

California Public Utilities Commission

Collinsville 500/230 kV Substation Project

Draft Environmental Impact Report

Volume 2

November 2025

PANORAMA ENVIRONMENTAL, INC.

California Public Utilities Commission

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Prepared for:
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PANORAMA ENVIRONMENTAL, INC.

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ACRONYMS AND ABBREVIATIONS

AADT	Annual Average Daily Traffic
AAM	annual arithmetic mean
AB	Assembly Bill
ABAG	Association of Bay Area Governments
AC	alternating current
ACS	American Chemical Society
ACSS	aluminum-conductor steel-supported
ADLS	aircraft detection lighting system
ADT	average daily trips
AEF	annual emission factor
AFB	Air Force Base
AFY	acre feet per year
AG	Solano County Agriculture zoning
AGL	above ground level
AIA	airport influence area
AL	Contra Costa County Agricultural Lands
ALUC	Airport Land Use Commission
ANSI	American National Standards Institute
API	Area of Potential Impacts
APLIC	Avian Power Line Interaction Committee
APM	Applicant Proposed Measure
AQMIS	Air Quality and Meteorological Information System
ASA	Abandoned Shipwreck Act
ASCE	American Society of Civil Engineers/Structural Engineering Institute
ATP	Active Transportation Plan
AWOIS	(NOAA) Automated Wrecks and Obstructions Information System

ACRONYMS AND ABBREVIATIONS

BAAQMD	Bay Area Air Quality Management District
BART	Bay Area Rapid Transit
BASMAA	Bay Area Stormwater Management Agencies Associates
BAU	business-as-usual
BCC	USFWS Birds of Conservation Concern
BCDC	San Francisco Bay Conservation and Development Commission
BGEPA	Bald and Golden Eagle Protection Act
BMP	best management practice
BNSF	The Burlington Northern & Santa Fe
BOR	Bureau of Reclamation
CAA	Clean Air Act
CAISO	California Independent System Operator
CALFED	California Bay-Delta Program
CALFIRE	California Department of Forestry and Fire Protection
CAP	criteria air pollutant
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CARE	Community Air Risk Evaluation
CATA	California Air Toxics Assessment
CATTCH	California Temporary Traffic Control Handbook
CBC	California Building Code
CBDA	California Bay-Delta Authority
CCC	California Coastal Commission
CCCHMP	Contra Costa County Hazard Mitigation Plan
CCCTA	Central Contra Costa Transit Authority
CCR	California Noise Exposure Regulations

ACRONYMS AND ABBREVIATIONS

CCR	California Code of Regulations
CCTA	Contra Costa Transportation Authority
CCWD	Contra Costa Water District
CDE	California Department of Education
CDFG	California Department of Fish and Game
CDFTA	California Department of Tax and Fee Administration
CDFW	The California Department of Fish and Wildlife
CDOC	California Department of Conservation
CDPR	California Department of Pesticide Regulation
CDTFA	California Department of Tax and Fee Administration
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CERS	California Environmental Reporting System
CESA	California Endangered Species Ac
CFPP	Construction Fire Prevention Plan
CFR	Code of Federal Regulations
CGS	California Geological Survey
CH4	methane
CHMIRS	California Hazardous Material Incident Report System
CHP	California Highway Patrol
CHRIS	California Historical Resources Information System
CLO	Cornell Lab of Ornithology
CM	Construction Measure
CMA	Congestion Management Agency
CMP	Solano Congestion Management Program

ACRONYMS AND ABBREVIATIONS

CNDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CO	carbon monoxide
CO2	carbon dioxide
CORRACTS	Corrective Action Report List
CPCN	Certificate of Public Convenience and Necessity
CPUC	California Public Utilities Commission
CRHR	California Register of Historical Resources
CRS	Congressional Research Service
CRS	cultural resources specialist
CSLC	California State Lands Commission
CTP	Solano Comprehensive Transportation Plan
CUPA	Certified Unified Program Agency
CVC	California Vehicle Code
CVFPB	Central Valley Flood Protection Board
CVRWQCB	Central Valley Regional Water Quality Control Board
CWA	Clean Water Act
CWPP	Solano County Community Wildfire Protection Plan
DBW	California Division of Boating and Waterways
DDT	dichlorodiphenyltrichloroethane
DHS	California Department of Health Services
DMMO	San Francisco Bay Dredge Material Management Office
DMR	Division of Mine Reclamation
DNL	day-night equivalent sound level
DOD	Department of Defense

DOE	Department of Energy
DOT	Department of Transportation
DPC	Delta Protection Commission
DPEM	Disaster Preparedness and Emergency Management
DPS	distinct population segment
DSC	Delta Stewardship Council
DTSC	California Department of Toxic Substances Control
DWR	California Department of Water Resources
EBRPD	East Bay Regional Park District
ECCCFPD	East Contra Costa County Fire Protection District
ECCTA	Eastern Contra Costa County Transit Authority
EFZ	Earthquake Fault Zone
EHC	Environmental Health Criteria
EHD	Department of Resource Management Environmental Health Division
EIA	Energy Information Administration
EIR	Environmental Impact Report
ELF	Static and Extremely Low-Frequency
EMA	California Emergency Management Agency
EMF	electric and magnetic fields
EMI	electromagnetic interference
EN2	Energy Efficiency
ENC	NOAA's Electronic Navigation Chart
EOP	Solano County Emergency Operations Plan
EPA	Environmental Protection Agency
EPRI	Electric Power Research Institute, Inc
ESA	federal Endangered Species Act

ESU	evolutionarily significant units
FAA	Federal Aviation Administration
FCC	Federal Communications Commission
FEMA	Federal Emergency Management Agency
FESA	federal Endangered Species Act
FHSZ	Fire Hazard Severity Zone
FHWA	Federal Highway Administration
FIFRA	Federal Insecticide, Fungicide, and Rodenticide Act
FMMP	Farmland Mapping and Monitoring Program
FMP	Electric and Magnetic Fields Management Plan
FOCA	Federal Office Civil Aviation
FPD	Fire Protection District
FRAP	Fire and Resource Assessment Program
FRED	Field Reporting Environmental Database
FTA	Federal Transit Administration
GHG	greenhouse gas
GIE	gas-insulated equipment
GIS	Geographic Information System
GO	CPUC General Order
GPS	global positioning system
GSA	Groundwater Sustainability Agency
GSP	Groundwater Sustainability Plan
GWP	global warming potential
H2S	hydrogen sulfide
HCD	California Department of Housing and Community Development
HCP	Habitat Conservation Plan

HDD	horizontal directional drilling
HDPE	high-density polyethylene
HFTD	CPUC High Fire Threat District
HMBP	Hazardous Materials Business Plan
HMIS	Hazardous Materials Inventory Statement
HMMP	Hazardous Materials Management Plan
HMP	Hazard Mitigation Plan
HMPB	Hazardous Materials Business Plan
HMTA	Hazardous Materials Transportation Act
HPTP	Historic Properties Treatment Plan
HRA	health risk assessment
HSAA	Carpenter-Presley-Tanner Hazardous Substance Account Act
HVAC	Heating, ventilation, and air conditioning
HVDC	high voltage direct current
IARC	International Agency for Research on Cancer
ICLEI	International Council for Local Environmental Initiatives
IEEE	Institute of Electrical and Electronics Engineers
IEPR	Integrated Energy Policy Report
INA	Information Not Available
IPC	integrated pest control
IPCC	International Panel on Climate Change
IPMP	Integrated Pest Management Plan
IWMB	Integrated Waste Management Board
JPA	Joint Powers Authority
KOP	key observation point
LAN	Local Area Network

LCI	Governor's Office of Land Use and Climate Innovation
LCU	landscape character unit
LEA	local enforcement agency
LGP	low ground pressure
LHMP	Local Hazard Mitigation Plan
LID	low impact development
LMP	Land Management Plan
LOS	level of service
LPP	Local Protection Program
LRA	local responsibility area
LSAA	Lake and Streambed Alteration Agreement
LSIWA	Lower Sherman Island Wildlife Area
LSP	lattice steel pole
LSPGC	LS Power Grid California, LLC
LST	lattice steel tower
LTPP	Long-Term Procurement Plan
LTS	less than significant
LTSM	less than significant with mitigation
LUCP	Travis AFB Land Use Compatibility Plan
MBTA	Migratory Bird Treaty Act
MCAS	Marine Corps Air Station
MCE	Marin Clean Energy
MHTL	mean high tide line
MIRTA	Military Installations, Ranges, and Training Areas
MLLW	Mean Lower Low Water
MMPA	Marine Mammal Protection Act

MMRP	Mitigation Monitoring and Reporting Plan
MMTCO	million metric tons carbon dioxide
MPO	metropolitan planning organization
MRP	Municipal Regional Stormwater Permit
MRR	Mandatory Reporting of Greenhouse Gas Emissions
MRZ	mineral resource zones
MSCP	Multiple Species Conservation Program
MSE	mechanically stabilized earth
MUTCD	California Manual on Uniform Traffic Control Devices
MVA	megavolt-ampere
N2O	nitrous Oxide
NAAQS	National Ambient Air Quality Standard
NAGPRA	Native American Graves Protection and Repatriation Act
NAHC	Native American origin, the Native American Heritage Commission
NCCP	Natural Community Conservation Plan
NCCPA	Natural Community Conservation Plan Act
NCIC	North Central Information Center
NCP	National Contingency Plan
NEC	National Electrical Code
NECPA	National Energy Conservation Policy Act
NEHRP	National Earthquake Hazards Reduction Program
NEPA	National Environmental Policy Act
NERC	National Energy Regulatory Commission
NESC	National Electrical Safety Code
NFIP	National Flood Insurance Program
NFPA	National Fire Protection Association

NHMLAC	Natural History Museum of Los Angeles County
NHPA	National Historic Preservation Act
NIH	National Institute of Environmental Health Science
NMFS	National Marine Fisheries Service
NMPS	National Pipeline Mapping System
NO2	nitrogen dioxide
NOAA	U.S. National Oceanic and Atmospheric Administration
NOD	Notice of Determination
NOP	Notice of Preparation
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
NPMS	U.S. Department of Transportation (DOT) National Pipeline Mapping System
NPS	National Park Service
NR3	National Ambient Air Quality Standards Regulatory Review and Rulemaking
NRCS	Natural Resource Conservation Service
NRHP	National Register of Historic Places
NSF	National Science Foundation
NTP	Normal Temperature and Pressure
NWIC	Northwest Information Center
NWP	Nationwide Permit
O3	ozone
OA	Operational Area
OAL	maximum Overall Length
OEHHA	Office of Environmental Health Hazard Assessment
OES	Office of Emergency Services
OHP	California State Office of Historic Preservation

OHWM	ordinary high water mark
OMR	Office of Mine Reclamation
OPGW	optical ground wire
OPR	Office of Planning and Research
OSHA	Occupational Safety and Health Administration
OTM	OSHA Technical Manual
PDWW	Public Drinking Water Watch
PEA	Proponent's Environmental Assessment
PHMSA	Department of Transportation Pipeline and Hazardous Materials Safety Administration
PHSA	Department of Transportation Pipeline and Hazardous Materials Safety Administration
PM	particulate matter
PM2.5	particulate matter 2.5 microns or less in diameter
PM10	particulate matter 10 microns or less in diameter
PMU	phaser measurement unit
PPC	Pittsburg Power Company
PPV	Peak Particle Velocity
PRC	Public Resources Code
PTC	Permit to Construct
PTS	Post-traumatic Stress
PUC	California Public Utilities Code
PVC	polyvinyl chloride
QSD	Qualified SWPPP Developer
RCNM	Roadway Construction Noise Model
RCRA	Resource Conservation and Recovery Act

RHA	Rivers and Harbors Act
RHNA	Regional Housing Needs Allocation
RISE	Reclamation Information Sharing Environment
ROG	reactive organic gases
ROW	right-of-way
RPP	Regional Priority Plan
RPS	renewable portfolio standard
RSMR	regionally significant mineral resource
RTPC	Regional Transportation Planning Committee
RWQCB	Regional Water Resource Control Board
SACDOT	Sacramento County Department of Transportation
SARA	Superfund Amendments and Reauthorization Act
SAV	Submerged aquatic vegetation
SB	Senate Bill
SCADA	supervisory control and data acquisition
SCS	sustainable communities strategy
SCWA	Solano County Water Agency
SDC	seismic design category
SDS	safety data sheets
SDWIS	Safe Drinking Water Information System
SEMS	Superfund Enterprise Management System Archive
SF6	sulfur hexafluoride
SFBAAB	San Francisco Bay Area Air Basin
SGMA	Sustainable Groundwater Management Act
SHMP	State Hazard Mitigation Plan
SIP	California State Implementation Plan

SLC	California State Lands Commission
SLF	Sacred Lands File
SMAQMD	Sacramento Municipal Air Quality Management District
SMARA	Surface Mining and Reclamation Act
SMP	Suisun Marsh Plan
SMPP	Suisun Marsh Protection Plan
SMPRP	Suisun Marsh Habitat Management, Preservation, and Restoration Plan
SMUD	Sacramento Municipal Utility District
SO2	sulfur dioxide
SPCC	Spill Prevention, Control, and Countermeasures Plan
SR	State Route
SRA	state responsibility area
SRCD	Suisun Resource Conservation District
SRRE	Source Reduction and Recycling Element
SSC	Species of Special Concern
STA	Solano Transportation Authority
SVAB	Sacramento Valley Air Basin
SVGB	Sacramento Valley Groundwater Basin
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAFB	Travis Air Force Base
TAG	Transportation Analysis Guidelines
THPO	Tribal Historic Preservation Officer
TIMF	Transportation Impact Mitigation Fee
TR22	tier III or IV off-road engines
TR9	Transportation Demand Management

TRANSPLAN	Contra Costa County transportation planning committee
TSCA	Federal Toxic Substances Control Act and Resource Conversation and Recovery Act
TSP	tubular steel pole
USACE	U.S. Army Corps of Engineers
USCG	Coast Guard
USDA	U.S. Department of Agriculture
USDOT	U.S. Department of Transportation
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UXO	unexploded ordnance
VCP	Voluntary Cleanup Program
VMT	vehicle miles traveled
VPD	vehicles per day
VRTR	Visual Resources Technical Study
WAN	Wide Area Network
WBWG	Western Bat Working Group
WEAP	Worker Environmental Awareness Program
WHO	World Health Organization
WMP	wildfire mitigation plan
WOTUS	waters of the U.S.
WQC	water quality certification
WRA	Wind Resource Area
WUI	Wildland Urban Interface
YSAQMD	Yolo-Solano Air Quality Management District
ZEV	zero-emission vehicles

4.5 Cultural Resources

This section presents the environmental setting and analysis of impacts on cultural resources resulting from the Proposed Project and alternatives. This section describes existing cultural resources, applicable regulations, and environmental impacts and provides mitigation measures to reduce or avoid significant effects for the Proposed Project, where feasible.

The following scoping comments are relevant to the analysis of cultural resources as documented in the Scoping Report (Appendix B):

- The EIR should analyze potential impacts on submerged cultural resources in the Project area. The California State Land Commission's (CSLC) shipwreck database could be used to obtain relevant shipwreck data.
- The EIR should include specific language in the Mitigation, Monitoring and Reporting Plan regarding the CSLC's authority and jurisdiction over archaeological, historical, and paleontological resources recovered on state lands.
- The EIR should analyze ground disturbance impacts on cultural and tribal cultural resources.

4.5.1 Definitions

Cultural resources are buildings, sites, humanly modified landscapes, traditional cultural properties, structures, or objects that may have historical, architectural, cultural, or scientific importance. CEQA requires 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.

CEQA defines *historically significant resources* as "resources listed or eligible for listing in the California Register of Historical Resources (CRHR)" (Public Resources Code section 5024.1). A cultural resource may be considered historically significant if the resource is at least 45 years old, possesses integrity of location, design, setting, materials, workmanship, feeling, and association, and meets any of the following criteria for listing on the CRHR:

1. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
2. Is associated with the lives of persons important in our past;
3. 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,
4. Has yielded, or may be likely to yield, information important in prehistory or history (Public Resources Code Section 5024.1).

The California State Office of Historic Preservation's (OHP) Instructions for Recording Historical Resources (OHP 1995) defines *site* as the location of a prehistoric or historic era

occupation or activity that has material evidence of past life, activities, and culture. *District* is defined as possessing a significant concentration, linkage, or continuity of sites, buildings, structures, or objects united historically or aesthetically by plan or physical development. The term *structure* is used to distinguish from buildings those functional constructions usually made for purposes other than creating human shelter. Although the National Register of Historic Places sets a threshold of 50 years of age for listing eligibility (36 CFR §60.4), the California OHP's standard is to record any cultural resources over 45 years of age[1]. In general, an archaeological "site" must contain at least three associated artifacts or a single feature. Isolates consist of less than three artifacts(Office of Historic Preservation 1989).

The *area of potential impact* (API) is the area within which a project may directly or indirectly cause changes in the character or use of historical resources, should any be present. The direct API is the area that would be directly and physically impacted by the Proposed Project. For the Proposed Project, the vertical direct API on land extends up to 55 feet below the ground surface to account for the maximum depth of the drilled pier foundations and in water the vertical API extends up to 16 feet to account below the channel bottom for the depth of the submarine cable. The tallest structure would be the microwave tower up to 200 feet tall. The horizontal API (approximately 416 acres) extends to the limits of the right-of-way, which varies based on the project component as provided in Table 2-2 of Section 2: Project Description. The horizontal API allows for adjustments to the placement of Proposed Project components, work areas, pull areas, and staging areas within the ROW. The indirect API includes accounts for visual, audible, or atmospheric intrusions; shadow effects; vibrations from construction activities; or change in access or use as a result of the Proposed Project (Caltrans 2020). The indirect API consists of a 1/2-mile buffer on the direct API.

4.5.2 Approach to Data Collection

Record Search

Record searches were conducted on May 5, 2023 through the California Historical Resources Information System (CHRIS) at the Northwest Information Center (NWIC) for the initial API including the Collinsville Substation, LSPGC 230 kV overhead segment, submarine, and underground segments, LSPGC telecommunications interconnection lines, PG&E 500 kV interconnection lines, PG&E 12 kV distribution line, and existing Pittsburg Substation including all associated staging and work areas and surrounding 0.5-mile buffer (Chronicle Heritage 2024). A supplemental record search was conducted on February 19, 2025 and March 6, 2025 for addition of the PG&E transposition sites and associated access roads and work areas with a 15-foot buffer around all access roads and work areas (additional 72.1 acres) and modification of the proposed submarine segment (ASM Affiliates 2025). The original direct API is shown on Figure 4.5-1 and the supplemental portions of the direct API are shown on Figure 4.5-2.

[1] The 45 year criteria recognizes that there is commonly a five-year lag between resource identification and the date that planning decisions are made.

Terrestrial Pedestrian Survey

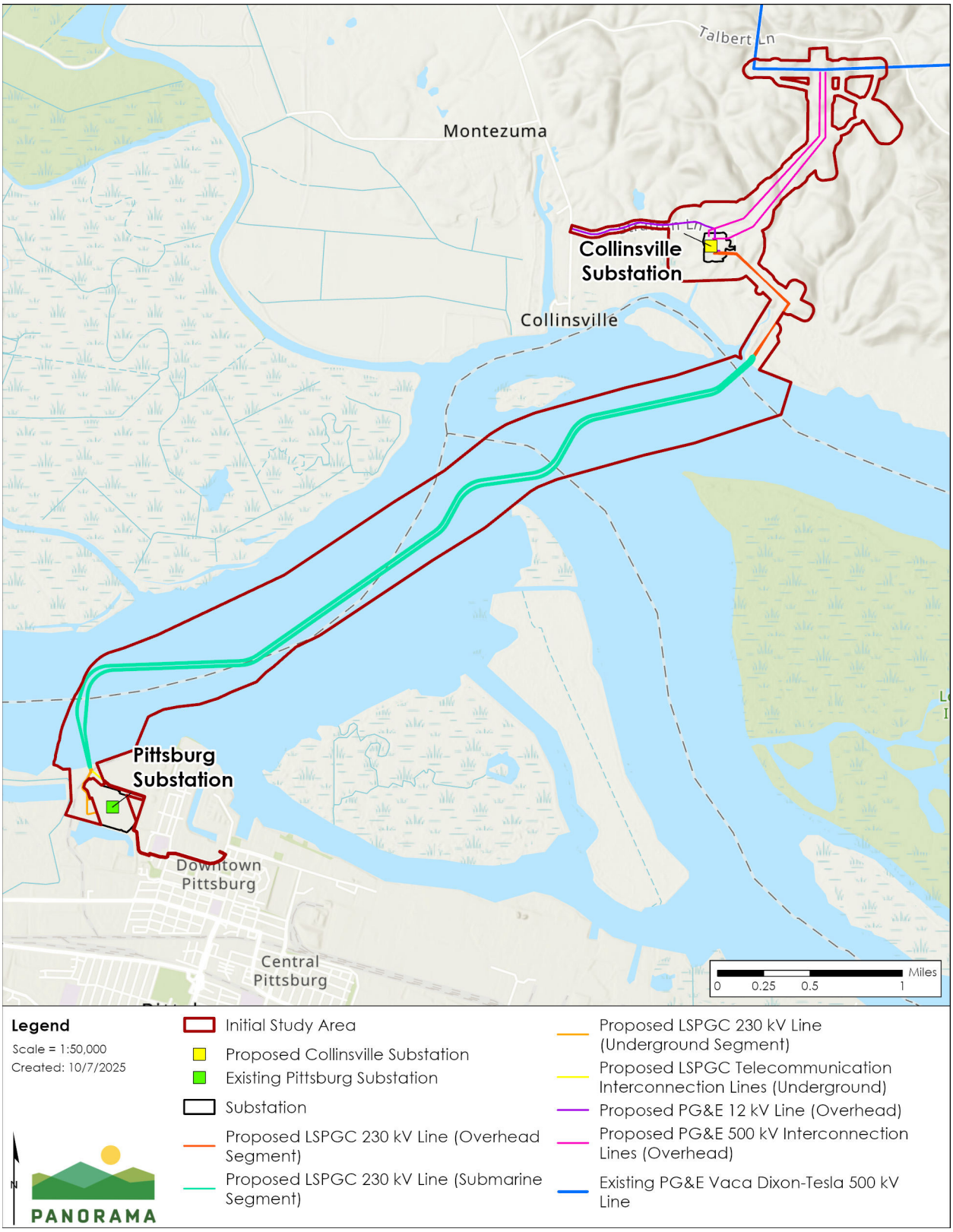
The terrestrial API was surveyed in pedestrian transects no more than 15 meters apart except for the proposed underground LSPGC telecommunication interconnection lines alignment in the City of Pittsburg. Because the proposed LSPGC telecommunications interconnection lines alignment is limited to the public right-of-way, and construction would be below developed roadways, the proposed alignment of the LSPGC telecommunication interconnection lines was not surveyed for cultural resources. Digital photographs were taken for use in documentation and reporting. Photographs include general views of the Proposed Project API and topography, vegetation density, and other relevant images. An ArcGIS Collector receiver with submeter accuracy (±50 centimeters) was used to conduct the archaeological survey within the bounds of the Proposed API to identify the extent of previously recorded cultural resources and to document artifacts and features within archaeological sites.

The initial terrestrial API was examined for the presence of historic or precontact period archaeological site indicators in 2024 (Chronicle Heritage 2024). The pedestrian survey area was expanded in 2025 to include the supplemental portions of the API (i.e., transposition sites and associated access roads and work areas) (ASM Affiliates 2025). 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. 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, leather shoes) or refuse from other pursuits such as agriculture (e.g., metal tanks, farm machinery parts, horseshoes) or structural materials (e.g., nails, glass window panes, corrugated metal, wood posts or planks, metal pipes and fittings).

Underwater Archaeology Assessment

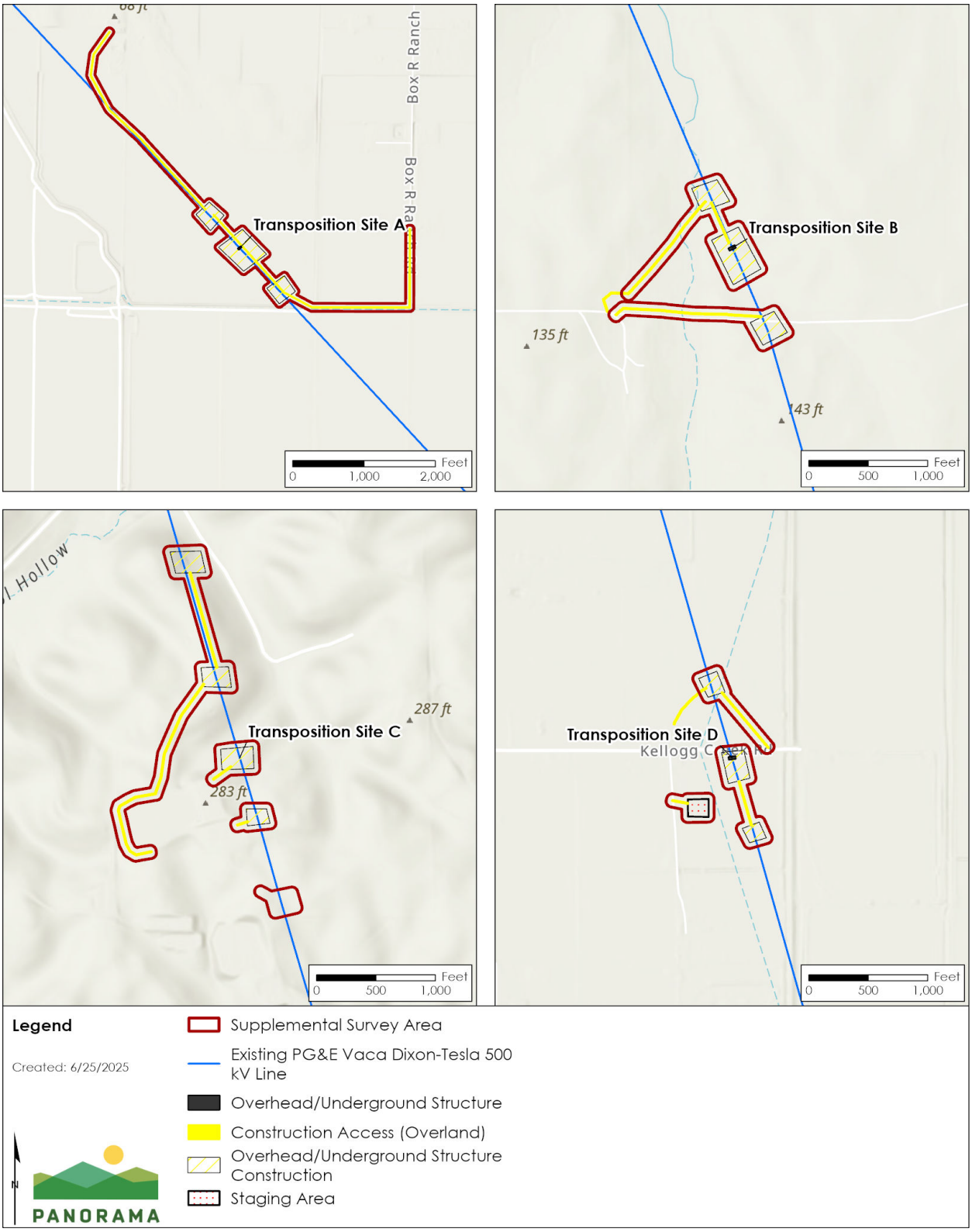
The California State Lands Commission (CSLC) Shipwreck Database, U.S. National Oceanic and Atmospheric Administration's (NOAA) Automated Wrecks and Obstructions Information System (AWOIS) and NOAA's Electronic Navigation Chart (ENC) Wrecks databases were reviewed to identify potential historic resources within the API for the proposed 230 kV submarine segment. A geophysical survey was conducted from September 17 to October 26 under CSLC Low Energy Geophysical Survey Permit No. 9235. The geophysical survey included dual frequency side scan sonar, magnetometer, sub-bottom profiler, and a high resolution multibeam echosounder. The survey covered a 2,000-foot-wide corridor as shown on Figure 4.5-1,which mapped the seafloor and sub-surface conditions, obstructions, and possible installation constraints of the cable route.

Figure 4.5-1 Cultural Resource API



Source:(ASM Affiliates and Insignia Environmental 2025)

Figure 4.5-2 Supplemental API



Source:(ASM Affiliates 2025)

Built Environment

A built environment survey was conducted on September 19 and 20, 2024 within the City of Pittsburg, California and along the proposed LSPGC telecommunications line from Halsey Street to the Marina Community Center (Goldman 2024). Local history centers like the Pittsburg Public Library and the former Pittsburg Power Plant and the Building Department were visited to obtain records on the built environment. Historic-era resources were documented with digital photography on all facades throughout the survey area.

4.5.3 Environmental Setting

Cultural Setting

The cultural setting, including prehistoric context, historic context, and ethnographic context are summarized from the Cultural Resource Assessment Report for the Collinsville 500/230kV Substation Project Contra Costa, Solano, and Sacramento Counties, California (Chronicle Heritage 2024).

Prehistoric Context

Prior cultural resource investigations in the Proposed Project vicinity have revealed nearly 10,000 years of occupation which is one of the longest sequences of human presence documented in a single locality in the broader San Francisco Bay Area. The earliest occupations during the Lower Archaic Period (10,000 to 6,000 B.P.) are characterized by high residential mobility evidenced by short-term occupation of sites. Artifacts characteristic of this period include millingslabs and handstones for processing plant resources such as seeds and nuts and wide-stemmed projectile points. 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.

During the Middle Archaic period (6,000 to 2,500 B.P.), residential mobility decreased, and base camps were established. Groundstone mortars and pestles replaced handstones and millingslabs by 4000 calibrated B.C. Camp residents harvested acorns, 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 Middle Archaic period. 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 during the Middle Archaic Period.

During the Upper Archaic period (2,500 B.P. to 1,500 B.P), 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. The Upper Archaic period burial customs show a preference for flexed burials.

During the Upper Archaic/Emergent period (1,500 B.P. to 700 B.P.) 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. Obsidian use increased from earlier periods, but other exchange items were absent.

By the Emergent period (1,000 B.P to 200 B.P.), fixed villages were 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 and bow and arrow use was introduced 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 eighteenth century.

Ethnographic Context

At the time of European contact, the Proposed API was within the territory of the Patwin, a southern Wintun linguistic group, and the Ompin group of Bay Miwok, a western Utian linguistic group. Two territories immediately surround Suisun Marsh: the Bay Area (Bay Miwok and Ohlone) and Middle Sacramento Valley (Patwin) discussed below.

The Bay Miwok People

The Ompin group of Bay Miwok are associated with the eastern and southeastern Suisun Marsh edges, where the San Joaquin and Sacramento rivers enter the Suisun Bay. 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. The Bay Miwok were hunter-gatherers, taking advantage of the abundant natural resources in the Delta and alluvial plains. This lush environment was able to sustain a relatively dense population despite the lack of agriculture. Like many other California groups, acorns were a staple carbohydrate of Bay Miwok foodways. Baskets were used for cooking, as utensils, storage containers, water jugs, and as trays for leaching and drying acorn meal. The Bay Miwok were active in managing and improving their environment through fire. By burning grass and brush annually, they were able to better control their natural resources. Their foraging for deer and rabbits was improved by eliminating much of the area in which the deer and rabbits would hide. Periodic burning also kept them safe from predators and neighbors and improved the land's productivity.

The Bay Miwok were organized into groups, or *tribelets,* of usually related intermarried families occupying a specific territory and speaking the same language or dialect. 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 brought Bay Miwok people together included regional festivals and religious dances. The division of labor within California tribelets was 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. The Bay Miwok village Ompin was located approximately 1 mile east of the Proposed Project area.

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.

The Patwin People

The Patwin comprise the southern branch of the Wintun people in Northern California who were native inhabitants of California since approximately 1500 B.P. The extent of the Wintun territory 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. Alfred Kroeber, in Handbook of the Indians of California, estimates that the 1770 population of the Wintun, including the Patwin, Nomlaki, and Wintu proper, was 12,000 individuals (Kroeber 1925). Permanent habitation sites of the Patwin were noted 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. 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 Proposed Project site. In the late 1790s, 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. The Patwin no longer hold the land grant and it was sold to the Mesa brothers, as discussed below. Another village site, Tolenas, was identified by Alfred Kroeber, in Handbook of the Indians of California, about 15 miles northwest of the Proposed Project site (Kroeber 1925).

The Patwin were organized into a principal village and a few satellite settlements. 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 chiefs.

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.

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's informants, however, did not report familiarity with many plants (e.g., buckeye, hazelnut, manzanita) 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 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 (ducks, geese, mudhens, quail) were also captured using nets. Fish were also a prime resource, and certain fishing sites were privately owned. Fish (such as salmon, sturgeon, perch, chub, sucker, hardhead, pike, and trout) and other riverine resources (such as 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 tule reeds.

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; baby carriers; and 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 (skinning, butchering, etc.) and ceremonial (such as 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.

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.

Historic Context

The earliest historical accounts of the area come from the Spanish explorers who ventured east of the Bay Area in the late eighteenth century. At the time of the Spanish arrival, Solano County was home to the Patwin Indians. In 1775, when Captain Juan Manuel Ayala's expedition explored the 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. 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. There is no evidence that the Spanish explored north of the river at the site of the Proposed Project during this period, but they likely passed within a few miles of it on the southern side of the river. There are no documented Spanish settlements or structures in the API. However, it is well known that the arrival of the Spanish had a devastating impact on Bay Area tribes causing catastrophic population decline, the destruction of indigenous cultures, and severe environmental disruption. The tribes' traditional way of life was fundamentally altered by the introduction of forced labor, new diseases, and European land-use practices

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. 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 uses on the ranchos were the raising of livestock and ranching. The API 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. The 1848 Treaty of Guadalupe Hidalgo that ceded California to the U.S. provided that the land grants would be honored.

The other rancho in the Proposed Project API 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 Suisun Bay, and covers the modern-day cities of Pittsburg and Antioch.

Prior to the 20th century, the history of both Contra Costa and Solano counties was overwhelmingly ranching and farming in character. During Mexican occupation, and for some years after that, cattle raising was the principal industry. In the late 1840s and 1850s, former gold seekers and pioneers began settling in Contra Costa and Solano counties, where they raised livestock and cultivated fruit orchards, vineyards, wheat, barley, and oats. 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.

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 Counties, such as Antioch, Pittsburg, and Walnut Creek, have grown into thriving cities and towns.

History of Pittsburg

The earliest recorded history of the Pittsburg area dates to 1839, when the Mexican government granted nearly 9,000 acres of the Rancho Los Medanos to brothers Jose Antonio Mesa and Miguel Jose Mesa Garcia. In 1849 the land was purchased by Col. Jonathon Drake Stevenson and Dr. William C. Parker. The first streets were laid out by future U.S. Army Gen. William Tecumseh Sherman (City of Pittsburg 2025).

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. 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 2025).

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 Sacramento Delta. An industry was born with fishermen, packing plants, and boat builders 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 2025).

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, in 1903, the town incorporated as Black Diamond. A rubber works and a steel company were started along with a large foundry. Black Diamond 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 2025).

In 1942, Camp Stoneman was built as the main point of embarkation on the west coast during WWII. It closed in 1954, and its property became the city of Pittsburg's and was used for a school, commercial and residential development (Pittsburg Historical Museum 2023).

History of Collinsville

Early in 1846, Lansford W. Hastings, acting as an agent responsible for finding a site for a Mormon colony, chose an area in today's southeastern Solano County on the Sacramento River near present day Collinsville (Chronicle Heritage 2025). The Mormon movement to California was part of a general exodus from the east and Midwest United States. The Mormons had been forced to leave their homes in Illinois and headed "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 (Chronicle Heritage 2025)

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. 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. 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 (Chronicle Heritage 2025).

The event known as the Bear Flag Revolt changed Hastings 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. In the wake of these hostilities, Hastings abandoned the adobe house, which remained unoccupied until 1852. Subsequently, a series of owners lived in the adobe house until PG&E bought the land in 1964. The old, abandoned adobe still stands, but it is rapidly deteriorating because of a lack of maintenance and leaking roof (Chronicle Heritage 2025).

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. In 1859, Mr. C.J. Collins settled on government land where Collinsville now stands. He surveyed the town plat and built a wharf and store (Chronicle Heritage 2025).

The small fishing village was approved for a steam ferry in 1868 to travel between Collinsville, New York Landing, and Antioch. Collinsville 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.

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 each car would be transported across the Delta by barge (requiring several trips) and then be rebuckled on the other side at the foot of Railroad Avenue in Pittsburg and would then resume its trip to San Francisco.

By the 1870s, Collinsville had a large salmon cannery and hotels and stores that serviced its workers. F. E. Booth built the salmon cannery in 1873 and employed many Italian fishermen, who lived on stilted houses in the marsh areas dubbed "Little Venice." 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 half of the town (Chronicle Heritage 2025).

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.

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. In 1928, the Sacramento Northern Railway purchased the railway, but the Great Depression and the popularity of the automobile contributed to the end of passenger service in 1940; by 1987, the railway had been abandoned (Chronicle Heritage 2025).

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. 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.

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 the Suisun Bay and the railroad made possible rail shipping of fish which up to that point had been shipped to market.

The Black Diamond Railroad (BD) was active at this time, which 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 railroad, a train trestle and large earthen embankment was built to span the CP line and allow for uninterrupted service by both railroad lines.

In 1888, the Southern Pacific (SP) bought out the CP. In turn the Union Pacific (UP) merged with the SP in 1996, assuming 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 their railroad network.

History of the Transmission Lines

The Pacific Gas & Electric (PG&E) Company 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 relation to commercial and residential development. Towers that predate 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 (Chronicle Heritage 2025).

PG&E's 230kV Pittsburg-Tesla 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 with electrical transmission tower development dating to the 1920s. PG&E's 230kV Pittsburg-Tesla transmission line that 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 line (running from the Pittsburg Substation to the Tesla Substation) was constructed in 1959 to 1960 and consists of 147 towers. It is considered by PG&E as a critical supply line for Contra Costa and Alameda counties. The transmission towers of the 1960s were made of steel, riveted together with lattice and bents for support. They had 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 (Chronicle Heritage 2025).

Results

Northwest Information Center Search Results

The records search results identified 12 previously recorded cultural resources within the initial search area and 13 additional previously recorded cultural resources within the supplemental search area. Of the 12 previously recorded resources within the initial search area, one is precontact and 11 are historic, with one of these historic resources being multicomponent (Chronicle Heritage 2024). Seven of the 12 previously recorded resources within the initial search area are within the Proposed Project API as indicated in Table 4.5-1. Of the seven resources within the Proposed Project API, six are historic and one is multicomponent (P-48-000041) (Chronicle Heritage 2024). Of the 13 additional resources within the record search area for the supplemental API, only a small portion of one resource was previously mapped within the API; however, the site was not observed during pedestrian surveys covering the area (ASM Affiliates 2025).

Built Environment Search Results

Twenty-six built environment resources were identified during the literature review. Of these, six are 45 years old or older (three of which are elements of the Pittsburg Power Plant). The potential historic resources in the built environment API are the Pittsburg Power Plant, St. Peter Martyr School, and Marina Community Center, which are all ineligible for the CRHR (Chronicle Heritage 2024).

Table 4.5-1 Previously Identified Cultural Resources within 0.5 mil of API and CRHR Eligibility Recommendations

Site Number	Resource Name	Age	Description	CRHR eligibility Recommendations	Within API?
P-48-000041	—	Multicomponent	Multicomponent site consisting of precontact camp site and Hastings Adobe	Nominated for the NRHP; Eligible for CRHR based on local historical significance	Yes (145 feet from direct API; within indirect API)
P-07-002956	—	Historic	Contra Costa Moraga/Pittsburg – Tesla PG&E Electrical Transmission Lines	Eligible under CRHR Criterion 1	Yes
P-48-000124	1H	Historic	A barn with small orchard, domestic and structure refuse, and agricultural equipment	Ineligible	Yes
P-48-000125	CA-SOL-284H	Historic	Remains of water conveyance system; covered well hole and a water pipe	Ineligible	Yes
P-48-000128	CA-SOL-287H	Historic	Possible homesite; no artifactual evidence remains.	Ineligible	Yes
P-48-000140	#65H	Historic	Possible homesite with pepper trees.	Ineligible	Yes
P-07-000981	—	Historic	Grizzly Island Road, Collinsville Road, Chadbourne Road established in 1891	Ineligible	Yes
P-07-000489	—	Historic	Sacramento Northern Railroad alignment	Unevaluated	No
P-48-000139		Historic	Domestic Refuse scatter	Ineligible	No
P-48-000416	—	Historic	Homesite with cellar hole, depressions, and scatter of bricks.	Ineligible	No
P-48-000521	—	Historic	Collapsed structure, two barns, and corral	Ineligible	No
P-48-000949	CW-1 Handstone Isolate	Precontact	Isolated handstone	Ineligible (isolate)	No

Site Number	Resource Name	Age	Description	CRHR eligibility Recommendations	Within API?
P-84-001920	—	Historic	Trave AFB Nike Missile Battery 10 Launcher Area	Ineligible	No
P-48-000736	—	Historic	Lambie/Orcuioli Ranch	Eligible	No
P-07-000410	CA-CCO-650H	Historic	Refuse scatter	Unevaluated	No
P-07-004521	—	Historic	Isolate glass bottle	Ineligible (isolate)	No
P-48-000126	CA-SOL-285H	Historic	Historic refuse and privy	Unevaluated	No[b]
P-48-000415	—	Historic	Homestead remnants with associated refuse	Unevaluated	No
P-48-000142	—	Historic	Refuse scatter	Unevaluated	No
P-48-000981		Historic	Historic Road	Ineligible	No
P-48-000521		Historic	Ranch Complex	Ineligible	No
P-07-000806	—	Historic	Atchison Topeka and Santa Fe Railroad	Ineligible	No
P-07-001093	—	Historic	California Theater	District Contributor	No[c]
P-07-004993	—	Historic	Industrial building	Ineligible	No
P-07-000869	—	Historic	Industrial building	Ineligible	No

Note:

[a] All unevaluated sites are outside of the API for the Proposed Project. Unevaluated sites were not evaluated for CRHR eligibility and no recommendation was made due to Proposed Project avoidance of the resource.

[b] A portion of site P-48-00126 was previously mapped within the API but was not relocated within the API during pedestrian surveys in 2024.

[c] The District is adjacent the horizontal API for the telecommunications interconnection lines; however, the API for the telecommunication lines is below ground and the District does not extend below ground (within the vertical API of the Proposed Project).

Source: (Chronicle Heritage 2024; ASM Affiliates 2025)

Marine Records Search Results

The Shipwreck Database returned many known shipwrecks within Contra Costa, Sacramento, and Solano counties. The results indicate that nine historical shipwrecks are known to have

occurred within 1 mile of the API (ASM Affiliates and Insignia Environmental 2025). A review of the AWOIS and ENC Wrecks databases indicated 32 charted wrecks or obstructions within 1 mile of the Proposed Project (ASM Affiliates 2025). In total 41 shipwrecks have been documented within 1 mile of the Proposed Project.

Pedestrian Survey

The pedestrian survey resulted in the identification of six new resources within the Proposed Project API. The six new resources that were recorded are not being recommended as eligible for listing in the NRHP or CRHR as summarized in Table 4.5-2.

Table 4.5-2 Newly Recorded Resources within the Proposed Project API

Site Number	Resource Name	Age	Description	CRHR Eligibility Determinations	Within API?
AG-001	—	Historic	Scattering of mixed historic domestic materials.	Ineligible. Does not possess historical significance under any CRHR criteria.	Yes
AG-002	—	Historic	BNSF railway line spur	Ineligible. Does not possess historical significance under any CRHR criteria.	Yes
JN-001	—	Historic	Domestic structure	Ineligible. Does not possess historical significance under any CRHR criteria.	Yes
JN-002	—	Historic	Unpaved single lane two-track road; partially graveled	Ineligible. Does not possess historical significance under any CRHR criteria.	Yes
Stratton Lane	Stratton Lane	Historic	10-to-16-foot wide road, 6.4 miles long	Ineligible. Does not possess historical significance under any CRHR criteria.	Yes
JN-004	—	Historic	Three power line poles along the west margin of Stratton line and a cut power line transmission pole	Ineligible. Does not possess historical significance under any CRHR criteria.	Yes

Marine Remote Sensing Results

Analysis of the marine remote sensing data identified 74 magnetic anomalies, 15 side-scan sonar contacts, and 21 sub-bottom profile reflectors associated with 12 geomorphological features in the form of disparate relict channel landforms. Eleven of these sub-bottom profiler features were not indicative of intact relict landforms that contained the potential to possess cultural material. One paleo landform, however, was initially thought to cross seven survey transects within the API. Upon further analysis, it would seem this feature is indicative of a braided

network of dynamic river channels. This being the case, there is a low probability for the potential for intact cultural material deposits.

Three resources referred to as Maritime Targets 1, 2 and 3 are in proximity to the proposed submarine cable. Maritime Targets 1 and 2 are likely structural components, and Maritime Target 3 is a wooden barge-like watercraft. Based on the current location of the submarine cables, the targets are 187, 146, and 103 feet from the submarine cables, respectively. An underwater paleo landform was also located and determined to have low sensitivity for cultural deposits (ASM Affiliates and Insignia Environmental 2025).

Buried Site Sensitivity

The subsurface cultural sensitivity of the API was estimated by analyzing local sedimentological, stratigraphical, and geomorphological information contained in academic and regulatory reports in relation to the distribution of recorded cultural resources in the region. Additionally, geologic maps and soil reports provided the units to be expected at depth with the API. The Montezuma Hills clays within proposed LPSGC Collinsville Substation site and proposed PG&E 500 kV interconnection lines alignment have an overall low likelihood to yield buried cultural materials because they are relatively shallow and are mostly situated on hillslopes. However, soils within small drainages of the Montezuma Hills at the northern end of the Proposed API have a moderate potential to contain buried cultural resources due to their position in a flat depositional setting near an ephemeral water source. Surface exposures within the Montezuma Hills clays and gravels are likely to contain historic resources given the presence of several previously recorded historic sites in the vicinity of Collinsville (Chronicle Heritage 2024).

Clay loams in marshland on the north bank of the Sacramento-San Joaquin Delta at the submarine segment riser poles and duct banks and 230 kV overhead segment have a high potential to yield buried cultural deposits due to their depth of at least 2 meters, their flat setting next to a significant water body, and ethnographic and archaeological evidence for sustained indigenous occupation of Sacramento–San Joaquin Delta marshlands. Artificial fill and Pleistocene alluvial fan deposits on the south bank of the Sacramento-San Joaquin Delta near the Pittsburg substation are unlikely to contain buried precontact materials due to heavy landscape modification associated with the historic development of the Pittsburg Substation and Pleistocene-aged material that may predate human occupation of the area (Chronicle Heritage 2024).

Additionally, the CPUC has held AB 52 consultations with both the Confederated Village of Lisjan Nation and Yocha Dehe Winton Nation. During consultations, the Native American representatives discussed the presence of significant tribal cultural resources including a potential historic Native American village site along the northern bank of the Sacramento River near the Proposed Project. The consulting tribes expressed concern about the overall sensitivity of the area and requested monitoring of ground disturbing activities in the area, cultural sensitivity training, regular meetings between Tribal representatives and contractors, and reburial of isolated artifacts outside of the Proposed Project API. AB 52 consultations and

impacts to tribal cultural resources are discussed in greater detail in Section 4.18: Tribal Cultural Resources of this EIR.

4.5.4 Regulatory Setting

Federal

National Historic Preservation Act

Authorized by the National Historic Preservation Act of 1966, as amended (NHPA) and administrated by the National Park Service (NPS), the National Register of Historic Places (NRHP) is the official list of the nation's historic places deemed worthy of preservation, and 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 36 CFR 60.4. Properties listed or formally determined eligible for listing in the NRHP are automatically listed in the California Register of Historical Resources (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 (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 manmade, 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 of 1987

The Abandoned Shipwreck Act (ASA) was signed into law on April 28, 1988. The purpose of the ASA is to protect historic shipwrecks in United States 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 the U.S. Code at 43 U.S.C. §§ 2101–2106 et seq.

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 three miles offshore (NPS 2025). Under the Act, 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
- Abandoned shipwrecks located on a state's submerged lands and included in or determined eligible for inclusion in the National Register of Historic Places.

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 Indian tribes have title to shipwrecks located on Indian 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 2025).

The ASA stipulates that the laws of salvage and finds do not apply to abandoned shipwrecks claimed by the government under the Act. 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 2025).

Native American Graves Protection and Repatriation Act (NAGPRA)
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, Indian 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.

The Act recognizes the rights of lineal descendants, Indian Tribes, and Native Hawaiian organizations (NHOs) 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 (Department) has published the following rules under the title "Native American Graves Protection and Repatriation Act Regulations":

- RIN 1024-AC07, 1993 Proposed Rule (58 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); and
- RIN 1024-AE00, Disposition of Unclaimed Cultural Items Final Rule (80 FR 68465, November 5, 2015).
- 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, 2022 Proposed Rule).

The final rule in 43 CFR Part 10 R1N1024-AE19 revises and replaces definitions and procedures for lineal descendants, Indian Tribes, Native Hawaiian organizations, museums, and federal agencies to implement the Native American Graves Protection and Repatriation Act of 1990. 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, Indian Tribes, and Native Hawaiian organizations. The final rule is effective January 12, 2024.

State

The Proposed Project is subject to compliance with CEQA statutes and guidelines, which require both public and private projects with financing or approval from a public agency to assess the undertaking's impact on cultural resources (PRC sections 21082, 21083.2 and 21084 and California Code of Regulations 10564.5). Specifically, under PRC section 201084.1, "a project that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment." The first step in the CEQA compliance process in terms of historical resources is to identify any that may be affected by a project.

Cultural resources are buildings, sites, human-modified landscaped areas, traditional cultural properties, structures, or objects that may have historical, architectural, cultural, or scientific importance based on established criteria. 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.

"Historical resource" is a term with a defined statutory meaning (PRC section 21084.1). The determination of significant impacts on historical and archaeological resources is described in sections 15064.5(a) and 15064.5(b) of the CEQA Guidelines. Section 15064.5(a) states historical resources include the following:

- A resource listed or determined to be eligible by the State Historical Resources Commission for listing in the CRHR (PRC section 5024.1).
- A resource included in a local register of historical resources, as defined in section 5020.1(k) of the PRC, or identified as significant in a historical resource survey meeting the requirements of section 5024.1(g) of the PRC, will be presumed to be historically or culturally significant. Public agencies must treat any such resource as significant unless the preponderance of evidence demonstrates that it is not historically or culturally significant.
- Any object, building, structure, site, area, place, record, or manuscript that a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California may be considered a historical resource, provided the lead agency's determination is supported by substantial evidence in light of the whole record. Generally, a resource will be considered by the lead agency to be historically significant if the resource meets the criteria for listing in the CRHR (PRC section 5024.1).

- The fact that a resource is not listed in or determined to be eligible for listing in the CRHR, not included in a local register of historical resources (pursuant to PRC Section 5020.1[k]) or identified in a historical resources survey (meeting the criteria in PRC Section 5024.1[g]) does not preclude a lead agency from determining that the resource may be an historical resource as defined in PRC sections 5020.1(j) or 5024.1.

California Register of Historical Resources

The CRHR program encourages public recognition and protection of resources of architectural, historical, archaeological, and cultural significance; identifies historical resources for state and local planning purposes; determines eligibility for state historic preservation grant funding; and affords certain protections under CEQA. The criteria established for eligibility for the CRHR are comparable to the national criteria established for the NRHP.

To be eligible for listing in the CRHR, a property must meet at least one of the following four criteria:

1. It is associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States; or
2. It is associated with the lives of persons important to local, Californian, or national history; or
3. It 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
4. It has yielded, or is likely to yield, information important to the prehistory or history of the local area, California, or the nation.

For a property to qualify under the CRHR's Criteria for Evaluation, it must also retain enough of its historic character or appearance, or integrity, to be recognizable as a historical resource and to convey the reasons for its significance. For the purposes of eligibility for the CRHR, *integrity* is defined as "the authenticity of a historical resource's physical identity evidenced by the survival of characteristics that existed during the resource's period of significance" (California Code of Regulations Title 14 § 4852(c)). To determine if a property retains the physical characteristics corresponding to its historic context, the NRHP has identified seven aspects of integrity, which the CRHR closely 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.
4. Materials are the physical elements that were combined or deposited during a particular period and in a particular pattern or configuration to form a historic property.

5. Workmanship is the physical evidence of the crafts of a particular culture or people during any given period in history or prehistory.
6. Feeling is the property's expression of the aesthetic or historic sense of a particular period.
7. Association is the direct link between an important historic event or person and a historic property.

Because integrity is based on a property's significance in a specific historic context, evaluations of integrity can only be completed after historic significance has been established.

Assembly Bill 52

Signed into law in September 2014, AB 52 created a new class of resources, *tribal cultural resources*, for consideration under CEQA. Tribal cultural resources 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 consult with California Native American tribes that have requested consultation for projects that may affect tribal cultural resources. 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 tribal cultural resource constitutes a significant effect on the environment unless mitigation reduces such effects to a less than significant level.

Local

Pursuant to 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."

Solano County General Plan

The Solano County General Plan includes goals, policies, and implementation measures related to the preservation of precontact and historic archaeological sites in Solano County. The county's stated cultural resource goals include (1) collaboration with Native American groups to protect traditional cultural places and sacred spaces in the context of land use decisions and (2) leveraging the county's historic capital to drive economic development, especially tourism. The Resources Chapter of the Solano County General Plan includes the following policies that are relevant to the Proposed Project (Solano County 2008):

> **Policy RS.P-38:** Identify and preserve important prehistoric and historic structures, features, and communities.

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 Conservation Element of the Sacramento County General Plan considers cultural and paleontological resources. The Conservation Element contains the following policies relating to cultural resources that are relevant to the Proposed Project (Sacramento County 2017):

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-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-157. Monitor projects during construction to ensure crews follow proper reporting, safeguards, and procedures.

Policy CO-164. Structures having historical and architectural importance shall be preserved and protected.

Policy CO-166. Development surrounding areas of historic significance shall have compatible design in order to protect and enhance the historic quality of the areas.

Contra Costa County General Plan

The Conservation, Open Space, and Working Lands Element of the Contra Costa County General Plan contains nine sections designed to promote conservation, preservation, and enhancement of species, habitats, open spaces, working lands, and natural and cultural resources. The following policy from the Historic and Cultural Resources and the Scenic Resources sections of the Conservation Element are relevant to the Proposed Project (Contra Costa County 2024)

Policy COS-P10.1 Prioritize preservation and adaptive reuse of buildings, sites, and areas having identifiable archaeological, cultural, or historic significance. Require new construction and renovation projects in historic areas to incorporate compatible and

high-quality design that protects the overall historic integrity of the area and adjacent historic resources.*[2]

Policy COS-P10.4 Encourage owners of eligible historic properties to apply for State and federal designation as historic properties and participate in tax incentive programs, such as allowed under the Mills Act, for historic preservation.

Policy COS-P10.5 When a project involves a resource that is listed in the County's Historic Resources Inventory, or as otherwise necessitated by the CEQA process, require applicants to engage a qualified consultant to prepare an evaluation of potential and previously identified archaeological, cultural, and historic resources that may be present on the project site.*

Policy COS-P10.6 Upon discovery of significant historic or prehistoric archaeological artifacts or fossils during project construction, require ground-disturbing activities to halt within a 50-foot radius of the find until its significance can be determined by a qualified historian, archaeologist, or paleontologist and appropriate protection and preservation measures developed.*

Policy COS-P10.7 Require significant historic, archaeological, and paleontological resources to be either preserved onsite or adequately documented as a condition of removal. Any documentation of historic resources shall be conducted in accordance with Historic American Building Survey (HABS) Level III standards, as defined by the US Secretary of the Interior.*

Policy COS-P10.9 Ensure new cultural/historic resource evaluations consider potential social and cultural significance of resources in addition to architectural significance.

Alameda County

The proposed modifications at PG&E's existing Tesla Substation located in Alameda County would occur within the substation fence line and would not require ground disturbance. No surface level resources could occur in the area of disturbance due to the prior development of the substation in the area. Therefore, resource plans and policies for Alameda County were not assessed.

City of Pittsburg General Plan

The City of Pittsburg General Plan's Resource Conservation and Open Space Element contains the following policies relating to cultural resources protection relevant to the Proposed Project (City of Pittsburg 2024):

[2] Asterisks identify policies and actions that mitigate potential environmental impacts, as described in the Contra Costa County General Plan Environmental Impact Report.

Policy 10-P-7.3*:* Protect archaeological/paleontological sites from destruction in order to preserve and interpret them for future scientific research, and public educational programs.

Policy 10-A-7.c: Halt construction immediately and conduct an archaeological investigation to collect all valuable remnants if archaeological resources are found during ground-breaking for new urban development.

Policy 10-A-7.h: Require the preparation of a resource mitigation plan and monitoring program for new development by a qualified archaeologist in the event that archaeological resources are uncovered.

Policy 10-A-7.i: Require a records search for any proposed development project, to determine whether the site contains known archaeological, historic, cultural, or paleontological resources and/or to determine the potential for discovery of additional cultural or paleontological resources. If any resources are identified, identify methods to preserve the resource or to document and account for the resource. This requirement may be waived if determined by the City that the proposed project area is already sufficiently surveyed.

Policy 10-A-7.k*:* Require all new development, infrastructure, and other ground-disturbing projects to comply with the following conditions in the event of an inadvertent discovery of cultural resources or human remains:

> If human remains are discovered during any ground disturbing activity, work shall stop until the Development Services Director and the Contra Costa County Coroner have been contacted; if the human remains are determined to be of Native American origin, the Native American Heritage Commission (NAHC) and the most likely descendants have been consulted; and work may only resume when measures to relocate or preserve the remains in place, based on the above consultation, have been taken and approved by the Development Services Director.
>
> If archaeological resources are encountered during construction or ground disturbing activity, work within 50 feet of the find shall be halted and a qualified archaeologist meeting the Secretary of Interior's Professional Qualification Standards for archaeology (National Park Service 1983) shall immediately be contacted to evaluate the find pursuant to Public Resources Code Section 21083.2. If necessary, the evaluation may require preparation of a treatment plan and archaeological testing for determining California Register of Historical Resources eligibility. If the discovery proves to be significant under CEQA and cannot be avoided by the project, additional work may be warranted, such as data recovery excavation, to mitigate any significant impacts to significant resources. If the resource is of Native American origin, the NAHC shall be contacted to ensure that the Most Likely Descendant can assess the find. Any

reports required to document and/or evaluate unanticipated discoveries shall be submitted to the City of Pittsburg for review and approval and submitted to the Northwest Information Center in Sonoma State after completion. Recommendations contained within prepared reports shall be implemented throughout the remainder of ground disturbance activities.

In the event of the identification of cultural resources on a development project site, a professionally qualified archaeologist and Tribal representative shall monitor ground-disturbing construction conducted during project implementation. The monitors shall observe ground-disturbing construction to identify potential archaeological deposits and avoid or limit damage to such deposits. The monitors shall have the discretion to reduce the intensity of monitoring, or suspend such monitoring, if field conditions clearly indicate that no potential intact archaeological deposits could be encountered. Should an intact archaeological deposit be identified, the monitors shall be empowered to temporarily halt construction in the vicinity of the find. The archaeologist shall, in consultation with the Tribal representative and City, evaluate the eligibility of the deposit for inclusion in the California Register of Historical Resources. If the deposit is eligible, the project shall attempt to feasibly avoid damage to the deposit (e.g., redesign or capping). If avoidance is not feasible, the archaeologist shall, in consultation with the Tribal representative and City, develop and implement a plan to recover the scientifically consequential data represented by the deposit in a manner respectful of tribal concerns. A report of the finds of any resource evaluation and/or data recovery efforts shall be submitted to the Northwest Information Center in Sonoma State as a condition for access to its archives.

4.5.5 Approach to Impact Analysis

The analysis of cultural resources applies the impact criteria and significance thresholds defined in the following subsection. The applicant proposed measures (APMs) and construction measures (CMs) identified by LSPGC and PG&E, respectively, are considered when making the impact determinations. Impacts are evaluated for the Proposed Project, including separate analyses of LSGPC and PG&E project components, cumulative impacts, and alternatives. Mitigation measures are defined to reduce or avoid significant impacts, where feasible.

Impact Criteria and Thresholds of Significance

The following impact criteria have been derived from Appendix G of the CEQA Guidelines to evaluate impacts on cultural resources. Appendix G of the CEQA Guidelines asks whether a project would:

- Impact CUL-1: Cause a substantial adverse change in the significance of a historical resource pursuant to § 15064.5?
- Impact CUL-2: Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?

- Impact CUL-3: Disturb any human remains, including those interred outside of dedicated cemeteries?

Applicant Proposed Measures and Construction Measures

LSPGC APMs and PG&E CMs identified in Section 2: Project Description that are relevant to the cultural resources impact analysis are provided in Table 4.5-3.

Table 4.5-3 APMs and CMs Relevant to Cultural Resources

LSPGC APMs and PG&E CMs
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 100-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 100-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 100 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

LSPGC APMs and PG&E CMs
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.
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.
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 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 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 ***(Superseded by MM CUL-2)***. **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. **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.

4.5.6 Impact Analysis – Proposed Project

Table 4.5-4 presents a summary of the CEQA impact criteria and impacts on cultural resources that would occur during construction, operation, and maintenance of the Proposed Project.

Table 4.5-4 Summary of Impacts on Cultural Resources for the Proposed Project

Impact Criteria: Would the project …	APMs/CMs Applied	Significance Before Mitigation	Mitigation Measures Required	Significance After Mitigation
Impact CUL-1: Cause a substantial adverse change in the significance of a historical resource pursuant to § 15064.5?	APM CUL-1 APM CUL-2 APM CUL-3 APM CUL-4 CM CUL-1 CM CUL-2 CM CUL-3*	S	MM CUL-1 MM CUL-2	SU
Impact CUL-2: Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?	APM CUL-1 APM CUL-2 APM CUL-3 APM CUL-4 CM CUL-1 CM CUL-2 CM CUL-3*	S	MM CUL-1 MM CUL-2	SU
Impact CUL-3: Disturb any human remains, including those interred outside of dedicated cemeteries?	None	S	MM CUL-1	SU

Notes:

S = significant

SU = significant and unavoidable

NA = not applicable

* CM CUL-3 is superseded by MM CUL-2

Impact CUL-1: Would the Proposed Project cause a substantial adverse change in the significance of a historical resource pursuant to § 15064.5? *(Significant and unavoidable)*

Impact CUL-2: Would the Proposed Project cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5? *(Significant and unavoidable)*

Construction

CCR Title 14 § 15064.5 defines "historical resource" as a resource eligible for listing in the CRHR, a resource included in a local register of historical resources, or a resource considered by the lead agency to be "historically significant" because it meets the criteria for listing on the CRHR. "Substantial adverse change" is defined in CCR Title 14 § 15064.5 as "physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired."

LSPGC Project Components

One CRHR eligible resource, the Hastings Adobe site, which was nominated for the NRHP, is located within the potential indirect API of LSPGC project components. The Contra Costa Moraga/Pittsburg – Tesla PG&E Electrical Transmission Lines are located within the API for PG&E project components but outside of the API for LSPGC project components. The California Theatre Historic District overlaps with the horizontal API for the LSPGC telecommunication lines, but does not intersect the vertical API. Each of these resources is discussed below. No other eligible resources are located within the direct or indirect API and the Proposed Project would not cause a substantial adverse change in the significance of a resource outside of the direct and indirect API.

Hastings Adobe

The Proposed Project construction would be approximately 250 feet from the Hastings Adobe structure (building) at the nearest location; however, this multicomponent site with precontact resources extends as far north as Stratford Lane. P-48-000041 has been nominated to the NRHP based on its local historical significance. None of the Proposed Project work areas are located within the geographic limits of the Hastings Adobe site; however, the Hastings Adobe site is considered within the API for the Proposed Project because of the potential for vibration during construction and potential for viewshed impacts. The exterior of the Hastings Adobe building remains in a state of deterioration, has seen multiple modern additions, and remains fenced off to prevent further vandalism (Chronicle Heritage 2024). A viewshed analysis was conducted to identify if visual impacts would adversely affect the historic property, and if the setting would be altered. From the Hastings Adobe, several large wind turbines are located within the viewshed. The addition of the 230 kV structures for the Proposed Project would not constitute significant changes to the visual landscape as it currently exists and would not adversely affect the setting or feeling of the historic property. Due to deterioration, vandalism, and the addition of new materials, including the reinforced structure around the adobe and a porch area, the integrity of the Hastings Adobe's exterior design has been compromised, and the building's significance is communicated through the integrity of the design, materials, and workmanship of adobe's interior (Chronicle Heritage 2024). Construction of the 230 kV overhead segment would require use of heavy equipment such as a large bulldozer, drill rig, and loaded trucks as close as 250 feet from the Hastings Adobe site. A vibratory roller would be used at the Collinsville Substation site. The Caltrans vibration threshold for structural damage to fragile historic buildings such as Hastings Adobe is 0.1 in/sec PPV for continuous/intermittent sources and 0.2 in/sec PPV for transient sources. Construction equipment, including vibratory rollers, is considered to be a continuous/intermittent source (Caltrans 2020, tbl. 8). Vibration from Proposed Project construction equipment, including a vibratory roller used for preparation of a temporary access road, would attenuate to 0.007 in/sec PPV at a distance of 250 feet, which is far below the 0.1 in/sec PPV threshold for potential damage of fragile historic buildings. Therefore, construction vibration would not cause a substantial adverse change in the significance of the Hastings Adobe site and the impact would be less than significant.

California Theatre Historic District

The LSPGC telecommunication lines intersect a small portion of the historic district. At the point where the telecommunication lines are located within the California Theatre Historic District, the telecommunication cables are buried beneath roads. Installation of the telecommunication cables via HDD at locations outside of the historic district would not adversely affect the significance of the historic district as the HDD activities would be temporary (last a few weeks) and would not damage any eligible resources within the district. The impact would be less than significant.

Maritime Resources

The proposed 230 kV submarine segment alignment is located in proximity to three maritime resources. The alignment is currently proposed over 100 feet from the nearest potential cultural resource/maritime resources. Due to the distance between the proposed submarine segment alignment and the maritime resources, the Proposed Project would have no impact on the significance of the maritime resources.

Inadvertent Discoveries

There is the potential to encounter cultural resources during construction activities, particularly in areas with moderate and high sensitivity for cultural resources including along the 230 kV overhead segment, onshore transition to the submarine segment including onshore trenches, and underground segment. Geoarchaeological studies indicate that at the onshore transition to the submarine segment there is a high possibility for buried precontact resources, as the Bay has been ringed with Native American habitations for thousands of years (Chronicle Heritage 2025). In addition, there is historical documentation suggesting that a historic Native American village may have been located along the northern bank of the Sacramento-San Joaquin River east of the Proposed Project area, but given the uncertainty of its exact location and based on CPUC's consultation with Native Americans, there is a possibility a village could be buried beneath the sediments in the area of the 230 kV overhead segment, riser structures, and northern submarine segments onshore area providing further evidence supporting the high sensitivity of the area. LSPGC has proposed APM CUL-1: Worker's Environmental Awareness Program, APM CUL-2: Avoid Environmentally Sensitive Areas, APM CUL-3: Inadvertent Discoveries, and APM CUL-4: Paleolandform Testing to minimize adverse changes in the significance of historical and archaeological resources. The APMs require worker training on cultural resource protections, surveys for any modified work areas and avoidance of any discoveries of cultural resources with a 100-foot buffer, investigation of any discoveries of cultural resources by an archaeologist, and paleolandform testing prior to construction. The impact on cultural resources after implementation of the APMs would be less than significant in areas with low sensitivity for cultural resources including the Collinsville Substation, submarine segment beneath the river bottom, and telecommunications lines. However, due to the moderate and high sensitivity and associated potential to encounter precontact resources within the onshore portion of the 230 kV submarine segment that would be installed with a hydroplow, the riser structures, the portion of the 230 kV overhead segment south of the end of Stratton Lane, and underground segment (in Pittsburg), construction activities including trenching, pole foundation construction, and

duct bank construction would have a significant impact on historical and unique archaeological resources if significant resources were encountered during construction. The Project would be required to implement MM CUL-1, which defines specific requirements for pre-construction testing in the area of the submarine segment and riser structures, methods to avoid impact where feasible, and additional requirements for monitoring and reporting. While MM CUL-1 would minimize impacts on cultural resources, because it may not be possible to avoid a historic Native American village site if one occurs in the area of construction, the Proposed Project's impacts on the significance of a historic or archaeological resource would remain significant and unavoidable.

PG&E Project Components

Known Resources

No CRHR eligible resources are within the direct API of the PG&E 500 kV interconnection lines alignment, 12 kV distribution line alignment, or transposition sites. One eligible resource, the Contra Costa Moraga/Pittsburg–Tesla PG&E Electrical Transmission Lines, is located adjacent to the location of the Proposed Project interconnection at the Pittsburg Substation. PG&E would conduct upgrades at the Pittsburg Substation, but the upgrades would not be in the same location as the Contra Costa Moraga/Pittsburg–Tesla PG&E Electrical Transmission Lines and would not affect the eligibility of the Contra Costa Moraga/Pittsburg – Tesla PG&E Electrical Transmission Lines. The resulting impact on known historical resources would be less than significant.

Inadvertent Discoveries

While PG&E construction would avoid previously recorded resources, there is the potential for PG&E construction to encounter cultural resources during construction. PG&E project components are in areas with low sensitivity for cultural resources (Chronicle Heritage 2025). PG&E has proposed CM CUL-1: Worker Awareness Training, CM CUL-2: Flag and Avoid Known Resources, CM CUL-3: Unanticipated Cultural Resources Discoveries. The CMs require worker training on avoidance of cultural resources, flagging known sites for avoidance, and halting work in the vicinity of a find. While the CM CUL-1 and CM CUL-2 would reduce impacts on cultural resources, CM CUL-3 does not define treatment measures for inadvertent discoveries or require avoidance of the resource; therefore, the impact on the significance of a historic or archaeological resource would remain significant. The Project would be required to implement MM CUL-2, which defines procedures for inadvertent discoveries of cultural resources including avoidance if feasible and treatment of any encountered resources as recommended by a qualified archaeologist in coordination with Native American tribes, if applicable, and the CPUC. Through avoidance or treatment of the resource, impacts on the significance of historic or archaeological resource from PG&E construction would be less than significant with mitigation.

Operation and Maintenance

LSPGC Project Components

Routine operation and maintenance activities would not involve new ground disturbance or activities that could affect the significance of a historic resource. However, the submarine cable may need to be replaced in the event of a defective cable. Replacement of the submarine cable would require separate permits and authorization. Replacement of the terrestrial portion of the cable would require trenching in areas that are disturbed during construction and contain fill, but have the potential to encounter undisturbed sediments, which could contain cultural resources. Even though the area would have been investigated and disturbed during construction, cable replacement still has the potential to disturb undisturbed sediments and impact the significance of a historic or archaeological resource during trenching. For cable replacement LSPGC would implement APM CUL-1: Worker's Environmental Awareness Program, APM CUL-2: Avoid Environmentally Sensitive Areas, and APM CUL-3: Inadvertent Discoveries, which require worker training on cultural resource protections, surveys for any modified work areas and avoidance of any discoveries of cultural resources with a 100-foot buffer, and investigation of any discoveries of cultural resources by an archaeologist. Because the potential for encountering resources within the cable area would be substantially reduced by import of fill materials during construction and APMs would further reduce impacts, the resulting impact on cultural resources during operation and maintenance would be less than significant.

PG&E Project Components

PG&E operation and maintenance would be conducted from areas disturbed during construction and would not involve activities that would have the potential to affect the significance of historic or archaeological resource given the absence of significant historic and archaeological resources in the area. Therefore, no impact would occur.

Impact CUL-3: Would the Proposed Project disturb any human remains, including those interred outside of dedicated cemeteries? *(Significant and unavoidable)*

Construction

LSPGC Project Components

No human remains are known to occur in the Proposed Project area. However, based on CPUC's consultation with representatives from Native American tribes, human remains are reasonably likely to occur in the area, and such remains could be encountered and disturbed or damaged during construction. Specifically, the LSPGC 230 kV overhead segment and submarine segment along the north shore of the Delta is located in areas that are sensitive for precontact resources including burials. LSPGC construction includes excavation up to 55 feet deep for the riser structures and approximately 6 to 10 feet deep for the onshore cables adjacent the riser structures. The excavation would be in undisturbed soils that are highly sensitive for buried prehistoric resources including human burials due to past human habitation and use of the Delta and shoreline areas (Chronicle Heritage 2025). The excavation could encounter human remains, including interment outside of formal cemeteries. Compliance with PRC section

5097.98, and Health and Safety Code section 7050.5 would require that work be stopped in the vicinity of any discovered human remains and that the County coroner be notified of the finds. The coroner would determine the nature of the remains and contact the NAHC if the remains are of Native American ancestry. In turn, the NAHC would contact the most likely descendent of remains, who would assess the finds and work with the County to determine final treatment and disposition of the remains. Compliance with State requirements to address any discovery of human burials during construction would reduce potential for disturbance of human remains; however, given the sensitivity of the area and extent of earthwork for the submarine segment, the impact would remain significant. LSPGC would be required to implement MM CUL-1, which requires Native American monitoring in areas that are sensitive for buried resources including human remains. With Native American monitoring, the potential to disturb human remains would be minimized; however, if graves were encountered it's unlikely the burial could be entirely avoided and it would not be feasible to rebury the human remains in the same location removed because the Proposed Project subsurface disturbance would conflict with reburial of the remains and the applicant does not have the land rights for the 230 kV overhead or submarine segment. The remains could be reburied on other lands nearby that are owned by the applicant or transferred to the tribe for reburial in accordance with MM CUL-1. The resulting impact on the human remains would thus remain significant and unavoidable.

PG&E Project Components

No human remains are known to exist or are reasonably likely to occur in the Proposed Project area. PG&E project components are not located in areas that are sensitive for buried prehistoric resources including human burials (Chronicle Heritage 2025). PG&E construction includes excavation into undisturbed soils for the 500 kV transmission line foundations and 12 kV distribution line poles, which has a low potential to encounter buried prehistoric resources and human remains, including interment outside of formal cemeteries. Compliance with PRC section 5097.98 and Health and Safety Code section 7050.5 would require that work be stopped in the vicinity of any discovered human remains and that the County coroner be notified of the finds. The coroner would determine the nature of the remains and contact the NAHC if the remains are of Native American ancestry. In turn, the NAHC would contact the most likely descendent of remains, who would assess the finds and work with the County to determine final treatment and disposition of the remains. Through compliance with PRC section 5097.8 and NAHC requirements, the impact on human remains would be less than significant.

Operation and Maintenance

LSPGC Collinsville Substation

Operation and maintenance activities would generally not involve new ground disturbance or activities that could damage human remains. However, the submarine cable may need to be replaced in the event of a defective cable. Replacement would require trenching in areas that would have been disturbed during construction and have fill materials, but some potential to encounter undisturbed sediments and human remains would still exist in case the trench area differed from the initial construction area. Compliance with PRC section 5097.98 and Health and Safety Code section 7050.5 would require that work be stopped in the vicinity of any

discovered human remains and that the County coroner be notified of the finds. The coroner would determine the nature of the remains and contact the NAHC if the remains are of Native American ancestry. In turn, the NAHC would contact the most likely descendent, who would assess the finds and work with the County to determine final treatment and disposition of the remains. Given the low potential to encounter human remains during maintenance activities, compliance with State requirements to address any discovery of human burials during construction would ensure the potential for disturbance of human remains less than significant.

PG&E Project Components
PG&E operations and maintenance would be conducted within areas disturbed during construction and would not involve activities that would have the potential to damage human remains. Therefore, no impact would occur.

4.5.7 Impact Analysis – Cumulative

The geographic scope for the analysis of the cumulative impacts associated with cultural resources is the Proposed Project site plus a 1-mile buffer. Past, present, and reasonably foreseeable projects contribute or would contribute to the cumulative conditions for cultural resources within the cumulative analysis study area. Projects within the cumulative analysis study area include all the projects in Table 4-1.

As discussed in Impacts CUL-1, CUL-2, and CUL-3, the Proposed Project would have a significant and unavoidable impact on historic or archaeological resources and human remains due to the high potential for historic Native American village site and burials to occur along the northern bank of the Sacramento River. The California Forever potential ship building project is also located on the north bank of the Sacramento River east of the Proposed Project in an area that has very high sensitivity for buried archaeological resources including precontact villages or burials. The cumulative impact of the Proposed Project and shipbuilding project would be significant. Because the Proposed Project riser poles, 230 kV overhead poles and installation of cables on shore using a hydroplow could destroy significant archaeological resources or human remains if they occur in the area, the Proposed Project contribution to the cumulative impact would be cumulatively considerable. The Proposed Project would implement MM CUL-1, which defines specific requirements for pre-construction testing in the area of the submarine segment and riser structures, methods to avoid impact where feasible, and additional requirements for monitoring and reporting. While MM CUL-1 would minimize impacts on cultural resources, because it may not be possible to avoid a village site or burials if they occur in the area of Proposed Project construction, the Proposed Project cumulative impacts on the significance of a historic or archaeological resource and human remains would remain cumulatively considerable and significant and unavoidable.

4.5.8 Alternative 1: Collinsville Substation North of Talbert Lane

Environmental Setting – Alternative 1

Alternative 1 involves relocating the proposed LSPGC Collinsville Substation to a different site, approximately 1.2 miles north of the Proposed Project substation site. Alternative 1 would also include an approximately 500-foot segment of PG&E 500 kV interconnection lines and an approximately 2-mile-long segment of LSPGC 230 kV overhead line. The Alternative 1 segment does not modify the Proposed Project riser structures and transition to the submarine segment. Alternative 1 would not involve changes to any of the other Proposed Project components, which would have the same impacts as described throughout this EIR for the Proposed Project or the other alternatives if selected in combination with Alternative 1.

Alternative 1 API

The horizontal API for Alternative 1 includes all staging areas, pull sites, access roads, and permanent disturbance areas for Alternative 1 as shown in Section 3: Description of Alternatives. The vertical API extends up to 55 feet for TSP foundations.

Alternative 1 Record Search and Survey Results

The majority of Alternative 1 direct API is located within the record search buffer of the Proposed Project discussed in Section 4.5.3. A supplemental record search for Alternatives 1 and 2 including a 0.5-mile buffer from the API for the alternatives was conducted in June 2025. Twenty cultural resource surveys had previously been completed within the supplemental record search area. The supplemental record search did not yield any cultural resource records within 0.5 mile of the Alternative 1 site in addition to those identified for the Proposed Project. Table 4.5-5 summarizes the resources within 0.5 mile of the API for Alternative 1. No resources are within 0.5 mile of the Alternative 1 substation site. The Hastings Adobe site (P-48-000041) is located adjacent to a pulling site for Alternative 1 and Stratton Lane would be used for access to Alternative 1.

Table 4.5-5 Cultural Resource Records Within 0.5 Mile of Alternatives 1 and 2 API

Site Number	Age	Description	CRHR eligibility Recommendations	Within Alternative 1 API?	Within Alternative 2 API?
P-48-000041	Multicomponent	Multicomponent site consisting of precontact camp site and Hastings Adobe	Nominated for the NRHP; Eligible for CRHR	Yes (pull site for 230 kV overhead structure)	Yes (pull site for 230 kV overhead structure)
P-48-000124	Historic	A barn with small orchard, domestic and structure refuse, and agricultural equipment	Ineligible	No	No

Site Number	Age	Description	CRHR eligibility Recommendations	Within Alternative 1 API?	Within Alternative 2 API?
P-48-000125	Historic	Remains of water conveyance system; covered well hole and a water pipe	Ineligible	No	No
P-48-000128	Historic	Possible homesite; no artifactual evidence remains.	Ineligible	No	No
P-48-000140	Historic	Possible homesite with pepper trees.	Ineligible	No	No
JN-001	Historic	Domestic structure	Ineligible	No	No
JN-002	Historic	Unpaved single lane two-track road; partially graveled	Ineligible	No	No
Stratton Lane	Historic	10-to-16-foot-wide road, 6.4 miles long	Ineligible	Yes	Yes
P-48-000518	Historic	Historic Ranch Site	Assumed eligible for the purpose of the project	No	Yes (existing access road)

Alternative 1 Cultural Resource Sensitivity

Alternative 1 would be located in areas with low sensitivity for buried archaeological resources with the exception of a single pull site extending south of Stratton Lane, which is partially located in an area of high sensitivity for buried archaeological resources due to the location within the Hastings Adobe multicomponent site. The portion of the pull site south of Stratton Lane is in an area that contains precontact resources and a high potential for buried archaeological resources. During CPUC's consultations with Native American representatives of the Confederated Village of Lisjan Nation and Yocha Dehe Winton Nation, the Alternative 1 substation site was preferred to the Proposed Project substation site due to the increased distance from the Sacramento River and potential village sites/archaeological resources.

Impact Analysis – Alternative 1

Impact CUL-1: Would Alternative 1 cause a substantial adverse change in the significance of a historical resource pursuant to § 15064.5? ***(Less than significant with mitigation)***

Impact CUL-2: Would Alternative 1 cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5? ***(Less than significant with mitigation)***

LSPGC Project Components

Hastings Adobe

A portion of a LSPGC 230 kV overhead segment pulling site is located within the geographic limits of the Hastings Adobe multicomponent site. If Alternative 1 use of the pulling site involved subsurface disturbance, Alternative 1 construction could result in a substantial adverse change in the significance of a historical and archaeological resource pursuant to § 15064.5. Use of this pull site would not be part of the Proposed Project, and this impact is specific to the alternative. MM CUL-3 requires that the pulling site either be adjusted to avoid the geographic limits of the Hastings Adobe site or any activities within the Hastings Adobe site avoid ground disturbance (e.g., no anchoring). With implementation of MM CUL-3, the impact on the Hastings Adobe site from use of the pulling site would be less than significant.

The Alternative 1 LSPGC 230 kV overhead poles would be located the same distance from the Hastings Adobe site as the Proposed Project LSPGC 230 kV overhead poles. The visual impact on the significance of the Hastings Adobe site would be similar to the Proposed Project and less than significant. The impact from vibration due to drilling and TSP construction in proximity to the Hastings Adobe site would be similar to the Proposed Project since the poles would be the same distance from the Hastings Adobe structure. The vibration impact would be less than significant as described for the Proposed Project.

Inadvertent Discoveries

There is the potential to encounter cultural resources during construction activities that involve excavation and subsurface disturbance (e.g., grading, drilling, trenching, etc.). With the exception of a pulling site that is within the Hastings Adobe site as discussed above, Alternative 1 is located in areas with low sensitivity for buried cultural resources. LSPGC has proposed APM CUL-1: Worker's Environmental Awareness Program, APM CUL-2: Avoid Environmentally Sensitive Areas, APM CUL-3: Inadvertent Discoveries, and APM CUL-4: Paleolandform Testing to minimize adverse changes in the significance of historical and archaeological resources. The APMs require worker training on cultural resource protections, surveys for any modified work areas and avoidance of any discoveries of cultural resources with a 100-foot buffer, investigation of any discoveries of cultural resources by an archaeologist, and paleolandform testing prior to construction. The impact on inadvertent discoveries of cultural resources after implementation of the APMs would be less than significant due to the low sensitivity/potential for inadvertent discoveries of cultural resources and the APMs define procedures for avoidance and treatment of any inadvertent discoveries. The Alternative 1

segment impact on the significance of a discovered historical archaeological resource or historic resource would be less than significant.

PG&E Project Components

The Alternative 1 PG&E 500 kV interconnection line and PG&E 12 kV distribution line are not located in areas containing any known historic or archaeological resources. The Alternative 1 500 kV interconnection lines and 12 kV distribution line would be in areas of low sensitivity for buried cultural resources based on geoarchaeological evaluation with the exception of the single pull site within the Hastings Adobe site boundary (Chronicle Heritage 2025). While no significant archaeological or historic resources are reasonably likely to occur, there is always some potential to encounter archaeological resources during construction. Ground disturbance for installation of the TSPs and distribution poles could result in damage to previously undiscovered historic or archaeological resources. PG&E has proposed CM CUL-1: Worker Awareness Training, CM CUL-2: Flag and Avoid Known Resources, CM CUL-3: Unanticipated Cultural Resources Discoveries. The CMs require worker training on avoidance of cultural resources, flagging known sites for avoidance, and halting work in the vicinity of a find. While the CM CUL-1 and CM CUL-2 would reduce impacts on historic and archaeological resources, CM CUL-3 does not define specific procedures for avoidance or treatment of historic or archaeological resources if encountered, and the resulting impacts on the significance of an encountered archaeological or historic resource would be significant. MM CUL-2 would supersede CM CUL-3 which defines procedures for inadvertent discoveries of cultural resources including avoidance/preservation in place if possible or data recovery and curation if avoidance is not feasible. Through avoidance or treatment of the resource, impacts on the significance of historic or archaeological resource from PG&E construction would be less than significant with mitigation.

Impact CUL-3: Would Alternative 1 disturb any human remains, including those interred outside of dedicated cemeteries? *(Less than significant)*

No human remains, including those interred outside of dedicated cemeteries are known to occur within the Alternative 1 area. The Alternative 1 area has low sensitivity for burial of human remains. Alternative 1 would involve earthwork and excavation at the substation and TSP sites. While no human remains are known to occur in the area and none are reasonably likely to occur due to the low sensitivity of the area, there is always some potential for human remains to be encountered and disturbed during earthwork and excavation activities. Compliance with PRC section 5097.98 and Health and Safety Code section 7050.5 would require that work be stopped in the vicinity of any discovered human remains and that the County coroner be notified of the finds. The coroner would determine the nature of the remains and contact the NAHC if the remains are of Native American ancestry. In turn, the NAHC would contact the most likely descendent of remains, who would assess the finds and work with the County to determine final treatment and disposition of the remains. Through compliance with PRC section 5097.8 and NAHC requirements, the impact on human remains from Alternative 1 construction would be less than significant.

4.5.9 Alternative 2: Collinsville Substation East of Wind Energy Substations

Environmental Setting – Alternative 2

Alternative 2 involves relocating the proposed LSPGC Collinsville Substation to a different site, approximately 3.0 miles north of the location proposed under the Proposed Project. Alternative 2 would also include an approximately 1,200-foot-long segment of PG&E 500 kV interconnection lines and a four-mile-long segment of LSPGC 230 kV overhead line, as well as an approximately 0.3-mile-long PG&E 12 kV distribution line. The Alternative 2 segment does not modify the Proposed Project riser structures and transition to the submarine segment. Alternative 2 would not involve changes to any of the other Proposed Project components, which would have the same impacts as described throughout this Draft EIR for the Proposed Project or the other alternatives if selected in combination with Alternative 2.

Alternative 2 API

The horizontal API for Alternative 2 includes all staging areas, pull sites, access roads, and permanent disturbance areas for Alternative 2 as shown in Section 3: Description of Alternatives. The vertical API extends up to 55 feet for TSP foundations.

Alternative 2 Record Search and Results

A supplemental record search for Alternatives 1 and 2 including a 0.5-mile buffer from the API for the alternatives was conducted in June 2025. Twenty cultural resource surveys had previously been completed within the supplemental record search area. The supplemental record search identified one additional record within the supplemental Alternative 2 search area (P-48-000518). Table 4.5-5 summarizes the resources within 0.5 mile of the API for Alternative 2.

Alternative 2 Cultural Resource Sensitivity

Alternative 2 would be located in areas with low sensitivity for buried archaeological resources with the exception of a single pull site extending south of Stratton Lane, which is partially located in an area of high sensitivity for buried archaeological resources due to the location within the Hastings Adobe multicomponent site. The portion of the pull site south of Stratton Lane is in an area that contains precontact resources and a high potential for buried archaeological resources. During CPUC's consultations with Native American representatives of the Confederated Village of Lisjan Nation and Yocha Dehe Winton Nation, the Alternative 2 substation site was preferred to the Proposed Project site due to the increased distance from the Sacramento River and potential village sites, suggesting a lower sensitivity for buried archaeological resources.

Impact Analysis – Alternative 2

Impact CUL-1: Would Alternative 2 cause a substantial adverse change in the significance of a historical resource pursuant to § 15064.5? ***(Less than significant with mitigation)***

Impact CUL-2: Would Alternative 2 cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5? ***(Less than significant with mitigation)***

LSPGC Project Components

Hastings Adobe

A portion of a LSPGC 230 kV overhead segment pulling site is located within the geographic limits of the Hastings Adobe multicomponent site. Alternative 2 use of the pulling site could involve subsurface disturbance (e.g., anchoring) and could result in a substantial adverse change in the significance of a historical and archaeological resource pursuant to § 15064.5. Use of this pull site would not be part of the Proposed Project, and this impact is specific to the alternative. MM CUL-3 requires that the pulling site either be adjusted to avoid the geographic limits of the Hastings Adobe site or any activities within the Hastings Adobe site avoid ground disturbance (e.g., no anchoring). With implementation of MM CUL-3, the impact on the Hastings Adobe site from use of the pulling site would be less than significant.

The Alternative 2 LSPGC 230 kV overhead poles would be located the same distance from the Hastings Adobe site as the Proposed Project LSPGC 230 kV overhead poles. The visual impact on the significance of the Hastings Adobe site would be similar to the Proposed Project and less than significant. The impact from vibration due to drilling and TSP construction in proximity to the Hastings Adobe site would be similar to the Proposed Project since the poles would be the same distance from the Hastings Adobe structure. The vibration impact would be less than significant as described for the Proposed Project.

P-48-000518

This ranch site occurs within an existing access road that would be used for Alternative 2 construction access for the LSPGC 230 kV overhead segment. It is assumed eligible for the purposes of this project. However, the existing access road is well established and Alternative 2 travel on the access road would not modify the access road within site P-48-000518. The Alternative 2 substation and LSPGC 230 kV overhead segment are not within the viewshed of P-48-000518. Because Alternative 2 use of the access road would not modify the existing access road, Alternative 2 would have no impact on the historical significance of the resource.

Inadvertent Discoveries

There is the potential to encounter cultural resources during construction activities that involve excavation and subsurface disturbance (e.g., grading, drilling, trenching, etc.). With the exception of a pulling site that is within the Hastings Adobe site as discussed above, Alternative 2 is located in areas with low sensitivity for buried cultural resources. LSPGC has proposed APM CUL-1: Worker's Environmental Awareness Program, APM CUL-2: Avoid Environmentally Sensitive Areas, APM CUL-3: Inadvertent Discoveries, and APM CUL-4: Paleolandform Testing to minimize adverse changes in the significance of historical and

archaeological resources. The APMs require worker training on cultural resource protections, surveys for any modified work areas and avoidance of any discoveries of cultural resources with a 100-foot buffer, investigation of any discoveries of cultural resources by an archaeologist, and paleolandform testing prior to construction. The impact on inadvertent discoveries of cultural resources after implementation of the APMs would be less than significant due to the low sensitivity/potential for inadvertent discoveries of cultural resources and the APMs define procedures for avoidance and treatment of any inadvertent discoveries. The Alternative 2 segment impact on the significance of a discovered historical archaeological resource or historic resource would be less than significant.

PG&E Project Components

The Alternative 2 PG&E 500 kV interconnection line and 12 kV distribution line are not located in areas containing any known historic or archaeological resources. However, there is always some potential to encounter buried archaeological deposits during construction. Ground disturbance for installation of the TSPs and distribution poles could result in damage to previously undiscovered historic or archaeological resources. PG&E has proposed CM CUL-1: Worker Awareness Training, CM CUL-2: Flag and Avoid Known Resources, CM CUL-3: Unanticipated Cultural Resources Discoveries. The CMs require worker training on avoidance of cultural resources, flagging known sites for avoidance, and halting work in the vicinity of a find. While CM CUL-1 and CM CUL-2 would reduce impacts on historic and archaeological resources, CM CUL-3 does not define specific procedures for avoidance or treatment of historic or archaeological resources if encountered. MM CUL-2 would supersede CM CUL-3 which defines procedures for inadvertent discoveries of cultural resources including avoidance/preservation in place if possible or data recovery and curation if avoidance is not feasible. Through avoidance or treatment of the resource, impacts on the significance of historic or archaeological resource from PG&E construction would be less than significant with mitigation.

Impact CUL-3: Would Alternative 2 disturb any human remains, including those interred outside of dedicated cemeteries? *(Less than significant)*

No human remains, including those interred outside of dedicated cemeteries are known to occur within the Alternative 2 area. The Alternative 2 area has low sensitivity for burial of human remains. Alternative 2 would involve earthwork and excavation at the substation and pole sites. While no human remains are known to occur in the area, there is the potential for human remains to be encountered and disturbed during earthwork and excavation activities. Compliance with PRC section 5097.98 and Health and Safety Code section 7050.5 would require that work be stopped in the vicinity of any discovered human remains and that the County coroner be notified of the finds. The coroner would determine the nature of the remains and contact the NAHC if the remains are of Native American ancestry. In turn, the NAHC would contact the most likely descendent of remains, who would assess the finds and work with the County to determine final treatment and disposition of the remains. Through compliance with PRC section 5097.8 and NAHC requirements, the impact on human remains from Alternative 2 construction would be less than significant.

4.5.10 Alternative 3: 500 kV Interconnection Lines on Entirely TSPs

Environmental Setting – Alternative 3

Alternative 3 involves constructing the PG&E 500 kV interconnection lines on entirely TSPs, instead of the combination of LSTs and three-pole TSPs under the Proposed Project. The 500 kV interconnection lines would be in the same general alignment as the Proposed Project PG&E 500 kV interconnection lines. Alternative 3 would not involve changes to any of the other Proposed Project components, which would have the same impacts as described throughout this Draft EIR for the Proposed Project or the other alternatives if selected in combination with Alternative 3.

The environmental setting for Alternative 3 is the same as the setting for the PG&E 500 kV interconnection lines addressed in Section 4.5.3. No cultural resources occur within the Alternative 3 API based on the record search and pedestrian survey.

Impact Analysis – Alternative 3

Impact CUL-1: Would Alternative 3 cause a substantial adverse change in the significance of a historical resource pursuant to § 15064.5? *(Less than significant with mitigation)*

Impact CUL-2: Would Alternative 3 cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5? *(Less than significant with mitigation)*

Alternative 3 involves changes to PG&E 500 kV interconnection lines structures, occurring within the same general alignment as the Proposed Project, on the northern side of the Delta within Solano County. The impacts would be the same as those described for the PG&E project components in Section 4.5.6 and PG&E would implement the same CMs for the alternative. No cultural resources have been recorded within the Alternative 3 API. The alternative would have the same potential to encounter inadvertent discoveries of cultural resources as the Proposed Project 500 kV interconnection lines during TSP foundation construction. Similar to the Proposed Project, PG&E would implement CMs CUL-1, CUL-2, and CUL-3. While the CMs would reduce impacts on historic and archaeological resources, they do not define treatment measures for inadvertent discoveries or require avoidance of the resource, therefore, the impact on the significance of a historic or archaeological resource would remain significant. MM CUL-2 defines procedures for any inadvertent discoveries of historic and archaeological resources. Similar to the Proposed Project 500 kV interconnection line, the Alternative 3 impact would be less than significant with mitigation.

Impact CUL-3: Would Alternative 3 disturb any human remains, including those interred outside of dedicated cemeteries? *(Less than significant)*

No human remains are known to occur in the Alternative 3 area and the area has low sensitivity for potential burials. While unlikely, there is the potential to encounter human remains including those interred outside of dedicated cemeteries during excavation of the TSP foundations. Compliance with PRC section 5097.98 and Health and Safety Code section 7050.5 would require that work be stopped in the vicinity of any discovered human remains and that the County coroner be notified of the finds. The coroner would determine the nature of the

remains and contact the NAHC if the remains are of Native American ancestry. In turn, the NAHC would contact the most likely descendent of remains, who would assess the finds and work with the County to determine final treatment and disposition of the remains. Through compliance with PRC section 5097.8 and NAHC requirements, the impact on human remains would be less than significant.

4.5.11 Alternative 4: 230 kV Overhead Segment Alternative Route

Environmental Setting – Alternative 4

Alternative 4 involves relocation of a short segment of the LSPGC 230 kV overhead segment between the proposed LSPGC Collinsville Substation and the Delta, west of the proposed LSPGC 230 kV overhead segment route. Additionally, the northern end of the LSPGC 230 kV submarine segment would be rerouted to meet up with the southern end of the Alternative 4 230 kV submarine segment. Alternative 4 would not involve changes to any of the other Proposed Project components, which would have the same impacts as described throughout this Draft EIR for the Proposed Project or the other alternatives if selected in combination with Alternative 4.

Alternative 4 API

The horizontal API for Alternative 4 includes all pull sites, access roads, work areas, and permanent disturbance areas for Alternative 4 as shown in Section 3: Description of Alternatives. The vertical API extends up to 55 feet for TSP foundations.

Record Search

A record search was conducted for the entirety of two parcels of land owned by PG&E: APNs 0090-120-310 (6414 Stratton Lane) and 0090-180-210 and covered the Alternative 4 and 6a/6b area that was not previously surveyed for the Proposed Project. Three cultural resources were previously recorded within the record search, including the Hastings Adobe (described previously for the Proposed Project). All three resource sites were revisited during field surveys and the results are discussed under pedestrian survey below.

Pedestrian Survey

An intensive, non-collection pedestrian survey was conducted for parcels APN 0090-120-310 and 0090-180-210 on July 2 and 3, 2025. Arcadis revisited three previously recorded cultural resources (P-48-000041, P-48-000128, and P-48-000139) and documented 11 newly recorded cultural resources as summarized in Table 4.5-6. Resources that are within the API are described further following the table.

Table 4.5-6 Pedestrian Survey Results

Site Number	Age	Description	CRHR eligibility determination	Within Alternative 4 API?	Within Alternative 6a/b API?
P-48-000041	Multicomponent	Multicomponent site consisting of precontact camp site and Hastings Adobe	Historic component nominated for the NRHP; eligible for CRHR. Precontact component assumed eligible.	Yes (within new access road)	No
P-48-000128	Historic	Homesite	Ineligible	Yes (within existing access road)	Yes (within existing access road)
P-48-000139	Multicomponent	Homesite with precontact stone tool (biface)	Assumed eligible	No	No
RP-01	Historic	Unpaved single-lane road	Ineligible	Yes (within existing access road)	Yes (within existing access road)
RP-02	Historic	Historic-era artificial swales	Ineligible	Yes	No
RP-03	Historic	Collinsville fishing resort	Assumed eligible	Yes (within existing access road)	Yes (within existing access road)
RP-04	Historic	Historic ranch	Assumed eligible	Yes (within existing access road)	Yes (within existing access road)
RP-05	Historic	Historic depression	Ineligible	No	No
RP-06	Historic	Historic utility line	Ineligible	Yes (within existing access road)	Yes (within existing access road)
RP-07	Historic	Historic canal (Marshall Cut)	Ineligible	No	No
RP-08	Historic	Historic canal	Ineligible	No	No

Source: (Insignia Environmental 2025)

Buried Site Sensitivity

The entirety of the Alternative 4 would be located within an area that likely contains a historic Native American village or burials based on CPUC's consultations with Native Americans. The

area is very sensitive for buried archaeological deposits. The area is also sensitive for buried historic deposits due to the density of historic resources in the area and high potential for those resources to have subsurface components.

Impact Analysis – Alternative 4

Impact CUL-1: Would Alternative 4 cause a substantial adverse change in the significance of a historical resource pursuant to § 15064.5? ***(Significant and unavoidable)***

Impact CUL-2: Would Alternative 4 cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5? ***(Significant and unavoidable)***

Alternative 4 involves new access road construction within the Hastings Adobe site and involves use of an existing access road within the boundaries of eligible resources RP-03 and RP-04. The impacts of these activities on historic and archaeological resources are discussed below. No other CRHR eligible resources occur within the Alternative 4 site.

Hastings Adobe Site

Alternative 4 includes a new access road segment within the limits of the Hastings Adobe site. Grading of the new access road and vehicle travel on the road would involve disturbance of sediments that are likely to contain significant historic and archaeological resource deposits. Damage or destruction of historic or archaeological deposits within the Hastings Adobe site would cause a substantial adverse change in the significance of a historic and archaeological resource, which would be a significant impact. MM CUL-4 requires realignment of the access road to avoid the Hastings Adobe site to the extent feasible. If the Hastings Adobe site cannot be avoided, the measure requires protections for any historic and archaeological deposits such as use of matting for the access road to avoid ground disturbance within the site. With implementation of MM CUL-4, Alternative 4 would avoid ground disturbance within the Hastings Adobe site and the impact on the significance of historic and archaeological resources associated with the site would be less than significant.

RP-03, RP-04

Assumed CRHR eligible historic sites RP-03 and RP-04 are located within an existing access road that would be used to provide construction and maintenance access for the Alternative 4 riser poles and submarine segment. The surface elements of historic sites RP-03 and RP-04 have been destroyed; however, the sites could contain buried resources. Due to the potential for buried resources both RP-03 and RP-04 are assumed eligible for purposes of this EIR. Surface use of the existing access road would not result in a substantial adverse change in the significance of a historic resource due to the absence of surface resources. However, if grading or other ground disturbance were involved in the existing access road use, the impact on RP-03 and RP-04 could be significant as both sites could yield significant buried cultural resource deposits. MM CUL-4 requires avoidance of ground disturbing activities within the boundaries of RP-03 and RP-04 as well as use or soil protections to avoid rutting from access road use. The impact on RP-03 and RP-04 would be less than significant with mitigation.

Inadvertent Discoveries

LSPGC construction of the Alternative 4 230 kV overhead segment and submarine segment including riser structures and hydroplow installation of the submarine cables on the northern bank of the Sacramento River has a high potential to cause a substantial adverse change in the significance of a historic or archaeological resource due to the high potential for a historic Native American village site, significant buried historic resource deposits, or burials to occur within the Alternative 4 area. Alternative 4 ground disturbing activities have a high potential to destroy a historic or archaeological resource, which would cause a substantial adverse change in the significance of the resource and result in a significant impact. LSPGC has proposed APM CUL-1: Worker's Environmental Awareness Program, APM CUL-2: Avoid Environmentally Sensitive Areas, APM CUL-3: Inadvertent Discoveries, and APM CUL-4: Paleolandform Testing to minimize impacts on cultural resources, including tribal cultural resources. The APMs require worker training on cultural resource protections, surveys for any modified work areas and avoidance of any discoveries of cultural resources with a 100-foot buffer, investigation of any discoveries of cultural resources by an archaeologist and treatment of any precontact resources in consultation with Native Americans, and paleolandform testing prior to construction. The impact on historic and archaeological resources after implementation of the APMs would remain significant along the north shore of the Delta due to the area's high sensitivity for buried historic and archaeological cultural resources and documented presence of precontact tribal cultural resources. Alternative 4 would be required to implement MM CUL-1. MM CUL-1 define specific requirements for pre-construction testing in the area of the submarine segment and transition structure and specifies requirements for Native American monitoring. While MM CUL-1 would minimize impacts on tribal cultural resources from the riser pole installation and 230 kV overhead poles, it may not be possible to avoid a village site if one occurs in the area of the riser pole foundations or hydroplow cable installation. As a result, Alternative 4 impacts on tribal cultural resources would remain significant and unavoidable.

Impact CUL-3: Would Alternative 4 disturb any human remains, including those interred outside of dedicated cemeteries? *(Significant and unavoidable)*

Similar to the Proposed Project rise poles and submarine segment on the north shore of the Sacramento River, Alternative 4 is located in an area that is highly sensitive for buried human remains. Foundation construction for the riser poles and TSPs and use of the hydroplow has the potential to disturb human remains, particularly a Native American burial. Compliance with PRC section 5097.98, and Health and Safety Code section 7050.5 would require that work be stopped in the vicinity of any discovered human remains and that the County coroner be notified of the finds. The coroner would determine the nature of the remains and contact the NAHC if the remains are of Native American ancestry. In turn, the NAHC would contact the most likely descendent of remains, who would assess the finds and work with the County to determine final treatment and disposition of the remains. Compliance with State requirements to address any discovery of human burials during construction would reduce potential for disturbance of human remains; however, given the sensitivity of the area and extent of earthwork for the riser poles and transition to the submarine segment, the impact would remain significant. The Project would be required to implement MM CUL-1, which requires pre-

construction testing and Native American monitoring in areas that are sensitive for buried resources including human remains. With Native American monitoring, the potential to disturb human remains would be minimized; however, if graves were encountered it's unlikely the burial could be entirely avoided and it would not be feasible to rebury the human remains in the same location because LSPGC does not own the land within the Alternative 4 area. The resulting impact on the human remains would thus remain significant and unavoidable.

4.5.12 Alternative 5: 230 kV Submarine Segment Alternative Route

Environmental Setting – Alternative 5

Alternative 5 involves rerouting a portion of the proposed LSPGC 230 kV submarine segment to the east of its current alignment as it approaches the southern shoreline in Pittsburg. The submarine segment cable would be installed in the same manner as the Proposed Project. Alternative 5 would not involve changes to any of the other Proposed Project components, which would have the same impacts as described throughout this Draft EIR for the Proposed Project or the other alternatives if selected in combination with Alternative 5.

The environmental setting for cultural resources for the Alternative 5 segment is the same as the setting for the LSPGC 230 kV submarine segment addressed in Section 4.18.2 as Alternative 5 is located within the Sacramento-San Joquin River Delta and within the API that was evaluated for maritime resources.

Impact Analysis – Alternative 5

Impact CUL-1: Would Alternative 5 cause a substantial adverse change in the significance of a historical resource pursuant to § 15064.5? *(Less than significant)*

Impact CUL-2: Would Alternative 5 cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5? *(Less than significant)*

The Alternative 5 alignment would avoid the maritime resources identified within the marine remote sensitive investigation within the API. Site preparation activities and cable installation for Alternative 5 would not result in a substantial adverse change in the significance of a historical or archaeological resource due to the absence of resources within the Alternative 5 area. The impact on the significance of a historical or archaeological resource would be less than significant.

Impact CUL-3: Would Alternative 5 disturb any human remains, including those interred outside of dedicated cemeteries? *(No impact)*

Alternative 5 would be located entirely within marine sediments in the Sacramento River Delta. The Alternative 5 area would not contain human remains due to its location under the river bottom. No impact would occur from disturbance of human remains.

4.5.13 Alternative 6a/6b: Underground Portions of the 230 kV Transmission Line within Suisun Marsh Protection Plan Management Area

Environmental Setting – Alternative 6a/6b

Alternative 6a/6b would locate the LSPGC 230 kV transmission line on primarily PG&E-owned property south of the proposed Collinsville Substation site (similar to Alternative 4). The Alternative 6a/6b would be installed in conduit underground. Alternative 6a differs from Alternative 6b only at the northern end of the segment where options are provided for connection to the Proposed Project Collinsville Substation or Alternatives 1 or 2. Two overhead riser structures would be installed at the northern end of the Alternative 6a/6b underground duct bank where the LSPGC 230 kV line would transition between an overhead and underground position. Alternative 6a/6b would not involve changes to any of the other Proposed Project components, which would have the same impacts as described throughout this Draft EIR for the Proposed Project or the other alternatives if selected in combination with Alternative 6a/6b.

Alternative 6a/6b API

The horizontal API for Alternative 6a/6b includes all access roads, work areas, and permanent disturbance areas including the underground duct bank for Alternative 6a/6b as shown in Section 3: Description of Alternatives. The vertical API extends up to 55 feet deep for TSP foundations, up to 6 feet deep for the underground duct bank, and up to 12 feet deep for the transition vaults.

Record Search and Pedestrian Survey

A record search and pedestrian survey for the Alternative 6a/6b parcels was conducted concurrently with the Alternative 4 record search and pedestrian survey. The results of the Alternative 6a/6b record search and pedestrian survey and resources identified within the Alternative 6a/6b API are listed in Table 4.5-6.

Buried Site Sensitivity

The entirety of the Alternative 6a/6b underground duct bank would be located within an area that could contain a historic Native American village or burials based on CPUC's consultations with Native Americans. The area is very sensitive for buried archaeological deposits. The area is also sensitive for buried historic deposits due to the density of historic resources in the area and high potential for those resources to have subsurface components.

Impact Analysis – Alternative 6a/6b

Impact CUL-1: Would Alternative 6a/6b cause a substantial adverse change in the significance of a historical resource pursuant to § 15064.5? *(Significant and unavoidable)*

Impact CUL-2: Would Alternative 6a/6b cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5? *(Significant and unavoidable)*

Alternative 6a/6b involves use of an existing access road within the boundaries of eligible resources RP-03 and RP-04. The impacts of these activities on historic and archaeological

resources are discussed below. No other CRHR eligible resources occur within the Alternative 6/6b site.

RP-03, RP-04

Assumed CRHR eligible historic sites RP-03 and RP-04 are located within an existing access road that would be used to provide construction and maintenance access for the Alternative 6a/6b underground construction. The surface elements of historic sites RP-03 and RP-04 have been destroyed and surface use of the existing access road would not result in a substantial adverse change in the significance of a historic resource. However, if grading or other ground disturbance were involved in the existing access road use, the impact on RP-03 and RP-04 could be significant as both sites could yield significant buried cultural resource deposits. MM CUL-5 requires avoidance of ground disturbing activities within the boundaries of RP-03 and RP-04 as well as use of soil protections to avoid rutting from access road use. The impact on RP-03 and RP-04 would be less than significant with mitigation.

Inadvertent Discoveries

Alternative 6a/6b ground disturbing activities from duct bank construction including trench excavation could destroy a historical or archaeological resource due to the high potential for buried historic and archaeological resources to occur in the area and the extent of excavation required for Alternative 6a/6b. Damage or destruction of a historic or archaeological resource would cause a substantial adverse change in the significance of a historic or archaeological resource and result in a significant impact. LSPGC has proposed APM CUL-1: Worker's Environmental Awareness Program, APM CUL-2: Avoid Environmentally Sensitive Areas, APM CUL-3: Inadvertent Discoveries, and APM CUL-4: Paleolandform Testing to minimize impacts on cultural resources, including tribal cultural resources. The APMs require worker training on cultural resource protections, surveys for any modified work areas and avoidance of any discoveries of cultural resources with a 100-foot buffer, investigation of any discoveries of cultural resources by an archaeologist and treatment of any precontact resources in consultation with Native Americans, and paleolandform testing prior to construction. The impact on historic and archaeological resources after implementation of the APMs would remain significant for Alternative 6a/6b duct bank construction due to the significant amount of excavation required for underground duct bank installation in an area with high sensitivity for buried historic and archaeological resources and nearby presence of CRHR eligible historic and archaeological resources. Alternative 6a/6b would be required to implement MM CUL-6, which defines specific requirements for pre-construction testing in the area of the underground duct bank and transition vaults and specifies requirements for Native American monitoring. While MM CUL-6 would minimize impacts on tribal cultural resources from the underground duct bank and transition vault installation, it may not be possible to relocate the underground duct bank to avoid a historic Native American village site or burials if the village site and burials were extensive throughout the area. As a result, Alternative 6a/6b impacts on tribal cultural resources would remain significant and unavoidable.

Impact CUL-3: Would Alternative 6a/6b disturb any human remains, including those interred outside of dedicated cemeteries? ***(Significant and unavoidable)***

Alternative 6a/6b is located in an area that is highly sensitive for buried human remains. Underground duct bank and transition vault construction has the potential to disturb human remains, particularly a Native American burial. Compliance with PRC section 5097.98, and Health and Safety Code section 7050.5 would require that work be stopped in the vicinity of any discovered human remains and that the County coroner be notified of the finds. The coroner would determine the nature of the remains and contact the NAHC if the remains are of Native American ancestry. In turn, the NAHC would contact the most likely descendent of remains, who would assess the finds and work with the County to determine final treatment and disposition of the remains. Compliance with State requirements to address any discovery of human burials during construction would reduce potential for disturbance of human remains; however, given the sensitivity of the area and extent of earthwork for the riser poles and transition to the submarine segment, the impact would remain significant. The Project would be required to implement MM CUL-6, which requires pre-construction testing and Native American monitoring in areas that are sensitive for buried resources including human remains. With Native American monitoring, the potential to disturb human remains would be minimized; however, if graves were encountered it's unlikely the burial could be entirely avoided and it would not be feasible to rebury the human remains in the same location because LSPGC does not own the land within the Alternative 6a/6b area. The resulting impact on the human remains would thus remain significant and unavoidable.

4.5.14 No Project Alternative

Environmental Setting – No Project

Under the No Project Alternative, the LSPGC Collinsville Substation and associated LSPGC 230 kV transmission line, PG&E 500 kV interconnection lines, and PG&E 12 kV distribution line would not be constructed. The existing cultural resource conditions described in Section 4.5.3 would apply to the No Project Alternative.

Impact Analysis – No Project

Under the No Project Alternative, the Proposed Project would not be constructed. No ground disturbing activities would occur and no new project elements would be introduced. The No Project Alternative would have no impact on the significance of a historical or archaeological resource or human remains (Impact CUL-1, Impact CUL-2, Impact CUL-3). The No Project Alternative would have no impact on cultural resources.

4.5.15 Mitigation Measures

LSPGC Mitigation Measures

MM CUL-1: Subsurface Resource Testing, Monitoring, and Reporting

Pre-Construction Testing: Prior to initiating construction, LSPGC shall conduct coring within the location of the northern onshore portion of submarine segment, the riser structures, and the

TSP structure north of the riser structures to investigate whether remains of a Native American village or habitation occur within the subsurface work areas. The coring shall include at least 10 cores to the depth of the proposed excavation at each core location. The exact locations of the cores shall be defined by a qualified geoarchaeologist with previous experience using this method in the San Francisco Bay Area to provide a representative sample of the subsurface area of potential impact (API). The coring shall be monitored by a qualified geoarchaeologist, and a tribal monitor shall be invited to participate in the monitoring. The results of the coring shall be reviewed by a qualified geoarchaeologist with previous experience using this method in the San Francisco Bay Area and the tribal monitor (Yocha Dehe or Lisjan Nation) to determine whether there are subsurface tribal cultural resources (e.g., village or other evidence of past human habitation) within the location of the overhead segment and onshore submarine segment. If any significant cultural or tribal cultural resources, as determined by a qualified archaeologist and/or a tribal monitor, are documented within the location of the overhead segment and onshore submarine segment API, the overhead and submarine segment cable alignment or riser and tubular steel pole structure locations shall be adjusted to avoid the buried resource through vertical or horizontal relocation to the extent feasible.

The preferred treatment strategy for any cultural or tribal cultural resource shall be avoidance. If historic resources cannot be avoided additional treatment measures, such as curation at an accredited curation facility. If tribal cultural resources cannot be avoided, treatment may include transfer to the appropriate tribal organization, or reburial of the resource outside of the API. Treatment of tribal cultural resources will be conducted in consultation with the consulting tribes.

Cultural Resource Monitoring: Archaeological monitoring will include monitoring by a qualified archaeologist and a tribal monitor during initial disturbance of native sediments in areas that have moderate and high sensitivity for buried cultural resources and tribal cultural resources. If a tribal monitor is unavailable to support the monitoring effort, LSPGC shall provide documentation to the CPUC on outreach efforts to AB 52 consulting tribes (Yocha Dehe Wintun Nation, Confederated Villages of Lisjan Nation) regarding cultural resource monitoring. Outreach shall include at least three attempts/requests for monitoring.

Reporting: After completion of the coring field work, LSPGC shall prepare and submit a confidential report documenting the results of the field work to the CPUC for review and approval. The report shall include maps, field notes, recordings, drawings or sketches, and analysis of any resources encountered, as appropriate.

LSPGC shall submit a confidential annual report with the monitoring results to the CPUC. The report shall include maps, field notes, recordings, photographs, and analysis of any resources encountered during construction. The documentation of any inadvertent discoveries per APM CUL-3 shall also be included in the annual report.

MM CUL-3: Hastings Adobe Site Avoidance (Alternatives 1 and 2)
LSPGC shall modify the Alternative 1/Alternative 2 pulling site to avoid the geographic limits of the Hastings Adobe site (P-48-000041) to the extent feasible. If it is infeasible to avoid the geographic limits of the Hastings Adobe site, activities within the geographic limits of the Hastings Adobe site shall be limited to vehicle travel and no subsurface disturbance (e.g., anchoring) shall be allowed within the Hastings Adobe site. All activities within the Hastings Adobe site shall be monitored by a qualified archaeologist and a tribal monitor. Avoidance measures for the Hastings Adobe site shall be noted on the final plans and specifications. LSPGC shall submit the final design for the Alternative 1/Alternative 2 pulling site that overlaps with the Hastings Adobe Site, and any recommended avoidance measures to the CPUC for review and approval at least 30 days prior to use of the pulling site.

MM CUL-4: Hastings Adobe Site Avoidance (Alternative 4)
LSPGC shall modify the Alternative 4 new access road to avoid the geographic limits of the Hastings Adobe site (P-48-000041) to the extent feasible. If it is infeasible to avoid the geographic limits of the Hastings Adobe site, LSPGC shall implement measures to protect any cultural resources within the access road limits (e.g., matting or other surface protection measures) within the Hastings Adobe site. All activities within the Hastings Adobe site shall be monitored by a qualified archaeologist and a tribal monitor. Avoidance measures for the Hastings Adobe site shall be noted on the final plans and specifications. LSPGC shall submit the final design for the Alternative 4 access road within the Hastings Adobe site and any recommended avoidance measures to the CPUC for review and approval at least 30 days prior to use of the pulling site.

MM CUL-5: RP-03 and RP-04 Avoidance (Alternatives 4 and 6a/6b)
LSPGC shall not conduct any ground disturbing construction activities (e.g., grading or excavation) within the limits of RP-03 and RP-04. LSPGC shall not travel on the unpaved access road within RP-03 and RP-04 when soil conditions are wet (e.g., after rain events) to avoid rutting. Additional measures shall be applied as needed to protect avoid disturbance of buried sediments such as use of matting or plating.

MM CUL-6: Subsurface Resource Testing, Monitoring, and Reporting (Alternatives 6a/6b)
Pre-Construction Testing: Prior to initiating construction, LSPGC shall conduct coring within the location of the Alternative 6a/Alternative 6b underground duct bank to investigate whether remains of a Native American village or habitation occur within the subsurface work areas. The coring shall include at least 20 cores to the depth of the proposed excavation at each core location. The exact locations of the cores shall be defined by a qualified geoarchaeologist with previous experience using this method in the San Francisco Bay Area to provide a representative sample of the subsurface area of potential impact (API). The coring shall be monitored by a qualified geoarchaeologist, and a tribal monitor shall be invited to participate in the monitoring. The results of the coring shall be reviewed by a qualified geoarchaeologist with previous experience using this method in the San Francisco Bay Area and the tribal monitor (Yocha Dehe or Lisjan Nation) to determine whether there are subsurface tribal cultural resources (e.g., village or other evidence of past human habitation) within the location of the

overhead segment and onshore submarine segment. If any significant cultural or tribal cultural resources, as determined by a qualified archaeologist and/or a tribal monitor, are documented within the location of the Alternative 6a/6b underground duct bank, the duct bank location shall be adjusted horizontally (realigned) to avoid the buried resource to the extent feasible.

The preferred treatment strategy for any cultural or tribal cultural resource shall be avoidance. If a historic resource cannot be avoided, additional treatment measures such as curation at an accredited curation facility. If a tribal cultural resource cannot be avoided, treatment may include transfer to the appropriate tribal organization, or reburial of the resource outside of the API. Treatment of tribal cultural resources will be conducted in consultation with the consulting tribes.

Cultural Resource Monitoring: Archaeological monitoring will include monitoring by a qualified archaeologist and a tribal monitor during initial disturbance of native sediments in areas that have moderate and high sensitivity for buried cultural resources and tribal cultural resources. If a tribal monitor is unavailable to support the monitoring effort, LSPGC shall provide documentation to the CPUC on outreach efforts to AB 52 consulting tribes (Yocha Dehe Wintun Nation, Confederated Villages of Lisjan Nation) regarding cultural resource monitoring. Outreach shall include at least three attempts/requests for monitoring.

Reporting: After completion of the coring field work, LSPGC shall prepare and submit a confidential report documenting the results of the field work to the CPUC for review and approval. The report shall include maps, field notes, recordings, drawings or sketches, and analysis of any resources encountered, as appropriate.

LSPGC shall submit a confidential annual report with the monitoring results to the CPUC. The report shall include maps, field notes, recordings, photographs, and analysis of any resources encountered during construction. The documentation of any inadvertent discoveries per APM CUL-3 shall also be included in the annual report.

PG&E Mitigation Measures

MM CUL-2: Inadvertent Discoveries
In the event that previously unidentified cultural resources are uncovered during implementation of the Proposed Project, all work within 100 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. 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, 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.

4.5.16 References

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4.6 Energy

This section presents the environmental setting and analysis of impacts on energy resulting from the Proposed Project and alternatives. This section describes existing energy sources and consumption, applicable regulations, and environmental impacts and provides mitigation measures to reduce or avoid significant effects for the Proposed Project and alternatives, as applicable. Additional impact analysis related to utilities is included in Section 4.19: Utilities and Services Systems.

The following scoping comments are relevant to the analysis of energy because it applies to potential indirect impacts on the operation of Sacramento Municipal Utility District's ("SMUD") existing wind turbines in the project area associated with the Solano 4 Wind Project and renewable energy resources, as documented in the Scoping Report (Appendix B):

- SMUD asserts that the use of tubular steel poles (TSPs) should be used for the proposed overhead transmission lines instead of where lattice steel towers (LSTs) are proposed (e.g., PG&E 500 kV interconnection lines) because LSTs would create new perching and nesting habitat in proximity to existing wind turbines that could result in an increase in bird strikes. The EIR should analyze the effects of the proposed LSTs related to an increase in wind turbine bird strikes.

4.6.1 Environmental Setting

State of California

Energy use for the State of California is monitored by the California Energy Commission (CEC). The most recent estimated energy use in California is presented in Table 4.6-1.

Table 4.6-1 Recent Estimated Energy Use in California

Energy use	Consumption
Electricity	281,140 GWh
In-state generation	215,623 GWh
Northwest Imports	15,925 GWh
Southwest Imports	49,593 GWh
Natural Gas	2,087,461 cubic feet
Petroleum	628,086 barrels
Gasoline	13.6 billion gallons
Diesel	3.5 billion gallons

Source: (CEC 2025a; 2025b; EIA 2025a; 2025b)

Electricity

Electricity use in California varies substantially among buildings according to the types of use in a given building, construction materials, and the efficiency of electricity-consuming devices. Due to the state's energy efficiency building standards and efficiency and conservation programs, California's per capita electricity use has remained stable for more than 30 years while the national average has steadily increased (CEC 2025a).

Natural Gas

The CPUC regulates California natural gas rates and natural gas services, including in-state transportation of natural gas over the utilities' extensive transmission and distribution pipeline networks and storage, procurement, metering, and billing systems. California's natural gas utilities provide service to over 11 million gas meters within the state (CEC 2025c). In 2023, California used approximately 2.09 million cubic feet of natural gas (EIA 2025a). Residential and small commercial customers account for approximately 35 percent of the natural gas delivered by California utilities. Large consumers such as electric generators and industrial non-core customers account for approximately 65 percent of usage of the natural gas provided by California utilities (CPUC 2025). Most of the natural gas used in California is imported from out-of-state natural gas basins. In 2017, California utility customers received 38 percent of their natural gas supply from basins located in the U.S. Southwest, 27 percent from Canada, 27 percent from the U.S. Rocky Mountain region, and 8 percent from production located in California (CPUC 2025). The Proposed Project site is located within the service territory of PG&E, which provides service to about 16 million customers (PG&E 2025).

Petroleum (Gasoline and Diesel)

Petroleum usage in California includes petroleum products such as motor gasoline, distillate fuel, liquefied petroleum gases, and jet fuel. Petroleum fuels refined from crude oil are the dominant source of energy for transportation sources. For petroleum that was converted into gasoline and diesel, the Alternative Fuels Data Center estimated California used approximately 13.6 billion gallons of gasoline in 2023 and approximately 3.5 billion gallons of diesel in 2023 (DOE 2025a; 2025b). According to the California Department of Tax and Fee Administration (CDFTA), gasoline is the most used transportation fuel in California, with light-duty cars, pickup trucks, and sport utility vehicles account for 97 percent of gasoline consumption. In 2023, approximately 13.6 billion gallons of gasoline were sold (CDTFA 2025). Diesel fuel is the second largest transportation fuel used in California, representing 17 percent of total fuel sales (CEC 2025d). Nearly all heavy-duty trucks; delivery vehicles; buses; trains; marine ships, boats, and barges; and farms, construction, and heavy-duty military vehicles and equipment have diesel engines. According to the California Department of Tax and Fee Administration, in 2023, approximately 3 billion gallons of diesel, including off-road diesel, were sold in California (CDTFA 2025). California has implemented policies to improve vehicle efficiency and to support use of alternative transportation such as the California Public Utilities Code (PUC) section 399.24, which states the CPUC shall adopt policies and programs that promote the in-state production and distribution of biomethane (biogas) for transportation use. Accordingly, the CEC anticipates an overall decrease in petroleum demand in the state over the next decade.

Project Setting

Energy Supply

The Proposed Project area is situated within an existing regional transmission system and contains established energy infrastructure including PG&E's existing Vaca Dixon Substation, Pittsburg Substation, Tesla Substation, and the Vaca Dixon-Tesla 500 kV Transmission Line. The regional transmission system supplies electricity to the northern greater Bay Area.

The portion of the Proposed Project area north of the Sacramento-San Joaquin River Delta is located in the Montezuma Hills area within the unincorporated community of Collinsville. According to the Sacramento Municipal Utility District (SMUD), 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 (SMUD 2023). 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). These wind energy facilities managed by SMUD are in the general vicinity of the Proposed Project. Additionally, Solano 4 Wind Project recently began construction in the Collinsville-Montezuma Hills WRA in April 2023 (SMUD 2023). Portions of the Proposed Project area are located within the Solano 4 Wind Project area Project area.

Electricity Consumption

PG&E is the utility provider for Solano, Sacramento, and Contra Costa counties and provides overall electric services to 16 million customers, including 106,681 circuit miles of electric distribution lines and 18,466 circuit miles of interconnected transmission lines over a 70,000-square-mile service area that includes in Northern California and central California (PG&E 2024). Table 4.6-2 provides the 2022 electricity consumption by sector in the PG&E service area. In 2022, PG&E provided approximately 72.9 billion kilowatt-hours (kWh) of electricity to its customers (CEC 2025f).

Table 4.6-2 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 2025f)

In 2018, Marin Clean Energy (MCE) became the primary electricity provider for several cities and portions of unincorporated Contra Costa County. Additionally, in 1997, the City of Pittsburg and its Redevelopment Agency established the Pittsburg Power Company (PPC), a municipal Joint Powers Agency (JPA) that operates as a municipal electric and natural gas utility with the authority to provide wholesale and retail utility services under authorized franchise agreements within California.

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, as shown in Table 4.6-3 (CEC 2025e).

Table 4.6-3 Electricity Consumption by County in 2022

County	Residential use (millions of kWh)	Non-residential use (millions of kWh)	Total (millions of kWh)
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 2025e)

Fuel Consumption

Diesel and regular unleaded gasoline are primarily used for vehicular transportation, including passenger cars and heavy-duty diesel trucks. Gasoline remains the most widely used transportation fuel in California, with approximately 97 percent consumed by light-duty cars, pickup trucks, and sport utility vehicles (CEC 2025g). A detailed summary of fuel sales in Solano, Sacramento, and Contra Costa counties for 2022 is shown in Table 4.6-4.

Table 4.6-4 Gasoline and Diesel Fuel Sales by County in 2022

County	Gasoline (million gallons)	Diesel (million gallons)
Solano County	190	32
Sacramento County	535	51
Contra Costa County	396	29

Source: (CEC 2025g)

4.6.2 Regulatory Setting

Federal, state, and local regulations were reviewed for applicability to the Proposed Project.

Federal

National Energy Conservation Policy Act

The National Energy Conservation Policy Act (NECPA) (42 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.

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 100, signed into law in September 2018, amends the California Renewables Portfolio Standard Program. The Program requires the CPUC to establish a renewables portfolio standard 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.

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, the California Air Resources Board (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 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, which 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.

Construction Equipment Idling
The CARB has also adopted a regulation for in-use off-road diesel vehicles that is designed to reduce emissions from diesel-powered construction vehicles by imposing idling limitations on owners, operators, renters, or lessees of off-road diesel vehicles. The regulation requires an operator of applicable off-road vehicles (self-propelled diesel-fueled vehicles 25 horsepower and up that were not designed to be driven on-road) to limit idling to no more than 5 minutes.

Renewables Portfolio Standard

The State of California adopted standards to increase the percentage that retail sellers of electricity, including investor-owned utilities and community choice aggregators, must provide from renewable resources. The standards are referred to as the Renewable Portfolio Standards (RPS). The CPUC and the CEC jointly implement the Initial Study and Environmental Checklist RPS program. As of 2018, utility providers are required to have 60 percent of their energy portfolio supplied by renewable energy sources by 2030.

California Green Building Standards (Title 24, Part 11)

The California Green Building Standards Code (CCR title 24 part 11), commonly referred to as the CALGreen Code, establishes mandatory green building requirements for residential and nonresidential structures. The 2022 CALGreen Code went into effect on January 1, 2023, and builds upon prior code versions by enhancing provisions related to *electric vehicle* (EV) infrastructure, water and energy efficiency, waste reduction, and indoor environmental quality. For nonresidential development, the 2022 update includes revised requirements for EV charging infrastructure, stormwater management, and water reuse systems. For residential development, including new multifamily housing, updates expand EV charging space requirements, strengthen low-flow plumbing fixture thresholds, and promote electrification-readiness. Compliance with the CALGreen Code is enforced through the local building permit process and ensures integration of sustainable design principles in alignment with California's broader climate and resource conservation goals.

Title 24 Building Energy Efficiency Standards

Title 24, Part 6, of the California Code of Regulations is the California Building Code governing all aspects of building construction. Included in Part 6 of the Building Code are standards mandating energy efficiency measures in new construction. Since its establishment in 1977, the building efficiency standards (along with standards for energy efficiency in appliances) have contributed to a reduction in electricity and natural gas usage and costs in California. The standards are updated every 3 years to incorporate new energy-efficiency technologies. The latest update to the Title 24 standards became effective January 1, 2020. The standards regulate energy consumed in buildings for heating, cooling, ventilation, water heating, and lighting. Title 24 is implemented through the local planning and permits processes.

Local

Pursuant to General Order (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."

Solano County General Plan

The 2008 Solano County General Plan, Chapter 4 Resources (Solano County 2008) outlines energy policies that seek to conserve energy, reduce energy demand, and enable the production of energy from renewable sources. The Resources chapter encourages citing 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:

Policy RS.P-58: Require the siting of energy facilities in a manner compatible with surrounding land uses, including Travis Air Force Base, and in a manner that will protect scenic resources.

Sacramento County General Plan

The Energy Element of the Sacramento County General Plan (Sacramento County 2017) 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 (Contra Costa County 2024) describes goals for energy conservation and include policies supporting wind energy and commercial-scale solar development. However, these elements do not contain energy policies directly relevant to the Proposed Project.

City of Pittsburg General Plan

The City of Pittsburg General Plan's Resource Conservation and Open Space Element contains the following goal and policies relevant to impacts to energy resources from the Proposed Project (City of Pittsburg 2024):

Goal-10-6: Support Federal, State, and regional efforts to reduce air pollution in order to protect human and environmental health and restore air quality in the area to a more healthful level.

***Policy 10-P-6.1*:** Support the principles of reducing air pollutants and greenhouse gas emissions through comprehensive and sustainable land use, transportation, and energy planning.

Policy 10-P-6.2: Ensure that new development is consistent with the energy objectives and targets identified by the City's Sustainability Plan.

***Policy 10-P-6.13*:** Implement development standards, mitigation measures, and best practices that require energy conservation and the reduction in greenhouse gases, including:

Requiring energy-efficient design through passive solar and building orientation strategies.

Requiring large energy users to implement an energy conservation plan, which may include solar or other non-fossil fuel sources to meet the operation's full power demand and 100% fleet electrification.

Policy 10-P-6.14: Encourage development of green and clean energy infrastructure and maintain land use designations to support and accommodate energy infrastructure projects that assist in meeting the State's goals to reduce carbon in the energy supply and reduce carbon-related emissions.

Policy 10-A-6.b: Implement the Strategic Energy Plan to reduce GHG emissions, including identifying ways to reduce energy use for existing City facilities, improving energy performance for new construction and major renovations, and adopting a Climate Action Plan.

Policy 10-A-6.o: Continue to review development projects to ensure that all new public and private development complies with or exceeds the California Code of Regulations, Title 24 standards, as well as the energy efficiency standards established by the General Plan and the Municipal Code

4.6.3 Approach to Impact Analysis

The analysis of impacts on energy applies the impact criteria and significance thresholds defined in the following subsection. The applicant proposed measures (APMs) and construction measures (CMs) identified by LSPGC and PG&E, respectively, are considered when making the impact determinations. Impacts are evaluated for the Proposed Project, including LSGPC and PG&E Project components analyzed separately as well as analyses of cumulative impacts and of project alternatives. Mitigation measures are defined to reduce or avoid significant impacts, where feasible.

Impact Criteria and Thresholds of Significance

The following impact criteria questions have been derived from Appendix G of the CEQA Guidelines to evaluate impacts on energy. Appendix G of the CEQA Guidelines ask whether a project would:

- Impact EN-1: Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?
- Impact EN-2: Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

Applicant Proposed Measures and Construction Measures

The LSPGC APMs and PG&E CMs identified in Section 2: Project Description that are relevant to the energy impact analysis are listed in Table 4.6-5.

Table 4.6-5 APMs and CMs Relevant to Energy

LSPGC APMs and PG&E CMs
APM 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.
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 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.

4.6.4 Impact Analysis – Proposed Project

Table 4.6-6 presents a summary of the impact analysis determinations for energy associated with the Proposed Project.

Table 4.6-6 Summary of Impacts on Energy for the Proposed Project

Impact Criteria: Would the project …	APMs/CMs Applied	Significance Before Mitigation	Mitigation Measures Required	Significance After Mitigation
Impact EN-1: Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	APM AIR-1 CM AIR-1 CM NOI-1	LTS	None	NA
Impact EN-2: Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	None	S	MM UT-1	SU

Notes:

LTS = less than significant

S = significant

SU = Significant and unavoidable

NA = not applicable

Impact EN-1: Would the Proposed Project result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation? ***(Less than significant)***

Construction

Energy would be supplied to the LSPGC Collinsville Substation by a new PG&E 12 kV distribution line. In addition, temporary construction power may be provided by a diesel-powered generator, if needed, while the distribution line connection is being constructed. Energy used during the Proposed Project construction would primarily involve the consumption of fossil fuels such as gasoline, diesel, and jet fuel to power construction vehicles, equipment, and helicopters. As shown in Appendix E, construction of the Proposed Project, including the LSPGC and PG&E components, is estimated to require approximately 704,202 gallons of diesel fuel, 260,028 gallons of gasoline, and 16,045 gallons of jet fuel for helicopter operations.

Of the total fuel consumption, 58 percent is attributed to LSPGC project components. Construction of LSPGC project components would be short term, and the consumption of energy resources would be necessary to construct the Proposed Project. To avoid wasteful and inefficient energy use, LSPGC proposes APM AIR-1, which requires use of Tier 4 engines for all off-road equipment, to the extent available, which would increase fuel efficiency. Because construction would use line power to the extent feasible, idling time would be minimized, and the selected construction equipment would be efficient, construction of LSPGC project components would not result in wasteful, inefficient, or unnecessary consumption of energy resources, and the impact would be less than significant.

Similar to LSPGC project components, construction of PG&E project components would require consumption of fossil fuels such as gasoline, diesel, and jet fuel to power construction vehicles, equipment, and helicopters, with 42 percent of the Proposed Project fuel consumption attributed to PG&E project components. Construction of PG&E project components would be short term and would require the use of fuel. To avoid wasteful and inefficient energy use, PG&E has proposed CM NOI-1, which minimize any unnecessary construction vehicle idling time and effectively avoid wasteful fuel consumption during construction of PG&E project components. PG&E has also proposed CM AIR-1, which requires use or Tier 4 engines for all off-road equipment, to the extent available, which would increase fuel efficiency. Because vehicle idling time would be minimized, construction of PG&E project components would not result in wasteful, inefficient, or unnecessary consumption of energy resources, and the impact would be less than significant.

Construction of the entire Proposed Project, including the LSPGC and PG&E components, would not result in wasteful, inefficient, or unnecessary consumption of energy resources, and the impact would be less than significant.

Operation and Maintenance

LSPGC Project Components

Operation of the LSPGC Collinsville Substation would require power that would be obtained via the proposed PG&E 12 kV distribution line. The LSPGC Collinsville Substation would also be equipped with an interconnection point for a mobile generator, which would be stored off site and only used when necessary (i.e., power outages or other times the distribution line is down) to temporarily power basic functions. No other energy would be required for operation. Because power would be supplied from line power and a generator would only serve on a contingency basis as a backup power source, the use of energy during operation would not be wasteful or inefficient, and the impact would be less than significant.

Maintenance of the LSPGC Collinsville Substation, LSPGC 230 kV overhead segment and telecommunications line would require diesel and gasoline fuel use for vehicles conducting routine maintenance and inspections. These fuels would be necessary for normal operation and maintenance activities, such as periodic inspections, equipment testing, and repairs. Additionally, diesel and gasoline would be required for motor vehicle trips and occasional use of off-road equipment. The submarine cable would not be inspected or maintained and would not require any energy during operation and maintenance. The minimal amount of energy required for inspection and maintenance of the LSPGC project components would not be wasteful, inefficient, or unnecessary, and the impact would be less than significant.

PG&E Project Components

Operation of the PG&E project components would not create demand for energy. Maintenance of the PG&E project components would be incorporated into existing programs and would not create increased vehicle trips. The increase in fuel to inspect and maintain the PG&E project components would not require wasteful, inefficient, or unnecessary use of energy, and the impact would be less than significant.

Operation and maintenance of the entire Proposed Project, including the LSPGC and PG&E components, would not result in wasteful, inefficient, or unnecessary consumption of energy resources, and the impact would be less than significant.

Impact EN-2: Would the Proposed Project conflict with or obstruct a state or local plan for renewable energy or energy efficiency? ***(Significant and unavoidable)***

Construction

LSPGC and PG&E Project Components Combined – Energy Use

During construction of the Proposed Project, there would be a temporary increase in demand for electricity and fuel resources for vehicles and construction equipment. The construction equipment would not conflict with State plans for energy efficiency and renewable energy including Senate Bill 100 and Senate Bill 1020 as both plans involve long-term transition to renewable energy and do not address short-term construction The short-term construction use of energy and fuel resources would not conflict with the long-term goals of State plans for renewable energy. In addition, compliance with the state's in-use off-road diesel vehicle regulation, which limits unnecessary idling to no more than 5 minutes, would help reduce

wasteful fuel consumption during construction. Because construction activities would be temporary in nature and would not result in the long-term or permanent use of non-renewable energy resources, energy use during construction of the Proposed Project would not conflict with or obstruct a State or local plan for renewable energy or energy efficiency and would result in no impact.

PG&E Project Components – Conflict with Renewable Energy Generation

The PG&E 500 kV interconnection lines are located within and adjacent to SMUD's Solano 4 Wind Project site. Construction of the PG&E 500 kV interconnection lines would require heavy equipment traveling over access roads within the wind farm and could require excavation in areas containing SMUD's subsurface electrical cables. Excavation in areas containing SMUD electrical collector cables or use of heavy equipment exceeding the design capacity for SMUD's buried utility lines has the potential to damage the buried electrical lines. Damage of the buried electrical lines could result in reduced generation of renewable energy, which would be a conflict with SMUD's ability to meet renewable energy delivery to its customers under the IEPR. The reduced renewable energy generation/output would be a significant impact. MM UT-1 would be implemented (refer to Section 4.19: Utilities and Services Systems), which requires the location of buried utilities including any electrical lines within the SMUD Solano 4 Wind Project site prior to PG&E construction and measures to protect the subsurface electrical lines including adjusting work areas if needed to avoid impacts. With implementation of MM UT-1, construction of PG&E project components would avoid conflicts with State plans for renewable energy. Therefore, the impact would be less than significant with mitigation.

Operation and Maintenance

LSPGC Project Components

Operation and maintenance of the LSPGC project components including the LSPGC Collinsville Substation and LSPGC 230 kV transmission line would strengthen the reliability of the existing transmission network by increasing capacity and enhancing the ability to deliver energy from the existing PG&E Vaca-Dixon 500 kV Transmission Line into the Bay Area via the existing PG&E Pittsburg Substation. The Proposed Project is identified in the CAISO Transmission Plan as part of the planned expansion of transmission infrastructure to improve reliability and relieve congestion in the Greater Bay Area, specifically through the establishment of a new 500/230 kV supply source at Collinsville by 2028 (CAISO 2022). By facilitating the reliable delivery of renewable energy to customers, the Proposed Project would help advance the State's renewable energy and decarbonization goals.

Overall, the LSPGC project components would improve use of renewable energy sources in the future due to improved integration of renewable energy sources and would be consistent with State and local plans for renewable energy. Therefore, operation and maintenance of the LSPGC project components would not conflict with a state or local plan for renewable energy or energy efficiency and the impact would be beneficial and less than significant.

PG&E Project Components

The proposed PG&E 500 kV interconnection lines would be installed on a combination of 10 LSTs and 4 TSPs. LSTs have substantially more cross-arms compared to TSPs, and the nature of their design creates nesting and perching habitat for avian species (Steenhof et al. 1993). The proposed installation of 10, PG&E 500 kV LSTs could increase avian activity in close proximity to existing wind turbines associated with SMUD's Solano 4 Wind Project. An increase in avian activity associated with the LSTs has the potential to increase wind turbine bird strikes. It is for this reason that the USFWS *Land-Based Wind Energy Guidelines* (USFWS 2012) has a mitigation measure stating that "tubular towers or best available technology to reduce ability of birds to perch and to reduce risk of collision [will be used when practical]." Additional information about the potential for increased bird strikes associated with the proposed LSTs is provided in Section 4.4: Biological Resources (Impact BIO-1d).

SMUD has obtained an incidental take permit from the U.S. Fish and Wildlife Service (USFWS) for operation of the wind farm. This permit limits the number of incidental avian fatalities allowed, and exceeding these limits would violate federal requirements and trigger operational consequences, including mandatory curtailment of energy generation, which would significantly affect SMUD's capacity to provide renewable energy to customers (R. Donovan, "PG&E Collinsville Substation Lattice Tower Impact," May 7, 2025). Curtailment of renewable energy generation at SMUD's Solano 4 Wind Project site would reduce overall generation of renewable energy and SMUD's ability to comply with their renewable energy plans including IEPR, which would be a conflict with a State plan for renewable energy. The reduced renewable energy generation/output would be a significant impact. No feasible mitigation is available to reduce the impact due to the location of the proposed 500 kV interconnection lines and the nature/design of LSTs could not be modified to substantially reduce perching or nesting opportunities. Therefore, the impact from conflicting with State plans for renewable energy generation would be significant and unavoidable.

4.6.5 Impact Analysis – Cumulative

CEQA defines a cumulative impact as "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" (CEQA Guidelines Section 15130(a)(1)). Cumulative impacts can result from "individually minor but collectively significant projects taking place over a period of time" (CEQA Guidelines Section 15355). An EIR must discuss cumulative impacts if the incremental effect of a project, combined with the effects of other projects, is "cumulatively considerable" (CEQA Guidelines Section 15130(a)). Projects within the cumulative analysis study area include those listed in Table 4.0-1 of Section 4: Environmental Analysis. Cumulative projects that could contribute to adverse cumulative impacts on energy resources include those that generate substantial long-term energy demand or involve energy-intensive construction or operational activities. These projects could combine with the Proposed Project in a manner that contributes to the wasteful, inefficient, or unnecessary use of energy or places additional demand on regional energy infrastructure and supply.

Cumulative projects within the service areas of applicable energy providers are relevant to this analysis. Development projects that generate substantial, long-term energy demand could contribute to cumulative energy impacts. The large development projects including the Lennar Homes Project and potential future California Forever Project have the potential to result in substantial energy demand. The cumulative residential development projects would be subject to CALGreen Code and Title 24 building efficiency standards, which establish increasingly stringent performance requirements for residential and commercial buildings. These standards are designed to reduce energy consumption and minimize inefficient energy use. The Proposed Project construction would have a less than significant impact on wasteful or inefficient energy use but would have no impact on wasteful or inefficient energy use during operation as the Proposed Project would not create a demand for energy. Construction of the Proposed Project would occur prior to completion of the cumulative development projects in the area. Therefore, the cumulative impact from wasteful or inefficient energy use would be less than significant.

The Proposed Project could impact renewable energy generation at the SMUD Solano 4 Wind Farm as discussed under Impact EN-2. Additionally, the proposed high voltage line from Humboldt to Collinsville (Humboldt to Collinsville 500 kV Line) would have similar impacts to the Proposed Project on the SMUD Solano Wind 4 Farm due to potential nesting and perching on LSTs (refer to Impact EN-2) and effect on curtailment of renewable energy generation within the wind farm due to USFWS incident take permit limits of avian mortality within the wind farm. The cumulative impact on SMUD's ability to deliver renewable energy to SMUD's customers as defined in the IEPR would be significant. The Proposed Project would install LSTs that contribute considerably to the cumulative impact. The Proposed Project's contribution to the cumulative impact would be significant and unavoidable, as discussed above.

4.6.6 Alternative 1: Collinsville Substation North of Talbert Lane

Environmental Setting – Alternative 1

Alternative 1 involves relocating the proposed LSPGC Collinsville Substation to a different site, approximately 1.2 miles north of the Proposed Project substation site. Alternative 1 would also include an approximately 500-foot segment of PG&E 500 kV interconnection lines, approximately 700-foot segment of 12 kV distribution line, and an approximately 2-mile-long segment of LSPGC 230 kV overhead line. Alternative 1 would not involve changes to any of the other Proposed Project components, which would have the same impacts as described throughout this Draft EIR for the Proposed Project or the other alternatives if selected in combination with Alternative 1.

The environmental setting for Alternative 1 energy is the same as the Proposed Project. The changes to the Proposed Project reflected in Alternative 1 would be located within Solano County.

Impact Analysis – Alternative 1

Impact EN-1: Would Alternative 1 result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation? *(Less than significant)*

Alternative 1 would use similar construction vehicles and equipment as described for the Proposed Project. Construction of Alternative 1 (with the Proposed Project in other segments) would require approximately 263,779 gallons of gasoline and 736,363 gallons of diesel fuel. LSGPC would implement APM AIR-1, which requires use of Tier 4 construction equipment. PG&E would implement CM NOI-1 and CM AIR-1 which require minimizing idling time and use of Tier 4 construction equipment. With use of efficient construction equipment, Alternative 1 construction would have a less than significant impact on wasteful or inefficient use of energy.

Impact EN-2: Would Alternative 1 conflict with or obstruct a state or local plan for renewable energy or energy efficiency? *(Less than significant with mitigation)*

Construction

The Alternative 1 LSPGC Collinsville Substation, LSPGC 230 kV overhead segment, PG&E 500 kV interconnection lines, and PG&E 12 kV distribution line are located within the Solano 4 Wind Project. Grading or excavation for construction of the Alternative 1 components within the Solano 4 Wind Project and heavy equipment travel over access roads has the potential to impact buried conduit. Impacts on buried electrical cable within the wind farm could reduce ability to deliver renewable energy to customers and conflict with SMUD's production and delivery of renewable energy in the IEPR. The conflict with a State plan for renewable energy would be significant. MM UT-1 (refer to Section 4.19: Utilities and Services Systems) defines measures to protect buried electrical cables within the wind farm. With implementation of MM UT-1, Alternative 1 would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency and the impact would be less than significant with mitigation.

Operation and Maintenance

Alternative 1 would install TSPs for both the LSPGC 230 kV overhead segment and PG&E 500 kV interconnection lines. Alternative 1 would not install LSTs within the wind farm. As discussed for the Proposed Project (Impact EN-2), TSPs have significantly fewer cross arms that may provide perching and nesting opportunities for avian species compared to LSTs, and thus the use of TSPs would minimize the creation of new perching and nesting habitat that could increase avian activity and wind turbine bird strikes. Alternative 1 would not conflict with SMUD's USFWS incidental take permit for the Solano 4 Wind Project and would not cause associated curtailment of wind energy generation. Alternative 1 operation and maintenance would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency and the impact would be less than significant.

4.6.7 Alternative 2: Collinsville Substation East of Wind Energy Substations

Environmental Setting – Alternative 2

Alternative 2 involves relocating the proposed LSPGC Collinsville Substation to a different site, approximately 3.0 miles north of the location proposed under the Proposed Project. Alternative 2 would also include an approximately 1,200-foot-long segment of PG&E 500 kV interconnection lines and a four-mile-long segment of LSPGC 230 kV overhead line, as well as an approximately 0.3-mile-long PG&E 12 kV distribution line. Alternative 2 would not involve changes to any of the other Proposed Project components, which would have the same impacts as described throughout this Draft EIR for the Proposed Project or the other alternatives if selected in combination with Alternative 2.

The environmental setting for Alternative 2 energy is the same as the Proposed Project. Alternative 2 would be located within Solano County.

Impact Analysis – Alternative 2

Impact EN-1: Would Alternative 2 result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation? *(Less than significant)*

Similar to the Proposed Project, Alternative 2 would use similar construction vehicles and equipment. Construction of Alternative 1 (with the Proposed Project in other segments) would require approximately 273,951 gallons of gasoline and 780,238 gallons of diesel fuel. LSGPC would implement APM AIR-1, which requires use of Tier 4 construction equipment. PG&E would implement CM NOI-1 and CM AIR-1 which require minimizing idling time and use of Tier 4 construction equipment. With use of efficient construction equipment, Alternative 2 construction would have a less-than-significant impact on wasteful or inefficient use of energy.

Impact EN-2: Would Alternative 2 conflict with or obstruct a state or local plan for renewable energy or energy efficiency? *(Less than significant with mitigation)*

Construction

The Alternative 2 substation, LSPGC 230 kV overhead segment, PG&E 500 kV interconnection lines, and PG&E 12 kV distribution line are located within the Solano 4 Wind Project. Grading or excavation for construction of the Alternative 2 components within the Solano 4 Wind Project and heavy equipment travel over access roads has the potential to impact buried electrical conduit. Impacts on buried electrical conduit within the wind farm could reduce SMUD's ability to deliver renewable energy to customers and conflict with SMUD's production and delivery of renewable energy in the IEPR. The conflict with a State plan for renewable energy would be significant. MM UT-1 (refer to Section 4.19: Utilities and Services Systems) defines measures to protect buried electrical cables within the wind farm and would avoid associated impacts on reduced renewable wind energy generation and delivery. With implementation of MM UT-1 Alternative 2 would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency and the impact would be less than significant with mitigation.

Operation and Maintenance

Alternative 2 would install TSPs for both the LSPGC 230 kV overhead segment and PG&E 500 kV interconnection lines. Alternative 2 would not install LSTs within the wind farm. As discussed for the Proposed Project (Impact EN-2), TSPs have significantly fewer cross arms that may provide perching and nesting opportunities for avian species compared to LSTs, and thus the use of TSPs would minimize the creation of new perching and nesting habitat that could increase avian activity and wind turbine bird strikes Alternative 2 would not conflict with SMUD's USFWS incidental take permit for the Solano 4 Wind Project and would not cause associated curtailment of wind energy generation. Alternative 2 operation and maintenance would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency and the impact would be less than significant.

4.6.8 Alternative 3: 500 kV Interconnection Lines on Entirely TSPs

Environmental Setting – Alternative 3

Alternative 3 involves constructing the PG&E 500 kV interconnection lines on entirely TSPs, instead of the combination of LSTs and three-pole TSPs under the Proposed Project. The 500 kV interconnection lines would be in the same general alignment as the Proposed Project PG&E 500 kV interconnection lines. Alternative 3 would not involve changes to any of the other Proposed Project components, which would have the same impacts as described throughout this Draft EIR for the Proposed Project or the other alternatives if selected in combination with Alternative 3.

The environmental setting for Alternative 3 energy is the same as the setting for Proposed Project described in Section 4.6.1.

Impact Analysis – Alternative 3

Impact EN-1: Would Alternative 3 result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation? *(Less than significant)*

Alternative 3 construction would require a similar number of equipment and vehicles to the Proposed Project PG&E 500 kV interconnection lines construction and would require similar energy (diesel and gasoline) use. Similar to the Proposed Project, PG&E would implement CM AIR-1 and CM NOI-1, which require use of Tier 4 construction equipment and PG&E contractors to minimize idling. The CMs would minimize wasteful, inefficient, or unnecessary consumption of energy and the impact during construction would be less than significant.

Operation of the Alternative 3 PG&E 500 kV interconnection line would not create energy demand and would not result in wasteful, inefficient, or unnecessary consumption of energy. No impact would occur during operation.

Impact EN-2: Would Alternative 3 conflict with or obstruct a state or local plan for renewable energy or energy efficiency? *(Less than significant with mitigation)*

Construction

Similar to the Proposed Project, Alternative 3 is located in the Solano 4 Wind Project. Construction of Alternative 3 within the Solano 4 Wind Project and heavy equipment travel over access roads has the potential to impact buried electrical conduit. Impacts on buried electrical conduit within the wind farm could reduce SMUD's ability to deliver renewable energy to customers and conflict with SMUD's production and delivery of renewable energy in the IEPR. The conflict with a State plan for renewable energy would be significant. MM UT-1 (refer to Section 4.19: Utilities and Services Systems) defines measures to protect buried electric cables within the wind farm and would avoid associated impacts on reduced renewable energy generation and delivery. With implementation of MM UT-1, Alternative 3 would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency and the impact would be less than significant with mitigation.

Operation and Maintenance

Alternative 3 would install TSPs only for the 500 kV interconnection lines. Alternative 3 would not install LSTs within the wind farm. As discussed for the Proposed Project (Impact EN-2), TSPs have significantly fewer cross arms that may provide perching and nesting opportunities for avian species compared to LSTs, and thus the use of TSPs would minimize the creation of new perching and nesting habitat that could increase avian activity and wind turbine bird strikes. Alternative 3 would not conflict with SMUD's USFWS incidental take permit for the Solano 4 Wind Project and would not cause associated curtailment of wind energy generation. Alternative 3 operation and maintenance would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency and the impact would be less than significant.

4.6.9 Alternative 4: 230 kV Overhead Segment Alternative Route

Environmental Setting – Alternative 4

Alternative 4 involves relocation of a short segment of the LSPGC 230 kV overhead segment between the proposed LSPGC Collinsville Substation and the Delta, west of the proposed LSPGC 230 kV overhead segment route. Additionally, the northern end of the LSPGC 230 kV submarine segment would be rerouted to meet up with the southern end of the Alternative 4 230 kV submarine segment. Alternative 4 would not involve changes to any of the other Proposed Project components, which would have the same impacts as described throughout this Draft EIR for the Proposed Project or the other alternatives if selected in combination with Alternative 4.

The environmental setting for Alternative 4 energy is the same as the setting for Proposed Project described in Section 4.6.1.

Impact Analysis – Alternative 4

Neither the Proposed Project 230 kV overhead segment nor Alternative 4 are within the Solano Wind Farm, and neither would involve the use of LSTs. Therefore, neither the Proposed Project

230 kV overhead segment nor Alternative 4 would affect curtailment of renewable energy generation due to avian fatalities within the wind farm. Both the Proposed Project 230 kV overhead segment and Alternative 4 would have a beneficial impact on delivery of renewable energy as part of the larger project and would not, on their own, conflict with or obstruct a state plan for renewable energy or energy efficiency. Impact EN-2 is not discussed further.

Impact EN-1: Would Alternative 4 result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation? ***(Less than significant)***

Alternative 4 construction would require a similar number of construction equipment and vehicles to the Proposed Project LSPGC 230 kV overhead segment and submarine segment construction and would require similar energy (diesel and gasoline) use. Similar to the Proposed Project, LSPGC would implement APM AIR-1, which requires use of Tier 4 construction equipment. The APM would minimize wasteful, inefficient, or unnecessary consumption of energy and the impact during construction would be less than significant.

Operation of the Alternative 4 segment would not create energy demand and would not result in wasteful, inefficient, or unnecessary consumption of energy. No impact would occur during operation.

4.6.10 Alternative 5: 230 kV Submarine Segment Alternative Route

Environmental Setting – Alternative 5

Alternative 5 involves rerouting a portion of the proposed LSPGC 230 kV submarine segment to the east of its current alignment as it approaches the southern shoreline in Pittsburg. The submarine segment cable would be installed in the same manner as the Proposed Project. Alternative 5 would not involve changes to any of the other Proposed Project components, which would have the same impacts as described throughout this Draft EIR for the Proposed Project or the other alternatives if selected in combination with Alternative 5.

The environmental setting for Alternative 5 energy is the same as the setting for Proposed Project described in Section 4.6.1.

Impact Analysis – Alternative 5

Neither the Proposed Project 230 kV submarine segment nor Alternative 5 are located within the Solano Wind Farm, and neither would involve the use of LSTs. Therefore, neither the Proposed Project 230 kV submarine segment nor Alternative 5 would affect curtailment of renewable energy generation due to avian fatalities within the wind farm. Both the Proposed Project 230 kV submarine segment and Alternative 5 would have a beneficial impact on delivery of renewable energy as part of the larger project and neither segment on their own would conflict with or obstruct a state plan for renewable energy or energy efficiency. Impact EN-2 is not discussed further.

Impact EN-1: Would Alternative 5 result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation? ***(Less than significant)***

Alternative 5 construction would require the same amount of energy use as the Proposed Project during submarine segment cable installation. In addition, Alternative 5 would require energy for marine vessel operation during site preparation, which would last two weeks in the year prior to submarine cable installation. Because the site preparation is needed in order to support the submarine cable installation, the use of energy for the site preparation would not be wasteful, inefficient, or unnecessary. The Alternative 5 impact on wasteful, inefficient, or unnecessary consumption of energy resources during construction would be less than significant.

Operation of the Alternative 5 segment would not create energy demand and would not result in wasteful, inefficient, or unnecessary consumption of energy. No impact would occur during operation.

4.6.11 Alternative 6a/6b: Underground Portions of the 230 kV Transmission Line within Suisun Marsh Protection Plan Management Area

Environmental Setting – Alternative 6a/6b

Alternative 6a/6b would locate the LSPGC 230 kV transmission line on primarily PG&E-owned property south of the proposed Collinsville Substation site (similar to Alternative 4). Alternative 6a/6b would be installed in conduit underground. Alternative 6a differs from Alternative 6b only at the northern end of the segment where options are provided for connection to the Proposed Project Collinsville Substation or Alternatives 1 or 2. Two overhead riser structures would be installed at the northern end of the Alternative 6a/6b underground duct bank where the LSPGC 230 kV line would transition between an overhead and underground position. Alternative 6 would not involve changes to any of the other Proposed Project components, which would have the same impacts as described throughout this Draft EIR for the Proposed Project or the other alternatives if selected in combination with Alternative 6.

The environmental setting for Alternative 3 energy is the same as the setting for Proposed Project described in Section 4.6.1.

Impact Analysis – Alternative 6a/6b

Neither the Proposed Project 230 kV overhead segment nor Alternative 6a/6b are located within the Solano Wind Farm, and neither would involve the use of LSTs. Therefore, neither the Proposed Project 230 kV overhead segment nor Alternative 6a/6b would affect curtailment of renewable energy generation due to avian fatalities within the wind farm. Both the Proposed Project 230 kV overhead segment and Alternative 6a/6b would have a beneficial impact on delivery of renewable energy as part of the larger project and would not, on their own, conflict with or obstruct a state plan for renewable energy or energy efficiency. Impact EN-2 is not discussed further.

Impact EN-1: Would Alternative 6a/6b result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation? ***(Less than significant)***

Alternative 6a/6b construction would require a similar number of construction equipment and vehicles to the Proposed Project LSPGC 230 kV overhead segment construction and submarine segment and would require similar energy (diesel and gasoline) use. The volume of gasoline, diesel fuel, and jet fuel required for Alternative 6a and Alternative 6b is summarized in Table 4.6-7. While Alternative 6 would require more fuel to construct than the Proposed Project, the additional fuel would be required to support construction of the duct bank and would not be unnecessary or wasteful. Similar to the Proposed Project, LSPGC would implement APM AIR-1, which requires use of Tier 4 construction equipment. The APM would minimize wasteful, inefficient, or unnecessary consumption of energy and the impact during construction would be less than significant.

Table 4.6-7 Alternative 6a/6b Construction Fuel Consumption

Alternative	Gasoline (gallons)	Diesel (gallons)	Jet Fuel (gallons)
Alternative 6a with Proposed Project	252,790	680,640	14,510
Alternative 6b with Alternative 2 (maximum fuel use)	286,080	787,223	16,045

Operation of the Alternative 6a/6b segment would not create energy demand and would not result in wasteful, inefficient, or unnecessary consumption of energy. No impact would occur during operation.

4.6.12 No Project Alternative

Environmental Setting – No Project Alternative

Under the No Project Alternative, the LSPGC Collinsville Substation and associated LSPGC 230 kV transmission line, PG&E 500 kV interconnection lines, and PG&E 12 kV distribution line would not be constructed.

Impact Analysis – No Project Alternative

Under the No Project Alternative, the Proposed Project would not be constructed. No ground disturbing activities would occur and no new project elements would be introduced. The No Project Alternative would not directly use any energy. However, the No Project Alternative would conflict with the 2024-2025 CAISO Transmission Plan including the plan's goals for renewable energy integration including energy from Wyoming as well as grid reliability (CAISO 2025) . Increasing grid reliability and delivery of energy to the Bay Ara reduces reliance on inefficient energy production and allows less efficient power plants to retire as planned to meet State goals. As a result, the No Project Alternative would have a significant conflict with a State plan for renewable energy integration. Based on the CAISO Transmission Plans there are

no other solutions available to mitigate the impact (CAISO 2025). The impact of the No Project Alternative would be significant and unavoidable.

4.6.13 Mitigation Measures

LSPGC Mitigation Measures

No mitigation is required.

PG&E Mitigation Measures

MM UT-1: Protect SMUD Buried Infrastructure from Construction Loads (refer to Section 4.19: Utilities and Services Systems)

4.6.14 References

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4.7 Geology, Soils, and Paleontological Resources

This section presents the environmental setting and analysis of impacts on geology, soils, and paleontological resources resulting from the Proposed Project and alternatives. This section describes existing geology, soils, and paleontological resources information, applicable regulations, and environmental impacts and provides mitigation measures to reduce or avoid significant effects for the Proposed Project and alternatives, as applicable.

None of the scoping comments submitted relate to geology, soils, and paleontological resources (refer to Appendix B).

The following analysis is based, in part, on four geotechnical reports that were prepared for the Proposed Project.

- 500 kV Collinsville Substation, Geotechnical Engineering Report, Collinsville, Solano County, California (Terracon 2025a).
- Draft Geotechnical Report, Collinsville Onshore Investigation, Collinsville – Pittsburg 230 kV (Geosyntec Consultants 2025a).
- Draft Geotechnical Report, Pittsburg Onshore Investigation, Collinsville-Pittsburg 230 kV (Geosyntec Consultants 2025b).
- Geotechnical Factual Report, Collinsville-Pittsburg 230 kV, Offshore Investigation (Geosyntec Consultants 2024).

4.7.1 Environmental Setting

Regional 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-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-North American plate boundary beginning at least 30 million years ago (Ma) (CGS 2002).

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 (CGS 2002).

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) (Graymer, D.L Jones, et al. 2002; Graymer, D.L. Jones, et al. 2002).

The University of California Museum of Paleontology (UCMP) online fossil locality database contains 168 fossil localities from Contra Costa County, 106 localities from Solano County, and 23 Montezuma Formation localities from Contra Costa, Solano, and Yolo counties (UCMP 2025).

Project Setting

Physiography and Topography

The proposed LSPGC Collinsville Substation site, proposed LSPGC 230 kV overhead segment alignment, proposed PG&E 500 kV interconnection transmission lines, proposed PG&E 12 kV distribution line, and PG&E transposition sites A, B, and C would be located north of the Delta on undulating terrain with slopes ranging between 2 and 30 percent and with elevation ranging from 246 feet above mean sea level (amsl) in the northwestern portion of the Proposed Project area to 0 feet amsl at the Delta. The proposed LSPGC submarine segment would be 0 feet or lower beneath the Delta. The proposed LSPGC 230 kV underground segment, LSPGC telecommunications lines, and PG&E transposition site D are located on relatively flat ground south of the Delta. The existing PG&E substations (i.e., Pittsburg Substation, Vaca Dixon Substation, and Tesla Substation) are located on flat terrain.

Geologic Setting and Units

A Geotechnical Factual Report was prepared by Geosyntec Consultants (Geosyntec) to support the design of the 230 kV submarine segment (Geosyntec Consultants 2024). The investigation included a total of 12 geotechnical borings along the cable alignment (nine shallow borings and three deeper borings) that extended 20, 40, 80, and 100 feet below the mudline. The investigation also included the collection of soil samples for geotechnical, environmental, and soil thermal testing (Geosyntec Consultants 2024).

The report identifies the Pittsburg-Kirby Hills section of the Great Valley fault zone (also known as the Rio Vista fault) as the nearest fault to the location of the cable alignment. The report also names the Los-Medanos-Roe Island, Clayton, Concord, Midland, Mount Diablo, Greenville, Green Valley, Calaveras, and Hayward faults as being in proximity to the cable alignment. (Geosyntec Consultants 2024).

The report also identifies the northern and southern shores of the Sacramento River as having very high susceptibility to liquefaction, based on 2006 USGS liquefaction data. (Geosyntec Consultants 2024).

The geology of the Proposed Project area is mapped by R.W. Graymer, D.J. Jones, and E.E. Brabb at a scale of 1:100,000. Geologic units that underlie the Proposed Project site are shown in Figure 4.7-1 and listed in Table 4.7-1.

Table 4.7-1 Geologic Units Underlying the Proposed Project Area

Name	Age	Proposed Project Component
Artificial Fill (af)[a]	Holocene, historic	LSPGC 230 kV underground segment PG&E Pittsburg Substation
Holocene-age Alluvial Fan Deposits (Qhf)	Holocene	LSPGC 230 kV overhead segment
Bay Mud Deposits (Qhbm)	Holocene	PG&E 12 kV distribution line
Delta Mud Deposits (Qhdm)	Holocene	LSPGC 230 kV overhead segment PG&E 12kV distribution line
Pleistocene-age Alluvial Fan Deposits (Qpf)	Late Pleistocene	PG&E Pittsburg Substation LSPGC telecommunications lines
Alluvium (Qoa)	Late and Early Pleistocene	PG&E 500 kV transposition site A Vaca Dixon Substation
Montezuma Formation (Qmz)	Early Pleistocene	LSPGC Collinsville Substation LSPGC 230 kV overhead segment PG&E 12kV distribution line
Quartz Pebble Conglomerate (QPc)	NA	PG&E 500 kV transposition sites B and C Tesla Substation
Unmapped sedimentary deposits	NA	LSPGC 230 kV submarine segment

Notes:

[a] Both alluvial fan deposits (Qhf) and Bay mud deposits (Qhbm) have the potential to occur beneath the artificial fill.

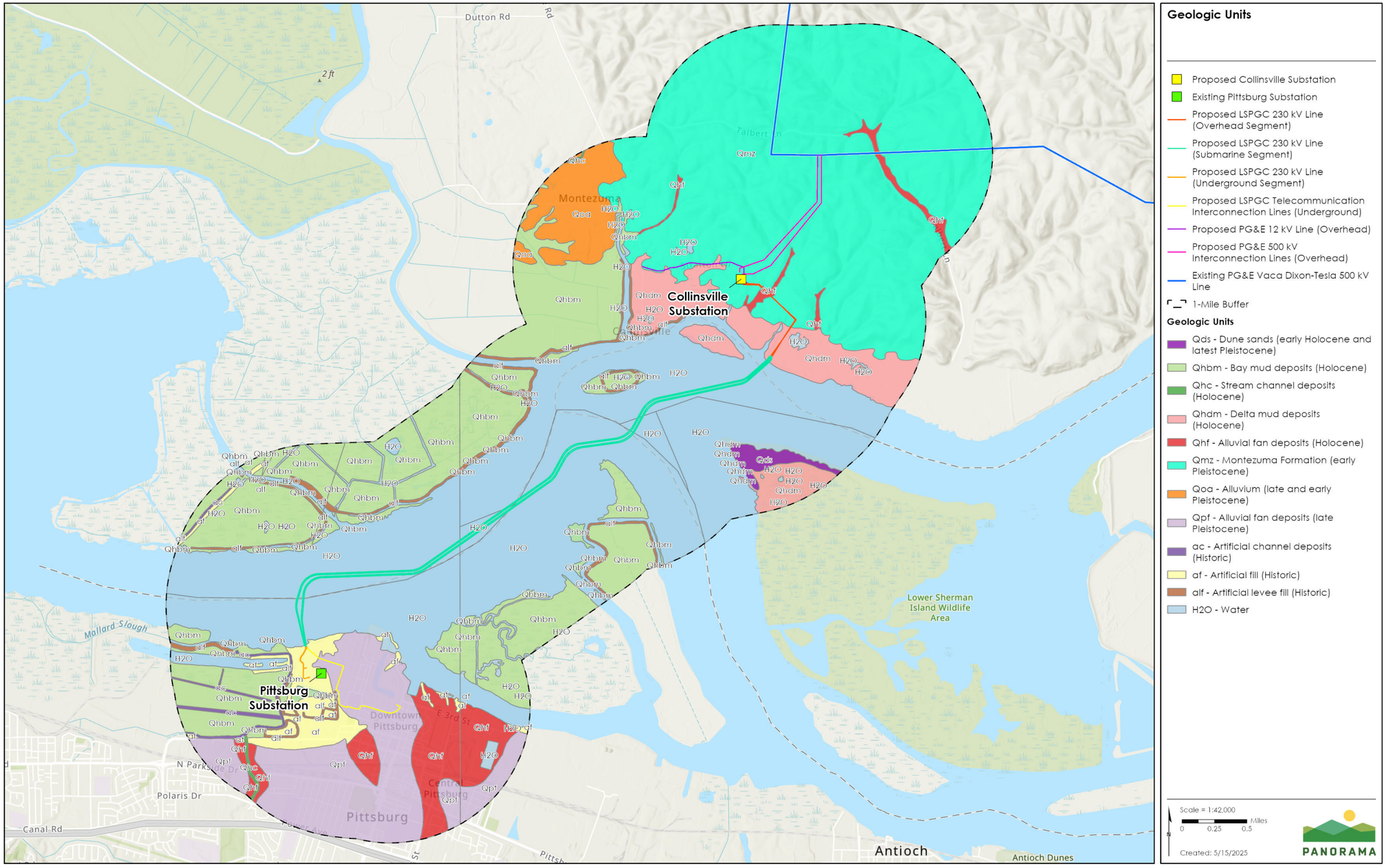
NA = not applicable

Source: (Graymer, D.L Jones, et al. 2002)

Soils

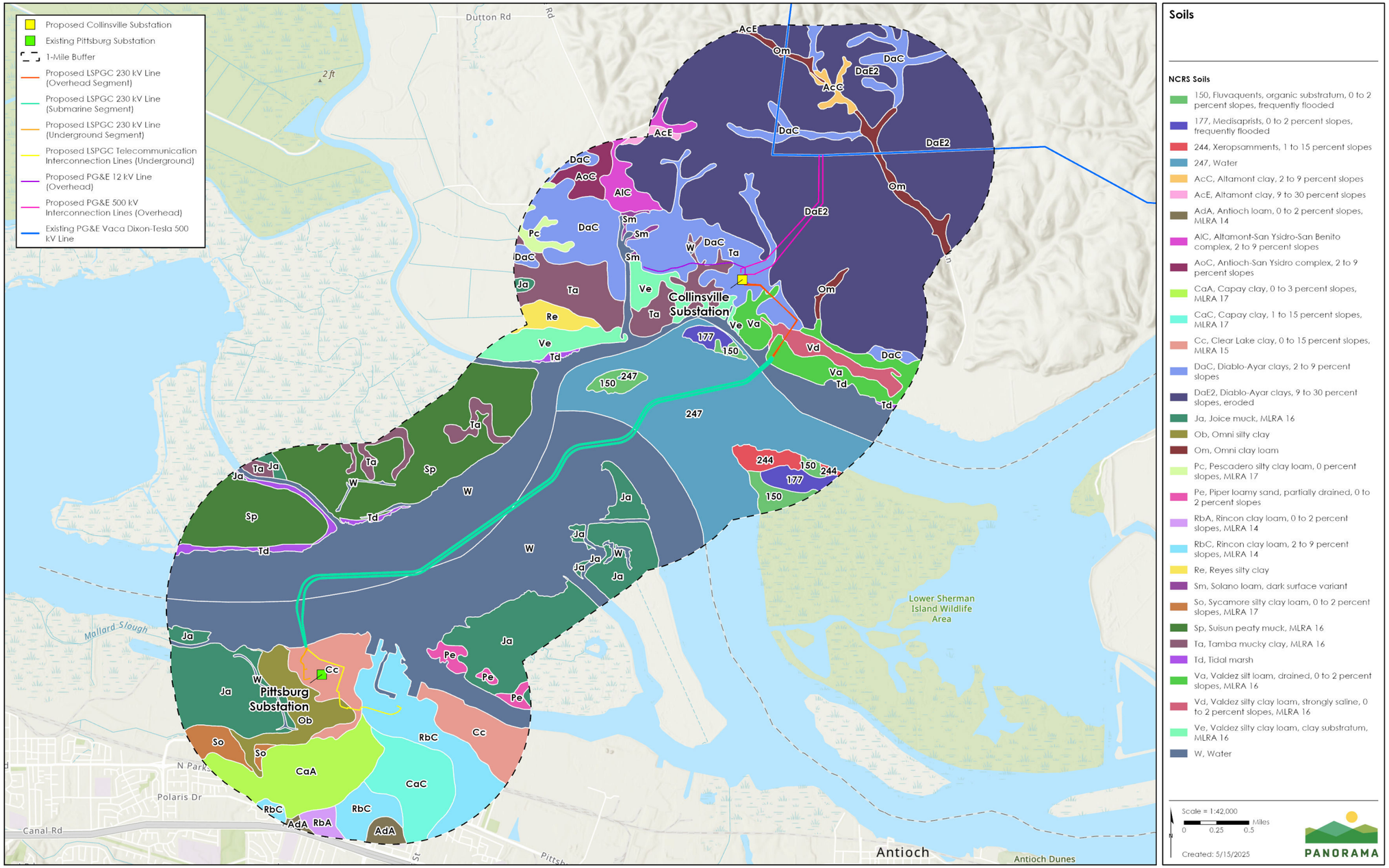
The soil types occurring in the Proposed Project area, as mapped by the USDA National Resources Conservation Service (NRCS) and depicted in the Web Soil Survey (NRCS 2025), are listed in Table 4.7-2 and shown on Figure 4.7-2. The table also documents selected soil properties, including hydrologic group, wind erodibility, soil erodibility, and slope percent. While soil units are shown for the entire Proposed Project area on Figure 4.7-2, soil units are not listed in Table 4.7-2 for existing PG&E substations as those soil units would have been replaced during the substation development and the area within the substation has been stabilized.

Figure 4.7-1 Geologic Units Within Proposed Project Area



Source: (Graymer, D.L Jones, et al. 2002)

Figure 4.7-2 Soils Crossed by the Proposed Project



Source: (NRCS 2025)

Table 4.7-2 Mapped Soil Units and Soil Properties Crossed by the Proposed Project

USDA Map Unit[a]	Map Unit Name	Hydrologic Group	Wind Erodibility Index[b]	Soil Erodibility Factor (K)[c]	Slope Percent	Stability Concerns[d]	Proposed Project Component
DaC	Diablo-Ayar clays	C	86	0.24	2 to 9	Moderate erosion potential, moderate runoff potential	LSPGC Collinsville Substation LSPGC 230 kV overhead segment PG&E 500 kV interconnection lines PG&E 12 kV distribution line
Vd	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	LSPGC 230 kV overhead segment
Va	Valdez silt loam	C	86	0.53	0 to 2	High liquefaction potential, moderate to high erosion potential, moderate runoff potential	LSPGC 230 kV overhead segment
W	Water	INA	INA	INA	INA	Scour potential	LSPGC 230 kV submarine segment

USDA Map Unit[a]	Map Unit Name	Hydrologic Group	Wind Erodibility Index[b]	Soil Erodibility Factor (K)[c]	Slope Percent	Stability Concerns[d]	Proposed Project Component
Cc	Clear Lake clay	C	86	0.25	0 to 15	High liquefaction potential, moderate erosion potential, moderate runoff potential	LSPGC 230 kV underground segment LSPGC telecommunication lines
Ob	Omni silt clay	D	86	0.25	0 to 2	Low liquefaction potential, moderate erosion potential, high runoff potential	LSPGC 230 kV underground segment LSPGC telecommunication lines
DaE2	Diablo-Ayar clays, eroded	C	86	0.24	9 to 30	Moderate erosion potential, moderate runoff potential	PG&E 500 kV interconnection lines
Ta	Tamba mucky clay	C	86	0.16	0 to 2	High liquefaction potential, moderate runoff potential	PG&E 12kV distribution line
RbC	Rincon clay loam	C	86	0.25	2 to 9	Low liquefaction potential, moderate erosion potential, moderate runoff potential	LSGPC telecommunication lines

USDA Map Unit[a]	Map Unit Name	Hydrologic Group	Wind Erodibility Index[b]	Soil Erodibility Factor (K)[c]	Slope Percent	Stability Concerns[d]	Proposed Project Component
Sh	Solano loam	D	86	0.44	0 to 2	Moderate erosion potential; high runoff potential	PG&E transposition site A
AmC	Altamont-Diablo clays	D	86	0.23	2 to 9	High runoff potential	PG&E transposition site A
AsA	Antioch-San Ysidro complex, thick surface	D	86	0.32	0 to 2	Moderate erosion potential; high runoff potential	PG&E transposition site B
DaE2	Diablo-Ayar clays, eroded	C	86	0.24	9 to 30	Moderate erosion potential, moderate runoff potential	PG&E transposition sites B and C
AmE2	Altamont-Diablo clays	D	86	0.24	9 to 30	Moderate erosion potential, high runoff potential	PG&E transposition site C
Mc	Marcuse clay, strongly saline,	D	86	0.25	0 to 2	High liquefaction potential; moderate erosion potential; high runoff potential	PG&E transposition site D

USDA Map Unit[a]	Map Unit Name	Hydrologic Group	Wind Erodibility Index[b]	Soil Erodibility Factor (K)[c]	Slope Percent	Stability Concerns[d]	Proposed Project Component
Mb	Marcuse clay, moderately saline	D	86	0.25	0 to 2	High liquefaction potential; moderate erosion potential; high runoff potential	PG&E transposition site D

Notes:

[a] USDA map unit symbols are shown in Figure 4.7-2

[b] Wind erodibility index (Y/Ac/Yr) refers to mass in tons of soil moved per unit area (acre) per year

[c] The soil erodibility factor (K) is discussed further in the Soil Erodibility Section

[d] The stability concerns are determined by liquefaction, erosion, subsidence, and runoff potential

INA = information not available

Sources: (NRCS 2025)

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) 2002). Soils are classified into Group A, B, C, or D and are summarized in Table 4.7-3 below.

Table 4.7-3 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 2002)

The hydrologic group, along with other soil factors, can give an indication or estimation of the erosion potential Table 4.7-2 identifies the hydrologic group for each soil group within the Proposed Project area.

Erosion (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).

Fine-textured soil that is high in clay has a low K value (0.05 to 0.15). Course-textured, sandy soil also has a low K value (0.05 to 0.2). Medium-textured soil, such as silt loam, has a moderate K value (0.25 to 0.45). Soil that has a high silt content is especially susceptible to erosion and has a high K value (K >0.45). The majority of the soil units in the Proposed Project area have low to moderate soil erodibility. Soil units in the proposed 230 kV overhead segment alignment have high soil erodibility (NRCS 2025).

Expansive and Collapsible Soil

Expansive soils contain large amounts of clays that expand when wet and cause damage to foundations if moisture collects beneath structures (e.g., settlement, structure heave, slab-on-

grade foundation shifting). Wetting can occur as a result of precipitation, a rise in the water table, irrigation water application, water line leakage, and other factors. Damage from expansive soils also occurs when the soil dries out and contract. Linear extensibility percent is the linear expression of the volume difference of natural soil between wet and dry conditions (USDA 2017).

Soil collapse occurs when increased moisture weakens chemical or physical bonds between soil particles, which allows the soil structure to collapse and the ground surface to subside. Collapsible soils occur as relatively dry alluvial fan, colluvium, and wind-blown deposits or as generally low-density, fine-grained combinations of clay and sand left by mudflows that have dried, resulting in the formation of small air pockets in the subsurface. These soils typically consist of silt and sand, with minor amounts of clay. When moisture is added the soil weakens, resulting in collapse or subsidence. (USDA 2017).

As shown in Table 4.7-2 portions of the Proposed Project occur within soils that could have expansive characteristics and are classified as Hydrologic Group D (NRCS 2025).

Fat and lean clays were identified at the Collinsville Substation site (Terracon 2025b). These soils exhibit moderate to high shrink-swell potential (Terracon 2025b).

Subsidence

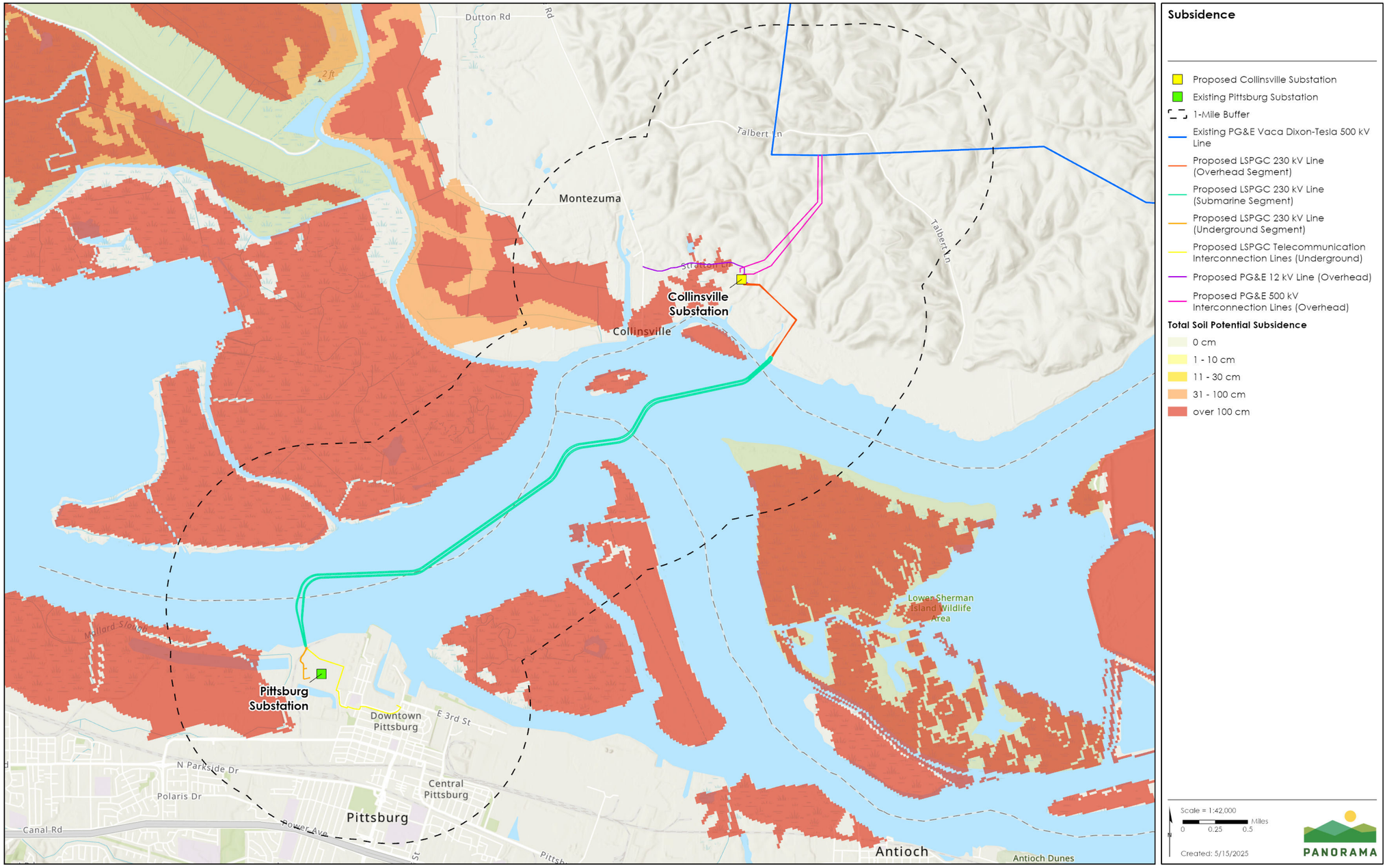
Land subsidence is the sinking or collapsing of the Earth's surface that may occur naturally or result from excessive groundwater pumping, drainage of organic soils, or underground mining (USGS 2019). Seismic activity increases the potential for land subsidence to occur.

The Delta has a history of land subsidence resulting from peat loss. As depicted in Figure 4.7-3, areas of subsidence potential greater than 100 centimeters have been documented within a portion of the Proposed Project area. Most of the Proposed Project area is not located in areas identified as susceptible to potential subsidence. (NRCS 2021; NRCS 2023).

Seismicity and Faults

The term *seismicity* describes the effects of seismic waves radiated from an earthquake fault in motion. Seismicity can result in seismic-related hazards (i.e., fault rupture, ground shaking, and liquefaction). Faults form in rocks when stress overcomes the internal strength of the rock, and surface fault rupture occurs when movement on a fault breaks through to the surface and can result in damage to infrastructure and persons. Ground movement during an earthquake can vary depending on the overall magnitude, distance to the fault, focus of earthquake energy, and type of geologic material. The composition of underlying soils, even those relatively distant from faults, can intensify ground shaking. Strong ground shaking from an earthquake can result in damage to buildings foundations and other infrastructure (CGS 2008).

Figure 4.7-3 Subsidence Within Proposed Project Area



Source: (NRCS 2023)

Faults

Faults are fractures or lines of weakness in the Earth's crust. Sudden movement along a fault generates an earthquake. There is one Holocene-active[1] fault, the Avon Section of the Concord fault, within 10 miles of the Proposed Project site. All other known faults identified within 10 miles of the Proposed Project site (Figure 4.7-4) are considered pre-Holocene[2] faults. Table 4.7-4 provides details on each fault's 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 Rio Vista fault (also known as the Kirby Hills fault or the Pittsburg-Kirby Hills fault) transects portions of the Proposed Project south of the Delta. 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 (Klotsko et al. 2023).

Most of the recorded seismicity on the Rio Vista fault has occurred at depths greater than 14 kilometers (km) and as much and 25 km. Although most measured seismicity is below a magnitude (M) 4, a M6 earthquake occurred in May 1889 in the vicinity of Pittsburg and Antioch. The epicenter of this event is unknown; however, the Rio Vista fault is the most likely source for this earthquake (Klotsko et al. 2023). The Rio Vista fault is considered a pre-Holocene fault, with the most recent surface rupture less than 130 thousand years ago (U.S. Geological Survey (USGS) 2020). While there is evidence of recent seismic activity along the Rio Vista fault, there is no evidence of surface rupture based on the pre-Holocene designation.

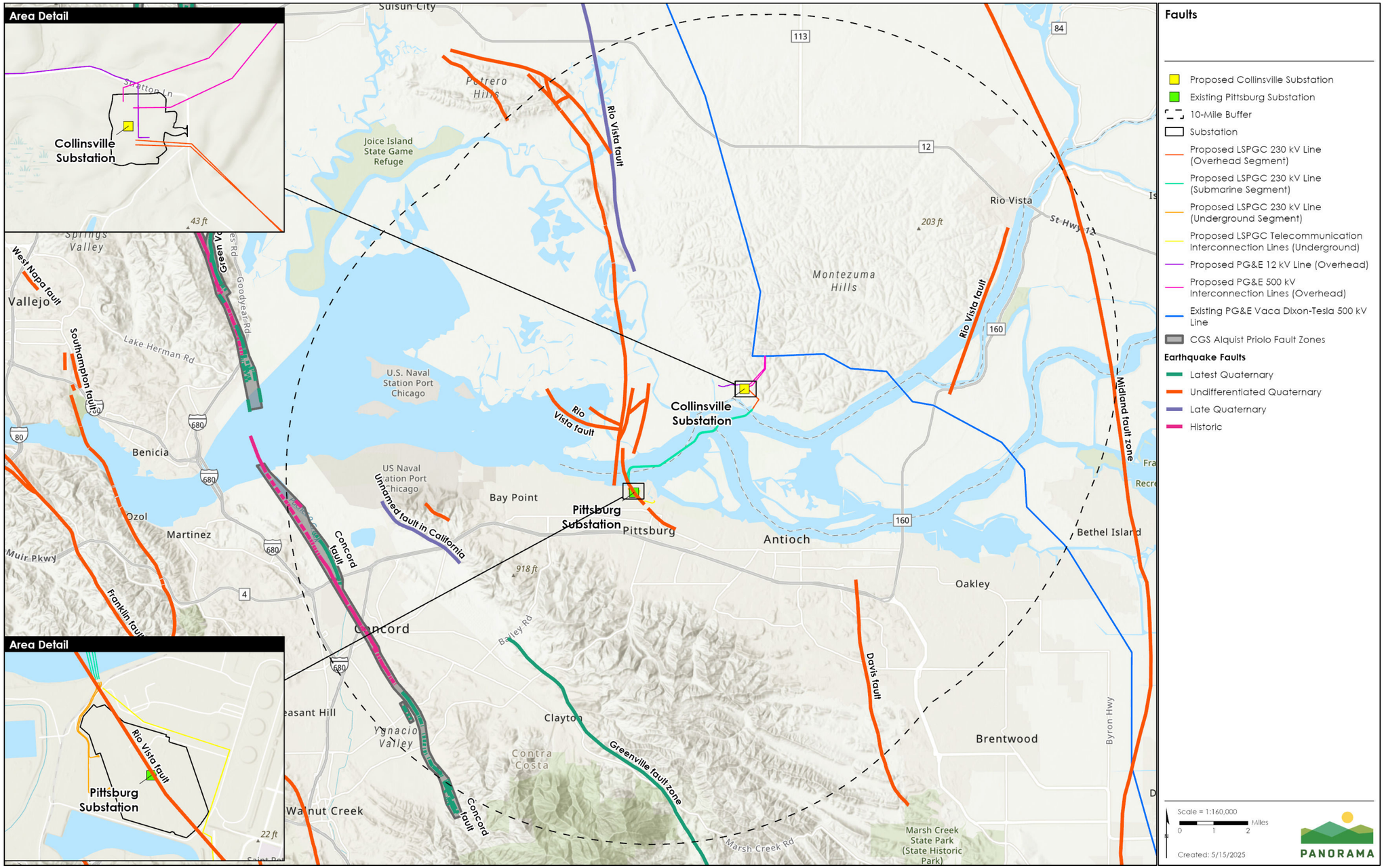
Fault Rupture

Surface fault rupture occurs when fault movement causes displacement of surface deposits. The displacement may result from a large-magnitude earthquake or from *creep*—measurable surface displacement in the absence of an earthquake) along a fault without an associated earthquake. The Alquist-Priolo Earthquake Fault Zoning Act (A-P Act) designates Earthquake Fault Zones (EFZs) based on the presence of a Holocene-active[3] fault. Pre-Holocene faults are considered to have a lower risk of surface fault rupture, and so construction along pre-Holocene faults is not regulated by the A-P Act (CGS 2018).

The terms "Holocene-active" and "pre-Holocene" faults are used specifically in the context of the A-P Act to distinguish between fault that have shown evidence of surface rupture in the last 11,500 years and those with evidence of surface rupture older than 11,500 years. A pre-Holocene fault may still have had an earthquake event during the Holocene Epoch—and could still result in strong ground shaking—but there was no evidence of displacement at the surface.

[1] A Holocene-active fault is a fault that has had surface displacement during the Holocene Epoch (i.e., the last 11,700 years).
[2] A pre-Holocene fault is fault where the last evidence of surface displacement is older than 11,700 years.
[3] A Holocene-active fault is a fault that has had surface displacement during the Holocene Epoch (i.e., the last 11,700 years).

Figure 4.7-4 Faults Located Within 10 Miles of the Proposed Project Site



Source: (U.S. Geological Survey (USGS) 2020)

Table 4.7-4 Faults Located Within 10 Miles of the Proposed Project

Fault name	Fault type	Fault section	Fault length	Maximum moment magnitude	Age of last known slip	Slip rate (mm/yr)	Approximate distance to Proposed Project	Nearest Proposed Project components
Midland Fault	Reverse, right lateral	INA	88 km	INA	Undifferentiated Quaternary (less than 1.6 million years)	INA	10 miles	PG&E 500 kV interconnection lines
Rio Vista Fault	Fault, concealed	INA	53 km	INA	Late Quaternary (less than 130,000 years)	INA	0 miles (crossed)	LSPGC 230 kV submarine and underground segments LSPGC telecommunications lines Pittsburg Substation
Davis Fault	Fault, certain	N/A	INA	INA	Undifferentiated Quaternary (less than 1.6 million years)	INA	6 miles	LSPGC telecommunication interconnection lines
Greenville Fault	Right lateral, strike-slip	Clayton section	16 km	6.6	Latest Quaternary (less than 15,000 years)	0.2–1.0	5 miles	LSPGC telecommunication interconnection lines
Unnamed Fault	Fault, certain	INA	INA	INA	Undifferentiated Quaternary (less than 1.6 million years)	INA	6 miles	LSPGC 230kV underground segment
Unnamed Fault	Fault, certain	INA	INA	INA	Late Quaternary (less than 130,000 years old)	INA	6 miles	LSPGC 230kV underground segment
Concord Fault	Right lateral, strike-slip	Concord Section	4 km	6.2	Latest Quaternary (less than 15,000 years)	1.0–5.0	9 miles	LSPGC 230kV underground segment

Notes:

INA = information not available

Source: (USGS 2020; USGS 2024)

There may also be a risk of surface fault rupture in other areas, outside of Holocene-active fault zones, where faults have either not been identified or are incompletely studied. No A-P faults are located within the Proposed Project area. The proposed LSPGC 230 kV submarine segment crosses the Rio Vista fault; however, as mentioned previously, the Rio Vista fault is not classified as an EFZ due to the pre-Holocene age of the last surface rupture.

Ground Motion

Ground shaking is the seismic effect that results in most structural damage. The Proposed Project area is located in Seismic Zone 4, as defined by Nuclear Regulatory Committee (NRC). Seismic Zone 4 areas include those closest to active faults that are expected to experience ground motion during an earthquake of at least 0.40 g (*g* being the acceleration due to gravity) (NRC 2015). The faults and fault systems in the Proposed Project region have the potential to produce high-magnitude earthquakes, including within the Proposed Project area and vicinity. Earthquake magnitude, distance from the earthquake epicenter, and the geologic materials underlying and surrounding the area determine the intensity of ground motion (seismic shaking) during a seismic event. The peak ground acceleration at the Collinsville Substation site is approximately 0.780 g (Terracon 2025b).

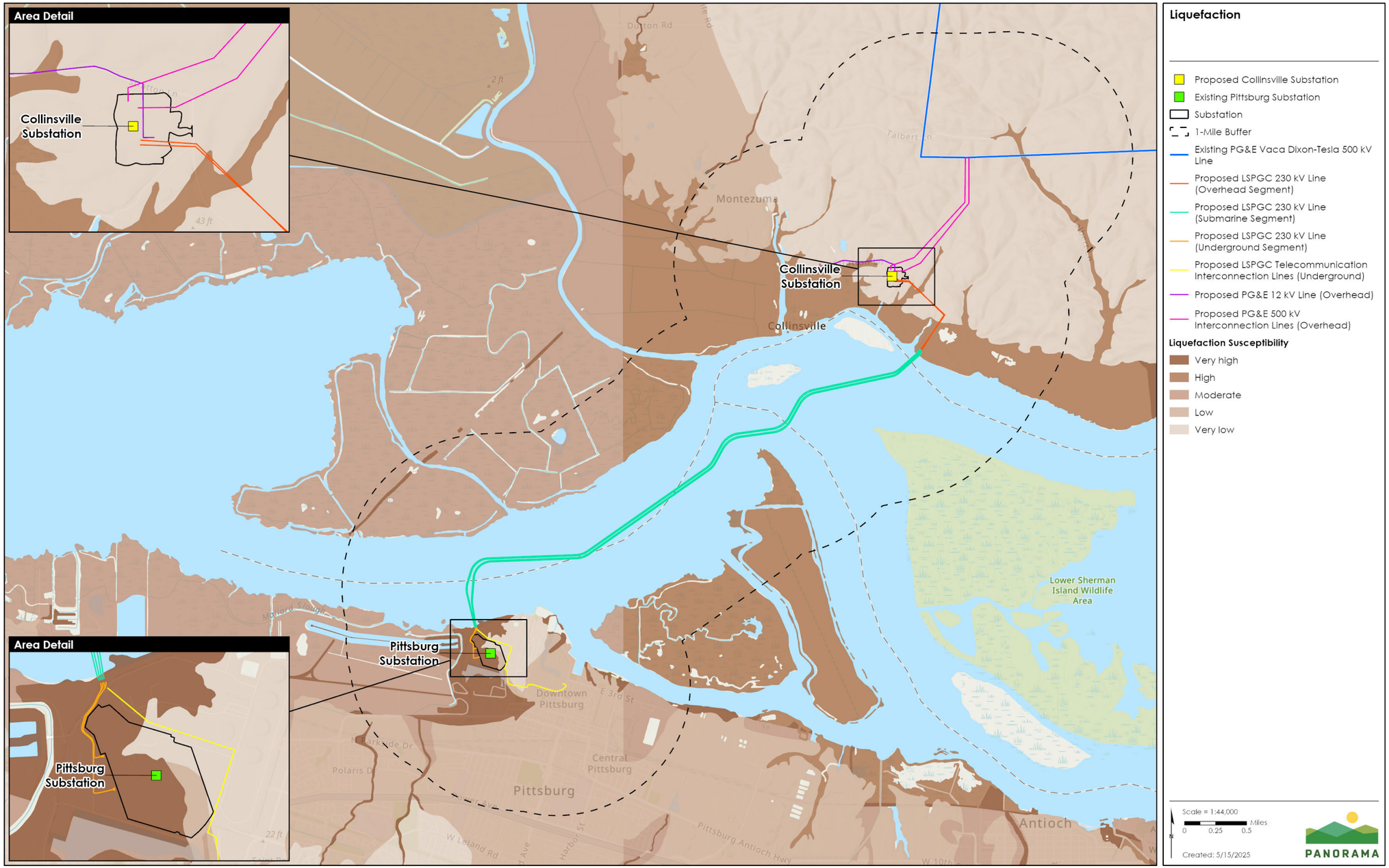
Liquefaction

Liquefaction occurs when loosely packed, water-logged sediments at or near the ground surface lose their strength in response to strong ground shaking (USGS 2022). Liquefaction causes the ground to lose its stability and move or collapse, which can cause severe damage to buildings and structures. Figure 4.7-5 classifies the liquefaction potential within Proposed Project area. Portions of the Proposed Project area in proximity to the Delta have a very high liquefaction potential. The Collinsville Substation is within an area designated as having a very low susceptibility to liquefaction and portions of the 230 kV overhead and underground transmission alignments and the telecommunications alignments are within areas designated as having a high liquefaction susceptibility (Terracon 2025b).

Lateral Spreading

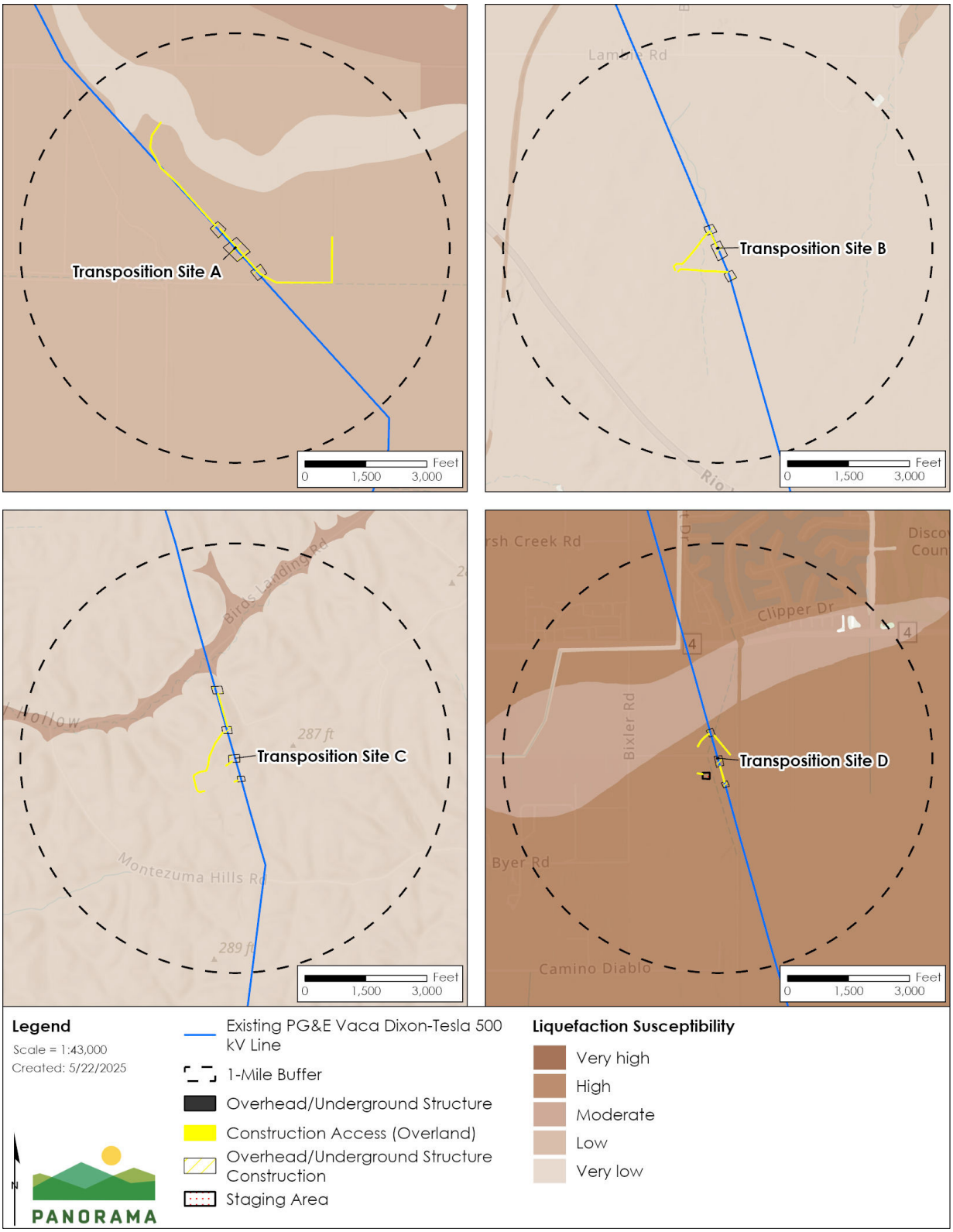
Lateral spreading is a phenomenon that involves lateral displacement of large, intact blocks of soil down gentle slopes or toward a steep, free face such as a stream bank. Lateral spreading can occur in fine-grained, sensitive soils such as quick clays, particularly if remolded or disturbed by construction and grading. Loose, granular soils present on gentle slopes and underlain by a shallow water table commonly produce lateral spreads through liquefaction. Lateral spreading occurs as a result of liquefaction of a shallow underlying deposit during an earthquake. It typically occurs on slopes of 0.3 percent to 5 percent underlain by loose sands and a shallow water table (Bartlett and Youd 1992). Areas at risk of lateral spreading include portions of the Proposed Project area near the Delta that have a very high risk of liquefaction.

Figure 4.7-5 Liquefaction Areas in the Proposed Project Vicinity



Source: (CGS 2022)

Figure 4.7-5 *(Continued)* Liquefaction Areas in the Proposed Project Vicinity



Source: (CGS 2022)

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 (e.g., grading), or any combination of these factors (USGS 2025). These activities can result in unstable fill slopes or excessive cuts. According to the CGS and USGS, no portion of the Proposed Project site would be located in a landslide zone (CGS 2010) (U.S. Geological Survey (USGS) 2024). The Solano County General Plan's Public Health and Safety Element does not identify the Collinsville area as susceptible to landslides (Solano County 2024). Likewise, the Contra Costa County Hazard Mitigation Plan does not consider the City of Pittsburg susceptible to landslides (Contra Costa County 2024b). Solano County identifies the areas of transposition sites B and C as susceptible to landslides. In addition, the Proposed Project is relatively flat and does not cross any areas with a record of major historical landslides (CDOC n.d.).

Paleontological Resources

Definitions

Paleontological resources—or fossils—are the remains of ancient plants and animals that can provide scientifically significant information about the history of life on earth. *Paleontological sensitivity* is defined as the potential for a geologic unit to produce scientifically significant fossils. Paleontological sensitivity is determined by rock type, history of the rock unit in producing significant fossils, and fossil localities that are recorded from that unit. Paleontological sensitivity is assigned based on fossil data collected from the entire geologic unit, not just at a specific site. Paleontological sensitivity ratings are as follows:

- High sensitivity: Indicates fossils are currently observed onsite, localities are recorded within the study area, and/or the unit has a history of producing numerous significant fossils remains.
- Moderate sensitivity: Fossils within the unit are generally not unique or are so poorly preserved as to have only moderate scientific significance.
- Low sensitivity: Indicates significant fossils are not likely to be found because of a random fossil distribution pattern, extreme youth of the rock unit and/or the method of rock formation, such as alteration by heat and pressure.
- No sensitivity: Origin of the geologic unit renders it not conducive to the existence of organisms and/or preservation of fossils, such as high-grade metamorphic rocks, intrusive igneous rocks, and most volcanic rocks.
- Indeterminate sensitivity: Unknown or undetermined sensitivity indicates that the rock unit has not been sufficiently studied or lacks good exposures to warrant a definitive rating. An experienced, professional paleontologist can often determine whether the stratigraphic unit should be categorized as having high or low sensitivity after reconnaissance surveys including observations of road cuts, stream banks, and possible subsurface testing, such as augering or trenching.

Fossils are considered to be non-renewable because they are the remains of prehistoric animal and plant life. Impacts to paleontological resources are based on the resource sensitivity of impacted formations (SVP 2010).

Paleontological Resource Investigation

A Paleontological Resource Memorandum was prepared by Chronicle Heritage for the Proposed Project (Chronicle Heritage 2024). 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 site vicinity and region. The memorandum was written in accordance with the guidelines set forth by the Society of Vertebrate Paleontology (SVP) (2010).

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 4.7-5 summarizes the findings from the NHMLAC records search.

Table 4.7-5 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; Dooley et al. 2019; University of California Museum of Paleontology 2023)

The geologic units within the Proposed Project area were discussed previously under Geologic Setting and Units. The geologic units underlying the area of the Delta are not mapped by Graymer et al. (Graymer, D.L Jones, 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 4.7-6.

Table 4.7-6 Geologic Units Crossed by the Proposed Project

Geologic unit	Typical fossils	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)	Bison, feral horse, horse, ground sloth, badger, deer, Pacific mastodon, mammoth, eutheria, elk, and camelid	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; Dooley et al. 2019; University of California Museum of Paleontology 2023; Society of Vertebrate Paleontology (SVP) 2010)

4.7.2 Regulatory Setting

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.
- 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.

National Pollutant Discharge Elimination System
The National Pollutant Discharge Elimination System (NPDES) permit program, authorized by Section 402(p) of the federal Clean Water Act, controls water pollution by regulating point sources, such as construction sites and industrial operations, that discharge pollutants into waters of the United States.

The NPDES General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (General Permit) (Order WQ 2022-0057-DWQ, NPDES No. CAS000002) regulates discharges to waters of the United States (WOTUS) from stormwater and authorized non-stormwater associated with construction activity from sites that disturb one or more acres of land surface, or that are part of a common plan of development or sale that disturbs more than one acre of land surface.

The General Permit requires the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP) that includes specific *best management practices* (BMPs) designed to prevent sediment and pollutants from coming into contact with stormwater and moving off site into receiving waters. The BMPs fall into several categories, including erosion control, sediment control, waste management, and good housekeeping. They are intended to protect surface water quality by preventing eroded soil and construction-related pollutants from migrating off site from the construction area. Routine monitoring of all BMPs is required under the General Permit. The General Permit also sets post-construction standards (i.e., implementation of BMPs to reduce pollutants in stormwater discharges from the site after construction).

In the Proposed Project area, the General Permit is implemented and enforced by the San Francisco Bay Regional Water Quality Control Board, which administers the stormwater permitting program. Portions of the Proposed Project are also within the Central Valley Regional Water Quality Board jurisdiction.

State

Alquist-Priolo Earthquake Fault Zoning Act
The Alquist-Priolo Earthquake Fault Zoning Act (A-P Act) was passed in 1972 to mitigate the hazard of surface fault rupture to structures for human occupancy. In accordance with the A-P Act, the State Geologist establishes regulatory zones, called Earthquake Fault Zones (EFZs), around the surface traces of Holocene-active faults and publishes maps depicting these zones. The A-P Act regulates the construction of structures for human occupancy within these zones, which extend approximately 200 to 500 feet on either side of a mapped fault trace. California Code of Regulations (CCR) title 14, section 3601(e) defines buildings intended for human occupancy as those that would be inhabited for more than 2,000 hours per year.

Power transmission support structures are not intended for human occupancy; therefore, they do not fall within the Alquist-Priolo Special Studies Zones requirements.

California Building Code

The California Building Code (CBC), which is codified in Title 24 of the California Code of Regulations (Cal. Code Regs.), Part 2, was promulgated to safeguard public health, safety, and general welfare by establishing minimum standards related to structural strength, means of egress to facilities (entering and exiting), and general stability of buildings. The purpose of the CBC is to regulate and control design, construction, quality of materials, use/occupancy, location, and maintenance of all buildings and structures within its jurisdiction. The California Building Standards Commission administers Title 24 and, by law, is responsible for coordinating all building standards. Under state law, all building standards must be centralized in Title 24 or they are not enforceable, and the provisions of the CBC apply to the construction, alteration, movement, replacement, repair, location, maintenance, and demolition of every building or structure or any appurtenances connected or attached to such buildings or structures throughout California.

The Proposed Project is subject to the applicable sections of title 24, part 2 of the CBC. 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 CBC provides requirements for general structural design and includes means for determining earthquake loads and other loads (such as wind loads) for inclusion in building codes.

California Public Utilities Commission General Order 95 and 128

California Public Utilities Commission (CPUC) General Order (GO) 95 (Rules for Overhead Line Construction) establishes uniform requirements for the design, construction, operation, and maintenance of overhead electric supply and communication lines. The order addresses safety, reliability, and engineering standards (including strength requirements, structural clearances, loading criteria, and vegetation management) to reduce hazards (e.g., conductor contact, pole or tower failure, and fire risk). Compliance reduces the potential for structural failure or contact events due to geologic hazards such as ground movement, subsidence, or slope instability. GO 128 (Rules for Construction of Underground Electric Supply and Communication Systems) sets forth design, construction, and maintenance standards for underground electric and communication facilities. GO 128 addresses protective structure design, burial depths, separation from other utilities, grounding, and backfill requirements to ensure system integrity and safety. Adherence to GO 128 minimizes risks associated with geologic conditions such as soil instability, corrosion potential, and seismic ground deformation.

Seismic Hazards Mapping Act

Like the Alquist-Priolo Earthquake Fault Zoning Act, the Seismic Hazards Mapping Act of 1990 (Public Resources Code [PRC] §§ 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.

Local

Pursuant to 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."

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 2024):

> **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-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, Open Space, and Working Lands Element of the Contra Costa County General Plan contains nine sections designed to promote conservation, preservation, and enhancement of species, habitats, open spaces, working lands, and natural and cultural resources. The following policy from the Historic and Cultural Resources and the Scenic Resources sections of the Conservation Element are relevant to the Proposed Project (Contra Costa County 2024a):

> **COS-P10.7:** Require significant historic, archaeological, and paleontological resources to be either preserved onsite or adequately documented as a condition of removal.

The Safety Element of the Contra Costa County General Plan identifies seismic and geologic hazards in the region and outlines goals, policies, and implementation measures that ensure people, property, and infrastructure are protected. The following policies from the Seismic and

Geologic Hazards section of the Health and Safety Element are relevant to the Proposed Project (Contra Costa County 2024a):

> **HS-P11.1:** For projects in Alquist-Priolo Earthquake Fault Zones or Seismic Hazard Zones (areas considered to be at risk of earthquake triggered liquefaction or landslide displacement) delineated by the California Geological Survey, as well as any other areas of steep slopes or areas of suspected ground failure known to the County, require submittal of appropriately detailed engineering geologic or geotechnical investigations. The reports must be compliant with State Guidelines and include:
>
> A map showing the outline of any geologic or potentially hazardous soil condition and areas subject to inundation.
>
> Recommended means of mitigation of any adverse conditions representing a hazard to improvements.
>
> Recommendations to assure proper implementation of mitigation measures during construction.
>
> **HS-P11.3:** Discourage construction of critical facilities and buildings intended for human occupancy in Alquist-Priolo Fault Zones and encourage earthquake retrofitting where such development already exists. If there is no feasible alternative to siting critical facilities and buildings intended for human occupancy in the Fault Zones, buildings must be sited, designed, and constructed to withstand the anticipated seismic stresses.
>
> **HS-P11.5:** Discourage development on slopes exceeding 15 percent, and prohibit development on slopes of 26 percent or greater, to avoid slope instability, unnecessary grading, and extensive land disturbance, and facilitate long-term control of erosion and sedimentation. Exceptions may be considered for infrastructure projects and development on existing legal lots where no other feasible building sites exist.

Alameda County

PG&E's proposed work at PG&E's existing Tesla Substation located in Alameda County would occur within the substation fence line and would not require ground disturbance. As a result, land use plans and policies for Alameda County were not assessed.

City of Pittsburg General Plan

The City of Pittsburg General Plan's (2023) Resource Conservation and Open Space Element contains goals and related policies relating to geologic, soils, and paleontological resources conservation relevant to the Proposed Project.

The Soils Conservation goal aims to protect and preserve soil quality and availability through following policy relevant to the Proposed Project:

> **Policy 10-P-3.1:** Require development to use best management practices (BMPs) to minimize the runoff and erosion caused by earth movement.

The Cultural and Historic Resources goal provides an overview of cultural and historic (including paleontological) resources conservation, and contains the following policy relevant to the Proposed Project:

> **Policy 10-P-7.3:** Protect archaeological/paleontological sites from destruction in order to preserve and interpret them for future scientific research, and public educational programs.

The Safety and Resiliency 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 risk to life and property from geologic and seismic hazards. The following policies from the Safety and Resiliency element are relevant to the Proposed Project:

> **Policy 11-P-4.1:** Regulate development in areas of seismic and geologic hazards to reduce risks to life and property associated with earthquakes, liquefaction, erosion, landslides, and expansive soils, and require new development, redevelopment, and infrastructure projects to avoid unreasonable exposure to seismic and geologic hazards.
>
> **Policy 11-P-4.6:** Continue to require geotechnical review of projects located in areas of steep slopes, unstable soils, or other areas of geologic or seismic risks.
>
> **Policy 11-P-4.8:** Ensure geotechnical studies prior to development approval in geologic hazard areas. Comprehensive geologic and engineering studies of critical structures shall be required regardless of location.
>
> **Policy 11-P-4.9:** Ensure that public and critical use buildings shall not be located in areas susceptible to potential natural hazards. Require geotechnical investigations to be completed prior to approval of any public safety or critical facilities, in order to ensure that these critical facilities are constructed in a way that mitigates site-specific seismic and/or geologic hazards.

4.7.3 Approach to Impact Analysis

The analysis of impacts on geology, soils, and paleontological resources applies the impact criteria and significance thresholds defined in the following subsection. The LSPGC Applicant Proposed Measures (APMs) and PG&E Construction Measures (CMs) are considered when making the impact determinations for geology, soils, and paleontological resources, as shown in Table 4.7-7. Impact conclusions are based on separate analyses of LSGPC and PG&E project components, the Proposed Project as a whole, cumulative impacts, and alternatives. Mitigation measures are defined to reduce or avoid significant impacts, where feasible.

In 2015, the California Supreme Court in *California Building Industry Assn. v. Bay Area Air Quality Management Dist.* (2015) 62 Cal.4th 369, held that CEQA generally does not require a lead agency to consider the impacts of existing environmental conditions on the future occupants or users of a project. More specifically, the Supreme Court invalidated prior language in Guidelines section 15126.2, subdivision (a), specifically: "[A]n EIR on a subdivision astride an

active fault line should identify as a significant effect the seismic hazard to future occupants of the subdivision. The subdivision would have the effect of attracting people to the location and exposing them to the hazards found there." This language has since been removed from the CEQA Guidelines. However, if a project could exacerbate pre-existing environmental hazards or conditions, the lead agency must analyze the impact of that exacerbated condition on the environment.

Impact Criteria and Thresholds of Significance

The following impact criteria have been derived from Appendix G of the CEQA Guidelines to evaluate impacts on geology, soils, and paleontological resources. Appendix G of the CEQA Guidelines asks whether a project would:

- Impact GEO-1: 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;
  - Strong seismic ground shaking;
  - Seismic-related ground failure, including liquefaction; or
  - Landslides?
- Impact GEO-2: Result in substantial soil erosion or the loss of topsoil?
- Impact GEO-3: 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?
- Impact GEO-4: Be located on expansive soil, creating substantial direct or indirect risks to life or property?
- Impact GEO-5: Be located in an area that has 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?
- Impact GEO-6: Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Applicant Proposed Measures and Construction Measures

The LSPGC APMs and PG&E CMs identified in Chapter 2: Project Description that are relevant to the geology, soils, and paleontological resources impact analysis are listed in Table 4.7-7.

Table 4.7-7 APMs and CMs Relevant to Geology, Soils, and Paleontological Resources

LSPGC APMs and PG&E CMs
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.

LSPGC APMs and PG&E CMs

- 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 preconstruction 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.

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 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 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.

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,

LSPGC APMs and PG&E CMs
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 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.
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.

4.7.4 Impact Analysis – Proposed Project

Table 4.7-8 presents a summary of the CEQA significance criteria and impacts on geology and soils that would occur during construction, operation, and maintenance of the Proposed Project.

Table 4.7-8 Summary of Impacts on Geology, Soils, and Paleontological Resources for the Proposed Project

Impact criteria: Would the project …	APMs /CMs applied	Significance Before Mitigation	Mitigation Measures Required	Significance After Mitigation
Impact GEO-1: 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.	None	NI	None	NA
ii. Strong seismic ground shaking?	None	NI	None	NA
iii. Seismic-related ground failure, including liquefaction?	None	NI	None	NA
iv. Landslides?	None	NI	None	NA
Impact GEO-2: Result in substantial soil erosion or the loss of topsoil?	APM GEO-1 CM GEO-1	LTS	None	NA
Impact GEO-3: 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?	None	NI	None	NA
Impact GEO-4: Be located on expansive soil creating substantial direct or indirect risks to life or property?	None	NI	None	NA
Impact GEO-5: 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?	None	NI	None	NA
Impact GEO-6: Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	APM PALEO-1 APM PALEO-2 CM PALEO-1 CM PALEO-2	S	MM GEO-1	LTSM

Notes:

LTS = less than significant

LTSM = less than significant with mitigation
NI = no impact
S = significant
NA = not applicable

Impact GEO-1: Would Proposed Project 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? *(No impact)*

LSPGC Project Components

The proposed LSPGC 230 kV submarine segment alignment, LSPGC 230 kV underground segment alignment, and LSPGC telecommunications interconnection lines alignment cross or are located adjacent the Rio Vista fault. As discussed in Section 4.7.2: Environmental Setting, the Rio Vista fault is considered a pre-Holocene fault and has not shown evidence of surface rupture in the last 11,700 years. The nearest Holocene-active fault to the Proposed Project is the Concord fault zone (approximately 10 miles west of the Proposed Project) (Geosyntec Consultants 2024).

None of the LSPGC project components would be located within an Alquist-Priolo earthquake fault zone or would cross an active fault. This being the case, construction, operation, and maintenance of LSPGC project components would have no potential to cause or exacerbate adverse effects from rupture of a known earthquake fault delineated on the Alquist-Priolo Earthquake Fault Zoning Map.

PG&E Project Components

None of the PG&E project components are located within an Alquist-Priolo fault zone or cross an active fault. This being the case, construction, operation, and maintenance of PG&E project components would have no potential to cause or exacerbate adverse effects from rupture of a known earthquake fault delineated on the Alquist-Priolo Earthquake Fault Zoning Map. There would be no impact.

ii. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking? *(No impact)*

Construction

LSPGC Project Components

The San Francisco Bay Area is a seismically active area of California and has been subject to major earthquakes in the past. As listed in Table 4.7-4, there are several faults within 10 miles of the Proposed Project site, including the Concord fault. The Concord fault zone is a Holocene-active fault and an established EFZ. The Green Valley fault zone is approximately 12 miles northwest of the Proposed Project and is also an established EFZ. As discussed above, the proposed LSPGC 230 kV submarine segment alignment, LSPGC 230 kV underground segment

alignment, and LSPGC telecommunication interconnection lines alignment are proposed in proximity to the Rio Vista fault. The Rio Vista fault is classified as pre-Holocene fault by the A-P Act definition (i.e., does not show evidence of surface rupture or displacement in the last 11,700 years); however, there have been relatively low magnitude earthquakes on this fault in recent history (Klotsko et al. 2023). As discussed in Section 4.7.2: Environmental Setting, although the Concord and Green Valley fault zones are 10 miles or more away from the Proposed Project, an earthquake within these fault zones could result in very strong to severe ground shaking in the area of the Proposed Project area.

Induced seismicity can occur when human activities alter subsurface stress conditions, such as through large-scale wastewater injection, geothermal energy production, or deep underground mining. Construction activities associated with the Proposed Project would not include activities that would induce or increase the likelihood of an earthquake and, therefore, would not exacerbate the existing risk of ground shaking and no impact would occur.

PG&E Project Components

Similar to the LSPGC project components, PG&E project components would be constructed within a seismically active region. As stated in Chapter 2: Project Description, construction of PG&E project components would last approximately 8 months.

As discussed in Section 4.7.2: Environmental Setting, although the Concord and Green Valley fault zones are 10 miles or more away from the Proposed Project, an earthquake within these fault zones could result in very strong to severe ground shaking in the area of the Proposed Project area.

Construction activities associated with the Proposed Project would not include activities that would induce or increase the likelihood of an earthquake and, therefore, would not exacerbate the existing risk of ground shaking. No impact related to the exacerbation of seismic ground shaking would occur.

Operation and Maintenance

LSPGC Components

The LSPGC project components, including 230 kV transmission line structures and substation equipment, would be designed compliant with CPUC GO 95 and the CBC. The CBC and GO 95 require that all structures be constructed based on recommendations provided in a site-specific, design-level geotechnical report to ensure that they are designed to withstand the effects of strong seismic ground shaking during operation. By incorporating the geotechnical recommendations into the design of the Proposed Project, the Proposed Project would avoid exacerbating existing hazards due to seismicity. In addition, there are no habitable structures in proximity to the proposed 230 kV transmission line or substation. Therefore, no impact associated with loss, injury or death associated with strong seismic ground shaking would occur.

PG&E Components
The PG&E project components, including the 500 kV interconnection transmission line lattice steel towers (LSTs), 12 kV distribution line supports, and transposition structures would be designed compliant with CPUC GO 95. GO 95 requires that all structures be constructed based on recommendations provided in a site-specific, design-level geotechnical report to ensure that they are designed to withstand the effects of strong seismic ground shaking during operation. By incorporating the geotechnical recommendations into the design of the Proposed Project, the Proposed Project would avoid exacerbating existing hazards due to seismicity and no impact would occur.

iii. Seismic-related ground failure, including liquefaction? *(No impact)*

Construction

LSPGC 230 kV Overhead Segment, LSPGC 230 kV Underground Segment, and LSPGC Telecommunication Interconnection Lines
Portions of the proposed LSPGC telecommunication interconnection lines alignment cross areas mapped as having very high to moderate liquefaction potential (Solano County 2024). In addition, portions of the proposed LSPGC 230 kV overhead segment alignment and 230 kV underground segment alignment (on the southern shore of the Delta) would be in an area mapped as having a very high liquefaction potential (Figure 4.7-4 and Figure 4.7-5).

Construction activities associated with the Proposed Project would not include activities that would induce or increase the likelihood of an earthquake or cause excessive ground shaking and, therefore, would not exacerbate the existing risk of liquefaction. No impact would occur from exacerbation of seismic ground failure, including liquefaction.

LSPGC Collinsville Substation
The proposed LSPGC Collinsville Substation would be in an area mapped as having a very low liquefaction potential. Given the low liquefaction potential at the Collinsville Substation site, the risk of directly or indirectly causing substantial adverse effects involving liquefaction would be low. As construction of the Collinsville Substation would not induce or increase the likelihood of hazards, no impact would occur.

LSPGC 230 kV Submarine Segment
The proposed LSPGC 230 kV submarine segment would be installed in the Delta waterways and would not be in an area susceptible to liquefaction. No impact from seismic-related ground failure would occur due to installation of the submarine cable.

PG&E Project Components
The proposed PG&E 12 kV distribution line alignment and existing transposition site D are located in an area mapped as having a high liquefaction potential. The proposed PG&E 500 kV interconnection lines alignment and existing transposition sites A, B, and C are located in an area mapped as having a very low to low liquefaction potential or have not been assessed (Figure 4.7-4 and Figure 4.7-5).

Construction activities associated with the Proposed Project would not include activities that would induce or increase the likelihood of an earthquake or cause excessive ground shaking and, therefore, would not exacerbate the existing risk of liquefaction. No impact would occur from exacerbation of seismic ground failure, including liquefaction.

Operation and Maintenance

LSPGC Components

The LSPGC Collinsville Substation and 230 kV submarine segment would be in areas mapped as having a very low or no liquefaction susceptibility and are not discussed further.

Portions of the proposed LSPGC telecommunication interconnection lines alignment cross areas mapped as having very high to moderate liquefaction potential (Solano County 2024). In addition, portions of the proposed LSPGC 230 kV overhead segment alignment and 230 kV underground segment alignment (on the southern shore of the Delta) would be in an area mapped as having a very high liquefaction potential. However, the LSPGC telecommunication interconnection lines and 230 kV underground segment would be installed underground, and the effects of liquefaction would not cause Proposed Project infrastructure to damage existing, adjacent infrastructure. Therefore, no impact would occur from the underground infrastructure.

Two geotechnical investigations were conducted for the LSPGC onshore project components, which include the 230-kV overhead and underground segments (Geosyntec Consultants 2025b; 2025a). These geotechnical investigations identify liquefaction hazards that would affect project design and recommend future investigation of liquefaction hazards to develop design options that would address liquefaction hazards.

The risks associated with liquefaction would be exacerbated during operation if the LSPGC components are not designed and engineered appropriately during construction. In the event of an earthquake on a nearby fault, if structures are not engineered properly, the effects of liquefaction could cause 230 kV overhead towers to topple. However, there is no habitable infrastructure (e.g., residences or other buildings) adjacent to the alignment. The Proposed Project would not result in risk of loss, injury, or death involving liquefaction due to the absence of nearby structures; therefore, no impact would occur.

PG&E Project Components

PG&E project components, except for the proposed 12 kV distribution line alignment and existing transposition site D, are in areas of low liquefaction hazard. As these areas are within areas of low liquefaction susceptibility, the operational impact of these components would be less than significant.

The geotechnical reports that were prepared for the Proposed Project analyze the LSPGC components and do not provide recommendations for the PG&E 12 kV distribution line or the 500 kV interconnection line.

The proposed 12 kV distribution line alignment and existing transposition site D are located in areas with high liquefaction risk. The risks associated with liquefaction could be exacerbated

during operation if the PG&E components are not designed and engineered appropriately during construction. In the event of an earthquake on a nearby fault, if structures are not engineered properly, the effects of liquefaction could cause towers to topple. However, there is no habitable infrastructure (e.g., residences or other buildings) adjacent to the alignment. The Proposed Project would not result in risk of loss, injury, or death involving liquefaction and no impact would occur.

iv. Landslides? *(No impact)*

LSPGC Project Components

None of the LSPGC project components are proposed within a landslide hazard zone (CGS 2025). The LSPGC project component areas are relatively flat and are not prone to landslides. Due to the gentle slope within the LSPGC project component area, no landslide could occur within the area of the LSPGC project components and construction, operation, and maintenance of LSPGC project components would not cause a landslide hazard. Thus, no impact from landslides would occur.

PG&E Project Components

None of the PG&E 500 kV interconnection lines support structures or 12 kV distribution line poles are located within a landslide hazard area (CGS 2025). Construction, operation, and maintenance of the 500 kV interconnection lines, 12 kV distribution line, and upgrades to existing substations would have no impact on landslide hazards due to the absence of conditions for a landslide (e.g., absence of steep slopes) in the area.

Solano County identifies the areas of transposition sites B and C as susceptible to landslides. Construction of the transposition structures would involve installation of three new TSPs at each site using either direct bury or pier foundation methods. These activities would not involve substantial earthmoving or grading, such that it would cause slopes to become unstable, resulting in a landslide. Additionally, there are no habitable structures adjacent to transposition sites B and C, and the Proposed Project would not result in loss, injury, or death involving landslides. Therefore, no impact would occur.

Impact GEO-2: Would the Proposed Project result in substantial soil erosion or the loss of topsoil? *(Less than significant)*

Construction

LSPGC Project Components

Grading would occur along new access roads (9.9 acres), staging areas (67.1 acres), at the proposed LSPGC Collinsville Substation (28.3 acres), and within work areas for the 230 kV overhead segment (8.6 acres). The total about of grading would be 114.6 acres. 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.

As stated in Chapter 2: Project Description, topsoil would be removed within the 13-acre fenced substation area and the locations of permanent structures. Topsoil reuse would not be feasible

within permanent impact areas, however, these areas would be stabilized as part of construction of project facilities. Additionally, areas of permanent impact would also be subject to APM GEO-1 which requires minimization of topsoil loss, vegetation removal, and soil disturbance by limiting project activities to the areas necessary for construction, access, and vegetation removal to support initial electrical clearance and wildfire prevention requirements. Construction of permanent project structures would not cause substantial erosion or loss of topsoil.

Areas of temporary disturbance, including Collinsville Substation, 230 kV line (overhead, underground, and submarine), and telecommunication interconnection lines have the potential to cause erosion and topsoil loss. 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 with salvaged topsoil, and keeping vegetation and soil disturbance to a minimum.

In addition, as the Proposed Project would disturb 1 acre or more of land, coverage under the Construction Stormwater General Permit (Order 2022-0057-DWQ) would be required. The Construction Stormwater General Permit requires submittal of a Notice of Intent, preparation of a site-specific Storm Water Pollution Prevention Plan (SWPPP), and implementation of site-specific best management practices (BMPs) to address material management, non-storm water discharge, sediment discharge, and erosion control. Potential BMPs to control erosion and off-site sedimentation could include (but would not be limited to) hydroseeding, soil binders, slope roughening, and the use of geotextiles. Potential BMPs that could be used to control sedimentation could include (but would not be limited to) the use of silt fences, fiber rolls (wattles), sediment basins, barriers, and storm drain inlet protections.

With implementation of the SWPPP, which would include BMPs to control erosion and prevent off-site sedimentation, and implementation of APM GEO-1, substantial soil erosion and associated topsoil loss is not anticipated to occur. As a result, the impact on soil erosion and loss of topsoil due to construction of LSPGC project components would be less than significant.

PG&E Project Components

Grading is anticipated along new access roads[4], staging areas (0.7 acres), and work areas for the 500 kV interconnection lines (39 acres), 12 kV distribution line (0.7 acres), and transposition sites (24.2 acres).

Topsoil would be permanently removed within the locations of permanent structures. Topsoil reuse is not feasible within the permanent impact areas; however, these areas would be stabilized by the installation of structure foundations. The impact would be limited to the footprint of the transmission, distribution, and transposition structures. Areas of temporary disturbance have the potential to cause erosion and topsoil loss. PG&E would implement CM

[4] Values for both LSPGC and PG&E access roads are evaluated as an LSPGC project component.

GEO-1, which defines procedures for working in areas in soft or loose soils to minimize soil loss. Because PG&E construction would disturb more than 1 acre, PG&E would also need to comply with the Construction Stormwater General Permit, which requires preparation and implementation of a project-specific SWPPP. The SWPPP must include site-specific BMPs to control erosion, manage topsoil, and prevent off-site sedimentation. Standard BMPs include salvaging and stockpiling topsoil in appropriate temporary work areas for reuse during restoration, limiting vehicle and equipment operation to designated work areas, avoiding grading in saturated soils, and stabilizing or revegetating disturbed areas following construction. With implementation of the SWPPP and BMPs, temporary disturbance would not result in substantial erosion or loss of topsoil. As a result, the impact on soil erosion and topsoil loss due to construction would be less than significant.

Operation and Maintenance

LSPGC and PG&E Project Components

Operation and maintenance 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. Therefore, no impact would occur.

Impact GEO-3: Would the Proposed 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? ***(No impact)***

Construction

LSPGC Collinsville Substation and 230 kV Submarine Segment

The proposed Collinsville Substation site and 230 kV submarine segment alignment are not within landslide hazard zones. The proposed LSPGC Collinsville Substation site is in an area mapped as having a very low liquefaction potential (Solano County 2024). Additionally, 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. As lateral spreading is associated with liquefaction, areas that have a low susceptibility to liquefaction would also have a low susceptibility to the effects of lateral spreading. While the Collinsville substation and submarine segment are located in areas subject to liquefaction and lateral spreading, construction activities would not cause liquefaction or lateral spreading, thus no impact would occur.

LSPGC 230 kV Overhead Segment, 230 kV Underground Segment, and Telecommunication Lines

The proposed 230 kV overhead segment alignment, underground segment alignment and telecommunication interconnection lines alignment are not within landslide hazard zones. Portions of the proposed LSPGC 230 kV overhead segment alignment, 230 kV underground segment alignment, and telecommunication interconnection lines alignment are in an area mapped as having high to very high susceptibility to liquefaction. The areas of high liquefaction

susceptibility would also have a high susceptibility to lateral spreading. However, the LSPGC telecommunication interconnection lines and 230 kV underground segment would be installed underground, and the effects of liquefaction would not cause Proposed Project infrastructure to damage existing, adjacent infrastructure. In addition, trenching for the underground segment and telecommunication lines could present localized risks of trench wall collapse in certain soil or groundwater conditions. These risks would be addressed through compliance with OSHA and Cal/OSHA excavation safety regulations, which require shoring, shielding, or sloping of trenches depending on soil classification and depth.

As discussed above, in Impact GEO-1(iii), the 230 kV overhead segment would be in an area mapped as having a very high liquefaction potential. Construction activities associated with the Proposed Project would not include activities that would induce or increase the likelihood of an earthquake or cause excessive ground shaking and, therefore, would not exacerbate the existing risk of liquefaction and no impact would occur.

PG&E 500 kV Interconnection Transmission Lines, and Existing Substations
The proposed 500 kV interconnection lines alignment and existing substations are not located in areas at risk for landslide hazard, liquefaction, or lateral spreading. Construction of the 500 kV interconnection lines and construction with the existing substations would have no impact from landslides, lateral spreading, or liquefaction.

PG&E Transposition Sites B and C
Solano County identifies the areas of transposition sites B and C as susceptible to landslides. Construction at the transposition sites would involve installation of three new TSPs at each site using either direct bury or pier foundation methods. These activities would not involve substantial earthmoving or grading, such that it would cause slopes to become unstable, resulting in a landslide. Additionally, there are no habitable structures adjacent to transposition sites B and C, and the Proposed Project would not result in loss, injury, or death involving landslides. The impact would be less than significant.

As discussed above, the construction activities associated with the Proposed Project would not exacerbate any of these conditions and no impact would result due to construction of these PG&E components within unstable soil.

PG&E 12 kV Distribution Lines and Transposition Site D
A portion of the proposed 12 kV distribution line alignment and existing transposition site D would be in an area of high liquefaction risk. The 12 kV distribution line and transposition site D would not be within an established landslide hazard area. As discussed above, the construction activities associated with the Proposed Project would not exacerbate the effects of liquefaction or landslides.

A portion of the 12 kV distribution line alignment occurs in areas of subsidence. Dewatering foundation holes, if needed for the 12 kV distribution line, would have a negligible effect on the groundwater aquifer and would not increase any rate of subsidence in the area, because the

required groundwater pumping rate would not exceed the recharge of the basin. Therefore, dewatering would not cause subsidence and no impact would occur.

Operation and Maintenance

LSPGC Project Components

As discussed above and in Impact GEO-1(ii), the proposed telecommunication interconnection lines, 230 kV underground segment, and 230 kV overhead segment alignments are located in an area with high risk for liquefaction and lateral spreading. However, the LSPGC telecommunication interconnection lines and 230 kV underground segment would be installed underground, and the effects of liquefaction would not cause Proposed Project infrastructure to damage existing, adjacent infrastructure.

The 230 kV overhead structures would exacerbate risks due to the location of large TSPs in areas of high liquefaction and associated lateral spreading risks. The risks associated with liquefaction could be exacerbated during operation if the LSPGC components are not designed and engineered appropriately during construction. In the event of an earthquake on a nearby fault, if structures are not engineered properly, the effects of liquefaction could cause 230 kV overhead towers to topple. However, there is no habitable infrastructure (e.g., residences or other buildings) adjacent to the alignment. The Proposed Project would not result loss, injury, or death during operation and no impact would occur.

PG&E Project Components

As discussed above and in Impact GEO-1(ii) and GEO-1(iii), the transposition sites B and C are located in areas with high landslide risk, and a portion of the proposed 12 kV distribution line alignment and existing transposition site D are located within areas of high liquefaction potential and associated lateral spreading risk.

There is no habitable infrastructure (e.g., residences or other buildings) adjacent to the PG&E project components. The Proposed Project would not result loss, injury, or death during operation and no impact would occur.

Impact GEO-4: Would the Proposed Project be located on expansive soil creating substantial direct or indirect risks to life or property? *(No impact)*

LSPGC Project Components

The proposed LSPGC Collinsville Substation and LSPGC 230 kV underground segment would be constructed on soils classified as Hydrologic Group C (U.S. Department of Agriculture (USDA) 2002), indicating a moderate to high potential for expansion. Portions of the proposed LSPGC 230 kV overhead segment and LSPGC telecommunications line would occur on soils with expansive characteristics classified as Hydrologic Group D (U.S. Department of Agriculture (USDA) 2002).

As discussed in Section 4.7-2: Environmental Setting, soil expansion is caused by the cyclical wetting and drying of clayey soil. The LSPGC telecommunication interconnection lines and 230

kV underground segment would be installed underground, and the effects of soil expansion would not cause Proposed Project infrastructure to damage existing, adjacent infrastructure.

Soil expansion could affect the Collinsville Substation and the 230 kV overhead segment by damaging the foundations. However, construction activities would not exacerbate the existing risk of soil expansion. Additionally, while expansive soil could cause damage to the substation and overhead segment foundations, there is no surrounding, existing infrastructure that would be impacted by the effects soil expansion thus no impact to life or property would occur.

PG&E Project Components

PG&E transposition sites A, B, and D are located on soils classified as Hydrologic Group D, which have a high potential for expansion (U.S. Department of Agriculture (USDA) 2002). The proposed 500 kV interconnection lines and 12 kV distribution line as well as new structure at transposition site C would be located on soils classified as Hydrologic Group C, which have a moderate to high potential for expansion (U.S. Department of Agriculture (USDA) 2002).

As discussed in Section 4.7-2: Environmental Setting, soil expansion is caused by the cyclical wetting and drying of clayey soil. Soil expansion could affect the PG&E components by damaging the foundations associated with these components. However, construction activities would not exacerbate the existing risk of soil expansion. While expansive soil could cause damage to the PG&E components foundations, there is no surrounding, existing infrastructure that would be impacted by the effects soil expansion thus no impact to life or property would occur.

Impact GEO-5: Would the Proposed 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? ***(No impact)***

LSPGC and PG&E Proposed Project Components

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. Therefore, no impact would occur.

Impact GEO-6: Would the Proposed Project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? ***(Less than significant with mitigation)***

Construction

LSPGC Project Components

There are no documented paleontological resources within the Proposed Project area, fossils have been uncovered within 3 miles of the Proposed Project site, and the Montezuma Formation (Qmz) and Pleistocene alluvial fan deposits (Qpf) underlying the Proposed Project have the potential to yield fossils (UCMP 2025). This being the case, construction activities involving trenching or excavation through Montezuma Formation (Qmz) and Pleistocene alluvial fan

deposits (Qpf) have the potential to uncover or destroy fossils, which could result in a significant impact to unique paleontological resources.

Although the proposed LSPGC telecommunication interconnection lines would be underlain by Pleistocene alluvial fan deposits (Qpf)—which have a high potential to contain paleontological resources—they would be installed in a previously disturbed area. Deposits that have been previously disturbed have low to no potential to contain significant paleontological resources, as any fossils discovered would be removed from their original context and would have lost their scientific significance under CEQA.

The Collinsville Substation and the 230 kV overhead segment would be underlain by the Montezuma Formation, which is considered to have a high potential to contain significant paleontological resources. Construction of these components would require ground disturbance and could potentially disturb a significant paleontological resource. To reduce impacts on paleontological resources, LSPGC proposed APMs PALEO-1 and PALEO-2, which require worker environmental awareness training and monitoring of ground-disturbing activities within sensitive geologic units. The APMs do not define reporting standards for discoveries of paleontological resources and thus the impact on paleontological resources would remain significant. To reduce this impact, MM GEO-1 would require worker training on paleontological resources and a paleontological monitor to be present during initial ground-disturbing activities in previously undisturbed areas mapped as the Pleistocene alluvial fan deposits (Qpf) or 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. Additionally, MM GEO-1 establishes performance standards and preparation of a final paleontological mitigation report. With the implementation of MM GEO-1 the potential impacts on paleontological resources would be less than significant.

PG&E Project Components

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 site have the potential to yield fossils. This being the case, construction activities involving trenching or excavation through Montezuma Formation (Qmz) and Pleistocene alluvial fan deposits (Qpf) have the potential to uncover or destroy fossils, which could result in a significant impact to unique paleontological resources. PG&E has proposed CMs PALEO-1 and PALEO-2 to reduce impacts on paleontological resources from PG&E construction. CM PALEO-1 would require that all field personnel receive environmental awareness training on paleontological resources. CM PALEO-2 would require a paleontological monitor to be present during initial ground-disturbing activities in previously undisturbed areas mapped as Qmz and grants the authority to temporarily divert the construction equipment around the find until it is assessed for scientific significance and, if appropriate, collected. While CMs PALEO-1 and PALEO-2 would reduce impacts on paleontological resources, the CMs do not define reporting standards for discoveries of paleontological resources and thus the impact on paleontological

resources would remain significant. To reduce this impact, MM GEO-1 would require worker training on paleontological resources and a paleontological monitor to be present during initial ground-disturbing activities in previously undisturbed areas mapped as the Pleistocene alluvial fan deposits (Qpf) or 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. Additionally, MM GEO-1 establishes performance standards and preparation of a final paleontological mitigation report. With the implementation of MM GEO-1 the potential impacts on paleontological resources would be less than significant.

Operation and Maintenance

LSPGC and PG&E Proposed Project Components

Operation and maintenance activities associated with the Proposed Project would not involve substantial ground disturbance or the installation of new features that would potentially damage a unique paleontological resource or a unique geologic feature. Therefore, no impact would occur during operation and maintenance.

4.7.5 Impact Analysis – Cumulative

The geographic scope for the analysis of the cumulative impacts associated with geology, soils, and paleontological resources is the Proposed Project site. Past, present, and reasonably foreseeable projects contribute or would contribute to the cumulative conditions for geology, soils, and paleontological resources within the cumulative analysis study area. The types of projects that could combine to result in adverse cumulative impacts for geology, soils, and paleontological resources include residential, commercial, infrastructure, and transmission projects. Projects within the cumulative analysis study area include all the projects in Table 4-1.

Geology and Soils

Seismic Ground Shaking

The Proposed Project would not result in substantial adverse effects, including the risk of loss, injury or death involving rupture of a known earthquake fault or strong seismic ground shaking. While there are known faults in the Proposed Project area, and project activities are not expected to directly or indirectly cause fault rupture due to the inactive nature of the faults. The Proposed Project would also not exacerbate the risk of seismic related ground shaking over the risk throughout the region and state as a whole. Compliance with the CBC would avoid cumulative impacts from strong seismic related ground shaking.

Liquefaction and Landslide Risk

Portions of the Proposed Project site are located in areas of high liquefaction risk and landslide risk. None of the cumulative projects are proposed in proximity to the Proposed Project components in an area of high liquefaction and landslide potential. Therefore, there would be no cumulative impact from death, injury, or loss related to liquefaction and landslides.

Soil Erosion and Loss of Topsoil

Many of the current and reasonably foreseeable projects listed in Table 4.0-1, including California Forever and Solano Wind 4 Project, would result in substantial soil erosion or the loss of topsoil. However, several projects, including the Montezuma Tidal and Seasonal Wetlands Restoration Project, Chipps Island Tidal Habitat Restoration Project, and Reclamation District No. 1607, Van Sickle Island Emergency Levee Repair, would reduce erosion and the loss of topsoil in the cumulative project area and may result in increased topsoil retention in the long term. The combined erosion potential and loss of topsoil would likely increase if all projects were implemented and would result in a significant cumulative impact on soil erosion and topsoil loss. The Proposed Project would comply with the Construction Stormwater General Permit including preparation and implementation of a SWPPP and would comply with the Solano County MRP during operation to manage stormwater runoff. Due to compliance with the Construction Stormwater General Permit and Solano County MRP, the Proposed Project contribution to a cumulative impact on soil erosion and topsoil loss would be less than cumulatively considerable.

Septic Tanks or Alternative Wastewater Disposal

The Proposed Project would not use septic tanks or alternative wastewater disposal systems during construction or during operation and maintenance and would not contribute to any potential cumulative impacts from use of septic tanks or alternative wastewater disposal systems.

Paleontological Resources

The Proposed Project and all cumulative projects involving ground disturbance have the potential to result in impacts on paleontological resources. The potential cumulative impact would be significant. LSPGC proposed APMs PALEO-1 and PALEO-2, and PG&E proposed CMs PALEO-1 and PALEO-2 to ensure that unique paleontological resources or sites or unique geologic features are not destroyed. However, the APMs and CMs do not include reporting standards without which the Proposed Project contribution to a cumulative impact on paleontological resources would be considerable. To reduce this impact, MM GEO-1 would require worker training, monitoring for paleontological resources, and reporting. With implementation of MM GEO-1, the Proposed Project's contribution to a significant cumulative impact on paleontological resources would be less than considerable and thus less than significant.

4.7.6 Alternative 1: Collinsville Substation North of Talbert Lane

Environmental Setting – Alternative 1

Alternative 1 involves relocating the proposed LSPGC Collinsville Substation to a different site, approximately 1.2 miles north of the Proposed Project substation site. Alternative 1 would also include an approximately 500-foot segment of PG&E 500 kV interconnection lines, approximately 700-foot segment of 12 kV distribution line, and an approximately 2-mile-long segment of LSPGC 230 kV overhead line. Alternative 1 would not involve changes to any of the other Proposed Project component, which would have the same impacts as described

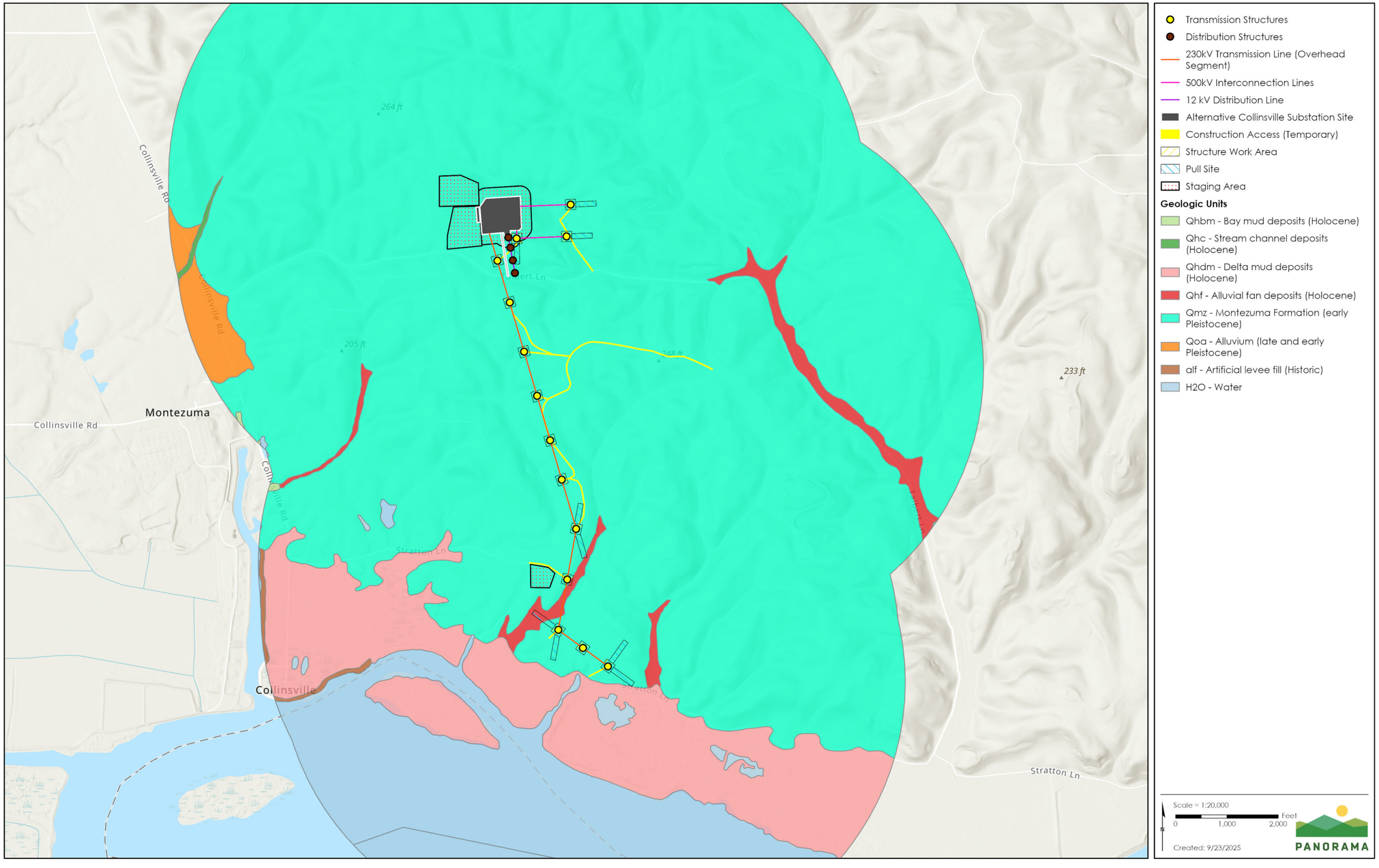
throughout this Draft EIR for the Proposed Project or the other alternatives if selected in combination with Alternative 1.

The Alternative 1 substation site is on gently to moderately sloping terrain underlain by late Pleistocene to Holocene alluvial fan deposits consisting of interbedded clays, silts, sands, and gravels, as well as the Montezuma Formation (Figure 4.7-6). The Alternative 1 substation would be on Diablo Ayar clays (same as the Proposed Project substation); however, the slopes within the Alternative 1 area are steeper than at the Proposed Project site. Diablo ayar clay soils exhibit moderate erosion potential when disturbed and, similar to the Proposed Project, they have a moderate to high potential for soil expansion. The location is within the same regional seismic hazard zone as the Proposed Project and is subject to strong seismic ground shaking. Alternative 1 is located within an area of low liquefaction risk with the exception of small portion of the 230 kV overhead segment which spans areas of high liquefaction risk (Figure 4.7-7). The soil units within the Alternative 1 area are illustrated on Figure 4.7-8. The Alternative 1 substation would be on the same soil units as the Proposed Project substation; however, the slopes within the area are steeper at Alternative 1 than at the Proposed Project site. The Alternative 1 substation site would not be within areas that are susceptible to subsidence (Figure 4.7-9). The steeper terrain compared to the Proposed Project may require increased grading and slope stabilization. As the Alternative 1 substation location is within the Montezuma Formation (same geologic unit as the Proposed Project substation), the paleontological potential is high as discussed in Section 4.7.1 (refer to Table 4.7-6). No habitable structures are located in proximity to Alternative 1.

Impact Analysis – Alternative 1

Alternative 1 would have no impact related to surface fault rupture (Impact GEO-1.i), due to the absence of faults within the Alternative 1 area. Alternative 1 would not exacerbate shaking, and Alternative 1 is not located near any habitable structures or people and thus would have no impact from risk of loss or death related to strong seismic shaking (Impact GEO-1.ii). Alternative 1 is also not located within a landslide hazard area (Impact GEO-1.iv) and none of the Alternative 1 structures are located within areas prone to liquefaction (Impact GEO-1.iii) and would have no impact related to landslides or liquefaction. Alternative 1 is located in an area with potentially expansive or collapsible soils, but is not located in proximity to any buildings or habitable structures and would have no impact associated with potential for expansive or collapsible soils (Impact GEO-3 and GEO-4). Alternative 1 would not involve septic tanks or alternative wastewater disposal systems (Impact GEO-5). Due to the absence of these impacts for Alternative 1, these impacts are not discussed further. The impacts of Alternative 1 related to the loss of topsoil (Impact GEO-2) and paleontological resources (Impact GEO-6) are discussed below.

Figure 4.7-6 Alternative 1 Geologic Units



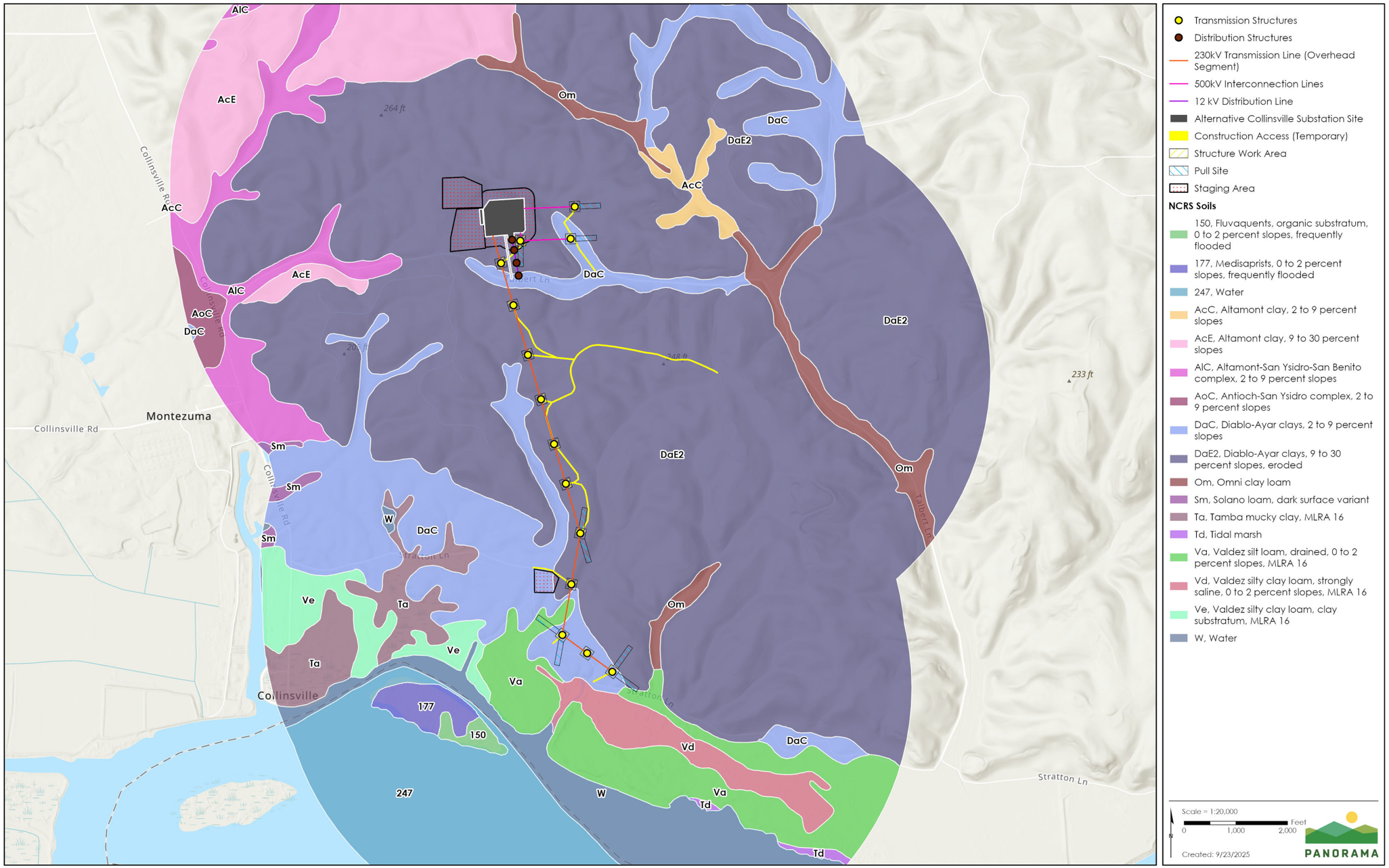
Source: (Graymer, D.L Jones, et al. 2002)

Figure 4.7-7 Alternative 1 Liquefaction Susceptibility



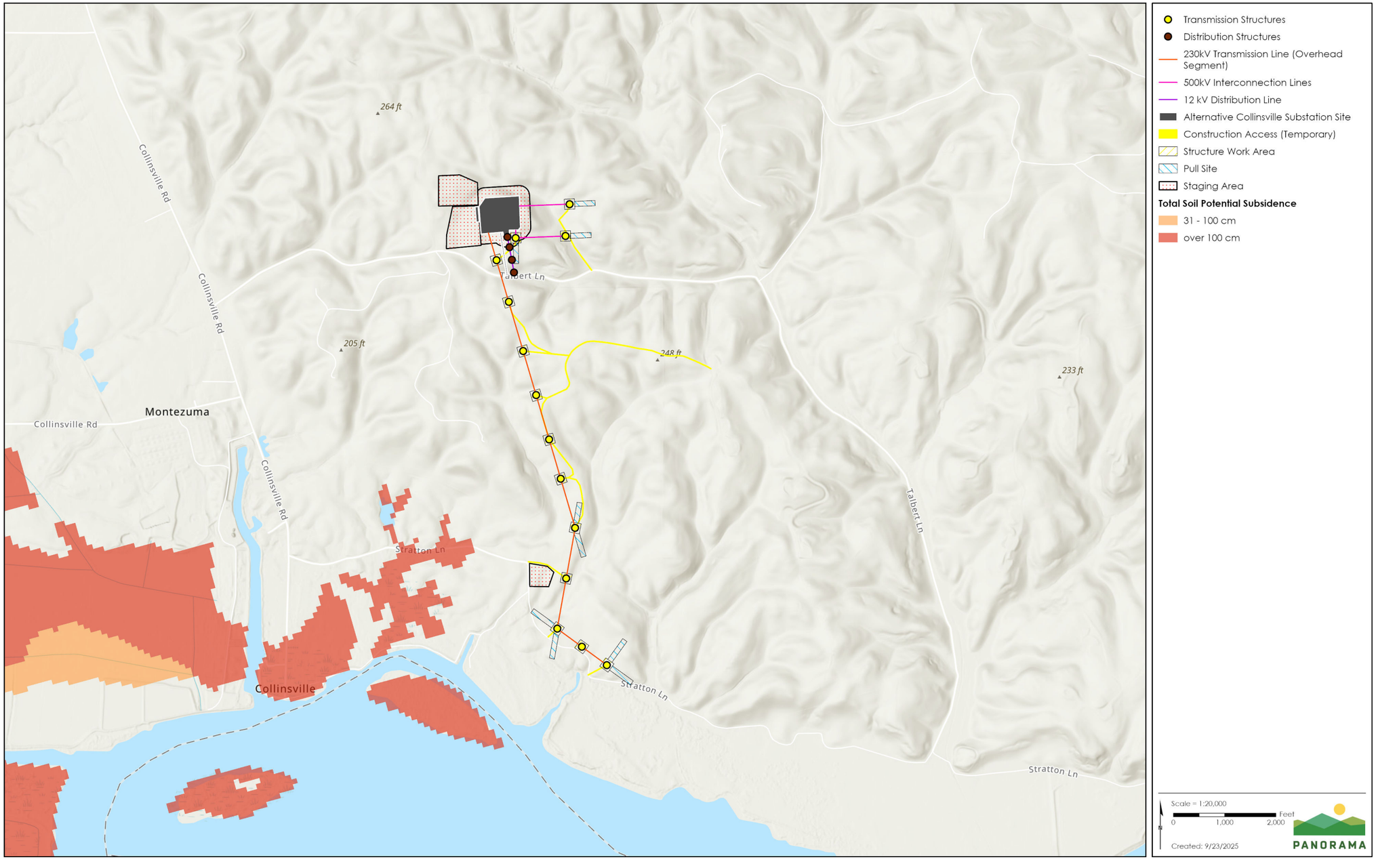
Source: (CGS 2022)

Figure 4.7-8 Alternative 1 Soil Units



Source: (NRCS 2025)

Figure 4.7-9 Alternative 1 Subsidence Risk



Source:(NRCS 2023)

Impact GEO-2: Would Alternative 1 result in substantial soil erosion or the loss of topsoil? (*Less than significant*)

Alternative 1 would include ground disturbing activities, including new access roads (7.7 acres), staging areas (46 acres), at the proposed LSPGC Collinsville Substation (139,000 cubic yards), and work areas for the 230 kV overhead segment, 500 kV interconnection line, and 12 kV distribution line. Alternative 1 could result in soil erosion and/or the loss of topsoil due to removal of topsoil within the substation site and potential for erosion associated with grading and ground disturbance. LSPGC would implement APM GEO-1, which requires keeping vehicles and construction equipment within the limits of the proposed disturbance, salvaging topsoil in appropriate temporary work areas where grading is required, avoiding saturated soils, restoring temporarily disturbed areas with salvaged topsoil, and keeping vegetation and soil disturbance to a minimum. PG&E would implement CM GEO-1, which defines procedures for working in areas of loose soil including use of plates along access roads.

Alternative 1 would disturb 1 acre or more of land and would require coverage under the Construction Stormwater General Permit, requiring preparation and implementation of a SWPPP. With implementation of the SWPPP, which would include BMPs to control erosion and prevent off-site erosion and implementation of APM GEO-1 and CM GEO-1, substantial soil erosion and associated topsoil loss would not occur as a result of Alternative 1. As a result, the impact on soil erosion and loss of topsoil due to construction of Alternative 1 would be less than significant.

Alternative 1 operation and maintenance would be conducted within developed areas and would not result in disturbance or loss of topsoil. No impact would occur during operation and maintenance.

Overall, geology and soil impacts under Alternative 1 would be similar to those of the Proposed Project and would remain less than significant.

Impact GEO-6: Would Alternative 1 directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? (*Less than significant with mitigation*)

The LSPGC and PG&E components under Alternative 1 would be underlain by Pleistocene-age alluvium and deposits from the Montezuma Formation. Alternative 1 would involve ground disturbing construction activities within geologic units that have a high potential to contain significant paleontological resources. Damaging a unique paleontological resource would be a significant impact. LSPGC proposed APM PALEO-1 and APM PALEO-2 and PG&E proposed CM PALEO-1, and CM PALEO-2. As described in Section 4.7.4 for the Proposed Project, these APMs and do not adequately identify reporting standards and the resulting impact on paleontological resources would remain significant. MM GEO-1 requires a paleontological monitor to be present during initial ground-disturbing activities in previously undisturbed areas mapped as the Pleistocene alluvial fan deposits (Qpf) or 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. Additionally, MM GEO-1 establishes performance standards and

preparation of a final paleontological mitigation report. With the implementation of MM GEO-1, the potential impacts on paleontological resources would be less than significant with mitigation. Overall, paleontological resource impacts under Alternative 1 would be similar to those of the Proposed Project and would remain less than significant with mitigation.

4.7.7 Alternative 2: Collinsville Substation East of Wind Energy Substations (Site A)

Environmental Setting – Alternative 2

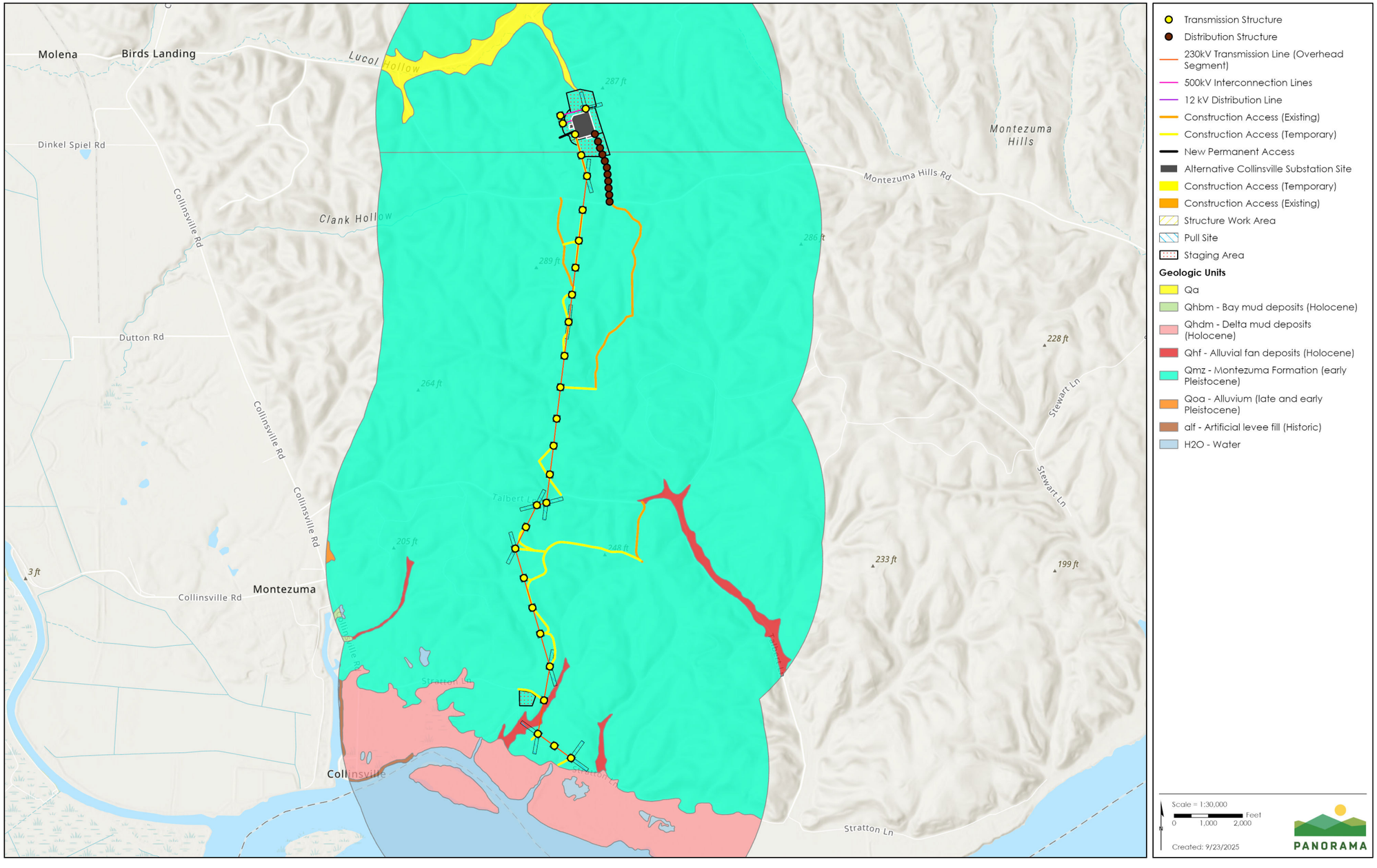
Alternative 2 involves relocating the proposed Collinsville Substation to a different site, approximately 3.0 miles north of the location proposed under the Proposed Project. Alternative 2 would also include an approximately 1,200-foot-long segment of PG&E 500 kV interconnection lines and a four-mile-long segment of LSPGC 230 kV overhead line, as well as an approximately 0.3-mile-long PG&E 12 kV distribution line. Alternative 2 would not involve changes to any of the other Proposed Project components, which would have the same impacts as described throughout this Draft EIR for the Proposed Project or the other alternatives if selected in combination with Alternative 2.

The Alternative 2 substation site is in an area characterized by moderate to steep slopes and underlain by older alluvial deposits and weathered bedrock of the Montezuma Formation (Figure 4.7-10). The Alternative 2 substation site is not in an area prone to liquefaction (Figure 4.7-11). The Alternative 2 substation would be on Diablo Ayar clays (Figure 4.7-12). Diablo Ayar clay soils exhibit moderate erosion potential when disturbed and, similar to the Proposed Project, they have a moderate to high potential for soil expansion. The Alternative 2 substation site is subject to similar seismic shaking hazards as the Proposed Project. The substation site would not be within areas that are susceptible to subsidence (Figure 4.7-13). The Alternative 2 substation site located in the Montezuma Formation, which has high paleontological potential (Table 4.7-6).

Impact Analysis – Alternative 2

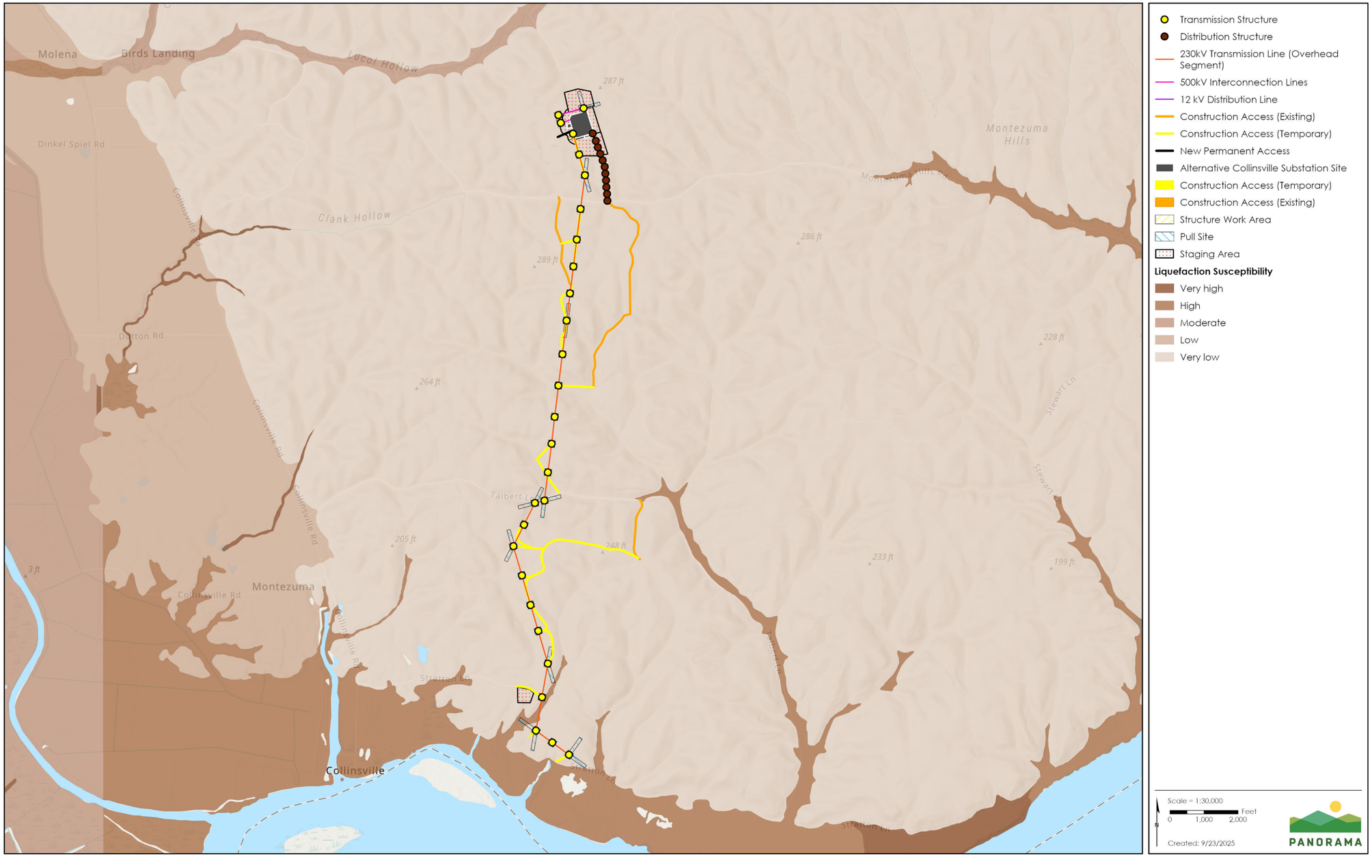
Alternative 2 would have no impact related to surface fault rupture (Impact GEO-1.i), due to the absence of faults within the Alternative 2 area. Alternative 2 would not exacerbate shaking, and Alternative 2 is not located near any habitable structures or people and thus would have no impact from risk of loss or death related to strong seismic shaking (Impact GEO-1.ii). Alternative 2 is also not located within a landslide hazard area (Impact GEO-1.iv) and none of the Alternative 2 structures are located within areas prone to liquefaction (Impact GEO-1.iii); thus Alternative 2 would have no impact related to landslides or liquefaction. Alternative 2 is located in an area with potentially expansive or collapsible soils, but is not located in proximity to any buildings or habitable structures and would have no impact associated with potential for expansive or collapsible soils (Impact GEO-3 and GEO-4). Alternative 2 would not involve septic tanks or alternative wastewater disposal systems (Impact GEO-5). Due to the absence of these impacts for Alternative 2, these impacts are not discussed further. The impacts of Alternative 2 related to the loss of topsoil (Impact GEO-2) and paleontological resources (Impact GEO-6) are discussed below.

Figure 4.7-10 Alternative 2 Geologic Units



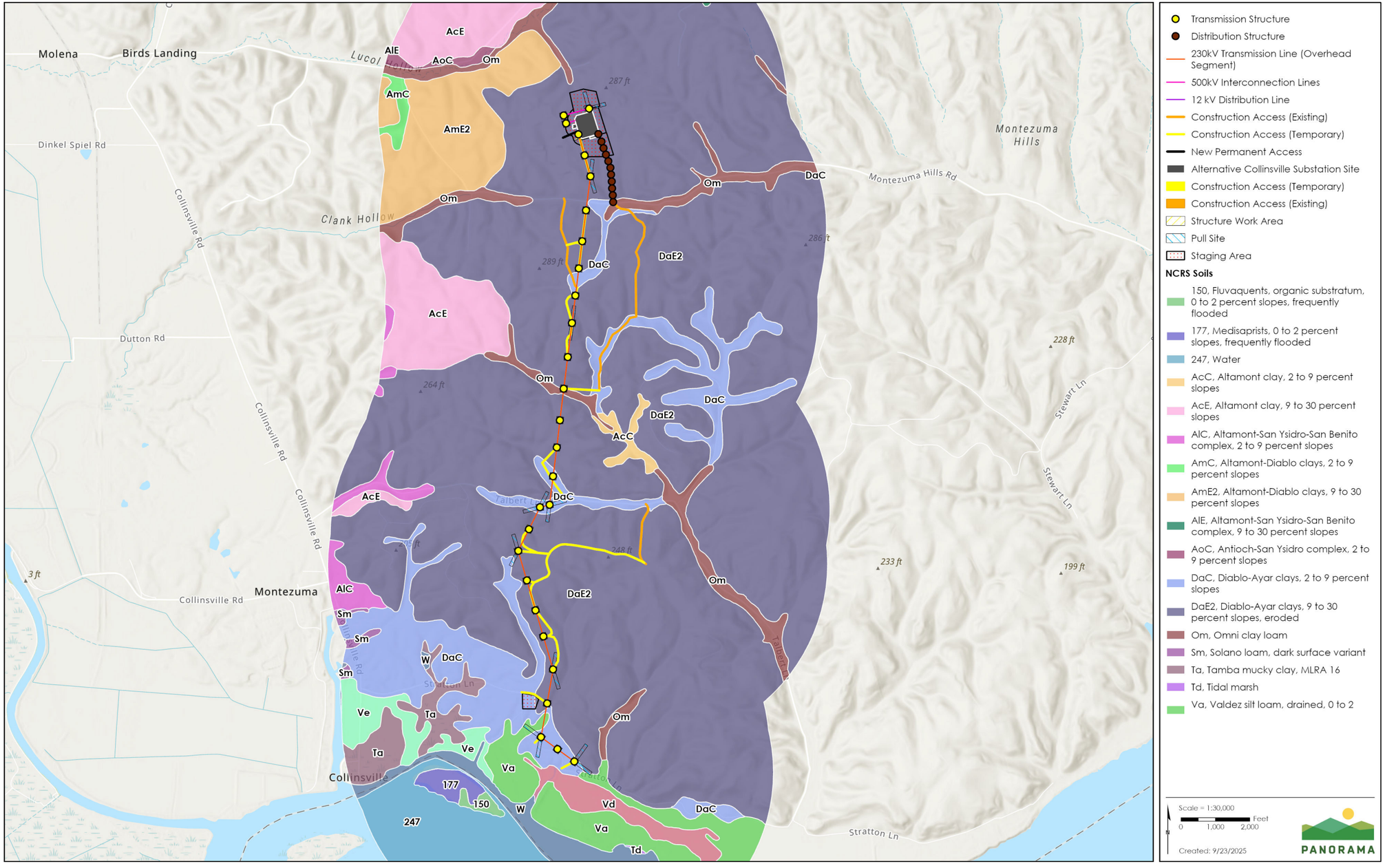
Source: (Graymer, D.L Jones, et al. 2002)

Figure 4.7-11 Alternative 2 Liquefaction Susceptibility



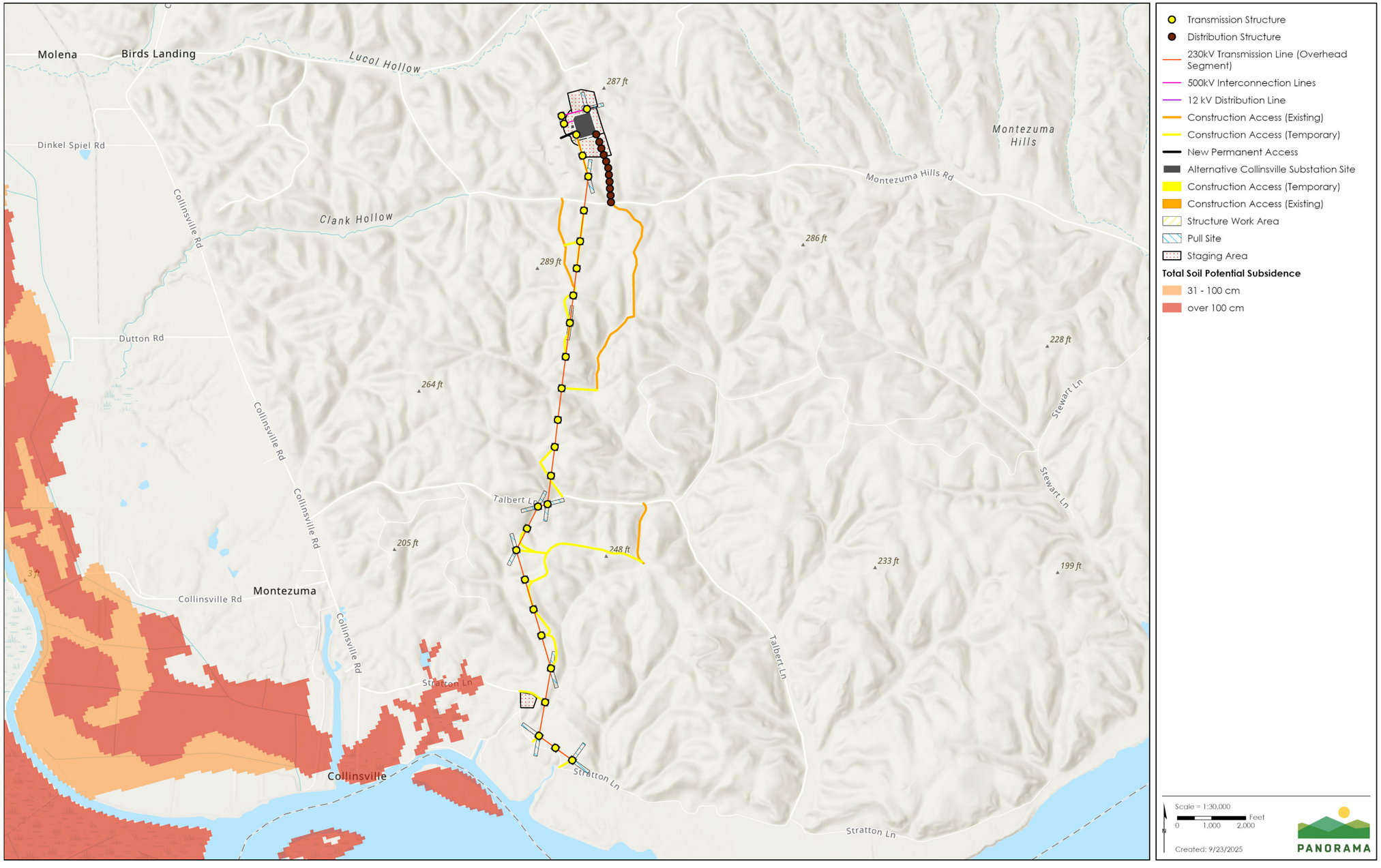
Source: (CGS 2022)

Figure 4.7-12 Alternative 2 Soil Units



Source: (NRCS 2025)

Figure 4.7-13 Alternative 2 Subsidence



Source: (NRCS 2023)

Impact GEO-2: Would Alternative 2 result in substantial soil erosion or the loss of topsoil? (*Less than significant*)

Alternative 2 would include ground disturbing activities, including new access roads (5.6 acres), staging areas (44.4 acres), at the proposed LSPGC Collinsville Substation (97,000 cubic yards), and within work areas for the 230 kV overhead segment, 500 kV interconnection line, and 12 kV distribution line. Alternative 2 would result in soil erosion and/or the loss of topsoil due to removal of topsoil within the substation site and potential for erosion associated with grading and ground disturbance. LSPGC would implement APM GEO-1, which requires keeping vehicles and construction equipment within the limits of the proposed disturbance, salvaging topsoil in appropriate temporary work areas where grading is required, avoiding saturated soils, restoring temporarily disturbed areas with salvaged topsoil, and keeping vegetation and soil disturbance to a minimum. PG&E would implement CM GEO-1, which defines procedures for working in areas of loose soil including use of plates along access roads.

Alternative 2 would disturb more than 1 acre of land and would require coverage under the Construction Stormwater General Permit, requiring preparation and implementation of a SWPPP. With implementation of the SWPPP, which would include BMPs to control erosion and prevent off-site erosion, and implementation of APM GEO-1 and CM GEO-1, substantial soil erosion and associated topsoil loss would not occur as a result of Alternative 2. As a result, the impact on soil erosion and loss of topsoil due to construction of Alternative 2 would be less than significant.

Alternative 2 operation and maintenance would be conducted within developed areas and would not result in disturbance or loss of topsoil. No impact would occur during operation and maintenance.

Overall, geology and soil impacts under Alternative 2 would be similar to those of the Proposed Project and would remain less than significant.

Impact GEO-6: Would Alternative 2 directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? (*Less than significant with mitigation*)

The LSPGC and PG&E components under Alternative 2 would be underlain by Pleistocene-age alluvium and deposits from the Montezuma Formation. Alternative 2 would involve ground disturbing construction activities within geologic units that have a high potential to contain significant paleontological resources. Damaging a unique paleontological resource would be a significant impact. As stated for the Proposed Project, significant impact would remain because APM PALEO-1, APM PALEO-2, CM PALEO-1, and CM PALEO-2 do not identify reporting standards for paleontological resources. MM GEO-1 requires a paleontological monitor to be present during initial ground-disturbing activities in previously undisturbed areas mapped as the Pleistocene alluvial fan deposits (Qpf) or 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. Additionally, MM GEO-1 establishes performance standards and preparation of a final paleontological mitigation report. With the implementation of MM GEO-

1, the potential impacts on paleontological resources would be less than significant with mitigation. Overall, paleontological resource impacts under Alternative 2 would be similar to those of the Proposed Project and would remain less than significant with mitigation.

4.7.8 Alternative 3: 500 kV Interconnection Lines on Entirely TSPs

Environmental Setting – Alternative 3

Alternative 3 involves constructing the PG&E 500 kV interconnection lines on entirely TSPs, instead of the combination of LSTs and three-pole TSPs under the Proposed Project. The 500 kV interconnection lines would be in the same general alignment as the Proposed Project PG&E 500 kV interconnection lines. Alternative 3 would not involve changes to any of the other Proposed Project components, which would have the same impacts as described throughout this Draft EIR for the Proposed Project or the other alternatives if selected in combination with Alternative 3. As such, the environmental setting would be the same as described for the Proposed Project.

Impact Analysis – Alternative 3

Similar to the Proposed Project, Alternative 3 would have no impact related to surface fault rupture (Impact GEO-1.i), seismic ground shaking (Impact gEO-1.ii), liquefaction (Impact GEO-1.iii), landslides (Impact GEO-1.iv), unstable soil (Impact GEO-3), expansive soils (Impact GEO-4), or having soil that is adequate to support septic tanks or alternative wastewater disposal systems (Impact GEO-5). The impacts of Alternative 3 related soil erosion and the loss of topsoil (Impact GEO-2), expansive soil (Impact GEO-4), and paleontological resources (Impact GEO-6) are discussed below.

Impact GEO-2: Would Alternative 3 result in substantial soil erosion or the loss of topsoil? (*Less than significant*)

Installation of the TSPs would require constructing a level pad large enough to handle the crane, requiring cut and fill as needed at each pad site to create a level work area. This would result in more ground disturbance and additional soil erosion and potential loss of topsoil. However, as with the Proposed Project, potential erosion and loss of topsoil would be minimized through implementation of CM GEO-1, which defines protocols for construction in areas of loose soils and compliance with the Construction Stormwater General Permit including implementation of BMPs for erosion control. Due to implementation of CM GEO-1 and compliance with the Construction Stormwater General Permit the impact from erosion and loss of topsoil would be less than significant.

Overall, geology and soil impacts under Alternative 3 would be similar to those of the Proposed Project and would remain less than significant.

Impact GEO-6: Would Alternative 3 directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? (*Less than significant with mitigation*)

The PG&E 500 kV interconnection lines would be constructed in the same alignment as the Proposed Project interconnection lines and would involve excavation within the Montezuma Formation (Qmz). The potential to encounter paleontological resources within the Montezuma

Formation (Qmz) is high. CMs PALEO-1 and PALEO-2 do not define reporting requirements and the impact on paleontological resources would remain significant. MM GEO-1 defines requirements for worker training, paleontological resource monitoring, and reporting to avoid significant impacts on paleontological resources. The impact on paleontological resources would be less than significant with mitigation.

Overall, paleontological resource impacts under Alternative 3 would be similar to those of the Proposed Project and would remain less than significant with mitigation.

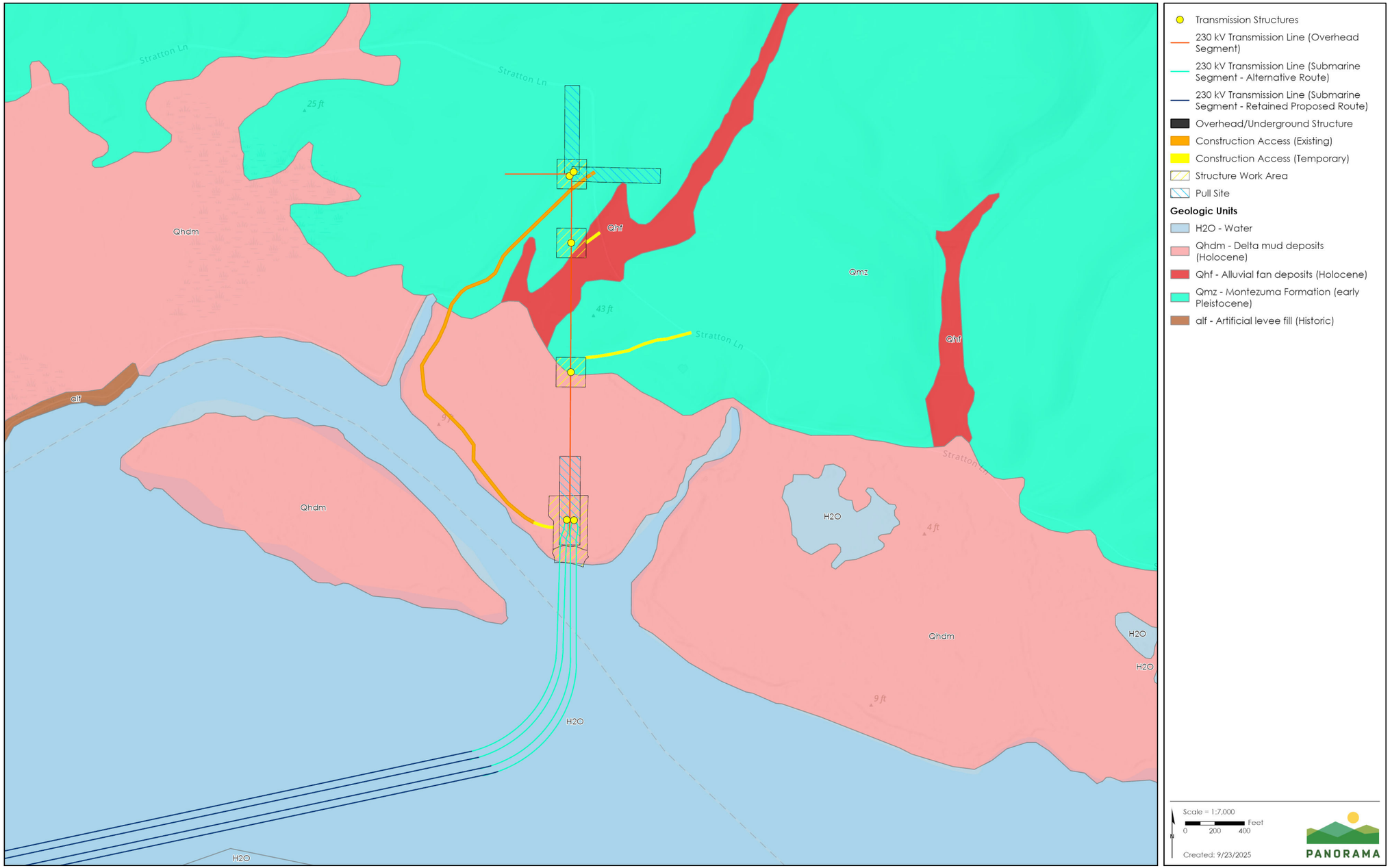
4.7.9 Alternative 4: 230 kV Overhead Segment Alternative Route

Environmental Setting – Alternative 4

Alternative 4 involves relocation of a short segment of the LSPGC 230 kV overhead segment between the proposed LSPGC Collinsville Substation and the Delta, west of the proposed LSPGC 230 kV overhead segment route. Additionally, the northern end of the LSPGC 230 kV submarine segment would be rerouted to meet up with the southern end of the Alternative 4 230 kV submarine segment. Alternative 4 would not involve changes to any of the other Proposed Project components, which would have the same impacts as described throughout this Draft EIR for the Proposed Project or the other alternatives if selected in combination with Alternative 4.

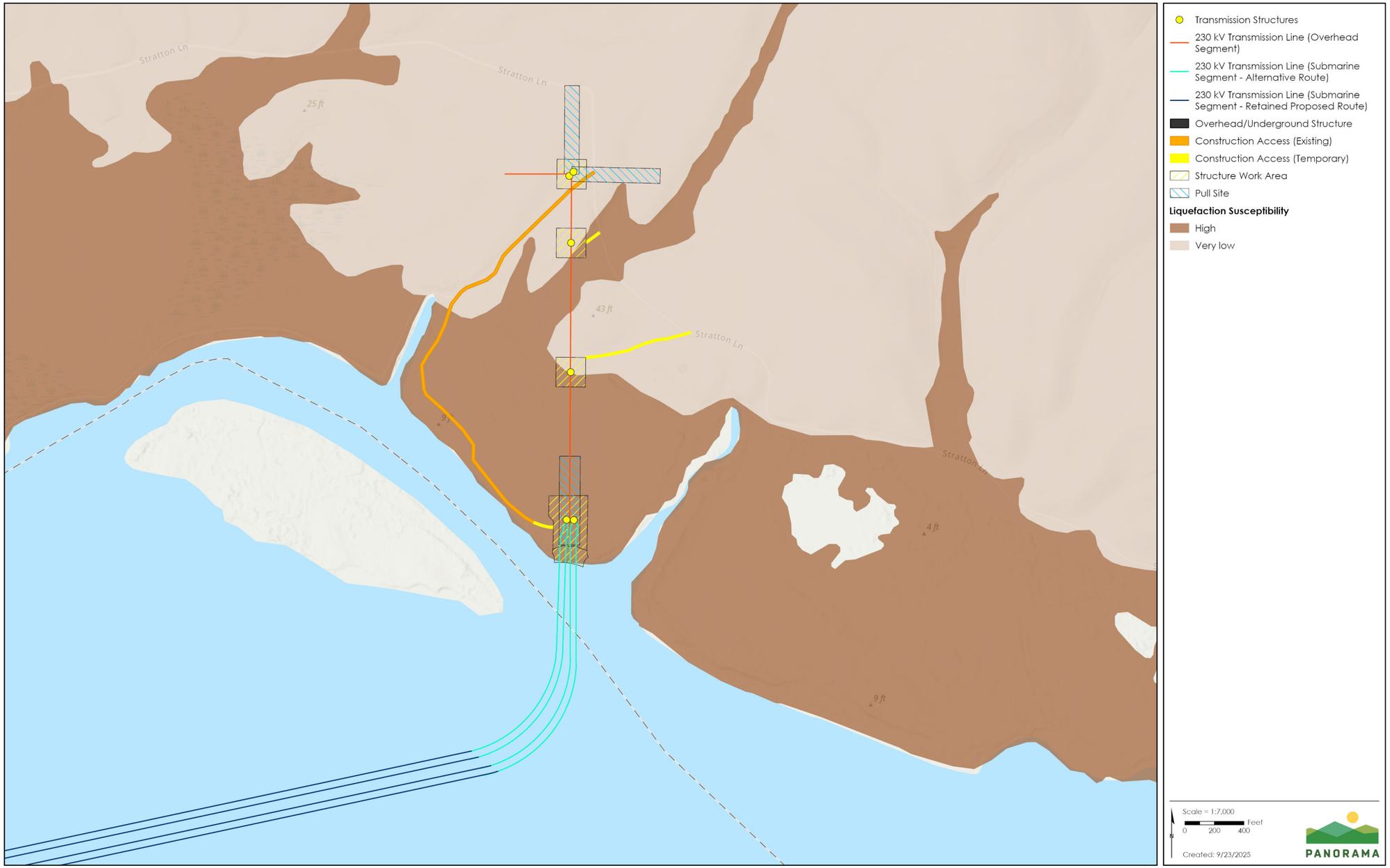
Alternative 4 structures are underlain by the Montezuma Formation and Holocene Delta mud deposits (Figure 4.7-14). The Alternative 4 riser poles and submarine segment are located in an area prone to liquefaction (Figure 4.7-15). Alternative 4 structures are located on Diablo Ayar clays and Valdez silt loams Figure 4.7-16). Diablo Ayar clay soils exhibit moderate erosion potential when disturbed and Valdez silt loams have moderate to high erosion potential. Diablo Ayar clays have a moderate to high potential for soil expansion and silt loams generally have a moderate to low shrink swell potential. The Alternative 4 area is subject to similar seismic shaking hazards as the Proposed Project. Alternative 4 would not be within areas that are susceptible to subsidence (Figure 4.7-17). The Alternative 4 geologic units include areas with high paleontological resource potential near the substation and low paleontological resource potential within the younger Holocene units. No structure or public access is located in proximity to Alternative 4.

Figure 4.7-14 Alternative 4 Geologic Units



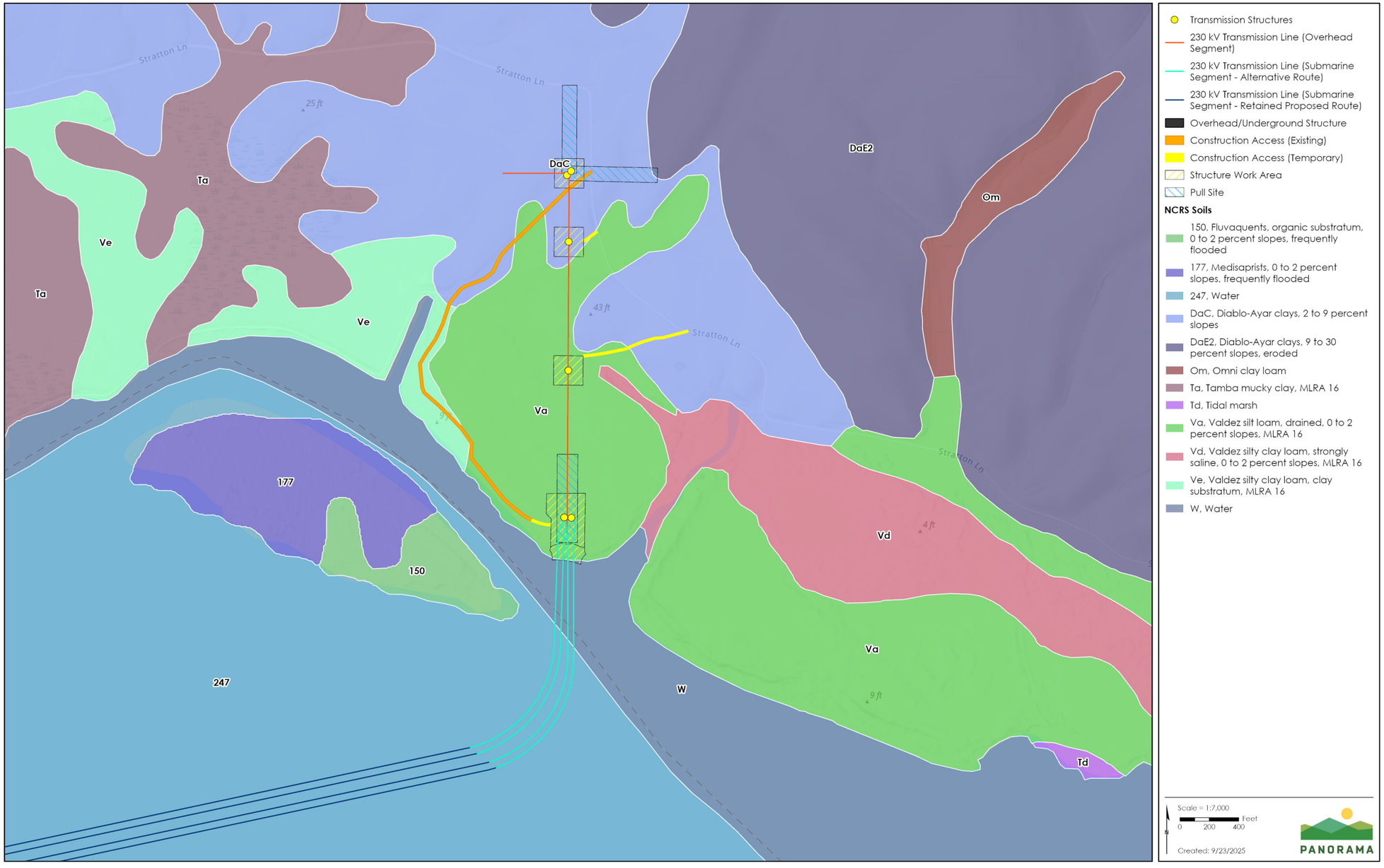
Source: (Graymer, D.L Jones, et al. 2002)

Figure 4.7-15 Alternative 4 Liquefaction Susceptibility



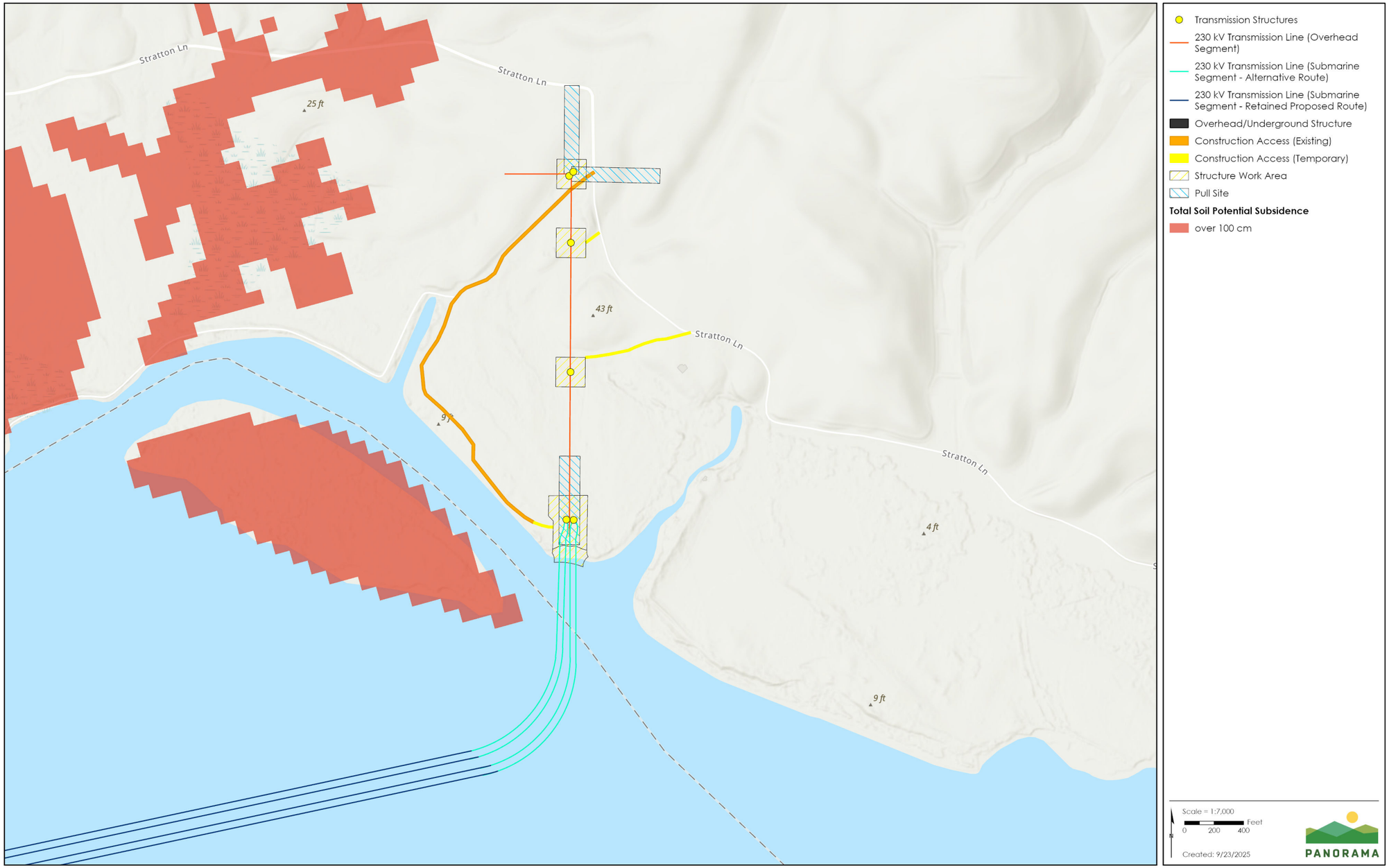
Source: (CGS 2022)

Figure 4.7-16 Alternative 4 Soil Units



Source: (NRCS 2025)

Figure 4.7-17 Alternative 4 Subsidence Potential



Source: (NRCS 2023)

Impact Analysis – Alternative 4

Similar to the Proposed Project, Alternative 4 would have no impact related to surface fault rupture (Impact GEO-1.i), seismic ground shaking (Impact GEO-1.ii), liquefaction (Impact GEO-1.iii), or landslides (Impact GEO-1.iv) as Alternative 4 would not exacerbate risks to people or structures. Alternative 4 would similarly have no impact related to unstable or expansive soils (Impacts GEO-3 and GEO-4) due to the absence of people or structures near the Alternative 4 area that could be affected by Alternative 4. Alternative 4 would have no impact due to a septic tanks or alternative wastewater disposal systems (Impact GEO-5). The impacts of Alternative 4 related to soil erosion and the loss of topsoil (Impact GEO-2 and paleontological resources (Impact GEO-6) are discussed below.

Impact GEO-2: Would Alternative 4 result in substantial soil erosion or the loss of topsoil? (*Less than significant*)

Alternative 4 would include ground disturbing activities, including new access roads (0.6 acres), staging areas, and within work areas for the 230 kV overhead segment. Alternative 4 would involve ground disturbance that could cause soil erosion and loss of topsoil. LSPGC would implement APM GEO-1, which requires keeping vehicles and construction equipment within the limits of the proposed disturbance, salvaging topsoil in appropriate temporary work areas where grading is required, avoiding saturated soils, restoring temporarily disturbed areas with salvaged topsoil, and keeping vegetation and soil disturbance to a minimum. In addition, because Alternative 4 would disturb 1 acre or more of land, coverage under the Construction Stormwater General Permit, including preparation of a SWPPP would be required. With implementation of the SWPPP, which would include BMPs to control erosion and prevent off-site sedimentation, and implementation of APM GEO-1, substantial soil erosion and associated topsoil loss would not occur. As a result, the impact on soil erosion and loss of topsoil due to construction of Alternative 4 would be less than significant.

Overall, geology and soil impacts under Alternative 4 would be similar to those of the Proposed Project and would remain less than significant.

Impact GEO-6: Would Alternative 4 directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? (*Less than significant with mitigation*)

A portion of the LSPGC 230 kV overhead segment including four 230 kV TSPs would be underlain by deposits from the Montezuma Formation, which have a high potential to contain significant paleontological resources. LSPGC has proposed implementation of APM PALEO-1, and APM PALEO-2, however, the impact on paleontological resources would remain significant because the APMs do not identify reporting standards. MM GEO-1 requires a paleontological monitor to be present during initial ground-disturbing activities in previously undisturbed areas mapped as 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. Additionally, MM GEO-1 establishes performance standards and preparation of a final paleontological mitigation report. With the implementation of MM GEO-1, the potential impacts on paleontological resources would be less than significant with mitigation.

Overall, paleontological resource impacts under Alternative 4 would be similar to those of the Proposed Project and would remain less than significant with mitigation.

4.7.10 Alternative 5: 230 kV Submarine Segment Alternative Route

Environmental Setting – Alternative 5

Alternative 5 involves rerouting a portion of the proposed LSPGC 230 kV submarine segment to the east of its current alignment as it approaches the southern shoreline in Pittsburg. The submarine segment cable would be installed in the same manner as the Proposed Project. Alternative 5 would not involve changes to any of the other Proposed Project components, which would have the same impacts as described throughout this Draft EIR for the Proposed Project or the other alternatives if selected in combination with Alternative 5.

The 230 kV transmission line would not be constructed within an established EFZ. The 230 kV submarine segments would be buried in the riverbed, which is not within a liquefaction or landslide hazard zone and would not be constructed in expansive soil. Construction of the submarine segment would not involve the use of septic tanks and there are no known fossil localities in the riverbed.

Impact Analysis – Alternative 5

The Alternative 5 230 kV submarine segment would be directly buried in the riverbed of the Sacramento River. Alternative 5 would have no impacts related to rupture of a known earthquake fault, strong seismic ground shaking, seismic-related ground failure, including liquefaction; or landslides (Impact GEO-1) as Alternative 5 would be buried beneath the riverbed. Alternative 5 would also have no impact on soil erosion or the loss of topsoil (Impact GEO-2), location on a geologic unit or soil that is unstable, or that would become unstable as a result of the project (Impact GEO-3), location on an expansive soil, creating risks to life or property (Impact GEO-4) or destruction of a unique paleontological resource or unique geologic feature (Impact GEO-6) due to the Alternative 5 location within the riverbed. Alternative 5 does not involve any septic systems of alternative wastewater disposal systems (Impact GEO-5). Alternative 5 would not result in the loss of topsoil, involve the use of septic tanks, and there are no known fossil localities in the riverbed. Construction, operation, and maintenance of the Alternative 5 segment would have no impact on geology, soil, or paleontological resources.

4.7.11 Alternative 6a/6b: Underground portions of the 230 kV Transmission Line within Suisun Marsh Protection Plan Management Areas

Environmental Setting – Alternative 6a/6b

Alternative 6a/6b would locate the LSPGC 230 kV transmission line on primarily PG&E-owned property south of the proposed Collinsville Substation site (similar to Alternative 4). The Alternative 6a/6b would be installed in conduit underground. Alternative 6a differs from Alternative 6b only at the northern end of the segment where options are provided for connection to the Proposed Project Collinsville Substation or Alternatives 1 or 2. Two overhead riser structures would be installed at the northern end of the Alternative 6a/6b underground

duct bank where the LSPGC 230 kV line would transition between an overhead and underground position. Alternative 6a/6b would not involve changes to any of the other Proposed Project components, which would have the same impacts as described throughout this Draft EIR for the Proposed Project or the other alternatives if selected in combination with Alternative 6a/6b.

Alternative 6 is located within the Montezuma Formation and Holocene Delta mud deposits (Figure 4.7-18). The alignment would cross areas underlain by alluvial deposits, bay mud, and marshland soils including Diablo Ayar clay and Valdez silt loam, which are generally characterized by high compressibility, potential for settlement, and shallow groundwater as well as potential for liquefaction (Figure 4.7-19 and Figure 4.7-20). The alignment would not be within areas that are susceptible to subsidence (Figure 4.7-21). Portions of Alternative 6a/6b within the Montezuma Formation have high paleontological resource potential while portiosn with Holocene Delta bay mud deposits have low paleontological resource potential. No people or habitable structures occur in proximity to Alternative 6a/6b as the alternative is located on private property and would be below ground.

Impact Analysis – Alternative 6a/6b

Similar to the Proposed Project, Alternative 6a/6b would have no impact related to surface fault rupture (Impact GEO-1.i), seismic ground shaking (Impact GEO-1.ii), liquefaction (Impact GEO-1.iii), or landslides (Impact GEO-1.iv) as Alternative 6a/6b would not exacerbate risks to people or structures and would be located subsurface. Alternative 6a/6b would would have no impact related to unstable or expansive soils (Impacts GEO-3 and GEO-4) due to the absence of people or structures near the Alternative 6a/6b area and Alternative 6a/6b would be below ground. Alternative 6a/6b would have no impact due to a septic tanks or alternative wastewater disposal systems (Impact GEO-5). The impacts of Alternative 6a/6b related to soil erosion and the loss of topsoil (Impact GEO-2 and paleontological resources (Impact GEO-6) are discussed below.

Impact GEO-2: Would Alternative 6a/6b result in substantial soil erosion or the loss of topsoil? (*Less than significant*)

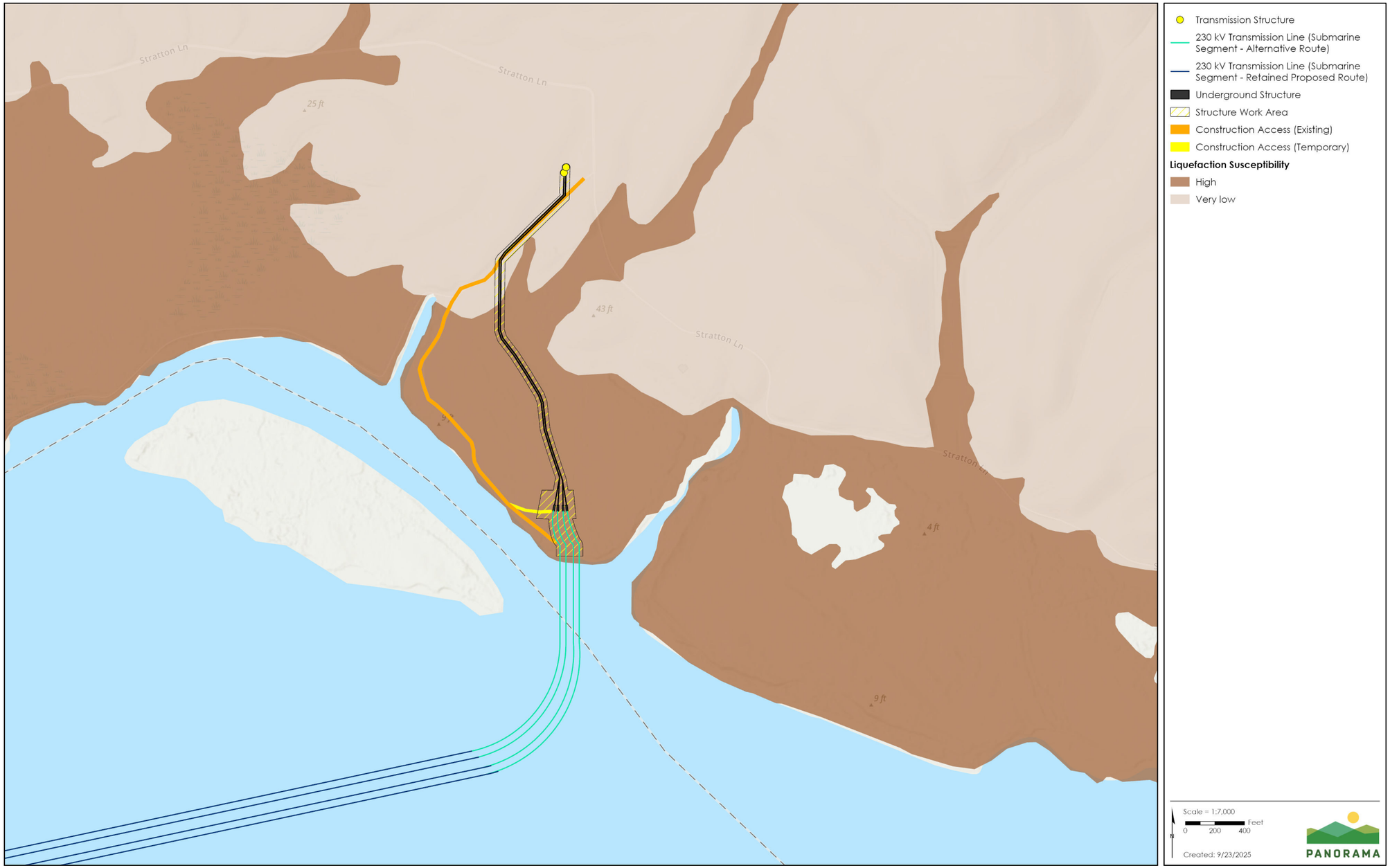
Construction of Alternative 6a/6b would involve trenching and excavation for duct banks and underground vaults. Alternative 6a/6b would require temporary removal of topsoil within the area of the underground duct bank. LSPGC would implement APM GEO-1, which requires salvaging topsoil in appropriate temporary work areas where grading is required and restoring temporarily disturbed areas such as the buried duct bank location with salvaged topsoil. In addition, because Alternative 6a/6b would disturb 1 acre or more of land, coverage under the Construction Stormwater General Permit, including preparation of a SWPPP would be required. With implementation of the SWPPP, which would include BMPs to control erosion and prevent off-site sedimentation, and implementation of APM GEO-1, substantial soil erosion and associated topsoil loss would not occur. As a result, the impact on soil erosion and loss of topsoil due to construction of Alternative 6a/6b would be less than significant.

Figure 4.7-18 Alternative 6 Geologic Units



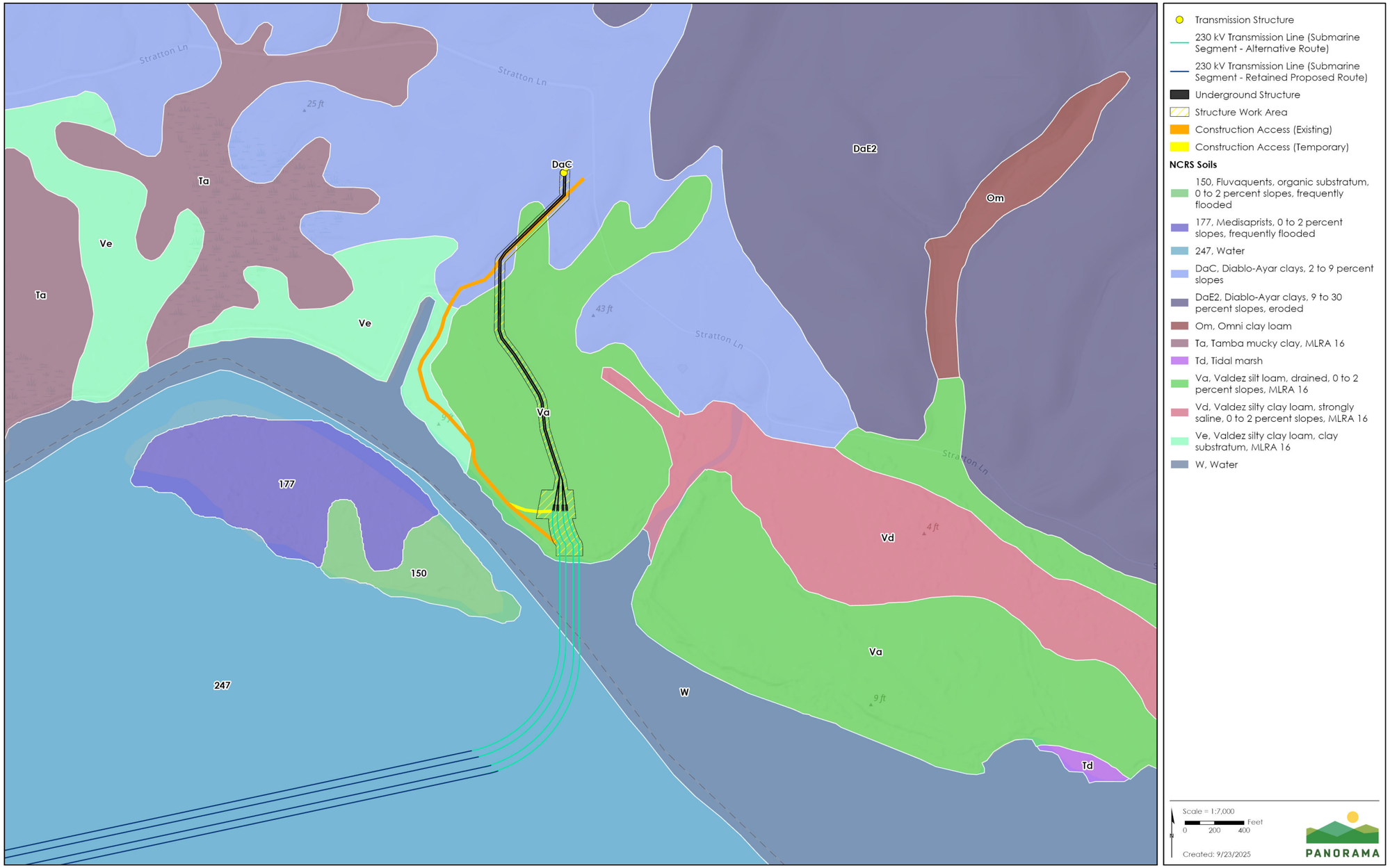
Source: (Graymer, D.L Jones, et al. 2002)

Figure 4.7-19 Alternative 6 Liquefaction Susceptibility



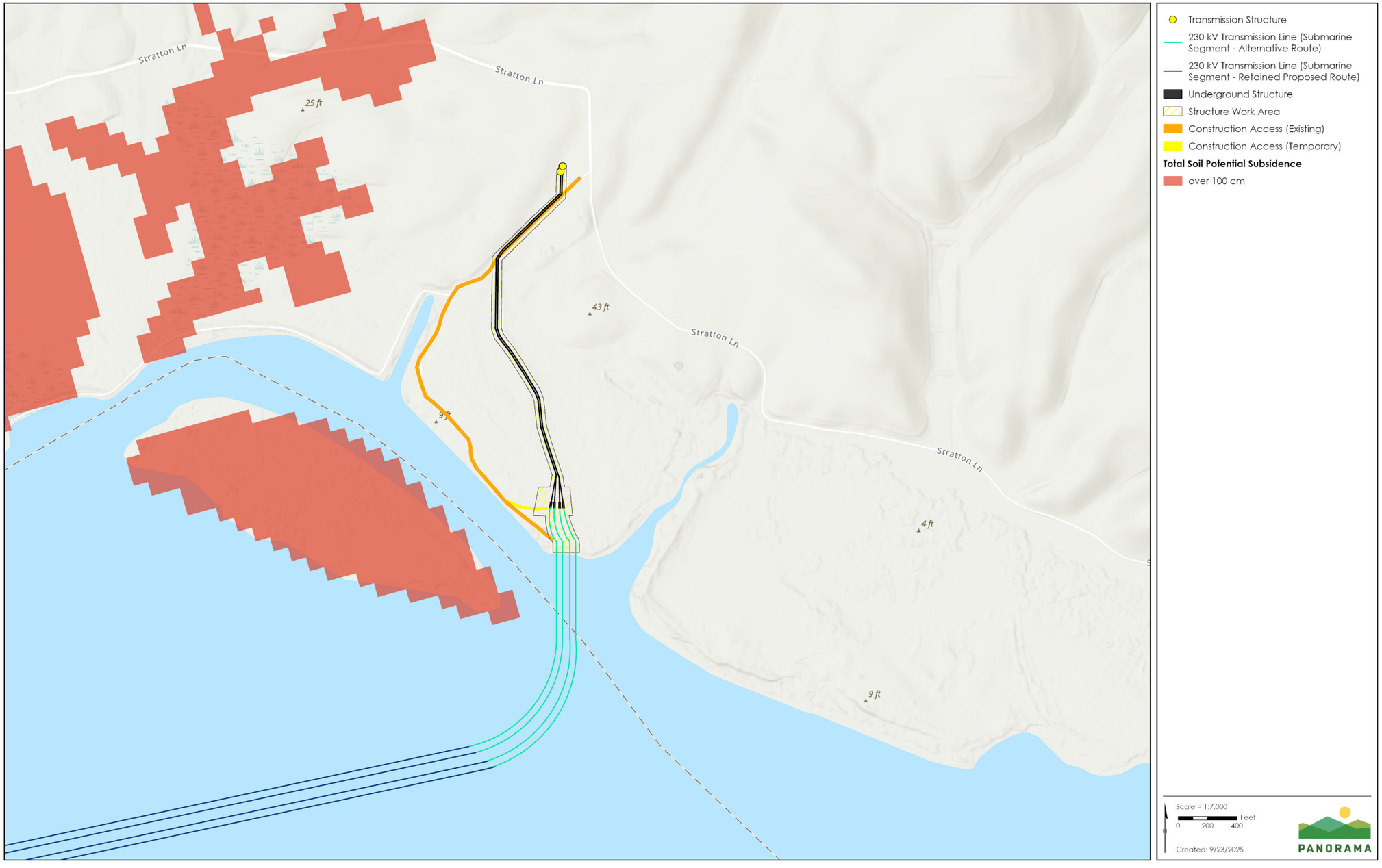
Source: (CGS 2022)

Figure 4.7-20 Alternative 6 Soil Units



Source: (NRCS 2025)

Figure 4.7-21 Alternative 6 Subsidence Potential



Source: (NRCS 2023)

Overall, geology and soil impacts under Alternative 6a/6b would be similar to those of the Proposed Project and would remain less than significant.

Impact GEO-6: Would Alternative 6a/6b directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? (*Less than significant)*

Alternatives 6a/6b would require trenching along the entire alignment. A portion of Alternative 6a/6b is located within the Montezuma Formation, which has a high potential to contain paleontological deposits. Construction of Alternative 6a/6b could thus destroy a unique paleontological resource. LSPGC proposed implementation of APMs PALEO-1 and PALEO-2, to reduce impacts on paleontological resources. While the APMs would reduce impact with worker training and paleontological monitoring, the APMs do not define procedures for reporting and thus a significant impact on paleontological resources would remain.MM GEO-1 specifies requirements for worker training, paleontological monitoring, and procedures for fossil discovery including reporting to avoid significant impacts on paleontological resources. With implementation of MM GEO-1, the impact from Alternative 6a/6b destruction of a unique paleontological resource would be less than significant.

Overall, paleontological resource impacts under Alternative 6a/6b would be similar to those of the Proposed Project and would remain less than significant with mitigation.

4.7.12 No Project Alternative

Environmental Setting – No Project

Under the No Project Alternative, none of the proposed LSPGC or PG&E project components would be constructed. Existing land uses at the substation sites, transmission alignments, and interconnection corridors would continue in their current condition. The geology, soils, seismic, and paleontological resources within the project study area would remain subject to the same regional hazards and natural processes (e.g., ground shaking, soil erosion, expansive soils, and potential for paleontological resources at depth). No new ground disturbance or construction would occur under this alternative.

Impact Analysis – No Project

Because no new substations, transmission lines, or related facilities would be developed, the No Project Alternative would avoid potential impacts related to geology, soil, and paleontological resources. There would be no excavation, grading, or foundation construction that could increase risks associated with seismic ground shaking, liquefaction, soil instability, or erosion, and there would be no potential to disturb paleontological resources (Impact GEO-1, Impact GEO-2, Impact GEO-3, Impact GEO-4, Impact GEO-5, Impact GEO-6). The No Project Alternative would have no impact on geology, soil, and paleontological resources.

4.7.13 Mitigation Measures

LSPGC Mitigation Measures

MM GEO-1: Paleontological Resources Mitigation and Monitoring Program.
Prior to the initiation of ground-disturbing activities within geologic units of high paleontological sensitivity (Montezuma Formation [Qmz] and Pleistocene alluvial fan deposits [Qpf]), a site-specific Paleontological Resources Mitigation Program (PRMP) shall be prepared and implemented under the direction of a qualified professional paleontologist, consistent with Society of Vertebrate Paleontology (2010) guidelines. The PRMP shall include the following elements:

- **Worker Environmental Awareness Program (WEAP) Training**. All construction personnel shall receive training on paleontological resources prior to the start of construction. Training shall describe the laws and ordinances protecting fossil resources, the types of fossil resources that may be encountered in the Proposed Project site, the role and authority of the paleontological monitor, procedures to follow in the event of a fossil discovery, and contact information for the project paleontologist. The training shall be prepared by the project paleontologist and may be conducted in conjunction with other environmental trainings required for the project.
- **Paleontological Monitoring**. A qualified paleontological monitor shall be retained to monitor initial ground-disturbing activities in areas mapped as Qmz and Qpf. Monitoring shall consist of visual inspection of excavated or graded areas and trench sidewalls. The project paleontologist may reduce or discontinue monitoring if field observations indicate that geologic conditions no longer warrant full-time monitoring.
- **Fossil Discovery Procedures**. If fossils are discovered during construction, the paleontological monitor shall have the authority to halt or divert construction equipment in the immediate vicinity of the find until it can be evaluated. If fossils are determined to be scientifically significant, the project paleontologist shall recover them using standard professional methods. Smaller discoveries may be salvaged quickly with minimal construction delay; however, larger discoveries (e.g., complete skeletons or large mammal fossils) may require extended excavation and salvage. Construction shall not resume in the affected area until the paleontological monitor confirms that fossil recovery is complete.
- **Fossil Preparation and Curation**. Prior to construction, an accredited repository willing to accept fossil specimens shall be identified. Significant fossils collected during project construction shall be prepared in a properly equipped laboratory, stabilized or repaired as needed, identified to the lowest taxonomic level practical, and curated at the accredited repository. All fossil specimens shall be delivered to the repository no later than 30 days after completion of laboratory work. The applicant shall be responsible for all costs associated with preparation and curation.
- **Final Paleontological Mitigation Report**. Upon completion of ground-disturbing activities and curation of fossils (if applicable), the project paleontologist shall prepare a final report documenting the results of the mitigation and monitoring program. The

report shall include a description of monitoring methods, locations, and duration; stratigraphic sections observed; a summary of recovered fossils and their scientific significance; and confirmation of fossil curation at the designated repository. The report shall be submitted to the CPUC and the identified repository no later than 60 days following completion of construction.

PG&E Mitigation Measures

MM GEO-1: Paleontological Resources Mitigation and Monitoring Program (see above)

4.7.14 References

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4.8 Greenhouse Gas Emissions

This section presents the environmental setting and analysis of greenhouse gas emission impacts resulting from implementation of the Proposed Project and alternatives. This section provides information on existing greenhouse gas emissions, regulations applicable to greenhouse gas emissions, environmental impacts, and mitigation measures to reduce or avoid significant effects for the Proposed Project and alternatives, where feasible.

None of the scoping comments submitted for the Proposed Project are relevant to the analysis of greenhouse gases as documented in the Scoping Report (Appendix B).

4.8.1 Environmental Setting

Greenhouse Gases and Climate Change

The term *greenhouse gasses* (GHGs) refers 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 2023)

Global warming potential (GWP) is an estimate of 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. *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.

Greenhouse Gas Emissions

GHG emissions from human activities primarily include CO_2, with much smaller amounts of nitrous oxide (N_2O), methane (CH_4, often from unburned natural gas), sulfur hexafluoride (SF_6) from high-voltage power equipment, and hydrofluorocarbons (HFCs) and perfluorocarbons (PFCs) from refrigeration/chiller equipment. Because GHGs emissions have different warming potentials (i.e., the amount of heat trapped in the atmosphere by a certain mass of the gas), and because CO_2 is the most common referenced gas for climate change, GHG emissions are often quantified and reported as CO_2-equivalent (CO_2e) emissions, which is calculated using a factor called the *global warming potential* (GWP). GWPs are metric values developed by the Intergovernmental Panel on Climate Change (IPCC) to compare the climate-warming effects of

different greenhouse gases over a set time horizon, typically 100 years (i.e., GWP_{100}). GWPs express how much heat a given GHG traps in the atmosphere relative to carbon dioxide (CO_2), which has a GWP of 1. For example, according to the IPCC's Fifth Assessment Report, SF_6 is very potent GHG, with a global warming potential (GWP) of 22,800, meaning that it traps 22,800 times the heat as CO_2 (IPCC 2013). Therefore, an emission of 1 metric ton (MT) of SF_6 would be reported as 22,800 metric tons CO2e ($MTCO_2e$). The global warming potential of CH_4 and N_2O are 25 and 298, respectively. The principal GHGs generated from human activity that enter and accumulate in the atmosphere are described below.

Carbon Dioxide (CO_2)
CO_2 is a naturally occurring gas that enters the atmosphere through natural as well as anthropogenic (human) sources. Key anthropogenic sources include the burning of fossil fuels (e.g., oil, natural gas, coal), solid waste, trees, wood products, and other biomass, as well as industrial chemical reactions, such as those associated with manufacturing cement. CO_2 is removed from the atmosphere when it is absorbed by plants as part of the biological carbon cycle.

Methane (CH_4)
Like CO_2, CH_4 is emitted from both natural and anthropogenic sources. Key anthropogenic sources of CH_4 include gaseous emissions from landfills, releases associated with the mining and materials extraction industries (in particular coal mining), and fugitive releases from extraction and transport of natural gas and crude oil. Livestock and agricultural practices also emit CH_4. Small quantities of CH_4 are released during fossil fuel combustion.

Nitrous Oxide (N_2O)
N_2O is emitted from both natural and anthropogenic sources. Important anthropogenic sources include industrial activities, agricultural activities (primarily the application of nitrogen fertilizer), the use of explosives, combustion of fossil fuels, and decay of solid waste.

Fluorinated Gases (HFCs, PFCs, and SF_6)
HFCs, PFCs, and SF_6 are synthetic gases emitted from a variety of industrial processes and contribute substantially more to the greenhouse effect on a pound-for-pound basis than the previously described GHGs. Fluorinated gases often are used as substitutes for ozone-depleting substances (i.e., chlorofluorocarbons (CFCs), hydrochlorofluorocarbons (HCFCs), and halons). Fluorinated gases typically are emitted in small quantities, but because of their potency they sometimes are referred to as "high global warming potential gases."

Greenhouse Gas Sources

United States

In 2022, total gross U.S. greenhouse gas emissions were 6,343.2 million metric tons of carbon dioxide equivalent (MMT CO_2e). Total gross U.S. emissions decreased by 3.0 percent from 1990 to 2022, down from a high of 15.2 percent above 1990 levels in 2007 (EPA 2024). In 2022, the electric power industry (including CO_2 from fossil-fuel combustion, stationary combustion, waste incineration, and electrical equipment) accounted for 25 percent of the U.S.'s GHG

emissions (EPA 2024, tbl. 2.10). Sulfur hexafluoride (SF_6), which is emitted from the manufacture and use of electrical equipment is the most potent GHG evaluated by the IPCC, with a high GWP and extremely long atmospheric lifetime. Fugitive emissions of SF_6 and CF_4 can escape from gas-insulated substations and switchgear through seals, especially from older equipment. The gas can also be released during equipment manufacturing, installation, servicing, and disposal. SF_6 emissions from electrical equipment decreased by 79.4 percent from 1990 to 2022 due partially to a growing awareness of the environmental impact of SF_6 emissions. Total emissions of SF_6 from electrical equipment in the U.S. in 2022 were lower than 2021 emissions, decreasing by 15.3 percent (EPA 2024).

California

The California Air Resources Board (CARB) produces the annual Assembly Bill (AB) 32 Greenhouse Gas Emissions Inventory, which estimates anthropogenic emissions within California as well as emissions associated with imported electricity. According to the most recent Inventory, released in September 2024, California's statewide emissions from GHG emitting activities in 2022 were 371.1 million metric tons of carbon dioxide equivalent ($MMTCO_2e$). This is a decrease of 9.3 $MMTCO_2e$, or 2.4 percent, from 2021 (380.4 MMTCO2e) (CARB 2024b). California's GHG emissions from 2016 to 2022 are shown in Table 4.8-1.

Table 4.8-1 California Greenhouse Gas Emissions, 2016 to 2022

Emission inventory category	2016	2017	2018	2019	2020	2021	2022	Percent total GHG emissions in 2022
Transportation	164.8	166.0	164.8	161.7	135.2	145.1	139.9	37.7%
Industrial	70.8	64.4	65.0	60.2	59.5	62.3	59.8	19.6%
Electricity	81.3	81.7	82.3	80.9	73.6	74.2	72.7	16.1%
Commercial and residential	37.7	38.3	37.5	40.6	39.0	38.8	39.5	10.6%
Agriculture	32.1	31.6	32.0	31.2	31.4	30.4	29.8	8.0%
High GWP GHGs	19.5	20.1	20.6	20.8	21.3	21.3	21.3	5.7%
Recycling and waste	7.9	8.2	8.2	8.3	8.5	8.3	8.2	2.2%
Total gross emissions	414.1	410.3	410.5	403.7	368.5	380.4	371.1	100%

Note:

Percentage may not add to 100 percent due to independent rounding. All measurements are shown in million MT CO_2e.

Source: (CARB 2024a)

Bay Area GHG Emissions

The 2017 *Bay Area Emissions Inventory: Greenhouse Gas Emissions and Forecasts* provides an inventory of greenhouses from years 1990 to 2050 in the San Francisco Bay Area. In 2015, the

Bay Area's GHG emissions totaled approximately 85 $MMTC_2Oe$, with electricity and cogeneration, including both direct combustion and electricity imports, accounting for 14 percent of total area GHG emissions. GHG emissions for the electricity and cogeneration sector in the Bay area were forecast to fall by 40 percent from 1990 levels by 2030 and 80 percent by 2050 (BAAQMD 2017).

Solano County

Fuel consumption in the transportation sector is the single biggest source of GHG emissions in most urban communities, such as the developed parts of Solano County. The transportation sector includes emissions from private, commercial, fleet, and transit vehicles. The residential, commercial, and industrial sector sources include emissions from electricity and natural gas used in both private and public sector buildings and facilities (Solano County 2024). The Proposed Project site is within an undeveloped portion of Solano County and a wind farm, where there are no existing GHG emission sources.

Conta Costa County

In 2013, activities in the unincorporated areas of Contra Costa County within the County's jurisdictional control resulted in 1,392,450 $MTCO_2e$, a 1-percent decrease from 2005 levels For Contra Costa County, the largest emitter of GHGs in 2013 was the transportation sector, contributing 651,130 $MTCO_2e$, or 47 percent of the county's emissions. Residential energy was the second-largest source of emissions with approximately 258,420 $MTCO_2e$ or 19 percent of emissions, followed by landfills with approximately 196,500 $MTCO_2e$ or 14 percent of emissions. Nonresidential energy was the fourth-largest source of emissions, with approximately 125,350 $MTCO_2e$ (9%); off-road equipment contributed approximately 66,230 $MTCO_2e$ (5%) and agriculture contributed approximately 58,200 $MTCO_2e$ (4 percent). The smallest sources of emissions, solid waste, water and wastewater, and BART, were responsible for 2 percent, 1 percent, and less than 1percent of emissions, respectively (Contra Costa County 2015).

City of Pittsburg

The City of Pittsburg Greenhouse Gas Emissions Inventories presents updated GHG emissions inventories for the city of Pittsburg for the years 2005 and 2016, quantifying both municipal and community-wide emissions from energy use, transportation, solid waste handling, and water and treatment using a methodology framework aligned with International Council for Local Environmental Initiatives (ICLEI) and CARB protocols to support future emissions tracking and reduction planning (City of Pittsburg 2019). Community-wide emissions for the city of Pittsburg totaled approximately 428,563 metric tons of CO_2e in 2016, reflecting a 9-percent decrease from 2005 levels despite a 15-percent increase in population. The largest emission sources were natural gas and electricity use (48 percent), on-road transportation (36 percent), and off-road equipment (11 percent). Smaller contributions came from solid waste handling, water and wastewater treatment, rail, and marine transit. The inventory also shows a 21-percent reduction in per capita emissions, from 5.2 to 4.2 $MTCO_2e$ per service person, and a 38-percent drop in municipal operations emissions, largely due to energy efficiency upgrades. These trends highlight Pittsburg's progress toward state and local climate goals.

The existing Pittsburg Substation is located within a heavily industrialized area of the city of Pittsburg, adjacent to multiple large stationary sources of GHG emissions, including petroleum refineries. These sources are regulated under California's Regulation for the Mandatory Reporting of Greenhouse Gas Emissions (MRR) (17 CCR §§ 95100 et seq.), which requires annual emissions reporting from facilities that emit 25,000 metric tons or more of CO_2e per year. Many of these facilities are also subject to the state's Cap-and-Trade Program (17 CCR §§ 95800 et seq.), which establishes declining emissions caps and market-based compliance obligations. The presence of these regulated sources reflects the regional GHG emissions profile but does not affect the regulatory applicability of CEQA GHG thresholds to the Proposed Project, which does not include any industrial or operational emissions sources subject to these programs.

LSPGC

LSPGC reports its GHG emissions and avoided emissions using the GHG Protocol Corporate Accounting and Reporting Standard (World Resources Institute and World Business Council for Sustainable Development 2004) and EPA equivalency tools. In 2023, LSPGC's Scope 1 emissions (primarily from natural gas combustion at power plants) totaled approximately 18.95 $MMTCO_2e$ while Scope 2 emissions (from purchased electricity) totaled 1.58 $MMTCO_2e$. The company also tracks avoided emissions from renewable and storage assets it operates. In 2023, LS Power estimates that it avoided approximately 105 $MMTCO_2e$. The company's California operations, including the Collinsville Substation Project, are part of its transmission and renewables expansion efforts. However, LS Power does not operate any stationary source in California that is individually subject to mandatory GHG reporting under CARB's MRR program (≥25,000 $MTCO_2e$/year) (LS Power 2023).

PG&E

PG&E provides electricity and natural gas service to much of Northern and Central California, including the City of Pittsburg. PG&E reports GHG emissions from its operations in accordance with state and federal programs and has adopted company-wide targets to reduce emissions consistent with California's climate goals. As of 2023, PG&E delivered electricity that was 100 percent greenhouse gas-free on an annual basis to all bundled customers. The utility has also reported a 27-percent reduction in direct (Scope 1 and 2) emissions and a 19-percent reduction in indirect (Scope 3) emissions relative to 2015 levels. PG&E participates in state programs to reduce systemwide emissions, including renewable energy procurement, electrification initiatives, and interconnection of energy storage and renewable natural gas facilities (PG&E 2024).

4.8.2 Regulatory Setting

Federal

Federal Mandatory Reporting of Greenhouse Gases (Code of Federal Regulation title 40, part 98)

In 2008, the U.S. EPA promulgated the Federal Mandatory Reporting of Greenhouse Gases rule 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 emissions of 25,000 $MTCO_2e$ or more. Reporting is required generally at the facility level. However, certain suppliers of fossil fuels and industrial GHGs as well as vehicle and engine manufacturers report at the corporate level rather than facility 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 EPA certification programs. Since 2012, the U.S. EPA and CFR title 40, part 98, subpart DD also require the reporting of SF_6 emissions from certain electrical facilities (EPA 2013).

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 (EPA 2009):

- 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.

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 (CARB 2018). 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 original Scoping Plan on December 11, 2008 (CARB 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 MMTCO2e),
- The Low-Carbon Fuel Standard (15.0 MMTCO2e),
- Energy efficiency measures in buildings and appliances and the widespread development of combined heat and power systems (26.3 MMTCO2e), and
- A renewable portfolio standard (RPS) for electricity production (21.3 MMTCO2e).

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 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 (CARB 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-emissions reduction goals as defined in the initial Scoping Plan. It also evaluates how to align the state's "longer-term" GHG-emissions 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.

CARB 2022 Scoping Plan

The current 2022 Scoping Plan (CARB 2022a) 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.

The Sustainable Communities and Climate Protection Act (Senate Bill 375, 2008)
Signed into law on October 1, 2008, Senate Bill (SB) 375 supplements GHG-emissions 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 (CARB 2025).

Executive Order B-30-15
EO B-30-15 establishes an interim GHG-emissions 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 reduction 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 has adopted the California Mandatory Greenhouse Gas Reporting Regulation (17 Cal. Code Regs. §§ 95100–95133), which requires annual reporting from facilities that emit 10,000 $MTCO_2e$ or more per year, including electricity-generating facilities, retail

providers, power marketers, oil refineries, hydrogen plants, cement plants, cogeneration facilities, and certain other industrial sources. Facilities emitting 25,000 $MTCO_2e$ or more are subject to third-party verification. Covered emissions include stationary combustion, process, and fugitive GHGs, depending on the source category.

Regulation for Reducing Sulfur Hexafluoride Emissions from Gas Insulated Switchgear
Sulfur hexafluoride (SF_6) is a commonly used insulator in electric transmission and distribution equipment. Because of its high GWP, CARB regulates emissions of SF_6 from *gas-insulated equipment* (GIE) under its Regulation for Reducing Sulfur Hexafluoride Emissions from Gas Insulated Switchgear (CCR Title 17 §§ 95350 through 95359.1, first adopted in 2010). This regulation requires that GIE owners not exceed the maximum annual SF_6 emission rate for active GIE 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 GIE 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, amendments to the regulation that establish phase-out dates for SF_6 GIE were adopted in 2021 and became effective on January 1, 2022. In accordance with the amendments, no person may acquire SF_6 GIE for use in California unless a SF_6 phase-out exemption was approved by the Executive Officer, the SF_6 GIE device was present in California and report to CARB for a data year prior to the phase-out date, the SF_6 GIE was purchased prior to the phase-out date, or the SF_6 GIE manufacturer replaces a defective SF_6 GIE device. Phase-out dates for SF_6 GIE begin on January 1, 2025, with phase-out dates varying based on voltage class, current rating, and installation configuration (i.e., aboveground or belowground). Table 4.8-2 provides the phase-out dates for SF_6 GIE.

Table 4.8-2 Phase-out Dates for SF_6 Gas-insulated Equipment

Configuration	Voltage capacity (kV)	Short-circuit current rating (kA)	Phase-out date
Aboveground	<38	All	January 1, 2025
Aboveground	38	All	January 1, 2028
Belowground	<38	<25	January 1, 2025
Belowground	<38	≥25	January 1, 2031
Any	>38 to 145	<63	January 1, 2025
Any	>38 to 145	≥63	January 1, 2028
Any	>38 to 145	<63	January 1, 2027
Any	>145 to 245	≥63	January 1, 2031
Any	>245	All	January 1, 2033

Source: (CARB 2022b)

The regulation also requires that all GIE owners meet annual emission limits as calculated according to section 95353 of the regulation (CARB 2022b). Under this provision, annual SF_6 emissions thresholds are based on a GIE owner's total fleetwide nameplate capacity, expressed in $MTCO_2e$ and multiplied by *an annual emission factor* (AEF) determined by the total capacity of the fleet.

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 four 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).

CEQA Guidelines

Section 15064.4 of the CEQA Guidelines addresses the significance of GHG emissions. Section 15064.4 calls for a lead agency to make a "good-faith effort" to "describe, calculate, or estimate" GHG emissions in CEQA environmental documents. Section 15064.4 further states that the analysis of GHG impacts should include consideration of: (1) the extent to which a project may increase or reduce GHG emissions, (2) whether project emissions would exceed a locally applicable threshold of significance, and (3) the extent to which a project would comply with "regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions."

The CEQA Guidelines also state that a project's incremental contribution to a cumulative effect is not cumulatively considerable if the project would comply with the requirements in a previously approved plan or mitigation program (including plans or regulations for the reduction of GHG emissions) that provides specific requirements to avoid or substantially lessen the cumulative problem within the geographic area in which the project is located (CEQA Guidelines section 15064(h)(3)). However, it does not set a numerical threshold of significance for GHG emissions. The following guidance on measures to mitigate GHG emissions are provided when GHG emissions are found to be significant:

Consistent with section 15126.4(a), lead agencies shall consider feasible means, supported by substantial evidence and subject to monitoring or reporting, of mitigating the significant effects of greenhouse gas emissions. Measures to mitigate the significant effects of greenhouse gas emissions may include, among others:

1. Measures in an existing plan or mitigation program for the reduction of emissions that are required as part of the lead agency's decision
2. Reductions in emissions resulting from a project through implementation of project features, project design, or other measures
3. Off-site measures, including offsets that are not otherwise required, to mitigate a project's emissions
4. Measures that sequester greenhouse gases
5. In the case of the adoption of a plan, such as a general plan, long range development plan, or plans for the reduction of greenhouse gas emissions, mitigation may include the identification of specific measures that may be implemented on a project-by-project basis. Mitigation may also include the incorporation of specific measures or policies found in an adopted ordinance or regulation that reduces the cumulative effect of emissions

California Energy Code

The energy consumption of new residential and nonresidential buildings in California is regulated by the California Code of Regulations under Title 24, Part 6, Building Energy Efficiency Standards (California Energy Code). The California Energy Code was established by the California Energy Commission (CEC) in 1978, in response to a legislative mandate to create uniform building codes to reduce California's energy consumption and provide energy efficiency standards for residential and nonresidential buildings. The CEC updates the California Energy Code every 3 years with more stringent design requirements for reduced energy consumption, resulting in generation of fewer GHG emissions.

The 2022 California Energy Code update, adopted by the CEC on August 11, 2021, applies to projects constructed after January 1, 2023. The update revised energy efficiency standards for newly constructed buildings as well as additions and alterations to existing buildings and builds on California's technology innovations and encourages inclusion of market-ready electric products in new construction. The 2025 update to the California Energy Code, which takes effect on January 1, 2026, builds on the foundational energy efficiency standards established in 1978 and the decarbonization focus of the 2022 code cycle. The 2025 code strengthens requirements for electric-ready infrastructure in both residential and nonresidential buildings, expands prescriptive use of heat pump technologies, and formalizes new performance modeling protocols to better account for electrification benefits. It also introduces mandatory demand management measures intended to support grid reliability and time-of-use responsiveness, reinforcing California's broader climate goals and advancing the state's transition toward zero-emission buildings (CEC 2024).

The building efficiency standards are enforced through the local plan check and building permit process. Local government agencies may adopt and enforce additional energy standards for new buildings as reasonably necessary in response to local climatologic, geologic, or topographic conditions, provided that these standards exceed those in the California Energy Code.

California Green Building Standards Code

The California Green Building Standards Code (CALGreen Code) is part 11 under Title 24 of the California Code of Regulations. The CALGreen Code is the first-in-the-nation mandatory green building standards code, developed to meet the goals of California's landmark initiative AB 32 (Global Warming Solutions Act of 2006), which established a comprehensive program of cost-effective reductions of GHG emissions to 1990 levels by 2020. The CALGreen Code includes a waste diversion mandate, requiring that at least 65 percent of construction materials that are generated during new construction or demolition projects be diverted from landfills.

Local

Pursuant to 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."

Solano County

Solano County General Plan

The planning practices promulgated within the Solano County General Plan Chapter 5 Public Health and Safety to reduce air pollutant emissions from motor vehicles, stationary, and area sources also act to minimize CO_2 emissions from the same sources. The following policy listed in Chapter 5 Public Health and Safety is relevant GHS impacts from the Proposed Project (Solano County 2024):

> *Policy HS.P-85*: Support land use, transportation management, infrastructure, and environmental planning programs that reduce vehicle emissions and improve air quality.

Solano County Climate Action Plan

Solano County's Board of Supervisors adopted its Climate Action Plan on June 7, 2011, to address GHG emissions at the local level (Solano County 2011). The Climate Action Plan recommends actions that the community can take to reduce both emissions and communitywide contributions to global climate change. In addition, the Climate Action Plan establishes a communitywide GHG emissions reduction goal of 20 percent below 2005 levels by 2020.

Sacramento County

Sacramento County General Plan

The following policy from the Sacramento County General Plan Air Quality Element is relevant to GHH emissions impacts from the Proposed Project (Sacramento County 2022a):

> *Policy AQ-4*. Developments which meet or exceed thresholds of significance for ozone precursor pollutants, and/or Greenhouse Gases (GHG) as adopted by the Sacramento Metropolitan Air Quality Management District (SMAQMD), shall be deemed to have a significant environmental impact. An Air Quality Mitigation Plan and/or a Greenhouse Gas Reduction Plan shall be submitted to the County of Sacramento prior to project approval, subject to review and recommendation as to technical adequacy by the Sacramento Metropolitan Air Quality Management District.

Sacramento County Climate Action Plan

On September 27, 2022, Sacramento County adopted its Climate Action Plan, 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 Climate Action Plan 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 (Sacramento County 2022b).

Contra Costa County

Contra Costa County General Plan

The Contra Costa County 2045 General Plan addresses greenhouse gas (GHG) emissions reduction goals primarily within the Health and Safety Element, specifically under the Greenhouse Gases and Climate Change, Resilience, and Adaptation sections (Contra Costa County 2024a). These sections establish policies and actions aimed at reducing GHG emissions in alignment with California's statewide carbon neutrality objectives. The Contra Costa County General Plan Health and Safety Element contains the following goal and policy that are relevant to the Project:

> *Goal HS-3:* Communities that reduce existing and anticipated GHG emissions in support of statewide carbon neutrality goals and other GHG reduction targets.
>
> *Policy HS-P3.1*: Facilitate carbon-neutral development projects and communities that support a circular economy, zero-emission modes of transportation, reliable and renewable energy resources, energy-efficient buildings, zero waste, water efficiency and conservation, green infrastructure, soil conservation, and a system of natural and working lands that support natural carbon sequestration and climate resilience.

Contra Costa County Climate Action Plan

The County's Climate Action and Adaptation Plan provides more specific strategies and actions to achieve Contra Costa County's GHG-emissions reduction goals. Contra Costa County's Climate Acton Plan 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 2015 Climate Action Plan identifies how the County will achieve the AB 32 GHG emissions reduction target of 15 percent below baseline levels by the year 2020, in addition to supporting other public health, energy efficiency, water conservation, and air quality goals identified in the County's General Plan and other policy documents (Contra Costa County 2015). The Contra Costa County 2024 Climate Action and Adaptation Plan Update, approved on November 5, 2024, reflects the County's programs and actions to 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 2024 Climate Action Plan also forecasts the County's GHG emissions and sets reduction targets and strategies (Contra Costa County 2024b).

City of Pittsburg

City of Pittsburg General Plan

The City of Pittsburg General Plan 2040 Resource Conservation and Open Space Element lists the following goal and related policies relevant to impacts to GHG emissions from the Proposed Project (City of Pittsburg 2024):

> *Goal-10-6*: Support Federal, State, and regional efforts to reduce air pollution in order to protect human and environmental health and restore air quality in the area to a more healthful level.
>
> > *Policy 10-P-6.1*: Support the principles of reducing air pollutants and greenhouse gas emissions through comprehensive and sustainable land use, transportation, and energy planning and addressing opportunities to decrease emissions associated with local government operations.
> >
> > *Policy 10-P-6.2*: Ensure that new development is consistent with the energy objectives and targets identified by the City's Sustainability Plan.
> >
> > *Policy 10-P-6.3:* Encourage transportation modes that minimize toxic air contaminants (TACs) and greenhouse (GHG) gas emissions from motor vehicle use.

City of Pittsburg Sustainability Plan

The 2023 City of Pittsburg Sustainability Plan is a long-range document that guides the City towards sustainability and GHG emission reduction goals. It includes the inventory of emissions sources in Pittsburg for 2005 and 2016, forecasts future GHG emissions through 2045,

and establishes emissions reduction targets that align with goals set by California for both 2030 and 2045 (City of Pittsburg 2023).

4.8.3 Approach to Impact Analysis

The analysis of impacts on greenhouses gases applies the impact criteria and significance thresholds defined in the following subsection. The applicant proposed measures (APMs) and construction measures (CMs) proposed by LSPGC and PG&E, respectively, that have been considered when making the impact determinations for greenhouse gases, as shown in Table 4.8-3. Impacts analysis for the Proposed Project includes separate analysis for LSGPC and PG&E project components as well as analyses of cumulative impacts and of project alternatives. Mitigation measures are defined to reduce or avoid significant impacts, where feasible.

GHG Emissions Modeling

Modeling of GHG emissions for construction was conducted for the Proposed Project as a whole regardless of the proponent (LSPGC or PG&E) (see Appendix E: Air Quality Calculations). Emission factors from the following sources were used to calculate emissions of GHGs (i.e., CO_2, CH_4, and SF_6) from construction (e.g., heavy equipment use, helicopter use, on-road vehicle travel, and watercraft), maintenance vehicle use, and electricity consumption:

- California Emissions Estimator Model (CalEEMod) v2022.1 (California Air Pollution Control Officers Association 2024)
- 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)
- CEC and other agency studies

Daily and annual emissions for the following greenhouse gases (GHGs) from the construction and operation and maintenance (O&M) phases of the Proposed Project were calculated:

- Carbon dioxide (CO_2)
- Methane (CH_4)
- Sulfur hexafluoride (SF_6)

GHG emissions were calculated for the following sources for the construction phase of the Proposed Project:

- Exhaust emissions from off-road equipment
- Exhaust emissions from on-road vehicle travel
- Exhaust emissions from helicopter use
- Exhaust emissions from watercraft

GHG emissions were calculated for the following sources for the operation and maintenance phase of the Proposed Project:

- Exhaust emissions from on-road vehicle travel

- Electricity consumption at the proposed LSPGC Collinsville Substation
- Fugitive SF_6 losses at the proposed LSPGC Collinsville Substation

Air District Guidance on Thresholds of Significance

Bay Area Air Quality Management District

The Bay Area Air Quality Management District (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 (BAAQMD 2022). 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.

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 are required quantify and disclose anticipated emissions and recommends implementation of BMPs as provided in Chapter 6, Table 6-1 of BAAQMD's CEQA Guidelines to minimize GHG emissions during construction (BAAQMD 2022). BAAQMD's threshold of significance for impacts from the operation of stationary sources is 10,000 $MTCO_2e$ (BAAQMD 2022).

Sacramento Metropolitan Air Quality Management District

SMAQMD is the regional government agency that regulates sources of air pollution within the SVAB. 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 GHG emissions for both construction and operation of a project. SMAQMD recommends an annual threshold for emissions of GHG of 1,100 $MTCO_2e$ for construction and 10,000 $MTCO_2e$ for operation (SMAQMD 2021).

Yolo-Solano Air Quality Management District

The Yolo-Solano Air Quality Management District (YSAQMD) is the regional government agency that regulates sources of air pollution within Yolo County and the northeastern portion of Solano County. The YSAQMD *Handbook for Assessing and Mitigating Air Quality Impacts* provides procedures for evaluating the air quality effects of development projects. While YSAQMD has not adopted quantitative thresholds of significance for greenhouse gas (GHG) emissions, the handbook recommends that larger projects include a qualitative discussion of potential GHG impacts. Lead agencies are encouraged to consider the implications of project-related GHG emissions in light of statewide goals and to incorporate mitigation measures where feasible (YSAQMD 2007).

Impact Criteria and Thresholds of Significance

The following impact criteria questions have been derived from Appendix G of the CEQA Guidelines to evaluate impacts on greenhouse gases. Appendix G of the CEQA Guidelines ask whether a project would:

- Impact GHG-1: Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.
- Impact GHG-2: Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

LSPGC APMs and PG&E CMs

The LSPGC APMs and PG&E CMs identified in Section 2: Project Description that are relevant to the GHG impact analysis are provided in Table 4.8-3.

Table 4.8-3 APMs and CMs Relevant to Greenhouse Gas Emissions

LSPGC APMs and PG&E CMs
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.
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.

LSPGC APMs and PG&E CMs
• 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.

4.8.4 Impact Analysis – Proposed Project

Table 4.8-4 presents a summary of the CEQA significance criteria and impacts on greenhouse gas emissions that would occur during construction, operation, and maintenance of the Proposed Project.

Table 4.8-4 Summary of Impacts on Greenhouse Gas Emissions for the Proposed Project

Impact Criteria: Would the project …	APMs/CMs Applied	Significance Before Mitigation	Mitigation Measures Required	Significance After Mitigation
Impact GHG-1: Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	APM GHG-1 CM GHG-1	LTS	None	NA
Impact GHG-2: Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	None	S	None	SU

Notes:

LTS = less than significant

NA = not applicable

S = significant

SU = significant and unavoidable

Impact GHG-1: Would the Proposed Project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? *(Less than significant)*

Construction

Construction of the Proposed Project would involve use of heavy equipment, vehicles, helicopters, and watercraft, which would generate emissions GHGs (CO_2, CH_4, and N_2O). Table 4.8-5, below, presents the modeled annual emissions of each individual GHG as well as the total CO_2e from construction of the Proposed Project within the jurisdictions of BAAQMD and SMAQMD.

Table 4.8-5 Proposed Project Construction Estimated Annual GHG Emissions by Jurisdiction

	CO_2 (metric tons)	CH_4 (metric tons)	N_2O (metric tons)	Total CO_2e (metric tons)
BAAQMD	10,159.33	0.30	0.36	10,274.71
SMAQMD	955.74	0.04	0.01	959.14
YSAQMD	46.15	<.01	0.00	46.76
Total combined	11,161.22	0.33	0.37	11,280.61

Notes:

[a] GHG emissions are modeled for the Project as a whole and not broken out by proponent.

[b] CO_2 = carbon dioxide; CH_4 = methane; N_2O = nitrous oxide; CO_2e = CO_2 equivalent

Source: (Insignia Environmental 2025)

BAAQMD does not set a quantitative significance threshold for construction-phase GHG emissions but requires that a lead agency quantify and disclose GHG emissions that would be generated by construction of a project and advises lead agencies to evaluate consistency with state climate goals and implement BMPs where feasible. The Proposed Project would incorporate standard BMPs, including equipment efficiency measures and idle reduction protocols, to reduce construction-related emissions. APM GHG-1 would apply to construction of LSPGC components and CM GHG-1 would apply to construction of PG&E components. Implementation of APM GHG-1 and CM GHG-1 would reduce GHG emissions from construction of the Proposed Project and are consistent with BAAQMD BMPs for GHG reduction. (BAAQMD 2022, tbl. 6.1). Because the Proposed Project would implement the standard BMPs as recommended by BAAQMD, and due to the short-term nature of construction activities, the Project's GHG emissions would not result in a cumulatively considerable contribution to climate change. Therefore, the impact would be less than significant.

SMAQMD recommends an annual emissions threshold of 1,100 $MTCO_2e$ per year for the construction. As shown in Table 4.8-5, construction activities within the SMAQMD (LSPGC submarine segment construction) are anticipated to generate approximately 959.14 $MTCO_2e$, which falls below the applicable significance threshold. Therefore, impacts would be less than significant.

YSAQMD has not adopted quantitative thresholds of significance for GHG emissions but recommends that larger development projects include a qualitative discussion of GHG emissions and their potential to conflict with statewide reduction goals. The district also encourages the use of BMPs and mitigation measures, particularly those that promote energy efficiency and low-emission project design. The Proposed Project would incorporate standard BMPs, including equipment efficiency measures and idle reduction protocols, to reduce construction-related emissions. PG&E's CM GHG-1 would be implemented for Proposed Project activities at Transposition Site C, which is located within the YSAQMD jurisdictional

portion of the SVAB in Solano County. Implementation of CM GHG-1 would reduce GHG emissions from these activities by implementing BMPs, as recommended by BAAQMD, to improve energy efficiency, reduce fuel use, and support statewide reduction targets established under AB 32 and SB 32. These measures are consistent with YSAQMD's guidance to evaluate GHG impacts in the context of long-term climate policy goals. Because the Proposed Project would implement standard BMPs and because the activities at Transposition Site C would be short term and limited in scale, the Project's GHG emissions within YSAQMD's jurisdiction would not conflict with applicable climate policy goals. Therefore, the impact would be less than significant.

Operation and Maintenance

Operation and maintenance of the Proposed Project would begin in 2028, once construction has been completed. Table 4.8-6, below, presents the estimated annual GHG emissions for operation and maintenance of the Proposed Project. The proposed LSPGC Collinsville Substation would be the main source of operational GHG emissions for the Proposed Project, and the primary source of emissions would be from leaks of SF_6 gas from GIS. While operation of the Collinsville Substation would mostly 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 analysis, it was assumed that the Proposed Project would generate up to five trips per month. The cables associated with the proposed LSPGC 230 kV submarine segment would not require regular maintenance; however, in the event of a defective cable, the cable segment would need to be replaced. Replacement of a cable segment would require similar watercraft operation to the initial construction and result in less emissions than construction as the activity would only involve a small segment of cable replacement. PG&E would maintain the components as part of the existing system in the area, and operation and maintenance would generate a negligible increase in vehicle travel or equipment use.

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 Section 2: Project Description, the total on-site electrical demand would be 22 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 operation of the proposed LSPGC Collinsville Substation would include six 500 kV and six 230 kV gas-insulated circuit breakers, which would utilize SF_6 for insulation. The Proposed LSPGC Collinsville Substation would house the circuit breakers within GIS halls, which would also utilize SF_6 for insulation. The volume of SF_6 emissions 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 4.8-6 Proposed Project Operation and Maintenance Estimated Annual GHG Emissions

	CO_2 (metric tons)	CH_4 (metric tons)	N_2O (metric tons)	SF_6 (metric tons)	CO2e (metric tons)
Vehicle use	2.47	0.00	0.00	0.00	2.59
Electricity consumption	35.66	0.01	0.00	0.00	36.01
Fugitive SF_6 losses	0.00	0.00	0.00	0.01	214.00
Total	38.13	0.01	0.00	0.01	252.60

Notes:

[a] GHG emissions are modeled for the Proposed Project and not broken out by proponent.

[b] CO_2 = carbon dioxide; CH_4 = methane; N_2O = nitrous oxide; SF_6 = sulfur hexafluoride; CO_2e = CO_2 equivalent

[c] 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.

Source: (Insignia Environmental 2025)

For stationary sources of GHG emissions, BAAQMD has established an annual threshold of 10,000 $MTCO_2e$. As shown in Table 4.8-6, annual operational emissions are anticipated to be 252.2 $MTCO_2e$, which would fall below BAAQMD's significance threshold. There would be no annual operational GHG emissions within SMAQMD or YSAQMD as none of the operating equipment within either air district would generate GHG emissions and no maintenance is scheduled within either air district since the submarine cable would not require routine inspections or maintenance and the transposition structure would be part of the existing PG&E transmission line and would not generate additional operation or maintenance requirements. Impacts from GHG emissions due to operation and maintenance would therefore be less than significant.

Impact GHG-2: Would Proposed Project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases? ***(Significant and unavoidable)***

AB32 Global Warming Solutions Act

The Proposed Project would not conflict with Assembly Bill 32 (AB 32), the California Global Warming Solutions Act of 2006, which requires the State to reduce its greenhouse gas (GHG) emissions to 1990 levels by 2020 and to maintain and continue reductions beyond 2020. The Proposed Project would not interfere with the attainment of AB 32's goals, as its construction-related emissions would be temporary and limited in scope, and its operational emissions would be minimal.

The Sustainable Communities and Climate Protection Act (Senate Bill 375, 2008)

The Proposed Project does not include housing, commercial, or transportation infrastructure that would induce population growth or affect regional VMT. Additionally, the Proposed Project would not conflict with or obstruct implementation of the applicable sustainable communities strategy (SCS) (see below) as it would not alter existing regional growth patterns,

transportation networks, or land use designations. Therefore, the Proposed Project would not conflict with SB 375 or any adopted SCS and would not interfere with California's efforts to reduce transportation-related GHG emissions.

CARB's 2022 Scoping Plan

CARB's 2022 Scoping Plan is designed to reduce statewide anthropogenic GHG emissions in California by 85 percent as compared to the 1990 levels by 2045. GHG emissions from the LSPGC and PG&E project components' operational activities would be minimal, primarily resulting from the use of SF_6 as an insulating material within the proposed LSPGC Collinsville Substation. Operation and maintenance of the Proposed Project would generate approximately 60 vehicle trips per year for regular operation and maintenance activities and would not involve a significant use of fossil fuels. Therefore, operation and maintenance of the Proposed Project would be consistent with the goals of and would not conflict with CARB's 2022 Scoping Plan.

CARB's Regulation for Reducing Greenhouse Gas Emissions from Gas-Insulated Equipment

Operation of the proposed LSPGC Collinsville Substation would include six 500 kV and six 230 kV SF_6-insulated circuit breakers housed within GIS halls that would also be SF_6-insulated. As a regulated GIE owner, LSPGC is subject to stringent equipment tracking, reporting, and emission limits established by CARB'S 2022 Regulation for Reducing Sulfur Hexafluoride Emissions from Gas Insulated Equipment (CCR title 17 §§ 95350–95359.1), which is a discrete, enforceable component of California's broader strategy to reduce greenhouse gas emissions under Assembly Bill 32 (AB 32) and Senate Bill 32 (SB 32). Under this regulation, new GIE containing SF_6 is subject to phase-out requirements based on voltage class and current rating (see Table 4.8-2). As the voltage capacities of the Proposed Project SF_6-insulated equipment would be 230kV and 500 kV, the earliest phase-out date that would apply to the proposed LSPGC Collinsville Substation would be January 1, 2031 (see Table 4.8-2).

As discussed in Section 4.8.2, annual emissions thresholds under CARB's 2022 regulation are based on the total nameplate capacity of an owner's GIE fleet. New GIE installed as part of the Proposed Project would contribute to LSPGC's total fleet capacity and emissions. Table 4.8-7 lists the new GIE that would be installed under the Proposed Project along with the SF_6 capacity and total modeled annual fugitive SF_6 emissions expressed in pounds and in $MTCO_2e$.

As shown in Table 4.8-7, the total SF6 nameplate capacity for all new Proposed Project GIE would be 14,909 pounds. Using the IPCC's Fifth Assessment Report 100-year GWP for SF6 of 23,500 (IPCC 2013), the modeled annual SF_6 emissions would total approximately 214 $MTCO_2e$. In compliance with CARB's 2022 GIE regulation, LSPGC would include the Proposed Project SF6 GIE nameplate capacity and annual emissions in MTCO2e in its annual report to CARB as required under section 95355. Because the Proposed Project would be installed prior to 2031 and LSPGC would file annual reports to CARB, the Proposed Project would not conflict with the policy and the impact would be less than significant.

Table 4.8-7 Proposed Project SF_6 GIE Nameplate Capacity and Fugitive Emissions

GIE equipment type	Capacity each (SF_6, pounds)	Quantity	Total capacity (pounds)	Leak rate (percent)	Annual SF_6 emissions (metric tons)	Annual emissions $MTCO_2e$
230 kV circuit breaker	135	6	810	0.1	0.0004	8.6
230 kV pipe	8,932	1	8,932	0.1	0.0041	95.2
500 kV circuit breaker	595	6	3,570	0.2	0.0032	76.1
500 kV pipe	1,597	1	1,597	0.2	0.0015	34.0
Total	NA	14	14,909	NA	0.0091	214.0

Source: (Insignia Environmental 2025)

California Mandatory Greenhouse Gas Reporting Regulation (17 California Code of Regulations §§ 95100–95133)

The Proposed Project's annual operational GHG emissions would be approximately 252.6 $MTCO_2e$, which is well below the reporting threshold of 10,000 $MTCO_2e$. Accordingly, the Project would not be subject to the mandatory reporting or verification requirements under this regulation. Nonetheless, by limiting operational emissions to levels that fall well below the State's reporting threshold, the Project is consistent with the regulatory framework established by CARB to monitor and manage large sources of GHG emissions and would not conflict with the goals or implementation of the Mandatory Reporting Regulation; no impact would occur.

Senate Bill 100

The Proposed Project includes a new substation, associated transmission infrastructure, and modifications to existing transmission and substation facilities that would support the delivery of electricity generated from renewable or other zero-carbon sources. By increasing the capacity and reliability of the regional transmission system, the Project would facilitate integration of clean energy resources into the grid and generally support statewide decarbonization goals.

The PG&E proposed lattice steel towers (LSTs) within the SMUD-owned Solano 4 Wind Project site would create nesting or perching habitat for raptors (Steenhof et al. 1993). The presence of perching or nesting raptors on new LST structures has the potential to result in increased bird strikes during operation of the existing Solano Wind Farm. SMUD has obtained an incidental take permit from the U.S. Fish and Wildlife Service (USFWS) for operation of the wind farm. This permit limits the number of incidental avian fatalities allowed at the Solano Wind Project. Exceeding these limits would violate federal requirements and trigger operational consequences, including mandatory curtailment of energy generation, which would significantly affect SMUD's capacity to provide renewable energy to customers (R. Donovan, "PG&E Collinsville Substation Lattice Tower Impact," May 7, 2025). Curtailment of renewable energy generation at the Solano 4 Wind Project would reduce overall generation of renewable energy, which would be a conflict with SB 100, which requires increased renewable energy generation. Since SMUD has informed the CPUC that curtailment of energy generation associated with exceedance of the avian fatalities would significantly affect SMUD's delivery of

energy to its customers, the impact of the LSTs would be significant. Since the impact would be due to the presence of the LSTs within the wind farm, no mitigation would feasibly reduce the impact from introduction of the LSTs within the wind farm. The impact from conflict with state plans for GHG reduction would be significant and unavoidable.

California Energy Code

The Proposed Project consists of electric transmission infrastructure and substation facilities that do not include conditioned buildings subject to the prescriptive or performance compliance requirements of the California Energy Code. To the extent any auxiliary structures (e.g., control buildings) are constructed, they would be required to comply with applicable provisions of the Energy Code in effect at the time of building permit issuance. Therefore, the Proposed Project would not conflict with the California Energy Code or impede implementation of California's energy efficiency and climate goals.

California Green Buildings Standards Code

As the Proposed Project consists of substation and transmission infrastructure and does not involve the construction of habitable buildings, most provisions of CALGreen are not applicable. However, any ancillary structures that meet the definition of nonresidential buildings under the Code would be required to comply with the applicable CALGreen standards in effect at the time of building permit issuance. Therefore, the Proposed Project would not conflict with CALGreen and would not impede California's green building or climate-related goals.

Executive Order B-55-18

The Proposed Project would not conflict with the State's long-term climate goals set forth in Executive Order B-55-18. Although Executive Orders are not legally binding in the same manner as statutes or adopted regulations, they inform the development of California's GHG reduction strategy and are incorporated into long-range planning efforts such as the CARB 2022 Scoping Plan. The Proposed Project would not interfere with California's ability to achieve carbon neutrality as it would not result in substantial long-term operational emissions, would not generate new vehicle miles traveled (VMT), and would comply with CARB's 2022 Regulation for Reducing SF_6 Emissions from Gas Insulated Equipment (Cal. Code Regs., tit. 17, § 95350 et seq.), which helps to reduce lifecycle GHG emissions from the electricity sector. Therefore, the Proposed Project would not conflict with Executive Order B-55-18 or impede progress toward the State's carbon neutrality goal.

Solano County Climate Action Plan

The Proposed Project consists of the construction and operation of a new substation and transmission infrastructure and modification of existing infrastructure within Solano County would not generate vehicle trips during operation, would not induce growth or increase demand for energy or water, and would not result in substantial solid waste generation. Furthermore, the Project would support long-term goals of the Solano County CAP by facilitating regional grid reliability and the delivery of renewable or zero-carbon electricity.

Therefore, the Proposed Project would not conflict with the Solano County Climate Action Plan or its emissions-reduction strategies.

Solano County General Plan Public Health and Safety Element

The Proposed Project consists of the construction and operation of a new substation and transmission infrastructure and modification of existing transmission infrastructure within Solano County and would not introduce substantial new vehicle emissions, building energy use, or land use changes. The Project would support long-term GHG-emissions reduction goals by improving grid reliability and facilitating the integration of renewable and zero-carbon electricity. Therefore, the Proposed Project would not conflict with the goals, policies, or implementation programs of the Solano County Public Health and Safety Element.

Contra Costa County Climate Action Plan

The Proposed Project consists of modification of existing transmission infrastructure within unincorporated Contra Costa County and would not result in substantial new vehicle trips, energy consumption, or water demand. The Project would not generate municipal solid waste or conflict with CAP measures aimed at reducing emissions from buildings or land use patterns. Furthermore, the Project would support implementation of CAP strategies by facilitating the integration of renewable or zero-carbon electricity into the regional grid. Therefore, the Proposed Project would not conflict with or obstruct implementation of the Contra Costa County CAP.

City of Pittsburg Sustainability Plan

The Proposed Project would not interfere with any of the Pittsburg Sustainability Plan's goals, which target sectors such as transportation mode shift, building electrification, and organic waste reduction. Therefore, the Proposed Project would not conflict with or obstruct implementation of the City of Pittsburg Sustainability Plan.

Conclusion

The Proposed Project would not directly conflict with applicable plans, policies, or regulations adopted for the purpose of reducing GHG emissions, including the California Air Resources Board 2022 Scoping Plan, Solano County Climate Action Plan, and SB 100. However, the PG&E lattice steel towers (LSTs) proposed within the existing Solano 4 Wind Project could increase opportunities for raptor nesting or perching resulting in elevated avian fatalities and associated curtailment of wind turbine operations under the terms of SMUD's USFWS incidental take permit. According to SMUD curtailment under their take permit would significantly impact their ability to deliver renewable energy to their customers (R. Donovan, "PG&E Collinsville Substation Lattice Tower Impact," May 7, 2025). Reduced renewable energy generation as a result of such curtailment would indirectly conflict with state goals for increasing renewable energy production and reducing GHG emissions. Because this impact would result from the presence of PG&E LSTs within an active wind energy facility and no feasible mitigation has been identified to avoid or reduce the potential for operational curtailment, the impact would be significant and unavoidable.

4.8.5 Impact Analysis – Cumulative

Impacts from GHG emissions are cumulative by nature as a single project's GHG emissions alone could not have a significant impact but, rather, would contribute to global atmospheric accumulations of GHGs that collectively drive worldwide climate change. The CEQA Guidelines state that a project's incremental contribution to a cumulative effect is not cumulatively considerable if the project would comply with the requirements in a previously approved plan or mitigation program (including plans or regulations for the reduction of GHG emissions) that provides specific requirements to avoid or substantially lessen the cumulative problem within the geographic area in which the project site is located (CEQA Guidelines section 15064(h)(3)).

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. 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, including significance thresholds for GHG emissions from both construction and operation. As discussed in Impact GHG-1, the BAAQMD does not set a numerical threshold for construction GHG emissions as such emissions are temporary and variable, and GHG emissions from construction of the Proposed Project within the jurisdiction of the SMAQMD would fall below the significance threshold. Emissions from operation and maintenance of the Proposed Project would fall well below the BAAQMD's significance thresholds for stationary sources, and there would be no emissions of GHGs from operation and maintenance of the Proposed Project within the jurisdiction of the SMAQMD. YSAQMD has not adopted a quantitative threshold of significance for GHG emissions under CEQA but recommends that larger projects include a qualitative discussion of GHG emissions and their consistency with statewide reduction goals. As discussed in Impact GHG-1, the construction activities that would occur within the jurisdiction of YSAQMD would be short term and limited in scale. Implementation of standard BMPs, including CM GHG-1, would reduce GHG emissions associated with those activities. Because the emissions would be minor and would not conflict with the state's climate targets under AB 32 and SB 32, the Project would not result in a cumulatively considerable contribution to global climate change within the jurisdiction of YSAQMD.

Because the GHG emissions for the Proposed Project fall well below the significance thresholds set by the air district jurisdictions within which the Proposed Project sites are located, it can be assumed that GHG emissions from the Proposed Project would have a less than considerable contribution to a globally significant cumulative impact.

4.8.6 Alternative 1: Collinsville Substation North of Talbert Lane

Environmental Setting – Alternative 1

Alternative 1 involves relocating the proposed LSPGC Collinsville Substation to a different site, approximately 1.2 miles north of the Proposed Project substation site. Alternative 1 would also include an approximately 500-foot segment of PG&E 500 kV interconnection lines, approximately 700-foot segment of 12 kV distribution line, and an approximately 2-mile-long

segment of LSPGC 230 kV overhead line. The environmental setting for Alternative 1 greenhouse gases is the same as the Proposed Project. The changes to the Proposed Project reflected in Alternative 1 would be located within Solano County. Alternative 1 would not involve changes to any of the other Proposed Project components, which would have the same impacts as described throughout this EIR for the Proposed Project or the other alternatives if selected in combination with Alternative 1.

Impact Analysis – Alternative 1

Impact GHG-1: Would Alternative 1 generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? *(Less than significant)*

Construction

Construction of Alternative 1 would involve use of heavy equipment, vehicles, and helicopters, which would generate emissions GHGs (CO_2, CH_4, and N_2O). Table 4.8-8, below, presents the modeled annual emissions of each individual GHG as well as the total CO_2e from construction of Alternative 1 combined with the Proposed Project in all other segments (e.g., submarine segment, underground segment, transposition structures, etc.) within the jurisdictions of BAAQMD, SMAQMD, and YSAQMD. Total construction related GHG emissions for Alternative 1 would be approximately 1 percent greater than the Proposed Project due to increased grading and associated equipment activity at the Alternative 1 substation site.

Table 4.8-8 Alternative 1 Construction Estimated Annual GHG Emissions by Jurisdiction

Air District	CO_2 (metric tons)	CH_4 (metric tons)	N_2O (metric tons)	Total CO_2e (metric tons)
BAAQMD	10,386.87	0.31	0.37	10,503.83
SMAQMD	955.74	0.04	0.01	959.14
YSAQMD	46.15	<.01	0.00	46.76
Total combined	**11,522.04**	**0.35**	**0.39**	**11,509.73**

Notes:

[a] GHG emissions are modeled for Alternative 1 with Proposed Project in other segments as a whole and not broken out by proponent.

[b] CO_2 = carbon dioxide; CH_4 = methane; N_2O = nitrous oxide; CO_2e = CO_2 equivalent

BAAQMD does not set a quantitative significance threshold for construction-phase GHG emissions but requires that a lead agency quantify and disclose GHG emissions that would be generated by construction of a project and advises lead agencies to evaluate consistency with state climate goals and implement BMPs where feasible. APM GHG-1 would apply to construction of LSPGC Alternative 1 components and CM GHG-1 would apply to construction of PG&E Alternative 1 components. Implementation of APM GHG-1 and CM GHG-1 would reduce GHG emissions from construction of Alternative 1 and are consistent with BAAQMD BMPs for GHG reduction. (BAAQMD 2022, tbl. 6.1). Because Alternative 1 would implement the standard BMPs as recommended by BAAQMD, and due to the short-term nature of

construction activities, the Project's GHG emissions would not result in a cumulatively considerable contribution to climate change. Therefore, the impact would be less than significant.

The new location of the proposed LSPGC Collinsville Substation in Alternative 1 is not within SMAQMD or YSAQMD. The impact of the Proposed Project segments in SMAQMD and YSAQMD are discussed in Section 4.8.4 above (Impact GHG-1).

Operation and Maintenance

Alternative 1 would relocate the LSPGC Collinsville Substation but would not change the substation operating equipment. The Alternative 1 operational GHG emission would be the same as the Proposed Project analyzed in Section 4.8.4 above (Impact GHG-1) and would be less than significant.

Impact GHG-2: Would Alternative 1 conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases? *(Less than significant)*

Alternative 1 would install the same equipment within the Collinsville Substation as the Proposed Project and would use TSPs for installation of the 500 kV interconnection line and 230 kV overhead segment. No LSTs would be installed under Alternative 1. Alternative 1 would not directly conflict with applicable plans, policies, or regulations adopted for the purpose of reducing greenhouse gas (GHG) emissions, including the California Air Resources Board 2022 Scoping Plan, Solano County Climate Action Plan, and SB 100. Alternative 1 would involve use of the same GIE as the Proposed Project and would also be exempt from the CARB phase out of SF_6 GIE because the equipment would be installed prior to 2031. Because Alternative 1 would not introduce any LSTs into the Solano Wind Farm, Alternative 1 would not contribute to exceedance of SMUD's incidental take permit for bird strikes and would not contribute to renewable energy curtailment within the wind farm. The resulting impact from conflict with a plan, policy or regulation adopted for the purpose of reducing emissions of GHGs would be less than significant.

4.8.7 Alternative 2: Collinsville Substation East of Wind Energy Substations

Environmental Setting – Alternative 2

Alternative 2 involves relocating the proposed LSPGC Collinsville Substation to a different site, approximately 3.0 miles north of the location proposed under the Proposed Project. Alternative 2 would also include an approximately 1,200-foot-long segment of PG&E 500 kV interconnection lines and a four-mile-long segment of LSPGC 230 kV overhead line, as well as an approximately 0.3-mile-long PG&E 12 kV distribution line. The environmental setting for Alternative 2 greenhouse gases is the same as the Proposed Project. The changes to the Proposed Project reflected in Alternative 2 would be located within Solano County. Alternative 2 would not involve changes to any of the other Proposed Project components, which would have the same impacts as described throughout this EIR for the Proposed Project or the other alternatives if selected in combination with Alternative 2.

Impact Analysis – Alternative 2

Impact GHG-1: Would Alternative 2 generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? *(Less than significant)*

Construction of Alternative 2 would involve use of heavy equipment, vehicles, and helicopters, which would generate emissions GHGs (CO_2, CH_4, and N_2O). Table 4.8-8, below, presents the modeled annual emissions of each individual GHG as well as the total CO_2e from construction of Alternative 2 combined with the Proposed Project in all other segments (e.g., submarine segment, underground segment, transposition structures, etc.) within the jurisdictions of BAAQMD, SMAQMD, and YSAQMD. Total construction related GHG emissions for Alternative 2 would be approximately 7 percent greater than the Proposed Project due to increased grading and the increased length of the 230 kV overhead segment.

Table 4.8-9 Alternative 2 Construction Estimated Annual GHG Emissions by Jurisdiction

Air District	CO_2 (metric tons)	CH_4 (metric tons)	N_2O (metric tons)	Total CO_2e (metric tons)
BAAQMD	11,052.68	0.32	0.40	11,179.59
SMAQMD	955.74	0.04	0.01	959.14
YSAQMD	46.15	<.01	0.00	46.76
Total combined	**12,054.57**	**0.36**	**0.41**	**12,055.34**

Notes:

[a] GHG emissions are modeled for Alternative 2 with Proposed Project in other segments as a whole and not broken out by proponent.

[b] CO_2 = carbon dioxide; CH_4 = methane; N_2O = nitrous oxide; CO_2e = CO_2 equivalent

BAAQMD does not set a quantitative significance threshold for construction-phase GHG emissions but requires that a lead agency quantify and disclose GHG emissions that would be generated by construction of a project and advises lead agencies to evaluate consistency with

state climate goals and implement BMPs where feasible. APM GHG-1 would apply to construction of LSPGC Alternative 2 components and CM GHG-1 would apply to construction of PG&E Alternative 2 components. Implementation of APM GHG-1 and CM GHG-1 would reduce GHG emissions from construction of Alternative 2 and are consistent with BAAQMD BMPs for GHG reduction (BAAQMD 2022, tbl. 6.1). Because Alternative 2 would implement the standard BMPs as recommended by BAAQMD, and due to the short-term nature of construction activities, the Project's GHG emissions would not result in a cumulatively considerable contribution to climate change. Therefore, the impact would be less than significant.

The new location of the proposed LSPGC Collinsville Substation in Alternative 2 is not within SMAQMD or YSAQMD. The impact of the Proposed Project segments in SMAQMD and YSAQMD are discussed in Section 4.8.4 above (Impact GHG-1).

Operation and Maintenance

Alternative 2 would relocate the LSPGC Collinsville Substation but would not change the substation operating equipment. The Alternative 2 operational GHG emission would be the same as the Proposed Project analyzed in Section 4.8.4 above (Impact GHG-1) and would be less than significant.

Impact GHG-2: Would Alternative 2 conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases? *(Less than significant)*

Alternative 2 would install the same equipment within the LSPGC Collinsville Substation as the Proposed Project and would use TSPs for installation of the 500 kV interconnection line and 230 kV overhead segment. No LSTs would be installed under Alternative 2. Alternative 2 would not directly conflict with applicable plans, policies, or regulations adopted for the purpose of reducing greenhouse gas (GHG) emissions, including the California Air Resources Board 2022 Scoping Plan, Solano County Climate Action Plan, and SB 100. Alternative 1 would involve use of the same GIE as the Proposed Project and would also be exempt from the CARB phase out of SF_6 GIE because the equipment would be installed prior to 2031. Because Alternative 2 would not introduce any LSTs into the Solano Wind Farm, Alternative 2 would not contribute to exceedance of SMUD's incidental take permit from bird strikes and would not contribute to renewable energy curtailment within the wind farm. The resulting impact from conflict with a plan, policy or regulation adopted for the purpose of reducing emissions of GHGs would be less than significant.

4.8.8 Alternative 3: 500 kV Interconnection Lines on Entirely TSPs

Environmental Setting – Alternative 3

Alternative 3 involves constructing the PG&E 500 kV interconnection lines on entirely TSPs, instead of the combination of LSTs and three-pole TSPs under the Proposed Project. The 500 kV interconnection lines would be in the same general alignment as the Proposed Project PG&E 500 kV interconnection lines. The environmental setting for Alternative 3 greenhouse gases is the same as the setting for the Proposed Project described in section 4.8.1. Alternative 3 would not

involve changes to any of the other Proposed Project components, which would have the same impacts as described throughout this EIR for the Proposed Project or the other alternatives if selected in combination with Alternative 3.

Impact Analysis – Alternative 3

Impact GHG-1: Would Alternative 3 generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? *(Less than significant)*

Construction of Alternative 3 would require equivalent construction equipment activity and duration to the Proposed Project. The GHG emissions from construction of Alternative 3 are equivalent to the Proposed Project as presented in Section 4.8.4 above (Impact GHG-1). PG&E would implement CM GHG-1, which would reduce GHG emissions from construction of Alternative 3 and is consistent with BAAQMD BMPs for GHG reduction (BAAQMD 2022, tbl. 6.1). Similar to the Proposed Project, the GHG emissions impact would be less than significant.

Alternative 3 would modify the structure type for the PG&E 500 kV interconnection line but would not introduce any GHG emitting equipment. The Alternative 3 operational GHG emission (with the Proposed Project in other segments) would be the same as the Proposed Project analyzed in Section 4.8.4 above (Impact GHG-1) and would be less than significant.

Impact GHG-2: Would Alternative 3 conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases? *(Less than significant)*

Alternative 3 would replace the Proposed Project LSTs with TSPs. TSPs do not include the framing that is used by raptors for perching and would not attract raptors to the area in the same manner as the Proposed Project LSTs. Because Alternative 3 would not introduce any LSTs into the Solano Wind Farm, Alternative 3 would not contribute to exceedance of SMUD's incidental take permit threshold from bird strikes and would not contribute to renewable energy curtailment within the wind farm. The resulting impact from conflict with a plan, policy or regulation adopted for the purpose of reducing emissions of GHGs would be less than significant.

4.8.9 Alternative 4: 230 kV Overhead Segment Alternative Route

Environmental Setting – Alternative 4

Alternative 4 involves relocation of a short segment of the LSPGC 230 kV overhead segment between the proposed LSPGC Collinsville Substation and the Delta, west of the proposed LSPGC 230 kV overhead segment route. Additionally, the northern end of the LSPGC 230 kV submarine segment would be rerouted to meet up with the southern end of the Alternative 4 230 kV submarine segment. The environmental setting for Alternative 4 greenhouse gases is the same as the setting for Proposed Project described in Section 4.8.1. Alternative 4 would not involve changes to any of the other Proposed Project components, which would have the same impacts as described throughout this EIR for the Proposed Project or the other alternatives if selected in combination with Alternative 4.

Impact Analysis – Alternative 4

Neither the Proposed Project 230 kV overhead segment nor Alternative 4 are within the Solano Wind Farm, and neither would involve the use of LTSs. Therefore, neither the Proposed Project 230 kV overhead segment nor Alternative 4 would affect curtailment of renewable energy generation due to avian fatalities within the wind farm. Both the Proposed Project 230 kV overhead segment and Alternative 4 would have a beneficial impact on delivery of renewable energy as part of the larger project and would not, on their own, conflict with a plan or policy adopted for the purpose of reducing emissions of GHGs. Impact GHG-2 is not discussed further.

Impact GHG-1: Would Alternative 4 generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? *(Less than significant)*

Construction of Alternative 4 would require equivalent construction equipment activity and duration to the Proposed Project. The GHG emissions from construction of Alternative 4 are equivalent to the Proposed Project as presented in Section 4.8.4 above (Impact GHG-1). LSPGC would implement APM GHG-1, which would reduce GHG emissions from construction of Alternative 4 and is consistent with BAAQMD BMPs for GHG reduction (BAAQMD 2022, tbl. 6.1). Similar to the Proposed Project, the GHG emissions impact would be less than significant.

Alternative 4 would modify the location of the 230 kV overhead segment and the northern portion of the submarine segment but would not introduce any GHG emitting equipment. The Alternative 4 operational GHG emission (with the Proposed Project in other segments) would be the same as the Proposed Project analyzed in Section 4.8.4 above (Impact GHG-1) and would be less than significant.

4.8.10 Alternative 5: 230 kV Submarine Segment Alternative Route

Environmental Setting – Alternative 5

Alternative 5 involves rerouting a portion of the proposed LSPGC 230 kV submarine segment to the east of its current alignment as it approaches the southern shoreline in Pittsburg. The submarine segment cable would be installed in the same manner as the Proposed Project. The environmental setting for Alternative 5 greenhouse gases is the same as the setting for Proposed Project described in Section 4.8.1. Alternative 5 would not involve changes to any of the other Proposed Project components, which would have the same impacts as described throughout this EIR for the Proposed Project or the other alternatives if selected in combination with Alternative 5.

Impact Analysis – Alternative 5

Neither the Proposed Project 230 kV submarine segment nor Alternative 5 are located within the Solano Wind Farm, and neither would involve the installation of LSTs. Therefore, neither the Proposed Project 230 kV submarine segment nor Alternative 5 would affect curtailment of renewable energy generation due to avian fatalities within the wind farm. Both the Proposed Project 230 kV overhead segment and Alternative 5 would have a beneficial impact on delivery of renewable energy as part of the larger project and neither segment on their own would

conflict with a plan, policy, or regulation adopted for the purpose of reducing emissions of GHGs. Impact GHG-2 is not discussed further.

Impact GHG-1: Would Alternative 5 generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? *(Less than significant)*

Construction of Alternative 5 would involve use of heavy equipment including marine vessels, which would generate emissions GHGs (CO_2, CH_4, and N_2O). Table 4.8-10, below, presents the modeled annual emissions of each individual GHG as well as the total CO_2e from construction of Alternative 2 combined with the Proposed Project in all other segments (e.g., submarine segment, underground segment, transposition structures, etc.) within the jurisdictions of BAAQMD, SMAQMD, and YSAQMD. Total construction related GHG emissions for Alternative 5 would be approximately 1 percent greater than the Proposed Project due to the site preparation activities for the Alternative 5 segment.

Table 4.8-10 Alternative 5 Construction Estimated Annual GHG Emissions by Jurisdiction

Air District	CO_2 (metric tons)	CH_4 (metric tons)	N_2O (metric tons)	Total CO_2e (metric tons)
BAAQMD	10,304.63	0.30	0.36	10,420.51
SMAQMD	955.74	0.04	0.01	959.14
YSAQMD	46.15	<.01	0.00	46.76
Total combined	**11,306.52**	**0.34**	**0.37**	**11,307.23**

Notes:

[a] GHG emissions are modeled for Alternative 5 with Proposed Project in other segments as a whole and not broken out by proponent.

[b] CO_2 = carbon dioxide; CH_4 = methane; N_2O = nitrous oxide; CO_2e = CO_2 equivalent

BAAQMD does not set a quantitative significance threshold for construction-phase GHG emissions but requires that that a lead agency quantify and disclose GHG emissions that would be generated by construction of a project and advises lead agencies to evaluate consistency with state climate goals and implement BMPs where feasible. APM GHG-1 would apply to construction of LSPGC Alternative 5 components. Implementation of APM GHG-1 would reduce GHG emissions from construction of Alternative 5 and is consistent with BAAQMD BMPs for GHG reduction (BAAQMD 2022, tbl. 6.1). Because Alternative 5 would implement the standard BMPs as recommended by BAAQMD, and due to the short-term nature of construction activities, the Alternative 5 GHG emissions would not result in a cumulatively considerable contribution to climate change. Therefore, the impact would be less than significant.

The Alternative 5 segment is not located within SMAQMD or YSAQMD. The impact of the Proposed Project segments in SMAQMD and YSAQMD are discussed in Section 4.8.4 above (Impact GHG-1).

Operation and Maintenance

Alternative 5 would relocate a segment of the 230 kV submarine segment, which has no operational emissions. The Alternative 5 operational GHG emission would be the same as the Proposed Project analyzed in Section 4.8.4 above (Impact GHG-1) and would be less than significant.

4.8.11 Alternative 6a/6b: Underground Portions of the 230 kV Transmission Line within Suisun Marsh Protection Plan Management Area

Environmental Setting – Alternative 6a/6b

Alternative 6a/6b would locate the LSPGC 230 kV transmission line on primarily PG&E-owned property south of the proposed Collinsville Substation site (similar to Alternative 4). Alternative 6a/6b would be installed in conduit underground. Alternative 6a differs from Alternative 6b only at the northern end of the segment where options are provided for connection to the Proposed Project Collinsville Substation or Alternatives 1 or 2. Two overhead riser structures would be installed at the northern end of the Alternative 6a/6b underground duct bank where the LSPGC 230 kV line would transition between an overhead and underground position. The environmental setting for Alternative 6a/6b is the same as the setting for Proposed Project described in Section 4.8.1. Alternative 6a/6b would not involve changes to any of the other Proposed Project components, which would have the same impacts as described throughout this EIR for the Proposed Project or the other alternatives if selected in combination with Alternative 6a/6b.

Impact Analysis – Alternative 6a/6b

Neither the Proposed Project 230 kV overhead segment nor Alternative 6a/6b are located within the Solano Wind Farm, and neither would involve the installation of LSTs. Therefore, neither the Proposed Project 230 kV overhead segment nor Alternative 6a/6b would affect curtailment of renewable energy generation due to avian fatalities within the wind farm. Both the Proposed Project 230 kV overhead segment and Alternative 6a/6b would have a beneficial impact on delivery of renewable energy as part of the larger project and would not, on their own, conflict with a plan, policy, or regulation adopted for the purpose of reducing emissions of GHGs. Impact GHG-2 is not discussed further.

Impact GHG-1: Would Alternative 6a/6b generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? *(Less than significant)*

Construction of Alternative 6a/6b would involve use of heavy equipment construction equipment and marine vessels, which would generate GHG emissions (CO_2, CH_4, and N_2O). Table 4.8-11, below, presents the modeled annual emissions of each individual GHG as well as the total CO_2e from construction of Alternative 6a combined with the Proposed Project in all other segments (e.g., Collinsville Substation, 500 kV interconnection lines, 12 kV distribution line, submarine segment, underground segment, transposition structures, etc.) within the jurisdictions of BAAQMD, SMAQMD, and YSAQMD. Total construction related GHG emissions for Alternative 6a would be approximately 2 percent less than the Proposed Project

because helicopters would not be used for construction of the Alternative 6a underground duct bank.

Table 4.8-12 and Table 4.8-13 below, presents the modeled annual emissions of each individual GHG as well as the total CO_2e from construction of Alternative 6b combined with Alternative 1 and Alternative 2, respectively (with the Proposed Project in all segments south of Alternative 6b) within the jurisdictions of BAAQMD, SMAQMD, and YSAQMD. The Alternative 6b emissions are generally equivalent to the Alternative 1 and Alternative 2 emissions.

Table 4.8-11 Alternative 6a Construction Estimated Annual GHG Emissions by Jurisdiction

Air District	CO_2 (metric tons)	CH_4 (metric tons)	N_2O (metric tons)	Total CO_2e (metric tons)
BAAQMD	10,022.53	0.29	0.36	10,023.18
SMAQMD	955.74	0.04	0.01	959.14
YSAQMD	46.15	<.01	0.00	46.76
Total combined	**11,024.12**	**0.33**	**0.37**	**11,025.12**

Notes:

[a] GHG emissions are modeled for Alternative 6a with Proposed Project in other segments as a whole and not broken out by proponent.

[b] CO_2 = carbon dioxide; CH_4 = methane; N_2O = nitrous oxide; CO_2e = CO_2 equivalent

Table 4.8-12 Alternative 6b Construction Estimated Annual GHG Emissions by Jurisdiction - Combined with Alternative 2

Air District	CO_2 (metric tons)	CH_4 (metric tons)	N_2O (metric tons)	Total CO_2e (metric tons)
BAAQMD	10,469.85	0.30	0.38	10,589.27
SMAQMD	955.74	0.04	0.01	959.14
YSAQMD	46.15	<.01	0.00	46.76
Total combined	**11,471.74**	**0.35**	**0.39**	**11,595.17**

Notes:

[a] GHG emissions are modeled for Alternative 6b with Alternative 1 and the Proposed Project in other segments as a whole and not broken out by proponent.

[b] CO_2 = carbon dioxide; CH_4 = methane; N_2O = nitrous oxide; CO_2e = CO_2 equivalent

Table 4.8-13 Alternative 6b Construction Estimated Annual GHG Emissions by Jurisdiction - Combined with Alternative 2

Air District	CO_2 (metric tons)	CH_4 (metric tons)	N_2O (metric tons)	Total CO_2e (metric tons)
BAAQMD	11,445.19	0.33	0.41	11,445.93
SMAQMD	955.74	0.04	0.01	959.14
YSAQMD	46.15	<.01	0.00	46.76
Total combined	**12,447.82**	**0.37**	**0.42**	**12,448.61**

[a] Notes: GHG emissions are modeled for Alternative 6b with Alternative 2 and the Proposed Project in other segments as a whole and not broken out by proponent.

[b] CO_2 = carbon dioxide; CH_4 = methane; N_2O = nitrous oxide; CO_2e = CO_2 equivalent

BAAQMD does not set a quantitative significance threshold for construction-phase GHG emissions but requires that that a lead agency quantify and disclose GHG emissions that would be generated by construction of a project and advises lead agencies to evaluate consistency with state climate goals and implement BMPs where feasible. APM GHG-1 would apply to construction of LSPGC Alternative 6a and 6b components. Implementation of APM GHG-1 would reduce GHG emissions from construction of Alternative 6a/6b and is consistent with BAAQMD BMPs for GHG reduction (BAAQMD 2022, tbl. 6.1). Because Alternative 6a/6b would implement the standard BMPs as recommended by BAAQMD, and due to the short-term nature of construction activities, the Alternative 6a/6b GHG emissions would not result in a cumulatively considerable contribution to climate change. Therefore, the impact would be less than significant.

The Alternative 6a/6b segment is not located within SMAQMD or YSAQMD. The impact of the Proposed Project segments in SMAQMD and YSAQMD are discussed in Section 4.8.4 above (Impact GHG-1).

Operation and Maintenance

Alternative 6a/6b would relocate a segment of the LSPGC 230 kV overhead and submarine segment, which have no operational emissions. The Alternative 6a/6b operational GHG emission would be the same as the Proposed Project analyzed in Section 4.8.4 above (Impact GHG-1) and would be less than significant.

4.8.12 No Project Alternative

Environmental Setting – No Project Alternative

Under the No Project Alternative, the LSPGC Collinsville Substation and associated LSPGC 230 kV transmission line, PG&E 500 kV interconnection lines, and PG&E 12 kV distribution line would not be constructed.

Impact Analysis – No Project Alternative

Under the No Project Alternative, the Proposed Project would not be constructed. No ground disturbing activities would occur and no new project elements would be introduced. The No Project Alternative would not directly emit greenhouse gases and would have no impact under Impact GHG-1.

The No Project Alternative would conflict with the 2024-2025 CAISO Transmission Plan including the plan's goals for renewable energy integration including energy from Wyoming as well as grid reliability (CAISO 2025). Increasing grid reliability and delivery of energy to the Bay Area reduces reliance on energy sources that produce GHGs. As a result, the No Project Alternative would have a significant conflict with a State plan adopted for the purpose of reducing GHGs. Based on the CAISO Transmission Plans there are no other solutions available to mitigate the impact (CAISO 2025). The impact of the No Project Alternative for Impact GHG-2 would be significant and unavoidable.

4.8.13 Mitigation Measures

LSPGC Mitigation Measures

No mitigation is required.

PG&E Mitigation Measures

No mitigation is feasible.

4.8.14 References

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4.9 Hazards, Hazardous Materials, and Public Safety

This section presents the environmental setting and analysis of impacts on hazards, hazardous materials, and public safety resulting from the Proposed Project and alternatives. This section describes existing hazardous materials conditions, applicable regulations, and environmental impacts and provides mitigation measures to reduce or avoid significant effects for the Proposed Project and alternatives, as applicable.

The following scoping comments are relevant to hazards, hazardous materials, and public safety (Appendix B):

- Proposed transmission features within the Sacramento Municipal Utility District (SMUD) windfarm blade throw hazard area
- Potential to disproportionately impact environmental justice communities
- Potential to exacerbate wildfire hazards or expose people to wildfire-related hazards (i.e., pollutants, flooding, landslides)
- Potential for earthquakes to cause the collapse of transmission structures or lines that could ignite wildfires
- Potential for lightning overvoltages that could ignite wildfires
- Potential obstructions to local hazard mitigation plans and resident evacuations

4.9.1 Environmental Setting

Definitions

In this document, hazardous materials and wastes are defined as follow:

- **Hazardous material**: This includes hazardous materials, hazardous substances, hazardous wastes, and any material that a handler or the administering agency has a reasonable basis for believing would be injurious to the health and safety of persons or harmful to the environment if released into the workplace or the environment. Section 25501(n) of the California Health and Safety Code defines *hazardous material* as "any material that, because of its quantity, concentrations, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment." Hazardous materials can include explosives, flammable and combustible substances, poisons, radioactive materials, pesticides, petroleum products, and other materials defined as hazardous under the Resource Conservation and Recovery Act (RCRA) in 40 Code of Federal Regulations (CFR) 261.
- **Hazardous waste:** Waste that, "because of its quantity, concentration, or physical, chemical, or infectious characteristics, causes or significantly contributes to an increase in mortality or illness or poses substantial or potential threats to public health or the environment" (42 U.S. Code [U.S.C.] 6903(5)). Hazardous wastes are further defined under the RCRA as "substances exhibiting the characteristics of

ignitability, reactivity, corrosivity, or toxicity." Chemical-specific concentrations that are used to define whether a material is a hazardous, designated, or nonhazardous waste include *total threshold limit concentrations* (TTLCs), *soluble threshold limit concentrations* (STLCs), and *toxic characteristic leaching procedures* (TCLPs), listed under California Code of Regulations (CCR) title 22, chapter 11, article 3, section 66261, which are used as waste acceptance criteria for landfills. Waste materials with chemical concentrations above TTLCs, STLCs, and TCLPs must be sent to Class I disposal facilities, may be sent to Class II disposal facilities depending on the waste material, and may not be sent to Class III disposal facilities.[1]

Regional Setting

Existing/Known Hazardous Materials Releases

A Phase I Environmental Site Assessment (ESA) was prepared by Insignia (Insignia Environmental 2023) to identify recognized environmental conditions (RECs) within the Collinsville Substation site and a 1-mile buffer (provided as Appendix 5.9-A of the Proponent's Environmental Assessment [PEA]). The results of the Phase I ESA revealed no evidence of RECs, controlled RECs (CRECs), or historical RECs (HRECs).

A Corridor Report (EDR 2023) was prepared to identify potential hazardous material sites within the LSPGC overhead segment and PG&E 500 kV interconnections lines and a 1-mile buffer (provided as Appendix 5.9-C of the PEA). The Corridor Report did not identify any unexploded ordnance (UXO) sites within 1 mile of the Proposed Project. Sites (and potential contamination associated with those sites) within 1 mile of the Proposed Project, identified in the Corridor Report, are discussed in Table 4.9-1.

As stated above, the Phase I ESA and the Corridor Report included the Collinsville Substation and LSPGC 230 kV overhead segment in their review. As such, the LSPGC 230 kV underground segment, LSPGC 230 kV submarine segment, LSPGC telecommunication interconnection lines, PG&E 12 kV line, and PG&E transposition sites were not included in either review.

Government Code § 65962.5, commonly referred to as the "Cortese List," requires the California Environmental Protection Agency (CalEPA) to compile and annually update a list of hazardous waste facilities, hazardous waste property, and hazardous substance release sites that pose a potential risk to public health or the environment. The list is compiled from data maintained by State agencies, including the Department of Toxic Substances Control (DTSC), the State Water Resources Control Board (SWRCB), Regional Water Quality Control Board (RWQCB), the SWRCB Division of Drinking Water, and the Department of Resources Recycling and Recovery (CalRecycle). The Cortese List is used by public agencies, developers, and property owners to

[1] Class I disposal facilities are specifically for hazardous waste, as defined under Title 22 of the CCR. Class II facilities are "designated" waste facilities, and special permitting must be acquired for them to

identify properties that may require investigation, remediation, or restrictions due to the presence or release of hazardous materials.

In addition, a database search for existing potentially hazardous sites was conducted for the general area surrounding the Proposed Project site, including all Proposed Project components. The following state and federal databases for hazardous materials sites were reviewed:

- EPA National Priorities List (NPL) (U.S. Environmental Protection Agency (EPA) 2025)
- California DTSC sites (EnviroStor database) (DTSC 2025)
- SWRCB Leaking Underground Storage Tank, Department of Defense, and Site Cleanup Program sites (GeoTracker database) (SWRCB 2025a)

Table 4.9-1 and Figure 4.9-1 identify hazardous sites within 1 mile of the Proposed Project site. No hazardous sites occur within 1-mile of the proposed LSPGC Collinsville Substation, 230 kV transmission line segments (overhead and submarine), PG&E 500 kV interconnection lines, or PG&E 12 kV distribution line . A description and the location of the Proposed Project components are provided in Section 2: Project Description. The sites listed in Table 4.9-1 occur between 0.2-mile and 0.8-mile of the LSPGC telecommunication interconnection lines, LSPGC 230 kV underground segment, and PG&E Pittsburg Substation.

Schools

The LSPGC telecommunication interconnection lines are located within 320 feet of Saint Peter Martyr School, an elementary and middle school in Pittsburg. No other schools are located with 0.25 mile of the Proposed Project. Additionally, a review of applicable city and county planning documents confirms that there are no proposed or planned schools in proximity to any of the Proposed Project components. According to the Phase I ESA and the Corridor Report, there are no RECs near the Saint Peter Martyr School (Insignia Environmental 2023; EDR 2023).

Airports and Air Strips

No airports are located within 2 miles of the Proposed Project. The closest airports to the Proposed Project are Rio Vista Municipal Airport (10 miles northeast) and Travis Air Force Base (12 miles northwest) in Solano County and Buchanan Field Airport (9 miles southwest) in Contra Costa County (Google Earth 2025a). Airport land use plans associated with these airports are discussed in the following section.

Table 4.9-1 Hazardous Materials Sites within 1 Mile of the Proposed Project

Name	Type, database, and date	Distance	Risk	Reason
Mirant Delta Pittsburg Power Plant	Type: Cleanup Program Database: SWRCB GeoTracker Date: May 2009 Status: Open – Verification Monitoring	Adjacent LSPGC telecommunication interconnection lines	Low	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	Type: Vacant Lot Database: Superfund Enterprise Management System Archive (SEMS-ARCHIVE) Date: June 2023 Status: Not Disclosed	0.2 mile from LSPGC telecommunication interconnection lines	Low	No violations were found in the Corridor Study. The proposed telecommunications lines interconnection line would not cross the site.
Trans Bay Cable Converter Station	Type: Voluntary Clean Up Database: EnviroStor; Voluntary Cleanup Program Properties (VCP); Deed Restriction Listing (DEED) Date: April 2023 Status: Certified O&M – Land Use Restrictions only as of May 18, 2010	0.3 mile from LSPGC telecommunication interconnection lines	Low	In 2014, the DTSC concluded that the selected remedial action remained protective of human health and the environment. No prohibited uses for the site were observed. Impacted soil within the site remains under an asphalt cap, which is in good shape and remains protective. 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.

Name	Type, database, and date	Distance	Risk	Reason
NRG Delta, LLC (PG&E Shell Pond/Carbon Black Area and Power Plant) [a]	Type: Corrective Action Database: 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 Date: April 2023 Status: Active – Corrective Action	0.3 mile from LSPGC telecommunication interconnection lines	Low	The Corridor Study identified violations in 2008, 2015, and 2019. The violations are associated with failure to test/inspect aboveground storage containers, failure to prepare a SPCC Plan, and hazardous waste tank closure issues, HMBP program violation, and RCRA violations. In each case, the site returned to compliance in that same year. The site has been under a Land Use Restriction (land use covenant) since 1999 and is undergoing corrective action under DTSC oversite. The proposed telecommunication interconnection lines would not cross the site.
PG&E Pittsburg Power (PG&E Shell Pond/Carbon Black Area and Power Plant) [a]	Type: Evaluation Database: EnviroStor Date: April 2023 Status: Active – Corrective Action	0.3 mile from LSPGC telecommunication interconnection lines	Low	The site is under corrective action as PG&E Shell Pond/Carbon Black Area and Power Plant. The proposed telecommunication interconnection lines would not cross the site.
PG&E Pittsburg Power (PG&E Shell Pond/Carbon Black Area and Power Plant) [a]	Type: Toxic Pit Database: Toxic Pits Cleanup Act Sites Date: July 1995 Status: Closed – Case Closed with Land Use Restrictions	0.3 mile from LSPGC telecommunication interconnection lines	Low	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 [a]	Type: RCRA Database: 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 Date: July 2023 Status: Closed	0.3 mile from LSPGC telecommunication interconnection lines	Low	The Corridor Study identified the most recent violation as occurring in 2004, and the site is currently undergoing corrective action. The proposed telecommunication interconnection lines would not cross the site.

Name	Type, database, and date	Distance	Risk	Reason
Sonoco Fibre Drum	Type: RCRA Database: SEMS-ARCHIVE; CORRACTS; RCRA-Small Quantity Generators; HIST UST; Facility Index System/Facility Registry System Date: July 2023 Status: Completed – Case Closed	0.6 mile from LSPGC telecommunication interconnection lines	Low	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 interconnection lines would not cross the site.
Continental Fibre Drum Inc (Greif Brothers Corporation)	Type: Voluntary Cleanup Database: EnviroStor; Leaking Underground Fuel Tank Report; VCP; HIST UST; DEED; "Cortese" Hazardous Waste & Substances Sites List; HWP; California Integrated Water Quality System; CERS Date: April 2023 Status: Completed – Case Closed; Certified/Operation and Maintenance as of March 13, 2009	0.6 mile from LSPGC telecommunication interconnection lines	Low	The site is currently undergoing voluntary cleanup, and the proposed interconnection lines would not cross the site.
Willow Pass Site	Type: School Database: EnviroStor; School Property Evaluation Program Date: April 2023 Status: Inactive – Withdrawn	0.7 mile from the 230 kV underground segment 0.8 mile from Pittsburg Substation	Low	A Phase I ESA was prepared in March 2005 and identified potential impacts to soil and surface water due to the neighboring Mirant Pittsburg Power Plant, Union Pacific Railroad tracks, and lagoons. The site was being considered for development by the Pittsburg Unified School District but was not pursued further. There was no further investigation into the potential contamination at the site and no cleanup actions were performed. The site remains inactive and is currently unused vacant land. The Pittsburg Substation modifications work areas would not overlap the site.

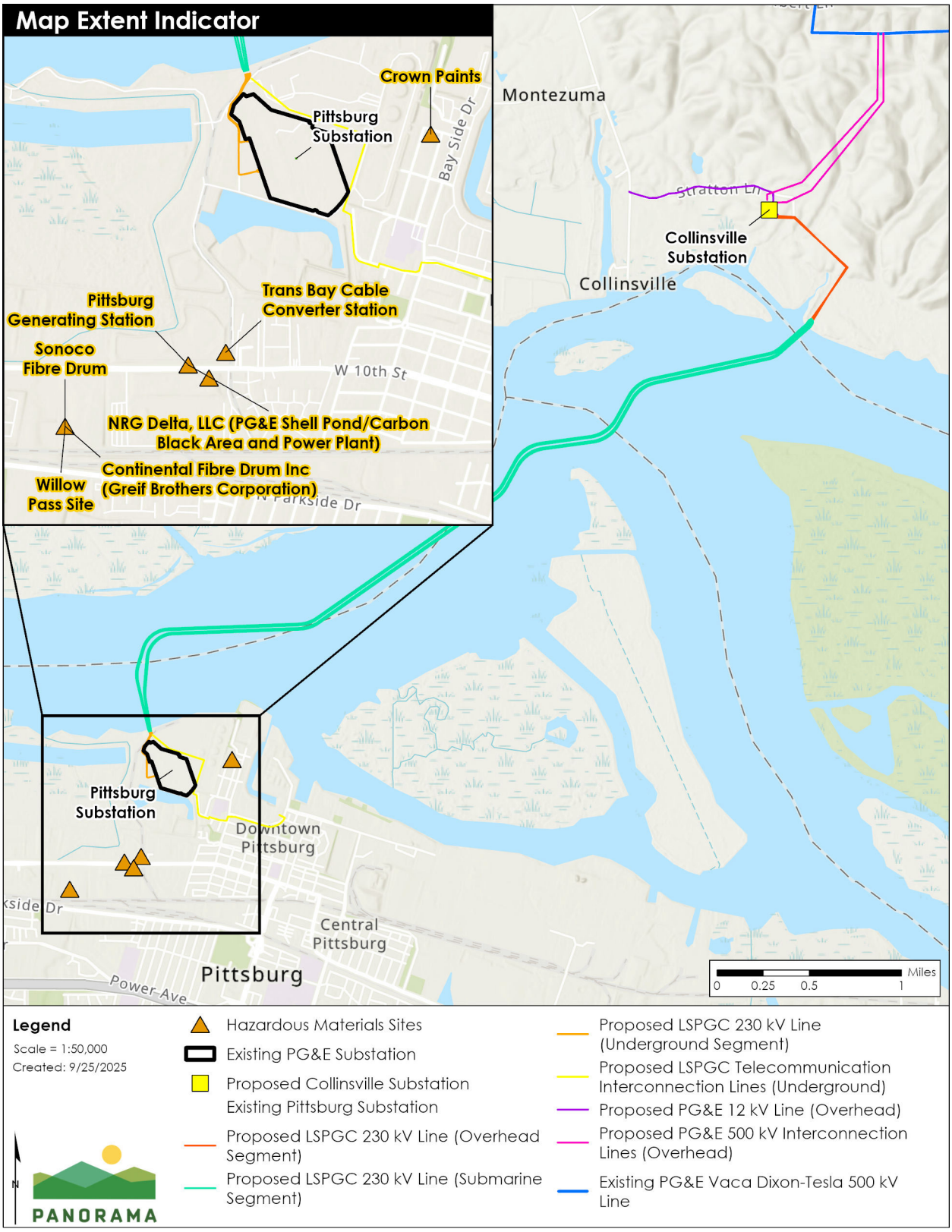
Notes:

[a] The Corridor Report identifies multiple regulatory listings for the facility at 696 W. 10th Street in Pittsburg, appearing under the names NRG Delta, LLC, Pittsburg Generating Station, and PG&E/Shell Pond. Although these entries refer to the same general facility, they are listed separately due to historic ownership

changes (PG&E, Southern Energy, Mirant, and NRG) and the fact that the site is regulated under several distinct state and federal programs. For example, the Pittsburg Generating Station appears in RCRA permitting records associated with past hazardous waste treatment and disposal operations, while NRG Delta, LLC is tracked under DTSC's corrective action program for ongoing site management. In addition, PG&E remains responsible for legacy waste management units, such as the Shell Pond and Carbon Black Area, which are separately listed in EnviroStor and the Toxic Pits database.

Source: (EDR 2023; Insignia Environmental 2023; SWRCB 2025b)

Figure 4.9-1 Hazardous Materials Sites within 1 Mile of the Proposed Project



Source: (EDR 2023; Insignia Environmental 2023; SWRCB 2025b)

Airport Land Use Plans

The proposed LSPGC Collinsville Substation site, LSPGC 230 kV overhead segment, PG&E 12 kV distribution line, and PG&E 500 kV interconnection lines are located approximately 12 miles southeast of Travis Air Force Base (Travis AFB) and are within the airport influence area (AIA) identified in the Travis AFB Land Use Compatibility Plan (LUCP) (Solano County 2024c). The Solano County Airport Land Use Commission (ALUC) is responsible for enforcing the Travis AFB 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 2024c). The proposed LSPGC Collinsville Substation site, LSPGC 230 kV overhead segment, PG&E 12 kV distribution line, and PG&E 500 kV interconnection lines 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 2024c).

The proposed LSPGC Collinsville Substation, LSPGC 230 kV overhead segment, and PG&E 500 kV interconnection lines are approximately 10 miles southwest of the Rio Vista Municipal Airport and not within the AIA outlined in the Rio Vista Municipal Airport LUCP (ESA 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).

Emergency Response and Evacuation

Emergency planning and response documents for Solano, Sacramento, Contra Costa, and Alameda counties are discussed in Section 4.9.2. While any road could be used for emergency access or evacuation, the Proposed Project site is not located near, and does not cross, any roads that are designated as essential emergency evacuation routes, and roads that would be subject to Proposed Project activities have secondary ingress and egress. In Solano County, the closest primary emergency access and evacuation routes identified in the General Plan are State Route (SR)-12 and SR-11, approximately 7.5 miles north of the proposed substation site (Solano County 2024a). In the City of Pittsburg and Contra Costa County, the closest primary emergency access and evacuation route is SR-4, approximately 1 mile south of the LSPGC telecommunication interconnection lines. Arterial and connector roads that provide access to SR-4 are identified in the Health and Safety Element of the Contra Costa General Plan as potential emergency evacuation routes; these roads include Bay Side Drive, Marina Boulevard, Herb White Way, Willow Pass Road/W. 10th Street, Railroad Avenue, E. 3rd Street, and Harbor Street (Contra Costa County 2024b). Portions of the LSPGC telecommunication interconnection lines would be along Herb White Way (150 feet) and Marina Boulevard (0.3 mile).

Wildfire Hazards

Wildfire hazards in the Proposed Project area are discussed in detail in Section 4.20: Wildfire. The following sections provide a summary of relevant environmental setting information from Section 4.20: Wildfire.

Fire Hazard Severity Zones

FHSZs within California are designated by the California Department of Forestry and Fire Protection (CAL FIRE). FHSZ designations are moderate, high, and very high. As shown Figure 4.20-2, approximately 0.3 mile of the proposed LSPGC 230 kV overhead segment and 0.1 mile of the submarine segment on the northern shore of the Delta would be within a very high FHSZ (CAL FIRE 2025). Additionally, most of the remaining LSPGC 230 kV overhead segment, most of the proposed LSPGC Collinsville Substation, most of PG&E 500 kV interconnection lines, and PG&E 12 kV line would be within high FHSZs (CAL FIRE 2025). These features would also be within moderate FHSZs that surround the outer boundaries of the high FHSZs.

Wildland Urban Interface

Wildland-urban interface (WUI) refers to areas where human development meets or intermingles with wildland vegetation, creating a zone highly susceptible to wildfire hazards. CAL FIRE publishes a statewide WUI hazard dataset as part of the Fire and Resource Assessment Program (FRAP), which includes mapping designations for Interface, Intermix, and Wildfire Influence Zone (refer to Section 4.20: Wildfire for complete definitions) (CAL FIRE 2025b). Portions of the Proposed Project site occur within or adjacent to Wildfire Influence Zones identified in CAL FIRE's WUI hazard dataset (CAL FIRE 2025b). The Proposed Project components do not occur within Interface and Intermix areas; the closest Interface and Intermix areas are approximately 0.5 mile or greater from the Proposed Project site.

High Fire Threat Districts

In accordance with SB 901, the CPUC has published and adopted High Fire Threat District (HFTD) maps identifying areas of high hazard, elevated risk, and extreme risk for destructive utility-associated wildfires in the State (CPUC 2021). The HFTD maps designate three district types where high fire threat has been identified, including Tier 3 (extreme fire risk), Tier 2 (elevated fire risk), and Zone 1 (Tier 1 High Hazard Zones). The Proposed Project site is not located within any Tier 3, Tier 2, or Zone 1 areas identified on the CPUC HFTD maps. The closest HFTD, designated as Tier 2, is located roughly 3 miles away (CPUC 2021).

Wind Turbine Hazard Throw Zones

Existing wind turbines associated with the SMUD Solano 4 Wind Project are located in the vicinity of the proposed LSPGC Collinsville Substation and 230 kV overhead segment, and the existing PG&E 500 kV line and proposed interconnection lines. If a turbine component were to strike an electrical facility, it could result in an electrical arc and potential ignition of surrounding vegetation. This unique condition introduces a reasonably foreseeable wildfire risk that is independent of typical electrical equipment failure scenarios. As discussed in Section 4.20: Wildfire, Figure 4.20-3 shows the wind turbine hazard throw zones in the Proposed Project vicinity. Approximately 430 feet of the proposed 230 kV overhead segment is within a wind turbine hazard throw zone for one wind turbine located approximately 600 feet northeast. No other Proposed Project components are within a wind turbine hazard throw zone, including the existing PG&E 500 kV Vaca Dixon-Tesla Transmission Line.

Shock Hazards

Alternating current (AC) electric transmission lines generate electric and magnetic fields (EMFs) that can induce voltages and currents in nearby conductive objects (e.g., buildings, roofs, fences, railroads, communication lines, pipelines, farm equipment, and vehicles). These induced voltages may create potential hazards, including electrical shock. Industry standards and regulations for the construction and operation of transmission lines are designed to minimize public exposure to these hazards, with grounding of conductive objects being a primary means of protection. Permanent structures can typically be grounded, while mobile objects, such as vehicles and farm equipment, cannot.

Electric shock occurs when a person or animal completes an electrical circuit between an energized object and an electrical ground, or between two objects at different voltages. Factors influencing the likelihood and severity of shock include line voltage, conductor clearance, object size and type, location relative to the line, atmospheric conditions, soil resistivity, and individual physiology. Multiple grounding points on permanent conductive structures provide redundant protection against induced voltage hazards.

Birds can safely perch on a single energized conductor without harm because they make contact at only one point; electrocution occurs if they touch two energized parts or an energized part and a grounded part simultaneously. Similarly, a person standing on the ground who touches an energized conductive object provides two contact points, creating a path for current flow and the potential for electric shock. Grounding of conductive objects in the vicinity of transmission lines substantially reduces this risk.

Even if a long linear parallel conductive object is grounded at two distant points, a hazardous situation can occur if a person touches the object somewhere between the two points, creating a different grounding point to complete the circuit (Golder Associates Inc. 2013). Perpendicular linear structures have significantly less potential for induced currents and voltages.

Based on recognized engineering guidance and industry research (including Institute of Electrical and Electronics Engineers [IEEE] studies showing that induced voltages and currents in nearby conductive utilities are significant only when a transmission line runs substantially parallel to them over considerable lengths and with specific configurations) a 66 kV power line would need to be significantly parallel to an existing linear metallic pipeline or a long wire fence for induced currents and voltages to be of concern (Dawalibi et al. 2000; Kopsidas and Cotton 2008).

Ground Faults

An accidental connection between an electrical system conductor and the earth is called a *ground fault*. Ground faults may be caused by many things, including dirt buildup on conductor insulators (creating a dirty-water path for current from the conductor to the pole and to the ground when it rains), groundwater infiltration in buried lines, or fallen tree branches. A tree branch touching an energized overhead line would provide an accidental path for current to

flow through the tree. A ground fault could result in induced current and voltage, with potentially hazardous impacts.

Electric Arcs

Electric arcs may form across small gaps between conductive surfaces. Arcing can also occur if a conductive object is raised such that it is too close to a transmission, power, or distribution line. Even excessive smoke can potentially provide a pathway to ground. More commonly, lightning strikes on overhead lines can create an ionized air path from the line to the tower during fault conditions. These arcs can have secondary effects such as ignition of flammable materials in the vicinity of the arc. It is theoretically possible for a spark discharge from the induced voltage on a large vehicle to ignite gasoline vapor during refueling; however, the likelihood of ignition is very low. Vehicles should not be refueled under energized lines unless specific precautions are taken to ground the vehicle and the fueling source.

Metallic Objects

Metallic objects, such as pipelines, near high-voltage transmission lines can have induced voltages and currents from EMFs. A person or animal that contacts a metallic object (like a pipeline) that is carrying induced voltage can experience an electric shock. Pipelines are particularly susceptible to inducive coupling with parallel transmission lines (Kim et al. 2021).

A review of the California Governor's Office of Emergency Services (CalOES) Geographic Information System Data Hub and United States Department of Transportation (USDOT) 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 (USDOT 2025).
- Multiple hazardous liquid pipelines are located approximately 0.4 mile south of PG&E's existing Pittsburg Substation (USDOT 2025).
- One gas transmission pipeline crosses the Delta and Lower Sherman Island approximately 0.6-mile east of the proposed LSPGC 230 kV submarine segment alignment (USDOT 2025).
- A gas transmission pipeline is parallel to and adjacent the proposed PG&E 500 kV interconnection lines alignment for a distance of approximately 0.4 mile and is 0.5 mile from the proposed LSPGC Collinsville Substation site (USDOT 2025).

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 lines would connect to PG&E's existing Vaca Dixon-Tesla 500 kV Transmission Line (CEC 2017). The transmission line towers, and interconnection line towers are metallic objects.

Environmental Setting by Project Component

LSPGC Collinsville Substation

There are no hazardous materials sites in the vicinity of the Collinsville Substation (Insignia Environmental 2023). A gas transmission pipeline is 0.5 mile from the proposed LSPGC Collinsville Substation site (USDOT 2025).

There are no schools (within 0.25 mile) or airports (within 2 miles) of the Collinsville Substation. However, the substation is within the AIA and Zone D for Travis AFB, as delineated in the Travis AFB LUCP (Solano County 2024c).

The LSPGC Collinsville Substation and surrounding areas are within an LRA; these areas are designated as high and moderate FHSZ (CAL FIRE 2025a). A small portion of the proposed substation site as well as the adjacent staging areas fall within the WUI Wildfire Influence Zone (CAL FIRE 2025b).

LSPGC 230 kV Transmission Line

There is one inactive hazardous materials site within 1 mile of the 230 kV underground segment (see Figure 4.9-1). One gas transmission pipeline crosses the Delta and Lower Sherman Island approximately 0.6-mile east of the proposed LSPGC 230 kV submarine segment alignment (USDOT 2025).

There are no schools (within 0.25 mile) or airports (within 2 miles) of the Collinsville Substation. However, the substation is within the AIA and Zone D for Travis AFB, as delineated in the Travis AFB LUCP (Solano County 2024c).

The proposed LSPGC 230 kV transmission line falls within an LRA; the overhead segment is located within an area designated as very high, high, and moderate FHSZ and the terrestrial portion of the submarine segment is designated as very high FHSZ (CAL FIRE 2025a). Roughly 400 feet of the proposed LSPGC 230 kV transmission line overhead segment crosses the WUI Wildfire Influence Zone (CAL FIRE 2025b).

Approximately 430 feet of the proposed LSPGC 230 kV overhead segment is within the 1.1x wind turbine hazard throw zone identified for one wind turbine north of Stratton Lane.

LSPGC Telecommunication Interconnection Lines

There are seven hazardous materials sites within 1 mile of the telecommunication interconnection lines (see Figure 4.9-1).

The LSPGC telecommunication interconnection lines are located within 320 feet of Saint Peter Martyr School. There are no airports within 2 miles of the telecommunication interconnection lines, however, this component is within the AIA and Zone D for Travis AFB, as delineated in the Travis AFB LUCP (Solano County 2024c).

SR-4 is the closest major road identified as a potential evacuation route in the Contra Costa County General Plan. Portions of the LSPGC telecommunications interconnection lines would

be located along Herbert White Way (150 feet) and Marina Boulevard (0.3 mile), which provide arterial road network access to SR-4 via W 10th Street, Railroad Avenue, E 3rd Street, and Harbor Street (Contra Costa County 2024b).

The proposed LSPGC telecommunication interconnection lines fall within an LRA (CAL FIRE 2025a); these areas are designated as non-wildland. The LSPGC telecommunication interconnection lines are outside of the WUI (CAL FIRE 2025b).

PG&E 500 kV Interconnection Lines

There are no hazardous materials sites in the vicinity of the 500 kV interconnection lines (see Figure 4.9-1). A gas transmission pipeline is parallel to and adjacent the proposed PG&E 500 kV interconnection lines alignment for approximately 0.4 mile (USDOT 2025).

There are no schools (within 0.25 mile) or airports (within 2 miles) of the 500 kV interconnection lines. However, this component is within the AIA and Zone D for Travis AFB, as delineated in the Travis AFB LUCP (Solano County 2024c).

The PG&E 500 kV interconnection lines are within an LRA and a 0.7 mile portion is within an area designated as a high FHSZ, 0.2 mile within a moderate FHSZ, and the remainder is un-zoned (CAL FIRE 2025a). Roughly 200 feet of the PG&E 500 kV interconnection lines cross the WUI Wildfire Influence Zone (CAL FIRE 2025b).

PG&E 500 kV Transposition Sites

There are no hazardous materials sites in the vicinity of the transposition sites (see Figure 4.9-1). There are no schools (within 0.25 mile) or airports (within 2 miles) of the 500 kV transposition sites. However, this component is within the AIA and Zone D for Travis AFB, as delineated in the Travis AFB LUCP (Solano County 2024c).

The PG&E transposition sites and surrounding areas fall within LRAs; none of these areas are designated as very high FHSZs (CAL FIRE 2025a). A portion of one structure work area is within a moderate FHSZ and portions of two temporary access roads are within high and moderate FHSZs at Transposition Site A (CAL FIRE 2025a). Transposition Site A is also within the WUI Wildfire Influence Zone (CAL FIRE 2025b).

PG&E 12 kV Distribution Line

There are no hazardous materials sites in the vicinity of the 12 kV distribution line (see Figure 4.9-1). There are no schools (within 0.25 mile) or airports (within 2 miles) of the 12 kV distribution line. However, this component is within the AIA and Zone D for Travis AFB, as delineated in the Travis AFB LUCP (Solano County 2024c).

The proposed PG&E 12 kV distribution line falls within an LRA. Approximately 0.4 mile of the proposed 12 kV distribution line is within a high FHSZ and 0.2 mile is moderate FHSZ (CAL FIRE 2025a). The majority of the proposed 12 kV distribution line is within the WUI Wildfire Influence Zone (CAL FIRE 2025b).

PG&E Substation Modifications
As discussed in Table 4.9-1, the existing PG&E Pittsburg Substation is listed in the SWRCB GeoTracker database as a Cleanup Program Site. It is currently undergoing remediation and an existing land use restriction exists at the site (EDR 2023; SWRCB 2025b).

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 (USDOT 2025).

There are no schools (within 0.25 mile) or airports (within 2 miles) of the 12 kV distribution line. However, this component is within the AIA and Zone D for Travis AFB, as delineated in the Travis AFB LUCP (Solano County 2024c).

PG&E's existing Pittsburg and Vaca Dixon substations and the surrounding areas are within an LRA, and PG&E's existing Tesla Substation is within an SRA designated as a high FHSZ; none of the existing substations are in or adjacent to an area designated as a very high FHSZ (CAL FIRE 2025a). A portion of the existing Vaca Dixon and Tesla substations and the surrounding areas are within the WUI Wildfire Influence Zone (CAL FIRE 2025b). In addition, the area surrounding the Tesla Substation is generally susceptible to fires.

4.9.2 Regulatory Setting

Federal

Federal Toxic Substances Control Act and Resource Conversation and Recovery Act
The Federal Toxic Substances Control Act (TSCA) and RCRA of 1976 established a program administered by EPA for the regulation of the generation, transportation, treatment, storage, and disposal of hazardous waste. The TSCA gives the EPA the authority to require reporting, record-keeping and testing requirements, and restrictions relating to chemical substances and/or mixtures. The RCRA, as amended in 1984 by the Hazardous and Solid Waste Act, gives the EPA the authority to control hazardous waste from the "cradle to grave" (15 U.S.C. §2601 et seq. (1976), n.d.; 42 U.S.C. §6901 et seq. (1976), n.d.)

Comprehensive Environmental Response, Compensation, and Liability Act
The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), commonly known as Superfund, was enacted by Congress on December 11, 1980. This law (U.S.C. title 42 chapter 103) provides broad federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment. CERCLA establishes requirements concerning closed and abandoned hazardous waste sites, provides for liability of persons responsible for releases of hazardous waste at these sites, and establishes a fund to provide for cleanup when no responsible party can be identified. CERCLA also enables the revision of the National Contingency Plan (NCP). The NCP (40 CFR part 300) provides the guidelines and procedures needed to respond to releases and threatened releases of hazardous substances, pollutants, and/or contaminants. The NCP also established the NPL.

CERCLA was amended by the Superfund Amendments and Reauthorization Act (SARA) on October 17, 1986. The act 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, SARA identifies requirements for planning, reporting, and notification concerning hazardous materials (42 U.S.C. §9601 et seq. (1980), n.d.).

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 (44 CFR Part 201 (2000), n.d.). 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
3. Ensure that local jurisdictions are made aware of the hazards and vulnerabilities within their jurisdiction and to develop strategies to reduce those vulnerabilities

California's 2023 State Hazard Mitigation Plan (SHMP), approved by FEMA on August 30, 2023, is the State's primary hazard mitigation guidance document. The 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 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 (Cal OES 2023).

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

Enacted in 1972, the Federal Clean Water Act (CWA; 33 U.S.C. §§ 1251 et seq.) and subsequent amendments outline the basic protocol for regulating discharges of pollutants to waters of the U.S. It is the primary federal law applicable to water quality of the nation's surface waters, including lakes, rivers, and coastal wetlands. Enforced by the EPA, it was enacted "… to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." The CWA authorizes states to adopt water quality standards and includes programs addressing both point and non-point pollution sources. The CWA also established the National Pollutant Discharge Elimination System (NPDES) and provides the EPA with the authority to implement

pollution control programs, such as setting wastewater standards for industry and water quality standards for surface waters.

In California, regulatory authority under the CWA has been delegated by EPA to the SWRCB and its nine RWQCBs. Under section 402 of the CWA, a discharge of pollutants to navigable waters is prohibited unless the discharge complies with an NPDES permit. The SWRCB and RWQCBs have developed numeric and narrative water quality criteria to protect beneficial uses of state waters and waterways.

National Pollutant Discharge Elimination System

The NPDES permit program, authorized by section 402(p) of the federal CWA, controls water pollution by regulating point sources, such as construction sites and industrial operations that discharge pollutants into waters of the United States.

The NPDES General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit, or General Permit) (Order WQ 2022-0057-DWQ, NPDES No. CAS000002) regulates discharges to waters of the United States from stormwater and authorized non-stormwater associated with construction activity from sites that disturb 1 or more acres of land surface, or that are part of a common plan of development or sale that disturbs more than one acre of land surface.

The General Permit requires the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP) that includes specific best management practices (BMPs) designed to prevent sediment and pollutants from coming into contact with stormwater and moving off-site into receiving waters. The BMPs fall into several categories, including erosion control, sediment control, waste management, and good housekeeping. They are intended to protect surface water quality by preventing eroded soil and construction-related pollutants from migrating off site from the construction area. Routine inspection of all BMPs is required under the General Permit. The General Permit also sets post-construction standards (i.e., implementation of BMPs to reduce pollutants in stormwater discharges from the site after construction).

In the Proposed Project area, the General Permit is implemented and enforced by the San Francisco Bay Regional Water Quality Control Board (RWQCB), which administers the stormwater permitting program. Portions of the Proposed Project are also within the Central Valley RWQCB jurisdiction.

Federal Insecticide, Fungicide, and Rodenticide Act

The Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), amended in 1996, authorizes the EPA to register or license pesticides (including herbicides) for use in the U.S. Pesticides must be registered with EPA and the state before distribution (7 U.S.C. §136-136y (1996), n.d.). Under FIFRA, the California Department of Pesticide Regulation (CDPR) is vested with primary responsibility to enforce pesticide laws and regulations in California. Pesticide rules are found in different sections of California codes and regulations, including the Food and Agriculture Code, Business and Professions Code, Health and Safety Code, and the Labor Code.

In general, CDPR regulates pesticide sales and use statewide whereas local use is enforced through the County Agricultural Commissioners. Many agricultural pesticides require a permit from the County Agricultural Commissioner before they may be purchased or used. The Agricultural Commissioner also enforces regulations to protect groundwater and surface water from pesticide contamination.

Occupational Safety and Health Administration

The Occupational Safety and Health Administration (OSHA) regulations contained in 29 CFR contain employee safety provisions that are designed to minimize the hazards for employees who may encounter hazardous materials in the workplace. The regulations require training, operating procedures, and protective equipment to be used at work sites where hazardous materials could be encountered. The purpose of 29 CFR part 1910, Hazard Communication Standard, is to ensure that the hazards of all chemicals produced or imported are evaluated and that information concerning their hazards is transmitted to employers and employees. Information is to be communicated through comprehensive hazard communication programs, which are required to include container labeling and other forms of warning, Material Safety Data Sheets, and employee training (OSHA n.d.)

OSHA regulations require employers to take precautions when cranes and boomed vehicles are operated near overhead lines. Any overhead line is to be considered energized unless the owner of the line or the electric utility company indicates that it has been de-energized and it is visibly grounded (29 CFR 1926.550 (a)(15)(vi)) (OSHA n.d.)

Pipeline and Hazardous Materials Safety Administration

The Pipeline and Hazardous Materials Safety Administration develops and enforces national policies for the safe, reliable, and environmentally sound operation of U.S. pipelines and transport of hazardous materials. 49 CFR section 192.467 (External corrosion control: Electrical isolation, part (f)) states: "Where a pipeline is located in close proximity to electrical transmission tower footings, ground cables or counterpoise, or in other areas where fault currents or unusual risk of lightning may be anticipated, it must be provided with protection against damage due to fault currents or lightning, and protective measures must also be taken at insulating devices."

Institute of Electrical and Electronics Engineers

To ensure public safety, the National Electrical Safety Code (NESC) requires induced current to be limited to less than 5 milliamperes (mA) for the largest anticipated truck, vehicle, or equipment under an energized line. This requirement is often referred to as the "5 mA Rule". The NESC is a voluntary standard adopted by most electric utilities in the U.S. The NESC is published and maintained by the IEEE.

IEEE Standard 80, "Guide for Safety in AC Substation Grounding" covers grounding methods at outdoor AC substations, both conventional and gas-insulated, and distribution, transmission, and generating plant substations (IEEE Standards Association 2015).

Federal Aviation Administration
Navigable airspace regulations at 14 CFR part 77 establish standards for determining obstructions in navigable airspace. The FAA issues the airspace hazard determinations (FAA, n.d.).

All airports and navigable airspace not administered by the DoD are under the jurisdiction of the FAA. Title 14 part 77 of the CFR establishes the standards and required notification for objects affecting navigable airspace. In general, construction projects exceeding 200 feet in height or those extending at a ratio greater than 100 to 1 (horizontal to vertical) from a public or military airport runway more than 3,200 feet long, out to a horizontal distance of 20,000 feet, are considered potential obstructions and require FAA notification. In addition, construction projects extending at a ratio greater than 50 to 1 (horizontal to vertical) from a public or military airport runway measuring 3,200 feet or less, out to a horizontal distance of 10,000 feet, are considered potential obstructions and require FAA notification. Title 14, part 133 of the CFR also requires an operating plan to be developed in coordination with and approved by the local FAA Flight Standards District Office that has jurisdiction over when helicopter use would be required. FAA helicopter loading regulations are also found in 14 CFR part 133.

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), as amended and codified in 49 U.S.C. sections 5101 et seq. (U.S. Code, n.d.).

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.

Title 40, Part 112 Oil Pollution Prevention

Title 40, part 122 of the CFR established procedures, methods, equipment, and other requirements to prevent the discharge of oil from non-transportation-related onshore and offshore facilities into or upon the navigable water of the United States. This part also established requirements for the preparation of Spill Prevention, Control, and Countermeasure (SPCC) plans. SPCC plans are designed to complement existing laws, regulations, rules, standards, policies, and procedures pertaining to safety standards, fire prevention, and pollution prevention rules. The purpose of an SPCC plan is to form a comprehensive federal/state spill prevention program that minimizes the potential for discharges. SPCC plans must address all relevant spill prevention, control, and countermeasures necessary at the specific facility.

These regulations are applicable to facilities with a single tank or cumulative aboveground storage capacities of 1,320 gallons, or greater, of oil.

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. 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. 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 (CHP) and California Department of Transportation (Caltrans), respectively.

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. 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. 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.

California Environmental Protection Agency
CalEPA was created in 1991. Its creation centralized California's environmental authority, consolidating the California Air Resources Board (CARB), SWRCB, Integrated Waste Management Board (IWMB), DTSC, Office of Environmental Health Hazard Assessment, and CDPR under one agency. These agencies were placed within CalEPA to create a cabinet-level advocate for the protection of human health and the environment and to ensure the coordinated deployment of state resources. CDPR, DTSC, IWMB, and SWRCB regulate hazardous materials and hazardous waste that have the potential to cause soil, water, and groundwater contamination (CalEPA, n.d.-b).

Requirements for hazardous waste management in California implemented by DTSC are contained in both the California Health and Safety Code division 20 chapter 6.5: Hazardous Waste Control Law and 22 CCR. Under Government Code section 65962.5, the DTSC provides information to Cal-EPA on the lists of hazardous waste facilities, land designated as hazardous waste property, hazardous waste disposal sites, and others, and the information in the Hazardous Waste and Substances Statement required under subdivision (f) of that section (CalEPA, n.d.-a).

California Code of Regulations Title 27, Division 1, Subdivision 4, Chapter 1
CalEPA has implementation authority for the Unified Hazardous Waste and Hazardous Materials Management Regulatory Program (Unified Program) per 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]). 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.

California Health & Safety Code, Chapter 6.95, Article 1
Under California Health and Safety Code, chapter 6.95, article 1, handling of hazardous materials in quantities equal to or greater than 55 gallons for materials that are liquids, 500 pounds for solids, or 200 cubic feet for compressed gas requires preparation of a hazardous materials business plan (HMBP) in order to protect the public health and safety and the environment. The statute also requires environmental reporting to CalEPA. Basic information on the location, type, quantity, and health risks of hazardous materials handled, used, stored, or disposed of, which could be accidentally released into the environment, is required to be submitted to firefighters, health officials, planners, public safety officers, health care providers, regulatory agencies, and other interested persons.

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 Cortese List contains sites managed by the DTSC and SWRCB. The DTSC is required to update this list as appropriate and at least annually. Sites included on the Cortese List are compiled from the list of Hazardous Waste and Substances sites (DTSC), Leaking Underground Storage Tank sites (SWRCB), soil waste disposal sites (SWRCB), and "active" Cease and Desist Orders and Cleanup and Abatement Orders (SWRCB).

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 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.

Hazardous Materials Transportation
California has adopted U.S. DOT regulations for the intrastate movement of hazardous materials through Title 13, CCR, Division 2, Chapter 6. The two state agencies with primary responsibility for enforcing federal and state regulations and responding to hazardous materials transportation emergencies are CHP and Caltrans. CHP enforces hazardous material and

hazardous waste labeling and packing regulations to prevent leakage and spills of material in transit and to provide detailed information to cleanup crews in the event of an accident. Caltrans oversees the safe operation of the state highway system and provides emergency response capabilities for hazardous materials incidents, including deployment of hazardous materials spill response teams.

California Occupational Safety and Health Administration

In California, California Occupational Safety and Health Administration (Cal/OSHA) regulates worker safety, similar to OSHA. Cal/OSHA assumes primary responsibility for developing and enforcing state regulations related to workplace safety. Because California has a federal OSHA program, it is required to adopt regulations that are at least as stringent as those found in 29 CFR. Cal/OSHA standards codified in title 8 of the CCR are generally more stringent than federal regulations.

Title 8 CCR sections 2700 et. seq., "High Voltage Safety Orders," specifies requirements and minimum standards for safely installing, operating, working around, and maintaining electrical installations and equipment. Section 2946 identifies clearances for lines developed by the California Department of Industrial Relations, Division of Safety and Health, through Cal/OSHA and contains provisions for preventing accidents due to proximity to overhead lines.

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.

California Public Utilities Commission

General Order 95

CPUC General Order (GO) 95, Rules for Overhead Electric Line Construction, section 35 covers all aspects of design, construction, operation and maintenance of overhead electrical lines and safety hazards. GO 95 is intended to ensure safety to workers engaged in the construction, operation and maintenance, and use of electrical facilities. The regulations are also intended to ensure the general reliability of the State's utility infrastructure and services. 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 (CPUC n.d.).

General Order 166

CPUC GO 166, Standards for Operation, Reliability, and Safety During Emergencies and Disasters, is intended to ensure that jurisdictional electric utilities are prepared for emergencies

and disasters in order 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, among others, that each jurisdictional electric utility 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 (CPUC n.d.).

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
On December 21, 2017, the CPUC issued Decision 17-12-024 to adopt regulations to enhance fire safety in the HFTD. 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 (CPUC 2025).

California Office of Energy Infrastructure and Safety
In 2018, following 2016 and 2017 wildfires, California legislature passed several bills that increased oversight of electrical corporations' efforts to reduce utility-related wildfires. Pursuant to Public Utilities Code section 8386(b), electrical corporations are required to prepare and submit Wildfire Mitigation Plans (WMPs) annually to the California Office of Energy Infrastructure and Safety (Energy Safety) for review and approval. A WMP should describe how the electrical corporation is constructing, maintaining, and operating its electrical lines and equipment in a manner that will minimize the risk of wildfire.

Prior to submittal, Energy Safety performs a pre-submission check to assess a submitted WMP for general completion and accuracy. The WMP is submitted again for an official and substantive review, and the WMP is approved or denied. A WMP is evaluated for completeness, technical and programmatic feasibility and effectiveness, resource use and efficiency, etc. (Energy Safety 2025).

Public Resources Code Sections 4201-4204, 4423.4, 4427, 4428, and 4442.
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.
- Outdoor smoking is confined to an area that is at least 1 meter in diameter and cleared to mineral soil by removal of flammable vegetation (PRC § 4423.4)
- On days when a burning permit is required, flammable materials must be removed to a distance of 10 feet from any equipment that could produce a spark, fire, or flame, and the construction contractor must maintain a round-point shovel and backpack pump fire extinguisher ready for use (PRC § 4427).
- Appropriate fire-suppression equipment must be maintained from April 1 to December 1, the highest-danger period for fires (PRC § 4428).
- Earthmoving and portable equipment with internal combustion engines must be equipped with a spark arrestor to reduce the potential for igniting a wildland fire (PRC Section 4442).

California Fire Code

The California Fire Code (CCR title 24 part 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.

Hazardous Materials Business Plan

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.

California Manual on Uniform Traffic Control Devices

Caltrans publishes the California Manual on Uniform Traffic Control Devices (CA MUTCD) to adopt uniform standards and specifications for all official traffic control devices in California, in accordance with Section 21400 of the California Vehicle Code (CVC). The 2014 update to the CA MUTCD aims to improve safety and mobility for all travelers in California by providing guidance to transportation practitioners that strives to balance safety and convenience for

everyone in traffic—drivers, pedestrians, and bicyclists. Significantly, the CA MUTCD integrates multimodal policies for safer crossings, work zones, and intersections, with improvements including Crosswalk Enhancement Policy, Temporary Traffic Control Plans, Work Zone and High Fines Signs and Plaques, and Traffic Control for School Areas (Caltrans 2023).

Caltrans Encroachment Permits

Construction activities that encroach upon state highways are subject to encroachment permit requirements administered by Caltrans under the California Streets and Highways Code §§ 660–734. Encroachment permits require applicants to prepare and implement traffic control plans consistent with the CA MUTCD. These traffic control plans are intended to ensure the safe and efficient movement of vehicles, bicycles, and pedestrians through or around work zones and to minimize risks to public safety during construction.

California Streets and Highways Code §660

California Streets and Highways Code § 660 authorizes Caltrans to regulate work conducted within state highway rights-of-way through encroachment permits. Permit conditions may restrict the timing of lane closures, require advance notification and signage, and mandate other safety measures to protect road users and emergency responders during construction activities.

California Joint Utility Traffic Control Manual

The California Joint Utility Traffic Control Manual provides guidelines for establishing temporary traffic control zones during utility and construction work. The manual was updated in 2018 (7th edition) and was renamed the California Temporary Traffic Control Handbook. This handbook, used in conjunction with the CA MUTCD and local encroachment permit conditions, establishes standards and requirements for temporary traffic control services, placement of signs and barriers, and safe management of lane closures, thereby reducing risks to workers, the traveling public, and emergency service providers (California Temporary Traffic Control Handbook Committee 2018).

CEQA Guidelines §15186(b)(1): Consultation Regarding Schools and Hazardous Materials Sites

CEQA Guidelines §15186(b)(1) requires the lead agency to consult with the agency responsible for oversight of hazardous materials sites (such as the Department of Toxic Substances Control or the Regional Water Quality Control Board) whenever a proposed project is located within one-quarter mile of a school and may involve the handling of hazardous or acutely hazardous materials, substances, or waste. This consultation ensures that appropriate protective measures are identified and implemented to prevent potential health and safety risks to students and staff. The requirement applies regardless of whether the project itself directly involves hazardous materials, if nearby listed sites could pose risks to schools.

Local

Pursuant to 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."

Bay Area Air Quality Management District, Regulation 11, Rule 2

The BAAQMD Regulation 11, Rule 2 provides stipulations for activities involving handling, transportation, and disposal of asbestos-containing material (ACM). Specific disposal methods for ACM are required under Rule 2. All asbestos-containing waste from program excavation would be required to be disposed at waste disposal sites that are operated in accordance with this BAAQMD regulation. All vehicles transporting asbestos-containing waste material are required to be marked during loading and unloading of waste. The signs are to be visible and be displayed in such a manner that a person can easily read the legend.

Solano County

Solano County General Plan

The Public Health and Safety Chapter of the Solano County General Plan provides an overview of natural and human-made hazards, public health, air quality, and water resources, and guides development in Solano County in a sustainable manner that respects the needs of both people and the environment (Solano County 2024a). The following goals and policies from this chapter are relevant to the Proposed Project:

Goal HS.G-3	Reduce the risk and threat from urban and wildland hazards.
Policy HS.P-31	Require that all structures or new development be built with defensible space.
Policy HS.P-32	Discourage the construction of public facilities in areas of high or very high wildfire risk.
Policy HS.P-33	Minimize non-farm-related development and road construction for public use in high or very high fire hazard severity zones.
Policy HS.P-34	Require new developments in high or very high fire hazard severity zones to incorporate fire-safe building methods and site planning techniques into the development.
Policy HS.P-39	Require new development to provide adequate access for fire and emergency vehicles and equipment that meets or exceeds the standards. These standards are found in two parts of the California Fire Safe Regulations (California Code of Regulations, Title 14, Division 1.5, Chapter 7): Subchapter 2, Articles 1-5 (commencing with Section 1270, SRA Fire Safe Regulations); and Subchapter 3, Article 3 (commencing with Section 1299.01, Fire Hazard Reduction Around Buildings and Structures Regulations).
Policy HS.P-40	Require new and existing development and infrastructure in high or very high fire hazard severity zones to establish and maintain vegetation management practices to reduce the risk of wildfire ignition and spread. This shall include

responsible site planning, vegetation management, the use of native drought-tolerant and fire-resistant species, and defensible space consistent with State, local, and fire protection district regulations.

Policy HS.P-41 Ensure public and private roadways in fire hazard severity zones are in compliance with current fire safety regulations.

Policy HS.P-43 Require review by the Building Services Division, Planning Services Division and fire protection districts prior to the issuance of development permits for significant development projects conceptual landscaping plans in Very High Fire Hazard Severity Zones identified by CAL FIRE. Plans for proposed development in such areas shall include, at a minimum:

- Site plan to reduce the risk of fire hazards and with consideration to site conditions, including slope, structures, and adjacencies.
- Development and maintenance of defensible space.
- Points of ingress and egress that facilitate improved evacuation and emergency response, and provide fire equipment access and adequate water infrastructure for water supply and fire flow that meets or exceeds the standards in the California Safe Regulations. This includes two sections of Title 14 of the CCR, Division 1.5, Chapter 7: Subchapter 2, Articles 1-5 (commencing with Section 1270, SRA Fire Safe Regulations); and Subchapter 3, Article 3 (commencing with Section 1299.01, Fire Hazard Reduction Around Buildings and Structures Regulations).
- Class A roof materials for new and replacement roofs.
- Location and source of anticipated water supply.
- A Fire Protection Plan that includes a fire risk analysis, current fire response capabilities, fire safety requirements (defensible space, infrastructure, and building ignition resistance), mitigation measures and design considerations for non-conforming fuel modification, wildfire education and limitations, wildfire prevention maintenance, and evacuation planning.

Policy HS.P-45 Coordinate with emergency responders and Caltrans to maintain potential evacuation routes to ensure adequate capacity, safety, and viability of those routes in the event of an emergency, including making improvements to existing roads to support safe evacuations, as needed.

Goal HS.G-4 Ensure that Solano County is safe from risks to public health that could result from exposure to hazardous materials.

Policy HS.P-49	Minimize the risks associated with transporting, storing, and using hazardous materials through methods that include careful land use planning and coordination with appropriate federal, State, or county agencies.
Policy HS.P-50	Work to reduce the health risks associated with naturally occurring hazardous materials, such as radon, asbestos, or mercury.
Policy HS.P-52	Promote hazardous waste management strategies in this order of priority: source reduction, recycling and reuse, on-site treatment, off-site treatment, and residuals disposal.
Goal HS.G-5	Prepare for and respond to natural and human-caused disasters, avoiding loss of life and minimizing the impacts to health, property, and community welfare.
Policy HS.P-56	Plan and designate evacuation and aid routes. Work to create a comprehensive circulation system that is effective in allowing emergency access to and from all parts of the county and which provides alternative routes during unexpected events such as flooding, fires, or hazardous materials accidents that require evacuation.
Goal HS.G-9	Maintain equitable and healthy air quality in Solano County through actions that avoid and minimize health risks from localized pollution sources and regional wildfire smoke.
Policy HS.P-86	Minimize health impacts from sources of toxic air contaminants, both stationary (e.g., refineries, manufacturing plants) as well as mobile sources (e.g., freeways, rail yards, commercial trucking operations).
Goal HS.G-10	Create a community protected from the harmful impacts of excessive noise.
Policy HS.P-92	Ensure that development in the vicinity of the Travis Air Force Base or the Rio Vista or Nut Tree airports is compatible with existing and projected airport noise levels.

Solano County Emergency Operations Plan

The 2024 Solano County Emergency Operations Plan (EOP) aims to "provide general information about how the Solano County Operational Area (OA) will prepare for, respond to, and recover from large-scale incidents within the jurisdiction"(Solano County 2024b). 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 General Plan

The Hazardous Materials Element contains various goals and policies that are intended to minimize the impact of hazardous materials on human health and the environment (Sacramento County 2017). The following are relevant to the Proposed Project.

Objective	Protect the residents of Sacramento County from the effects of a hazardous material incident via the implementation of various public health and safety programs.
Policy HM-4	The handling, storage, and transport of hazardous materials shall be conducted in a manner so as not to compromise public health and safety standards.
Policy HM-7	Encourage the implementation of workplace safety programs and to the best extent possible ensure that residents who live adjacent to industrial or commercial facilities are protected from accidents and the mishandling of hazardous materials.
Policy HM-8	Continue the effort to prevent groundwater and soil contamination.
Policy HM-9	Continue the effort to prevent surface water contamination.
Policy HM-10	Reduce the occurrences of hazardous material accidents and the subsequent need for incident response by developing and implementing effective prevention strategies.

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 Office of Emergency Services 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 General Plan

The Health and Safety Element of the Conta Costa County General Plan addresses natural and human-caused hazards and dangers and identifies the potential risk of death, injuries, property damage, and economic and social dislocation from fires, floods, earthquakes, and other events (Contra Costa County 2024b). The following goals and policies from this element are relevant to the Proposed Project:

Goal HS-1	Air quality that supports community and environmental health.
Policy HS-P1.4	Require new industrial development to locate significant pollution sources at the maximum distance possible from sensitive receptors.
Policy HS-P1.10	Prohibit nonessential diesel engine idling countywide and nonessential idling of all vehicles within 100 feet of sensitive receptors.
Goal HS-7	Minimize injury, loss of life, and damage to property from wildfire hazards.
Policy HS-P7.2	Require any construction of buildings or infrastructure within a High or Very High Fire Hazard Severity Zone in LRA or SRA, or in areas that may designated as the WUI to incorporate fire-safe design features that meet the State Fire Safe Regulations and Fore Hazard Reduction Around Buildings and Structures Regulation for road ingress and egress, fore equipment access, and adequate water supply.
Policy HS-P7.5	Work with property owners in High or Very High Fire Hazard Severity Zones in the LRA or SRA, or in areas that may be designated as the WUI, to establish and maintain fire breaks and defensible space, vegetation clearance, emergency access roads, water supply and fire flow, signage, and firefighting infrastructure that meet adopted State, County, or community fire breaks and public and private road clearance.
Policy HS-P7.10	Coordinate with energy service providers to underground power lines, especially in the WUI and High and Very High Fire Hazard Severity Zones.
Goal HS-9	Communities that are protected from hazards associated with the use, manufacture, transport, storage, treatment, and disposal of hazardous materials and hazardous waste, including from fossil fuels, chemical refining, and power plants, as well as pipelines, rail lines, and truck transportation.

Policy HS-P9.3	Require new industrial development to reduce generation and disposal of hazardous materials to the maximum extent feasible by (listed in order of importance): • Implementing operational source reduction strategies and replacing hazardous materials with less hazardous materials. • Reducing generation of those wastes not amenable to source reduction or recycling. • Recovering and recycling the remaining waste for reuse. • Properly disposing of hazardous wastes and residuals generated from treatment of hazardous waste.
Policy HS-P9.5	Require industrial projects involving use, management, or generation of hazardous materials or waste, particularly those utilizing stationary or fixed storage tanks, in areas at risk from sea level rise, surface or emergent groundwater flooding, or tsunami to incorporate best management practices to reduce risk and prepare plans for prevention and remediation of hazardous materials/waste releases resulting from inundation. Remediation plans must meet regulatory standards for protection of people and the environment in the event of permanent inundation and include financial assurances to guarantee implementation.
Policy HS-P9.6	Require transport of hazardous materials via the safest available method for each material, avoiding Impacted Communities, populated areas, and areas subject to natural hazards whenever possible.
Policy HS-P9.8	Require applicants for projects that involve hazardous materials or hazardous waste to provide clear information in plain language about potential hazards their projects pose to nearby communities at the beginning of the review process. Review and verify this information, make it available to residents, and encourage project applicants to host at least one community meeting to discuss potential hazards.
Goal HS-13	Effective evacuation capacity and capabilities throughout the county in response to emergencies and major hazards of concern.
Policy HS-P13.1	Except for infill sites, require new development in High and Very High Fire Hazard Severity Zones, the WUI, and 100-year or 200-year floodplains to have access to at least two emergency evacuation routes, and encourage the same for existing development.

Contra Costa County Emergency Operations Plan

The 2022 Contra Costa County EOP provides "the basis for a coordinated response before, during and after an emergency affecting Contra Costa County". 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 2022).

Contra Costa County Hazard Mitigation Plan

The 2024 Contra Costa County Hazard Mitigation Plan (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 2024a). 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.

Alameda County

The Proposed Project would not extend beyond the Tesla Substation in Alameda County. Modifications to PG&E's existing Tesla Substation in Alameda County would occur within the substation fence line and would not require ground-disturbing activities. Therefore, plans and policies of Alameda County were not assessed in this analysis. No Alameda County policies for hazards or hazardous materials are relevant to the Proposed Project.

City of Pittsburg

City of Pittsburg General Plan

The City of Pittsburg 2040 General Plan includes policies applicable to redevelopment and reuse of areas within the Proposed Project area as summarized below (City of Pittsburg 2024)

Policy 2-P-17.1 Support the remediation and revitalization of this site as a master-planned community with sustainable and resilient design that provides opportunities to work, live, and play and addresses Pittsburg's jobs/housing balance, recreation, economic development, and public use needs:

Ensure remediation of site meets or exceeds California Department of Toxic Substance Control and U.S. Environmental Protection Agency standards in all areas proposed for residential, employment, recreational, and other uses that may expose humans to hazards associated with former uses of the site. Any future project shall be required to ensure that future development of the site would not expose workers, residents, employees, or other users of the site to hazardous materials at levels that exceed federal or State standards for the specific proposed activity or use associated with each phase of development of this subarea and to demonstrate that remediation has occurred to a level that meet or exceeds federal and State health and safety standards prior to any permits being issued for that phase. For example, prior to grading of the site, the project applicant shall demonstrate that the potential exposure to

hazardous materials have been remediated to a level that is safe for construction workers performing ground-disturbing activities. Prior to issuance of building permits for residential, office, or other users, the project applicant shall demonstrate that the potential exposure to hazardous materials has been remediated to a level that is acceptable for the specific proposed use.

Policy 8-P-2.2 Require future planning decisions, development, and infrastructure and public projects to consider the effects on the overall health and well-being of the community and its residents, with specific consideration provided to ensure disadvantaged communities have equitable access to services and amenities and to reduce exposure to hazardous materials, industrial activity, vehicle exhaust, other sources of pollution, and excessive noise on residents, with an emphasis on reducing exposure of any disadvantaged communities to such exposure.

Goal 10-3 Protect and preserve the availability and quality of soil as a resource to sustain health plant, animal, and human life.

Policy 10-P-3.1 Require development to use BMPs to minimize the runoff and erosion caused by earth movement.

Action 10-A-3.a Require evaluation and implementation of appropriate measures as part of development plans for creek bank stabilization as well as necessary BMPs to reduce erosion and sedimentation.

Action 10-A-3.d Require that applications for discretionary development projects provide detailed information regarding the potential for the historical use of hazardous materials on the site, including information regarding the potential for past soil and/or groundwater contaminations. If warranted, identify and require mitigation measures to ensure the exposure to hazardous materials from historical uses has been mitigated to acceptable levels consistent with EPA and/or DTSC standards.

Goal 10-4 Promote the conservation and efficient use of surface water and groundwater and protect the quality of local and regional waterways, water supply, and groundwater resources.

Policy 10-P-4.3 Comply with RWQCB regulations and standards to maintain and improve the quality of both surface water and groundwater resources.

Policy 10-P-4.4 Address soil and groundwater pollution during development, redevelopment, and reuse projects.

Policy 10-P-4.5 Reduce sedimentation and erosion of waterways by minimizing site disturbance and vegetation removal.

Action 10-A-4.c Continue working with the RWQCB in the implementation of the NPDES permits, with specific requirements established in each NPDES permit.

Action 10-A-4.e Monitor land uses discharging into groundwater recharge areas to prevent potential contamination from hazardous or toxic substances.

Action 10-A-4.i As part of the development review process, require new development to identify and implement BMPs to minimize creek bank instability, runoff of construction sediment, and flooding.

Goal 11-1 Protect the safety of life and property throughout the community by planning and preparing for effective disaster and emergency response.

Policy 11-P-1.1 Ensure Pittsburg is prepared to effectively respond to any emergency or disaster, including flooding, fire, hazardous material releases, and seismic activity, in cooperation with other public agencies and appropriate organizations.

Policy 11-P-1.2 Ensure emergency response equipment and personnel training are adequate to follow the procedures contained within the Emergency Operations Plan and Emergency Response and Emergency Operations Plan for a major earthquake, wildland fire, flood, or hazardous materials release event.

Policy 11-P-1.3 Locate new essential public facilities outside of high hazard areas, including high fire risk areas, special flood hazard areas, and areas at high risk for geologic or soil instability, to the extent feasible. Where it is not feasible to locate essential public facilities outside of high hazard areas, require site design, construction, and other methods to minimize damage.

Policy 11-P-1.8 Ensure that all areas of the city are accessible to emergency response providers. Keep emergency access routes free of traffic impediments.

Policy 11-A-1.e Prioritize and implement mitigation projects identified in the HMP to ensure that critical facilities and infrastructure, including water (storage tanks, treatment facilities, and distribution system), wastewater (collection infrastructure and wastewater treatment pump stations), and energy infrastructure, are operational in the event of a disaster.

Goal 11-5 Minimize the risk to life and property from the generation, storage, and transportation of hazardous materials and waste.

Policy 11-P-5.1 Strictly regulate the production, use, storage, transport, and disposal of hazardous materials.

Policy 11-P-.5.2 Require hazardous waste generated within the city to be disposed of in a safe manner, consistent with all applicable local, state, and federal laws.

Policy 11-P-5.3 Continue to support and require compliance with Contra Costa County's Countywide Integrated Waste Management Plan as well as all of the CUPA program elements.

Policy 11-p-5.4 Support Contra Costa County in implementing the Hazardous Materials Area Plan to coordinate emergency response and hazardous materials incidents affecting the City.

Policy 11-P-5.5 Require compliance with the City's Hazardous Waste Management Plan in addressing the generation, transport, and disposal of hazardous waste in the city, from large and small generators.

Policy 11-P-5.6 Encourage and support as feasible the cleanup of contaminated sites during development and redevelopment projects.

Action 11-A-5.a Require that applications for discretionary development projects provide detailed information regarding the potential for the historic use of hazardous materials on the site, including information regarding the potential for past soil and/or groundwater contaminations. If warranted, identify and require mitigation measures to ensure the exposure to hazardous materials from historical uses has been mitigated to acceptable levels acceptable by the City and consistent with EPA and/or DTSC standards.

Action 11-A-5.b Continue to review all new development projects expansions and project requiring use permits for compliance with Municipal Code Chapter 18.84, Article VI, "Hazardous Materials," to address the use, handling, storage, and transport of hazardous materials and substances.

Goal 12-4 Increase recycling and waste diversion while maintaining adequate solid waste service for all users.

Policy 12-P-4.1 Enforce solid waste reduction, diversion, and recycling standards to divert increasingly larger portions of the waste stream from landfills serving the region.

Goal 12-6 Ensure the provision of high quality and responsive fire protection services, including for urban and wildland fires.

Policy 12-P-6.2 Require adequate road widths, turnarounds, and emergency access development projects for fire response trucks.

Policy 12-P-6.3 Require development in areas of high fire hazard to be designed and constructed to minimize potential losses and maximize the ability of fire personnel to suppress fire incidents.

Policy 12-P-6.4 Require existing and new development in or adjacent to high and very high fire hazard severity zones, wildland urban interface zones, and State Responsibility Areas to maintain defensible space zones, landscape using native, fire-resistant plants and fire-resistant materials, abate weeds, and, where feasible, harden structures and infrastructure against fires.

Action 12-A-6.b Continue to enforce the California Building Code and California Fire Code, with amendments to address local conditions, to ensure that all construction and development implement fire-safe techniques, including fire-resistant materials, where required.

Action 12-A-6.d Review and amend the Municipal Code to include fire safe requirements, including defensible space zones, structure hardening, fire-resistant materials and landscaping, and, where appropriate, community firebreaks, for development in or adjacent to high and very high fire hazard severity zones and wildland urban interface zones.

City of Pittsburg Hazard Mitigation Plan

This Hazard Mitigation Plan was prepared to assess the natural, technological, and huma-caused risks to the City of Pittsburg to reduce the potential impact of hazards by creating mitigation strategies (City of Pittsburg 2023).

City of Pittsburg Emergency Operations Plan

The City of Pittsburg EOP provides an overview of the City of Pittsburg's organization, policies, and approach to all phases of emergency preparedness. It is the foundation document for the City of Pittsburg emergency management program. The EOP identifies the functions and responsibilities for the emergency response organization and Emergency Operations Center staff and provides guidance for plan maintenance. It describes internal processes that address emergency response and coordination (City of Pittsburg 2018).

Industry Standards and Guidance

In addition to regulatory requirements, industry standards provide guidance for safe design and operation of substations and oil-filled electrical equipment. The National Fire Protection Association (NFPA) 850, Recommended Practice for Fire Protection for Electric Generating Plants and High-Voltage Substations, provides design recommendations for transformer fire protection, oil containment, and drainage systems (NFPA 2000). The Institute of Electrical and Electronics Engineers (IEEE) Standard 980, Guide for Containment and Control of Oil Spills in Substations, offers technical guidance for spill prevention and control measures, including use of impervious liners, gravel-filled sumps, trench drains, and oil-water separation systems. While not regulatory requirements, these standards are widely applied by the utility industry and inform substation design and spill prevention practices (IEEE 2022).

4.9.3 Approach to Impact Analysis

The analysis of impacts on hazards, hazardous materials, and public safety applies the impact criteria and significance thresholds defined in the following subsection The LSPGC Applicant Proposed Measures (APMs) and PG&E Construction Measures (CMs) are considered when making the impact determinations for hazards, hazardous materials, and public safety, as shown in Table 4.9-2. Impact conclusions are based on separate analyses of LSGPC and PG&E project components, the Proposed Project as a whole, cumulative impacts, and alternatives. Mitigation measures are defined to reduce or avoid significant impacts, where feasible.

Impact Criteria and Thresholds of Significance

The following impact criteria questions have been derived from Appendix G of the CEQA Guidelines to evaluate impacts on hazards, hazardous materials, and public safety. Appendix G of the CEQA Guidelines ask whether a project would:

- Impact HAZ-1: Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.
- Impact HAZ-2: 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.
- Impact HAZ-3: Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.
- Impact HAZ-4: 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, it would create a significant hazard to the public or the environment.
- Impact HAZ-5: 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.
- Impact HAZ-6: Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.
- Impact HAZ-7: Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires.

Pursuant to the CPUC's Guidelines for Energy Project Applications Requiring CEQA Compliance, the following additional CEQA impact criteria are required for hazards, hazardous materials, and public safety (CPUC 2019). These criteria suggest that the impact of the Proposed Project would be significant if the Proposed Project would:

- Impact HAZ-8: Create a significant hazard to the public or environment through the transport of heavy materials using helicopters.
- Impact HAZ-9: Expose workers or the public to excessive shock hazards.

Applicant Proposed Measures and Construction Measures

LSPGC APMs and PG&E CMs identified in Section 2: Project Description that are relevant to hazards, hazardous materials, and public safety impact analysis are listed in Table 4.9-2.

Table 4.9-2 APMs and CMs Relevant to Hazards and Hazardous Materials

LSPGC APMs and PG&E CMs
APM 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 BIO-21: 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-22: 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.

LSPGC APMs and PG&E CMs

- Requirements to inspect equipment regularly such that it is maintained to be free of leaks.
- Spill kit location, cleanup, and notification procedures.

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.

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.

APM 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.

APM TRA-2: Road and Lane Closure Plan. LSPGC shall develop a Traffic Control Plan for the proposed project which includes a Road and Lane Closure plan that outlines how LSPGC will handle road and lane closures to allow for safe vehicle, bicyclist, and pedestrian passage when road and lane closures occur. The plan shall be prepared in coordination with local jurisdictions where road and lane closures would occur. Upon determination of the final construction schedule and precise locations and durations of road and lane closures, the plan shall describe locations and durations of:

- Lane closures
- Bicycle lane closures
- Sidewalk or pedestrian path closures
- Measures to be included in the plan that would allow for safe vehicle, bicyclist, and pedestrian passage shall adhere to the California Manual on Uniform Traffic Control Devices. Potential measures include:
- Signage directing motorists, pedestrians, and bicyclists to an efficient, safe detour around the closure

LSPGC APMs and PG&E CMs

- Flaggers and/or signage to halt traffic at road closures or direct traffic at lane closures and to allow traffic to pass when construction is halted
- Requirements for notifications and a process for communication with affected residents and landowners prior to the start of construction.
- Emergency service providers would be notified of the timing, location, and duration of construction activities.
- Requirement that emergency vehicle access is maintained at all times.

CM FIRE-1: Fire Risk Management. PG&E would follow relevant California Public Resource Code provisions and the then-current company-specific standard for preventing and mitigating fires while performing PG&E work. PG&E would utilize a project-specific safety plan to outline and ensure compliance with safe work practices, training, and fire response. Examples of the measures in the wildfire prevention and mitigation standard include, but are not limited to, the following practices:

- When working on unpaved roads where the ignitions may be probable due to dry vegetation, park vehicles in an area cleared of vegetation (e.g., paved, gravel or cleared to bare mineral soil) or otherwise where suitable to avoid fire ignitions.
- During dry months, all motorized equipment driving on unpaved or gravel/dirt right-of-way or roads must have installed State-approved spark arrestor.
- When traveling to the jobsite, or when operating on unimproved roadways, passenger vehicles are to carry one dry chemical fire extinguisher (rated ABC) and one round point shovel.
- Trucks (1/2 ton or larger) and all-terrain vehicles (ATVs) are to carry one dry chemical fire extinguisher (rated ABC), one round point shovel and one, 5-gallon backpack pump-type fire extinguisher.
- Heavy machinery or equipment (e.g., tractors, tub grinders, whole tree chippers, excavators, bulldozers) must have one dry chemical fire extinguisher (rated ABC), one round point shovel and one 5-gallon backpack pump-type fire extinguisher in the operating area but these are not required to be affixed to heavy machinery or equipment.
- In addition, during "red flag warning" advisory conditions (as determined by the National Weather Service) or other very high fire risk conditions, certain work activities will be curtailed or temporarily stopped unless work is deemed an emergency.
- All flammable chemicals must be clearly labeled and stored in approved containers away from ignition sources.

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 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.

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.

LSPGC APMs and PG&E CMs
• 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 Storm Water Pollution Prevention Plan.
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 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 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.

4.9.4 Impact Analysis – Proposed Project

Table 4.9-3 presents a summary of the CEQA significance criteria and impacts on hazards, hazardous materials, and public safety that would occur during construction, operation, and maintenance of the Proposed Project.

Table 4.9-3 Summary of Impacts on Hazards, Hazardous Materials, and Public Safety for the Proposed Project

Impact criteria: Would the project …	APMs and CMs applied	Significance prior to Mitigation	Mitigation Measures Required	Significance After Mitigation
Impact HAZ-1: Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	APM BIO-3 APM BIO-22 CM HAZ-1 CM HAZ-2	LTS	None	NA
Impact HAZ-2: Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident	APM BIO-21	LTS	None	NA

Impact criteria: Would the project …	APMs and CMs applied	Significance prior to Mitigation	Mitigation Measures Required	Significance After Mitigation
conditions involving the release of hazardous materials into the environment?				
Impact HAZ-3: Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	APM PUB-1	LTS	None	NA
Impact HAZ-4: 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?	None	NI	None	NA
Impact HAZ-5: 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?	None	LTS	None	NA
Impact HAZ-6: Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	APM TRA-2 CM TRA-2	LTS	None	NA
Impact HAZ-7: Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	APM FIRE-1 CM FIRE-1	S	MM FIRE-1	LTS
Impact HAZ-8: Create a significant hazard to the public or environment through the transport of heavy materials using helicopters?	APM HAZ-1 CM HAZ-3	LTS	None	NA
Impact HAZ-9: Expose workers or the public to excessive shock hazards?	None	LTS	None	NA

Notes:

LTS = less than significant

NI = no impact

S = significant

NA = not applicable

Impact HAZ-1: Would the Proposed Project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? ***(Less than significant)***

Construction

Construction of the LSPGC and PG&E project components would involve the transport, use, and disposal of hazardous materials commonly used during construction, which are discussed

in the following sections. These materials would not be routinely used following the construction period for the project. Hazardous materials that would be routinely used following construction are discussed under operation and maintenance, below.

LSPGC Collinsville Substation, LSPGC 230 kV Overhead and Underground Segments, and LSPGC Telecommunication Interconnection Lines

Construction of the terrestrial LSPGC project components would involve the use of diesel, gasoline, motor oil, hydraulic fluids, antifreeze, transmission fluids, greases, and various chemicals typically associated with vehicle operation and construction work. Hazardous materials required for construction use would be stored at staging yards. Improper handling, transport, storage, or disposal of hazardous substances could pose a potential risk to public health and the environment. Based on the anticipated volume of hazardous liquid materials (e.g., fuel) that would be stored and dispensed at a staging area, a HMBP, HMMP, and SPCC Plan would be required (in accordance with applicable provisions of title 19, chapter 1 and title 40, parts 112.1 to 112.7 of the CFR). The HMBP, HMMP, SPCC Plan would outline procedures for the safe use, storage, transportation, and disposal of hazardous substances. In addition, APM BIO-3 requires worker training on hazardous material storage and use procedures. Construction personnel would also receive WEAP training, which includes procedures for identifying stained or odorous soils and response protocols for accidental releases, further ensuring that potential hazards would be promptly addressed.

In addition to the risks associated with fuels and other hazardous materials used during construction, the potential for exposure to existing site contamination or asbestos was considered. Based on the Phase I ESA and Corridor Report, no RECs were identified within or immediately adjacent to the Collinsville Substation, 230 kV overhead and underground segments, or telecommunication interconnection alignment. Therefore, soil or site remediation is not anticipated to be required. In the unlikely event that stained soil, odors, or other evidence of contamination are encountered, work would stop in the affected area and testing would be conducted; if remediation is required, contaminated export materials would be transported by licensed haulers to a permitted Class I or Class II landfill in accordance with state and federal regulations. The likelihood of encountered ACM is also considered low, as construction would not involve demolition of existing buildings or structures. If ACM were unexpectedly encountered (e.g., in abandon utility conduits), abatement would be performed by certified asbestos contractors in compliance with Cal/OSHA asbestos regulations (8 CCR §1529) and BAAQMD requirements (Regulation 11, Rule 2).

Because the transport, use, storage, and disposal of hazardous materials would comply with State regulations, including preparation of an HMBP, HMMP, and SPCC Plan, and workers would be trained in proper hazardous material handling and storage, the potential for hazardous materials releases would be minimized. Due to compliance with State regulations and implementation of APM BIO-3, construction of the terrestrial LSPGC project components would not create a significant hazard to the public or environment through the routine transport, use, or disposal of hazardous materials, and the impact would be less than significant.

LSPGC 230 kV Submarine Segment

Construction of the LSPGC submarine segment would require transport and use of hazardous materials in the marine vessels and equipment stored on the marine vessels used to install the submarine cable. If hazardous materials are not properly contained on the vessels, they could be released to the Delta waterway, which would create a significant hazard to the environment. LSPGC has proposed APM BIO-22, which requires preparation of an aquatic spill prevention and control plan.

Construction of the submarine segment would be conducted in compliance with state regulations for hazardous materials management, including preparation of an HMBP if volumes of hazardous materials are stored onshore above regulatory thresholds (≥55 gallons of liquid, ≥500 pounds of solid, or ≥200 cubic feet of compressed gas). Onshore staging or storage of hazardous materials for submarine cable construction is not anticipated, and the materials used would be stored on the marine vessels supporting the work. As such, it is unlikely that an HMBP would be required. Instead, hazardous materials (i.e., diesel fuel, lubricating oils, and hydraulic fluids) would be managed on marine vessels, which are regulated under United States Coast Guard and California Office of Spill Prevention and Response spill prevention requirements (Title 40, Part 112 Oil Pollution Prevention).

Together, compliance with hazardous materials regulations and implementation of APM BIO-22 would ensure that hazardous materials are properly managed and that spill prevention and response measures tailored for work in the Delta are in place. Regulatory compliance requires safe storage, handling, and emergency response planning for regulated materials, while APM BIO-22 adds site-specific measures (i.e., spill containment procedures, equipment inspection requirements, vessel spill kits, crew training, and notification protocols to provide rapid containment and cleanup of any accidental release). These overlapping requirements would minimize the likelihood of a release and ensure rapid and effective response if one were to occur. For these reasons, construction of the submarine segment would not create a significant hazard to the public or the environment through the routine transport, use or disposal of hazardous materials. The impact would be less than significant.

PG&E Project Components

Construction activities associated with the PG&E project components would require the use of materials such as diesel fuel, gasoline, motor oil, hydraulic fluids, antifreeze, transmission fluids, greases, and other substances commonly linked to vehicles and construction operations. The primary activities with potential risk of spills or leaks include fueling and servicing of equipment, temporary storage of fuels and lubricants at staging yards, and operation of heavy equipment in proximity to sensitive resources. If these materials are not properly handled, transported, stored, or disposed of, accidental releases could pose a considerable risk to human health and the environment. However, such risks would be minimized by compliance with state hazardous materials regulations, preparation of an HMBP (under California Health and Safety Code Chapter 6.95 § 25500 et seq.) and HMMP (under California Fire Code, Title 24, Part 9, CCR) , and, if fuel storage volumes exceed the federal threshold of 1,320 gallons, a SPCC Plan (under 40 CFR Part 112). These plans collectively require safe storage, handling, and emergency

response measures for hazardous substances. In addition, PG&E would implement CM HAZ-1 and CM HAZ-2, which require spill prevention practices, site-specific buffer zones for construction vehicles and equipment near sensitive areas, procedures for reporting hazardous material spills and stopping work to notify appropriate authorities if contaminated soil or chemical odors are observed, and worker training for identification and handling of hazardous substances and applicable regulatory requirements. Construction personnel would also receive WEAP training, which would include procedures for identifying stained or odorous soil and response protocols for accidental releases, further ensuring that potential hazards would be promptly addressed.

Based on the Phase I ESA and Corridor Report, no RECs were identified within PG&E construction footprints. However, as discussed in Table 4.9-1, the existing PG&E Pittsburg Substation is listed in the SWRCB GeoTracker database as a Cleanup Program site. The site is under regulatory oversight for historical releases and has an active land-use restriction that limits disturbance of underlying soils. Proposed modifications associated with the LSPGC 230 kV transmission line interconnection would occur entirely within the existing developed and paved substation footprint and would not require ground disturbance in areas subject to remediation or land-use restrictions. PG&E maintains ongoing compliance with the corrective action requirements for the site, and any construction activity within the substation would be conducted in coordination with the responsible regulatory agency to ensure compliance with applicable health and safety standards. Therefore, while one existing PG&E facility is listed in GeoTracker, construction of the PG&E project components would not exacerbate or interfere with remediation activities or expose workers or the public to hazardous materials.

In the unlikely event that stained soil, odors, or other evidence of contamination are encountered, CM HAZ-1 requires work stoppage, testing, and appropriate remediation, with any contaminated export materials transported by licensed haulers to a permitted Class I or Class II disposal facility in compliance with state and federal regulations. Similarly, the risk of encountering asbestos-containing material is considered low because PG&E work would occur within existing substations, transmission corridors, and previously disturbed rights-of way. However, if asbestos is encountered (e.g., in older conduit or building materials), abatement would be conducted by certified asbestos contractors in accordance with Cal/OSHA and BAAQMD requirements.

These procedures ensure that hazardous materials would be appropriately managed and that construction of PG&E project components—including activities at the Pittsburg Substation—would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials. The impact would be less than significant.

Operation and Maintenance

LSPGC Project Components – Operation

The Collinsville Substation initial buildout would include seven mineral-oil immersed autotransformers. Each of the seven transformers would house approximately 28,000 gallons of mineral oil and be equipped with a containment system, such as an impervious liner and an

open or gravel-filled sump basin, designed to capture potential leaks or spills. These containment features would be designed consistent with the federal SPCC Rule [40 CFR §112.7(c), with §112.7(k) provisions for oil-filled equipment], National Fire Protection Association (NFPA) 850 recommended practices for transformer oil containment and drainage, and IEEE Standard 980 guidance for substation lines, dikes, sumps, and oil-water separation. In California, oil-filled electrical equipment is also managed under the Aboveground Petroleum Storage Act (HSC ch. 6.67), which relies on appropriate containment and routine inspection. Due to the volume of mineral oil stored at the Collinsville Substation, an SPCC Plan would be required for the substation (> 10,000 gallons of hazardous material stored) under 40 CFR Part 112. Due to compliance with regulatory requirements for storage of hazardous materials including preparation of an SPCC Plan, transformer oil storage would not create a significant hazard.

Additionally, the planned LSPGC Collinsville Substation would utilize lead-acid batteries to supply backup power for critical functions, including alarms, monitoring systems, protection relays, instrumentation, controls, and emergency lighting during outages. These batteries would be installed with secondary containment beneath and around the battery racks. The secondary containment system would be designed consistent with the California Fire Code §1207 requirements for stationary storage battery systems, including spill control and neutralization (§1207.6.2), the International Fire Code §608.5) criteria (flooded systems sized to contain a spill from the largest battery; valve-regulated lead-acid [VRLA] systems sized to neutralize 3 percent of the largest cell or block to pH 7-9), Cal/OSHA regulations (8 CCR §5184) requiring equipment and procedures to preclude, detect, and control failures, and IEEE Standard 484-2019 recommended practices for stationary lead-acid battery installations. Any potential release from the batteries would be addressed through requirements in the HMBP (HSC Chapter 6.95) and HMMP (California Fire Code), as well as through implementation of AMP HAZ-3 (Battery Handling and Containment), which specifies procedures for safe storage, inspection, and spill response.

Because hazardous materials used and stored at the Collinsville Substation would be addressed in an SPCC Plan, HMBP, and HMMP in compliance with regulatory standards, including required reporting and employee training, operation of the Proposed Project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials. The impact would be less than significant.

Operation of the LSPGC 230 kV transmission line and telecommunication interconnection lines would not require transport, use, or disposal of hazardous materials. There would be no impact from these components.

LSPGC Project Components – Maintenance

Routine maintenance would be conducted at the Collinsville Substation and LSPGC 230 kV overhead segment; no maintenance is proposed for the 230 kV submarine segment. Maintenance of the LSPGC telecommunication interconnection line would be limited to

inspection and repair within handholes or at the fiber hub and would not involve routine hazardous material use.

Routine maintenance would involve use of lubricants, coatings, and cleaning solvents. In addition, state-approved herbicides would also be applied to treat bare-ground areas, as needed. Herbicides used for vegetation management along transmission corridors are considered hazardous materials and are regulated under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) and California Food and Agricultural Code. In California, herbicide use is overseen by the Department of Pesticide Regulation and County Agricultural Commissioners, which requires licensed applicators, training, and compliance with label requirements regarding application rates, methods, and protective measures. Storage and handling of herbicides must also comply with Cal/OSHA Hazard Communication regulations (8 CCR §5194) and, if thresholds are exceeded, be included in a HMBP pursuant to HSC Chapter 6.95. With these regulatory requirements in place, routine vegetation management activities would not create a significant hazard to the public or the environment. Pesticides would not be used during maintenance activities.

Storage, transport, and use of hazardous materials during maintenance activities would be addressed in an HMBP and HMMP in accordance with state and federal regulations. Because the project would comply with regulatory requirements, including preparation of an HMBP and HMMP, the potential for routine hazardous material transport or use during maintenance to create a significant hazard to the public or environment would be minimal. Therefore, impacts would be less than significant.

PG&E Project Components

Operation of PG&E project components would not require large-scale storage or use of hazardous materials. PG&E currently operates and maintains transmission infrastructure in the vicinity of the Proposed Project site, and routine maintenance activities would proceed as they have historically and are not expected to introduce any new hazards to public health or the environment. Routine use of small volumes of materials such as fuels, lubricants, and cleaning solvents would occur during maintenance, but these would be managed in accordance with state and federal requirements, including preparation of an HMBP (HSC Chapter 6.95) and HMMP (California Fire Code), if thresholds are exceeded.

For the 500 kV interconnection lines, operation and maintenance activities would include routine inspection (via ground or aerial patrol), and occasional repair or replacement of conductors, insulators, or tower components. For the 12 kV distribution line, operation and maintenance activities would involve periodic inspection, pole and conductor maintenance, and vegetation management, which may include the limited application of state-approved herbicides regulated under FIFRA and the California Food and Agriculture Code. For the transposition sites, operation and maintenance activities would consist primarily of inspections and occasional repair of conductors or towers. Inspections and maintenance would be equivalent to PG&E existing inspection and maintenance of the existing line and would not create a hazard to the public.

Therefore, the PG&E project components would not create a significant hazard to the public or the environment through the routine transport, use or disposal of hazardous materials. Impacts would be less than significant.

LSPGC and PG&E Project Components Combined

LSPGC and PG&E would both follow state and federal law for storage, handling, and use of hazardous materials as described above. Therefore, the Proposed Project as a whole would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials during operation and maintenance. Impacts would be less than significant.

Impact HAZ-2: Would the Proposed 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? *(Less than significant)*

Construction

The potential for construction of LSPGC and PG&E project components to result in a significant hazard to the public or environment from accident conditions such as a spill of hazardous materials used during construction is addressed in Impact HAZ-1. The discussion in Impact HAZ-2 addresses the potential for construction grading or earthwork to release hazardous materials due to known contaminants in the area.

LSPGC Collinsville Substation and LSPGC 230 kV Overhead Segment

Based on the Phase I ESA and the Corridor Report prepared for the Proposed Project, no RECs or contaminated sites were identified within or adjacent to the proposed Collinsville Substation or 230 kV overhead segment. Therefore, grading and earthwork in these areas is not expected to encounter any hazardous materials and thus would not release hazardous materials to the environment (EDR 2023; Insignia Environmental 2023). The impact would be less than significant.

LSPGC 230 kV Submarine and Underground Segments, and LSPGC Telecommunication Interconnection Lines

There are known hazardous material sites in the City of Pittsburg near the telecommunication interconnection lines, 230 kV underground segment, and 230 kV submarine segment southern approach (EDR 2023) (refer to Table 4.9-1 and Figure 4.9-1). At the Mirant Delta Pittsburg Power Plant site (the open site closest to the telecommunication lines), the media of concern is groundwater (SWRCB 2025b). The 230 kV underground segment is approximately 0.5 mile from the nearest hazardous materials site (EDR 2023). Construction of the 230 kV underground segment would thus not cause release of any hazardous materials.

During construction, potential releases of hazardous materials could occur if excavation or dewatering activities were to encounter contaminated soil or groundwater, as these activities can mobilize pollutants and discharge them into the environment. Dewatering can increase the risk of hazardous material releases because it may draw contaminated groundwater to the surface and discharge it into the environment. However, installation of the telecommunication

interconnection lines is not anticipated to involve groundwater dewatering. Because no RECs have been identified within the area of telecommunication line construction and dewatering would not occur, the overall risk of encountering and releasing hazardous materials during construction activities, including excavation, is considered very low and the resulting impact from release of hazardous materials would be less than significant.

PG&E Project Components

The existing PG&E Pittsburg Substation, however, is identified in the SWRCB GeoTracker database as a Cleanup Program site under active regulatory oversight for historical releases. Proposed modifications at this facility would occur entirely within the existing developed and paved substation footprint and would not involve excavation or disturbance in areas subject to land-use restrictions or ongoing remediation. No other hazardous materials sites are known to occur in the vicinity of the PG&E project components (EDR 2023). Construction of PG&E project components would, therefore, not cause a release of hazardous materials that would pose a significant risk to public health or the environment since there are no known hazardous materials that would be encountered. The impact would be less than significant.

Operation and Maintenance

LSPGC Project Components

Impacts from storage and potential release of mineral oil and other hazardous materials at the Collinsville Substation and maintenance of other LSPGC project components are addressed in Impact HAZ-1. Operation and maintenance of the LSPGC project components would not involve earthwork or dewatering and would not have the potential to encounter any known contaminants. The impact from a significant hazard to the public or environment from release of hazardous materials during operation and maintenance would be less than significant.

PG&E Project Components

Impacts from use of hazardous materials during maintenance of PG&E project components is address in Impact HAZ-1. No earthwork would be involved in operation or maintenance of PG&E project components. The operation and maintenance of PG&E project components would not pose a significant hazard to public health or the environment. Therefore, impacts would be less than significant.

LSPGC and PG&E Project Components Combined

No combined impacts for LSPGC and PG&E project components would occur with respect to disturbance of hazardous materials as the components do not occur within any RECs. The impact for the project as a whole would be less than significant.

Impact HAZ-3: Would the Proposed Project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school? ***(Less than significant)***

Construction

LSPGC Collinsville Substation and LSPGC 230 kV Transmission Line (Overhead, Underground, and Submarine Segments)

The proposed LSPGC Collinsville Substation site and 230 kV transmission line alignment are located more than 0.25 mile from any existing or planned school facilities (Google Earth 2025b). Construction of the Collinsville Substation and 230 kV transmission line would not generate hazardous emissions or involve the handling of hazardous or acutely hazardous materials within 0.25 mile of an existing or proposed school. Thus, no impact would occur.

LSPGC Telecommunication Interconnection Lines

A portion of the proposed LSPGC telecommunication interconnection lines alignment is along Halsey Way in Pittsburg, approximately 320 feet from the St. Peter Martyr School. The use of hazardous substances during construction of the telecommunication lines is not expected and, thus, there would be no handling of hazardous materials within 0.25 mile of a school. However, the alignment passes near known hazardous materials sites in Pittsburg, including facilities listed on the Cortese List pursuant to Government Code §65962.5. CEQA Guidelines §15186(b)(1) requires the lead agency to consult with the agency responsible for oversight of such sites (e.g., DTSC or RWQCB) to ensure appropriate protective measures are in place. Prior to certification or approval of this EIR, the CPUC will consult with the appropriate agency as part of the CEQA process, ensuring that construction does not pose an additional hazard to nearby sensitive receptors, including the school. St. Peter Martyr School is also approximately 0.4 to 0.5 mile southeast of the Mirant Delta Pittsburg Power Plant site, where groundwater is the medium of concern. Because the school is not immediately adjacent to this facility and the proposed telecommunication line work would involve only shallow trenching along existing roadways, construction would not disturb or require remediation of potentially contaminated soil associated with the power plant within 0.25 mile of the school.

Construction of the telecommunication interconnection lines would require HDD construction methods and based on the Phase I ESA and Corridor Report, no RECs were identified within or adjacent to the alignment. Therefore, installation of the telecommunication lines is not expected to disturb or require remediation of contaminated soil. If evidence of contamination is unexpectedly encountered, work would be halted and handled in coordination with the appropriate agency in accordance with APM HAZ-1.

Project construction would require use of heavy motorized equipment, including vehicles with diesel emissions, as discussed further in Section 4.3: Air Quality. Diesel fuel is considered a hazardous material due to its flammability, and is addressed in this analysis under storage, handling, and spill prevention. Diesel exhaust fumes are not classified as hazardous materials for purposes of hazardous materials management; instead, they are regulated as toxic air contaminants by the CARB and are discussed further in Section 4.3: Air Quality.

Installation of the telecommunication lines would last less than two months and would require only limited boring and associated truck trips. Because of the short duration, small scale of equipment use, and the fact that construction would not occur directly adjacent to a school site, emissions from this activity would be temporary, localized, and minimal. Accordingly, emissions would not be significant in proximity to a school. Potential air quality impacts, including construction emissions, are further evaluated in Section 4.3: Air Quality.

LSPGC has also proposed APM PUB-1, which requires that construction near the school be scheduled during the summer break, when students are not present. Thus, while project construction would be expected to result in diesel emissions within 0.25 mile of the school, this impact would not be considered significant because the construction schedule would minimize the risk that emissions would reach students. Given the absence of hazardous material handling in proximity to a school, short duration of construction activities near the school, timing of construction activities when school is not in session, and required consultation with the regulatory agency under CEQA Guidelines §15186(b)(1), impacts from hazardous emissions within 0.25 mile of a school would be less than significant.

PG&E 500 kV Interconnection Lines, PG&E Transposition Sites, and PG&E Substation Modifications

No PG&E project component site are located within 0.25 mile of an existing or proposed school (Google Earth 2025b), and the construction of the PG&E project components would not emit or handle hazardous materials within 0.25 mile of a school. Therefore, no impact would occur.

Operation and Maintenance

LSPGC Project Components

The only LSPGCG Project component site within 0.25 mile of a school is the proposed LSPGC telecommunication interconnection lines alignment. Operation and maintenance of LSPGC telecommunication lines would not emit hazardous materials or require handling of acutely hazardous materials within 0.25 mile of a school. There would be no impact.

PG&E Project Components

The PG&E project components would not be within 0.25 mile of an existing or proposed school. Therefore, no impact from operation or maintenance would occur.

LSPGC and PG&E Project Components Combined

No combined impacts for LSPGC and PG&E project components would occur, and impacts for the project as a whole would be less than significant.

Impact HAZ-4: Would the Proposed Project 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? ***(Less than significant)***

LSPGC Project Components

The LSPGC project components would not be located on a known hazardous material site compiled pursuant to Government Code section 65962.5. Therefore, no impact would occur.

PG&E Project Components

The PG&E project components would not introduce new facilities on or adjacent to sites listed as containing known hazardous materials releases pursuant to Government Code § 65962.5. The existing PG&E Pittsburg Substation is identified in the SWRCB GeoTracker database for historical releases that have been remediated and are under regulatory oversight. Proposed modifications at this existing facility would occur entirely within the existing developed and paved substation footprint and would not involve soil disturbance in areas with known contamination. No other PG&E project component sites appear on the Cortese List or other hazardous materials databases. Therefore, while one facility associated with the Proposed Project is listed in GeoTracker, the proposed activities would not encounter or exacerbate existing contamination, and impacts related to hazardous materials sites would be less than significant.

Impact HAZ-5: If the Proposed Project would be 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 Proposed Project result in a safety hazard or excessive noise for people residing or working in the project area? ***(Less than significant)***

The analysis below addresses potential conflicts with an airport land use plan. None of the Proposed Project components are located within two miles of a public airport or public use airport. The nearest facilities are Travis AFB (approximately 15 miles to the west) and Rio Vista Municipal Airport (approximately 12 miles to the northwest). Both airports are governed by adopted ALUCPs. According to the noise contour maps in both ALUCPs, the Proposed Project components are outside of the 55 Community Noise Equivalent Level (CNEL) contour, which is the threshold used in both plans to identify areas potentially affected by excessive aircraft noise. As such, construction and operation of the Proposed Project would not expose workers or nearby receptors to excessive noise associated with airport operations.

The LPSGC and PG&E overhead transmission line components would require the temporary use of helicopters to support construction activities (e.g., conductor stringing, tower assembly, and line pulling). These activities would occur intermittently and only during construction of the overhead segments of the LSPGC 230 kV line and the PG&E interconnection lines (500 kV, 12 kV, and transposition sites). Helicopters would not be used for construction of the Collinsville Substation, the submarine segment, or the telecommunication interconnection line, and helicopter use is not anticipated during routine operation and maintenance of any Proposed Project component. Although helicopters would increase temporary noise levels during construction, the work would occur outside the AIA and noise contours identified in the Travis AFB and Rio Vista Municipal Airport ALUCPs. Accordingly, helicopter operations would not conflict with ALUCP policies or expose people residing or working in the Proposed Project area to excessive aircraft noise. Temporary construction noise from helicopters is evaluated in Chapter 4.13, Noise, and helicopter use in relation to private airstrips is addressed further under Impact HAZ-8.

Construction

LSPGC Project Components

The proposed LSPGC Collinsville Substation site and 230 kV overhead segment alignment are located within Compatibility Zone D of the Travis AFB LUCP. Zone D restricts land uses that could interfere with flight operations, including those that generate physical, visual, or electronic obstructions.

Use of tall cranes during construction could result in temporary construction equipment exceeding 200 feet in height. If cranes taller than 200 feet are used during construction of LSPGC project components, LSPGC would be required to notify FAA pursuant to 14 CFR Part 77, §77.9(a), which requires notice of construction or alteration exceeding 200 feet in height. The Proposed Project would also be required to comply with any FAA determinations and guidance, including lighting or marking requirements set forth in FAA Advisory Circular 70/7460-1M (FAA 2024).

Cranes would be used during construction of the Collinsville Substation and along the LSPGC 230 kV overhead segment for installation of poles, towers, and substation equipment. Cranes would not be required for the submarine segment or telecommunication interconnection line. The Proposed Project site lies within Zone D of the Travis AFB ALUCP, which encompasses lands more distant from the airfield and where only certain unusual hazards are restricted. Temporary crane use during construction does not conflict with Zone D policies because it would not result in permanent tall structures, would be subject to standard safety practices, and would occur outside of the Travis AFB and Rio Vista Airport height review areas (Zones A-C).

If cranes taller than 200 feet are required, LSPGC would notify the FAA in accordance with 14 CFR Part 77 (§77.9). FAA review through its Obstruction Evaluation/Airport Airspace Analysis process would reduce potential hazards to air navigation, including by requiring crane lighting, marking, or operational restrictions set forth in FAA Advisory Circular 70/7460-1M. With FAA oversight and compliance, no significant aviation safety hazards would remain. Temporary helicopter and crane use during construction would increase noise levels; however, these activities would be short-term, would occur outside the AIA and CNEL 55 decibel (dB) noise contours identified in the Travis AFB and Rio Vista ALUCPs, and would therefore not expose people residing or working in the Proposed Project area to excessive airport-related noise. Construction noise is further evaluated in Section 4.13, Noise. With implementation of these requirements, impacts related to airport land use compatibility, aviation safety, and noise would be less than significant.

PG&E Project Components

The PG&E 500 kV interconnection transmission lines, 12 kV distribution line, and transposition sites are located within Zone D of the Travis AFB LUCP. Zone D restricts land uses that could interfere with flight operations, including those that generate physical, visual, or electronic obstructions.

A crane would be used to install the tower if it is under 199 feet, and a helicopter may be used to install the tower if it is equal to or above 199 feet in height. Regardless of method, the work would be temporary, subject to standard construction safety practices, and would not conflict with Zone D policies because it would not result in permanent tall structures and would occur outside of the Travis AFB and Rio Vista Airport height review areas (Zones A-C).

If cranes taller than 200 feet are used during construction of PG&E project components, PG&E would be required to notify the FAA pursuant to 14 CFR Part 77, §77.9(a), which requires notice of construction or alteration exceeding 200 feet in height. The Proposed Project would also be required to comply with any FAA determinations and guidance, including lighting or marking of the cranes or other equipment exceeding 200 feet in height set forth in FAA Advisory Circular 70/7460-1M. FAA review through its Obstruction Evaluation/Airspace Analysis process ensures that any potential hazards to air navigation are mitigated. With FAA oversight and compliance, no significant aviation safety hazards would remain.

Temporary crane and helicopter use during construction would increase noise levels; however, these activities would be short-term, would occur outside of the AIA and CNEL 55 dB noise contours identified in the Travis AFB and Rio Vista ALUCPs, and would therefore not expose people residing or working in the Proposed Project area to excessive airport-related noise. Construction noise is further evaluated in Section 4.13, Noise. With implementation of these requirements, impacts related to airport land use compatibility, aviation safety, and noise would be less than significant.

Operation and Maintenance

Combined PG&E and LSPGC Project Components

LSPGC Collinsville Substation and 230 kV overhead segment and PG&E 500 kV interconnection lines, microwave tower, 12 kV distribution line, and transposition sites are located within Zone D of the TAFB LUCP. Zone D restricts land uses that could interfere with flight operations, including those that generate physical, visual, or electronic obstructions.

As described in Section 2: Project Description, the tallest equipment at the LSPGC Collinsville Substation would be up to approximately 90 feet in height, and the tallest 230 kV overhead structures would be up to approximately 150 feet in height (refer to Table 2-2 for transmission structure heights). PG&E tallest project component would be the proposed microwave tower, with a maximum height of 199 feet. All other proposed PG&E structures, including the 500 kV interconnection towers, 12 kV distribution line poles, and transposition towers, would be 155 feet in height or less. Both LSPGC and PG&E project components are below 200 feet above ground level, which is the typical height threshold for potential air navigation hazards and when FAA notification is required. Regardless, LSPGC filed preliminary notices with FAA pursuant to 14 CFR Part 77 (§77.9) based on the anticipated locations and heights of aboveground structures identified for the Proposed Project. In response, the FAA conducted aeronautical studies and issued a Determination of No Hazard to Air Navigation for the proposed structures (LSPGC 2024). In addition, LSPGC conducted informal consultation with the DOD through the Military Aviation and Installation Assurance Siting Clearinghouse, and

the DOD issued a letter stating the Proposed Project "…will have minimal impact on military operations conducted in the area" which includes military operations conducted at Travis AFB (LSPGC 2024). Furthermore, the proposed LSPGC and PG&E structures would be in proximity to existing wind turbines associated with the Solano Phase V Wind Project that exceed 600 feet in height, which is substantially taller than the proposed LSPGC and PG&E structures (SMUD 2019; Lawrence Berkeley National Laboratory et al. 2025). This comparison illustrates that the proposed LSPGC project components would be shorter than and consistent with the existing built environment in the region. Therefore, the LSPGC structures would not present an air navigation or airspace hazard within the Travis AFB ALUCP Zone D.

Neither maintenance nor inspections of LSPGC nor PG&E project components would require activities above 200 feet in height or other actions that could create physical, visual, or electronic obstruction to aircraft, as restricted under Zone D of the Travis AFB ALUCP. Therefore, ongoing maintenance would not pose a risk to air navigation or result in a conflict with airport land use compatibility policies. The impact would be less than significant.

Impact HAZ-6: Would the Proposed Project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan? *(Less than significant)*

Construction

LSPGC Project Components

Potential impacts on emergency response or evacuation plans could occur if construction or operation of the LSPGC project components were to obstruct access routes, substantially impair emergency vehicle response or interfere with the execution of emergency evacuation plans. Solano, Sacramento, and Contra Costa counties each maintain EOPs that provide a framework for addressing major disasters and emergency incidents. These EOPs do not establish specific evacuation routes but instead focus on overarching coordination and response procedures.

In Solano County, the closest primary emergency access and evacuation routes identified in the General Plan are SR-12 and SR-113 approximately 7.5 miles north of the proposed substation site (Solano County 2024a).

In the City of Pittsburg and Contra Costa County, the closest primary emergency access and evacuation route is SR-4 approximately 1 mile south of the LSPGC telecommunication interconnection lines (Contra Costa County 2024b). Arterial and connector roads that provide access to SR-4 are identified in the Contra Costa General Plan Health and Safety Element as potential emergency evaluation routes; these roads include Bay Side Drive, Marina Boulevard, Herb White Way, Willow Pass Road/W 10th Street, Railroad Avenue, E 3rd Street, and Harbor Street. Portions of the LSPGC telecommunications interconnection lines would be along Herb White Way (150 feet) and Marina Boulevard (0.3 mile).

In addition, the Contra Costa County Health and Safety Element identifies potential evacuation routes (Figure HS-19) and evacuation-constrained parcels with only a single access route (Figure HS-20) (Contra Costa County 2024b). None of the designated evacuation routes overlap

with the LSPGC construction areas, and no evacuation-constrained parcels are within the Proposed Project footprint. Therefore, construction of the LSPGC components would not interfere with designated evacuation routes or neighborhoods with limited egress.

The Proposed Project site is not located near and does not cross any roads that are designated as essential emergency evaluation routes, and roads that would be subject to Proposed Project activities have secondary ingress and egress.

Lane closures may be implemented on a temporary, intermittent basis during activities that require large equipment or materials to be delivered or installed. For example, on Stratton Lane near the Collinsville Substation, closures could occur when oversized deliveries (such as transformers) are transported or when cranes are used for equipment installation. In Pittsburg, short-term closures may be required near HDD entry and exit pits during equipment mobilization or removal. Along rural county roads intersected by the 230 kV overhead alignment, closures would typically be brief and localized, occurring during tower construction or conductor stringing across roadways. Lane closures may also be implemented intermittently along roadways where the LSPGC telecommunication interconnection lines would be constructed, including Marina Boulevard, Herb White Way, and Halsey Court. Construction activities and potential lane closures along roadways in Pittsburg would be limited to the handhole locations identified for the LSPGC telecommunication interconnection lines and not along the entire linear route. There are approximately 10 handholes along Halsey Way, 2 along Herb White Way, and 12 along Marina Boulevard.

These closures would be temporary, localized, and subject to traffic management plans. There are no residential or commercial properties along Statton Lane that would require use of that road for emergency response or evacuation. The roads along the telecommunications lines and the 230 kV alignment include residential and public uses, which could require emergency response or evacuation.

LSPGC proposes APM TRA-2, which includes temporary traffic control and coordination with emergency response service providers during road or lane closures. APM TRA-2 requires that emergency responders be notified of closures in advance and be provided with alternative routes, and emergency response vehicles would be permitted access through closure areas. As a result, construction of the LPSGC components is not expected to result in delays to emergency response or interference with evacuation. In addition, any impact on access would be localized to the individual structure work areas or HDD entry or exit pits. Because emergency vehicles would have permitted access through closure areas under APM TRA-2, and any delays would be brief and managed through traffic controls, the Proposed Project would not substantially impair emergency response or evacuation. Therefore, the impact would be less than significant.

PG&E Project Components

Construction of PG&E 500 kV interconnection transmission lines and 12 kV distribution line could result in temporary lane or road closures on Stratton Lane, similar to construction of the LSPGC Collinsville Substation. As documented in the Contra Costa County Health and Safety

Element (Figures HS-19 and HS-20), Stratton Lane and the PG&E interconnection facilities do not overlap designated evacuation routes or evacuation-constrained parcels (Contra Costa County 2024b). Stratton Lane is a rural access road without residential or commercial development, and Solano and Sacramento County planning documents likewise identify no designated evacuation routes in proximity to the PG&E components (Sacramento County 2017; Solano County 2024a). Impacts on emergency response or evacuation are therefore not anticipated. PG&E has proposed CM TRA-2, which requires coordination with emergency service providers at least 24 hours prior to implementing any road or lane closure. CM TRA-2 would reduce impacts on emergency response by ensuring that providers are notified in advance, provided alternative routes, and permitted access through closure areas. In addition, any impact on access would be localized to the individual structure work areas or stringing work areas, and closures would be limited to the amount of time necessary to complete the activity within the roadway (typically a few hours). Because Stratton Lane is not a designated evacuation route, no residential or commercial properties depend on it for emergency access, and CM TRA-2 ensures that emergency response vehicles would maintain access during closures, construction of the PG&E project components would not substantially impair emergency response or evacuation. Therefore, the impact would be less than significant.

Operation and Maintenance

LSPGC Project Components

LSPGC project components would be operated and monitored remotely. Routine maintenance activities would be conducted within the substation and within LSPGC easements outside of public roadways. Operation and maintenance would not require any road or lane closures on roads that could be used for emergency access or evacuation, therefore would not interfere with the implementation of emergency response or evacuation plans. Operation and maintenance would not alter any public roadways or access for emergency service. Thus operation and maintenance of LSPGC project components would not impede emergency evacuation or emergency response; the impact would be less than significant.

PG&E Project Components

Routine inspection and maintenance activities for PG&E project components would be conducted by accessing the improvements from Stratton Lane and access roads within the wind farm, which are not accessible to the public and are not used for emergency evacuation or response. Operation and maintenance of the PG&E project components would not alter any public roadways or access for emergency service. Operation and maintenance of PG&E project components would not impede emergency evacuation or emergency response; the impact would be less than significant.

LSPGC and PG&E Project Components Combined

Construction of the Proposed Project as a whole would require the temporary use of cranes, heavy equipment, and large deliveries at both the LSPGC and PG&E work areas. These activities could result in brief, intermittent lane or road closures along Stratton Lane, rural county roads crossed by the 230 kV overhead alignment, and short segments of local roads in

Pittsburg such as Marina Boulevard, Herb White Way, and Halsey Court. However, none of the affected roadways are designated evacuation routes or essential emergency access corridors under Solano, Sacramento, or Contra Costa County planning documents. Both LSPGC and PG&E have committed to implementing traffic management measures (APM TRA-2 and CM TRA-2, respectively) that require advance coordination with emergency service providers, notification of closures, provision of alternative routes, and guaranteed access for emergency response vehicles. With these measures in place, and because potential closures would be short in duration and localized to specific work areas, construction of the combined project components would not substantially impair emergency response or evacuation. The combined construction impact would be less than significant.

Operation and maintenance of both LSPGC and PG&E components would be limited to periodic inspections, vegetation management, and equipment repair or replacement within existing substations, easements, and access roads. These activities would not require lane or road closures on public roadways that could serve as emergency access or evacuation routes. Because the Proposed Project as a whole would not alter public roadway networks, access points, or emergency service coordination, operation and maintenance of the combined components would not impede emergency evacuation or emergency response. The combined operation and maintenance impact would be less than significant.

Impact HAZ-7: Would the Proposed Project expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires? ***(Less than significant with mitigation)***

Construction

LSPGC Project Components

The LSPGC Collinsville Substation and portions of the LSPGC 230 kV overhead and submarine segment are within very high, high, and moderate FHSZs (Figure 4.20-2 in Section 4.20: Wildfire). LSPGC project component sites are not within a CPUC-designated HFTD.

The LSPGC telecommunications interconnection lines and 230 kV underground segment in the City of Pittsburg are proposed to be installed within existing paved streets in developed areas. Construction would consist of trenching, conduit placement, and HDD in disturbed roadway environments, rather than vegetation removal or equipment use in grassland or wildland areas. Construction in paved, urbanized settings with little to no adjacent flammable vegetation, has negligible potential to generate or spread wildfire. Accordingly, telecommunication line construction activities would not create a fire risk.

The proposed LSPGC Collinsville Substation site and 230 kV transmission line overhead segment are located in areas containing grassland vegetation. High heat or sparks from vehicles or equipment during construction 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. Flammable materials would also be stored at staging areas during construction. Use of equipment that would generate sparks, worker smoking, and storage of flammable materials during construction of LSPGC project components

within and adjacent to vegetated areas has the potential to ignite a wildland fire, which would have a significant impact.

Construction contractors must comply with the following requirements in the PRC during construction activities at any sites with forest-, brush-, or grass covered land:

- Earthmoving and portable equipment with internal combustion engines must be equipped with a spark arrestor to reduce the potential for igniting a wildland fire (PRC section 4442).
- Appropriate fire-suppression equipment must be maintained from April 1 to December 1, the highest-danger period for fires (PRC section 4428).
- On days when a burning permit is required, flammable materials must be removed to a distance of 10 feet from any equipment that could produce a spark, fire, or flame, and the construction contractor must maintain a round-point shovel and backpack pump fire extinguisher ready for use (PRC section 4427).
- Outdoor smoking is confined to an area that is at least 1 meter in diameter and cleared to mineral soil by removal of flammable vegetation (PRC section 4423.4).

LSPGC must also adhere to Article 80 of the California Fire Code, which defines specific requirements for the safe storage and handling of flammable and combustible liquids or hazardous materials. LSPGC has also proposed APM FIRE-1, which requires implementation of a project-specific Construction Fire Prevention Plan (CFPP) that includes procedures for fire reporting, response, and prevention and enforcement by a Proposed Project Fire Marshal. Due to implementation of fire management procedures in compliance with PRC requirements (such as vegetation clearance around equipment, use of spark arrestors on construction equipment, and restrictions on hot work during red flag conditions) combined with APM FIRE-1, which requires worker training, fire suppression equipment at construction sites, and coordination with local fire districts, the potential for construction equipment or activities to ignite a wildfire would be minimized. These measures ensure ignition sources are controlled and fuels are reduced, thereby lowering the likelihood of wildfire.

As a result, while construction of the LSPGC components would introduce a temporary increase in ignition risk, compliance with PRC fire prevention requirements and implementation of APM FIRE-1 would minimize this risk. Construction would also not expose permanent structures or nearby communities to increased wildfire danger, as work areas are limited to substation and transmission corridors without adjacent occupied development, and fire suppression equipment would be onsite to protect construction personnel. Therefore, the impact from construction on wildland fire hazards would be less than significant.

PG&E Project Components

The PG&E 500 kV interconnection lines and 12 kV distribution line are within high and moderate FHSZs (Figure 4.20-2 in Section 4.20: Wildfire). The PG&E project components are not within a CPUC-designated HFTD. The PG&E project component sites are in areas containing grassland vegetation that can ignite under dry and windy conditions. High heat or sparks from vehicles or equipment during construction 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. Construction workers and equipment would be temporarily present in areas where wildland fire could occur, creating potential exposure to wildfire hazards. However, construction activities would be of short duration and limited to small, dispersed work areas with established access routes that would allow for rapid evacuation if a wildfire were to occur. Nevertheless, construction of PG&E project components has the potential to ignite wildland fire, which would be a significant impact.

Similar to construction of LSPGC project components, PG&E construction contractors would comply with requirements for construction fire prevention in PRC sections 4423.4, 4427, 4428, and 4442. PG&E has also proposed CM FIRE-1 which outlines standard fire risk management procedures, including safe work practices, work permit programs, training, and fire response. Implementation of CM FIRE-1and compliance with the PRC would minimize the potential for construction-related ignition and the exposure of workers or nearby properties to wildfire hazards. The impact from construction on wildland fire hazards would be less than significant.

Operation and Maintenance

LSPGC Project Components

As discussed above, portions of the LSPGC Collinsville Substation, 230 kV overhead and submarine segments are within and adjacent to very high, high, and moderate FHSZs where there is an increased risk of wildfire. Overhead electrical lines such as the proposed 230 kV overhead segment, along with the proposed battery racks and flammable materials stored within the Collinsville Substation, present a potential ignition risk if equipment failure, electrical faults, or improper handling were to occur. Underground and submarine project components (i.e., 230 kV submarine segment, underground segment, and telecommunications line) would not create a risk of wildfire. Because aboveground facilities would be located in grassland areas designated as FHSZs, dry vegetation could serve as fuel for wildfire if ignition occurred. However, the degree of risk is reduced through compliance with CPUC GO 95, which governs line design and maintenance to prevent faults and sparking; PRC §§4292 and 4293, which require vegetation clearance around poles and equipment; and California Fire Code requirements for safe storage and containment of flammable materials at substations. In terms of exposure, the Collinsville Substation and 230 kV overhead segment are within approximately 1 mile of residences in the Community of Collinsville. The installation of aboveground electrical equipment within FHSZs near the Community of Collinsville would be a significant impact.

The LSPGC Collinsville Substation and 230 kV overhead segment would be operated to meet all GO 95 requirements, including minimum vegetation and equipment clearances, in addition to the vegetation clearance requirements in California PRC §4292 and title 14, §1254 of the California CCR. Compliance with these standards reduces wildfire risk by ensuring that vegetation is cleared away from conductors and equipment, faults are less likely to occur from contact between lines and vegetation, and fuel sources are minimized around electrical infrastructure. In accordance with fire break clearance requirements in GO 95, PRC §4292 and title 14, §1254 of the CCR, LSPGC would trim or remove flammable vegetation in the area

surrounding the Proposed Project facilities as required and applicable for each of the proposed facilities and their locations. GO 95 requires a minimum radial clearance of 31 inches for 230 kV conductors. According to PRC §4292, anyone operating electrical transmission or distribution lines on certain types of land, such as mountainous, forest-covered, brush-covered, or grass-covered land, must maintain a firebreak clearing of at least 10 feet around the structures. The LSPGC Collinsville Substation would be unmanned and would require quarterly inspections. Maintenance of the proposed LSPGC 230 kV overhead segment and Collinsville Substation would require approximately one trip site visit per year. These activities would not involve any high fire risk activities. Maintaining vegetation around aboveground electrical equipment would reduce fuel for wildfire but the potential for ignition of a severe wildfire that could impact the Community of Collinsville would remain a significant impact.

The proposed LSPGC 230 kV overhead transmission line alignment (approximately 430 feet) is located within the hazard throw zone of a wind turbine located within the Solano 4 Wind project (refer to Figure 4.20-3 in Section 4.20: Wildfire). The hazard throw zone for wind turbines is a safety zone that should be avoided for any proposed facilities to avoid damage to those facilities and associated environmental impacts. As the proposed LSPGC transmission line is located within the hazard throw zone for the wind turbine, there is a reasonably foreseeable potential for the turbine to come in contact with the conductor which would potentially start a wildfire. Although the probability of a turbine blade or component being thrown is low given modern turbine design and compliance with engineering standards, the possibility cannot be ruled out. Because the proposed LSPGC 230 kV overhead segment would be within the hazard throw zone of an existing turbine, this rare but reasonably foreseeable event could result in contact with the line, creating an electrical arc and potential ignition of vegetation. As such, this condition represents a significant hazard irrespective of the low likelihood of occurrence. The impact from location of the 230 kV transmission line within the hazard throw zone would be significant.

LSPGC is required to operate and maintain equipment in a CPUC HFTD in accordance with a WMP, which is filed with the Office of Energy Infrastructure and Safety. The WMP is updated annually. The current LSPGC WMP does not address the LSPGC Collinsville Substation or 230 kV overhead segment as neither have been approved nor are in operation. Since the Proposed Project is not in a CPUC HFTD, it is uncertain whether LSPGC would include the Proposed Project in its WMP. As a result, MM FIRE-1 would be implemented to reduce the risk of wildfire during operation. MM FIRE-1 requires LSPGC to prepare a wildfire management plan to minimize operational fire risks associated with transmission lines within a hazard throw zone and electrical equipment within and near very high FHSZs, including the LSPGC Collinsville Substation and 230 kV overhead segment. The wildfire management plan would define infrastructure hardening and system protection, relocating equipment outside of the wind turbine throw zone, vegetation management, and inspections to minimize the risk of wildfire ignition (refer to Section 4.9.13). With implementation of MM FIRE-1, impacts would be less than significant.

PG&E Project Components

As discussed above, the PG&E 500 kV interconnection lines and 12 kV distribution line are in high and moderate FHSZs and near very high FHSZs. Overhead electrical lines such as the 500 kV interconnection lines and 12 kV distribution line present an ignition risk if electric faults, conductor contact with vegetation, or equipment failures occur. Because these facilities are in grassland areas and designated FHSZs, dry vegetation could serve as fuel if an ignition occurred. However, the degree of risk is reduced through compliance with CPUC GO 95, which governs line design and maintenance to prevent sparking and faults, and PRC vegetation clearance requirements that minimize fuel around poles and conductors. In terms of exposure, the PG&E interconnection lines and 12 kV line are within approximately 1 mile or less of residences in the Community of Collinsville. The installation of aboveground electrical equipment within FHSZs near the Community of Collinsville would be a significant impact.

None of the proposed PG&E project components are located within a hazard throw zone for the wind turbines located in proximity to the 500 kV interconnection lines and the location of the facilities would not present a wildfire hazard due to interaction with the wind facility.

PG&E project components would be operated to meet GO 95 requirements, including minimum vegetation and equipment clearance and California PRC section 4292 and title 14, section 1254 of the California CCR. In addition, PG&E would need to operate and maintain all PG&E equipment in compliance with its general WMP (PG&E 2025), where applicable. However, similar to the LSPGC project components, the PG&E 500 kV interconnection lines and PG&E 12 kV distribution line are not in a CPUC HFTD and it is uncertain whether PG&E would integrate the PG&E 500 kV interconnection lines and 12 kV distribution line into its general WMP. The resulting impact from new electrical lines in a high fire hazard severity zone would be significant.

MM FIRE-1 requires PG&E to prepare a project-specific WMP to minimize operational fire risks associated with transmission lines and electrical equipment within and near very high FHSZs, including the PG&E 500 kV interconnection lines and PG&E 12 kV distribution line. The project-specific WMP would define infrastructure hardening and system protection, vegetation management, and inspections and sensors to minimize the risk of wildfire ignition (refer to Section 4.9.13). With implementation of MM FIRE-1, impacts would be less than significant.

LSPGC and PG&E Project Components Combined

Construction of both the LSPGC and PG&E project components would involve work within grassland and within and near areas designated as moderate, high, or very high FHSZs. Overlapping construction activities such as use of vehicles and heavy equipment, storage of flammable materials, and worker presence in vegetated areas would introduce ignition risks in a larger area than the LSPGC and PG&E project components alone. However, both groups of components would be subject to PRC requirements (e.g., spark arrestors, fire suppression equipment, clearance of flammable materials around equipment, and smoking restrictions) and the California Fire Code, as well as implementation of project-specific fire prevention plans (APM FIRE-1 and CM FIRE-1). These measures provide for fire marshal oversight, worker training, onsite fire suppression equipment, and coordination with local fire agencies. Together,

these regulatory requirements and project-specific measures would minimize ignition risks during construction. The combined effect of construction across both components would therefore result in a temporary increase in wildfire ignition potential, but with the implementation of fire prevention and suppression measures, the combined construction impact would be less than significant.

During operation and maintenance, both the LSPGC and PG&E aboveground facilities would be located within and near the same FHSZs in the vicinity of the Community of Collinsville. The installation of aboveground electrical equipment within FHSZs near the Community of Collinsville would be a significant impact. In addition, installing aboveground equipment within the hazard throw zones of existing wind turbines would be a significant impact; however, the only project component within these areas is approximately 430 feet of the 230 kV overhead segment. Impacts would be reduced to less than significant levels for each individual project component through compliance with CPUC General Order 95, PRC vegetation clearance requirements, and California Fire Code standards, and through implementation of MM FIRE-1 which requires LSPGC and PG&E to prepare project-specific WMPs (refer to Section 4.9.13). With implementation of MM FIRE-1, the combined impacts of all LSPGC and PG&E project components together would be less than significant.

Impact HAZ-8: Would the Proposed Project create a significant hazard to the public or environment through the transport of heavy materials using helicopters? *(Less than significant)*

Construction

LSPGC Project Components

Light-duty helicopter use is anticipated to support construction of the proposed LSPGC project components located north of the Delta. No helicopter use is proposed for construction of the submarine segment or construction in the city of Pittsburg. Helicopter use 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. Helicopter takeoff and landing areas would be located within each pulling site and staging area. In addition, local public and/or private airports or airstrips may be used to support helicopter operations. The proposed LSPGC project components would be located approximately 12 miles southeast of the Travis Air Force Base and approximately 10 miles southwest of the Rio Vista Municipal Airport. The use of helicopters for transport of heavy materials (i.e., transmission line hardware, insulators, and conductor bundles that cannot be easily delivered by ground equipment) has the potential to create a hazard if a load were to be dropped or if rotor wash[2] were to dislodge equipment, scatter loose materials, or affect nearby equipment or workers. For the Proposed Project, helicopter transport would occur intermittently during construction of the 230 kV overhead segment for conductor stringing and tower assembly, but would not be required for the Collinsville Substation, submarine cable, or telecommunication interconnection line. Compliance with FAA regulations, implementation of

[2] Rotor wash is the strong downward and outward rush of air generated by helicopter rotors.

contractor flight safety procedures, and adherence to APMs would minimize the risk from helicopter transport of heavy materials.

LSPGC has proposed APM HAZ-1, which requires coordination of flight paths with local airports and air traffic control. LSPGC contractors would also be required to prepare a Helicopter Plan and a Congested Area Plan pursuant to FAA requirements (14 CFR, § 133.33(d) and Part 77), which establish operating procedures, load-handling practices, and additional safeguards when operating near populated areas. With the implementation of APM HAZ-1 and preparation of a Helicopter Plan and Congested Area Plan pursuant to FAA requirements, the risks from helicopter use would be reduced. These measures minimize the potential for accidents or dropped loads. Therefore, impacts from the use of helicopters during construction would be less than significant.

PG&E Project Components

PG&E proposes use of light duty helicopters and a heavy-duty helicopter to support construction of the proposed PG&E 500 kV interconnection lines. Helicopter use is not anticipated to support the construction or replacement of the proposed PG&E 500 kV transposition site structures. Helicopter activities may include transportation of construction workers, delivery of equipment and materials to temporary construction areas, installation or removal of poles and LSTs, and installation or removal of overhead conductor/cable. Helicopter takeoff and landing areas would be within each pulling site and staging area and, local public and/or private airports or airstrips may be used to support helicopter operations. The use of helicopters for transporting heavy materials (i.e., transmission line hardware, insulators, and conductor bundles that cannot be easily delivered by ground equipment) has the potential to create a hazard if a load were to be dropped or if rotor wash were to dislodge equipment, scatter loose materials, or affect nearby workers. These hazards would be temporary and localized to the construction areas, and are subject to FAA oversight and contractor safety procedures.

PG&E has proposed CM HAZ-3, which requires coordination of flight paths with local airports and air traffic control. This coordination reduces the risk of potential conflicts with existing air traffic and ensures safe routing to avoid risk of dropped loads. In addition, PG&E contractors would also be required to prepare a Helicopter Plan and a Congested Area Plan pursuant to FAA requirements (14 CFR, § 133.33(d) and Part 77), which establish operating procedures, load-handling practices, and additional safeguards when operating near populated areas. These requirements minimize the potential for accidents, dropped loads, or hazards to workers and the public. For the microwave tower, as noted in Section 2.5.5 of the Project Description, a crane would be used if the structure is 198 feet or shorter, and a helicopter would only be required if the tower were 199 feet. At this time, helicopter use for the microwave tower is not anticipated.

With the implementation of CM HAZ-3 and preparation of a Helicopter Plan and Congested Area Plan, impacts from the use of helicopters during construction would be less than significant.

Operation and Maintenance

LSPGC Project Components

Helicopters use during operation and maintenance of the LSPGC project components is not anticipated. Routine operation and maintenance would involve inspection, vegetation management, and minor repairs—none of which would require the transport of heavy materials by helicopter. Because helicopters would not be used to transport transmission line components or other heavy loads during operation and maintenance, there would be no associated risk, such as dropped loads or rotor wash hazards. Therefore, helicopter use during operation and maintenance would not create a public safety hazard through transport of heavy materials. There would be no impact.

PG&E Project Components

Helicopter use during operation and maintenance would be limited to occasional aerial inspections consistent with existing PG&E practices for the existing Vaca Dixon–Tesla 500 kV Transmission Line and other distribution lines in the area. The minor extension of the 500 kV transmission line would not increase hazards from helicopter use. Since helicopters would not be used to carry transmission hardware, conductor bundles, or other large loads during operation and maintenance, there would be no potential for risks related to dropped loads, rotor wash, or airspace conflicts. Accordingly, operation and maintenance of PG&E components would not create a hazard from the transport of heavy materials via helicopter. There would be no impact.

LSPGC and PG&E Project Components Combined

Both the LSPGC and PG&E components would require the temporary use of helicopters to support construction of overhead transmission facilities. Helicopter activities would include transport of workers, delivery of materials, and installation of conductor bundles and hardware. The hazards from helicopter use are the same for both components—potential for dropped loads, rotor wash impacts, or conflicts with existing air traffic. However, both LSPGC and PG&E would implement project-specific measures (APM HAZ-1 and CM HAZ-3, respectively) that require coordination with local airports and air traffic control, and both would prepare Helicopter Plans and Congested Area Plans pursuant to FAA requirements. These measures establish safe flight routing, operating procedures, and safeguards for construction near populated areas. Because helicopter operations would be intermittent, localized to staging and pulling sites, and subject to FAA oversight and project-specific safety plans, the Proposed Project as a whole would not create a significant public safety hazard during helicopter-supported construction. The combined construction impact would be less than significant.

Neither LSPGC nor PG&E anticipate helicopter use for routine operation and maintenance of the proposed facilities. Maintenance activities would be limited to ground-based inspections, vegetation management, and minor repairs, with only occasional aerial inspections consistent with existing practices. Since helicopters would not be used for transporting heavy materials during operation or maintenance of either component, there would be no risk of dropped loads, rotor wash, or conflicts with air traffic. Accordingly, the Proposed Project as a whole would not

result in helicopter-related hazards during operation and maintenance. No combined operation and maintenance impacts would occur.

Impact HAZ-9: Would the Proposed Project expose workers or the public to excessive shock hazards? *(Less than significant)*

Construction

LSPGC Project Components

The potential for electrical shock hazards exists at the LSPGC work areas due to the nature of high-voltage infrastructure construction. Such hazards could arise if workers were to inadvertently contact energized equipment during substation construction, if conductor stringing activities were to inadvertently energize a line, or if improper lockout/tagout procedures led to accidental energization of substation equipment (such as circuit breakers or switches). There is also a low potential for electrical impacts from rare events, such as live overhead conductors falling onto de-energized systems or from atmospheric events (i.e., lightning strikes inducing electrical current during construction.

Although there are no existing electrical lines within or adjacent to the proposed Collinsville Substation site or along the proposed 230 kV transmission line alignment until the point of interconnection with PG&E facilities, potential exposure could still occur at interconnection points or if metallic equipment or construction machinery inadvertently contacted energized systems (see Section 2: Project Description, Section 2.5.4). In such situations, both workers and members of the public in the vicinity could be exposed to induced currents or electric shock.

To address the risk of electrical shock, all construction work would conform to or exceed applicable safety standards, including those set by the IEEE, CPUC GOs 95 and 166, and regulations established by the OSHA and Cal/OSHA. Compliance with these industry and regulatory standards reduces the risk of electrical shock by requiring safe clearances between conductors and equipment, maintaining effective grounding and bonding to dissipate induced voltages, and ensuring that workers use appropriate training, procedures, and protective equipment. Collectively, these requirements minimize the likelihood that accidental energization, conductor contact, or induced current could result in shock hazards. With implementation of these measures, potential hazards associated with induced voltage or electrical current during construction would remain less than significant.

PG&E Project Components

Similar to LSPGC construction, the potential for electrical shock hazards exists at the PG&E project component sites due to the nature of high-voltage infrastructure construction. Such hazard could occur if workers were to inadvertently contact energized equipment during conductor installation or transmission line relocation, if improper switching resulted in accidental energization of substation equipment, or if induced voltages were present from nearby energized lines.

Activities such as conductor installation and the relocation and transposition of transmission lines would take place in areas where PG&E energized lines are present. Although the transmission, distribution, and power lines would be de-energized during the majority of construction activities—significantly reducing the likelihood of shock hazards—there remains a low potential for electrical impacts from events such as accidental energization due to improper operation of circuit breakers or switches, live overhead conductors falling onto de-energized systems, or atmospheric events such as lightning strikes.

To address these risks, all construction work would conform to or exceed applicable safety standards, including those set by the IEEE, CPUC General Orders 95 and 166, and regulations established by the OSHA and Cal/OSHA. Compliance with these industry and regulatory standards reduces risk by requiring minimum clearances between conductors and equipment, mandating effective grounding and bonding to dissipate induced voltages, and ensuring worker protection through training, lockout/tagout procedures, and use of personal protective equipment. Collectively, these measures minimize the likelihood that accidental energization, induced current, or contact with energized equipment could result in electrical shock. With implementation of these measures, potential hazards associated with induced voltage or electrical current during construction would remain less than significant.

Operation and Maintenance

LSPGC Project Components

During operation, potential electrical hazards could arise from energized equipment at the Collinsville Substation—such as transformers, switchgear, and insulated conductors within the substation yard (commonly referred to as "buswork")—as well as the energized conductors of the 230 kV overhead transmission line. These energized elements pose an electric shock risk if unauthorized individuals were to gain access to the substation or if equipment or tall vehicles were to come into direct contact with the overhead lines. The underground and submarine segments, while energized, would be buried beneath the ground or water surface and therefore would not pose an exposure hazard to the public; however, accidental excavation into underground lines could present a hazard to workers if proper clearance procedures are not followed. Authorized workers could also be exposed to electrical hazards during inspections or maintenance activities if lockout/tagout procedures are not implemented.

To evaluate potential induced current hazards, an AC Interference Analysis was prepared for the Proposed Project (ARK Engineering & Technical Services 2024; Lawrence Berkeley National Laboratory et al. 2025). The study analyzed potential AC induction effects of the LSPGC 230 kV transmission line on the adjacent Calpine Montezuma 8-inch gas pipeline. The analysis found that all modeled values were below established safety thresholds: maximum induced pipeline potential was less than 1-volt, maximum touch voltages were below the 15-volt design limit, maximum AC density was 5.4 A/m² (below the 30 A/m² threshold for AC corrosion), and maximum coating stress voltage under fault conditions was approximately 58 volts, below the 2,500-volt design limit. Based on these results, no mitigation is required. The study

recommended monitoring pipeline potentials at test stations following line energization, with additional analysis or mitigation only if induced voltages increase over time.

In addition, the proposed LSPGC Collinsville Substation would be enclosed by a 10-foot-high security wall topped with an additional foot of barbed wire, with a secure, remotely monitored gate to prevent unauthorized access. This barrier would serve to prevent unauthorized access that could potentially result in exposure of the public to excessive shock hazards. A single vehicle entry point would be installed at the substation and equipped with a secure, remotely monitored gate, ensuring that only approved personnel could enter. As required by 29 CFR 1910.303(e) (part of OSHA's General Industry Electrical Standards) caution signage must be posted at substations (as well as mental-enclosed switchgear, transformers, pull boxes and connection boxes) to notify the public of potential electrical dangers. There are no existing above- or belowground metallic objects that could create a shock hazard to the general public due to project energization, as confirmed by the Phase I ESA and Corridor Report.

The proposed LSPGC 230 kV overhead segment would be constructed in accordance with CPUC General Order 95, which specifies safe vertical clearances from the ground to prevent accidental contact and reduce the risk of electric shock. The LSPGC 230 kV submarine and underground segments would be installed below ground or water surfaces, providing natural insulation and eliminating public exposure to energized components. Additionally, the LSPGC telecommunication interconnection lines would be placed underground and would not carry electrical current, thereby presenting no electric shock hazard to the public.

During operation and maintenance, the Proposed Project would comply with IEEE, ANSI, CPUC GO 95, and GO 128 safety standards as well as OSHA and Cal/OSHA safety regulations. All personnel authorized to perform work on site during either construction or operation would receive training in accordance with safety protocols established by OSHA (OSHA n.d.). These standards incorporate relevant federal, state, and local safety regulations to protect worker health and safety. Given these engineering controls, design standards, and access restrictions, the potential for electric shock to either workers or the public would be minimal and less than significant.

PG&E Project Components

All personnel authorized to perform work during operation and maintenance of the PG&E project components would be trained in compliance with OSHA standards (OSHA n.d.). Additionally, the PG&E project components would be engineered to comply with CPUC General Order 95. This regulation establishes specific requirements for safe electrical line clearances above ground, reducing the likelihood of accidental contact and protecting public safety.

The proposed 500 kV transmission interconnection lines are parallel to and in proximity to a gas pipeline for a distance of 0.4 mile. PG&E conducted an AC interference study for the proposed 500 kV interconnection lines that evaluated the potential for the 500 kV interconnection lines to cause a shock hazard under steady state and fault conditions (Kinetrics AES 2025). The quality

of the pipeline coating could not be determined at the time of the study and a range of coatings were therefore modeled. The touch potential during steady state conditions ranged from 5.93 V with a non-existent pipeline coating to 44 V with an excellent coating. Because all touch potentials are below the IEEE allowable limit of 50 V, the impact during steady state conditions would be less than significant.

Under fault conditions, the touch and step voltage ranged from 36.82 V for a non-existent coating to the highest potential of 919.77 V assuming an excellent coating. While the simulated touch voltage under fault conditions exceed the IEEE allowable limit of 359.5 V under four of the five pipeline coating types evaluated; however, the pipeline is not accessible in the area where the threshold could be exceeded.(Kinetrics AES 2025). Because the pipeline is not accessible in the area where the voltage threshold could be exceeded under fault conditions, the voltage caused by the 500 kV interconnection lines would not expose workers or the public to an excessive shock hazard and the impact would be less than significant. Accordingly, the impact from shock hazards would be less than significant.

4.9.5 Impact Analysis – Cumulative

The geographic scope for the cumulative analysis of hazards, hazardous materials, and public safety includes the area within and immediately surrounding the Proposed Project components, encompassing areas that may be affected by construction activities, transport or storage of hazardous materials, the presence of contaminated sites, emergency access routes, wildfire hazard zones, or the operation of electrical infrastructure. The cumulative analysis considers the potential for the Proposed Project, in combination with other past, present, and reasonably foreseeable future projects, to result in significant cumulative impacts related to hazards, hazardous materials, and public safety. The types of projects that could combine to result in adverse cumulative impacts under this resource area include residential and commercial development, infrastructure improvements, transmission line upgrades, and other energy-related or industrial projects that involve hazardous materials, ground-disturbing work, or introduction of new sources of wildfire ignition risk. Projects within the cumulative analysis study area include all of the projects listed in Table 4.0-1.

The following cumulative analysis is organized by each relevant CEQA Appendix G checklist criterion and CPUC-specific criteria for hazards, hazardous materials, and public safety, applying the cumulative standard of whether the Proposed Project would make a cumulatively considerable contribution to a significant cumulative impact.

Impact HAZ-1: Routine Transport, Use, or Disposal of Hazardous Materials

Cumulative projects in the region (e.g., residential, commercial, and utility development) may involve routine use of hazardous materials such as fuels, lubricants, solvents, and concrete additives during construction and operation. Like the Proposed Project, these projects are required to comply with federal, state, and local regulations governing hazardous substances (e.g., Hazardous Materials Transportation Act, RCRA, California Hazardous Materials Release Response Plans and Inventory Law). Because the Proposed Project would implement HMBPs, SPCC plans, HMMPs, and worker training programs, and because similar controls apply to

other cumulative projects, the incremental contribution of the Proposed Project would not be cumulatively considerable.

Impact HAZ-2: Upset and Accident Conditions Involving Hazardous Materials
Cumulative projects could disturb contaminated soil or groundwater, or result in spills during construction and operation. However, projects must comply with state and federal hazardous materials regulations and CEQA requirements for contaminated site management. The Proposed Project site is not on the Cortese List and Phase I ESA/database reviews did not identify RECs, HRECs, or CRECs. With project-specific measures in place, the incremental contribution of the Proposed Project would not be cumulatively considerable.

Impact HAZ-3: Hazardous Emission or Hazardous Materials Near Schools
The only school within 0.25 mile of the Proposed Project is St. Peter Martyr School near the LSPGC telecommunication line. Construction there would be scheduled when school is not in session and would not involve hazardous material use. Other cumulative projects in the area are also subject to CEQA Guidelines §15186(b)(1), requiring coordination with DTSC or RWQCB to protect schools. There are nine schools within 0.25-mile of one or more of the cumulative projects listed in Table 4.0-1. The names of these schools are listed below:

- Delta View Elementary School
- Heights Elementary School
- Highlands Elementary School
- Los Medanos Elementary School
- Marina Vista Elementary School
- Stoneman Elementary School
- Willow Cove Elementary School
- Riverside High School
- Pittsburg High School

The Proposed Project's incremental contribution would not be cumulatively considerable.

Impact HAZ-4: Project Site on a Listed Hazardous Materials Site
The Proposed Project site is not listed on the Cortese List or other federal/state hazardous materials databases; however, the existing PG&E Pittsburg Substation is identified in the SWRCB GeoTracker database. for historical releases that have been remediated and remain under regulatory oversight. Proposed work at this facility would occur entirely within the existing developed substation footprint and would not involve excavation or other disturbance in areas with known contamination. No other Proposed Project component sites are listed in the Cortese List or other hazardous materials databases. Because activities at the listed facility would not encounter or exacerbate existing contamination, and because other project components would not occur on hazardous materials sites, the Proposed Project a significant cumulative impact related to location on a hazardous materials site would not occur.

Impact HAZ-5: Airports and Airstrips

None of the Proposed Project components or nearby cumulative projects are within 2 miles of a public airport. Some components are within Zone D of the Travis AFB Land Use Compatibility Plan, but FAA notification and compliance would prevent hazards. Cumulative projects would also be required to comply with FAA and ALUC requirements. The Proposed Project's incremental contribution would not be cumulatively considerable.

Impact HAZ-6: Emergency Response and Evacuation Plans

Construction of cumulative projects could cause localized, temporary road closures. The Proposed Project would implement traffic control and emergency service coordination measures (APM TRA-2, PG&E CM TRA-2). These would avoid substantial interference with evacuation routes. Because cumulative projects must also coordinate with local agencies, the Proposed Project's incremental contribution would not be cumulatively considerable.

Impact HAZ-7: Wildland Fire Hazards

Several cumulative projects, including California Forever LP and Humboldt- Collinsville 500 kV Transmission Line, would involve construction and operation in areas of grassland or high fire hazard severity zones. The Proposed Project includes substation equipment, overhead lines, and storage of flammable materials within mapped hazard areas. The cumulative impact from wildfire risk would be significant. The Proposed Project transmission lines and batteries would contribute considerably to the cumulative fire risk. MM FIRE-1 requires wildfire management for the project including increased inspections, fire hardening, and response (refer to Section 4.9.13). The impact from fire risk would be less than cumulatively considerable with mitigation.

Impact HAZ-8: Helicopter Transport of Heavy Materials

Helicopter use for transporting heavy materials is anticipated for some overhead line components. Similar use may occur for cumulative energy and infrastructure projects. FAA regulations, helicopter plans, and flight coordination protocols would minimize risks across projects. The Proposed Project's contribution would not be cumulatively considerable.

Impact HAZ-9: Electrical Shock Hazards

Shock hazards are highly localized and depend on proximity to energized equipment and metallic objects. None of the identified cumulative projects would be co-located in a way that creates overlapping risks. All projects must comply with IEEE, CPUC, OSHA, and Cal/OSHA safety standards. Due to compliance with IEEE standards, the cumulative impact from excessive shock hazards would be less than significant.

4.9.6 Alternative 1: Collinsville Substation North of Talbert Lane

Environmental Setting – Alternative 1

Alternative 1 involves relocating the proposed LSPGC Collinsville Substation to a different site, approximately 1.2 miles north of the Proposed Project substation site. Alternative 1 would also include an approximately 500-foot segment of PG&E 500 kV interconnection lines, approximately 700-foot segment of 12 kV distribution line, and an approximately 2-mile-long segment of LSPGC 230 kV overhead line. Alternative 1 would not involve changes to any of the

other Proposed Project components, which would have the same impacts as described throughout this Draft EIR for the Proposed Project or the other alternatives if selected in combination with Alternative 1.

The Alternative 1 substation site is located north of Talbert Lane, in an area with grassland vegetation and agricultural uses similar to the proposed site. The site is not listed on federal or state hazardous materials databases, and no RECs, HRECs, or CRECs have been identified. Portions of the 230 kV overhead segment associated with this alternative would traverse areas mapped by CAL FIRE as high FHSZ in an LRA (CAL FIRE 2025a). The alignment is not within a hazard throw zone of a wind turbine. No schools are located within 0.25 mile of the Alternative 1 site. No natural gas pipelines or other metallic pipelines are located in proximity to Alternative 1.

Impact Analysis – Alternative 1

Similar to the Proposed Project, Alternative 1 would have no impact related to hazardous emissions or handling hazardous materials within 0.25 mile of a school (Impact HAZ-3). The impacts of Alternative 1 related to the routine transport, use, or disposal of hazardous materials (Impact HAZ-1); upset and accidental conditions involving the release of hazardous materials (Impact HAZ-2); being located on a listed hazardous materials site (Impact HAZ-4); safety hazard or excessive noise due to being in proximity to an airport (Impact HAZ-5); interference with an emergency response or evacuation plan (Impact HAZ-6); wildland fires (Impact HAZ-7); transport of heavy materials using helicopters (Impact HAZ-8); and excessive shock hazards (Impact HAZ-9) are discussed below.

Impact HAZ-1: Would Alternative 1 create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? ***(Less than significant)***

Impact HAZ-2: Would Alternative 1 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? ***(Less than significant)***

Alternative 1 would involve construction and operation of a substation approximately 1.2 miles north of the Proposed Project site, along with associated 500 kV and 230 kV transmission segments. The types of hazards and hazardous materials impacts would be the same as those described for the Proposed Project because construction methods, operation, and maintenance activities would be comparable. Construction would involve the routine use, transport, and storage of fuels, lubricants, and other hazardous materials, and would be subject to existing federal, state, and local regulations.

The Alternative 1 substation site is not identified as containing RECs, HRECs, or CRECs. Soil or site remediation is not anticipated. As with the Proposed Project, if contaminated soil or odors are encountered during construction, response protocols under WEAP and APM BIO-3 would apply, with contaminated materials transported to appropriate permitted facilities. Asbestos is unlikely because no existing structures would be demolished. Impacts would be similar to the Proposed Project and less than significant.

Impact HAZ-4: Would Alternative 1 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, it would create a significant hazard to the public or the environment. (*No impact*)

The Alternative 1 substation, 500 kV interconnection lines, 12 kV distribution line, and 230 kV overhead segment are not located on a site listed as a hazardous materials site compiled pursuant to Government Code § 65962.5. No impact related to location on a hazardous materials site would be created from relocation of the substation under Alternative 1.

Impact HAZ-5: 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 Alternative 1 result in a safety hazard or excessive noise for people residing or working in the project area? *(Less than significant)*

As with the Proposed Project, the substation site under Alternative 1 would be within Compatibility Zone D of the Travis AFB LUCP, which restricts land uses that could interfere with flight operations, including those that generate physical, visual, or electronic obstructions. The Alternative 1 infrastructure would be the same height as the Proposed Project and would be located adjacent tall wind turbines. Alternative 1 structures would require the same FAA review as the Proposed Project. The impacts from location within an airport land use plan would be similar to the Proposed Project and would be less than significant.

Impact HAZ-6: Would Alternative 1 impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan? *(Less than significant)*

Construction of the 230 kV overhead segment from the substation under Alternative 1 may require lane closures on Stratton Lane and Talbert Lane during conductor stringing. As with the Proposed Project, these closures would be temporary, localized, and subject to traffic management plans. Additionally, APM TRA-2 would be implemented, which requires that emergency responders be notified of closures in advance and be provided with alternative routes, and emergency response vehicles would be permitted access through closure areas. Impacts would be similar to the Proposed Project and would be less than significant.

Impact HAZ-7: Would Alternative 1 expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires? *(Less than significant)*

The Alternative 1 substation site, 500 kV interconnection line and 12 kV distribution line are not within or near a fire hazard severity zone. A portion of the Alternative 1 230 kV overhead segment is within a high fire hazard severity zone in an LRA, similar to the Proposed Project 230 kV overhead segment. Construction would pose ignition risks from equipment, fuels, and worker activities, but compliance with PRC fire prevention requirements, Article 80 of the Fire Code, and APM FIRE-1 would minimize risks. While risks would be less than significant for Alternative 2 equipment outside of the fire hazard area (substation, 500 kV interconnection transmission lines, and 12 kV distribution line) impacts would remain significant for the 230 kV overhead segment which would remain in a high fire hazard severity zone. MM FIRE-1, required for the Proposed Project, would also apply to Alternative 1 230 kV overhead segment only and would ensure implementation of project-specific fire-safety protocols, maintenance of

fire-suppression equipment, and coordination with local fire agencies during construction and operation (refer to Section 4.9.13).

With implementation of MM FIRE-1 and compliance with applicable fire-prevention regulations, wildfire-related impacts would be less than significant with mitigation.

Impact HAZ-8: Would Alternative 1 create a significant hazard to the public or environment through the transport of heavy materials using helicopters? ***(Less than significant)***

Helicopter use may be required during conductor stringing for the 230 kV overhead segment. The type, duration, and regulatory controls would be the same as the Proposed Project. Compliance with FAA requirements and APM HAZ-1 (Helicopter Plan and coordination with air traffic control) would ensure risks to people from transport of heavy loads are minimized. Impacts would be the same as the Proposed Project and less than significant.

Impact HAZ-9: Would Alternative 1 expose workers or the public to excessive shock hazards? ***(Less than significant)***

The Alternative 1 230 kV overhead segment would be the same distance from the nearest natural gas pipeline as the Proposed Project. The impact from shock hazards from the 230 kV overhead segment would be less than significant as described for the Proposed Project. Alternative 1 would relocate the 500 kV interconnection transmission lines. No natural gas pipelines or other metallic pipelines or facilities are located in proximity to the Alternative 1 500 kV interconnection transmission lines. Therefore, Alternative 1 500 kV interconnection transmission lines would have no impact from exposure of workers or the public to shock hazards.

4.9.7 Alternative 2: Collinsville Substation East of Wind Energy Substations

Environmental Setting – Alternative 2

Alternative 2 involves relocating the proposed LSPGC Collinsville Substation to a different site, approximately 3.0 miles north of the location proposed under the Proposed Project. Alternative 2 would also include an approximately 1,200-foot-long segment of PG&E 500 kV interconnection lines and a four-mile-long segment of LSPGC 230 kV overhead line, as well as an approximately 0.3-mile-long PG&E 12 kV distribution line. Alternative 2 would not involve changes to any of the other Proposed Project components, which would have the same impacts as described throughout this Draft EIR for the Proposed Project or the other alternatives if selected in combination with Alternative 2.

The Alternative 2 substation site is located east of existing wind substations, on grassland and agricultural lands. The site is not identified on hazardous materials databases and no RECs, HRECs, or CRECs have been reported in the Alternative 2 area. Portions of the 230 kV overhead alignment would traverse areas mapped as high fire hazard severity zones by CAL FIRE (in the same areas as the Proposed Project). Alternative 2 would not be located within a wind turbine hazard throw zone. No schools are located within 0.25 mile of the Alternative 2 substation site. No gas pipelines or other metallic pipelines are located in proximity to Alternative 2.

Impact Analysis – Alternative 2

Similar to the Proposed Project, Alternative 2 would have no impact related to hazardous emissions or handling hazardous materials within 0.25 mile of a school (Impact HAZ-3). The impacts of Alternative 2 related to the routine transport, use, or disposal of hazardous materials (Impact HAZ-1); upset and accidental conditions involving the release of hazardous materials (Impact HAZ-2); being located on a listed hazardous materials site (Impact HAZ-4); safety hazard or excessive noise due to being in proximity to an airport (Impact HAZ-5); interference with an emergency response or evacuation plan (Impact HAZ-6); wildland fires (Impact HAZ-7); transport of heavy materials using helicopters (Impact HAZ-8); and excessive shock hazards (Impact HAZ-9) are discussed below.

Impact HAZ-1: Would Alternative 2 create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? (*Less than significant*)

Impact HAZ-2: Would Alternative 2 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? (*Less than significant*)

Construction of Alternative 2 would involve hazardous materials such as fuels, lubricants, and solvents in similar types and quantities as the Proposed Project. Materials would be managed under HMBPs, HMMPs, and SPCC Plans where required, with training provided under the WEAP and APM BIO-3. Impacts would be similar to the Proposed Project and less than significant.

No RECs, HRECs, or CRECs were identified at the Alternative 2 substation site. Soil or site remediation is not anticipated, but response protocols would apply if stained or odorous soils are encountered. Asbestos is unlikely because no structures would be demolished. Impacts would be similar to the Proposed Project and less than significant.

Impact HAZ-4: Would Alternative 2 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, it would create a significant hazard to the public or the environment? (*No impact*)

The Alternative 2 substation, 500 kV interconnection transmission lines, 12 kV distribution line, and 230 kV overhead segment are not located on a site listed as a hazardous materials site compiled pursuant to Government Code § 65962.5. No impact related to location on a hazardous materials site would be created from relocation of the substation under Alternative 2.

Impact HAZ-5: 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 Alternative 2 result in a safety hazard or excessive noise for people residing or working in the project area? (*Less than significant*)

The Alternative 2 substation site and overhead alignment would be within the Zone D of the Travis AFB LUCP, consistent with the Proposed Project. Zone D restricts land uses that could interfere with aircraft operations but allows electrical infrastructure provided that structures do not exceed applicable height limits or generate glare, dust, or electronic interference. The nearest public or private airstrip is more than 2 miles from the Alternative 2 substation site, and

therefore the alternative would not fall within the area of potential aviation hazard consideration established by Solano County or the FAA. The Alternative 2 infrastructure would be the same height as the Proposed Project and would be located adjacent tall wind turbines. Alternative 2 structures would require the same FAA review as the Proposed Project. The impacts from location within an airport land use plan would be similar to the Proposed Project and would be less than significant.

Impact HAZ-6: Would Alternative 2 impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan? (*Less than significant*)

Temporary lane closures may occur during deliveries and conductor stringing but would be managed under APM TRA-2 and encroachment permit requirements. O&M would not require road closures. Impacts would be similar to the Proposed Project and less than significant.

Impact HAZ-7: Would Alternative 2 expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires? (*Less than significant with mitigation*)

The Alternative 2 substation site, 500 kV interconnection transmission lines, and 12 kV distribution line are not within or near a fire hazard severity zone. A portion of the Alternative 2 230 kV overhead segment is within a high fire hazard severity zone in an LRA, similar to the Proposed Project 230 kV overhead segment. Construction would pose ignition risks from equipment, fuels, and worker activities, but compliance with PRC fire prevention requirements, Article 80 of the Fire Code, and APM FIRE-1 would minimize risks. While risks would be less than significant for Alternative 2 equipment outside of the fire hazard area (substation, 500 kV interconnection transmission lines, and 12 kV distribution line) impacts would remain significant for the 230 kV overhead segment which would remain in a high fire hazard severity zone. MM FIRE-1 required for the Proposed Project, would also apply to Alternative 2 230 kV overhead segment only and would ensure implementation of project-specific fire-safety protocols, maintenance of fire-suppression equipment, and coordination with local fire agencies during construction and operation (refer to Section 4.9.13).

With implementation of MM FIRE-1 and compliance with applicable fire-prevention regulations, wildfire-related impacts would be less than significant with mitigation.

Impact HAZ-8: Would Alternative 2 create a significant hazard to the public or environment through the transport of heavy materials using helicopters? (*Less than significant*)

Helicopter use may be required during conductor stringing for the 230 kV overhead segment. The type of helicopter use, duration of use, and regulatory controls would be the same as the Proposed Project 230 kV overhead segment. Compliance with FAA requirements and APM HAZ-1 (Helicopter Plan and coordination with air traffic control) would ensure risks to people from transport of heavy loads are minimized. Impacts would be the same as the Proposed Project and less than significant.

Impact HAZ-9: Would Alternative 2 expose workers or the public to excessive shock hazards? (*No impact*)

The Alternative 2 230 kV overhead segment would be the same distance from the nearest natural gas pipeline as the Proposed Project. The impact from shock hazards from the 230 kV overhead segment would be less than significant as described for the Proposed Project. Alternative 2 would relocate the 500 kV interconnection transmission lines. No natural gas pipelines or other metallic pipelines or facilities are located in proximity to the Alternative 2 500 kV interconnection transmission lines. Therefore, Alternative 2 500 kV interconnection transmission lines would have no impact from exposure of workers or the public to shock hazards.

4.9.8 Alternative 3: 500 kV Interconnection Lines on Entirely TSPs

Environmental Setting – Alternative 3

Alternative 3 involves constructing the PG&E 500 kV interconnection lines on entirely TSPs, instead of the combination of LSTs and three-pole TSPs under the Proposed Project. The 500 kV interconnection lines would be in the same general alignment as the Proposed Project PG&E 500 kV interconnection lines. Alternative 3 would not involve changes to any of the other Proposed Project components, which would have the same impacts as described throughout this Draft EIR for the Proposed Project or the other alternatives if selected in combination with Alternative 3.

Impact Analysis – Alternative 3

Alternative 3 would merely change the structure type for the 500 kV interconnection transmission lines and would not change any other Proposed Project facilities or the location of the 500 kV interconnection transmission lines. Alternative 3 would have the same hazards, hazardous materials, and public safety impacts as the Proposed Project under all resource areas as described in Section 4.9.4. Changing the structure type from TPSs to LSTs would not create or avoid any impacts on hazards, hazardous materials, or public safety.

4.9.9 Alternative 4: 230 kV Overhead Segment Alternative Route

Environmental Setting – Alternative 4

Alternative 4 involves relocation of a short segment of the LSPGC 230 kV overhead segment between the proposed LSPGC Collinsville Substation and the Delta, west of the proposed LSPGC 230 kV overhead segment route. Additionally, the northern end of the LSPGC 230 kV submarine segment would be rerouted to meet up with the southern end of the Alternative 4 230 kV submarine segment. Alternative 4 would not involve changes to any of the other Proposed Project components, which would have the same impacts as described throughout this Draft EIR for the Proposed Project or the other alternatives if selected in combination with Alternative 4.

No RECs, HRECs, or CRECs have been identified along the alternative alignment. Portions of the Alternative 4 230 kV overhead segment would remain within CAL FIRE-mapped high

FHSZs (CAL FIRE 2025a). Alternative 4 would avoid a wind turbine hazard throw zone. No schools are within 0.25 mile of the alignment. No natural gas pipelines or metallic pipelines are located in proximity to Alternative 4.

Impact Analysis – Alternative 4

Similar to the Proposed Project, Alternative 4 would have no impact related to hazardous emissions or handling hazardous materials within 0.25 mile of a school (Impact HAZ-3). The impacts of Alternative 4 related to the routine transport, use, or disposal of hazardous materials (Impact HAZ-1); upset and accidental conditions involving the release of hazardous materials (Impact HAZ-2); being located on a listed hazardous materials site (Impact HAZ-4); safety hazard or excessive noise due to being in proximity to an airport (Impact HAZ-5); interference with an emergency response or evacuation plan (Impact HAZ-6); wildland fires (Impact HAZ-7); transport of heavy materials using helicopters (Impact HAZ-8); and excessive shock hazards (Impact HAZ-9) are discussed below.

Impact HAZ-1: Would Alternative 4 create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? (*Less than significant*)

Impact HAZ-2: Would Alternative 4 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? (*Less than significant*)

Alternative 4 would involve relocation of a short portion of the 230 kV overhead segment on PG&E-owned property south of the proposed substation. The types of hazards and hazardous materials impacts would be the same as those described for the Proposed Project, since construction and operational activities would be comparable and would occur within the same regional setting. Construction would require the use, storage, and transport of hazardous materials such as fuels and lubricants, which would be managed in compliance with existing federal, state, and local regulations. No RECs identified along the alternative alignment. Unexpected contamination would be managed under WEAP and APM BIO-3 as well as compliance with state and federal regulatory requirements. As with the Proposed Project, compliance with applicable regulations would minimize risks from hazards due to routine transport, use, or disposal of hazardous materials or reasonably foreseeably upset and accident conditions involving the release of hazardous materials. The impact would be less than significant.

Impact HAZ-4: Would Alternative 4 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, it would create a significant hazard to the public or the environment? (*No impact*)

The Alternative 4 230 kV overhead segment is not located on a site listed as a hazardous materials site compiled pursuant to Government Code § 65962.5. No impact related to location on a hazardous materials site would be created from relocation of the 230 kV overhead segment to the Alternative 4 site.

Impact HAZ-5: 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 Alternative 4 result in a safety hazard or excessive noise for people residing or working in the project area? (*Less than significant*)

Under Alternative 4, the 230 kV overhead segment would be shifted to primarily PG&E-owned land directly south of the proposed Collinsville Substation and would use TSPs similar in design and height to the Proposed Project 230 kV overhead segment. The tallest structures would reach approximately 150 feet above ground, which is below the 200-foot FAA notification threshold and shorter than the existing wind turbines in the vicinity. The area is within Zone D of the Travis AFB LUCP, which restricts land uses that could interfere with aircraft operations. Because Alternative 4 would not alter the height or configuration or aboveground structures in relation to the Proposed Project and would not include any new lighting or reflective surfaces, Alternative 4 would not introduce new physical or visual obstructions or interfere with flight operations. The impact related to aviation hazards would be less than significant.

Impact HAZ-6: Would Alternative 4 impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan? (*No impact*)

The Alternative 4 230 kV overhead segment is located entirely on private property and does not cross any roadways. Alternative 4 would not introduce any new facilities that would impede emergency response or evacuation, nor would it alter or block existing roadways during operation. Construction would, similarly, not affect emergency response. Alternative 4 would not interfere with any adopted emergency response or evacuation plan, and no impact would occur.

Impact HAZ-7: Would Alternative 4 expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires? (*Less than significant with mitigation*)

The Alternative 4 230 kV overhead segment would be located within moderate and high FHSZs (refer to Figure 4.20-2 in Section 4.20, Wildfire). Construction of the 230 kV overhead segment would involve activities such as equipment operation, vehicle movement, and welding that could generate sparks or heat capable of igniting dry grassland vegetation. Compliance with PRC fire-prevention requirements, Article 80 of the California Fire Code, and implementation of APM FIRE-1 would minimize ignition sources during construction. Impacts during construction would be less than significant and the same as the Proposed Project.

However, APM FIRE-1 does not address operational fire hazards. During operation, the 230 kV TSPs and associated electrical equipment would be maintained in accordance with CPUC GO 95, which require vegetation clearance and routine inspections to prevent electrical-equipment-related ignitions. However, due to Alternative 4 location in a high and very high FHSZ, the impact during operation would be significant. MM FIRE-1 requires preparation and implementation of a project-specific fire-prevention and emergency-response plan, maintenance of fire-suppression equipment at all active work areas, establishment of fire-watch procedures during high-risk operations, and coordination with local fire-protection agencies (refer to

Section 4.9.13). Implementation of MM FIRE-1 would reduce the potential for ignition and ensure prompt response capability in the unlikely event of a fire. The impact would be less than significant with mitigation and the risk would be the same as the Proposed Project.

Impact HAZ-8: Would Alternative 4 create a significant hazard to the public or environment through the transport of heavy materials using helicopters? (*Less than significant*)

Helicopter use may be required during conductor stringing for the 230 kV overhead segment. The type of helicopter use, duration of use, and regulatory controls would be the same as the Proposed Project 230 kV overhead segment. Compliance with FAA requirements and APM HAZ-1 (Helicopter Plan and coordination with air traffic control) would ensure risks to people from transport of heavy loads are minimized. Impacts would be the same as the Proposed Project and less than significant.

Impact HAZ-9: Would Alternative 4 expose workers or the public to excessive shock hazards? (*Less than significant*)

Alternative 4 would relocate the 230 kV overhead segment. The Alternative 4 230 kV overhead segment would be further from the nearest metallic pipeline (Calpine natural gas pipeline) than the Proposed Project. The potential for shock hazard would be less than the Proposed Project 230 kV overhead segment and would be less than significant.

4.9.10 Alternative 5: 230 kV Submarine Segment Alternative Route

Environmental Setting – Alternative 5

Alternative 5 involves rerouting a portion of the proposed LSPGC 230 kV submarine segment to the east of its current alignment as it approaches the southern shoreline in Pittsburg. The submarine segment cable would be installed in the same manner as the Proposed Project. Alternative 5 would not involve changes to any of the other Proposed Project components, which would have the same impacts as described throughout this Draft EIR for the Proposed Project or the other alternatives if selected in combination with Alternative 5.

There are no known hazardous materials sites along the 230 kV submarine segment alignment. There are no schools within 0.25 mile of the alignment, and the alignment is not within 2 miles of an airport, nor is it within an airport LUCP. As the 230 kV submarine segment would be directly buried in the riverbed of the Sacramento River, its construction would not interfere with an emergency response or evacuation plan, nor would it be within an established FHSZ.

The 230 kV submarine segment would not require the use of helicopters during construction or operation.

Impact Analysis – Alternative 5

Alternative 5 involves rerouting a portion of the 230 kV submarine segment to reduce the total area where the submarine cables would be within an existing sand and gravel mining lease. The 230 kV submarine segment would be directly buried in the riverbed of the Sacramento River.

Because the Alternative 5 segment is located within the river and there are no known hazardous material sties or schools in proximity to the Alternative 5 segment, Alternative 5 would have no impact associated with hazardous emissions or handling hazardous materials within 0.25 mile of a school (Impact HAZ-3); being located on a listed hazardous materials site (Impact HAZ-4); safety hazard or excessive noise due to being in proximity to an airport (Impact HAZ-5); interference with an emergency response or evacuation plan (Impact HAZ-6); wildland fires (Impact HAZ-7); transport of heavy materials using helicopters (Impact HAZ-8); and excessive shock hazards (Impact HAZ-9) .

The impacts of Alternative 5 related to the routine transport, use, or disposal of hazardous materials (Impact HAZ-1); and upset and accidental conditions involving the release of hazardous materials (Impact HAZ-2). are discussed below.

Impact HAZ-1: Would Alternative 5 create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? (*Less than significant*)

Impact HAZ-2: Would Alternative 5 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? (*Less than significant*)

Construction of Alternative 5 would require similar use of hazardous materials as the Proposed Project submarine segment including fuels for the marine vessels. Similar to the Proposed Project, these materials would be handled in compliance with state and federal laws to present hazardous material spills. There are no known sources of contamination in the Alternative 5 area; however, Alternative 5 could involve disturbance of potentially contaminated sediments during site preparation or submarine cable installation. APM BIO-21 requires sediment screening and testing prior to cable installation, reducing the potential for encountering contaminated materials. Alternative 5 would not create a significant hazard to the public or environment due to routine use of hazardous materials or reasonably foreseeable accident conditions and the impact would be less than significant. Alternative 5 impacts would be equivalent to the Proposed Project submarine segment construction and operation.

4.9.11 Alternative 6a/6b: Underground Portions of the 230 kV Transmission Line within Suisun Marsh Protection Plan Management Areas

Environmental Setting – Alternative 6a/6b

Alternative 6a/6b would locate the LSPGC 230 kV transmission line on primarily PG&E-owned property south of the proposed Collinsville Substation site (similar to Alternative 4). Alternative 6a/6b would be installed in conduit underground. Alternative 6a differs from Alternative 6b only at the northern end of the segment where options are provided for connection to the Proposed Project Collinsville Substation or Alternatives 1 or 2. Two overhead riser structures would be installed at the northern end of the Alternative 6a/6b underground duct bank where the LSPGC 230 kV line would transition between an overhead and underground position. Alternative 6a/6b would not involve changes to any of the other Proposed Project components, which would have the same impacts as described throughout this Draft EIR for the Proposed Project or the other alternatives if selected in combination with Alternative 6a/6b.

No RECs or hazardous sites occur within the Alternative 6a/6b area. Portions of Alternative 6a/6b are located within areas mapped by CAL FIRE as high FHSZs. Alternative 6a/6b would be located underground and would not be within a hazard throw zone of any wind turbine. No schools are located within 0.25 mile of the underground segments. No gas pipeline or other metallic pipelines are located in proximity to Alternative 6a/6b

Impact Analysis – Alternative 6a/6b

Similar to the Proposed Project, Alternative 6a/6b would have no impact related to hazardous emissions or handling hazardous materials within 0.25 mile of a school (Impact HAZ-3). Alternative 6a/6b would be constructed underground and would not involve transport of heavy materials using helicopters (Impact HAZ-8). The impacts of Alternative 6a/6b related to the routine transport, use, or disposal of hazardous materials (Impact HAZ-1); upset and accidental conditions involving the release of hazardous materials (Impact HAZ-2); being located on a listed hazardous materials site (Impact HAZ-4); safety hazard or excessive noise due to being in proximity to an airport (Impact HAZ-5); interference with an emergency response or evacuation plan (Impact HAZ-6); wildland fires (Impact HAZ-7and excessive shock hazards (Impact HAZ-9) are discussed below.

Impact HAZ-1: Would Alternative 6a/6b create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? (*Less than significant*)

Impact HAZ-2: Would Alternative 6a/6b 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? (*Less than significant*)

Construction would involve hazardous materials for operation of heavy equipment during trenching, vault installation, and duct bank construction as well as for the relocated submarine segment. Excavation could encounter groundwater and soil, but no RECs were identified in the area. Compliance with state and federal regulatory requirements in the event of a spill or contamination is discovered would reduce impacts from the minimal use of hazardous materials for Alternative 6a/6b construction and the impact would be less than significant.

Impact HAZ-4: Would Alternative 6a/6b 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, it would create a significant hazard to the public or the environment? (*No impact*)

Alternative 6a/6b is not located on a site listed as a hazardous materials site compiled pursuant to Government Code § 65962.5. No impact related to location on a hazardous materials site would be created from relocation of the 230 kV overhead segment and locating the transmission line underground for Alternative 6a/6b.

Impact HAZ-5: 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 Alternative 6a/6b result in a safety hazard or excessive noise for people residing or working in the project area? (*Less than significant*)

Alternative 6a/6b would place portions of the 230 kV transmission line underground within the Suisun Marsh Protection Plan Management Areas and would not include riser poles

approximately the same height as the 230 kV overhead segment TSPs. The underground line would have no potential for conflicts with Travis AFB LUCP. The riser poles would have a similar impact to the Proposed Project 230 kV TSPs and the impact would be less than significant.

Impact HAZ-6: Would Alternative 6a/6b impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan? (*Less than significant*)

Under Alternative 6a/6b, the LSPGC 230 kV underground and submarine segment would not be constructed on or near any identified emergency evacuation routes. Alternative 6b would include a single road crossing at Stratton Lane; however, construction at this location would not require full road closures. Any temporary lane restrictions needed to install the underground duct bank would be short-term and managed through implementation of APM TRA-2, which requires coordination with emergency service providers and maintenance of emergency access. Alternative 6a would not require any public road crossings. With implementation of APM TRA-2 and the absence of full road closures, Alternative 6a/6b would not affect emergency access and impacts on emergency response or evacuation would be less than significant.

Impact HAZ-7: Would Alternative 6a/6b expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires? (*Less than significant*)

The Alternative 6a/6b 230 kV transmission line would be constructed in generally similar topographical and climatic conditions as the Proposed Project—flat to gently rolling terrain subject to prevailing westerly winds and occasional Diablo winds—but would traverse a slightly different area characterized by more marsh and wetland vegetation and lower overall fuel loads. The Proposed Project components are not intended (and would not be used) for occupation; therefore, pollutants from a fire would not affect occupants of the Proposed Project. As with the Proposed Project, APM FIRE-1 would be implemented under this alternative. Given the similar slope and wind conditions and the lower fuel potential along the underground alignment, the potential impacts associated with the exacerbation of wildfire risk due to uncontrolled spread of wildfire due to slope or prevailing winds under Alternative 6a/6b would be less than significant.

As the LSPGC 230 kV transmission line would be installed underground in a concrete duct bank, there would be no operational wildfire risk from the underground transmission line in a very high FHSZ. Alternative 6a/6b would have less wildfire risk than the Proposed Project.

Impact HAZ-9: Would Alternative 6a/6b expose workers or the public to excessive shock hazards? (*No impact*)

Alternative 6a/6b would be located further from the Calpine natural gas pipeline than the 230 kV overhead segment. The underground transmission line would also have less potential to induce shock hazards due to absorption of the electrical current by the ground. As a result, Alternative 6a/6b would not expose workers or the public to a shock hazard and there would be no impact.

4.9.12 No Project Alternative No Project Alternative

Environmental Setting – No Project Alternative

Under the No Project Alternative, the LSPGC Collinsville Substation and associated LSPGC 230 kV transmission line, PG&E 500 kV interconnection lines, and PG&E 12 kV distribution line would not be constructed. The existing hazards and hazardous materials conditions described in Section 4.9.1 would apply to the No Project Alternative.

Impact Analysis – No Project Alternative

Under the No Project Alternative, the LSPGC and PG&E components would not be constructed. As a result, there would be no transport, storage, or use of hazardous materials, and no potential for hazardous materials releases during construction or operation (Impact HAZ-1, Impact HAZ-2, Impact HAZ-3, Impact HAZ-4). The No Project Alternative would not be located within an airport land use plan area (Impact HAZ-5). The No Project Alternative would not interfere with any emergency report or evacuation plans (Impact HAZ-6). No new substations, transmission lines, or underground facilities would be built, and there would be no associated risk of hazardous materials transport, accidental release, electrical shock hazards, or increased wildfire risk (Impact HAZ-7, Impact HAZ-8, and Impact HAZ-9). Accordingly, the No Project Alternative would avoid the hazards and hazardous materials impacts of the Proposed Project and no impact on hazards, hazardous materials, or public safety would occur.

4.9.13 Mitigation Measures

LSPGC Project Components

MM FIRE-1: Wildfire Management Plan (refer to Section 4.20: Wildfire)

PG&E Project Components

MM FIRE-1: Wildfire Management Plan (refer to Section 4.20: Wildfire)

4.9.14 References

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4.10 Hydrology and Water Quality

This section presents the environmental setting and analysis of impacts on hydrology and water quality resulting from the Proposed Project and alternatives. This section includes information on existing hydrology and water quality conditions, applicable regulations, and environmental impacts and provides mitigation measures to reduce or avoid significant effects for the Proposed Project and alternatives, where feasible.

The following scoping comments are relevant to the analysis of hydrology and water quality as presented in the Scoping Report (Appendix B):

- The California State Lands Commission (CSLC) noted concerns about flooding impacts due to sea level rise in the tidally influenced Sacramento River and requested that the Project should address the design of riverbank structures to withstand flood events and the effects of climate change.
- The Central Valley Regional Water Quality Control Board provided background on basin plans and the need for the Project to comply with these plans.
- The Central Valley Regional Water Quality Control Board submitted comments providing details about requirements for compliance with permits and plans from the State Water Boards (SWB), Central Valley Regional Water Quality Control Board (CVRWQCB), United States Army Corps of Engineers (USACE), and any other required permitting agencies.

4.10.1 Environmental Setting

Regional Setting

The Proposed Project is located south of the Montezuma Hills within Solano, Contra Costa, and Alameda 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 23 inches (Insignia Environmental 2025a).

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 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 million years ago). 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 Proposed Project would be located within two Regional Water Quality Control Board (RWQCB) jurisdictions—the Central Valley RWQCB and the San Francisco Bay RWQCB

(SWRCB 2025). Each region is regulated by its own water quality control plan or also referred to as a basin plan. The jurisdiction of the Central Valley RWQCB covers the entire area included in the Sacramento and San Joaquin River drainage basins. The basins are bound 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 the Pescadero and Butano creeks in the south.

The main receiving waterbody in the region is the Sacramento-San Joaquin River Delta (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 site.

Environmental Setting

Surface Waters

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. Hydrologic features in the Proposed Project area are displayed on Figure 4.10-1 and Figure 4.10-2, and streams are displayed on Figure 4.10-3 and Figure 4.10-4.

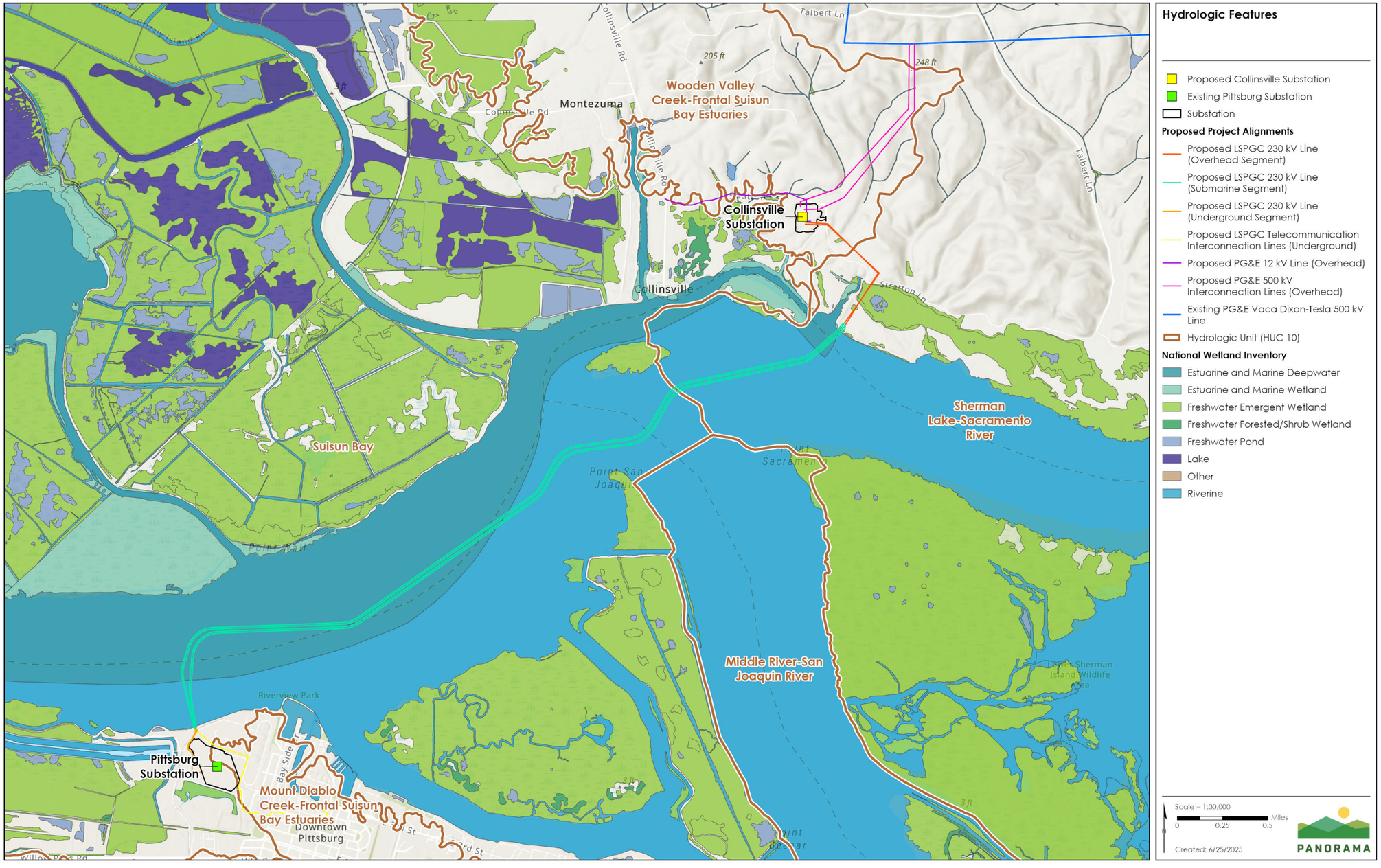
Watersheds

The watersheds (HUC 10[1]) within which the Proposed Project site are located are shown in Figure 4.10-1 and Figure 4.10-2 (ESRI 2023). These watersheds and the portions of the Proposed Project site located within them are as follows:

- Wooden Valley Creek Frontal Suisun Bay Estuaries: proposed LSPGC Collinsville Substation site, portion of proposed LSPGC 230 kV overhead segment alignment, portion of the proposed PG&E 500 kV interconnection lines alignment, portion of the proposed PG&E 12 kV distribution line alignment, and transposition site C.

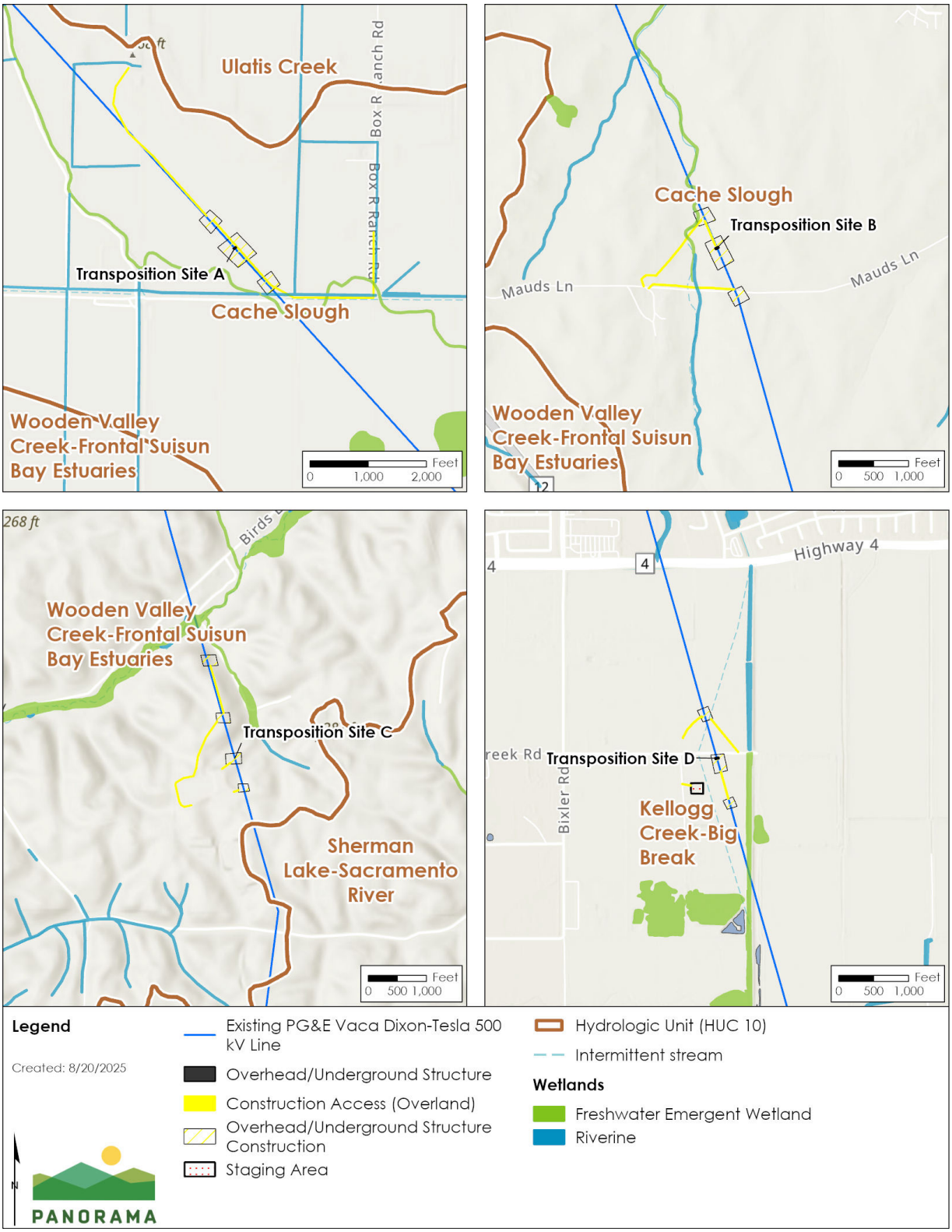
[1] A hydrologic unit is defined by the United States Geologic Survey (USGS) using hydrologic unit codes (HUCs), and delineated based on surface hydrologic features (ESRI 2023). HUC units are based on the size of hydrologic unit, with HUC10 indicating a watershed.

Figure 4.10-1 Hydrologic Features in the Proposed Project Area



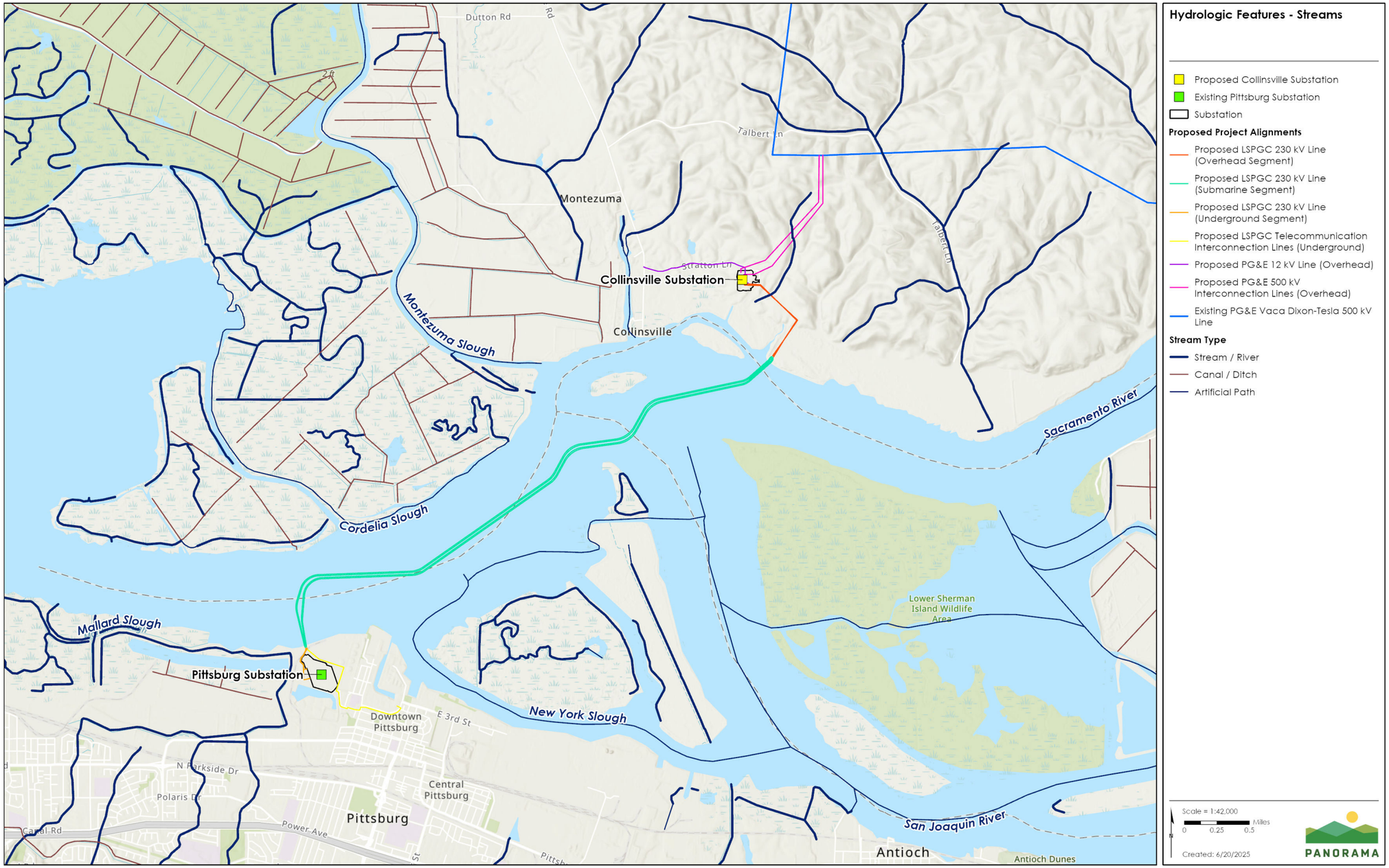
Source: (U.S. Fish and Wildlife (USFWS) 2012)

Figure 4.10-2 Hydrologic Features in Proximity to the Transposition Sites



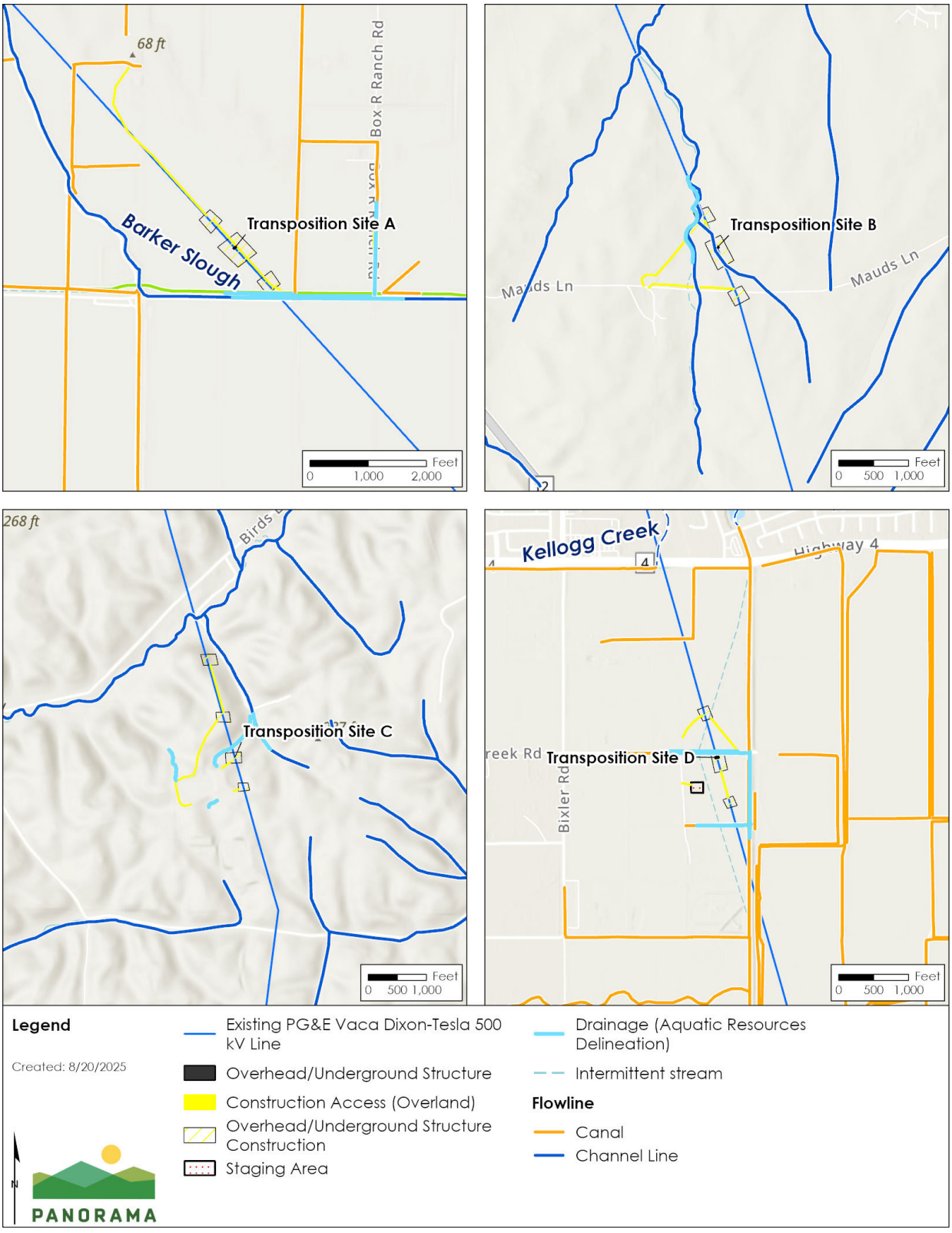
Source: (U.S. Fish and Wildlife (USFWS) 2012)

Figure 4.10-3 Streams in the Proposed Project Area



Source: (U.S. Geological Survey (USGS) 2025)

Figure 4.10-4 Streams in Proximity to the Transposition Sites



Source: (U.S. Geological Survey (USGS) 2025)

- Sherman Lake Sacramento River: portion of proposed LSPGC 230 kV overhead segment alignment, portion of the proposed LSPGC 230 kV submarine segment alignment, and the proposed portion of PG&E 500 kV interconnection line alignment
- Suisun Bay: portion of proposed LSPGC 230 kV submarine segment alignment, portion of the LSPGC 230 kV underground segment alignment, existing PG&E Pittsburg Substation, and portion of the proposed LSPGC telecommunication lines alignment)
- Mount Diablo Creek Frontal Suisun Bay Estuaries: portion of proposed LSPGC telecommunication interconnection lines.
- Cache Slough: transposition sites A and B
- Kellog Creek–Big Break transposition site D

Reservoirs, Ponds, and Lakes

No reservoirs, ponds, or lakes are located within the Proposed Project site. Reservoirs, ponds, and lakes in proximity to the Proposed Project site shown on Figure 4.10-1 and Figure 4.10-2.

Drainages, Creeks, and Streams

Drainages, creeks, and streams in the Proposed Project area are shown in Figure 4.10-3 and Figure 4.10-4. No drainages, creeks, or streams are located within the PG&E Pittsburg Substation site, or LSPGC telecommunication line alignment. The proposed LSPGC Collinsville Substation, 230 kV overhead segment alignment, proposed PG&E 12 kV overhead line, 500 kV interconnection line alignment, and transposition sites A, B, C and D cross or are adjacent to drainages. The proposed 230 kV submarine segment and underground segment alignments are located in and on the banks of the Sacramento-San Joaquin Delta.

Flooding Potential and Dam Failure Inundation Areas

FEMA regulatory floodways, 100-year flood zones (1-percent annual chance of inundation), and 500-year flood zones (0.2-percent annual chance of inundation) are shown in Figure 4.10-5 and Figure 4.10-6. The proposed LSPGC Collinsville Substation site, PG&E 500 kV interconnection lines alignment, and transposition sites B and C are not located in either a 100-year or 500-year flood zone, though portions of the construction work areas (staging areas and pulling sites) are within a 500-year flood zone and adjacent to a 100-year flood zone. The proposed LSPGC 230 kV overhead segment alignment, LSPGC 230 kV underground segment alignment, LSPGC telecommunication lines alignment, PG&E 12 kV distribution line alignment, and PG&E existing Pittsburg Substation site are located within a 500-year flood zone. Transposition site A is located within a 100-year flood zone, and transposition site D is located within a FEMA-designated special floodway.

The proposed 230 kV submarine segment alignment is located within the 100-year flood zone and regulatory floodway (FEMA 2025). There are no dams indicated as significant, high, or extremely high risk for dam breach inundation within five miles of the Proposed Project site (California Department of Water Resources 2025); therefore, the Proposed Project would not be in a dam failure inundation area.

Water Quality

The Delta, Suisun Bay, and Suisun Marsh receiving waters are located within or downstream of the Proposed Project site and are 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 (SWRWCB 2025). These key pollutants are listed in the State Water Resources Control Board 2024 Integrated Report fact sheets for each waterbody (SWRCB 2025). Both the Sacramento San Joaquin Delta and Suisun Bay are located within proposed LSPGC submarine segment alignment. Existing sources of water quality impairment for these water bodies include agriculture and wastewater runoff as well as several unknown sources (SWRCB 2025).

Table 4.10-1 Waterbodies and Key Pollutants in the Project Area

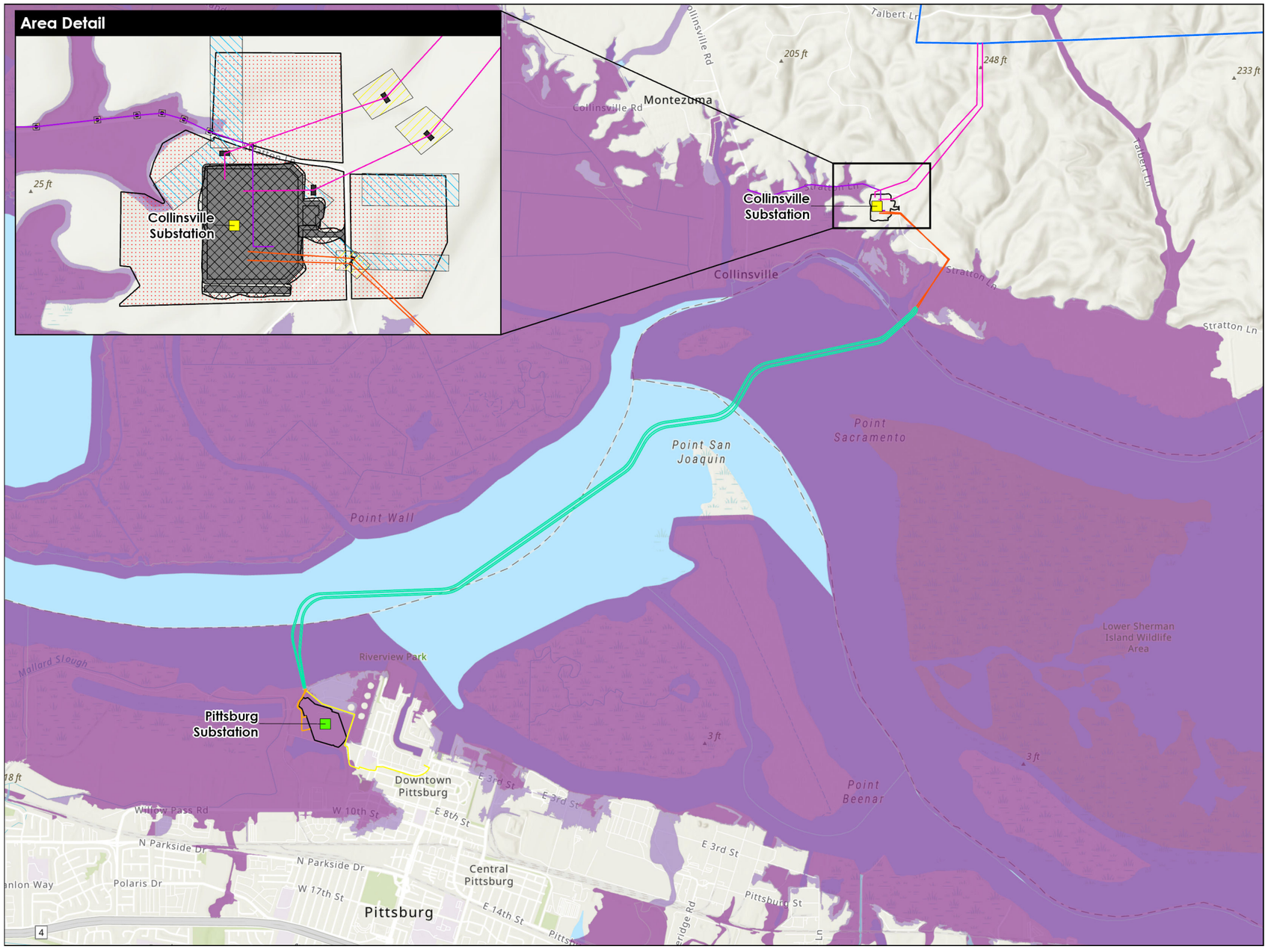
Waterbody	Location relative to the Proposed Project	Key pollutants
Sacramento-San Joaquin Delta	Crossed by the proposed LSPGC 230 kV submarine segment alignment	Chlordane, dichlorodiphenyltrichloroethane (DDT), dieldrin, dioxin compounds (2,3,7,8), furan compounds, invasive species, mercury, polychlorinated biphenyls (PCBs), and selenium
Suisun Bay	Crossed by the proposed LSPGC 230 kV submarine segment alignment	Chlordane, DDT, dieldrin, dioxin compounds (2,3,7,8), furan compounds, mercury, PCBs, and selenium
Suisun Marsh Wetlands	Approximately 1 mile west of the proposed LSPGC Collinsville Substation and 230 kV submarine segment alignment	Mercury, nutrients, organic enrichment/low dissolved oxygen, and salinity/total dissolved solids/chlorides, temperature

Source: (SWRCB 2025)

Wetlands

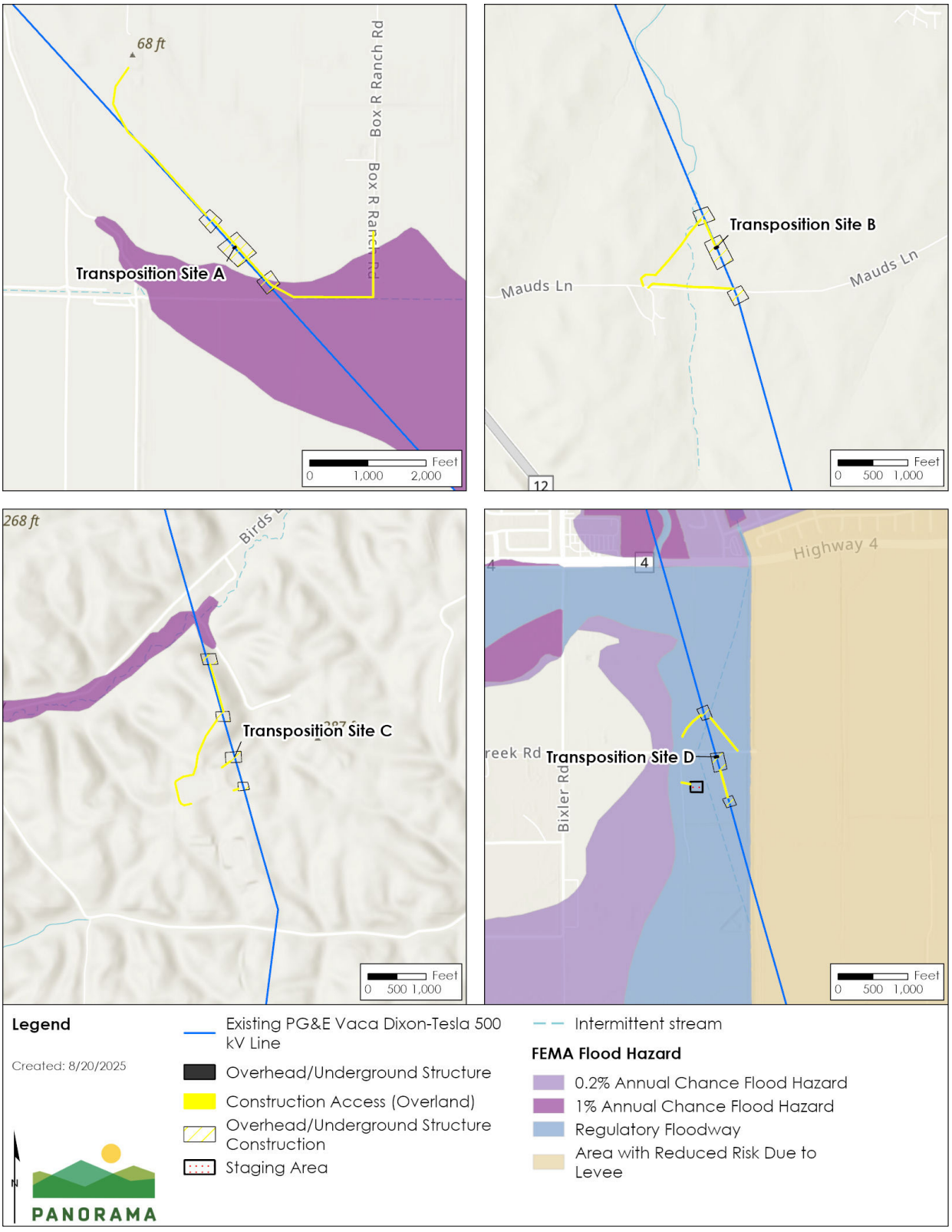
Wetland resources in proximity to the Proposed Project site are documented and mapped in the Aquatic Resources Delineation Report (Appendix F). The proposed LSPGC submarine segment alignment, LSPGC 230 kV overhead segment alignment, and PG&E 12 kV distribution line alignment are located within or cross areas containing wetlands and there are potential wetlands/vernal pools at the PG&E transposition sites. No wetlands occur within the proposed LSPGC Collinsville Substation site, LSPGC 230 kV underground segment site, LSPGC telecommunication lines alignment, PG&E 500 kV interconnection lines alignment, or 12 kV distribution lines alignment.

Figure 4.10-5 FEMA Flood Zones in the Proposed Project Area



Source: (Federal Emergency Management Agency (FEMA) 2018)

Figure 4.10-6 FEMA Flood Zones at Transposition Sites



Source: (Federal Emergency Management Agency (FEMA) 2018)

Tsunamis and Seiches

Tsunamis are seismically induced waves generated by sudden movements of the ocean bottom during earthquakes, landslides, or volcanic activity. The Delta flows into the San Francisco Bay, which enters the Pacific Ocean to the west of the Proposed Project site. Several active and potentially active earthquake faults are located within the Proposed Project area, including offshore. An earthquake occurring offshore or as far away as Asia could result in tsunami generation that could impact areas near the coast. The Proposed Project site is located approximately 40 miles from the coastline and is not located in a tsunami inundation area.

Seiches are wind or earthquake-induced "standing waves" within enclosed water bodies, such as bays, lakes, or reservoirs. The nearest closed waterbody to the proposed LSPGC Collinsville Substation site is a series of small unnamed artificial lakes, approximately 3 miles west of the proposed Collinsville Substation site (U.S. Fish and Wildlife (USFWS) 2012). Movement on any of the active or potentially active faults located in the Proposed Project site vicinity could possibly result in the creation of a seiche on this standing waterbody; however, the lakes are relatively shallow and the effects, if any, would be restricted to the immediate vicinity of the shorelines. A seiche could also occur in the Suisun Bay, Grizzly Bay, or the San Francisco Bay as the result of a strong earthquake (California Geological Survey (CGS) 2006); however, the seiche inundation area within the San Francisco Bay would be similar to the tsunami inundation area and is not mapped separately by the State of California. Therefore, the Proposed Project site is not located in an area that is susceptible to seiches.

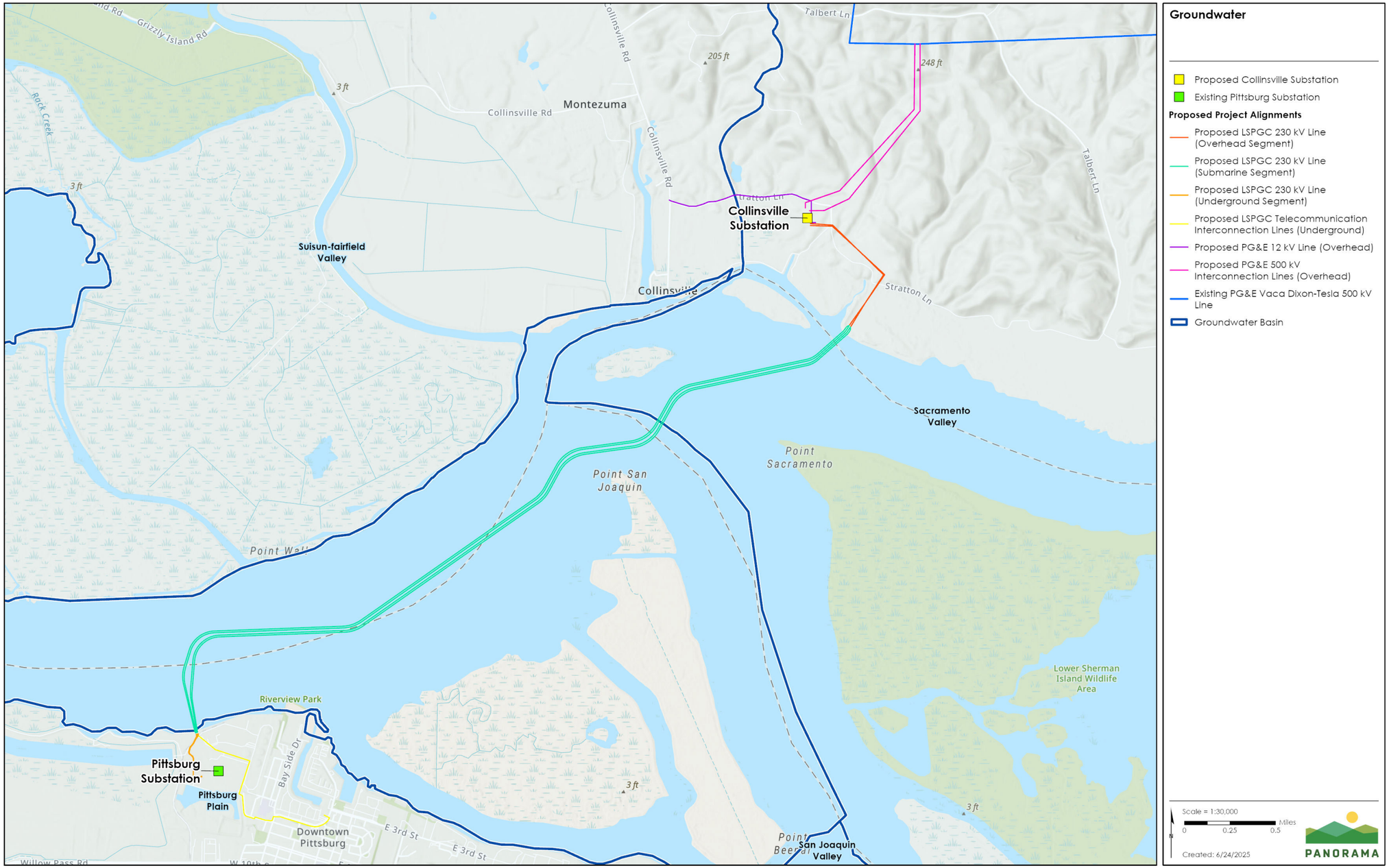
Groundwater Basin

The Proposed Project site is located within the Solano Subbasin of the Sacramento Valley Groundwater Basin north of the Delta and Pittsburg Plain south of the Delta, as shown in Figure 4.10-7 and Figure 4.10-8. The boundaries of the Solano Subbasin of the Sacramento Valley Groundwater basin 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 (DWR 2021).

The Pittsburg Plain groundwater basin encompasses 11,600 acres in northern Contra Costa County. The basin is located along the south shore of Suisun Bay, with the Clayton basin to the west, the Tracy basin to the east, the Suisun Bay to the north, the southern boundary extends inland from the Suisun Bay (DWR 2003).

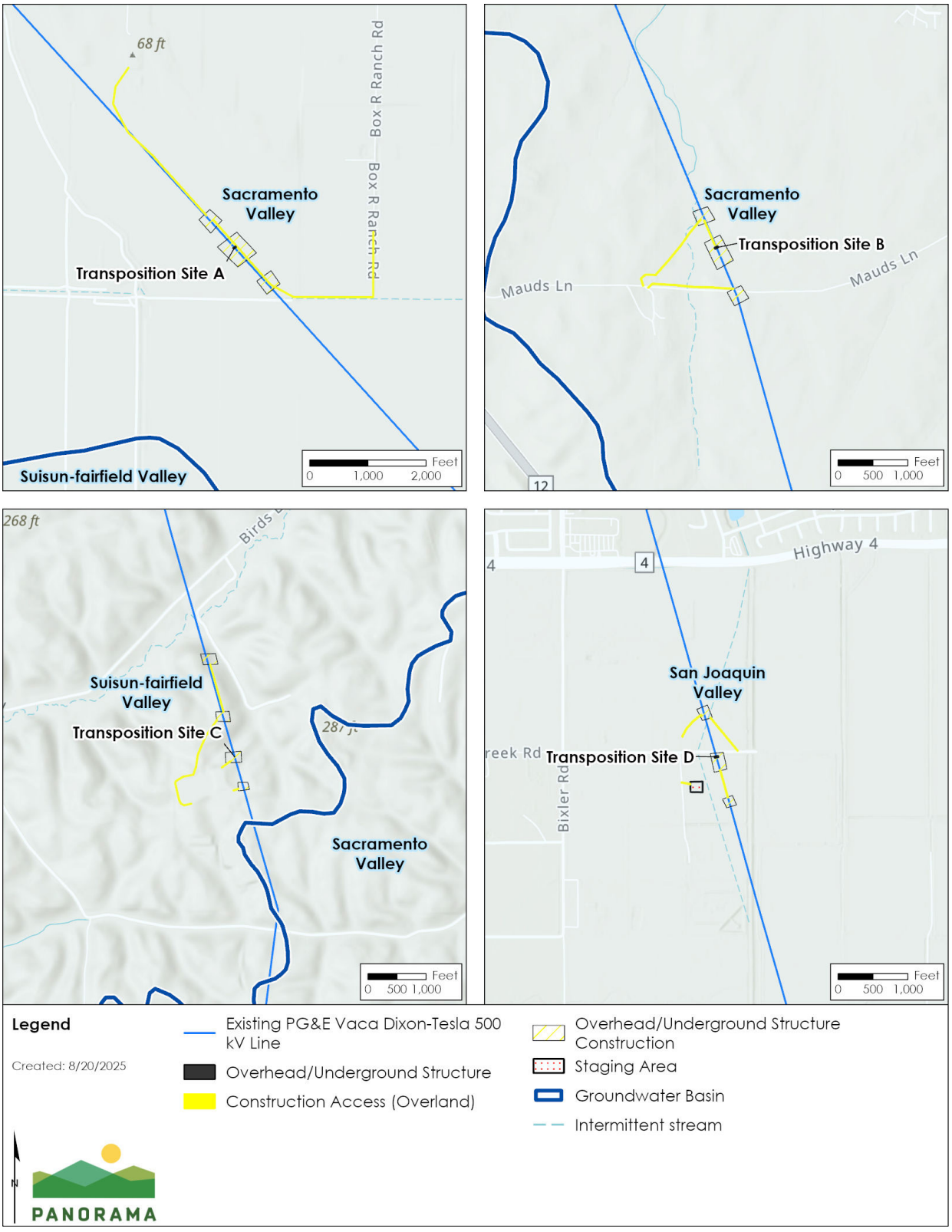
The California Department of Water Resources (DWR) ranks basins as either very low, low, medium, or high priority based on the results from the statewide prioritization evaluation process of 515 basins/subbasins, using consistent data and methodology (DWR 2025). These four rankings provide an indicator of the overall relative importance of groundwater in relation

Figure 4.10-7 Groundwater Basins in the Proposed Project Area



Source: (California Department of Water Resources 2022)

Figure 4.10-8 Groundwater Basins in Transposition Sites



Source: (California Department of Water Resources 2022)

to the components identified in the established California Water Code for each of the state's basins or subbasins. The Sacramento Valley Groundwater Basin is currently designated as medium priority and is managed by the Solano Collaborative (Solano Collaborative and Solano County Water Agency 2024). 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 (Solano Collaborative and Solano County Water Agency 2024).

The proposed LSPGC Collinsville Substation site, proposed LSPGC 230 kV overhead segment alignment, a portion of the proposed LSPGC 230 kV underground segment alignment, PG&E 500 kV interconnection lines alignment, and 12 kV distribution lines alignment are located within Solano Subbasin of the Sacramento Valley Groundwater Basin, as shown on Figure 4.10-7. The Solano Subbasin is within the Solano Subbasin GSA and, therefore, subject to a Groundwater Sustainability Plan (GSP) (DWR 2025). The initial GSP was submitted in 2022 and adopted by the California DWR Sustainable Groundwater Management Office in 2024. (DWR "Solano Subbasin 2022 Groundwater Sustainability Plan Determination," January 18, 2024). According to the 2024 GSP, the sustainable yield of the basin is 190,000 acre feet per year (AFY) and groundwater use has averaged 180,000 AFY; groundwater in the basin is not currently in a state of long-term overdraft. Groundwater is anticipated to be fairly shallow and near the surface in lower-elevation areas, such as near the banks of the Sacramento River.

The Pittsburg Plain groundwater basin is a very low priority basin (DWR 2020). As a very low priority basin, there is neither a GSA or a GSP applicable to the Pittsburg Plain groundwater basin.

Drinking Water Supplies

According to the DWR's California Groundwater Live (DWR n.d.), there is a public groundwater well in the Collinsville Water Works system that is just north of the town of Collinsville, located approximately 0.75 mile southwest of the proposed LSPGC Collinsville Substation site. Two public groundwater wells, both within the City of Pittsburg system, are located approximately 1.25 mile southwest of the proposed LSPGC 230 kV underground segment, south of State Route 4 and adjacent to Rancho Medanos Junior High School. Two additional groundwater wells, one in the Bella Vista Water System and one in the Riverview Mobile Homes System are approximately 1.4 miles southwest of the existing Pittsburg Substation. No other drinking water supplies occur within 3 miles of the Proposed Project site. There is a groundwater well within the Solano 4 Wind Project site, adjacent to the proposed 500 kV interconnection lines alignment, but that groundwater is not used for drinking water supply.

4.10.2 Regulatory Setting

Federal

Clean Water Act

The Clean Water Act (CWA; 33 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 (POTWs). 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, as follows:

1. Facilities already covered by a NPDES permit for stormwater.
2. Facilities that engage in industrial activities.
3. Large municipal separate storm drain systems (MS4s) that serve more than 250,000 people.
4. Medium MS4s that serve between 100,000 and 250,000 people.
5. 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 stormwater 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 the State Water Resources Control Board Section.

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 permits or a general permit (i.e., Nationwide Permit) 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 EPA to publish water quality criteria, which reflect the latest scientific knowledge on the kind and extent of effects that pollutants in water may have on health and welfare. These criteria provide the foundation for the development of enforceable water quality standards by states and tribes (33 U.S.C. § 1314(a)). Where multiple designated beneficial uses exist, water quality standards must protect the most sensitive beneficial use to ensure that all applicable uses are maintained. Water quality standards are typically numeric; however, 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 EPA has published water quality criteria and that could reasonably be expected to interfere with designated beneficial uses in a waterbody.

Under Section 303(d) of the CWA, states, territories, and authorized tribes are required to develop a list of *impaired waterbodies* (known as a 303(d) list), which are those waters that do not meet water quality standards even after the application of technology-based effluent limits for point sources. The law requires that these jurisdictions establish priority rankings for impaired water bodies on the 303(d) list and develop Total Maximum Daily Loads (TMDLs), which identify the maximum amount of a pollutant that a water body can receive while still meeting water quality standards.

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.C 403). Section 10 of the RHA requires USACE approval and a permit for excavation or fill, or for 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. *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 (SFHAs), which include FEMA-designated 100-year flood hazard zones (i.e., areas with a 1-percent annual chance of flood event). FEMA allows non-residential development in SFHAs; however, construction activities are restricted within SFHAs depending on the potential for flooding within each area. Federal regulations governing development in SFHAs 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 flood hazard zones.

Federal Insecticide, Fungicide, and Rodenticide Act

The Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), amended in 1996, authorizes the EPA to register or license pesticides (including herbicides) for use in the U.S. Pesticides must be registered with EPA and the State before distribution (7 U.S.C § 136(a)). Under FIFRA, the California Department of Pesticide Regulation (CDPR) is vested with primary responsibility to enforce pesticide laws and regulations in California. Pesticide rules are found in different sections of California codes and regulations, including the Food and Agriculture Code, Business and Professions Code, Health and Safety Code, and the Labor Code.

In general, California Department of Pesticide Regulation (CDPR) regulates pesticide sales and use statewide whereas local use is enforced through the County Agricultural Commissioners. Many agricultural pesticides require a permit from the County Agricultural Commissioner

before they may be purchased or used. The Agricultural Commissioner also enforces regulations to protect groundwater and surface water from pesticide contamination.

Title 40, Part 112 Oil Pollution Prevention

Title 40, part 122 of the CFR established procedures, methods, equipment, and other requirements to prevent the discharge of oil from non-transportation-related onshore and offshore facilities into or upon the navigable water of the United States. This part also established requirements for the preparation of Spill Prevention, Control, and Countermeasure (SPCC) plans. SPCC plans are designed to complement existing laws, regulations, rules, standards, policies, and procedures pertaining to safety standards, fire prevention, and pollution prevention rules. The purpose of an SPCC plan is to form a comprehensive federal/state spill prevention program that minimizes the potential for discharges. SPCC plans must address all relevant spill prevention, control, and countermeasures necessary at the specific facility.

These regulations are applicable to facilities with a single tank or cumulative aboveground storage capacities of 1,320 gallons, or greater, of oil.

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, n.d.). 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." (CSLC, n.d.). 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 (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, n.d.). 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. The Proposed Project is a regulatory action and is

therefore not a covered action under the Suisun Marsh Protection Plan, as discussed further in Section 4.11: Land Use and Planning. The following policies from the Suisun Marsh Protection Plan are generally relevant to utility projects:

> 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 alignment is located within the Primary Management Area, which triggers the requirement to obtain a Marsh Development Permit from the BCDC. The proposed LSPGC Collinsville Substation site and portions of the proposed PG&E 12 kV distribution line alignment are located in the Secondary Management Area and is therefore subject to the Suisun Marsh LPP, as discussed in Section 4.11: 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. The Suisun Principal Agencies subsequently adopted the Suisun Marsh Plan (SMP), in 2013. The SMP includes 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 (BoR) et al. 2013). The proposed LSPGC 230 kV submarine segment alignment is located 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 (Delta Stewardship Council (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"(Delta Protection Commission 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 alignment falls within the Primary Management 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 2020). 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 (Central Valley Flood Protection Board, n.d.).

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.

California Health & Safety Code, Chapter 6.95, Article 1

Under California Health and Safety Code chapter 6.95 article 1, handling of hazardous materials in quantities equal to or greater than 55 gallons for materials that are liquids, 500 pounds for solids, or 200 cubic feet for compressed gas requires preparation of a Hazardous Materials Business Plan (HMBP) in order to protect the public health and safety and the environment. The statute also requires environmental reporting to CalEPA. Basic information on the location, type, quantity, and health risks of hazardous materials handled, used, stored, or disposed of, and which could therefore be accidentally released into the environment, is required to be submitted to firefighters, health officials, planners, public safety officers, health care providers, regulatory agencies, and other interested persons.

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, that 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 ordinary high-water mark (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 site 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.
- Certification from a Qualified SWPPP Developer (QSD)

State Water Resources Control Board NPDES Permit – Utility Vaults

On October 21, 2014, the SWRCB adopted Order WQ 2014-0174-DWQ (General NPDES Permit for Discharges from Utility Vaults and Underground Structures), which issued waste discharge requirements and a NPDES permit for the short-term and intermittent discharges from utility vaults and underground structures to Waters of the United States for utility companies. The General Permit requires utilities to file an application for coverage under the general order and to prepare a Pollution Prevention Plan for the protection of water quality. Pollutant discharges

must not cause or contribute to exceedance of any CWA Section 303 criteria, cause or contribute to exceedance of SWB or RWQCB water quality objectives or cause acute or chronic toxicity in receiving water.

San Francisco Bay Region Municipal Regional Stormwater NPDES Permit
On May 11, 2022, the CRWQCB San Francisco Bay Region adopted Order No. R2-2022-0018 (Municipal Regional Stormwater NPDES Permit), which issued waste discharge requirements and a National Pollutant Discharge Elimination System (NPDES) permit for the discharge of stormwater runoff from the municipal separate storm sewer systems (MS4s) for jurisdictions and entities that are permitted under the San Francisco Bay Municipal Regional Stormwater Permit (San Francisco Bay MRP). The Order supersedes and rescinds Order Nos. R2-2015-0049 as amended by R2-2019-004. Permit Provision E.12 requires local agencies (including Solano County) to regulate development projects to control pollutants in runoff from newly created or replaced impervious surfaces.

The 2022 order prohibits discharge of non-stormwater materials into storm drains and watercourses to ensure that the beneficial uses of waters of the State are not adversely affected. Permittees must comply with discharge prohibitions and receiving water limitations through implementation of *best management practices* (BMPs) to prevent non-stormwater discharge and maintain water quality.

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.

Local

Pursuant to 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." The Solano County Municipal Regional Permit will be enforced by Solano County through the Proposed Project's grading permit.

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 (Solano County 2008). 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.

Solano County Municipal Regional Permit

Provision C.3 of the Solano County Municipal Regional Stormwater Permit (Solano MRP) requires site designs for new developments and redevelopments to minimize the area of new roofs and paving. Where feasible, pervious surfaces should be used instead of paving so that runoff can infiltrate to the underlying soil. Remaining runoff from impervious areas must be captured and used or treated using bioretention. In some developments, the rates and durations of site runoff must also be controlled. In addition, project applicants must execute agreements to allow municipalities to verify that stormwater treatment and flow-control facilities are maintained in perpetuity. The C.3 requirements are separate from, and in addition to, requirements for erosion and sediment control and for pollution prevention measures during construction (Solano Stormwater Alliance 2025). The project is not located in the jurisdiction of any agency that is a permittee to the Solano MRP.

Sacramento County 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 (Sacramento County 2017). 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 (Contra Costa County 2024). 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.

Contra Costa County Municipal Regional Stormwater Permit

The Contra Costa County Public Works Department oversees stormwater regulations for new projects by requiring features that control and treat stormwater runoff to reduce pollutants flowing to the storm drain system and waterways. Provision C.3 of the County's National Pollutant Discharge Elimination System (NPDES) permit sets specific standards requiring projects that trigger certain thresholds to install Stormwater Management Facilities (SMFs) that are sized according to specific criteria. In general, thresholds for C.3 regulated projects are as follows:

- Facilities, roads, sidewalks, and trails that create or replace 5,000 square feet of impervious surface.
- Detached single family homes that create or replace 10,000 square feet of impervious surface.
- Road maintenance, lane widening, and utility trenching projects contiguous over 1 acre.

Additionally, projects creating and/or replacing at least 1 acre (43,560 square feet) of impervious surface must design their stormwater management facilities to provide both stormwater treatment and flow control functions (in order to maintain pre-project runoff volumes and

durations.) In addition to treating stormwater runoff, these projects control the volume and rate at which runoff is released so that it does not contribute to erosion in waterways (Contra Costa County Public Works 2025). The Proposed Project does not exceed any of these thresholds and therefore would not be a C.3 regulated project.

Alameda County Plan(s)

The Conservation Element in the Alameda County General Plan (Alameda County 1994) outlines issues regarding the identification, and conservation of natural resources across the county. The Conservation Element aims to promote the protection, maintenance, and use of natural resources, and it contains the following relevant goals:

> Water Resources Goal: To ensure and maintain a continuing supply of high-water quality for the citizens of Alameda County.

The Safety Element in the Alameda County General Plan (Alameda County 2022) aims to prevent flood hazards, and contains the following relevant goals and policies:

> Goal 3: To reduce hazards related to flooding and inundation.
>
> > **P1**. "Within flood hazard areas, all new construction of buildings, structures, and portions of buildings and structures, including substantial improvement and restoration of substantial damage to buildings and structures, shall be designed and constructed to resist the effects of flood hazards and flood loads."
> >
> > **P2**. Surface runoff from new development shall be controlled by on-site measures including, but not limited to structural controls and restrictions regarding changes in topography, removal of vegetation, creation of impervious surfaces, and periods of construction such that the need for off-site flood and drainage control improvements is minimized and such that runoff from development will not result in downstream flood hazards. (Source: Seismic Safety and Safety Element, pg. 8)
> >
> > **P3**. Structures shall generally be located away from shoreline areas subject to tsunami inundation, except where they can be feasibly designed to withstand the effects of inundation. (Source: Seismic Safety and Safety Element, pg. 8)
> >
> > **P4.** Development shall only be allowed on lands within the 100-year flood zone if it will not:
> >
> > > Create danger to life and property due to increased flood heights or velocities caused by excavation, fill, roads and intended use.
> > >
> > > Impede access of emergency vehicles during a flood.
> > >
> > > Create a safety hazard due to the expected heights, velocity, duration, rate of rise and sediment transport of the flood waters at the site.

Exacerbate costs of providing governmental services during and after flooding, including increased maintenance and repair of public utilities and facilities.

Interfere with the existing water flow capacity of the floodway.

Substantially increase erosion and/or sedimentation.

Contribute to the deterioration of any watercourse or the quality of water in any body of water. (Source: Eden Area Plan, pg. 8-19 (Alameda County 2010))

P5. Both public and private service facilities and utilities in existing 100-year flood zones, shall be flood-proofed to a point at, or above, the base flood elevation. (Source: Eden Area Plan, pg. 8-19 (Alameda County 2010))

P9. Development shall comply with applicable NPDES requirements. (Source: Eden Area Plan, pg. 8-20 (Alameda County 2010))

P15. All development proposals shall comply with all County ordinances and State Codes that include flood-related design requirements

City of Pittsburg General Plan

The Resource Conservation and Open Space Element in the City of Pittsburg General Plan outlines issues regarding the conservation and management of open spaces and resources in the City (City of Pittsburg 2024). The Resource Conservation and Open Space Element aims to promote the protection and enhancement of natural resources, and it contains the following relevant goals and policies:

Goal-10-2: Conserve biological and ecological resources, particularly the health of Suisun Bay and Marsh (Bay) and the Sacramento- San Joaquin Delta (Delta), special status species, including species that are State or Federally listed as endangered, threatened, or rare, habitats that support s special status species, and sensitive habitats.

Policy 10-P-2.5: Conserve natural terrain, native vegetation, and sensitive habitats and recognize the role of native vegetation, natural terrain and green infrastructure in natural resource and watershed management.

Policy 10-P-2.6: Support efforts to protect and enhance the Bay and Delta ecosystem and Pittsburg's creeks in perpetuity for their value in providing visual amenity, drainage capacity, and habitat value, through a variety of measures including local conservation efforts that improve adequate water supply and quality.

Policy 10-P-2.7: Preserve large areas of naturally vegetated habitat to allow for water infiltration and reduce flood hazards in the Kirker Creek watershed by requiring that new development minimizes paved areas.

Policy 10-P-2.13: Support the reclamation of wetlands and marshlands along local industrial waterfronts.

Policy 10-P-2.15: Protect and restore threatened natural resources, such as wildlife, estuaries, tidal zones, marine life, wetlands, and waterfowl habitat.

Policy 10-P-2.17: Work with industrial property-owners along the waterfront to improve urban runoff and water quality levels within the Bay wetlands.

Goal-10-3: Protect and preserve the availability and quality of soil as a resource to sustain healthy plant, animal, and human life.

Policy 10-P-3.1: Require development to use best management practices (BMPs) to minimize the runoff and erosion caused by earth movement.

Policy 10-P-3.2: Encourage preservation of natural creeks and riparian habitat as best as possible.

Goal-10-4: Promote the conservation and efficient use of surface water and groundwater and protect the quality of Pittsburg's waterways and groundwater resources.

Policy 10-P-4.1: Implement local conservation efforts that improve the San Joaquin River Delta water supply and quality by supporting the long-term viability of the natural Delta ecosystems and the continuation of Delta heritage through encouraging protection and restoration of the ecosystem.

Policy 10-P-4.2: Protect the water availability and quality of the San Joaquin River Delta for beneficial uses and habitat protection.

Policy 10-P-4.3: Comply with Regional Water Quality Control Board regulations and standards to maintain and improve the quality of both surface water and groundwater resources.

Policy 10-P-4.4: Address soil and groundwater pollution during development, redevelopment, and reuse projects.

Policy 10-P-4.5: Reduce sedimentation and erosion of waterways by minimizing site disturbance and vegetation removal.

Policy 10-P-4.6: Encourage rehabilitation and revegetation of riparian corridors and wetlands throughout the City to contribute to bioremediation and improved water quality.

Policy 10-P-4.7: Monitor water quality in the local creek and reservoir system to ensure clean supplies for human consumption and ecosystem health.

Policy 10-P-4.8: Protect water quality by reducing non-point sources of pollution and the dumping of debris in and near creeks, storm drains, and Contra Costa Canal.

Policy 10-P-4.9: Continue use and implementation of the City's storm drain marking program in newly developed or redeveloped areas.

Policy 10-P-4.10: Encourage groundwater recharge through water management strategies, including reducing urban runoff through low impact development designed to conserve natural resources and facilitate groundwater recharge.

The Safety and Resiliency Element of the City of Pittsburg General Plan, addresses public safety and resilience to natural disasters and climate change, contains the following relevant goals and policies relevant to the Proposed Project:

Goal-11-3: Reduce risks to human life, property, and public services associated with flooding and sea level rise.

Policy 11-P-3.1: Reduce the risk of loss of life, personal injury, and property damage resulting from flooding by properly maintaining storm drainage systems, natural flood control channels, and waterways and regulating runoff from new construction and development projects.

Policy 11-P-3.3: Locate development outside of flood-prone areas unless mitigation of flood risk is assured. All new development within an identified Special Flood Hazard Area shall be built according to Federal Emergency Management Agency standards and comply with the City's Floodplain criteria included in Municipal Code Chapter 15.80 - Floodplain Management.

Policy 11-P-3.4: Ensure that development projects mitigate impacts to the City's storm drainage capacity from storm water runoff occurring from the property. Project applicants shall demonstrate that projects implement Best Management Practices (BMPs) and Low Impact Development measures (LID) to treat stormwater before discharge from the site project and that project implementation would not result in increases in the peak flow runoff to adjacent lands or drainage facilities that would exceed the design capacity of the drainage facility or result in an increased potential for off-site flooding.

Policy 11-P-3.7: Ensure that new developments comply with all applicable requirements of Municipal Code Chapter 15.80 - Floodplain Management, the California Building Code as adopted by the City, and the latest promulgated FEMA standards for development in the flood hazard areas.

4.10.3 Approach to Impact Analysis

The analysis of impacts on hydrology and water quality applies the impact criteria and significance thresholds defined in the following subsection. The LSPGC Applicant Proposed Measures (APMs) and PG&E Construction Measures (CMs) are considered when making the impact determinations for hydrology and water quality, as shown in Table 4.10-3. Impacts are evaluated for the Proposed Project include separate analyses of LSGPC and PG&E project components, cumulative impacts, and alternatives. Mitigation measures are defined to reduce or avoid significant impacts, where feasible.

Impact Criteria and Thresholds of Significance

The following impact criteria questions have been derived from Appendix G of the CEQA Guidelines to evaluate impacts on hydrology and water quality. Appendix G of the CEQA Guidelines ask whether a project would:

- Impact HYD-1: Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?
- Impact HYD-2: Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?
- Impact HYD-3: 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- or off-site?
  - substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite?
  - 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?
  - impede or redirect flood flows?
- Impact HYD-4: In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?
- Impact HYD-5: Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

Applicant Proposed Measures and Construction Measures

The LSPGC APMs and PG&E CMs identified in Section 2: Project Description that are relevant to the hydrology and water quality analysis are provided in Table 4.10-2.

Table 4.10-2 APMs and CMs Relevant to Hydrology and Water Quality

LSPGC APMs and PG&E CMs
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

LSPGC APMs and PG&E CMs
discharged to the surrounding area and to reduce potential short-term impacts from mobilized sediment on surrounding benthic environments.
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-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-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-21: 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.

LSPGC APMs and PG&E CMs
APM BIO-22: 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.
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-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),

LSPGC APMs and PG&E CMs
• 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-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.
CM 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.
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 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 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.

4.10.4 Impact Analysis – Proposed Project

Table 4.10-3 presents a summary of the CEQA significance criteria and impacts on hydrology and water quality that would occur during construction, operation, and maintenance of the Proposed Project.

Table 4.10-3 Summary of Impacts on Hydrology and Water Quality for the Proposed Project

Impact criteria: Would the project …	APMs and CMs applied	Significance prior to Mitigation	Mitigation Measures Required	Significance After Mitigation
Impact HYD-1: Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	APM BIO-3 APM BIO-10 APM BIO-21 APM BIO-22 APM GEO-1 APM HYD-1 CM BIO-3 CM BIO-4 CM BIO-17 CM BIO-18 CM GEO-1 CM HYD-1 CM HYD-2	LTS	None	NA
Impact HYD-2: Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	None	LTS	None	NA
Impact HYD-3: 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;	None	LTS	None	NA
ii. substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	None	LTS	None	NA

Impact criteria: Would the project …	APMs and CMs applied	Significance prior to Mitigation	Mitigation Measures Required	Significance After Mitigation
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?	APM BIO-3 APM BIO-22 CM BIO-3	LTS	None	NA
iv. impede or redirect flood flows?	None	LTS	None	NA
Impact HYD-4: In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	None	LTS	None	NA
Impact HYD-5: Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	None	LTS	None	NA

Notes:

NA = not applicable

LTS = less than significant

Impact HYD-1: Would the Proposed Project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality? ***(Less than significant)***

Construction

LSPGC Collinsville Substation

Erosion and Sedimentation

Construction of the LSPGC Collinsville Substation 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. Ground disturbance for the Collinsville Substation would exceed 1 acre; therefore, 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 stormwater pollution prevention program (SWPPP); and implementation of site-specific BMPs (e.g., elimination, control, or treatment of non-stormwater discharges, pollutant control from wash water, minimizing exposure of hazardous materials to stormwater and precipitation, spill and leak prevention and response, post-construction site stabilization, etc.) and site monitoring 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 (e.g., covering of stockpiles, construction watering, stabilized construction entrance/exit, silt fence, etc.)to ensure protection of water quality. Implementation of the SWPPP would be monitored throughout the Proposed Project by a QSD and Qualified SWPPP Practitioner. Additionally, APMs BIO-10 and GEO-1, which would include delineation of work areas, restricting construction to the space within these work areas and ensuring soil disturbance is reduced to the extent practicable. With implementation of BMPs, SWPPP, and APMs BIO-10 and GEO-1, impacts to water quality standards or waste discharge requirements from erosion or sedimentation associated with construction ground disturbance would be less than significant.

Hazardous Materials

Materials used during construction (e.g., diesel fuel, hydraulic fluid, oils, grease, concrete) have the potential to be transported by stormwater runoff and could threaten aquatic life or groundwater quality in the event of spills or leaching. Release of these materials could result in a violation of water quality standards if the materials are transported to nearby water resources. APM BIO-3, which requires worker training on proper handling and storage of hazardous materials, as discussed in Section 4.9: Hazards, Hazardous Material, and Public Safety. Per APM BIO-22, LSPGC would develop and implement an aquatic spill prevention and control plan to reduce potential effects from any spills. In addition, LSPGC would need to comply with regulations for hazardous materials management and storage including LSPGC preparation of a Hazardous Materials Management Plan (HMMP), Hazardous Materials Business Plan (HMPB), and Spill Prevention, Control, and Countermeasures Plan (SPCC). The SPCC would apply to the filling of the transformers with mineral oil, which would exceed 1,320 gallons. With compliance with State and federal regulations for hazardous materials management along with implementation of APM BIO-3 and BIO-22, hazardous material use from the Proposed Project would not result in violation of any water quality standards or waste discharge requirements, and the impact would be less than significant.

LSPGC 230 kV Transmission Line (Overhead, Submarine, Underground)

Erosion and Sedimentation

Similar to the LSPGC Collinsville Substation, construction of the LSPGC 230 kV transmission line would result in ground disturbance exceeding 1 acre of land. The 230 kV transmission line would be constructed in compliance with the Construction General Permit. Similar to the Collinsville Substation, compliance with the Construction General Permit would avoid generation of sediment or erosion that would violate any water quality standard or substantially degrade water quality and the impact from erosion, and impacts to water quality from sedimentation generated by construction of the 230 kV transmission line would be less than significant.

Waste Discharge Requirements

As shown in Figure 4.10-1, the proposed LSPGC 230 kV overhead segment, submarine segment, and underground segment alignments cross or are located within waters of the State, including wetlands and streams. Construction of infrastructure within waters of the State is subject to

waste discharge requirements under the Porter-Cologne Water Quality Control Act. LSPGC would need to obtain a SWRCB Section 401 Water Quality Certification (WQC) and coverage under Waste Discharge Requirements pursuant to the Porter Cologne Water Quality Control Act for construction of the 230 kV transmission line overhead, submarine, and underground segments within waters of the U.S. and waters of the State. The SWRCB would define specific conditions/waste discharge requirements for the impacts in the 401 WQC. In addition, LSPGC has proposed the potential to discharge dewatered groundwater removed from the transition structures and on-land submarine segment trenches to the land surface. Any discharge of groundwater to the land surface would need to obtain a permit issued under Waste Discharge Requirements or would need to comply with a relevant general order for the discharge. Any permits issued by the SWRCB would become binding on LSPGC, and LSPGC would need to comply with all measures in the permit(s). Additionally, APM BIO-21, which would require screening and testing of aquatic sediment if it has been determined that there have been any known spills or other hazardous materials releases that could potentially intersect with the work area. If there have been spills or releases, aquatic sediments would be collected and tested, and any areas that exceed testing standards would be either avoided, removed, or otherwise controlled to limit mobilization of contaminated substrate. Because LSPGC would comply with all permit conditions and implement APM BIO-21, the impact from violation of Waste Discharge Requirements would be less than significant.

Turbidity

Construction of the proposed LSPGC 230 kV submarine segment and underground segment would involve use of a hydroplow and water-jetting equipment 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.

Along the northern and southern shorelines at the entry and exit points for the LSPGC 230 kV submarine segment and underground segment, 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 on the southern shoreline 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. APM HYD-1, which requires use of in-waters sediment controls such as turbidity curtains for trenching in the marine environment. Implementation of APM HYD-1 would ensure proper sediment containment during the trenching activities such that installation of the LSPGC 230 kV submarine segment on the shoreline would have a less than significant impact on water quality.

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 (Delta Stewardship Council 2013). Studies of turbidity in San

Francisco Bay showed that turbidity associated with dredging (an activity that 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 LSPGC 230 kV submarine segment 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 due to windy conditions, storm flows, and passing boats under existing conditions. LSPGC has applied for a Section 401 water quality certification from the State Water Resources Control Board for construction of the submarine cable. The Section 401 water quality certification would contain waste discharge requirements, which would become binding conditions of approval on LSPGC. Therefore, any turbidity generated during use of the hydroplow would comply with waste discharge requirements, including any water quality monitoring required by the SWRCB as a condition of approval. .

LSPGC Telecommunication Lines

The proposed LSPGC telecommunications line would be installed *using horizontal directional drilling* (HDD) in developed upland areas. No wetlands or linear water features are located along the proposed alignment. While unlikely, it would be possible for a frac-out to occur during the HDD process. A frac-out is the unintentional return of drilling fluids to the surface when the drilling fluid finds a seepage pathway through fractures or loose material, or when the pressure within the drilling hole exceeds the pressure from outside of the hole. If a freak-out occurs, it could result in the potential for drilling mud to discharge to the local municipal drain system and impact water quality. Limited drilling fluid would be required due to the limited length of HDD, and appropriate BMPs, as required under the Construction General Permit, (e.g., staff training, containment of HDD areas, and routine visual inspections) would be implemented to protect surface water quality from non-stormwater discharges. Accordingly, the telecommunication line installation is not anticipated to result in impacts to water quality and would not violate any water quality standards. The impact would be less than significant.

PG&E Project Components

Potential impacts to water quality from construction of the PG&E project components include potential erosion and sedimentation and use and storage of hazardous materials similar to those discussed for LSGPC project components discussed directly above. CM BIO-3, which requires worker training on proper handling of hazardous materials. PG&E would comply with the Construction General Permit and CMs BIO-17 and HYD-2 and prepare a project-specific

SWPPP, which would address impacts from erosion and sedimentation on water quality. Implementation of CM BIO-18 would also require the location and management of any soil stockpiling to ensure soil does not enter any bodies of water. PG&E would also be required to comply with State and federal regulations for hazardous materials management including preparation of a (HMMP) and HMBP. Similar to LSPGC Collinsville Substation construction, compliance with the Construction General Permit and State and federal regulations for management of hazardous materials would avoid violation of water quality standards and substantial water quality impacts. Therefore, impacts to water quality and violation of water quality standards from PG&E construction activities would be less than significant.

Multiple potentially jurisdictional wetlands and drainages occur within work areas and along access roads near the 500 kV transposition sites, and the proposed 12 kV distribution line alignment crosses several jurisdictional waters and wetlands. To reduce the potential for impacts to these features, PG&E would flag the features for avoidance during construction activities to the extent avoidance is feasible per CM BIO-4 and site poles in a manner that minimizes permanent impacts to sensitive wetland resources as described in CM HYD-1. Further, CM GEO-1 outlines actions to minimize construction in soft or loose soils, to reduce soil disturbance and associated runoff. The Proposed Project construction would result in temporary impacts on waters of the State and could result in permanent impacts on waters of the State. The impacts on waters of the State, including wetlands, would require a permit from SWRCB in compliance with the Porter-Cologne Water Quality Act. The SWRCB permit would contain waste discharge requirements, which would become legally binding measures on PG&E. Because PG&E would need to comply with all waste discharge requirements, PG&E construction would not violate any waste discharge requirements. The impact from violation of any waste discharge requirements would be less than significant.

Operation and Maintenance

LSPGC Project Components

Stormwater Runoff

The Collinsville Substation would include approximately 12 acres of new impervious surface at the substation site. The approximate 12 acres of new impervious surfaces could have a substantial impact on water quality if the stormwater runoff were not properly contained. The 230 kV overhead segment would also introduce new TSPs, which would also be impervious surfaces. However, the TSPs would occupy a few square feet and would be surrounded by pervious surfaces. The impact on stormwater runoff quality from the TSPs would be less than significant. The Proposed Project design includes a stormwater detention basin. The final design of the stormwater detention basin would be reviewed by Contra Costa County as part of the grading permit review and is required to meet the design standards specified in the Construction General Permit for permanent BMPs. The LSPGC Collinsville Substation and 230 kV overhead segment are not located in an area that is covered under the Solano MRP; however, Solano County enforces provision E.12 of the Phase II statewide municipal stormwater NPDES permit through its grading permit and low impact development manual

(Bay Area Stormwater Management Agencies Association Phase II Committee 2014) and associated waste discharge requirements. The Contra Costa MRP does cover the City of Pittsburg, where the 230 kV underground segment and telecommunication lines would be installed. As the 230 kV underground segment and telecommunication lines would be installed below ground, they would not introduce new impervious surfaces to the area, and the C.3. provisions of the Contra Costa MRP (i.e., post-construction stormwater treatment and flow control design standards) would therefore not apply. Through development of the stormwater detention basin in compliance with the Construction Stormwater General Permit, compliance with the low impact development requirements enforced by Solano County through provision E.12 of the Phase II statewide municipal stormwater NPDES permit, the impact from violation of waste discharge requirements or damage to water quality would be less than significant.

Hazardous Materials

Hazardous materials, including transformers containing mineral oil, would be stored within the LSPGC Collinsville Substation site. Spills or leaks of fluids from the transformers could impact water quality. In addition, herbicides may be used for vegetation management by LSPGC. Use of herbicides would be limited to areas of vegetation management and would be conducted in compliance with State and federal laws for herbicide use. The project would be required to implement an SPCC plan and comply with all State and federal standards for storage of hazardous materials. Due to compliance with State and federal requirements for hazardous materials management, the impacts from hazardous material storage or use by LSPGC on water quality would not violate waste discharge requirements and would be less than significant.

PG&E Project Components

PG&E operation and maintenance activities for the 500 kV interconnection lines, 12 kV distribution line, and telecommunication yard would be similar to the activities conducted on the existing transmission line, distribution line, and infrastructure in the area. Due to the interspersed nature of the transmission poles, the transmission structures would not concentrate runoff in a manner that would adversely affect water quality. The PG&E telecommunications yard would be contained within the LSPGC Collinsville Substation site discussed above, and runoff from the telecommunications yard would be directed to the stormwater detention basin for the substation. No hazardous materials would be stored within the telecommunications yard. Similar to LSPGC, PG&E would comply with State and federal laws for use of hazardous materials and herbicides for vegetation management. Operation and maintenance would not violate waste discharge requirements, and the impact on water quality would be less than significant.

Impact HYD-2: Would the Proposed Project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin? ***(Less than significant)***

Construction

It is estimated that approximately 6 million gallons, or 18 acre-feet, of water would be used in total for both the LSPGC and PG&E project components for dust control, compaction, and

concrete work. Approximately 5 percent (300,000 gallons) of the water required from the Proposed Project may be obtained from existing wells. Water for 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. The exact location of an offsite water source has not yet been determined. It is expected that offsite water may be sourced from a provider up to 18 miles from the proposed substation site in Rio Vista; however, a suitable water source provided may be identified closer to the substation site. The amount of water required for the Proposed Project would represent approximately 0.01 percent of the approximately 150,000 acre-feet of groundwater pumped from the Solano Subbasin for agricultural purposes in Water Year 2023 (Solano Collaborative and Solano County Water Agency 2024). The water demand for construction is limited to the 27-month construction period, and groundwater supplies would recharge after the Proposed Project use has ceased, as calculated in the Solano Subbasin Groundwater Sustainability Plan (Solano Collaborative 2021). Therefore, the use of 6 million gallons of water over the 27-month construction period would not substantially decrease groundwater supplies or impede sustainable groundwater management. The impact from groundwater use would be less than significant.

LSPGC Project Components

Water Use

Approximately 96 percent of the Proposed Project's 6-million-gallon water use would be for construction of LSPGC components. Of the LSPGC water allocation, approximately 94 percent (roughly 5,400,000 gallons) would be used for LSPGC's substation construction (e.g., concrete work and dust control), and approximately 6 percent (roughly 350,000 gallons) would be used for transmission line construction (e.g., dust control). As the total LSPGC and PG&E groundwater use would not substantially decrease groundwater supplies or impede sustainable groundwater management, LSPGC water use alone would also be less than significant.

Dewatering

In instances where groundwater is encountered such as within the 230 kV submarine segment or 230 kV underground segment work areas, 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 construction work areas prior to disposal off site. 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. Any dewatering of excavations would be limited to the period when work is occurring in the excavation and would be limited to the 230kV submarine and underground segment work areas. Because the dewatering would be of a limited amount and duration, the dewatering activity would not substantially decrease groundwater supplies or impede sustainable groundwater management. The impact from dewatering would be less than significant.

PG&E Project Components

Approximately four percent of the water used during project construction would be for PG&E components. PG&E's water usage would be primarily for dust control during transmission line construction (roughly 250,000 gallons). As the total LSPGC and PG&E groundwater use would not substantially decrease groundwater supplies or impede sustainable groundwater management, LSPGC water use alone would also be less than significant.

Operation and Maintenance

LSPGC Components

No water use/groundwater supplies would be required during operation and maintenance. The LSPGC project components would increase impervious surface cover due to construction of the proposed LSPGC Collinsville Substation and new 230 kV structures. The area surrounding the LSPGC 230 kV structures would remain undeveloped, and the small footprint of the poles would not affect groundwater supplies or impede groundwater storage. The proposed 12-acre LSPGC Collinsville Substation would include foundations, buildings, and improved driveways, which would reduce the surface area for groundwater recharge.

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 the proposed stormwater detention basin on the southern side of the substation. Runoff would infiltrate the soil at the detention basin. Accordingly, the new impervious surfaces at the substation would not substantially decrease groundwater supplies or impede sustainable groundwater management, and the impact would be less than significant.

PG&E Components

No groundwater supplies would be needed during operation and maintenance of PG&E project components. The PG&E project components would minimally increase impervious surface cover due to construction of new structures along the proposed PG&E 500 kV interconnection lines and 12 kV distribution line. Only the foundations of transmission structures would reduce the surface area for groundwater recharge, and these areas total less than 1 acre. Due to the small and dispersed area of impervious surface, PG&E structures would have a negligible impact on groundwater supplies and would not impede sustainable groundwater management. The impact would be less than significant.

Impact HYD-3: Would the Proposed 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:

(i) result in a substantial erosion or siltation on- or off-site? ***(Less than significant)***

Construction

LSPGC Components

Construction of the LSPGC project components would not alter the course of a stream or river. No aboveground LSPGC project components are located within a stream or river. The cables within the 230 kV submarine segment would be buried beneath the Sacramento-San Joaquin Delta and would not affect flows within the river.

The proposed Collinsville Substation site would be regraded. The site grading would be designed to direct surface flow within the substation site to a stormwater detention basin where stormwater would be allowed to percolate into the ground. As discussed in Impact HYD-1, LSPGC would need to comply with the Construction Stormwater General Permit and prepare and implement a project-specific SWPPP, including appropriate sediment and erosion control BMPs. With implementation of the SWPPP, substantial erosion or siltation would not occur, and the impact would be less than significant.

PG&E Project Components

The PG&E 500 kV interconnection lines and 12 kV distribution line structures and poles would not be located within a stream or river and would not redirect the course of a stream or river. Poles and structures installed by PG&E would require limited areas of grading around each pole, which would minimize ground disturbance and associated soil mobilization and would avoid changes in flow paths. Due to the limited areas of grading/earthwork, PG&E would not redirect flows in a manner that would cause substantial erosion or siltation. The impact would be less than significant.

Operation and Maintenance

LSPGC Components

Approximately 12 acres at the LSPGC Collinsville Substation site would be located on impervious surfaces during facility operation. The impervious surface would redirect flows to the onsite detention. The detention basin would be designed in compliance with the Construction Stormwater General Permit and low impact design requirements in provision E.12 of the Phase II MS4 general permit, which is enforced by Solano County through their grading permit to capture runoff from areas of impervious surface. As a result, the Proposed Project would not cause substantial erosion or siltation due to the addition of impervious surfaces at the substation and the impact would be less than significant.

PG&E Components

The PG&E LSTs and wooden poles along the 500 kV interconnection lines and 12 kV distribution line would introduce a negligible amount of impervious surface to the area. The

PG&E project components would not introduce substantial impervious surfaces that would result in erosion or siltation. The impact would be less than significant.

(ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite? *(Less than significant)*

Construction

Proposed Project construction activities would not increase the rate or amount of surface runoff in a manner that would result in flooding on-or offsite. No impact would occur. Impacts from change in impervious surface cover at the site are addressed under operation below.

Operation and Maintenance

LSPGC Components

The LSPGC Collinsville Substation would introduce approximately 12 acres of impervious surfaces to the substation site. 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 stormwater flows would be allowed to percolate into the ground. Due to proper design of the stormwater detention basin to manage post-construction runoff consistent with pre-project conditions in compliance with State regulatory requirements in the Construction Stormwater General Permit and Provision E.12 of the Phase II MS4 permit (low impact design standards) as enforced by Solano County through their grading permit, development of the substation site would not generate substantial runoff that would result in flooding on or offsite. The impact would be less than significant.

PG&E Components

The PG&E LSTs and wooden poles along the 500 kV interconnection lines and 12 kV distribution line would introduce a negligible amount of impervious surface to the area. The impervious surface introduced from the LSTs and poles would not increase the amount of surface runoff in a manner which would result in flooding on- or offsite. The impact would be less than significant.

(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? *(Less than significant)*

There is no existing or planned stormwater drainage system in proximity to the Proposed Project site north of the Delta. There is an existing stormwater drainage system near the proposed LSPGC telecommunication lines alignment south of the Delta.

Construction

LSPGC Collinsville Substation and 230 kV Transmission Line (Overhead, Submarine, and Underground Segment)

As discussed in Impact HYD-1, construction of the Proposed Project would require use of hazardous materials (e.g., diesel fuel, hydraulic fluid, oils, grease, concrete), which have the potential to generate polluted runoff if not properly contained. In addition, mineral oil would

be used to fill the transformer at the proposed LSPGC Collinsville Substation, and concrete would be used to construct foundations. If the hazardous materials used during construction were not properly contained, they have the potential to generate additional sources of polluted runoff. APM BIO-3, which requires worker training on proper handling and storage of hazardous materials. Per APM BIO-22, LSPGC would develop and implement an aquatic spill prevention and control plan to reduce potential effects from any spills. As addressed in Section 4.9: Hazards, Hazardous Materials, and Public Safety, LSPGC would need to comply with regulations for hazardous materials management and storage including preparation of a HMMP, HMPB, and SPCC. The SPCC would apply to filling of transformers with mineral oil at the substation site, which would exceed the regulatory standard of 1,320 gallons where an SPCC is required. Due to compliance with State and federal regulations for hazardous materials management and implementation of APM BIO-3 and BIO-22, construction of LSPGC project components would not generate substantial additional sources of polluted runoff and the impact would be less than significant.

Telecommunication Lines

The proposed LSPGC telecommunications line would be installed using HDD in developed upland areas. While unlikely, it would be possible for a frac-out to occur during the HDD process, as described in Impact HYD-1, resulting in the potential for drilling mud to discharge to the local municipal drain system and generate additional sources of polluted runoff. Limited drilling fluid would be required due to the limited length of HDD and appropriate BMPs as required under the Construction General Permit would be implemented to protect water quality from non-stormwater discharges including the drilling fluid. Accordingly, the telecommunication line installation is not anticipated to result in generation of additional sources of polluted runoff. The impact would be less than significant.

PG&E Components

Construction of the PG&E Proposed Project components would involve use of similar hazardous materials to construction of LSPGC project components but would not require mineral oil as PG&E would not be installing any transformers. Should the hazardous materials used during construction not be properly contained, they have the potential to generate additional sources of polluted runoff. CM BIO-3, which requires worker training on proper handling of hazardous materials. CM HYD-2, which includes implementation of measures to address hazardous materials spills. In addition, similar to LSPGC, PG&E would need to comply with State regulatory requirements for hazardous material use and storage, including preparation of an HMMP and HMBP in accordance with California Health & Safety Code, Chapter 6.95, Article 1, and as addressed in Section 4.9: Hazards, Hazardous Materials, and Public Safety. Due to compliance with State and federal regulations for hazardous materials, the PG&E construction would not generate substantial additional sources of polluted runoff, and the impact would be less than significant.

Operation and Maintenance

LSPGC Components

The LSPGC Collinsville Substation would introduce approximately 12 acres of impervious surfaces to the substation site. 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 stormwater flows would be allowed to percolate into the ground. In addition, the substation site would be designed to address State and federal requirements for storage of hazardous materials at the transformers including any required secondary containment and implementation of a SPCC plan, in accordance with California Health & Safety Code, Chapter 6.95, Article 1 and applicable provisions of Title 40, parts 112.1 to 112.7 of the CFR, and addressed in Section 4.9: Hazards, Hazardous Materials, and Public Safety. Herbicides may be used by LSPGC during maintenance activities for vegetation management. Use of herbicides would be limited in extent to the area needed and conducted by a CDPR licensed qualified applicator in compliance with State and federal laws for herbicide use. Due to proper design of the facility, storage of hazardous materials, and application of herbicides in compliance with state and federal laws, operation of the LSPGC project components would not generate substantial sources of polluted runoff, and the impact would be less than significant.

PG&E Components

Operation and maintenance of PG&E project components would be similar to operation of existing PG&E transmission and distribution lines. The PG&E infrastructure would not introduce new sources of pollution that could impact water quality. Similar to LSPGC use of herbicides for vegetation management, all herbicide use would be conducted in compliance with State and federal laws including application by a CDPR licensed qualified applicator and would be limited in extent. Impacts from generation of sources of polluted runoff during operation and maintenance would be less than significant.

(iv) impede or redirect flood flows? *(Less than significant)*

Construction

Construction activities would not occur during flooding conditions; therefore, construction of the Proposed Project would not impede or redirect flood flows.

Operation and Maintenance

LSPGC Components

The proposed LSPGC Collinsville Substation site is not located within a floodplain and would not impede or redirect flood flows. All buried infrastructure (LSPGC 230 kV submarine segment, 230 kV underground segment, and telecommunication lines) would similarly not impede or redirect flood flows.

Several LSPGC 230 kV overhead transmission poles and the transition structure to the submarine segment are located above ground within the 100-year and 500-year flood hazard zone. While six TSPs are located within the flood hazard zone, the small volume of the poles

(i.e., 4 feet in diameter) would not substantially impede or redirect flood flows, and the impact would be less than significant.

PG&E Components

The proposed PG&E 500 kV interconnection lines alignment is not located within a flood hazard zone and would not impede or redirect flood flows. Several 12 kV distribution poles are located within the 500-year flood hazard zone. While the poles are located within the flood hazard zone, the small volume of the poles (12 poles each 2 feet in diameter) would not substantially impede or redirect flood flows, and the impact would be less than significant.

The new structure at PG&E transposition site D and its associated work areas would be located within an area designated as a Regulatory Floodway in Contra Costa County but not within a designated Flood Hazard Zone (FEMA 2025). Development within a Regulated Floodway that may potentially increase the water surface elevation more than a designated height is subject to approval by the local jurisdiction (FEMA 2020). The new structure at PG&E transposition site D would not impede or redirect flood flows due to the small volume of the structure that would be within the floodway.

Impact HYD-4: Would the Proposed Project be located within a flood hazard, tsunami, or seiche zones, and risk release of pollutants due to project inundation? *(Less than significant)*

The Proposed Project site is not located in a seiche or tsunami zone. Impacts from location within a flood hazard zone are discussed below.

LSPGC Components

The proposed LSPGC Collinsville Substation site would not be located within a flood hazard zone. Small portions of staging areas and pulling sites would be located within the edges of a 500-year floodplain and adjacent to a 100-year floodplain; however, these are temporary work areas which would not be utilized during flooding. The proposed LSPGC 230 kV overhead segment, underground segment, submarine segment and telecommunication lines alignments are located entirely or partially within a flood hazard zone (FEMA 2025). Given that only the LSPGC 230 kV overhead segments would potentially be inundated by a flood, and all components containing hazardous materials would be within the proposed LSPGC Collinsville Substation site located outside of the flood hazard zone, the likelihood that pollutants would be released due to inundation during Proposed Project construction or operation and maintenance is very low. Construction would not occur during flooding and any hazardous material spills in work areas would be contained and removed in compliance with the Construction General Permit. Additionally, the proposed LSPGC 230 kV underground segment alignment and a portion of the proposed LSPGC telecommunication lines alignment located within Contra Costa County is located within a 100-year floodplain (FEMA 2025); however, these facilities would be installed underground and would not pose a substantial risk of releasing pollutants due to inundation. Accordingly, impacts from release of pollutants due to inundation would be less than significant.

PG&E Components

The new structure at PG&E 500 kV transposition site D and its associated work areas are located within an area designated as a Regulatory Floodway in Contra Costa County but not within a designated Flood Hazard Zone (FEMA 2025). Development within a Regulated Floodway that may potentially increase the water surface elevation more than a designated height is subject to approval by the local jurisdiction (FEMA 2020). A portion of the proposed 12 kV distribution line alignment is also located within a 500-year flood hazard zone. No hazardous materials would be stored at the PG&E 500 kV transposition site D or along the 12 kV distribution line alignment, and any spills of hazardous materials during construction would be cleaned up in compliance with the Construction General Permit. Construction and operation and maintenance of PG&E project components would thus not risk release of pollutants due to inundation during flooding, and the impact would be less than significant.

Impact HYD-5: Would the Proposed Project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan? *(No impact)*

Construction

As discussed in Impact HYD-1, LSPGC and PG&E construction would not result in the violation of any water quality standards or substantially impact water quality. Construction of PG&E project components would therefore not conflict with the Solano Basin Plan, which was adopted to protect water quality. As discussed in Impact HYD-2, groundwater may be encountered and/or utilized during construction of the Proposed Project; however, use of or discharge of groundwater would be in coordination with the Solano Basin 2022 Groundwater Sustainability Plan. According to the Solano Basin Groundwater Sustainability Plan, the sustainable yield of the basin is 190,000 AFY and the average annual use of water is 180,000 AFY (Solano Collaborative 2021). Therefore, sufficient groundwater supply exists to accommodate the maximum water use of 6 million gallons (18.4-acre feet) over a 27-month period, as described in HYD-2. The Proposed Project 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 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 project components in the City of Pittsburg would be purchased from Delta Diablo and the Contra Costa Water District and trucked to the site. Construction activities planned in Sacramento County would occur within the Delta and would not require additional water to be brought on site. The Proposed Project would not involve activities that would conflict with a Basin Plan, and the use of up to 6 million gallons of water over a 27-month period during construction would not conflict with a GSP; therefore, the Proposed Project, including LSPGC project components and PG&E project components would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan, and there would be no impact.

Operation and Maintenance

As discussed in Impact HYD-1, construction of the Proposed Project, including LSPGC and PG&E project components, would not violate any water quality standards or substantially impact water quality and would therefore not conflict with the Basin Plan. As discussed in Impact HYD-2, operation and maintenance of the Proposed Project would not create a demand for groundwater and would therefore not conflict with a sustainable groundwater management plan. No impact from conflicts with a water quality control plan or sustainable groundwater management plan would occur.

4.10.5 Impact Analysis – Cumulative

CEQA defines a cumulative impact as "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" (CEQA Guidelines section 15130(a)(1)). Cumulative impacts can result from "individually minor but collectively significant projects taking place over a period of time" (CEQA Guidelines section 15355). An EIR must discuss cumulative impacts if the incremental effect of a project, combined with the effects of other projects, is "cumulatively considerable" (CEQA Guidelines section 15130(a)). Projects within the cumulative analysis study area include those listed in Table 4.0-1 of Chapter 4.0.

The geographic extent for the analysis of cumulative impacts related to hydrology and water quality includes the State Water Board's Central Valley and San Francisco Bay Regions and the associated groundwater basins within those regions. Future attainment of California water quality and groundwater availability standards is a function of successful implementation of the Central Valley and San Francisco Bay Basin Plans as well as the available Groundwater Sustainability Plans (GSPs). The California Forever LP Project, Solano 4 Wind Project, Montezuma Tidal and Seasonal Wetlands Restoration Project, Chips Island Tidal Habitat Restoration Project, Reclamation District No. 1607, Van Sickle Islan Emergency Levee Repair, Maintenance Dredging of the Federal Navigation Channels in San Francisco Bay, San Francisco Bay and Delta Sand Mining Project, Bay Walk Mixed Use Project (Phases I, II, and III), Central Harbor Park and Boat Launch Area Upgrades, Harbor View Project, East Street Estates, Liberty Subdivision Phase II, and Valley Link Rail Project have the potential for cumulative impacts to hydrology and water quality, are located within both the Central Valley and San Francisco Bay Regions and would be covered under GSPs for the Solano and East Contra Costa subbasins. Waters within and downstream of the Proposed Project do not meet water quality standards and are on the state 303(d) list of impaired waterbodies. Due to the existing impairments, it is assumed that there is an existing significant impact on water quality to which the Proposed Project would contribute.

Water Quality or Violate Waste Discharge Requirements (Impact HYD-1)

As discussed in Section 4.10.4 under Impact HYD-1, with the implementation of BMPs, APMs and CMs, construction, maintenance and operation of Proposed Project components would not significantly violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality. Because the Proposed Project would not

degrade surface or groundwater quality, the Proposed Project would not result in a cumulatively considerable decrease in water quality standards or contribute excessive waste discharge. Therefore, the cumulative impact on water quality from degradation of surface or groundwater would be less than significant.

Groundwater Supplies and Sustainable Groundwater Management (Impacts HYD-2 and HYD-5)
The cumulative projects identified in Section 4.0 include large development projects such as the potential future California Forever project, the Bay Walk Mixed Use Project (Phases I, II, and III), and the Harbor View Project, which could require groundwater supplies in excess of the available capacity or in excess of sustainable groundwater management. The cumulative impact on groundwater could be significant. Proposed Project construction would occur prior to implementation of all three projects, which have not yet been approved and do not currently have a construction timeline. Operation and maintenance of the Proposed Project would not generate water demand. This being the case, the Proposed Project would not contribute to any cumulative impacts on groundwater as the groundwater use would not overlap with the large cumulative projects in the City of Pittsburg and Solano County area.

Drainage Patterns (Impact HYD-3)
Impact HYD-3 discusses drainage patterns and impacts on erosion, rate of surface runoff and generation of polluted. Due to the existing impairment of water quality in downstream waters, it is assumed that an existing significant cumulative impact from erosion and polluted runoff is occurring. Because the Proposed Project would implement BMPs, APMs and CMs as well as comply with the Construction General Permit, the Proposed Project would not contribute considerably to impacts on water quality from erosion, surface runoff, and pollution.

Flooding (Impact HYD-4)
Construction, maintenance and operation of the Proposed Project would not result in risk of release of pollutants due to project inundation (Impact HYD-4). Because storage of hazardous materials would not occur in a flood hazard zone, the Proposed Project would not result in a cumulatively considerable risk of releasing pollutants due to Project inundation. In addition, the limited area of Proposed Project components (few individual poles) would not contribute considerably to any increase in downstream flooding. Therefore, the Proposed Project contribution to a cumulative impact on flood hazard risk and release of pollutants would be less than significant.

4.10.6 Alternative 1: Collinsville Substation North of Talbert Lane

Environmental Setting – Alternative 1

Alternative 1 involves relocating the proposed LSPGC Collinsville Substation to a different site, approximately 1.2 miles north of the Proposed Project substation site. Alternative 1 would also include an approximately 500-foot segment of PG&E 500 kV interconnection lines, approximately 700-foot segment of 12 kV distribution line, and an approximately 2-mile-long segment of LSPGC 230 kV overhead line. Alternative 1 would not involve changes to any of the

other Proposed Project components, which would have the same impacts as described throughout this Draft EIR for the Proposed Project or the other alternatives if selected in combination with Alternative 1.

Alternative 1 is located entirely within the Sacramento Valley groundwater basin. Alternative 1 is located within both the Sherman Lake-Sacramento River and Wooden Valley Creek-Frontal Suisun Bay Estuaries watersheds (Figure 4.10-9). The Alternative 1 staging yard and PG&E 500 kV interconnection line structures would be within unnamed drainages and the LSPGC 230 kV overhead line would cross three unnamed drainages based on USGS National Hydrography Data (U.S. Geological Survey (USGS) 2025) (Figure 4.10-10). Field surveys could not be performed to verify the locations of waters of the State or wetlands in proximity to Alternative 1 due to LSPGC's lack of site access required to perform field surveys. Alternative 1 would not be located within FEMA flood hazard zones (with the exception of minor portions of temporary work areas), as shown in and Figure 4.10-11.

Impact Analysis – Alternative 1

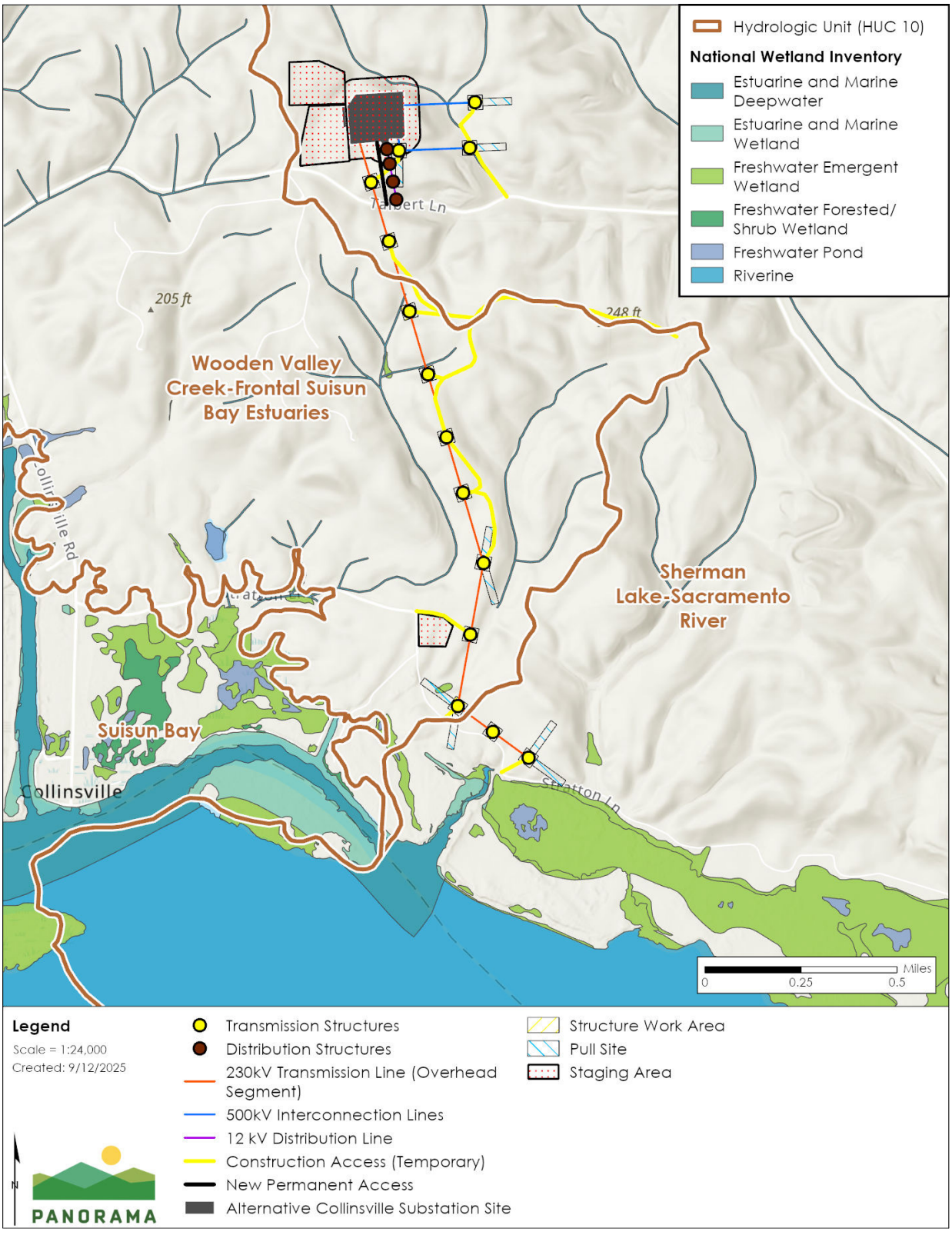
Alternative 1 would not occur in a flood hazard, tsunami, or seiche zone, and would have no impact on release of pollutants due to inundation (Impact HYD-4). The Alternative 1 impact on water quality (Impact HYD-1), groundwater management (Impact HYD-2), drainage patterns (Impact HYD-3), and a water quality control plan or sustainable groundwater management plan (Impact HYD-5) are discussed below.

Impact HYD-1: Would Alternative 1 violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality? *(Less than significant with mitigation)*

Construction

The Alternative 1 staging yard overlaps an unnamed drainage, and several unnamed drainages appear to overlap the LSPGC 230 kV line overhead segment. The PG&E 500 kV TSPs and 12 kV pole proposed under Alternative 1 are located in areas containing potential waters of the State Figure 4.10-10). Grading for the substation, staging yard, and LSPGC 230 kV overhead segment, PG&E 500 kV interconnection lines, and PG&E 12 kV distribution line work areas could result in discharge of fill materials to waters of the State resulting in violation of waste discharge requirements. MM HYD-1 (refer to Section 4.10.13) requires completion of an aquatic resource delineation prior to any construction activities proposed under Alternative 1. MM HYD-1 also requires avoidance and minimization of impacts on waters of the State where feasible, and compensatory mitigation for any unavoidable impacts in compliance with the State Policy for Water Quality Control: State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State (2021). Additionally, MM HYD-1 requires that a State Water Resources Control Board permit and associated waste discharge requirements be obtained prior to any discharge to waters of the State. Because MM HYD-1 requires LSPGC and/or PG&E as applicable to obtain and comply with waste discharge requirements for any discharges of fill materials to waters of the State, the impact from violation of waste discharge requirements would be less than significant with mitigation.

Figure 4.10-9 Hydrologic Features in Proximity to Alternative 1



Source:(USGS 2023)

Figure 4.10-10 Surface Water in Proximity to Alternative 1



Source:(U.S. Geological Survey (USGS) 2025)

Figure 4.10-11 FEMA Flood Zones in Proximity to Alternative 1



Source:(FEMA)2018)

The Alternative 1 LSPGC Collinsville Substation would be located on a hillslope. Grading would be required to level the hill slope and construct a flat substation pad. The additional grading could result in an increased potential for soil erosion and associated water quality impacts. Similar to the Proposed Project, the Alternative 1 substation site is located in an area that drains to a waters of the U.S., and LSPGC would be required to obtain coverage under the Construction Stormwater General Permit prior to construction at the site. In compliance with the Construction Stormwater General Permit, LSPGC would need to prepare a SWPPP that defines specific sediment and erosion control BMPs including slope stabilization materials (e.g., erosion control matting, soil binders, revegetation, etc.) to minimize sediment and erosion. Similar to the Proposed Project, LSPGC would store hazardous materials within the substation site. LSPGC would be required to prepare an HMMP, HMBP, and SPCC for storage and use of hazardous materials. Through compliance with State and federal laws for the protection of water quality, Alternative 1 construction would have a less than significant impact on water quality.

Operation and Maintenance

Similar to the Proposed Project, Alternative 1 would not require grading or earthwork in new areas during operation and would not involve any activities that could violate waste discharge requirements. The detention basin located at the Alternative 1 substation site would need to be designed to meet State requirements in the Construction Stormwater General Permit. LSPGC would also be required to comply with State and federal requirements for hazardous materials storage, including preparation of an HMBP and SPCC for the substation site. Similar to the Proposed Project, LSGPC and PG&E would comply with State and federal requirements for herbicide use. Due to compliance with State and federal laws protecting water quality, the impact on water quality during operation and maintenance would be less than significant.

Impact HYD-2: Would Alternative 1 substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin *(Less than significant)*

The water demand for Alternative 1 would be approximately 57 percent greater than the Proposed Project due to a 76 percent increase in grading and compaction at the substation site. The total estimated water demand would be 27.3 AF over the 27-month construction period. Similar to the Proposed Project, as discussed in Impact HYD-2, potential water supply sources during construction include an existing SMUD groundwater well within the Solano wind farm (within the Solano Subbasin), SCWA, or the City of Rio Vista (groundwater wells within the Solano Subbasin). Historical and projected water budgets developed for the Solano subbasin indicates surplus groundwater conditions (Solano Subbasin Groundwater Sustainability Agency [Solano GSA] 2021). Similarly, the SCWA Five-Year Water Management Plan indicated SCWA's total Solano Project entitlement is 207,350 AF per year, while actual deliveries in 2017 totaled 140,605 acre-feet, indicating a surplus of approximately 66,745 AF. The City of Rio Vista pumped 733 million gallons of groundwater in 2024. Based on the potential for multiple sources of supply and the overall surplus of water in the area, Alternative 1 construction water demand of 27.3 AF would not substantially decrease groundwater supplies or interfere with

groundwater recharge that may impede sustainable groundwater management of the basin. Similar to the Proposed Project, Alternative 1 operation would not create any demand for water supply. As a result, the impact of Alternative 1 on groundwater supplies, groundwater recharge and sustainable groundwater management would be less than significant.

Impact HYD-3: Would Alternative 1 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? ***(Less than significant with mitigation)***

Construction

The Alternative 1 staging yard, LSPGC 230 kV overhead segment access roads and pulling sites, PG&E 500 kV interconnection line TSPs, and a PG&E 12 kV distribution pole appear to overlap unnamed drainages (Figure 4.10-9). Grading for Alternative 1 construction within unnamed drainages has the potential to alter the course of a stream, which could result in substantial erosion causing a significant impact. MM HYD-1 (refer to Section 4.10.13) requires LSPGC and PG&E to avoid drainages to the extent feasible through relocation of poles and associated work areas to avoid the drainage. Because the drainages are not extensive and pole locations can be adjusted in subsequent design, LSPGC and PG&E would be able to design the Alternative 1 poles and work areas to avoid redirecting drainages. The resulting impact on erosion and siltation from redirecting the course of a stream would be less than significant with mitigation.

The preliminary layout for the Alternative 1 substation site does not include a grading plan or design for the detention basin; however, given the hilly topography in the area, grading is anticipated to exceed the grading at the Proposed Project location. While the Alternative 1 substation would require increased grading, LSPGC would be required to comply with the requirements of the Construction Stormwater General Permit including preparation of a SWPPP and implementation of stormwater BMPs (e.g., erosion control matting, soil binders, revegetation, etc.) to control erosion and siltation. In addition, LSGPC would need to obtain a grading permit from Solano County, which includes review of the grading design. Through compliance with State, federal, and local requirements for stormwater management, impacts from erosion or siltation during construction of the Alternative 1 substation would be less than significant.

Operation and Maintenance

Similar to the Proposed Project, no Alternative 1 activities would occur outside of the permanent disturbance area at the substation, LSPGC 230 kV overhead segment, PG&E 500 kV interconnection lines, and PG&E 12 kV distribution line. The substation would introduce approximately 12 acres of impervious surfaces to the area, which could increase runoff in a manner that results in erosion or siltation off site. The Construction Stormwater General Permit includes requirements for post-construction BMPs and management of runoff to avoid erosion. In addition, similar to the Proposed Project, LSPGC would need to obtain a grading permit from Solano County for the Alternative 1 substation and Solano County would enforce the low

impact development design requirements under Provision E.12 of the Phase II NPDES MS 4 permit (Bay Area Stormwater Management Agencies Association Phase II Committee 2014). Because the Alternative 1 substation would be designed in accordance with State, federal, and local requirements for management of post-construction stormwater runoff, the Alternative 1 substation would not cause substantial erosion or siltation and the impact would be less than significant.

(ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite? ***(Less than significant)***

Construction

Similar to Proposed Project construction activities, Alternative 1 would not increase the rate or amount of surface runoff in a manner that would result in flooding on-or offsite. No impact would occur. Impacts from change in impervious surface cover at the site are addressed under operation below.

Operation and Maintenance

Similar to the Proposed Project, the Alternative 1 substation would introduce approximately 12 acres of impervious surfaces. The increase in impervious surface under Alternative 1 could increase the rate of surface runoff. The Construction Stormwater General Permit includes requirements for post-construction BMPs and management of runoff to avoid offsite increase in runoff and flooding. In addition, similar to the Proposed Project, LSPGC would need to obtain a grading permit from Solano County for the Alternative 1 substation and Solano County would enforce the low impact development design requirements under Provision E.12 of the Phase II NPDES MS 4 permit (Bay Area Stormwater Management Agencies Association Phase II Committee 2014) which also require no increase in offsite runoff. Because the Alternative 1 substation would be designed in accordance with State, federal, and local requirements for management of post-construction stormwater runoff, the Alternative 1 substation would not cause flooding on or off-site and the impact would be less than significant.

(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? ***(Less than significant)***

Construction

Similar to the Proposed Project, Alternative 1 construction would involve use and storage of hazardous materials at the substation site. LSPGC would be required to prepare an HMBP, HMMP, and SPCC for use and storage of hazardous materials. Both LSPGC and PG&E would be required to comply with the Construction Stormwater General Permit and clean up any spills of hazardous materials generated during construction. Through compliance with State and federal requirements for management of hazardous materials, Alternative 1 would not create or contribute runoff water that would provide substantial additional sources of polluted runoff and the impact would be less than significant.

Operation

Similar to the Proposed Project, the Alternative 1 substation would contain mineral oil in the transformers and hazardous materials would be stored at the substation site. In addition, herbicides would be used or vegetation management for the 500 kV interconnection lines, 230 kV overhead segment, and 12 kV distribution line. Similar to the Proposed Project, Alternative 1 hazardous material storage would need to comply with State and federal requirements for hazardous materials management including preparation of an HMBP and SPCC for the material storage and application of herbicides by a CDPR licensed qualified applicator. Because the hazardous materials would be stored and used in compliance with State and federal requirements to prevent hazardous materials from entering waterways, Alternative 1 would not create or contribute to runoff water that provides substantial additional sources of polluted runoff and the impact would be less than significant.

(iv) impede or redirect flood flows? ***(No impact)***

None of the Alternative 1 structures or work areas are located within a floodplain. Construction and operation and maintenance of Alternative 1 would thus not have the potential to impede or redirect flood flows and no impact would occur.

Impact HYD-5: Would Alternative 1 conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan? ***(No impact)***

Similar to the Proposed Project, and as discussed in Impact HYD-1, construction of Alternative 1 would not result in the violation of any water quality standards or substantially impact water quality. Construction of Alternative 1 would therefore not conflict with the Solano Basin Plan, which was adopted to protect water quality. Groundwater, as discussed in Impact HYD-2, may be encountered and/or utilized during construction of the Proposed Project; however, use of or discharge of groundwater would be in coordination with the Solano Basin 2022 Groundwater Sustainability Plan. Sufficient groundwater supply exists to accommodate the anticipated water use of 27.3 AF, as described in HYD-2. 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. According to the Solano Basin Groundwater Sustainability Plan, the sustainable yield of the basin is 190,000 AFY and the average annual use of water is 180,000 AFY (Solano Collaborative 2021). The use of up to 27.3 AF of water over a 27-month period during construction would not exceed available groundwater supplies and would thus not conflict with a GSP. Therefore, Alternative 1 construction would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan, and there would be no impact.

As discussed in Impact HYD-1, operation and maintenance of Alternative 1 would not violate any water quality standards or substantially impact water quality and would therefore not conflict with the Solano Basin Plan. As discussed in Impact HYD-2, operation and maintenance of Alternative 1 would not create a demand for groundwater and would therefore not conflict with a sustainable groundwater management plan. No impact from conflicts with a water quality control plan or sustainable groundwater management plan would occur.

4.10.7 Alternative 2: Collinsville Substation East of Wind Energy Substations

Environmental Setting – Alternative 2

Alternative 2 involves relocating the proposed LSPGC Collinsville Substation to a different site, approximately 3.0 miles north of the location proposed under the Proposed Project. Alternative 2 would also include an approximately 1,200-foot-long segment of PG&E 500 kV interconnection lines and a four-mile-long segment of LSPGC 230 kV overhead line, as well as an approximately 0.3-mile-long PG&E 12 kV distribution line. Alternative 2 would not involve changes to any of the other Proposed Project components, which would have the same impacts as described throughout this Draft EIR for the Proposed Project or the other alternatives if selected in combination with Alternative 2.

Alternative 2 is located within the Sacramento Valley groundwater basin and a small portion of the Suisun-Fairfield Valley Groundwater Basin (Figure 4.10-12). The Suisun-Fairfield Valley Groundwater Basin is managed under the Solano County Water Agency and designated as a low priority basin under the SGMA (California Department of Water Resources 2020). A Groundwater Management Plan has not been prepared for the basin due its low priority. Alternative 2 is within the Sherman Lake-Sacramento River and Wooden Valley Creek-Frontal Suisun Bay Estuaries watersheds and would cross several unnamed drainages (Figure 4.10-12). Alternative 2 staging yard and PG&E 500 kV interconnection line structures would overlap unnamed drainages and the LSPGC 230 kV overhead line would cross three unnamed drainages based on USGS National Hydrography Data (2025), as shown in Figure 4.10-13. No field surveys could be performed to verify the locations of waters of the State or wetlands in proximity to Alternative 2 due to LSPGC lack of site access to perform field surveys. Alternative 2 would not be located within FEMA flood hazard zones (with the exception of minor portions of temporary work areas), as shown in Figure 4.10-14.

Impact Analysis – Alternative 2

Alternative 2 would not occur in a flood hazard, tsunami, or seiche zone, and would have no impact on release of pollutants due to inundation (Impact HYD-4). The Alternative 2 impact on water quality (Impact HYD-1), groundwater management (Impact HYD-2), drainage patterns (Impact HYD-3), and a water quality control plan or sustainable groundwater management plan (Impact HYD-5) are discussed below.

Impact HYD-1: Would Alternative 2 violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality? *(Less than significant with mitigation)*

Construction

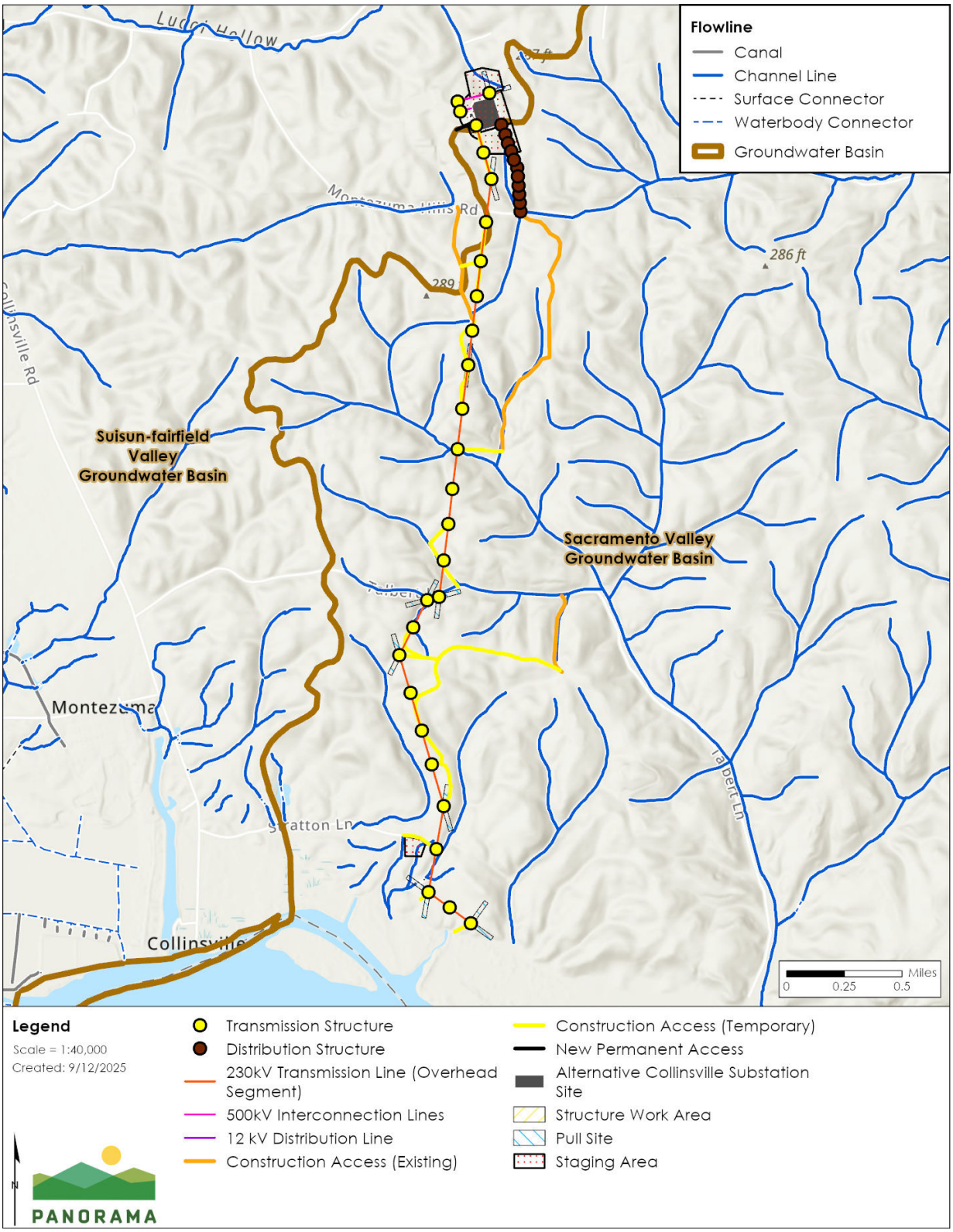
The Alternative 2 staging yard, LSPGC 230 kV overhead segment access roads and pulling sites, PG&E 500 kV interconnection line TSPs, and a PG&E 12 kV distribution pole appear to be located within unnamed drainages that are potential waters of the State (Figure 4.10-13). Grading for the substation, staging yard, LSPGC 230 kV overhead segment, PG&E 500 kV interconnection lines, and 12 kV distribution line work areas could result in discharge of fill materials to waters of the State resulting in violation of waste discharge requirements. MM

Figure 4.10-12 Hydrologic Features in Proximity to Alternative 2



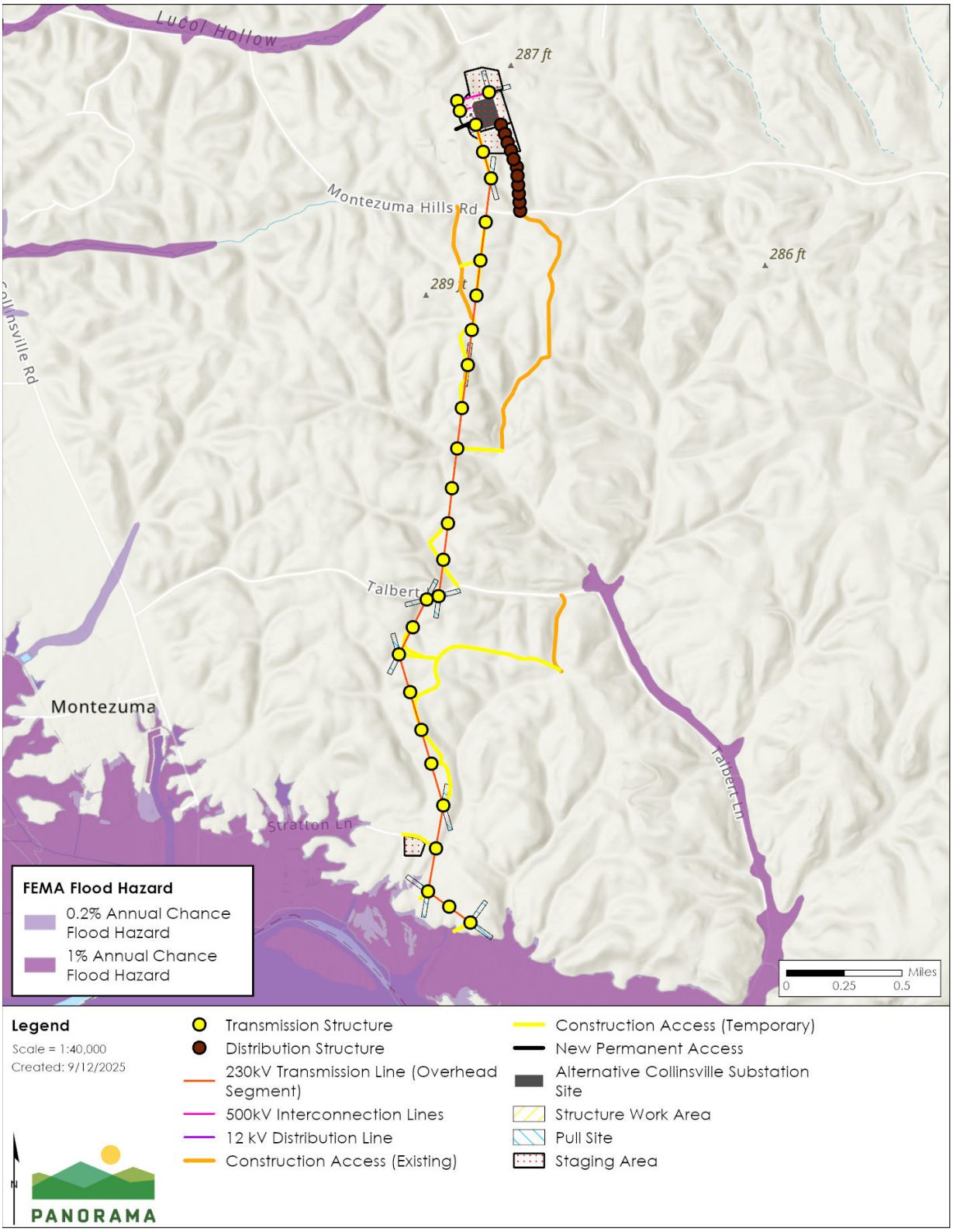
Source:(USGS 2023)

Figure 4.10-13 Surface Waterbodies in Proximity to Alternative 2



Source: ((U.S. Geological Survey (USGS) 2025)

Figure 4.10-14 FEMA Flood Zones in Proximity to Alternative 2



Source:(FEMA)2018)

HYD-1 (refer to Section 4.10.13) requires completion of an aquatic resource delineation prior to any Alternative 2 construction activities; avoidance and minimization of impacts on waters of the State where feasible, and compensatory mitigation for any unavoidable impacts in compliance with the *State Policy for Water Quality Control: State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State* (2021). MM HYD-1 (refer to Section 4.10.13) also requires that a State Water Resources Control Board permit and associated waste discharge requirements be obtained prior to any discharge to waters of the State. Because MM HYD-1 requires LSPGC and/or PG&E as applicable to obtain and comply with waste discharge requirements for any discharges of fill materials to waters of the State, the impact from violation of waste discharge requirements would be less than significant with mitigation.

The Alternative 2 LSPGC Collinsville Substation would be located on a hillslope. Grading would be required to levelized the hill slope and construct a flat substation pad. The additional grading could result in increased potential for soil erosion and associated water quality impacts. Similar to the Proposed Project, the Alternative 2 substation site is located within an area that drains to a waters of the U.S. and thus LSPGC would be required to obtain coverage under the Construction Stormwater General Permit prior to construction activities at the site. In compliance with the Construction Stormwater General Permit, LSPGC would need to prepare a SWPPP that defines specific sediment and erosion control BMPs including slope stabilization materials (e.g., erosion control matting, soil binders, revegetation, etc.) to minimize sediment and erosion. Similar to the Proposed Project, LSPGC would store hazardous materials within the substation site. LSPGC would be required to prepare an HMMP, HMBP, and SPCC for storage and use of hazardous materials. Through compliance with State and federal laws for the protection of water quality, Alternative 2 construction would have a less than significant impact on water quality.

Operation and Maintenance

Similar to the Proposed Project, Alternative 2 would not require grading or earthwork in new areas during operation and would not involve any activities that could violate waste discharge requirements. The detention basin at the Alternative 2 substation site would need to be designed to meet State requirements in the Construction Stormwater General Permit. LSPGC would also be required to comply with State and federal requirements for hazardous materials storage, including preparation of an HMBP and SPCC for the substation site. Similar to the Proposed Project, LSGPC and PG&E would comply with State and federal requirements for herbicide use. Due to compliance with State and federal laws protecting water quality, the impact on water quality during operation and maintenance would be less than significant.

Impact HYD-2: Would Alternative 2 substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin? *(Less than significant)*

The water demand for Alternative 2 would be approximately 28 percent greater than the Proposed Project due to a 23 percent increase in grading and compaction at the substation site and a substantial increase in the LSPGC 230 kV overhead line construction. The total estimated water demand would be 22.3 AF over the 27-month construction period. Similar to the

Proposed Project as discussed in Impact HYD-2, potential water supply sources during construction include an existing SMUD groundwater well within the Solano wind farm (within the Solano Subbasin), SCWA, or the City of Rio Vista (groundwater wells within the Solano Subbasin). Historical and projected water budgets developed for the Solano subbasin indicates surplus groundwater conditions (Solano Subbasin Groundwater Sustainability Agency [Solano GSA] 2021). According to the Solano Basin Groundwater Sustainability Plan, the sustainable yield of the basin is 190,000 AFY and the average annual use of water is 180,000 AFY (Solano Collaborative 2021). Similarly, the SCWA Five-Year Water Management Plan indicated SCWA's total Solano Project entitlement is 207,350 AF per year, while actual deliveries in 2017 totaled 140,605 acre-feet, indicating a surplus of approximately 66,745 AF. And the City of Rio Vista pumped 733 million gallons of groundwater in 2024. Based on the potential for multiple sources of supply and the overall surplus of water in the area, Alternative 2 construction water demand of 20.4 AF would not substantially decrease groundwater supplies or interfere with groundwater recharge that may impede sustainable groundwater management of the basin. Similar to the Proposed Project, Alternative 2 operation would not create any demand for water supply. As a result, the impact of Alternative 2 on groundwater supplies, groundwater recharge and sustainable groundwater management would be less than significant.

Impact HYD-3: Would Alternative 2 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? ***(Less than significant with mitigation)***

Construction

The Alternative 2 staging yard, LSPGC 230 kV overhead segment access roads and pulling sites, PG&E 500 kV interconnection line TSPs, and a PG&E 12 kV distribution pole appear to be located within unnamed drainages (Figure 4.10-12). Grading required for Alternative 2 construction occurring within unnamed drainages has the potential to alter the course of a stream, which could result in substantial erosion causing a significant impact. MM HYD-1 (refer to Section 4.10.13) requires LSPGC and PG&E to avoid drainages to the extent feasible through relocation of poles and associated work areas to avoid the drainage. Because the drainages are not extensive and pole locations can be adjusted in subsequent design, LSPGC and PG&E would be able to design the Alternative 2 poles and work areas to avoid redirecting drainages. The resulting impact on erosion and siltation from redirecting the course of a stream would be less than significant with mitigation.

The preliminary layout for the Alternative 2 substation site does not include a grading plan or design for the detention basin; however, given the hilly topography in the area, grading is anticipated to exceed the grading at the Proposed Project location. While the Alternative 2 substation would require increased grading, LSPGC would be required to comply with the requirements of the Construction Stormwater General Permit including preparation of a SWPPP and implementation of stormwater BMPs (e.g., erosion control matting, soil binders, revegetation, etc.) to control erosion and siltation. In addition, LSGPC would need to obtain a

grading permit from Solano County, which includes review of the grading design. Through compliance with State, federal, and local requirements for stormwater management, impacts from erosion or siltation during construction of the Alternative 2 substation would be less than significant.

Operation and Maintenance

Similar to the Proposed Project, no Alternative 2 activities would occur outside of the permanent disturbance area at the substation, LSPGC 230 kV overhead segment, PG&E 500 kV interconnection lines, and PG&E 12 kV distribution line. The substation would introduce approximately 12 acres of impervious surfaces to the area, which could increase runoff in a manner that results in erosion or siltation off site. The Construction Stormwater General Permit includes requirements for post-construction BMPs and management of runoff to avoid erosion. In addition, similar to the Proposed Project, LSPGC would need to obtain a grading permit from Solano County for the Alternative 2 substation and Solano County would enforce the low impact development design requirements under Provision E.12 of the Phase II NPDES MS 4 permit (Bay Area Stormwater Management Agencies Association Phase II Committee 2014). Because the Alternative 2 substation would be designed in accordance with State, federal, and local requirements for management of post-construction stormwater runoff, the Alternative 2 substation would not cause substantial erosion or siltation and the impact would be less than significant.

(ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite? *(Less than significant)*

Construction

Similar to Proposed Project construction activities, Alternative 2 would not increase the rate or amount of surface runoff in a manner that would result in flooding on-or offsite. No impact would occur. Impacts from change in impervious surface cover at the site are addressed under the operation analysis below.

Operation and Maintenance

Similar to the Proposed Project, the Alternative 2 substation would introduce approximately 12 acres of impervious surfaces. The increase in impervious surface could increase surface runoff. The Construction Stormwater General Permit includes requirements for post-construction BMPs and management of runoff to avoid offsite increase in runoff and flooding. In addition, similar to the Proposed Project, LSPGC would need to obtain a grading permit from Solano County for the Alternative 1 substation and Solano County would enforce the low impact development design requirements under Provision E.12 of the Phase II NPDES MS 4 permit (Bay Area Stormwater Management Agencies Association Phase II Committee 2014) which also require no increase in offsite runoff. Because the Alternative 2 substation would be designed in accordance with State, federal, and local requirements for management of post-construction stormwater runoff, the Alternative 2 substation would not cause flooding on or off-site and the impact would be less than significant.

(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? ***(Less than significant)***

Construction

Similar to the Proposed Project, Alternative 2 construction would involve use and storage of hazardous materials at the substation site. LSPGC would be required to prepare an HMBP, HMMP, and SPCC for use and storage of hazardous materials. Both LSPGC and PG&E would be required to comply with the Construction Stormwater General Permit and clean up any spills of hazardous materials generated during construction. Through compliance with State and federal requirements for management of hazardous materials, Alternative 2 construction would not create or contribute runoff water that would provide substantial additional sources of polluted runoff and the impact would be less than significant.

Operation

Similar to the Proposed Project, the Alternative 2 substation would contain mineral oil in the transformers and hazardous materials would be stored at the substation site. In addition, herbicides would be used for vegetation management for the PG&E 500 kV interconnection lines, LSPGC 230 kV overhead segment, and PG&E 12 kV distribution line. Similar to the Proposed Project, Alternative 2 hazardous material storage would need to comply with State and federal requirements for hazardous materials management including preparation of an HMBP and SPCC for the material storage and application of herbicides by a CDPR licensed qualified applicator. Because the hazardous materials would be stored and used in compliance with State and federal requirements to prevent hazardous materials from entering waterways, Alternative 2 would not create or contribute to runoff water that provides substantial additional sources of polluted runoff and the impact would be less than significant.

(iv) impede or redirect flood flows? ***(No impact)***

None of the Alternative 2 structures or work areas are located within a floodplain. Alternative 2 construction and operation and maintenance would thus not impede or redirect flood flows and no impact would occur.

Impact HYD-5: Would Alternative 2 conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan? ***(No impact)***

As discussed in Impact HYD-1, construction of Alternative 2 would not result in the violation of any water quality standards or substantially impact water quality. Construction of Alternative 2 would therefore not conflict with the Solano Basin Plan, which was adopted to protect water quality. As discussed in Impact HYD-2, groundwater may be encountered and/or utilized during construction of the Proposed Project; however, use of or discharge of groundwater would be in coordination with the Solano Basin 2022 Groundwater Sustainability Plan. According to the Solano Basin Groundwater Sustainability Plan, the sustainable yield of the basin is 190,000 AFY and the average annual use of water is 180,000 AFY (Solano Collaborative 2021). Therefore, sufficient groundwater supply exists to accommodate the anticipated water use of 22.3 AF, as described in HYD-2. As with the Proposed Project, Alternative 2 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. As with the Proposed Project, Alternative 2 construction would not involve activities that would conflict with a Basin Plan, and the use of up to 22.3 AF of water over a 27-month period during construction would not conflict with a GSP. Therefore, Alternative 2 construction would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan, and there would be no impact.

As discussed in Impact HYD-1, operation and maintenance of Alternative 2 would not violate any water quality standards or substantially impact water quality and would therefore not conflict with the Solano Basin Plan. As discussed in Impact HYD-2, operation and maintenance of Alternative 2 would not create a demand for groundwater and would therefore not conflict with a sustainable groundwater management plan. No impact from conflicts with a water quality control plan or sustainable groundwater management plan would occur.

4.10.8 Alternative 3: 500 kV Interconnection Lines on Entirely TSPs

Environmental Setting – Alternative 3
Alternative 3 involves constructing the PG&E 500 kV interconnection lines on entirely TSPs, instead of the combination of LSTs and three-pole TSPs under the Proposed Project. The 500 kV interconnection lines would be in the same general alignment as the Proposed Project PG&E 500 kV interconnection lines. Alternative 3 would not involve changes to any of the other Proposed Project components, which would have the same impacts as described throughout this Draft EIR for the Proposed Project or the other alternatives if selected in combination with Alternative 3.

The environmental setting for Alternative 3 is the same as the setting for the PG&E 500 kV interconnection lines addressed in Section 4.10.1.

Impact Analysis – Alternative 3
Alternative 3 involves changes to PG&E 500 kV interconnection lines structures, occurring within the same general alignment as the Proposed Project, on the southern side of the Delta within Solano County. The impacts would be the same as those described for the PG&E project components in Section 4.10.4 and would be less than significant with implementation of BMPs, APMs and CMs.

4.10.9 Alternative 4: 230 kV Overhead and Submarine Segment Alternative Route

Environmental Setting – Alternative 4
Alternative 4 involves relocation of a short segment of the LSPGC 230 kV overhead segment between the proposed LSPGC Collinsville Substation and the Delta, west of the proposed LSPGC 230 kV overhead segment route. Additionally, the northern end of the LSPGC 230 kV submarine segment would be rerouted to meet up with the southern end of the Alternative 4 230 kV submarine segment. Alternative 4 would not involve changes to any of the other

Proposed Project components, which would have the same impacts as described throughout this Draft EIR for the Proposed Project or the other alternatives if selected in combination with Alternative 4.

Alternative 4 is within the same watershed and groundwater basin as the Proposed Project. Alternative work areas and poles are located in proximity to waters of the State as shown in Figure 4.10-15. One of the Alternative 4 LSPGC 230 kV overhead poles, the riser structures, and LSPGC 230 kV submarine segment are located within a FEMA floodplain as shown in Figure 4.10-16. Two of the Alternative 4 pole work areas would be located within unnamed drainage swales that could be waters of the State as shown in Figure 4.10-17 below.

Impact Analysis – Alternative 4

The water demand of Alternative 4 would be the same as the Proposed Project and the impact on groundwater management (Impact HYD-2) and a water quality control plan or sustainable groundwater management plan (Impact HYD-5) would be the same as those described for the LSPGC project components in Section 4.10.4. The Alternative 4 impacts on water quality (Impact HYD-1), drainage patterns (Impact HYD-3), and release of pollutants due to inundation (Impact HYD-4) are discussed below.

Impact HYD-1: Would Alternative 4 violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality? *(Less than significant with mitigation)*

Construction

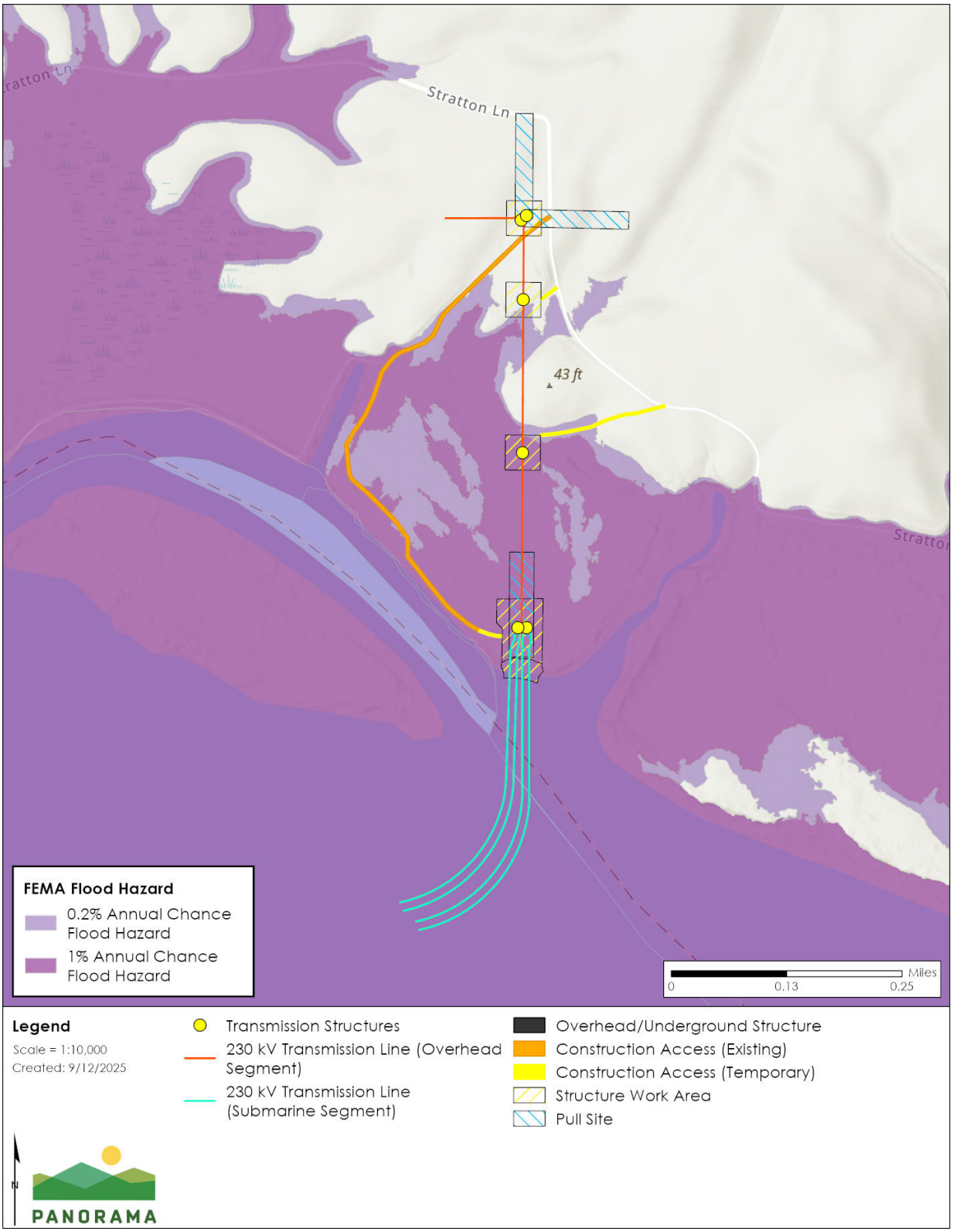
Two of the LSPGC 230 kV TSPs and associated pull sites and construction access locations under Alternative 4 appear to be located within unnamed drainages based on available data (Figure 4.10-17). A preliminary assessment of wetlands was completed on the Alternative 4 LSPGC 230 kV overhead segment alignment and access areas (Insignia Environmental 2025b); however a formal wetland delineation was not completed. The preliminary assessment of wetlands indicates that temporary construction access, the proposed riser structures, and the work area for the riser structures and onshore portion of the submarine segment are located within potentially jurisdictional wetlands, which are waters of the State (Figure 4.10-15). Construction of the LSPGC 230 kV overhead segment, riser structures, and submarine segment would result in discharge of fill materials to waters of the State, which could violate waste discharge requirements if LSPGC did not obtain the required permit from the SWRCB. MM HYD-1 (refer to Section 4.10.13) requires completion of an aquatic resource delineation prior to any construction activities for Alternative 4. MM HYD-1 would also require avoidance and minimization of impacts on waters of the State where feasible, and compensatory mitigation for any unavoidable impacts in compliance with the State Policy for Water Quality Control: State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State (2021). Additionally, MM HYD-1 also requires that a State Water Resources Control Board permit and associated waste discharge requirements be obtained prior to any discharge to

Figure 4.10-15 Hydrologic Features in Proximity to Alternative 4



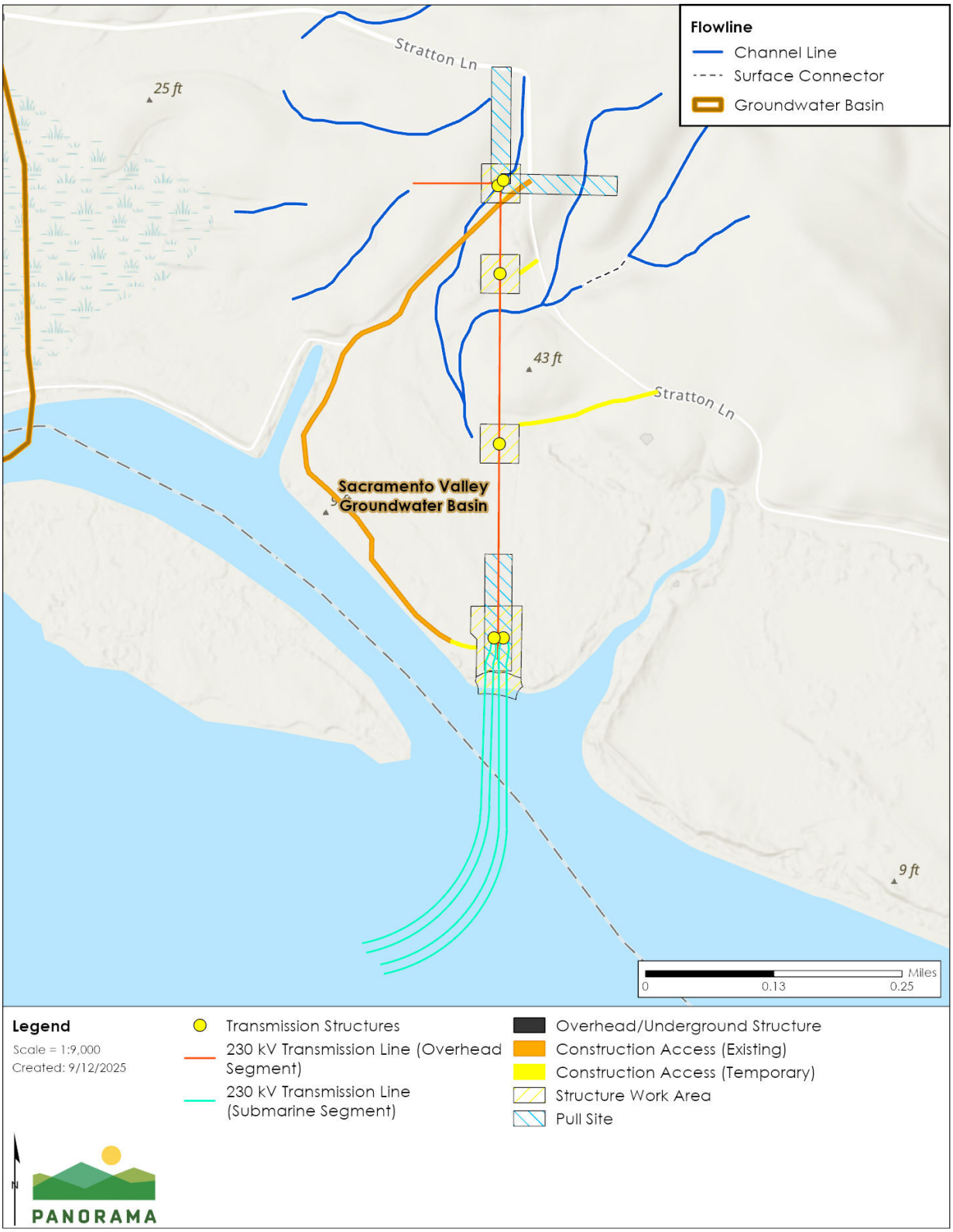
Source: (Insignia Environmental 2025b)

Figure 4.10-16 FEMA Flood Zones in Proximity to Alternative 4



Source: (Federal Emergency Management Agency (FEMA) 2018)

Figure 4.10-17 Surface Water in Proximity to Alternative 4



Source: (USGS 2025)

waters of the State. Because MM HYD-1 requires LSPGC to obtain and comply with waste discharge requirements for any discharges of fill materials to waters of the State, the impact from violation of waste discharge requirements would be less than significant with mitigation.

Operation and Maintenance

Similar to the Proposed Project, Alternative 4 would not require grading or earthwork in new areas during operation and would not involve any activities that could violate waste discharge requirements. Similar to the Proposed Project, LSGPC and PG&E would comply with State and federal requirements for herbicide use. Due to compliance with State and federal laws protecting water quality, the impact on water quality during operation and maintenance would be less than significant.

Impact HYD-3: Would Alternative 4 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? ***(Less than significant with mitigation)***

Construction

The Alternative 4 LSPGC 230 kV overhead segment existing access roads and proposed pulling sites, and two transmission structures appear to overlap an unnamed drainage (Figure 4.10-17). Grading for Alternative 4 construction overlapping unnamed drainages have the potential to alter the course of a stream, which could result in substantial erosion causing a significant impact. MM HYD-1 (refer to Section 4.10.13) requires LSPGC and PG&E to avoid drainages to the extent feasible through relocation of poles and associated work areas to avoid the drainage. Because the drainages are not extensive and pole locations can be adjusted in subsequent design, LSPGC and PG&E would be able to design the Alternative 4 poles and work areas to avoid redirecting drainages. The resulting impact on erosion and siltation from redirecting the course of a stream would be less than significant with mitigation.

Operation and Maintenance

Similar to the Proposed Project, no Alternative 4 activities would occur outside of the permanent disturbance area at the LSPGC 230 kV overhead segment. The Construction Stormwater General Permit includes requirements for post-construction BMPs and management of runoff to avoid erosion. In addition, similar to the Proposed Project, LSPGC would need to obtain a grading permit from Solano County for the Alternative 1 substation and Solano County would enforce the low impact development design requirements under Provision E.12 of the Phase II NPDES MS 4 permit (Bay Area Stormwater Management Agencies Association Phase II Committee 2014). Because the Alternative 4 LSPGC 230 kV overhead segment would be designed in accordance with State, federal, and local requirements for management of post-construction stormwater runoff, the Alternative 4 LSPGC 230 kV overhead segment would not cause substantial erosion or siltation and the impact would be less than significant.

(ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite? ***(Less than significant)***

Construction

Construction of Alternative 4 would not increase the rate or amount of surface runoff in a manner that would result in flooding on-or offsite. No impact would occur. Impacts from change in impervious surface cover at the site are addressed under the operational analysis below.

Operation and Maintenance

The four Alternative 4 LSPGC 230 kV transmission structures would introduce small amounts of impervious surfaces. The increase in impervious surface would be minor and would be separated by pervious areas. As a result, the increase in impervious surface from the four LSPGC 230 kV structures would not cause flooding on or off-site and the impact would be less than significant.

(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? ***(Less than significant)***

Construction

No storage of hazardous materials would occur within the Alternative 4 work areas. Construction equipment used to construct Alternative 4 would contain hazardous materials such as fuel. Alternative 4 construction would need to comply with State and federal requirements for management of hazardous materials, including cleanup of any spills of hazardous materials Due to cleanup of any spills of hazardous materials, Alternative 4 construction would not create or contribute runoff water that would provide substantial additional sources of polluted runoff and the impact would be less than significant.

Operation

No hazardous materials would be stored at the Alternative 4 site during operation. Herbicides would be used for vegetation management for Alternative 4. Application of herbicides would need to be conducted by a CDPR licensed qualified applicator under State law. Because the hazardous materials would be used in compliance with State and federal requirements to prevent hazardous materials from entering waterways, Alternative 4 would not create or contribute to runoff water that provides substantial additional sources of polluted runoff and the impact would be less than significant.

(iv) impede or redirect flood flows? ***(Less than significant)***

Three Alternative 4 structures including one overhead structure and two riser poles are located within a floodplain. The Alternative 4 poles would each be up to 10 feet in diameter. The poles would also be spaced apart and would not create a solid barrier to flood flows. Due to the small overall area occupied by the three poles within the floodplain and the separation between the poles, Alternative 4 would not impede or redirect flood flows and the impact would be less than significant.

Impact HYD-4: Would Alternative 4 be located within a flood hazard, tsunami, or seiche zones, and risk release of pollutants due to project inundation? *(Less than significant)*

Alternative 4 is not located in a seiche or tsunami zone. The majority of Alternative 4 would be located within a flood hazard zone, as shown in Figure 4.10-16 (FEMA 2025). No hazardous materials would be stored within the Alternative 4 area because all hazardous materials would be stored at the LSPGC Collinsville Substation. Therefore, the likelihood that pollutants would be released due to inundation during Alternative 4 construction or operation and maintenance is very low. Construction would not occur during flooding and any hazardous material spills in work areas would be contained and removed in compliance with the Construction General Permit. Accordingly, impacts from release of pollutants due to inundation would be less than significant.

4.10.10 Alternative 5: 230 kV Submarine Segment Alternative Route

Environmental Setting – Alternative 5

Alternative 5 involves rerouting a portion of the proposed LSPGC 230 kV submarine segment to the east of its current alignment as it approaches the southern shoreline in Pittsburg. The submarine segment cable would be installed in the same manner as the Proposed Project. Alternative 5 would not involve changes to any of the other Proposed Project components, which would have the same impacts as described throughout this Draft EIR for the Proposed Project or the other alternatives if selected in combination with Alternative 5.

The environmental setting for hydrology and water quality for Alternative 5 is the same as the setting for the LSPGC 230 kV submarine segment addressed in Section 4.10.1 as Alternative 5 is located within the Sacramento-San Joquin River Delta.

Impact Analysis – Alternative 5

Alternative 5 impacts on hydrology and water quality would be similar to those described for the LSPGC 230 kV submarine segment in Section 4.10.4; however, Alternative 5 would require site preparation for two weeks in the year prior to cable installation. The additional site preparation work for Alternative 5 would generate turbidity from dredging within the Delta. The turbidity impact would be similar to the Proposed Project submarine segment installation, but would extend the duration of the impact to the two-week site preparation period. As with the Proposed Project submarine segment, the impacts would be less than significant due to compliance with State regulations and permits and with implementation of BMPs, APMs and CMs.

4.10.11 Alternative 6a/6b: Underground 230 kV Transmission Line within Suisun Marsh Protection Plan Management Area and Submarine Segment

Environmental Setting – Alternative 6a/6b

Alternative 6a/6b would locate the LSPGC 230 kV transmission line on primarily PG&E-owned property south of the proposed Collinsville Substation site (similar to Alternative 4). Alternative 6a/6b would be installed in conduit underground. Alternative 6a differs from Alternative 6b

only at the northern end of the segment where options are provided for connection to the Proposed Project Collinsville Substation or Alternatives 1 or 2. Two overhead riser structures would be installed at the northern end of the Alternative 6a/6b underground duct bank where the LSPGC 230 kV line would transition between an overhead and underground position. Alternative 6a/6b would not involve changes to any of the other Proposed Project components, which would have the same impacts as described throughout this Draft EIR for the Proposed Project or the other alternatives if selected in combination with Alternative 6a/6b.

Alternative 6a/6b is located within the same watershed and groundwater basin as the Proposed Project described in Section 4.10.1. Water resources in proximity to Alternative 6a/6b are shown in Figure 4.10-18 and Figure 4.10-19. The majority of the Alternative 6a/6b underground duct bank and access roads are located within a FEMA floodplain (Figure 4.10-20 and Figure 4.10-21). The underground duct bank and access road cross an unnamed drainage as shown in Figure 4.10-22 and Figure 4.10-23, which is a potential waters of the State.

Impact Analysis – Alternative 6a/6b

Alternative 6 a/b impacts on water quality (Impact HYD-1), groundwater management (Impact HYD-2). drainage patterns (Impact HYD-3), release of pollutants due to inundation (Impact HYD-4), and a water quality control plan or sustainable groundwater management plan (Impact HYD-5) are discussed below are discussed below.

Impact HYD-1: Would Alternative 6a/6b violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality? *(Less than significant with mitigation)*

Construction

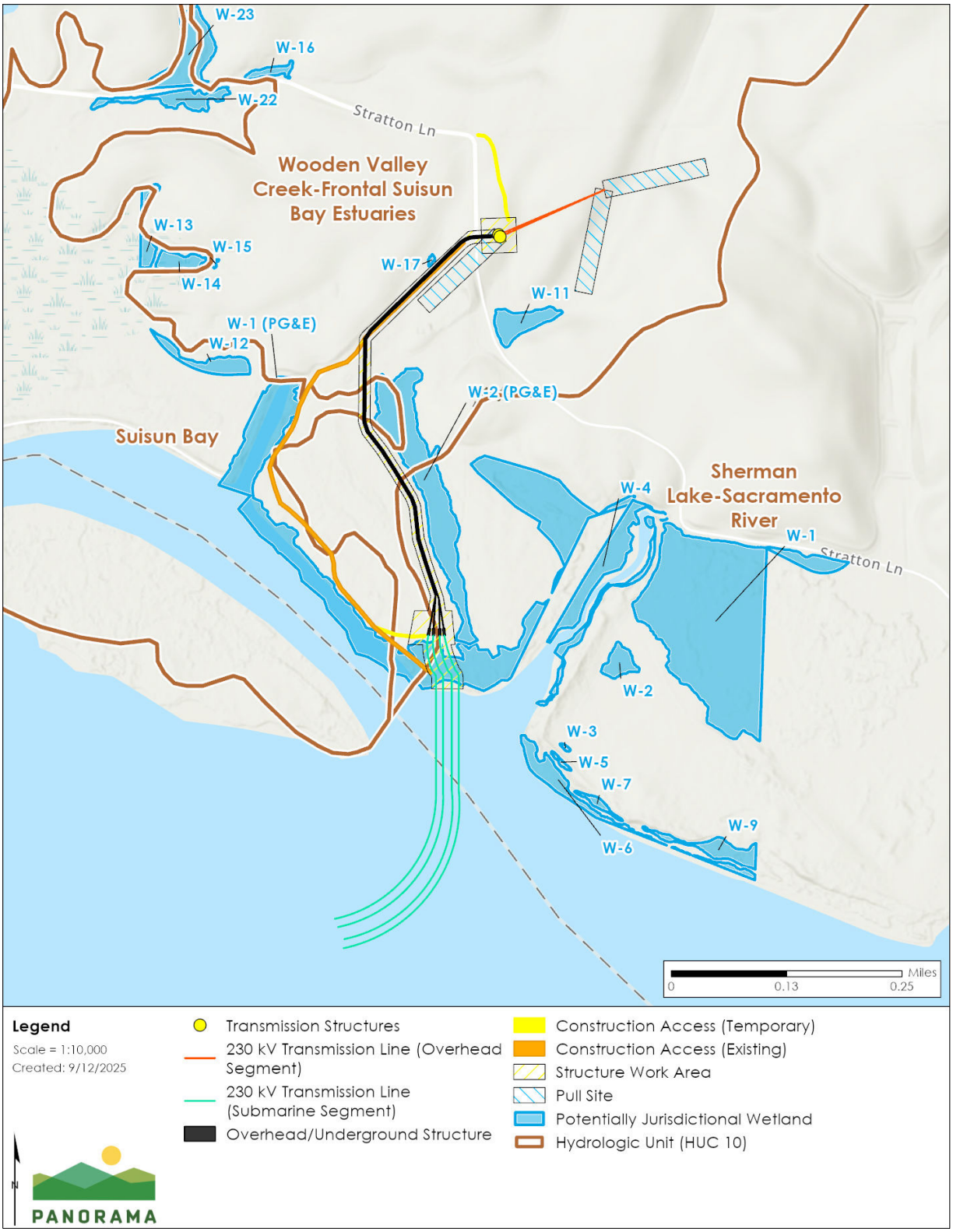
The Alternative 6a/6b access road and duct bank would be constructed across an unnamed drainage that may be a waters of the State (Figure 4.10-22 and Figure 4.10-23). The duct bank for the submarine cable transition on land would occur in potential wetlands based on the preliminary delineation as shown in Figure 4.10-18 and Figure 4.10-19 (Insignia Environmental 2025b). Grading and excavation for the LSPGC 230 kV underground segment and work areas could result in discharge of fill materials to waters of the State resulting in violation of waste discharge requirements. MM HYD-1 (refer to Section 4.10.13) requires completion of an aquatic resource delineation prior to any Alternative 6a/6b construction activities; avoidance and minimization of impacts on waters of the State where feasible, and compensatory mitigation for any unavoidable impacts in compliance with the State Policy for Water Quality Control: State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State (2021). MM HYD-1 also requires that a State Water Resources Control Board permit and associated waste discharge requirements be obtained prior to any discharge to waters of the State. Because MM HYD-1 requires LSPGC and/or PG&E as applicable to obtain and comply with waste discharge requirements for any discharges of fill materials to waters of the State, the impact from violation of waste discharge requirements would be less than significant with mitigation.

Figure 4.10-18 Hydrologic Features in Proximity to Alternative 6a



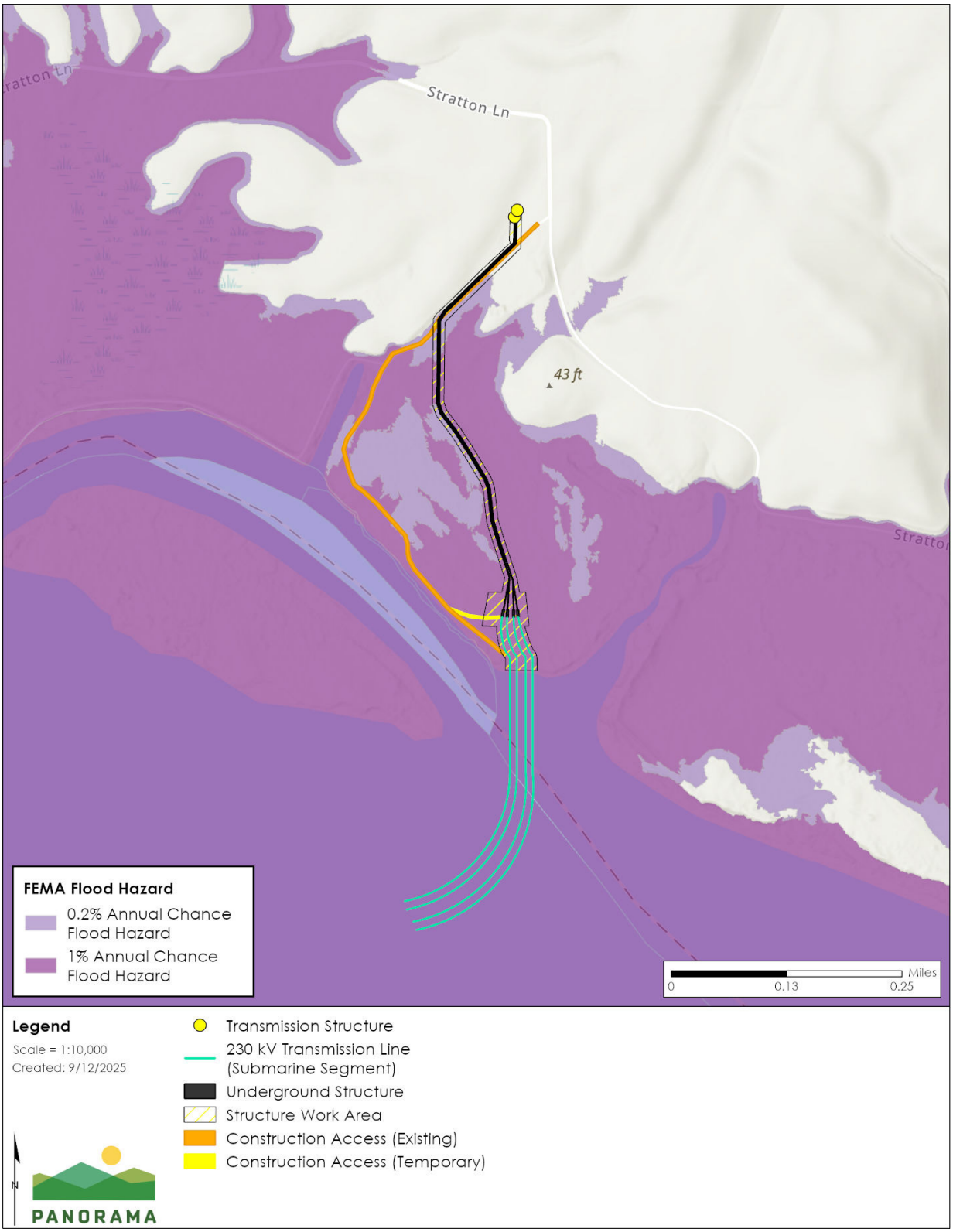
Source: (Insignia Environmental 2025b)

Figure 4.10-19 Hydrologic Features in Proximity to Alternative 6b



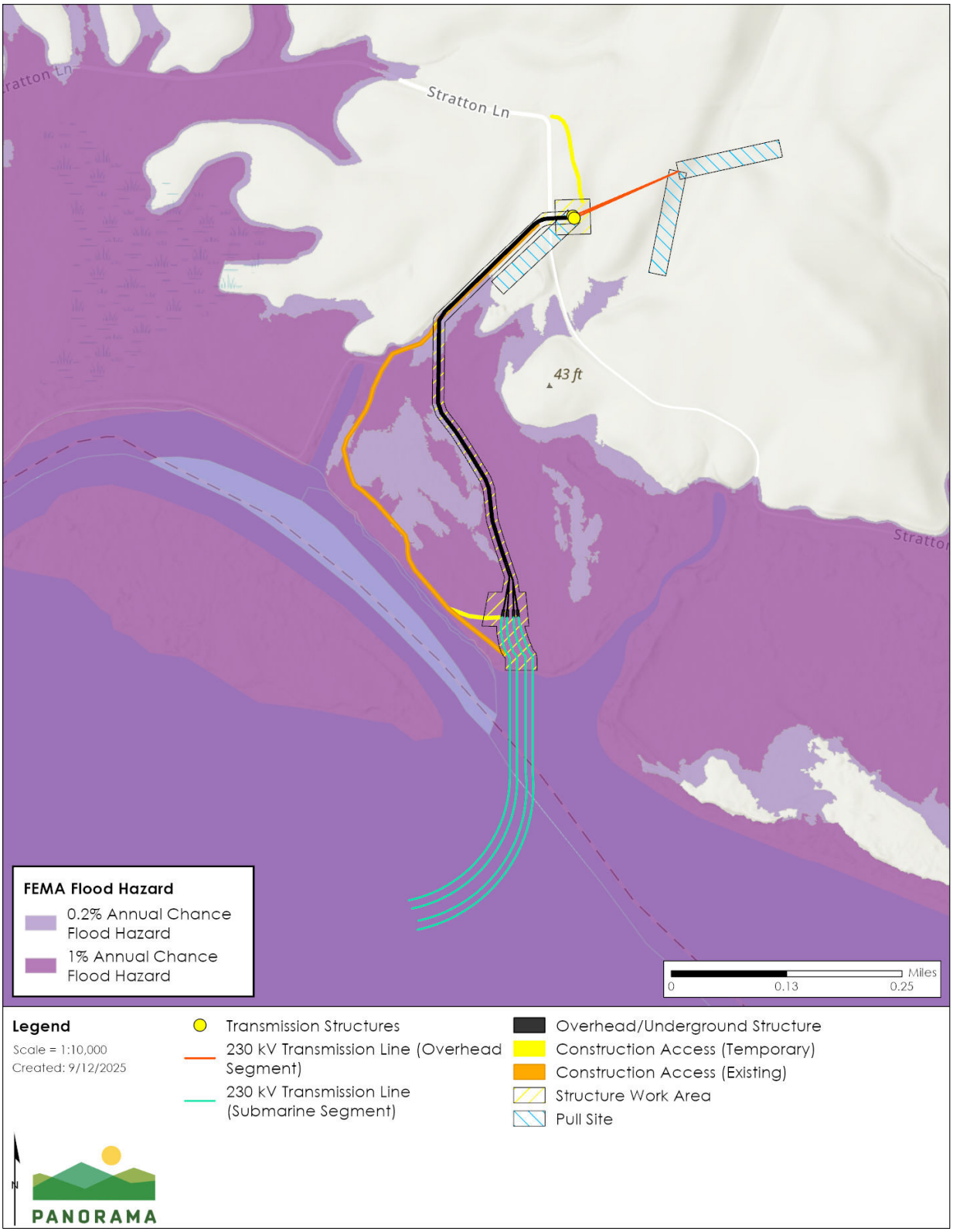
Source: (Insignia Environmental 2025b)

Figure 4.10-20 FEMA Flood Zones in Proximity to Alternative 6a



Source: (FEMA 2018)

Figure 4.10-21 FEMA Flood Zones in Proximity to Alternative 6b



Source: (Federal Emergency Management Agency (FEMA) 2018)

Figure 4.10-22 Surface Water in Proximity to Alternative 6a



Source: (U.S. Geological Survey (USGS) 2025)

Figure 4.10-23 Surface Water in Proximity to Alternative 6b



Source: (U.S. Geological Survey (USGS) 2025)

Operation and Maintenance

Alternative 6a/6b duct bank would be located below ground. Dewatering of the vaults and duct bank would be required during inspections and would be conducted using sump pumps, which would result in discharge of water. The typical constituents found in utility vault and underground structure discharges are oil and grease, petroleum hydrocarbons, and total suspended solids. Management of water removed from the vaults and duct bank would need to be in accordance with federal, State, and local laws and regulations for protection of water quality including General NPDES Permit for Discharges from Utility Vaults and Underground Structures (Order WQ 2014-0174-DWQ). The General Permit requires utilities to file an application for coverage under the general order and to prepare a Pollution Prevention Plan for the protection of water quality. Due to compliance with State and federal laws protecting water quality, the impact on water quality during operation and maintenance would be less than significant.

Impact HYD-2: Would Alternative 6a/6b substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin? *(Less than significant)*

Under Alternative 6a/6b, excavation for the approximately 0.5-mile duct bank and access roads would require approximately 0.9 AF based on the estimated total excavation and backfill of 5,100 CY (6a) or 5,400 CY (6b). Table 4.10-4, below, provides the total estimated water usage as well as the percentage increase compared with the Proposed Project for each Alternative 6a/6b scenario.

Table 4.10-4 Water Use for Alternative 6a/6b

	Water use (AF)	Increase compared with Proposed Project
Alternative 6a with Proposed Project	18.3	5%
Alt 6b with same substation site as Alternative 1	28.2	62%
Alternative 6b with same substation site as Alternative 2	23,2	33%

Similar to the Proposed Project as discussed in Impact HYD-2, potential water supply sources during construction include an existing SMUD groundwater well within the Solano wind farm (within the Solano Subbasin), SCWA, or the City of Rio Vista (groundwater wells within the Solano Subbasin). Historical and projected water budgets developed for the Solano subbasin indicates surplus groundwater conditions (Solano Subbasin Groundwater Sustainability Agency [Solano GSA] 2021). Similarly, the SCWA Five-Year Water Management Plan indicated SCWA's total Solano Project entitlement is 207,350 AF per year, while actual deliveries in 2017 totaled 140,605 acre-feet, indicating a surplus of approximately 66,745 AF. And the City of Rio Vista pumped 733 million gallons of groundwater in 2024. Based on the potential for multiple sources of supply and the overall surplus of water in the area, Alternative 6a/6b construction water demand of between 18.3 AF and 28.2 AF would not substantially decrease groundwater supplies or interfere with groundwater recharge that may impede sustainable groundwater

management of the basin. Alternative 6a/6b operation would not create any demand for water supply. As a result, the impact of Alternative 6a/6b on groundwater supplies, groundwater recharge and sustainable groundwater management would be less than significant.

Impact HYD-3: Would Alternative 6a/6b 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? ***(Less than significant)***

Construction

The Alternative 6a/6b 230 kV underground duct bank and access road cross an unnamed drainages, as shown in Figure 4.10-22 and Figure 4.10-23. Trenching for Alternative 6a/6b construction and use of the access road within the unnamed ephemeral drainages would not alter the course of a stream as the trench would be backfilled to match current grade after the duct bank has been installed. The resulting impact on erosion and siltation from redirecting the course of a stream would be less than significant.

Operation and Maintenance

Alternative 6a/6b would be located subsurface and would not alter the drainage pattern of the site or area. Alternative 6a/6b would also not introduce impervious surfaces as the duct bank would be covered with soil material. No impact from alteration of the course of a stream or river or addition of impervious surfaces in a manner that would result in substantial erosion or siltation would occur.

(ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite? ***(No impact)***

Alternative 6a/6b would be located below ground. The duct bank would be covered with soil material that would not increase the rate or amount of surface runoff in a manner that would result in flooding on- or offsite. No impact would occur.

(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? ***(Less than significant)***

Construction

No storage of hazardous materials would be stored within the Alternative 6a/6b work areas. Construction equipment used to construct Alternative 6a/6b would contain hazardous materials such as fuel. Alternative 6a/6b construction would need to comply with State and federal requirements for management of hazardous materials, including cleanup of any spills of hazardous materials. Through compliance with State and federal requirements for management of hazardous materials, Alternative 6 a/b 230 kV would not create or contribute runoff water that would provide substantial additional sources of polluted runoff and the impact would be less than significant.

Operation

Vegetation management would not be required for the LSPGC 230 kV underground segment, but would be required for the few overhead poles at the end of the underground segment. Similar to the Proposed Project, Alternative 6 a/b herbicide use for vegetation management would need to comply with State and federal requirements for hazardous materials management including preparation of an HMBP for the material storage and application of herbicides by a CDPR licensed qualified applicator. Because the hazardous materials would be stored and used in compliance with State and federal requirements to prevent hazardous materials from entering waterways, Alternative 6a/b would not create or contribute to runoff water that provides substantial additional sources of polluted runoff and the impact would be less than significant.

(iv) impede or redirect flood flows? *(No impact)*

None of the Alternative 6a/b above ground structures or work areas are located within a floodplain. Alternative 6a/6b duct bank and electrical cable would be buried within the floodplain. Alternative 6a/6b would thus not impede or redirect flood flows and no impact would occur.

Impact HYD-4: Would Alternative 6a/6b be located within a flood hazard, tsunami, or seiche zones, and risk release of pollutants due to project inundation? *(Less than significant)*

Alternative 6a/6b is not located in a seiche or tsunami zone. The majority of Alternative 6a/6b would be located within a flood hazard zone, as shown in Figure 4.10-20 and Figure 4.10-21 (FEMA 2025). No hazardous materials would be stored within the Alternative 6a/6b area because all hazardous materials would be stored at the Collinsville Substation. Therefore, the likelihood that pollutants would be released due to inundation during Alternative 6a/6b construction or operation and maintenance is very low. Construction would not occur during flooding and any hazardous material spills in work areas would be contained and removed in compliance with the Construction General Permit. Accordingly, impacts from release of pollutants due to inundation would be less than significant.

Impact HYD-5: Would Alternative 6a/6b conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan? *(No impact)*

Construction

Similar to the Proposed Project and as discussed in Impact HYD-1, construction of Alternative 6a/6b would not result in the violation of any water quality standards or substantially impact water quality. Construction of Alternative 6a/6b would therefore not conflict with the Solano Basin Plan, which was adopted to protect water quality. As discussed in Impact HYD-2, groundwater may be encountered and/or utilized during construction of the Proposed Project; however, use of or discharge of groundwater would be in coordination with the Solano Basin 2022 Groundwater Sustainability Plan. According to the Solano Basin Groundwater Sustainability Plan, the sustainable yield of the basin is 190,000 AFY and the average annual use of water is 180,000 AFY (Solano Collaborative 2021); therefore, sufficient groundwater supply exists to accommodate the anticipated water use of between 18.3 AF and 28.2 AF, as described

in HYD-2. 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. As with the Proposed Project, Alternative 6a/6b construction would not involve activities that would conflict with a Basin Plan, and the use of up to 28.2 AF of water over a 27-month period during construction would not conflict with a groundwater sustainability plan. Therefore, Alternative 6a/6b construction would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan, and there would be no impact.

Operation and Maintenance

As discussed in Impact HYD-1, operation and maintenance of Alternative 6a/6b would not violate any water quality standards or substantially impact water quality and would therefore not conflict with the Solano Basin Plan. As discussed in Impact HYD-2, operation and maintenance of Alternative 6a/6b would not create a demand for groundwater and would therefore not conflict with a sustainable groundwater management plan. No impact from conflicts with a water quality control plan or sustainable groundwater management plan would occur.

4.10.12 No Project Alternative

Environmental Setting – No Project Alternative

Under the No Project Alternative, the LSPGC Collinsville Substation and associated LSPGC 230 kV transmission line, PG&E 500 kV interconnection lines, and PG&E 12 kV distribution line would not be constructed. The existing hydrologic conditions described in Section 4.10.1 would apply to the No Project Alternative.

Impact Analysis – No Project Alternative

The No Project Alternative would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality (Impact HYD-1). The No Project Alternative would not decrease groundwater supplies or interfere with groundwater recharge and would not impede sustainable groundwater management (Impact HYD-2). The No Project Alternative would not alter existing drainage patterns, alter the course of a stream or river, or add any impervious surfaces (Impact HYD-3). The No Project Alternative would not be located in a flood hazard, tsunami, or seiche zone (Impact HYD-5), and would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan (Impact HYD-6). No hydrology or water quality impacts would occur under the No Project Alternative.

4.10.13 Mitigation Measures

LSPGC Mitigation Measures

MM HYD-1: Aquatic Resource Delineation, Avoidance, Minimization, and Mitigation

Prior to construction, LSPGC and PG&E shall submit to the CPUC an Aquatic Resources Delineation Report that documents the limits of waters of the State and waters of the U.S.

within the limits of the alternative work areas. Drainages shall be delineated in accordance with A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States: A Delineation Manual (2008) and wetlands shall be delineated in accordance with the U.S. Army Corps of Engineers Wetland Delineation Manual (1987) and Arid West Regional Supplement to the Corps of Engineers Wetland Delineation Manual (Version 2.0) (2008).

Where waters of the State or waters of the U.S. are located within the alternative work areas, an Aquatic Resource Avoidance and Minimization Plan shall be prepared. The Aquatic Resource Avoidance and Minimization Plan shall document strategies for avoidance and minimization of impacts on waters of the State and waters of the U.S. wherever feasible. Avoidance strategies would include relocating poles and associated work areas where feasible to provide a minimum buffer of 10 feet from the outer limits of the aquatic resource and installing fencing to avoid project activities from encroaching on the aquatic resource. Where avoidance isn't feasible, minimization strategies could include using matting or alternative construction techniques to minimize damage to the resource and avoiding grading within the resource limits.

Where avoidance of the resource is not feasible, the responsible party (LSPGC or PG&E) shall obtain any permits required under State (Porter Cologne Water Quality Control Act and Fish and Game Code) and federal law (Clean Water Act) from the State Water Resources Control Board, California Department of Fish and Wildlife, and U.S. Army Corps of Engineers for discharge of dredged or fill materials within the waters of the State or U.S. In addition, the responsible party shall provide compensatory mitigation for impacts on the aquatic resource through preservation, enhancement, or creation of aquatic resources in kind (same type of aquatic resource). The mitigation ratio shall be at a minimum ratio of 1:1 and may be greater depending on the type of mitigation proposed (creation, enhancement/restoration, or preservation), value of the impacted resource, and value of the mitigation resource. For any unavoidable impacts on aquatic resources, the responsible party shall submit an aquatic resource mitigation plan to the CPUC for review and approval no less than 30 days prior to construction within the aquatic resource. The aquatic resource mitigation plan shall meet the standards for compensatory mitigation as defined in the State Policy for Water Quality Control: State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State (2021). The responsible party shall submit evidence of successful mitigation to the CPUC through either record of purchase of mitigation lands at a mitigation bank or through an in-lieu fee program, or monitoring documenting that the compensatory mitigation has successfully compensated for the functions and values of the impacted resource per the approved mitigation plan.

PG&E Mitigation Measures

MM HYD-1. See above for full description of measure.

4.10.14 References

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4.11 Land Use and Planning

This section presents the environmental setting and analysis of impacts on land use and planning resulting from the Proposed Project and alternatives. This section describes existing land use and planning information, applicable regulations, and environmental impacts and provides mitigation measures to reduce or avoid significant effects for the Proposed Project and alternatives, where feasible.

The following scoping comments are relevant to the analysis of land use and planning as discussed in the Scoping Report (Appendix B):

- Concerns regarding whether the proposed transmission lines in upland areas would result in land use changes, such as new restrictions on what uses may occur.
- Encouragement to allow agricultural land uses to continue where possible, and the adoption of mitigation where agricultural land uses cannot continue including the preservation of equivalent or greater agricultural land that is lost.
- Concerns regarding potential conflicts with a sand and gravel mining lease area located within the Delta[1] that would be crossed by the proposed submarine segment of the LSPGC 230 kV transmission line.

The relevant scoping comments applicable to the land use and planning impact criteria have been addressed in this section. Potential impacts related to agricultural land uses are addressed in Section 4.2: Agriculture and Forestry. Potential impacts to existing mining activities are discussed further in Section 4.12: Mineral Resources.

4.11.1 Environmental Setting

Regional Setting

The Proposed Project is located within unincorporated areas of Solano County, Sacramento County, Contra Costa County, and Alameda County as well as areas within the City of Pittsburg in Contra Costa County. While the Proposed Project site is located within areas identified as Sacramento County, these areas occur with the Delta waterway where the proposed submarine segment of the LSPGC 230 kV transmission line alignment is located, and the Proposed Project would not coincide with Sacramento County parcels (Sacramento County, n.d.).

[1] CSLC-issued Lease 7781 for the extraction of sand and gravel for commercial use. CSLC is currently processing an application for a new 10-year lease for 7781, set for Commission consideration in late 2025 or early 2026, pending completion of a Supplemental EIR for the San Francisco Bay and Delta Sand Mining Project.

The California State Lands Commission (CSLC) has jurisdiction and management authority over all ungranted tidelands, submerged lands, and the beds of navigable lakes and waterways as well as certain residual and review authority for tidelands and submerged lands legislatively granted in trust to local jurisdictions (Pub. Resources Code §§ 6009, subd. (c); 6009.1; 6301; 6306) (CSLC n.d.).

In addition to the local general plan and zoning jurisdictions and the CSLC jurisdiction over the Delta water lands, other federal, state, and local agencies have special land use and planning jurisdictions where the Proposed Project site is located, largely due to the complex issues associated with Delta. The various land use and planning jurisdictions crossed by the Proposed Project site are listed in Table 4.11-1, Table 4.11-2, and Table 4.11-3 and shown in Figure 4.11-5 through Figure 4.11-7. Additional information about these jurisdictions and the associated planning documents are provided in Section 4.11.2 Regulatory Setting.

The Proposed Project site does not fall within a designated coastal zone management area, designated or proposed candidate national or state wild and scenic river, or national landmark.

Table 4.11-1 Federal Land Use and Planning Jurisdictions Crossed by the Proposed Project

Agency	Jurisdiction	Project components	Area/distance crossed [a]
United States Army Corps of Engineers (USACE)	Federal navigable waters	LSPGC 230 kV transmission line, submarine segment	4.5 miles
USACE	Sacramento navigation channel	LSPGC 230 kV transmission line, submarine segment	0.2 mile
USACE	Suisun Bay navigation channel	LSPGC 230 kV transmission line, submarine segment	0.1 mile

Notes:

[a] Areas and distances provided are approximate. The entire proposed property for the Collinsville Substation is included, and the PG&E Collinsville Substation Communication Yard is incorporated. Temporary construction work areas are not included in this table.

Source: (BOR 2011; USACE 2025)

Table 4.11-2 State Land Use and Planning Jurisdictions Crossed by the Proposed Project

Agency	Jurisdiction	Project components	Area/distance crossed [a]
California State Lands Commission (CSLC)	Ungranted tidelands, submerged lands, and beds of navigable lakes and waterways	LSPGC 230 kV transmission line, submarine segment	4.1 miles
San Francisco Bay Conservation and Development Commission (BCDC)	Suisun Marsh Protection Plan (SMPP) (Primary Management Areas)	LSPGC 230 kV transmission line, submarine segment	2.2 miles

Agency	Jurisdiction	Project components	Area/distance crossed [a]
BCDC	SMPP (Secondary Management Areas)	LSPGC Collinsville Substation	61.1-acre parcel
BCDC	SMPP (Secondary Management Areas)	LSPGC 230 kV transmission line, overhead segment	650 feet
BCDC	SMPP (Secondary Management Areas)	PG&E 500 kV interconnection lines	800 feet
BCDC	SMPP (Secondary Management Areas)	PG&E 12 kV distribution line	0.9 mile [b]
BCDC	San Francisco Bay Plan	LSPGC 230 kV transmission line, submarine segment	2.2 miles
Suisun Principal Agencies [c]	Suisun Marsh Habitat Management, Preservation, and Restoration Plan (SMPRP)	LSPGC 230 kV transmission line, submarine segment	1.9 miles
Delta Protection Commission (DPC)	Land Use and Resource Management Plan (Primary Zone)	LSPGC 230 kV transmission line, submarine segment	3.5 miles
Delta Stewardship Council (DSC)	Delta Plan (Suisun Marsh Priority Habitat Restoration Area)	LSPGC Collinsville Substation	61.1-acre parcel
Delta Stewardship Council (DSC)	Delta Plan (Suisun Marsh Priority Habitat Restoration Area)	LSPGC 230 kV transmission line, overhead segment	0.2 mile
Delta Stewardship Council (DSC)	Delta Plan (Suisun Marsh Priority Habitat Restoration Area)	PG&E 500 kV interconnection lines	800 feet
Delta Stewardship Council (DSC)	Delta Plan (Suisun Marsh Priority Habitat Restoration Area)	PG&E 12 kV distribution line	0.9 mile [b]
Delta Stewardship Council (DSC)	Delta Plan (Delta Primary Zone)	LSPGC 230 kV transmission line, submarine segment	3.5 miles
Delta Stewardship Council (DSC)	Delta Plan (Delta Secondary Zone)	LSPGC 230 kV transmission line, submarine segment	1 mile
Delta Stewardship Council (DSC)	Delta Plan (Delta Secondary Zone)	LSPGC Collinsville Substation	61.1-acre parcel
Delta Stewardship Council (DSC)	Delta Plan (Delta Secondary Zone)	LSPGC 230 kV transmission line, overhead segment	1.0 mile

Agency	Jurisdiction	Project components	Area/distance crossed [a]
Delta Stewardship Council (DSC)	Delta Plan (Delta Secondary Zone)	LSPGC 230 kV transmission line, underground segment	0.6 mile
Delta Stewardship Council (DSC)	Delta Plan (Delta Secondary Zone)	LSPGC telecommunication lines interconnection	2.5 miles
Delta Stewardship Council (DSC)	Delta Plan (Delta Secondary Zone)	PG&E 500 kV interconnection lines	800 feet
Delta Stewardship Council (DSC)	Delta Plan (Delta Secondary Zone)	PG&E Pittsburg Substation	28.7 acres
Delta Stewardship Council (DSC)	Delta Plan (Delta Secondary Zone)	PG&E 12 kV distribution line	0.4 mile
Delta Stewardship Council (DSC)	Delta Plan (Delta Secondary Zone)	PG&E Transposition Site D	NA

Notes:

[a] Areas and distances provided are approximate. The entire proposed property for the Collinsville Substation is included, and the PG&E Collinsville Substation Communication Yard is incorporated. Temporary construction work areas are not included in this table.

[b] The proposed 12 kV distribution line and the SMPP/SMPRP areas follow Stratton Lane. The full length of the distribution is identified, but the actual length of the distribution line with the plan area may be as little as 50 percent or less.

[c] The Suisun Principal Agencies are a group of agencies with primary responsibility for Suisun Marsh management. They include USFWS, BOR, NMFS, CDFW, DWR, and SRCD, and the DSC.

NA = not applicable

Source: (BCDC n.d.; DSC 2013; CSLC 2025b; CSLC 2025a)

Table 4.11-3 Local Land Use and Planning Jurisdictions Crossed by the Proposed Project

Agency	Jurisdiction	Project components	Area/distance crossed [a]
Solano County	General Plan & Zoning Code	LSPGC Collinsville Substation	61.1-acre parcel
Solano County	General Plan & Zoning Code	LSPGC 230 kV transmission line, overhead segment	1.0 mile
Solano County	General Plan & Zoning Code	PG&E 500 kV interconnection lines	2.5 miles
Solano County	General Plan & Zoning Code	PG&E transposition sites A, B, and C	NA
Solano County	General Plan & Zoning Code	PG&E Vaca Dixon Substation	66.8 acres
Solano County	Collinsville Special Study Area	LSPGC Collinsville Substation	61.1-acre parcel
Solano County	Collinsville Special Study Area	LSPGC 230 kV transmission line, overhead segment	1.0 mile
Solano County	Collinsville Special Study Area	PG&E 12 kV distribution line	0.9 mile
Solano County	Collinsville Special Study Area	PG&E 500 kV interconnection lines	2.5 miles
Solano County	Suisun Marsh Local Protection Program; SMPP Primary Management Areas	LSPGC 230 kV transmission line, submarine segment	2.2 miles
Solano County	Suisun Marsh Local Protection Program; SMPP Secondary Management Areas	LSPGC Collinsville Substation	61.1-acre parcel
Solano County	Suisun Marsh Local Protection Program; SMPP Secondary Management Areas	LSPGC 230 kV transmission line, overhead segment	650 feet
Solano County	Suisun Marsh Local Protection Program , SMPP Secondary Management Areas	PG&E 500 kV interconnection lines	800 feet

Solano County	Suisun Marsh Local Protection Program; SMPP Secondary Management Areas	PG&E 12 kV distribution line	0.9 mile [b]
Sacramento County	NA [c]	LSPGC 230 kV transmission line, submarine segment	1.1 miles
Contra Costa County	General Plan & Ordinance Code	PG&E transposition site D	NA
Alameda County	General Plan & Zoning Code	PG&E Tesla Substation	75.9 acres
City of Pittsburg	General Plan & Zoning Code	LSPGC 230 kV transmission line, underground segment	0.6 mile
City of Pittsburg	General Plan & Zoning Code	LSPGC underground telecommunication line	2.5 miles
City of Pittsburg	General Plan & Zoning Code	PG&E Pittsburg Substation	28.7 acres
City of Pittsburg	General Plan & Zoning Code	Granted tidelands, submerged lands, and beds of navigable lakes and waterways	0.4 mile

Notes:

[a] Areas and distances provided are approximate. The entire proposed property for the Collinsville Substation is included, and the PG&E Collinsville Substation Communication Yard is incorporated. Temporary construction work areas are not included in this table.

[b] The proposed 12 kV distribution line and the SMPP/SMPRP areas follow Stratton Lane. The full length of the distribution is identified, but the actual length of the distribution line with the plan area may be as little as 50 percent or less.

[c] The Proposed Project would not coincide with Sacramento County parcels (Sacramento County, n.d.).

NA = not applicable

Source: (Solano County 2023a; City of Pittsburg 2024a; CDA 2024; Contra Costa County 2024a; Sacramento County 2017a; Solano County 2018a)

Environmental Setting by Project Component

Overview

Local land use and zoning designations crossed by the Proposed Project site are presented in Table 4.11-4 and Table 4.11-5 and shown in Figure 4.11-1 through Figure 4.11-4 for informational purposes. Due to the large area over which the Proposed Project component sites are distributed, land uses and zoning designations are combined into categories to represent the major land uses that are present. With the exception of the Delta waterway, the Proposed Project components are located on land that is privately owned or owned by PG&E.

Local land use and zoning designations as well as the other special land use jurisdictions crossed by the Proposed Project site are described by project component in the following sections.

LSPGC Collinsville Substation

The proposed LSPGC Collinsville Substation site is to be located on approximately 61.1 acres of privately owned land in the unincorporated community of Collinsville, which is in southeastern Solano County and falls within the Solano Wind Resource Area (formerly the Montezuma Hills Wind Resource Area) (SMUD 2019; CEC 2023). The surrounding land uses include natural resource land areas, utility operations, residences, wind energy farms, and agricultural lands (Solano County 2008a). The nearest residences to the substation are located approximately 0.8 mile west-southwest along Collinsville Road. The proposed LSPGC Collinsville Substation site is not be located on a parcel with any existing wind turbine or wind energy facilities. The proposed LSPGC Collinsville Substation property is located on land designated as agricultural lands by Solano County and zoned as Suisun Marsh Agriculture (ASM-160) (Solano County 2023a; 2023b). Land use and zoning categories are presented in Table 4.11-4 and Table 4.11-5 and shown in Figure 4.11-1 through Figure 4.11-4.

The LSPGC Collinsville Substation property also falls within special land use and planning areas (refer to Table 4.11-1 through Table 4.11-3), including the Suisun Marsh Protection Plan (Secondary Management Areas), the DSC's Delta Plan (Delta Secondary Zone; Suisun Marsh Priority Habitat Restoration Area), and Solano County's Collinsville Special Study Area. Special land use and planning areas are shown on Figure 4.11-5 through Figure 4.11-7. The jurisdictional agencies that manage the areas and policies applicable to the project are discussed in Section 4.11.2.

Table 4.11-4 Local Land Use Categories Crossed by the Proposed Project

Proposed Project bomponent	County/city	Land use category [a]	Area/distance crossed
LSPGC Collinsville Substation [b]	Solano County	Agriculture	61.1-acre parcel
LSPGC 230 kV transmission line, overhead segment	Solano County	Agriculture	1.7 miles
LSPGC 230 kV transmission line, submarine segment	City of Pittsburg	Commercial	< 0.1 mile
LSPGC 230 kV transmission line, submarine segment	Contra Costa County	Water	1.5 miles
LSPGC 230 kV transmission line, submarine segment	Sacramento County	Recreational	1.1 miles
LSPGC 230 kV transmission line, submarine segment	Sacramento County	Water	< 0.1 mile
LSPGC 230 kV transmission line, submarine segment	Solano County	Agriculture	< 0.1 mile
LSPGC 230 kV transmission line, submarine segment	Solano County	Water	2.1 miles
LSPGC 230 kV transmission line, underground segment	City of Pittsburg	Commercial	0.3 mile
LSPGC 230 kV transmission line, underground segment	City of Pittsburg	Industrial	0.3 mile
LSPGC telecommunication interconnection lines	City of Pittsburg	Commercial	0.2 mile
LSPGC telecommunication interconnection lines	City of Pittsburg	Industrial	0.2 mile
LSPGC telecommunication interconnection lines	City of Pittsburg	Open Space	0.1 mile
LSPGC telecommunication interconnection lines	City of Pittsburg	Public/Institutional	0.1 mile
LSPGC telecommunication interconnection lines	City of Pittsburg	Recreational	0.3 mile
LSPGC telecommunication interconnection lines	City of Pittsburg	Residential	0.1 mile
LSPGC telecommunication interconnection lines	City of Pittsburg	Utility/ROW	0.3 mile
PG&E 500 kV interconnection lines	Solano County	Agriculture	2.4 miles
PG&E Transposition Site A	Solano County	Agriculture	0.3 mile
PG&E Transposition Site B	Solano County	Agriculture	0.2 mile

PG&E Transposition Site C	Solano County	Agriculture	0.2 mile
PG&E Transposition Site D	Contra Costa County	Agriculture	0.3 mile
PG&E 12kV distribution line	Solano County	Agriculture	0.3 mile
PG&E 12kV distribution line	Solano County	Marsh	0.7 mile
PG&E Vaca Dixon Substation [c]	Solano County	Public/Institutional	66.8 acres
PG&E Pittsburg Substation [c]	City of Pittsburg	Industrial	28.7 acres
PG&E Tesla Substation [c]	Alameda County	Agriculture	75.9 acres

Notes:

[a] Specific land uses were combined into categories to represent the major land uses that are present. Areas within the Delta where designated categories were not available have been approximated based on the adjacent designations.

[b] The 61.1-acre parcel area for the proposed LSPGC Collinsville Substation is the extent of the proposed substation property. The proposed substation site would require permanent land rights to be acquired by LSPGC, which include approximately 28.3 acres of a 61.1-acre parcel. Approximately 12 acres would be occupied by the proposed substation.

[c] PG&E's existing Vaca Dixon, Pittsburg, and Tesla Substations are industrial/utility land uses by nature, but these areas are within or surrounded by the other land uses identified.

Source: (Solano County 2023a; City of Pittsburg 2024a; CDA 2024; Contra Costa County 2024a; Sacramento County 2017a)

Table 4.11-5 Local Zoning Categories Crossed by the Proposed Project

Proposed Project component	County/city	Zoning categories	Area/distance crossed
LSPGC Collinsville Substation [b]	Solano County	Agriculture (ASM-160)	61.1-acre parcel
LSPGC 230 kV transmission line overhead segment	Solano County	Agriculture (A-160)	1.5 miles
LSPGC 230 kV transmission line overhead segment	Solano County	Agriculture (ASM-160)	0.2 mile
LSPGC 230 kV transmission line submarine segment	City of Pittsburg	Industrial General	< 0.1 mile
LSPGC 230 kV transmission line submarine segment	Contra Costa County	Unrestricted	1.5 miles
LSPGC 230 kV transmission line submarine segment	Sacramento County	Delta Waterways	1.2 miles
LSPGC 230 kV transmission line submarine segment	Solano County	Agriculture (A-160)	0.1 mile
LSPGC 230 kV transmission line submarine segment	Solano County	Marsh Preservation	2.0 miles
LSPGC 230 kV Line underground segment	City of Pittsburg	Industrial General	0.6 miles
LSPGC telecommunications line	City of Pittsburg	Commercial (Pedestrian)	< 0.1 mile
LSPGC telecommunications line	City of Pittsburg	Governmental and Quasi public	0.1 mile
LSPGC telecommunications line	City of Pittsburg	Industrial General	0.5 mile
LSPGC telecommunications line	City of Pittsburg	Planned Development	0.3 mile
LSPGC telecommunications line	City of Pittsburg	Residential	0.2 mile
LSPGC telecommunications line	City of Pittsburg	Residential (Single Family Residential)	<0.1 mile
PG&E 500 kV interconnection lines	Solano County	Agriculture (A-160)	2.3 miles
PG&E 500 kV interconnection lines	Solano County	Agriculture (ASM-160)	0.2 mile
PG&E Transposition Site A	Solano County	Agriculture (A-80)	8.36 acres
PG&E Transposition Site B	Solano County	Agriculture (A-160)	4.82 acres

PG&E Transposition Site C	Solano County	Agriculture (A-160)	2.62 acres
PG&E Transposition Site D	Contra Costa County	General Agriculture (A-2)	2.30 acres
PG&E 12 kV distribution line	Solano County	Agriculture (A-160)	0.8 mile
PG&E 12kV distribution line	Solano County	Agriculture (ASM-160)	0.1 mile
Existing PG&E Vaca-Dixon Substation	Solano County	Agriculture (A-20)	66.8 acres
Existing PG&E Pittsburg Substation	City of Pittsburg	Industrial General	28.7 acres
Existing PG&E Tesla Substation	Alameda County	Agriculture	75.9 acres

Notes:

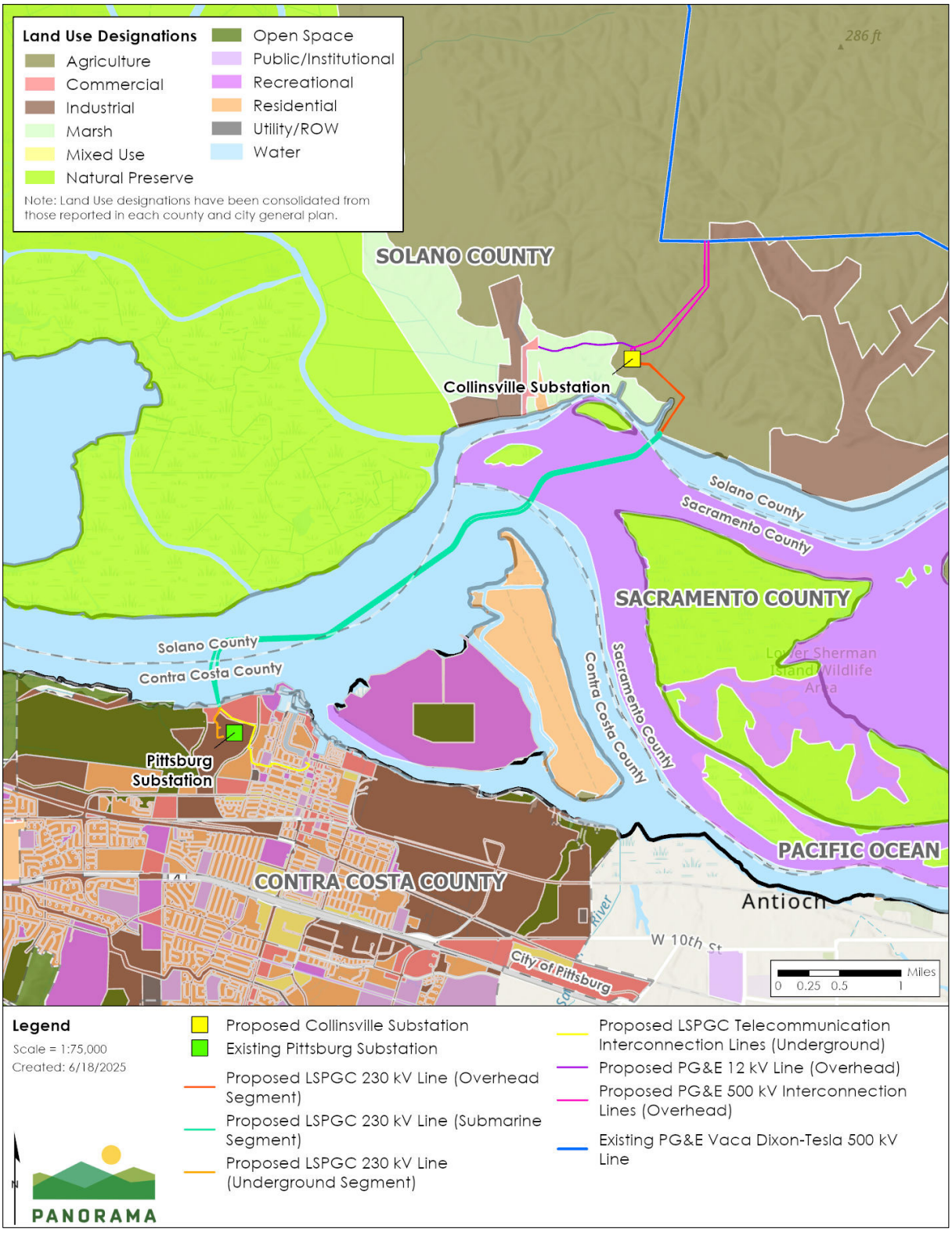
[a] Specific land uses were combined into categories to represent the major land uses that are present. Areas within the Delta where designated categories were not available have been approximated based on the adjacent designations.

[b] The 61.1-acre parcel area for the proposed LSPGC Collinsville Substation is the extent of the proposed substation property. The proposed substation site would require permanent land rights to be acquired by LSPGC, which include approximately 28.3 acres of a 61.1-acre parcel. Approximately 12 acres would be occupied by the proposed substation.

[c] PG&E's existing Vaca-Dixon, Pittsburg, and Tesla Substations are industrial/utility land uses by nature, but these areas are within or surrounded by the other land uses identified.

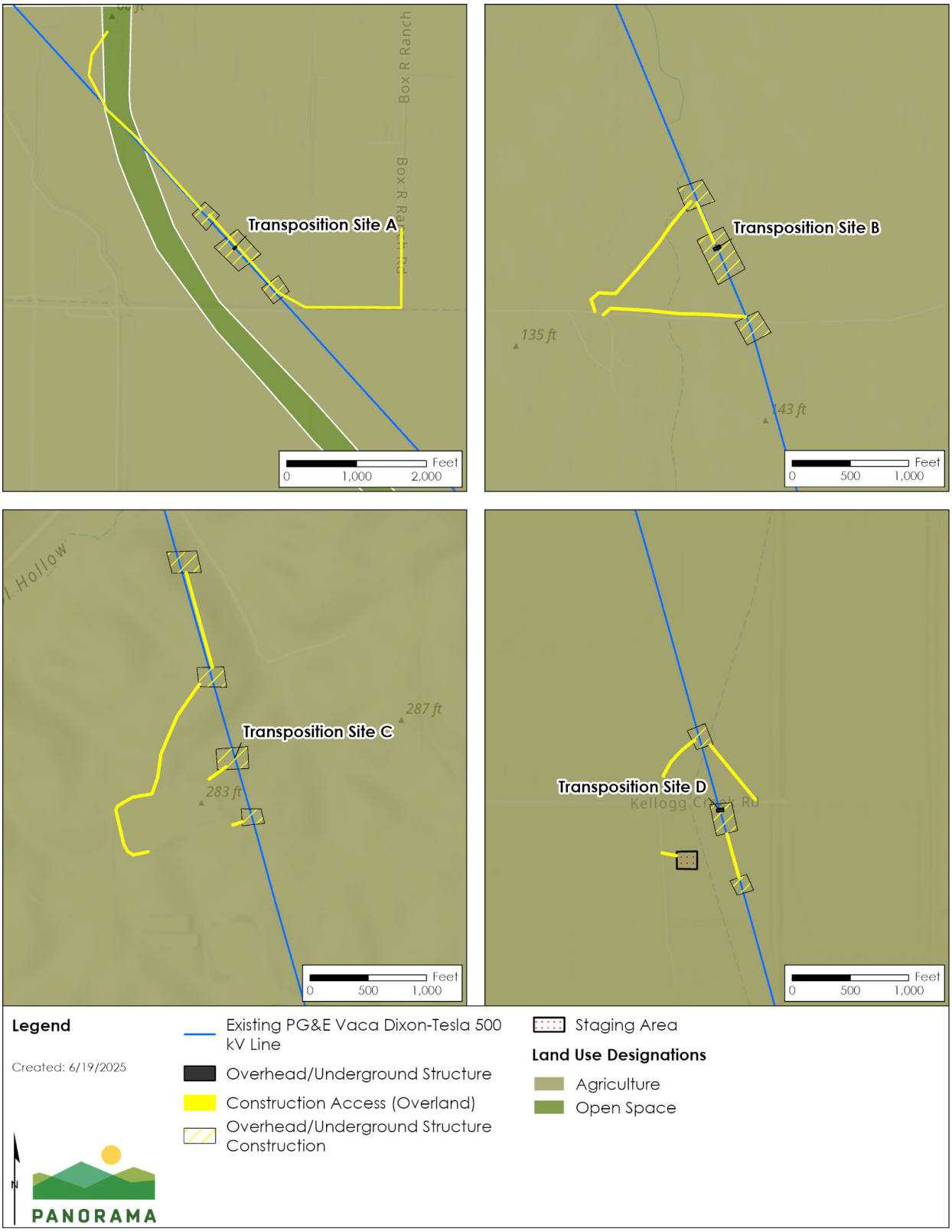
Source: (Solano County 2023a; City of Pittsburg 2023; CDA 2024; Contra Costa County 2024a; Sacramento County 2017b)

Figure 4.11-1 General Plan Land Use Categories within the Proposed Project Area



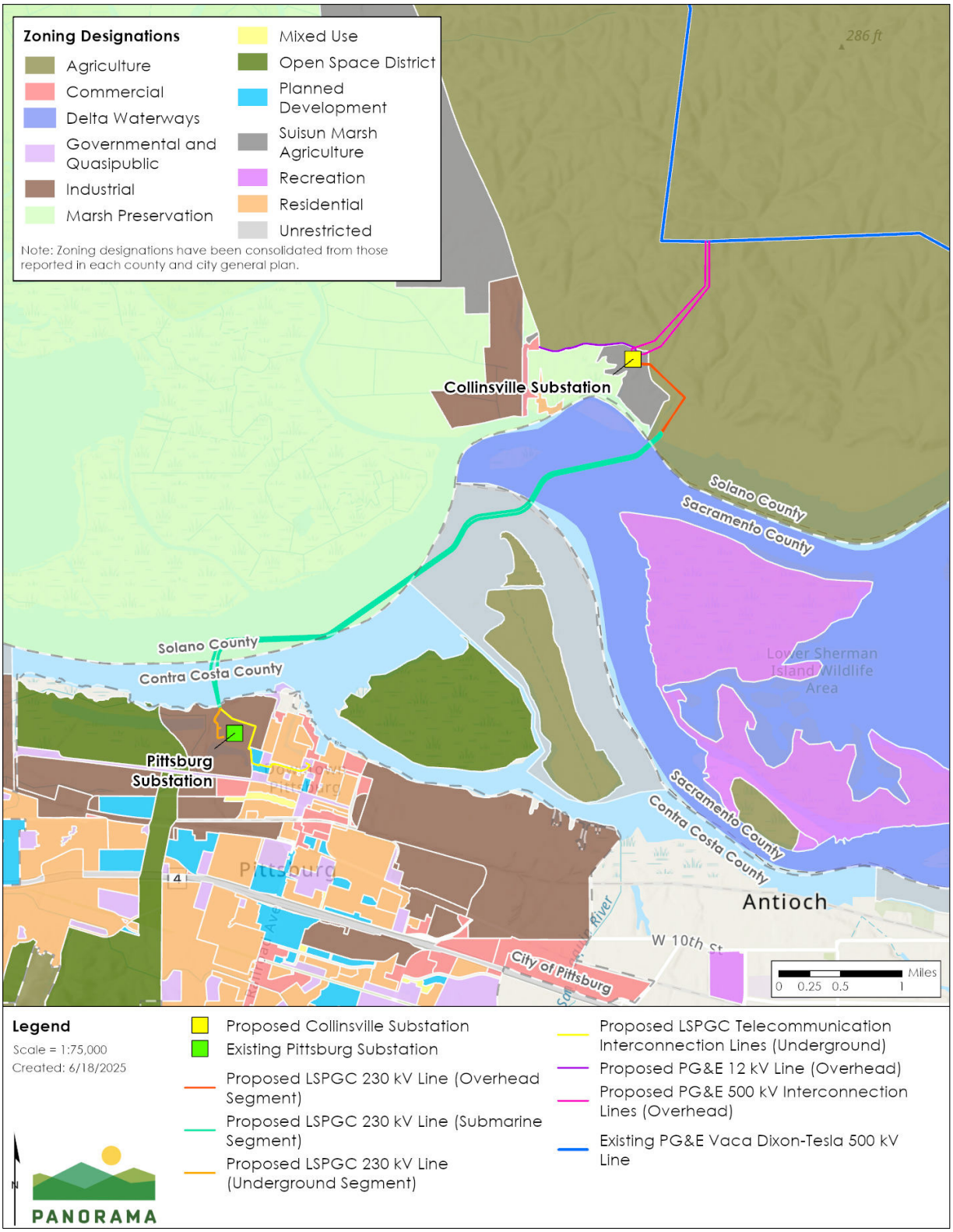
Source: (Solano County 2023a; City of Pittsburg 2024a; CDA 2024; Contra Costa County 2024a; Sacramento County 2017a)

Figure 4.11-2 General Plan Land Use Categories Surrounding Transposition Sites



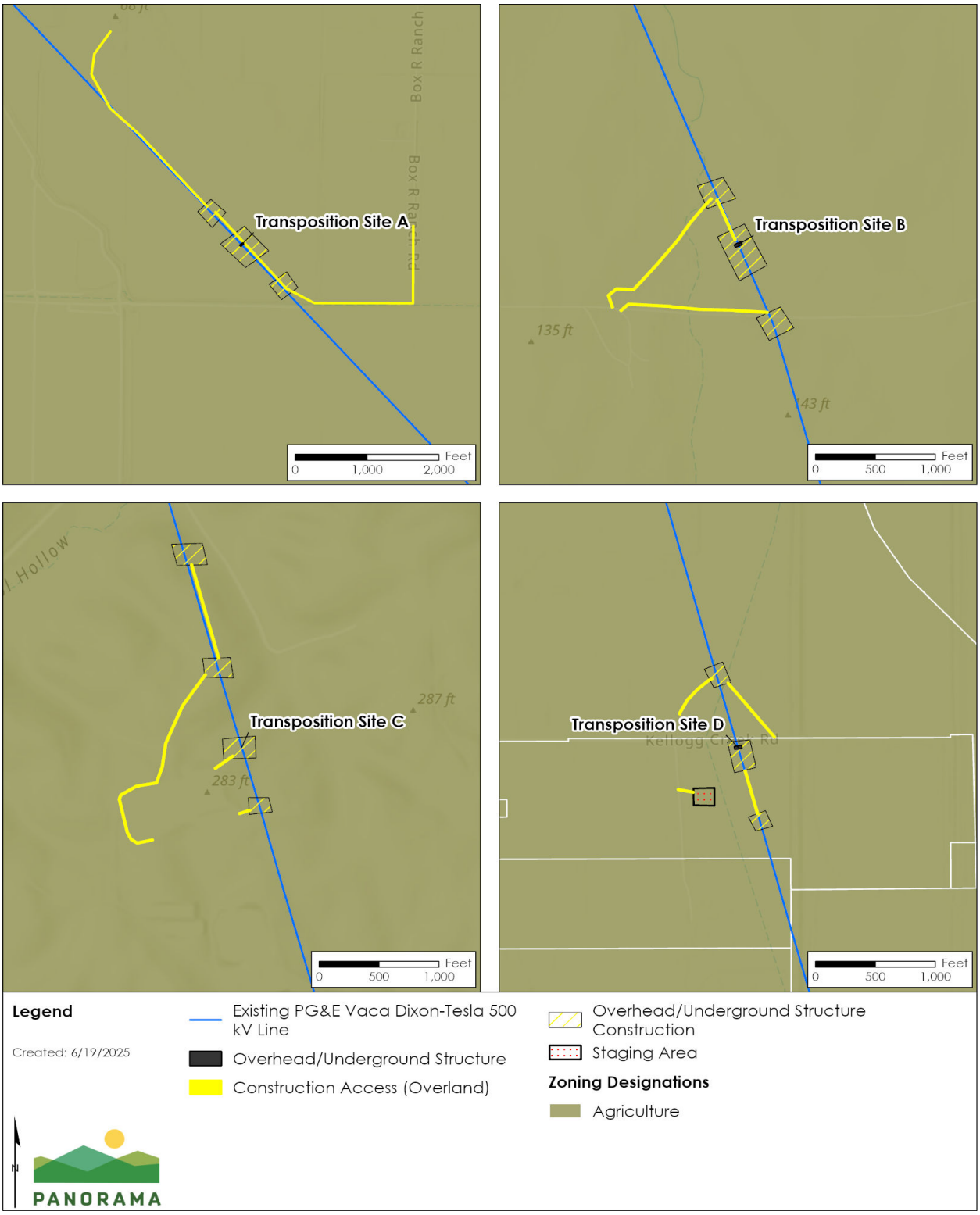
Source: (Solano County 2023a; CDA 2024; Contra Costa County 2024a)

Figure 4.11-3 Zoning Categories within the Proposed Project Area



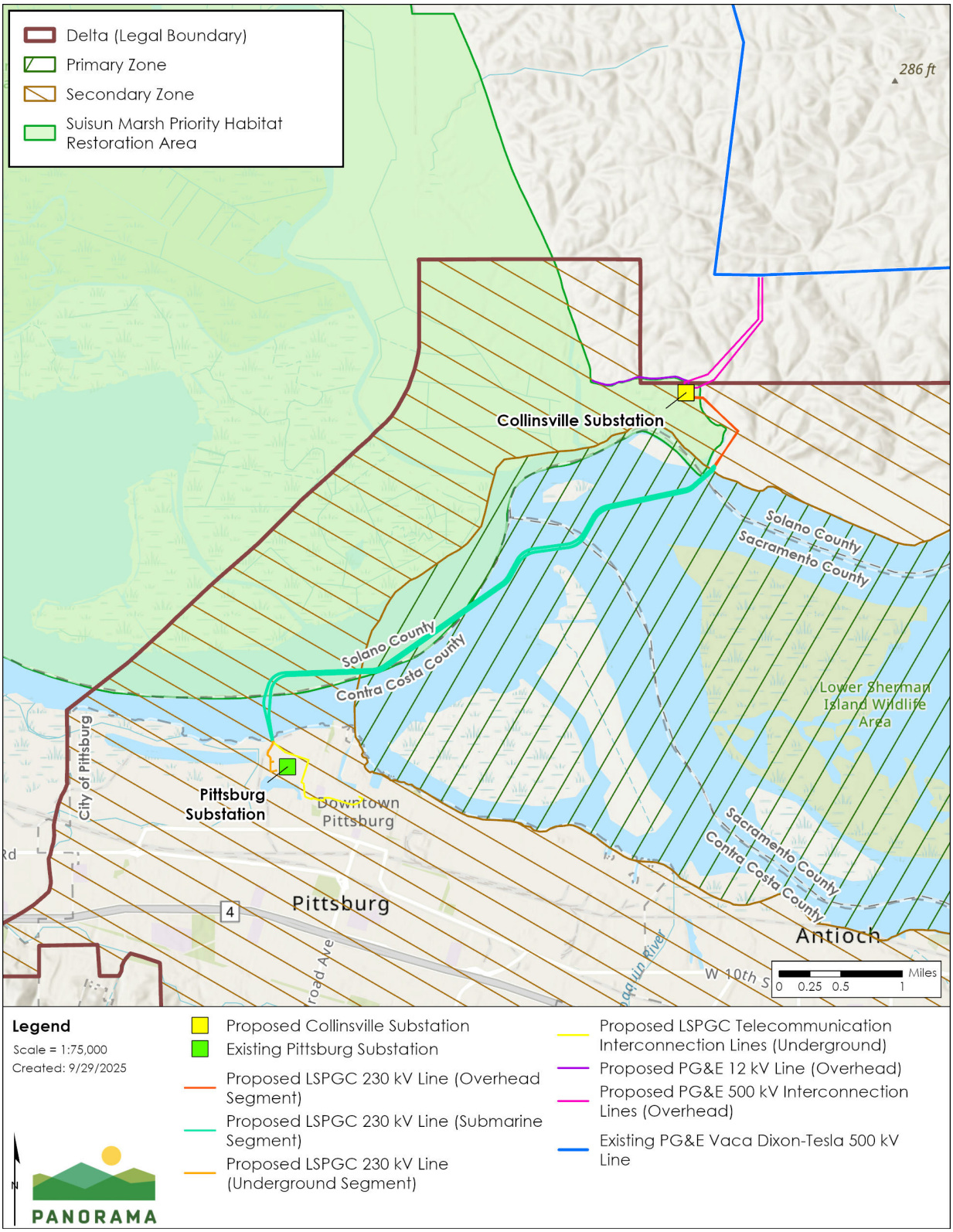
Source: (Solano County 2023a; City of Pittsburg 2023; CDA 2024; Contra Costa County 2024a; Sacramento County 2017b)

Figure 4.11-4 Zoning Categories Within Tranposisiton Sites



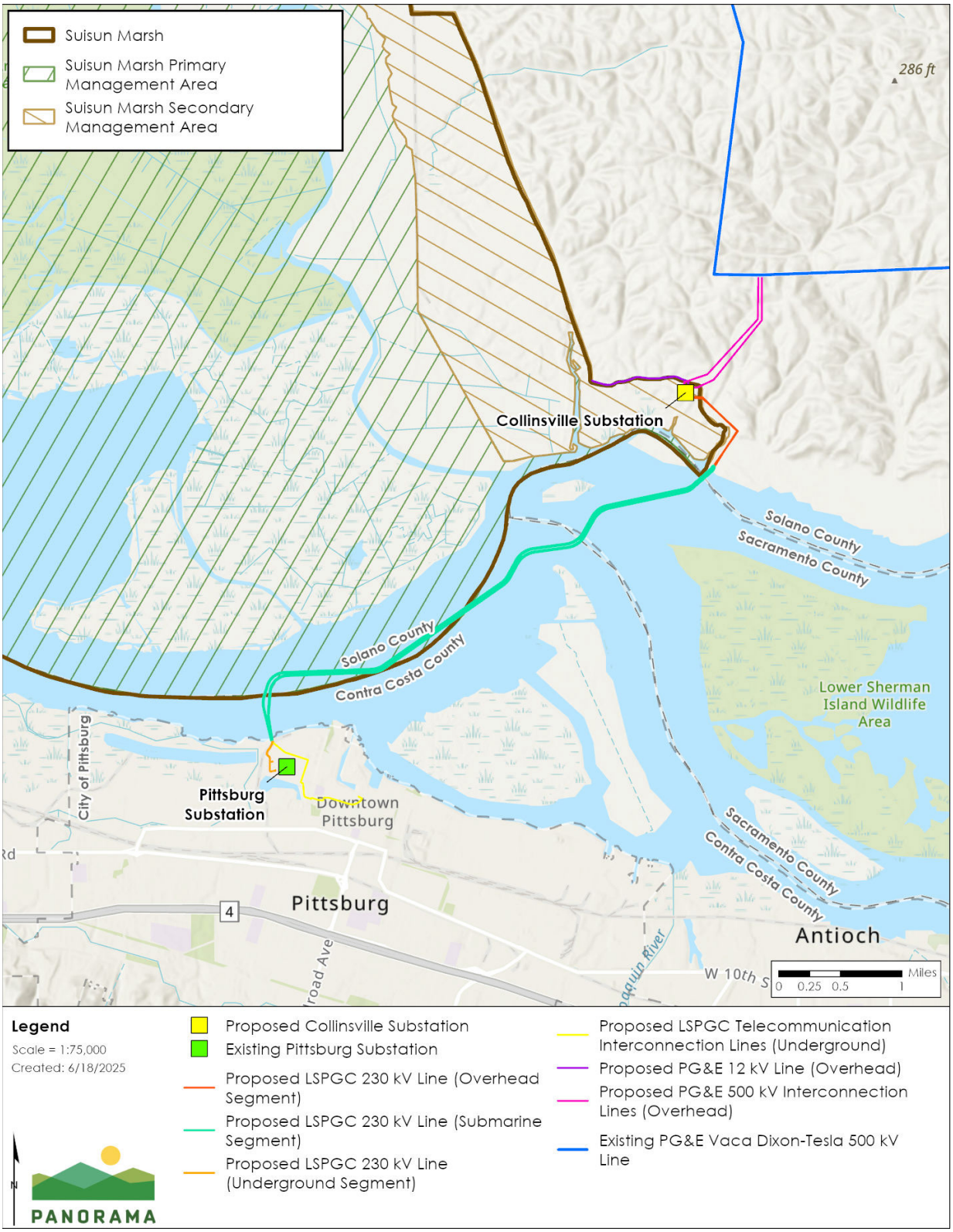
Source: (Solano County 2023a; CDA 2024; Contra Costa County 2024a)

Figure 4.11-5 Primary and Secondary Zones of the Delta



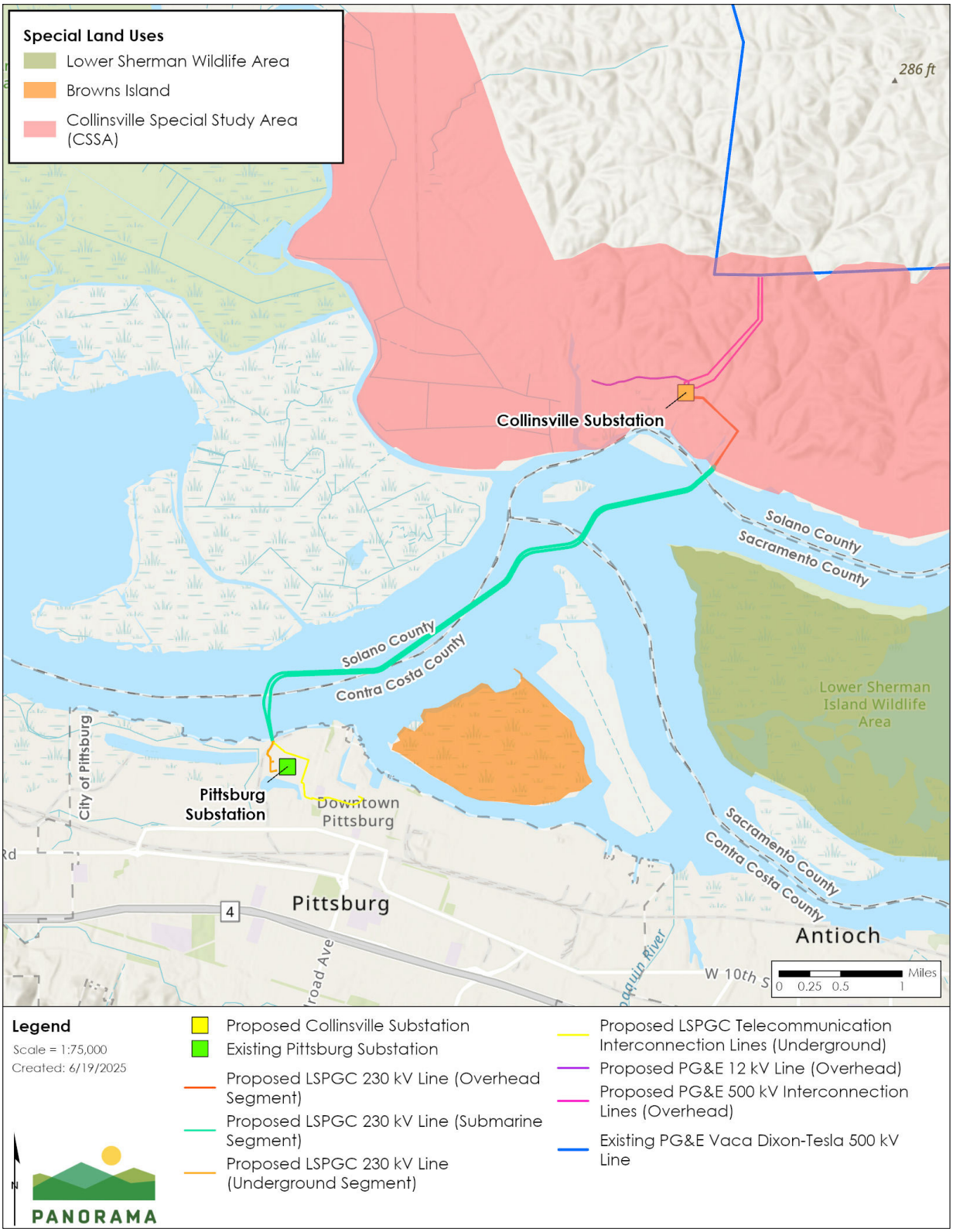
Source: (DWR 2022)

Figure 4.11-6 Primary and Secondary Management Areas of the Suisun Marsh



Source: (BCDC 2020)

Figure 4.11-7 Special Land Use and Planning Areas in the Proposed Project Vicinity



Source: (Solano County 2008a; CDFW 2007; EBRPD n.d.)

LSPGC 230 kV Transmission Line

Overhead Segment

The proposed LSPGC 230 kV transmission line overhead alignment extends from the proposed LSPGC Collinsville Substation over agricultural lands and marsh lands for approximately 1 mile before transitioning to the submarine segment alignment at the northern shore of the Delta. The proposed 230 kV line overhead alignment is located on lands designated as Agriculture by Solano County and zoned as Agriculture (A-160 and ASM-160) (Solano County 2023a; 2023b). Land use and zoning categories are presented in Table 4.11-4 and Table 4.11-5 and shown in Figure 4.11-1 through Figure 4.11-4.

The LSPGC 230 kV transmission line overhead segment also falls within special land use and planning areas (refer to Table 4.11-1 through Table 4.11-3), including the Suisun Marsh Protection Plan (Secondary Management Areas), the DSC's Delta Plan (Delta Secondary Zone; Suisun Marsh Priority Habitat Restoration Area), and Solano County's Collinsville Special Study Area. Special land use and planning areas are shown on Figure 4.11-5 through Figure 4.11-7. The jurisdictional agencies that manage the areas and policies applicable to the project are discussed in Section 4.11.2.

Submarine Segment

The proposed LSPGC 230 kV transmission line proposed submarine segment alignment is approximately 4.5 miles long. On the northern shore of the Delta, approximately 0.1 mile of the proposed alignment is located in Solano County in areas designated as Agriculture and Water and zoned for A-160 (Solano County 2023a; 2023b). The proposed alignment then continues south for approximately 1.2 miles through waters within Sacramento County designated as Recreational and Water and zoned as Delta Waterways (Sacramento County 2017b; 2017a). From that point, the proposed alignment extends south for approximately 1.5 miles through waters within Contra Costa County designated as Water and zoned as an Unrestricted District (Contra Costa County 2024a). From that point, the proposed alignment again extends into waters within Solano County designated as Water and zoned as an Marsh Preservation for approximately 2 miles (Solano County 2023a; 2023b). Continuing south, the proposed alignment traverses waters within Contra Costa County for approximately 0.3 mile to connect to the southern shore of the Delta in the City of Pittsburg, designated as Commercial and zoned as Industrial General for less than 0.1 mile (City of Pittsburg 2023; 2024a). Land use and zoning categories are presented in Table 4.11-4 and Table 4.11-5 and shown in Figure 4.11-1 through Figure 4.11-4.

The proposed LSPGC 230 kV transmission line submarine segment alignment also falls within special land use and planning areas (refer to Table 4.11-1 through Table 4.11-3), including USACE navigable waters and federal navigation channels (Sacramento and Suisun Bay channels), Suisun Marsh Protection Plan (Primary Management Areas), CSLC administered waterways, and the DPC's Land Use and Resource Management Plan (Primary Zone), DSC's Delta Plan (Delta Primary Zone and Delta Secondary Zone), and neighbors the LSIWA, which is 0.4 mile southeast of the proposed LSPGC 230 kV submarine segment. Special land use and

planning areas are shown in Figure 4.11-5 through Figure 4.11-7; the jurisdictional agencies that manage the areas and policies applicable to the Project are discussed in Section 4.11.2.

Underground Segment

The proposed LSPGC 230 kV transmission line underground segment alignment extends approximately 0.3 mile from the southern shore of the Delta to the existing Pittsburg Substation. The proposed underground segment alignment is located within the City of Pittsburg on land designated as Commercial for approximately 0.3 mile and Industrial for approximately 0.3 mile, and that is zoned entirety as Industrial General (City of Pittsburg 2023; 2024a). Land use and zoning categories are presented in Table 4.11-4 and Table 4.11-5 and shown in Figure 4.11-1 through Figure 4.11-4.

The proposed LSPGC 230 kV transmission line overhead segment also falls within the East Bay Regional Park District Master Plan area (refer to Table 4.11-1 through Table 4.11-3), which is discussed further in Section 4.11.2. The proposed LSPGC 230 kV transmission line overhead segment alignment also falls within special land use and planning areas (refer to Table 4.11-1 through Table 4.11-3), DSC's Delta Plan (Delta Secondary Zone; Suisun Marsh Priority Habitat Restoration Area). Special land use and planning areas are shown on Figure 4.11-5 through Figure 4.11-7; the jurisdictional agencies that manage the areas and policies applicable to the Project are discussed in Section 4.11.2.

LSPGC Telecommunication Interconnection Lines

The proposed LSPGC telecommunication interconnection lines would be installed underground within the City of Pittsburg for a total length of approximately 1.2 miles between a fiber hub installed along the 230 kV transmission line corridor near the southern shore of the Delta and an existing fiber optic cable near the Marina Community Center. From the Marina Community Center, approximately 0.1 mile of the proposed telecommunication lines alignment crosses land designated as Public/Institutional and zoned for Governmental and Quasipublic. From that point, the proposed telecommunication lines alignment extends for approximately 0.3 mile parallel to Marina Boulevard and Herb White Way, which are designated as Utility/ROW corridors and are adjacent to residential uses. Along Marina Boulevard and Herb White Way, the proposed telecommunication lines alignment crosses short segments of lands designated as recreational and residential uses and zoned as single-family residential and Planned Development. From that point, the proposed telecommunication lines alignment extends along Halsey Way for approximately 0.2 mile within the designated Utility/ROW corridors, intersecting lands designated as Residential and Public/Institutional and zoned as Planned Development. From there, the proposed telecommunication lines alignment extends along Halsey Court for another approximate 0.2 mile on lands designated as Recreational lands and zoned as Planned Development. From Halsey Court, the proposed telecommunication lines alignment traverses lands designated as Residential and zoned Industrial General for approximately 0.5 mile to terminate at the proposed fiber hub (City of Pittsburg 2023; 2024a). Land use and zoning categories are presented in Table 4.11-4 and Table 4.11-5 and shown in Figure 4.11-1 through Figure 4.11-4.

The proposed LSPGC telecommunication interconnection lines alignment does not fall within any special land use or planning areas.

PG&E 500 kV Interconnection Lines

Two approximately 1.2-mile-long single-circuit 500 kV overhead transmission line extensions are proposed (with a combined length of approximately 2.5 miles) between PG&E's existing Vaca Dixon-Tesla 500 kV Transmission Line and the proposed LSPGC Collinsville Substation. The proposed PG&E 500 kV interconnection lines alignment is located entirely on lands designated as agriculture lands and zoned for Agriculture (A-160 and ASM-160) and is within the Solano Wind Resource Area (SMUD 2019; CEC 2023; Solano County 2023b; 2023a). The closest wind turbine is approximately 624 feet from the proposed LSPGC 230 kV transmission line overhead segment alignment, intersecting the wind turbine blade throw zone. Land use and zoning categories are are presented in Table 4.11-4 and Table 4.11-5 and shown in Figure 4.11-1 through Figure 4.11-4.

The proposed PG&E 500 kV interconnection lines alignment also falls within special land use and planning areas (refer to Table 4.11-1 through Table 4.11-3), including the Suisun Marsh Protection Plan (Secondary Management Areas) and the DSC's Delta Plan (Delta Secondary Zone; Suisun Marsh Priority Habitat Restoration Area). Special land use and planning areas are shown on Figure 4.11-5 through Figure 4.11-7; the jurisdictional agencies that manage the areas and policies applicable to the project are discussed in Section 4.11.2.

PG&E 500 kV Transposition Sites

All transposition structures are located along PG&E's existing Vaca Dixon–Tesla 500 kV Transmission Line. Transposition sites A, B, and C are in unincorporated Solano County, and Transposition Site D is near the unincorporated Census Designated Place of Byron in Contra Costa County. All transposition sites are designated as Agriculture and zoned as Agriculture (A-80 and A-160) (Contra Costa County 2024a; Solano County 2023a). Transposition Site A and Transposition Site B fall within the outer edges of the Travis Air Force Base Airport Influence Area (Solano County 2008a). Land use and zoning categories are presented in Table 4.11-4 and Table 4.11-5 and shown in Figure 4.11-1 through Figure 4.11-4.

The PG&E transposition sites do not fall within any special land use or planning areas.

PG&E 12 kV Distribution Line

The proposed PG&E 12 kV distribution line alignment is located on the north side of Stratton Lane, extending approximately 0.9 mile to connect the LSPGC Collinsville Substation site to an existing distribution line on the west side of Collinsville Road. The proposed distribution line alignment is located within Solano County on lands designated as Agriculture, Marsh, and Utility/ROW, and zoned as Agriculture (A-160 and ASM-160) (Solano County 2023a; 2023b). Land use and zoning categories are presented in Table 4.11-4 and Table 4.11-5 and shown in Figure 4.11-1 through Figure 4.11-4.

The proposed PG&E 12 kV distribution line alignment also falls within special land use and planning areas (refer to Table 4.11-1 through Table 4.11-3), including the Suisun Marsh

Protection Plan (Secondary Management Areas), the DSC's Delta Plan (Delta Secondary Zone; Suisun Marsh Priority Habitat Restoration Area), and Solano County's Collinsville Special Study Area. Special land use and planning areas are shown onFigure 4.11-5 through Figure 4.11-7; the jurisdictional agencies that manage the areas and policies applicable to the project are discussed in Section 4.11.2.

PG&E Substation Modifications
PG&E's existing Pittsburg Substation is 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 Pittsburg Substation site is designated as Industrial and zoned as Industrial General.

PG&E's existing Vaca-Dixon Substation is in Solano County, in an industrial area surrounded by Commercial, Industrial, Residential, and Open Space uses. The Vaca-Dixon Substation site is designated as Public/Institutional and zoned as Agriculture (A-20) (Solano County 2023a; 2023b). The Vaca-Dixon Substation falls within the Nut Tree Airport Influence Area Compatibility Zone E (Solano County 2018b; 2008a), and within the outer edges of the Travis Air Force Base Airport Influence Area (Solano County 2008a).

PG&E's existing Tesla Substation is in Alameda County in an agricultural area. The Tesla Substation site is designated and zoned as Agriculture (CDA 2024).

Land use and zoning categories are are presented in Table 4.11-4 and Table 4.11-5 and shown in Figure 4.11-1 through Figure 4.11-4.

The existing PG&E substations do not fall within any special land use or planning areas.

4.11.2 Regulatory Setting

Federal, state, and local regulations were reviewed for applicability to the Proposed Project and alternatives.

Federal

Rivers and Harbors Appropriation Act of 1899
Under section 14 of the Rivers and Harbors Appropriation Act of 1899 (commonly referred to as Section 408), the Secretary of the Army may grant permission for the permanent or temporary alteration or use of any USACE Civil Works project provided the alteration is not injurious to the public interest and would not impair the usefulness of the Civil Works project (USACE 2025). The proposed LSPGC 230 kV submarine segment alignment crosses the Suisun Bay channels (i.e., Suisun Bay Channel and New York Slough), which are USACE navigation channels with an annual dredge cycle, the Sacramento River Deep Water Ship Channel, and the Stockton Deep Water Ship Channel. The New York Slough is a USACE Civil Works project; therefore, the Proposed Project must receive authorization under Section 14.

Section 10 of the Rivers and Harbors Act of 1899 prohibits the unauthorized obstruction or alteration of any navigable water of the United States. Under section 10, the USACE regulates activities such as construction of structures (e.g., piers, transmission lines, and pipelines), excavation, or deposition of material in, over, or under navigable waters. A section 10 permit is required for the proposed submarine cable crossing where it would occur within federally designated navigable waters.

Section 404 of the Clean Water Act

Section 404 of the Clean Water Act authorizes the USACE to regulate the discharge of dredged or fill material into waters of the United States, including wetlands. Activities such as trenching, side casting, or backfilling in jurisdictional waters typically require a section 404 permit. The proposed installation of the 230 kV submarine transmission line segment may require such a permit for any discharge of material into waters of the United States during construction.

State

This section includes regulatory setting information for state agency plans and programs as well as joint state, federal, and regional agency plans and programs.

General Order 131-D

Pursuant to CPUC 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 the State of California. Under CEQA, the CPUC is the lead agency with respect to such Proposed Project elements within the State of California. LSPGC is required to comply with GO 131-D and is seeking a Certificate of Public Convenience and Necessity (CPCN) from the CPUC for the Proposed Project.

State Lands Act of 1938

The State Lands Act, established in 1938, created the CSLC. The CSLC has sovereign ownership, jurisdiction, and management authority over all ungranted tidelands, submerged lands, and beds of navigable lakes and waterways (CSLC 2017). The CSLC also has certain residual and review authority for tidelands and submerged lands legislatively granted in trust to local jurisdictions (Pub. Resources Code, §§ 6009, subd. (c); 6009.1; 6301; 6306) (CSLC 2025). All tidelands and submerged lands, granted or ungranted, as well as navigable lakes and waterways are subject to the protections of the common law Public Trust Doctrine. 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. On tidal waterways, the State's sovereign fee ownership extends landward to the *mean high tide line* (MHTL), except for areas of fill or artificial accretion or where the boundary has been fixed by agreement or a court; such boundaries may not be readily apparent from present day site inspections (CSLC 2025).

The proposed 230 kV submarine segment alignment is within State sovereign land granted by the legislature to the City of Pittsburg pursuant to Chapter 422, Statutes of 2011, with minerals reserved. The proposed submarine segment alignment is also to be located within ungranted

State sovereign land in the Sacramento River (also known as Suisun Bay on the 1980 U.S. Geological Survey Honker Bay and Antioch North maps), which at this location is natural, navigable, and tidal. The ungranted State sovereign land falls under the jurisdiction of the CSLC and is subject to leasing requirements. LSPGC would be required to obtain Land Lease Agreements with the City of Pittsburg and CSLC to construct, operate, and maintain the proposed submarine segment.

The proposed submarine segment alignment also traverses State sovereign lands authorized by CSLC-issued Lease 7781 for the extraction of sand and gravel for commercial use (refer to Figure 4.12-1 in Section 4.12: Mineral Resources). While the CSLC seeks to lease public lands under a doctrine of non-exclusivity, the CSLC also seeks to ensure that competing uses of these lands do not directly conflict. The CSLC is currently processing an application for a new 10-year lease for Lease 7781, which is scheduled for CSLC consideration in late 2025 or early 2026, pending completion of a Supplemental EIR for the San Francisco Bay and Delta Sand Mining Project (CSLC 2025).

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 n.d.) 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 following policies in the San Francisco Bay Plan are relevant to the Proposed Project (BCDC n.d.):

> Projects should be designed to avoid adverse environmental impacts to Bay natural resources such as to water surface area, volume, or circulation and to plants, fish, other aquatic organisms and wildlife habitat, subtidal areas, or tidal marshes or tidal flats. Whenever adverse impacts cannot be avoided, they should be minimized to the greatest extent practicable. Finally, measures to compensate for unavoidable adverse impacts to the natural resources of the Bay should be required. Mitigation is not a substitute for meeting the other requirements of the McAteer-Petris Act.
>
> 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:
>
> > New routes should avoid interfering with scenic views and with wildlife, to the greatest extent possible; and
> >
> > 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.

Suisun Marsh Preservation Act of 1974 and Suisun Marsh Preservation Act of 1977

In 1974, the Nejedly-Bagley-Z'berg Suisun Marsh Preservation Act was enacted which directed the BCDC and the California Department of Fish and Game (now the CDFW) to develop a plan for the preservation of the Suisun Marsh (Marsh) and called for various restrictions on development in the Marsh boundaries. In 1976, BCDC developed the Suisun Marsh Protection Plan (1976 SMPP), which defined and limited development within the Primary Management Area and Secondary Management Area for the "future of the wildlife values or the area as threatened by potential residential, commercial, and industrial development" (BCDC n.d.). The Primary Management Area is composed of tidal marshes, managed wetlands, adjacent lowland grasslands, and waterways; the Secondary Management Area encompasses significant upland grasses and cultivated lands serving as significant buffers to the Marsh (Solano County 2018a) (refer to Figure 4.11-6). The objectives of the 1976 SMPP 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 n.d.).

In 1977, the Suisun Marsh Preservation Act replaced the 1974 Suisun Marsh Preservation Act and called for the implementation of the 1976 SMPP; designated BCDC as the state agency with jurisdiction over the Marsh; and called for Suisun Resource Conservation District (SRCD) to have the primary local responsibility for water management on privately owned lands in the Marsh (BOR 2011).

Part II of the 1976 SMPP includes findings and the following policies that are relevant to the project:

> Environment
>
> (1) 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.
>
> (2) The Marsh waterways, managed wetlands, tidal marshes, seasonal marshes, and lowland grasslands are critical habitats for marsh-related wildlife and are essential to the integrity of the Suisun Marsh. Therefore, these habitats deserve special protection.
>
> (3) 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.
>
> Utilities, Facilities, and Transportation
>
> (1) 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 SMPP 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.

(3) Underground pipelines, wires and cables should be permitted in the Suisun Marsh if no alternative route is feasible and they are designed and constructed to meet the following standards:

Installation of pipes, wires, and cables (particularly local service utilities) are located within existing road rights-of-way whenever possible.

Whenever construction occurs within the wetlands, it is confined to the dry months (generally mid-April through mid-October) to minimize disturbance of wetland vegetation, wintering migratory waterfowl, other water-associated birds, and nesting resident birds.

Wide-track or amphibious construction equipment is used to reduce the bearing weight of the equipment unless pads are laid on the wetland area to support the heavy machinery and to prevent it from sinking into the soft marsh soil. Equipment movement to the construction site within the Marsh is limited to roads in the immediate vicinity of the pipeline, wire, or cable being installed to minimize disruption of Marsh wildlife habitat. The construction site is well defined and clearly marked so that workers do not disturb adjacent Marsh areas.

When a trench is cut to install a pipe, wire, or cable, excavation is only slightly wider than the utility line to be buried to minimize wetland disturbance. Underground pipelines, wires and cables should be permitted in the Suisun Marsh if no alternative route is feasible and they are designed and constructed to meet the following standards:

Installation of pipes, wires, and cables (particularly local service utilities) are located within existing road rights-of-way whenever possible.

All pipelines passing through the Marsh meet Pipeline Safety Regulations of the U.S. Department of Transportation regarding pipe thickness, pressure limiting devices, emergency shut-down valves and other safety design criteria.

When pipelines only are being installed across wetlands, the "trench and push" method of construction is employed. This construction method, the least damaging to the wetlands because it avoids the need for heavy equipment alongside the trench to install the pipe, involves filling the excavated trench with water and pushing or pulling the assembled pipe through the Marsh trench. Recent pipeline installation in the Suisun Marsh, conducted under a BCDC permit, indicates that this is a practical method in the Marsh.

Tidal marsh and managed wetlands disturbed during pipeline, wire, or cable construction will generally revegetate naturally within one growing season if the top layer of soil and vegetation is stockpiled when the trench is first dug and replaced on top of the backfilled trench to facilitate revegetation. If a completed trench is not revegetated within one growing season in a managed wetland, the disturbed area must be reseeded with appropriate native plant seed.

In water areas (bays and sloughs), dredging and pipe and cable installation is scheduled so as to avoid major fish migrations.

(4) All plans for construction within the Marsh should be reviewed by [CDFW] to further assure that construction methods and timing will have a minimal impact on Marsh flora and fauna.

Land Use and Marsh Management

(10) 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.

Portions of the Proposed Project would be located within both Primary Management Areas and Secondary Management Areas identified in the 1976 SMPP, as shown in Table 4.11-2 and in Figure 4.11-6. Development, land use changes, and water management activities within the Primary Management Area would require a discretionary permit (Administrative Permit or Major Permit, as determined by BCDC)from BCDC. In addition, development within the Secondary Management Area may require a Marsh Development Permit from Solano County, based on the authority granted by BCDC through the certified Suisun Marsh LPP (refer to the Solano County regulatory discussion below).

Suisun Marsh Preservation Agreement of 1987

In 1987, Bureau of Reclamation (BOR), Department of Water Resources (DWR), CDFW, and Suisun Resource Conservation District signed the Suisun Marsh Preservation Agreement, which contains provisions for BOR and DWR to mitigate the adverse effects on Suisun Marsh channel water salinity from the state and central valley project operations and other upstream diversions (BOR 2011). It required BOR and DWR to meet salinity standards as specified in the then-current State Water Board D-1485, set a timeline for implementing the Plan of Protection for the Suisun Marsh, and delineate monitoring and mitigation requirements (BOR 2011).

Delta Protection Act of 1992

The Delta Protection Act of 1992 established the Delta Protection Commission (DPC) and declared the Delta as a natural resource of statewide, national, and international significance and that it is the policy of the State to recognize, preserve, and protect Delta resources for the use and enjoyment of current and future administrations. The act mandated the designation of primary and secondary zones within the legal Delta and completion of a Land Use and Resource Management Plan for the Primary Zone of the Delta (Delta Protection Commission 2024). The Secondary Zone is not within the planning area of the DPC and is subject to the land use authority of the surrounding local governments (DSC 2013). The Land Use and Resource Management Plan for the Primary Zone of the Delta outlines policies for utilities and infrastructure in the Primary Zone. Portions of the Proposed Project that are within the Primary and Secondary Zones are identified in Table 4.11-2 and Figure 4.11-5).

The following policies are relevant to the Proposed Project (Delta Protection Commission 2024):

> **Utilities and Infrastructure 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.
>
> **Water Policy P-1:** State, federal and local agencies shall be strongly encouraged to preserve and protect the water quality of the Delta both for in-stream purposes and for human use and consumption.
>
> **Natural Resource Policy P-1:** Preserve and protect the natural resources of the Delta. Promote protection of remnants of riparian and aquatic habitat. Encourage compatibility between agricultural practices, recreational uses and wildlife habitat.

Natural Resource Policy P-3: Lands managed primarily for wildlife habitat should be managed to maximize ecological values. Appropriate programs, such as "Coordinated Resource Management and Planning" (Public Resources Code Section 9408(c)) should ensure full participation by local government and property owner representatives.

Natural Resource Policy P-7: Incorporate, to the maximum extent feasible, suitable and appropriate wildlife protection, restoration and enhancement on publicly-owned land as part of a Delta-wide plan for habitat management.

Agriculture Policy P-2: Conversion of land to non-agriculturally-oriented uses should occur first where productivity and agricultural values are lowest.

California Bay-Delta Program Record of Decision (2000)

The California Bay-Delta Program (CALFED) involves a consortium of 12 state and 13 federal agencies to address water management and ecological issues in the Bay-Delta region of California. In 2000, the CALFED Record of Decision was signed, establishing the Ecosystem Restoration Program for the protection and enhancement of 40,000 to 50,000 acres of managed wetlands. In 2001, the CALFED agencies were directed to work with key entities involved with Suisun Marsh to form a charter group to develop a plan for Suisun Marsh that would balance the needs of CALFED, the Suisun Marsh Preservation Agreement, and other plans by protecting and enhancing existing land uses and existing waterfowl and wildlife values, including those associated with the Pacific Flyway, endangered species, and state and federal water project supply quality. The charter group includes all of the local, state, and federal agencies that have jurisdiction or interest in the Marsh (BOR 2013).

In 2013, the Suisun Marsh Habitat Management, Preservation, and Restoration Plan (2013 SMPRP) was adopted by the Suisun Principal Agencies, which included USFWS, BOR, National Marine Fisheries Service (NMFS), CDFW, DWR, and SRCD, and the California Bay-Delta Authority (CBDA); however, the CBDA was dissolved in 2009 and its responsibilities were transferred to the DSC. The Principal Agencies consulted with other participating agencies, such as the USACE, BCDC, RWQCB, and the SWRCB, in developing the 2013 SMPRP. The 2013 SMPRP is intended to address the full range of issues in the Marsh, which are linked geographically, ecologically, and ideologically. Many of these issues have been recognized in other planning documents such as the CALFED Record of Decision and the Suisun Marsh Preservation Agreement (BOR 2013).

The 2013 SMPRP 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. These restoration targets stem from the CALFED Bay-Delta Program Record of Decision (BOR 2013). The 2013 SMPRP also includes the objective to 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 (BOR 2013).

The 1976 SMPP is a land-use protection plan, preventing habitat loss due to urbanization, while the 2013 SMPRP focuses on active habitat restoration and long-term ecological resilience, including the implementation of restoration projects. The 2013 SMPRP does not define new permitting regulations beyond those established in the 1976 SMPP.

Lower Sherman Island Wildlife Area Land Management Plan (2007)

The CDFW oversees the Lower Sherman Island Wildlife Area (LSIWA), which is approximately 3,100 acres of riparian marshland located at the confluence of the Sacramento and San Joaquin Rivers within the Delta in Sacramento County (CDFG 2007). The proposed LSPGC 230 kV submarine segment alignment is 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 (CDFG 2007).

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 in both the Primary and Secondary Zone (DSC 2013). The Delta Plan identifies six 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 2022). Portions of the Proposed Project site overlap the Suisun Marsh priority habitat restoration area (DSC 2022). The Delta Plan also includes discussion regarding the DPC Land Use and Resource Management Plan for the Primary Zone of the Delta (2010), which guides land uses in the Primary Zone and is discussed below in relation to the Delta Protection Act of 1992.

Water Code section 85022(a) directs "state and local land use actions identified as covered actions pursuant to section 85057.5 be consistent with the Delta Plan"(Findlaw 2023; DSC 2013). While portions of the Proposed Project would cross the Primary Zone and Secondary Zone (refer to Table 4.11-2 and Figure 4.11-5), the Proposed Project is a regulatory action and, as such, is not a covered action.[2] While the Proposed Project would not require a consistency analysis

[2] CPUC consulted DSC regarding whether the Proposed Project would be considered a covered action and if a consistency analysis would be required. The Proposed Project was determined to be statutorily exempt from regulation as a covered action under Water Code section 85057.5(b)(1) because the Proposed Project is a regulatory action of a state agency. Nevertheless, Appendix H includes a comparison of the Project's APMs, CMs, and mitigation measures with the Delta Plan's mitigation measures.

under the Delta Plan,the following land use policies from the Delta Plan are considered for informational purposes only in this analysis:

> **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 [of the Original Delta Plan published in 2013], significant adverse impacts to the opportunity to restore habitat as described in section 5006 [of Chapter 4 of the amended Delta Plan], 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 CDFW, considering the size of the area impacted by the covered actionand 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 [of the Original Delta Plan published in 2013], and other relevant information about habitat restoration opportunities of the area.
>
> **ER P5.** Avoid Introductions of and Habitat Improvements for Invasive Nonnative Species
>
> (a) The potential for new introductions of or improved habitat conditions for nonnative invasive species, striped bass, or bass must be fully considered and avoided or mitigated in a way that appropriately protects the ecosystem.
>
> (b) For purposes of Water Code section 85057.5(a)(3) and section 5001(j)(1)(E) of this Chapter, this policy covers a proposed action that has the reasonable probability of introducing or improving habitat conditions for nonnative invasive species.

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 (CVFPB 2025a). The portion of the LSPGC 230 kV submarine segment that falls within Sacramento County overlaps the Sacramento San Joaquin Drainage District boundaries (CVFPB 2025b). 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 in addition to providing guidance regarding carrying out enforcement actions, meeting CEQA requirements (CVFPB 2025a).

Senate Bill 1065

The CDFW-administered LSIWA was originally designated as a wildlife area and was 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 (CDFG 2007). In 2007, the CDFW adopted the LSIWA LMP, which is a guiding document that ensures public uses and operation and maintenance activities on Lower Sherman Island are compatible with the conservation of species and habitats. While the Proposed Project site is in the vicinity of the LSIWA, no portion of the Proposed Project site crosses lands or waters within the boundaries of the LSIWA. The LMP does not include any policies land use policies relevant to the Proposed Project.

Local

Pursuant to 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."

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 2008a). The proposed LPSGC Collinsville Substation site, LSPGC 230 kV overhead segment alignment, PG&E 500 kV interconnection lines alignment, and PG&E 12 kV distribution line alignment are within the Collinsville Special Study Area. The Collinsville Special Study Area covers the unincorporated community of Collinsville and has an associated Collinsville Land Use Plan. The following policy from the Collinsville Land Use Plan is relevant to the Proposed Project (Solano County 2008a):

> **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 (Solano County 2008b):

> **PF.P-5:** Design and locate new development to maximize the use of existing facilities and services and to coordinate with the cities the need for additional County services.

PF.P-8: Notify the appropriate agencies (e.g., school districts, public safety, water) of new development applications within their service area early in the review process to allow sufficient time to assess impacts on facilities.

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.

PF.I-54: Direct utility companies to locate transmission lines within existing rights-of-way or other locations that minimize impacts on human populations and natural areas.

Solano County Zoning Code

Chapter 28, Article II of the Solano County Zoning Code details the allowable uses on the lands crossed by the Proposed Project, including the following requirements (Solano County 2024):

28.21.20 Agricultural District Land Uses and Permit Requirements: 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 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.

28.104.B When [Marsh Development Permit] Required. A marsh development permit shall be required from any person or entity wishing to undertake a development, as defined in Section 29114 of the Public Resources Code, within the Secondary Management Area of the Suisun Marsh. Any land use development permit or other permit which conforms with the provisions of this Section may serve as a marsh development permit, as determined by the Director of Resource Management. If all or a portion of the site or development is within the Primary Management Area, any required County land use or development permit shall be obtained prior to application for a marsh development permit from the San Francisco Bay Conservation and Development Commission for development within the Primary Management Area, unless that Commission has delegated its permit authority as described in section 29501 of the Public Resources Code. The lawful use of land under County permit, issued prior to the certification of the Suisun Marsh Local Protection Program, shall be eligible for a marsh development permit, provided, such existing use does not have an adverse impact upon the Suisun Marsh.

28.104.H Required Findings. A marsh development permit shall not be approved unless the all of the following general findings are made:

i. That the application process complies with the California Environmental Quality Act of 1970, as amended.
ii. That the establishment, maintenance, or operation of the use is in conformity with the County General Plan with regard to traffic circulation, population densities and distributions, and all other pertinent aspects.
iii. That adequate utilities, access roads, drainage, and other necessary facilities have been or are being provided.
iv. That the applicant has exhibited proof that such use will not constitute a nuisance or be detrimental to the health, safety, comfort, or general welfare of the people of the County, or be detrimental to adjacent property or improvements to the neighborhood.
v. That the proposed development shall be consistent with the certified Suisun Marsh Local Protection Program. Where the proposed development is located in both the Secondary and Primary Management Areas, all portions of the proposed development shall be consistent with the certified Suisun Marsh Local Protection Program.

Solano County Suisun Marsh Local Protection Program

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 SMPP (Solano County 2018a). Therefore, Solano County developed and received certification for its Suisun Marsh LPP in 1982. The County is responsible for preparing and administering the LPP. The Solano County Component of the Suisun Marsh LPP, as amended in 2018, included revisions to the Solano County General Plan Policies. 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. At the the proposed LSPGC Collinsville Substation site, the LPP changed the Limited Agriculture (AL) District to the Suisun Marsh Agricultural (A-SM) District, requiring that existing uses 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 and that, where feasible, the value of the upland grasslands and cultivated lands as habitat for marsh-related wildlife be enhanced. Details on the A-SM District are provided in the Solano County Zoning Code section above.

The following policies from the Suisun Marsh LPP are relevant to the Proposed Project (Solano County 2018a):

SM.P-1: 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.

SM.P-2: The Marsh waterways, managed wetlands, tidal marshes, seasonal marshes, and lowland grasslands, which are critical habitats for marsh related wildlife and are essential to the integrity of the Suisun Marsh, shall be protected from degradation. Habitat areas that have become degraded or are of marginal value should be restored or enhanced, where feasible, if other values of the Marsh would not be adversely impacted.

SM.P-8: 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.

SM.P-25: In the Suisun Marsh, improvements to public utility and transportation facilities should follow these planning guidelines:

> a. 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.
>
> b. 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 effect on the Marsh than aboveground 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.

SM.P-26: Underground pipelines, wires, and cables should be permitted in the Suisun Marsh if no alternative route is feasible and they are designed and constructed to meet the following standards;

> c. Whenever construction occurs within the wetlands, it is confined to the dry months (generally April 15 through October 15) to minimize disturbance of wetland vegetation, wintering migratory waterfowl, other water-associated birds, and nesting resident birds.

h. In water areas (bays and sloughs), dredging and pipe and cable installation is scheduled so as to avoid major fish migrations.

SM.P-33: The following policies toward diking, filling, and dredging of sloughs, managed wetlands, and marshes should be implemented:

a. No dredging, filling, or diking activity shall be conducted within the Primary Management Area of the Suisun Marsh, except with the permission of the appropriate permitting authorities.

Portions of the Proposed Project would be located within both Primary Management Areas and Secondary Management Areas identified in the 1976 SMPP and Suisun Marsh LPP, as shown in Table 4.11-2 and in Figure 4.11-6. As discussed for the Suisun Marsh Preservation Act, development within the Primary Management Area requires a discretionary permit (Administrative Permit or Major Permit, as determined by BCDC) from BCDC. In addition, development within the Secondary Management Area may require a Marsh Development Permit from Solano County, based on the authority granted by BCDC through the certified Suisun Marsh LPP.

Solano County Agricultural Mitigation Program

In November 2024, Solano County amended Chapter 2.2 of the Solano County Code by adding Article III to define and implement an agricultural mitigation program and ordinance as directed by Solano County's 2008 General Plan Implementation Program AG.1-1. The ordinance establishes a regulatory program for avoiding or reducing significant environmental impacts to farmland in the county and ensures that future impacts to farmland are minimized and mitigated through a consistent and standardized regulatory program (refer to Section 4.2: Agriculture and Forestry Resources).

Sacramento County

Sacramento County General Plan

The Land Use Element of the Sacramento County General Plan was reviewed and does not contain goals, policies, or implementation measures relevant to the Proposed Project. The Delta Protection Element of the Sacramento County General Plan was adapted from Land Use and Resource Management Plan for the Primary Zone of the Delta; policies specific to protection of the Primary zone of the Delta are discussed above. 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 The Public Facilities Element contains the following land use policies relevant to the Proposed Project (Sacramento County 2019):

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-89: Wherever feasible, utilize existing transmission poles to accommodate new overhead transmission lines. If practical, existing and future transmission corridors should be shared by more than one utility company subject to the Northern California Joint Pole Agreement.

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.

PF-103: Sub-transmission facilities should be entirely contained within a public utility easement or dedicated SMUD easements, as applicable.

PF-107. New sub-transmission lines should be routed along road rights-of-way in dedicated private or public utility easements. When necessary, sub-transmission lines can be routed along rear property lines in dedicated easements that provide adequate access for maintenance by the utility provider. Easements shall be granted as a condition of project approval. Lines near schools shall comply with California Codes and Regulations. Disclosure of future substations, transmission, and sub-transmission lines by developers is required before property sales are made.

Sacramento County Zoning Code

Chapter 4 of the Sacramento County Zoning Code details the uses permitted in the zones crossed by the Proposed Project site. The Proposed Project crosses the Delta Waterways (DW) zone. According to section 4.9 of the Sacramento County Zoning Code, the DW zoning district is designed to regulate property in the unincorporated area of the County along the Sacramento River and along the waterways and is intended to preserve and enhance the waterways and ensure compatibility of land uses along the river and waterways (Sacramento County 2015). No language in the 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 2024b). The following policies from the Land Use Element are relevant to the Proposed Project:

> **LU-P6.1:** Ensure that County projects and decisions on private development and land use activities within the Legal Delta are consistent with the following plans:
>
> > (a) Land Use and Resource Management Plan for the Primary Zone of the Delta adopted by the Delta Protection Commission.
> >
> > (b) Delta Plan adopted by the Delta Stewardship Council. In addition, screen proposed General Plan amendments affecting the Primary Zone for consistency with Public Resources Code Section 29763.5, including a specific analysis of consistency with each subsection thereof
>
> **LU-P6.3:** Work collaboratively with cities and special districts (e.g., East Bay Regional Park District and utility service providers) to address regional issues of mutual concern and coordinate on decisions and actions that affect residents of nearby unincorporated areas.

The Public Facilities and Services Element of the General Plan includes policies relevant to public utilities and the Proposed Project and include the following (Contra Costa County 2024c):

> **PFS-P1.4** Encourage, and whenever possible require, co-location and undergrounding of new utility infrastructure, such as transmission and distribution lines, fiber-optic cables, and pipelines, in existing rights-of-way to minimize visual, operational, and environmental impacts on the community
>
> **PFS-P1.3** Encourage, and whenever possible require, public agencies to locate, design, construct, and operate their facilities in a manner that complements and avoids conflict with adjacent land uses.

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. Transposition Site D is zoned as general agriculture (A-2); however, the Transposition Site D would be installed within PG&E's existing ROW and, therefore, allowable uses in zone A-2 are not relevant to the Proposed Project. Chapter 84 includes the following relevant to the Proposed Project (Contra Costa County 2025):

> **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 (EBRPD 2013). The proposed LSPGC 230 kV submarine segment alignment is approximately 0.6 mile northwest of Browns Island, and no portion of the Proposed Project site crosses the area. Therefore, the Master Plan policies are not relevant to the Proposed Project.

Alameda County

The proposed modifications at PG&E's existing Tesla Substation are the only Proposed Project activities that would occur in Alameda County. Land where the Tesla Substation is located and in the surrounding area is designated as large parcel agriculture and zoned as agriculture (CDA 2024). All of PG&E's proposed substation modifications would occur within the substation fence line. Therefore, the Proposed Project would not conflict with any land use plans or policies in Alameda County, and detailed information about land use and planning in Alameda County is not addressed in this section.

City of Pittsburg

City of Pittsburg General Plan

The Land Use Element of the City of Pittsburg General Plan establishes goals, policies, and programs to manage and address land use within the City. The Proposed Project site is located in the Northwest River Planning and Downtown subareas. The Land Use Element contains the following policies relevant to the Proposed Project (City of Pittsburg 2024b):

> **2-P-6.6**: Ensure—through a combination of on- and off-site mitigation—that new development results in no net loss of wetlands. If wetlands are located on-site, on-site wetland mitigation (including but not limited to preservation in place, wetland restoration, wetland enhancement, and wetland establishment) shall be encouraged and preferred.
>
> **2-P-6.8**: Support the permanent preservation of the wetlands and salt marsh habitats along New York and Dowest Sloughs, including Browns Island Regional Shoreline Preserve.
>
> **12-P-8.1**: Work cooperatively with utility providers to ensure the provision of adequate electric power and natural gas services and facilities to serve the needs of existing and future residents and businesses and to site facilities to reduce community and environmental impacts.

12-P-8.3: Require new and redevelopment projects to install utility lines underground, where feasible.

12-A-8.a: Coordinate with utility providers regarding major development plans, any needed utility infrastructure, and participate in the planning of the extension of utilities.

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 within the City of Pittsburg. Major utilities require a use permit, minor utilities and telecommunication facilities are permitted in the Governmental and Quasipublic zone which fall under Industrial zoning designations (City of Pittsburg, n.d.). Telecommunication facilities are permitted in the Open Space (OP), Governmental and Quasipublic District (GQ), and Commercial District zones. According to 18.62.030, Planned Development (PD) District, no use other than an existing use is permitted in a PD district except in accord with a PD plan or specific plan (City of Pittsburg, n.d.).

City of Pittsburg Granted Tidelands, Submerged Lands, and Beds of Navigable Lakes and Waterways

When California became a state in 1850, the State acquired all right, title, and interest in tide and submerged lands and beds of navigable waterways within its borders. The California Legislature has since granted sovereign public trust lands to over 80 local municipalities to manage in trust for the people of California. Granted public trust lands and assets are managed locally; however, the CSLC was delegated the state's residual and review authority for granted lands by the California legislature. Public Resources Code section 6301 states that "all jurisdiction and authority remaining in the State as to tidelands and submerged lands as to which grants have been or may be made is vested in the commission" (CSLC 2025b). The City of Pittsburg was granted sovereign tide and submerged lands in trust in 1937. The trust lands must be used for public trust purposes and managed in conformance with a land use plan approved by the CSLC, with a report of trust uses every five years. The 2017 Trusts Land Use Plan utilized goals from the City of Pittsburg General Plan at the time of publication, which included the following goals relevant to the Proposed Project (CSLC 2025a; City of Pittsburg 2017):

Goal 3: Maximize public access to and recreational facilities along the City's waterfront areas.

Goal 4: Promote improved views of the shoreline from public parks and rights-of-way.

Goal 5: Protect sensitive marshland habitats along the New York Slough waterfront.

Goal 6: Preserve existing wetlands and salt marshes along the Suisun Bay

Goal 8: Protect conservation areas, particularly habitats that support special status species, including species that are state or federally listed as endangered, threatened, or rare.

Goal 9: Support the reclamation of wetlands and marshlands along local industrial waterfronts.

Goal 10: Minimize the runoff and erosion caused by earth movement by requiring development to use best construction management practices (BMPs).

Goal 12: Comply with Regional Water Quality Control Board (RWQCB) regulations and standards to maintain and improve the quality of both surface water and groundwater resources.

Goal 14: Minimize risk to life and property from geologic and seismic hazards.

4.11.3 Approach to Impact Analysis

The analysis of impacts on land use and planning applies the impact criteria defined in the following subsection. Applicant proposed measures (APMs) and construction measures (CMs) identified by LSPGC and PG&E, respectively, have been considered when making the impact determinations. Impacts are evaluated for the Proposed Project, including LSGPC and PG&E Project components analyzed separately and as a whole, as well as analyses of cumulative impacts and of project alternatives. Mitigation measures are defined to reduce or avoid significant impacts, where feasible.

Impact Criteria and Significance Thresholds

The following impact criteria questions have been derived from Appendix G of the CEQA Guidelines to evaluate impacts on land use and planning. Appendix G of the CEQA Guidelines ask whether a project would:

- Impact LU-1: Physically divide an established community?
- Impact LU-2: 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?

Applicant Proposed Measures and Construction Measures

LSPGC APMs and PG&E CMs identified in Chapter 2: Project Description that are relevant to the land use and planning impact analysis are provided in Table 4.11-6.

Table 4.11-6 APMs and CMs Relevant to Land Use and Planning

LSPGC APMs and PG&E CMs
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.

LSPGC APMs and PG&E CMs
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-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: 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.
APM BIO-20: 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.
APM BIO-21: 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.

LSPGC APMs and PG&E CMs
APM BIO-22: 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.
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.
CM 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.

4.11.4 Impact Analysis – Proposed Project

Table 4.11-7 presents a summary of the CEQA significance criteria and impacts on land use and planning that would occur during construction, operation, and maintenance of the Proposed Project.

Table 4.11-7 Summary of Impacts on Land Use and Planning for the Proposed Project

Impact criteria: Would the project …	APMs/CMs applied	Significance Before Mitigation	Mitigation Measures Required	Significance After Mitigation
Impact LU-1: Physically divide an established community?	None	NI	None	NA

Impact criteria: Would the project …	APMs/CMs applied	Significance Before Mitigation	Mitigation Measures Required	Significance After Mitigation
Impact LU-2: 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?	APM BIO-1 APM BIO-4 APM BIO-18 APM BIO-19 APM BIO-20 APM BIO-21 APM BIO-22 APM HYD-1 CM AG-1	S	MM AG-1 MM BIO-2	SU

Notes:

NA = not applicable

NI = no impact

S = significant

SU = significant and unavoidable

Impact LU-1: Would the Proposed Project physically divide an established community? ***(No impact)***

LSPGC Project Components

On the north side of the Delta, the nearest established community to the Proposed Project site is the community of Collinsville, located along Collinsville Road, approximately 0.8 mile west of the proposed LSPGC Collinsville Substation site and LSPGC 230 kV overhead segment alignment. The LSPGC portions of the Proposed Project site north of the Delta are in a generally undeveloped area, with an existing SMUD wind farm to the north and the Delta to the south. None of the LSPGC project components would physically divide the community of Collinsville or any other communities in the vicinity. Collinsville Road and Stratton Lane would be used to access the Project site during construction and operation; however, no physical changes to existing roads are proposed that could result in impacts on an established community. No impact from physically dividing an established community would occur.

On the south side of the Delta, all the portions of the Project site are located within an industrial area in the City of Pittsburg that is surrounded by security fencing, with the exception of the approximately 0.7 mile of the proposed LSPGC telecommunication lines alignment located within the public roadways and utility corridors along Marina Boulevard, Herb White Way, and Halsey Court adjacent residential development. The proposed telecommunication lines would be installed underground and primarily along existing roadways. None of the Proposed Project components would physically divide an established community within the City of Pittsburg. No impact from physically dividing an established community would occur.

PG&E Project Components

The proposed PG&E 12 kV distribution line would connect to an existing distribution line on the west side of Collinsville Road, cross Collinsville Road, and then run along the north side of Stratton Lane to the Collinsville Substation. The 12 kV line would be installed to cross and follow existing roads similar to PG&E's existing distribution network in the area. The proposed PG&E 500 kV interconnection lines alignment is located approximately 0.9 to 1.9 miles northeast of Collinsville, surrounded by existing wind turbines to east and west and existing transmission to the north. None of the LSPGC project components would physically divide the community of Collinsville or any other communities in the vicinity. No impact would occur.

The proposed PG&E substation modifications would occur within the existing fence lines of the substations and would therefore divide any residential communities. Similarly, the proposed transposition structures would be installed along PG&E's existing Vaca-Dixon–Tesla 500 kV Transmission Line and adjacent to other existing structures and would not physically divide any communities. No impact would occur.

Impact LU-2: Would the Proposed 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? *(Significant and unavoidable)*

Overview

As discussed in Sections 4.11.1 and 4.11.2, the Proposed Project site is located on privately owned land or land owned by PG&E within areas subject to federal, state, and local jurisdictions. The jurisdictions crossed by the Proposed Project site are summarized in Table 4.11-1 through Table 4.11-3 and shown in Figure 4.11-1 through Figure 4.11-7. Potential conflicts with land use plans, policies, and regulations adopted for the purpose of avoiding or mitigating an environmental effect that apply to these areas are discussed by jurisdiction in the following sections for both the LSPGC and PG&E project components. The applicable joint federal, state, and regional agency plans and programs are discussed with the state jurisdictions because these plans are generally administered by a state or regional agency.

Federal Jurisdictions

LSPGC Project Components

The only jurisdiction of a federal agency applicable to the Proposed Project is the USACE's jurisdiction over federal navigable waters and navigation channels where the submarine segment of the LSPGC 230 kV transmission line would be located (refer to Table 4.11-1). The USACE does not have any land use plans, policies, or regulations adopted for the purpose of avoiding or mitigating an environmental effect that apply to the Proposed Project; therefore, no impact would occur. Impacts related to the Delta waterway and navigation channels are discussed in other sections of the EIR, including Section 4.10: Hydrology and Water Quality, and Section 4.17: Transportation.

PG&E Project Components

The PG&E portions of the Proposed Project site would not be located within areas subject to the jurisdiction of federal agencies that have an applicable land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect. No impact would occur.

State Jurisdictions

LSPGC Project Components

California State Lands Commission Lease Areas

LSPGC would obtain a Land Lease Agreement from the CSLC to construct, operate, and maintain the proposed LSPGC 230 kV submarine segment within ungranted areas of the Delta. LSPGC would be subject to the conditions of the Land Lease Agreement, which would ensure consistency with all applicable CSLC regulations. By obtaining a Land Lease Agreement for the portions of the Proposed Project within CSLC jurisdiction, the Proposed Project would not conflict with any land use policies, regulations, or plans set forth by the CSLC, and impacts would be less than significant.

BCDC San Francisco Bay Plan

A portion of the proposed 230 kV submarine segment alignment is located within BCDC jurisdiction under the Bay Plan. The Bay Plan includes policies relevant to avoiding or mitigating an environmental effect include avoiding adverse environmental impacts to Bay natural resources such as to water surface area, volume, or circulation and to plants, fish, other aquatic organisms and wildlife habitat, subtidal areas, or tidal marshes or tidal flats and mitigating for any impacts that cannot be avoided. The Proposed Project does not propose any aboveground structures in the Bay Plan area. A portion of the submarine segment would be installed within the Bay Plan Area. The proposed 230 kV submarine segment would not affect water surface area, volume, or circulation. The impacts of the proposed 230 kV submarine segment on fish and marine mammals are discussed in detail in Section 4.4: Biological Resources. Impacts on fish and marine mammals would be reduced through implementation of APM BIO-18, APM BIO-19, APM BIO-20, APM BIO-21, and APM BIO-22, which define in-water work windows to minimize impacts on fish migration, require intake screening for any pumps or water intakes, require invasive species management for in-water work, sediment testing per DMMO standards, and aquatic spill prevention and control. The Bay Plan also requires that high voltage transmission lines only be placed in the Bay when there is no reasonable alternative. The alternatives analysis (refer to Section 5: Alternatives) considered an alternative in which the LSPGC 230 kV submarine segment would avoid BCDC's defined Bay jurisdictional area; however, this alternative was dismissed as it would not reduce an environmental effect. With the implementation of APMs, the Proposed Project would not result in substantial conflicts with the Bay Plan.

BCDC Suisun Marsh Protection Plan

The SMPP includes policies that address preservation of diverse habitats and surrounding upland areas wherever possible; the siting and design of utilities within the Marsh;

coordination with CDFW regarding construction methods and timing to minimize impacts on Marsh flora and fauna; preservation of compatible agricultural uses within the Marsh (i.e., grazing and grain production) (refer to Section 4.11.2). Policies related to the SMPP, included under the Solano County Suisun Marsh LPP, are addressed below under the discussion of local jurisdictions.

Approximately 2.2 miles of the proposed LSPGC 230 kV submarine segment alignment are within the Primary Management Area identified in the SMPP, and construction of the submarine segment would result in approximately 6.5 acres of temporary disturbance within the Delta that is in the Primary Management Area. The disturbance and sediment dispersion during construction would be temporary and would return to background levels within approximately one tidal cycle. The cables would be buried to a depth of 6 to 15 feet below the channel and would not interfere with habitat preservation objectives of the SMPP.

The proposed LSPGC Collinsville Substation site and approximately 650 feet of the proposed LSPGC 230 kV overhead segment alignment would be within the Secondary Management Area and upland grassland habitat identified in the SMPP. These areas are also subject to grazing and hay cultivation. Construction of the LSPGC Collinsville Substation and 230 kV overhead segment would result in approximately 16 acres of temporary disturbance and 12 acres permanent disturbance within grassland.[3] Development within the Primary Management Area requires a discretionary permit (Administrative Permit or Major Permit, as determined by BCDC) from BCDC.

The SMPP requires maintaining agricultural uses consistent with protection of the Marsh, such as grazing and grain production, in the Secondary Management Area; however, in the event that such uses are infeasible, other compatible uses consistent with protection of the Marsh are permitted. Temporary impacts from establishment of staging yards within agricultural use areas could conflict with the SMPP policies aimed at mitigating environment effects should those areas not be restored thus resulting in a significant impact. The Project would be required to implement MM BIO-2 (refer to Section 4.4: Biological Resources), which would ensure that all areas temporarily disturbed by construction activities are restored. However, after restoration efforts, the approximately 12 acres within the SMPP Secondary Management Area would still be permanently converted to utility uses and, therefore, the Proposed Project would conflict with policies outlined in the SMPP which are designed to reduce environmental effects, and would result in a significant impact. The Project would be required to implement MM AG-1, which requires mitigation of permanent impacts on agricultural land through granting of an

[3] Temporary disturbance includes the staging areas surrounding LSPGC Collinsville Substation site that are within the SMPP Secondary Management Area, excluding areas of permanent disturbance that overlap. The area of permanent disturbance includes the combined footprint and area of grading for the LSPGC Collinsville Substation, which also includes the 0.3-acre PG&E telecommunication yard. Construction of the LSPGC 230 kV transmission line overhead segment would not result in additional disturbance outside of areas already identified for the substation.

agricultural conservation easement at a 1.5:1 mitigation ratio consistent with the Solano County Agricultural Mitigation Program. Within implementation of MM AG-1, lands with similar agricultural or farmland value to those impacted by the Proposed Project would be conserved, and the Proposed Project would therefore not conflict with SMPP requirements for maintaining agricultural uses. Further, if Solano County were to issue a Marsh Development Permit for the development within the Secondary Management Area, LSPGC would be required to comply with requirements outlined in the permit. Additionally, LSPGC would be required to comply with requirements outlined in the descretionary permit from BCDC for permanent disturbance in the Primary Management Area. Therefore, with mitigation and adherence to permit conditionsthe impacts from conflict with SMPP policies adopted for the purpose of avoiding or mitigating an environmental effect would be less than significant with mitigation.

Plans of Suisun Principal Agencies

Suisun Marsh Habitat Management, Preservation, and Restoration Plan

The SMPRP focuses on active habitat restoration and long-term ecological resilience, including implementation of restoration projects. Key objectives covered under this plan include restoration and protection goals regarding the Marsh's valued biological resources. Approximately 1.9 miles of the proposed LSPGC 230 kV submarine segment alignment falls within the Suisun Marsh boundaries as outlined in the SMPRP. The proposed 230 kV submarine segment would be installed below bed of the Delta and would not conflict with restoration of any habitat resources. Impacts from conflicts with a land use plan adopted for the purpose of avoiding or mitigating environmental effects would be less than significant.

DPC Land Use and Resource Management Plan

The DPC Land Use and Resource Management Plan is only applicable to the Primary Zone of the Delta. Approximately 3.5 miles of the proposed LSPGC 230 kV submarine segment alignment is located within the Primary Zone. Water Policy P-1 is applicable to the submarine segment, which states: "State, federal and local agencies shall be strongly encouraged to preserve and protect the water quality of the Delta both for in-stream purposes and for human use and consumption."

While the Plan outlines additional policies specific to agricultural protections and other land use policies, those policies are specific to on-land resources and would not apply to the Proposed Project site, of which only the proposed 230 kV submarine segment alignment portion is located within the Primary Zone. Installation of the submarine cables would temporarily increase turbidity levels in proximity to the area of the hydroplow and could result in increased levels of toxicity if there were a spill of hazardous materials or disturbance of a sediments containing hazardous materials. LSPGC has proposed APM BIO-21, which includes screening (DSC 2013)and testing of sediments for hazardous materials prior to disturbance. In addition, LSPGC would comply with State and federal requirements for storage and use of hazardous materials. As discussed in Section 4.4: Biological Resources, impacts form elevated turbidity levels are anticipated to return to background conditions within one tidal cycle. Due to the short-term nature of construction and implementation of APMs, the Proposed Project would

not conflict with the DPC Land Use and Resource Management Plan policies adopted for the purpose of avoiding or mitigating an environmental effect. Impacts would be less than significant.

DSC Delta Plan

The Delta Plan includes policies aimed at improving statewide water supply reliability and protecting and restoring a vibrant and healthy Delta ecosystem in a manner that preserves, protects, and enhances the unique agricultural, cultural, and recreational characteristics of the Delta in both the Primary and Secondary Zone (ER P 5). Additionally, the Delta Plan identifies priority habitat restoration areas, including the Suisun Marsh Priority Habitat Restoration Area, which directly overlaps the proposed LSPGC Collinsville Substation site and 230 kV transmission line overhead segment alignment (ER P 3). Within the priority habitat restoration areas, it is required that projects avoid or mitigate significant adverse impacts to the opportunity to restore habitat. Impacts are considered avoided or mitigated to appropriate levels if the project is designed such that it does not preclude or otherwise interfere with the ability to restore habitat and, in the event that a project does interfere, mitigation is implemented as determined in consultation with the CDFW (DSC 2013).

Construction of the proposed LSPGC Collinsville Substation would permanently impact approximately 12 acres and would temporarily disturb approximately 16 acres that fall within the habitat restoration area and are located on agricultural lands within the Delta. Therefore, construction of the LSPGC Collinsville substation would result in the permanent conversion of lands identified as restoration areas and agricultural lands within the Delta to utility uses. While the Proposed Project has been sited and designed to minimize conflicts the Delta Plan policies where possible, the loss of approximately 12 acres of agricultural and restoration lands within the Delta Plan area would be considered a significant impact. The Project would be required to implement MM BIO-2, which would ensure that areas of temporary disturbance are restored. However, areas of permanent impact would be converted to a utility use and would no longer be available for restoration. The Project would be required to implement MM AG-1, which requires lands with similar agricultural or farmland value to those impacted by the Proposed Project to be conserved and would mitigate impacts related to the loss of agricultural lands; however, MM AG-1 would not address the restoration value of the converted lands. The permanent conversion of lands within the Suisun Marsh Priority Habitat Restoration Area to a utility use would be a significant impact. Since the impact would be caused by the location of the Collinsville Substation within the Suisun Marsh Priority Habitat Restoration Area, the impact would be significant and unavoidable.[4]

[4] While the Proposed Project is not considered a covered action under the Delta Plan (refer to Section 4.11.2), in consideration of the intent and goals of the Delta Plan, the CPUC recognizes that the location of the LSPGC Collinsville Substation would create a significant and unavoidable impact by locating a substation in an area designated by the state for habitat restoration, and that off-site mitigation measures

CDFW Lower Sherman Island Wildlife Area Land Management Plan
Lower Sherman Island Wildlife Area is approximately 0.4 mile southeast of the proposed LSPGC 230 kV transmission line submarine segment alignment, and no portion of the Proposed Project site would cross the area. Therefore, the Proposed Project would not conflict with Lower Sherman Island Wildlife Area Land Management Plan. No impact would occur.

PG&E Project Components

BCDC Suisun Marsh Protection Plan
Limited portions of the proposed PG&E 500 kV interconnection lines and PG&E 12 kV distribution line alignments are within the Secondary Management Area and Upland Grassland habitat identified in the SMPP. Additionally, the PG&E telecommunication yard portion of Collinsville Substation site is within the Secondary Management Area. As the footprint of the telecommunication yard is incorporated into the LSPGC Collinsville Substation site, the associated impacts are discussed above. These areas are similarly subject to grazing and hay cultivation. Construction of the proposed PG&E 500 kV interconnection lines and 12 kV distribution line would cause a permanent impact on agricultural use at the location of two 500 kV interconection lines support structures within the SMPP and individual 12 kV distribution line support poles within the SMPP. The SMPP requires maintaining agricultural uses consistent with protection of the Marsh, such as grazing and grain production, in the Secondary Management Area; however, in the event that such uses are infeasible, other compatible uses consistent with protection of the Marsh are permitted. The siting of the 500 kV interconnection lines support structures and 12 kVdistribution line support poles would allow for continued agricultural uses and restoration activities around the poles. As the pole footprints are small and interspersed, the 500 kV interconnection lines support structures and 12 kV distribution support poles would not conflict with restoration goals of the SMPP. Following restoration, the telecommunication yard area would be permanently converted to utility uses, which would conflict with policies outlined in the SMPP. The Project would be required to implement MM AG-1, which requires mitigation of permanent impacts on agricultural land through granting of an agricultural conservation easement at a 1.5:1 mitigation ratio consistent with the Solano County Agricultural Mitigation Program. Because the implementation of MM AG-1 would result in conservation of lands with similar value to those impacted by the Proposed Project, the Proposed Project would not conflict with SMPP requirements for maintaining agricultural uses. The impacts related to conflict with SMPP policies adopted for the purpose of avoiding or mitigating an environmental effect would be less than significant with mitigation.

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are not feasible because the Delta Plan covers all equivalent habitat, and off-site areas would not mitigate the impacts of reducing specific delta habitats. Alternatives 1 and 2 (refer to Sections 4.11.1 and 4.11.2) analyzed below considered a relocated substation.

DSC Delta Plan

The Delta Plan includes policies aimed at improving statewide water supply reliability and protecting and restoring a vibrant and healthy Delta ecosystem in a manner that preserves, protects, and enhances the unique agricultural, cultural, and recreational characteristics of the Delta in both the Primary and Secondary Zone. Within the priority habitat restoration areas, it is required that projects avoid or mitigate significant adverse impacts to the opportunity to restore habitat. Impacts are considered avoided or mitigated to appropriate levels if the project is designed such that it does not preclude or otherwise interfere with the ability to restore habitat and, in the event that a project does interfere, that mitigation is applied as determined in consultation with the CDFW (ER P 3 and ER P 5) (DSC 2013). The PG&E telecommunication yard portion of the LSPGC Collinsville Substation site is also within the Suisun Marsh priority habitat restoration area. As the footprint of the telecommunication yard site is incorporated into the LSPGC Collinsville Substation site, the associated impacts are discussed above. Construction of the PG&E telecommunication yard would result in the permanent conversion of lands identified as restoration areas and agricultural lands within the Delta to utility uses. While the Proposed Project has been sited and designed to minimize conflicts with the Delta Plan policies where possible, the loss of 12 acres of agricultural and restoration lands within the Delta Plan area would be considered a significant impact as the permanent conversion of lands identified as restoration areas and agricultural lands within the Delta to utility uses would conflict with Delta Plan policies specifically aimed at reducing environmental effects. PG&E has proposed CM AG-1, which would ensure that proper notice is provided to landowners outlining construction and restoration efforts, all disturbed areas are restored in accordance with lease agreements, applicable operation and maintenance standards, and environmental permit requirements, and that, in areas containing permanent crops that must be removed, PG&E compensates the farmer and/or landowner according to agreed upon conditions; however, even with implementation of CM AG-1, the permenant conversion of approximately 12 acres of agricultural and restoration lands within the Suisun Marsh Priority Habitat Restoration Area to a utility use would be a significant impact. The PG&E telecommunications yard is included within the LSPGC Collinsville Substation footprint, therefore MM AG-1 would also apply to PG&E in this case. MM AG-1 which requires lands with similar agricultural or farmland value to those impacted by the Proposed Project to be conserved and would mitigate impacts related to the loss of agricultural lands; however, MM AG-1 would not address the restoration value of the converted lands. Since the impact would be caused by the location of the telecommunications yard within the Suisun Marsh Priority Habitat Restoration Area, the impact would be significant and unavoidable.

Local Jurisdictions

Overview

The Proposed Project components would be within areas where location agencies have adopted land use plans and ordinances, including Solano County, Contra Costa County, Alameda County, City of Pittsburg, and East Bay Parks District. Portions of Sacramento County where the Proposed Project components are located are limited to areas of the Delta that are under the jurisdiction of state and federal agencies; therefore, no Sacramento County plans and policies

are relevant, and they are not discussed further. In addition, Proposed Project activities within Alameda County would be limited to modification of PG&E's existing Tesla Substation which would occur within the existing fence line.

LSPGC Project Components

LSPGC would be responsible for obtaining applicable permits from Solano County, Contra Costa County, and the City of Pittsburg prior to construction within public ROWs, including roadways and tidelands and submerged lands owned by the City of Pittsburg.

Collinsville Special Study Area

The proposed LSPGC Collinsville Substation site and 230 kV transmission line overhead segment alignment overlap the Collinsville Special Study Area. The Collinsville Special Study Area, as identified in the Solano County General Plan (2008), has an associated Collinsville Land Use Plan that specifies the residential character of the community of Collinsville should be preserved to ensure future non-residential uses are compatible with residential uses. While the Proposed Project site does overlap this area, the LSPGC project components would be consistent with existing development in the area and would have no impact on the residential character of the Collinsville community such that the Proposed Project would not conflict with this land use plan. No impact would occur.

City of Pittsburg CSLC Granted Tidelands

LSPGC would obtain a Land Lease Agreement from the City of Pittsburg to construct, operate, and maintain portions of the proposed 230 kV transmission line submarine segment that are within areas of the Delta that have been granted to the City of Pittsburg. LSPGC would be subject to the conditions of the Land Lease Agreement with the City of Pittsburg, including any terms related to minimizing environmental impacts. Therefore, impacts would be less than significant.

East Bay Regional Park District Master Plan

Browns Island Regional Preserve is approximately 0.6 mile southeast of the proposed LSPGC 230 kV transmission line submarine segment alignment, and no portion of the Proposed Project site crosses the area. Therefore, the Proposed Project would not conflict with East Bay Regional Parks District Master Plan. No impact would occur.

Solano County Suisun Marsh Local Protection Program

The Solano County Component of the Suisun Marsh 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 Suisun Marsh LPP also requires that existing agricultural uses continue in upland grasslands and cultivated areas surrounding the critical habitats of the Suisun Marsh in order to protect, preserve, and enhance valuable marsh-related wildlife habitat.

The proposed LSPGC Collinsville Substation site and approximately 650 feet of the proposed LSPGC 230 kV overhead segment are within the Suisun Marsh Secondary Management Area and Upland Grassland habitat identified in the SMPP, analyzed above. Construction of the

LSPGC Collinsville Substation site and 230 kV overhead segment would result in approximately 15.6 acres of temporary disturbance and 12.7 acres of permanent impact within grassland within the Suisun Marsh Secondary Management Areas.

As discussed in Section 4.11.2, development within the Suisun Marsh Secondary Management Area may require a Marsh Development Permit from Solano County in accordance with the County's certified Suisun Marsh LPP (as defined by Section 29114 of the Public Resources Code). If a Marsh Development Permit is required from Solano County, the permit would be obtained prior to construction of the Proposed Project . The Suisun Marsh LPP includes policies (refer to Section 4.11.2) required for avoiding and minimizing impacts on Suisun Marsh associated with construction of electrical transmission lines and utility accessory uses and structures which include substations, including preserving and enhancing habitat wherever possible (SM.P-1); protecting waterways, wetlands, and aquatic habitat (SM.P-2, SM.P-26, and SM.P-33); maintaining agricultural uses and maintaining and enhancing upland grassland and cultivated lands where possible (SM.P-8); and transmission siting, design, and construction authorization (SM.P-25, SM.P-26, and SM.P-33).

Temporary impacts construction within agricultural use areas could conflict with the SMPP policies aimed at mitigating environment effects should those areas not be restored thus resulting in a significant impact. The Project would be required to implement MM BIO-2 (refer to Section 4.4: Biological Resources), which would ensure that all areas temporarily disturbed by construction activities are restored. Temporary impacts within the Secondary Management Areas would be restored through implementation of MM BIO-2 (refer to Section 4.4: Biological Resources), which requires all temporarily disturbed areas to be restored following construction. Therefore, upland areas and habitats would be preserved where possible, consistent with SM.P-1 and SM.P-8.

Impacts to waterways, wetlands, and aquatic habitat would be addressed through implementation of APM BIO-1 (avoid environmentally sensitive areas), APM BIO-4 (delination of sensitive resources), APM BIO-18 (in-water work window), APM BIO-19 (water intake screening), APM BIO-20 (invasive species management for in-water work), APM BIO-21 (aquatic sediment screening and testing), APM BIO-22 (aquatic spill prevention and control), (refer to Section 4.4: Biological Resources), as well as APM HYD-1 (utilize in-water sediment containment during open trenching in marine environments) and Section 4.10: Hydrology and Water Quality). The Proposed Project would also avoid permanent impacts in wetlands as discussed in Section 3.4: Biological Resources. Therefore, the Proposed Project would not conflict with SM.P-2, SM.P-26, and SM.P-33.

Impacts to agricultural uses and cultivated lands would be addressed through implementation of MM AG-1 (refer to Section 4.2: Agriculture and Forestry Resources). MM AG-1 requires mitigation of permanent impacts on agricultural land through granting an agricultural conservation easement at a 1.5:1 mitigation ratio, consistent with the Solano County Agricultural Mitigation Program and SM.P-8.

Siting and design requirements applicable to transmission and substation equipment, including the associated permanent impacts, to the Suisun Marsh Secondary Management Areas, would be addressed by obtaining a Marsh Development Permit from Solano County, if required. The results of the alternatives analysis process presented in this EIR would determine if there are feasible and environmentally superior locations for the proposed transmission line and substation. Therefore, siting, design, and construction authorization requirements for the project components within Secondary Management Areas (SM.P-25, SM.P-26, and SM.P-33) would be addressed through the CEQA review process and obtaining a Marsh Development Permit. Siting, design, and construction authorization requirements for the project components within Primary Management Areas would be addressed seperately by BCDC as discussed above. Impacts would be less than signficant with implementation of mitigation and after obtaining applicable permits.

PG&E Project Components

PG&E may also be responsible for obtaining the same types of permits as LSPGC to construct portions of the 500 kV interconnection lines and 12 kV distribution line, except where LSPGC's permits also cover these PG&E project components. No permits are expected to be required for PG&E's existing substation modifications or transposition sites. If it is determined that permits are required, they would be obtained from the applicable local jurisdiction consistent with PG&E's operation and maintenance activities associated with the existing facilities that would be modified.

Collinsville Special Study Area

The proposed PG&E 12 kV distribution line and 500 kV interconnection lines alignments overlap the Collinsville Special Study Area. The Collinsville Special Study Area, as identified in the Solano County General Plan (2008), is under an associated Collinsville Land Use Plan, which dictates that the residential character of the community of Collinsville be preserved to ensure future non-residential uses are compatible with residential uses. While the Proposed Project site does overlap this area, the construction of PG&E project components would have no impact on the residential character of the Collinsville community, as the components would be consistent with existing infrastructure in the area, such that the Proposed Project would conflict with this land use plan. No impact would occur.

City of Pittsburg

LSPGC would obtain a Land Lease Agreement from the City of Pittsburg to construct, operate, and maintain portions of the proposed submarine segment of the 230 kV transmission line that are within areas of the Delta that have been granted to the City of Pittsburg. LSPGC would be subject to the conditions of the Land Lease Agreement with the City of Pittsburg, including any terms related to minimizing environmental impacts. Therefore, impacts would be less than significant.

Solano County Suisun Marsh Local Protection Program

As described previously, the Solano County Component of the Suisun Marsh 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 Suisun Marsh LPP also requires that existing agricultural uses continue in upland grasslands and cultivated areas surrounding the critical habitats of the Suisun Marsh in order to protect, preserve, and enhance valuable marsh-related wildlife habitat.

Limited portions of the proposed PG&E 500 kV interconnection lines (approximately 900 feet of overhead conductor and two LSTs) and PG&E 12 kV distribution line (approximately 200 feet of overhead condutor)[5] are within the Secondary Management Area and upland grassland habitat. Additionally, the proposed PG&E telecommunication yard is within the Secondary Management Area; however, the footprint of the telecommunication yard has been incorporated into the proposed LSPGC Collinsville Substation site, and the associated impacts for the substation are discussed above.

As discussed in Section 4.11.2 and for impacts associated with the LSPGC project components, development within the Suisun Marsh Secondary Management Areas may require a Marsh Development Permit from Solano County in accordance with the certified Suisun Marsh LPP (as defined by Section 29114 of the Public Resources Code). If a Marsh Development Permit is required from Solano County, the permit would be obtained prior to construction of the project. The Suisun Marsh LPP includes policies (refer to Section 4.11.2) required for avoiding and minimizing impacts on Suisun Marsh associated with construction of electrical transmission lines and utility accessory uses and structures which include substations, including preserving and enhancing habitat whereever possible (SM.P-1); protecting waterways, wetlands, and aquatic habitat (SM.P-2, SM.P-26, and SM.P-33); maintaining agricultural uses and maintaining and enhancing upland grassland and cultivated lands where possible (SM.P-8); and transmission siting, design, and construction authorization (SM.P-25, SM.P-26, and SM.P-33).

Temporary impacts within the Secondary Management Areas would be restored through implementation of MM BIO-2 (refer to Section 4.4: Biological Resources), which requires all temporarily disturbed areas to be restored following construction. Therefore, upland areas and habitats would be preserved where possible consistent with SM.P-1 and SM.P-8.

PG&E project components are not located in wetalnds or aquatic resource areas in the LPP. Therefore, the Proposed Project would not conflict with SM.P-2, SM.P-26, and SM.P-33.

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[5] The proposed PG&E 12 kV distribution line would be located along the north side of Stratton Lane. The boundary of the Suisun Marsh Secondary Management Area generally follows Stratton Lane; however, the boundary does not perfectly align with Stratton Lane due to spatial accuracy. It is assumed that the Suisun Marsh Secondary Management Area does not extent north of Stratton Lane where the proposed PG&E 12 kV distribution line would be located along Stratton Lane. The estimated 200 feet of overhead 12 kV conductor within the Secondary Management Area includes the easternmost portion that would cross Stratton Lane and enter the proposed Collinsville Substation.

Impacts to agricultural uses and cultivated lands would be addressed through implementation of CM AG-1 (refer to Section 4.2: Agriculture and Forestry Resources), which would ensure that disturbed areas are restored in accordance with PG&E's lease agreements. Therefore, the Proposed Project would not conflict with SM.P-8.

Siting and design requirements applicable to transmission and substation equipment, including the associated permanent impacts, to the Suisun Marsh Secondary Management Areas, would be addressed by obtaining a Marsh Development Permit from Solan County, if required. The results of the alternatives analysis process presented in this EIR would determine if there are feasible and environmentally superior locations for the proposed transmission line and substation. Therefore, siting, design, and construction authorization requirements for the project components within Secondary Management Areas (SM.P-25, SM.P-26, and SM.P-33) would be addressed through the CEQA review process and obtaining a Marsh Development Permit. Siting, design, and construction authorization requirements for the project components within Primary Management Areas would be addressed seperately by BCDC as discussed above. Impacts would be less than signficant with implementation of mitigation and after obtaining applicable permits.

4.11.5 Impact Analysis – Cumulative

CEQA defines a cumulative impact as "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" (CEQA Guidelines Section 15130(a)(1)). Cumulative impacts can result from "individually minor but collectively significant projects taking place over a period of time" (CEQA Guidelines Section 15355). An EIR must discuss cumulative impacts if the incremental effect of a project, combined with the effects of other projects, is "cumulatively considerable" (CEQA Guidelines Section 15130(a)).

The Proposed Project would not divide an established community and therefore would not result in a cumulative impact with respect to LU-1.

Projects within the cumulative analysis study area include all of the projects listed in Table 4.0-1 in Section 4: Environmental Analysis. Relevant to LU-2, this cumulative analysis considered projects that would also have the potential to convert agricultural lands to non-agricultural uses in the same area as the Proposed Project. The potential future California Forever shipbuilding proejct is located within the Delta Plan area, but is within areas that are zoned for industrial use. There would be no cumulative impact from conversion of agricultural land within the Delta Plan area.

4.11.1 Alternative 1: Collinsville Substation North of Talbert Lane

Environmental Setting – Alternative 1

Alternative 1 involves relocating the proposed LSPGC Collinsville Substation to a different site, approximately 1.2 miles north of the Proposed Project substation site. Alternative 1 would also include an approximately 500-foot segment of PG&E 500 kV interconnection lines, approximately 700-foot segment of 12 kV distribution line, and an approximately 2-mile-long

segment of LSPGC 230 kV overhead line. Alternative 1 would not involve changes to any of the other Proposed Project component, which would have the same impacts as described throughout this Draft EIR for the Proposed Project or the other alternatives if selected in combination with Alternative 1.

Alternative 1 would be located within lands designated and zoned for Agriculture (A-160 and ASM-160) in the Solano County General Plan and a small portion of the LSPGC 230 kV overhead segment would be sited on lands designated as Water as shown in Figure 4.11-8 and Figure 4.11-9 (Solano County 2023a; 2023b). Approximately 0.5 miles of the LSPGC 230 kV overhead segment and a staging area neighboring Stratton Lane is located within the secondary management zone of the Delta and approximately 0.2 acre of a pull site location would be within the Suisun Marsh Priority Habitat Restoration Area. Approximately 1.6 mile of the LSPGC 230 kV overhead segment would be sited within the CSSA. Alternative 1 would not involve changes to any of the other Proposed Project component, which would have the same impacts as described throughout this Draft EIR for the Proposed Project or the other alternatives if selected in combination with Alternative 1.

Impact Analysis – Alternative 1

Impact LU-1: Would Alternative 1 physically divide an established community? *(No impact)*

Alternative 1 neighbors the community of Collinsville, similar to the Proposed Project, located along Collinsville Road. Alternative 1 would generally be located within an undeveloped area, near the existing SMUD wind farm. None of the Alternative 1 LSPGC or PG&E Alternative 1 project components would physically divide the community of Collinsville or any other communities in the vicinity. Collinsville Road and Stratton Lane would be used to access the Project site during construction and operation; however, no physical changes to existing roads are proposed that could result in impacts on an established community. No impact from physically dividing an established community would occur.

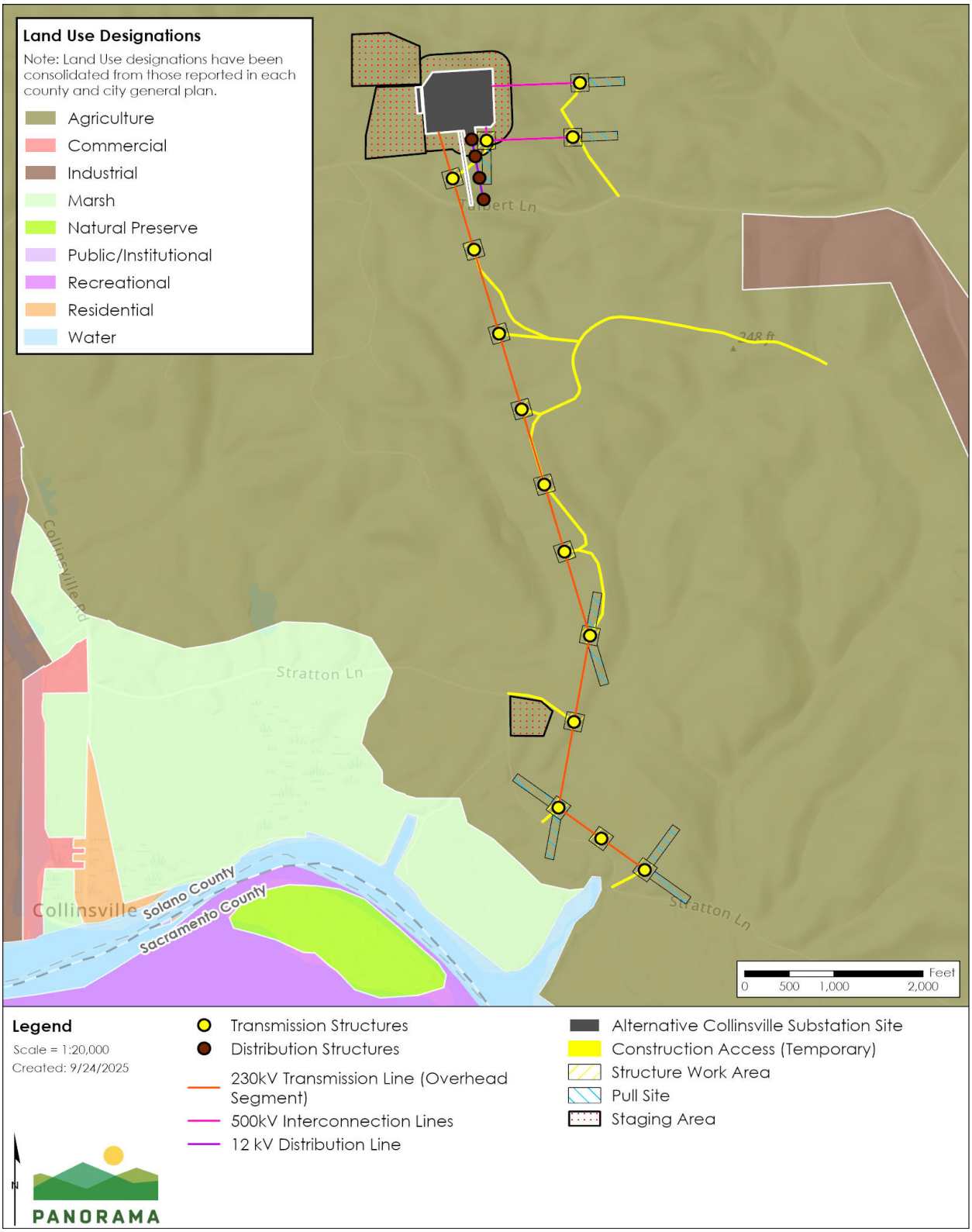
Impact LU-2: Would Alternative 1 cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect? *(Less than significant)*

Alternative 1 would largely avoid impacts to the Suisun Marsh Priority Habitat Restoration Area, in comparison to the Proposed Project. Alternative 1 would locate the LSPGC Collinsville Substation Site outside of the habitat restoration area and the secondary management zone of the Delta, as shown in Figure 4.11-10; therefore, there would be no permanent conversion of lands within the Suisun Marsh Priority Habitat Restoration Area under Alternative 1. Alternative 1 would also avoid the Secondary Management Areas identified in the Suisun Marsh LPP, except for approximately 0.7 acre of one temporary conductor pull site that extends south of Stratton Lane (refer to Figure 4.11-11).

While Alternative 1 does overlap the CSSA, as shown in Figure 4.11-11, Alternative 1 would be consistent with existing development in the area and would have no impact on the residential character of the Collinsville community such that the Alternative 1 would conflict with the

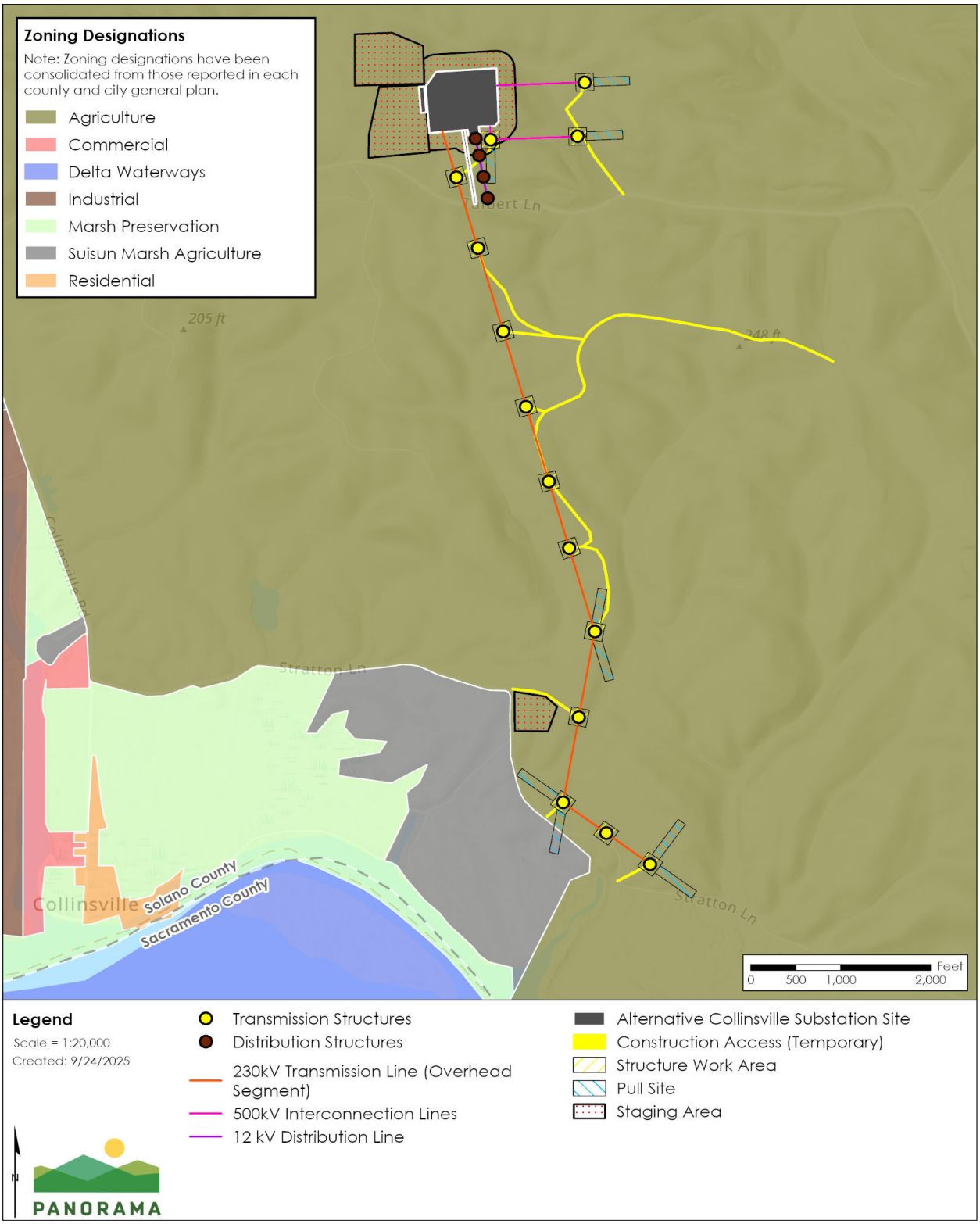
CSSA land use plan. Alternative 1 would be compatible with the SMPP, Delta Plan, and CSSA land use plan and impacts would be less than significant.

Figure 4.11-8 General Plan Land Use Designation within the Alternative 1 Area



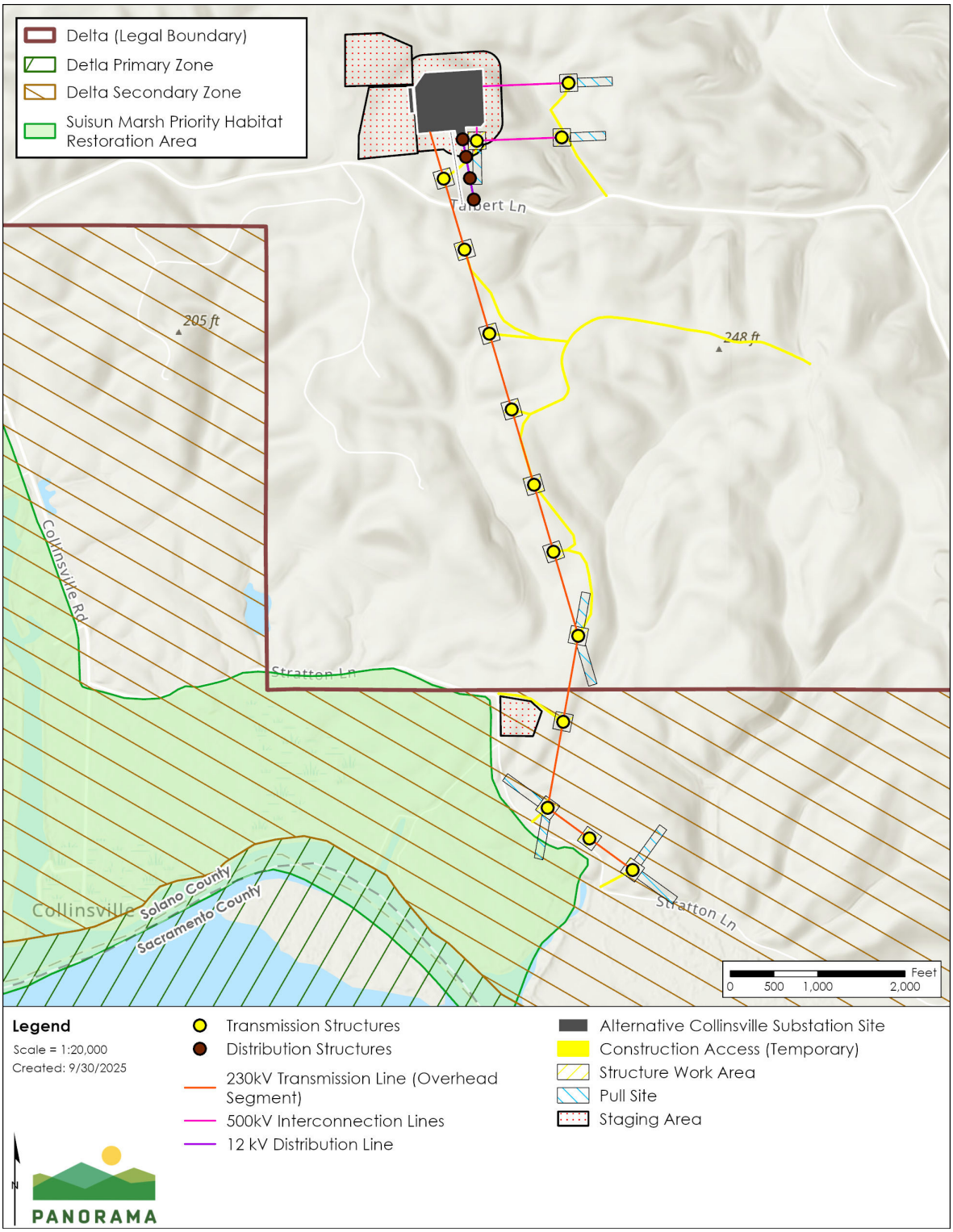
Source: (Solano County 2023a; 2023b)

Figure 4.11-9 Zoning Categories within the Alternative 1 Area



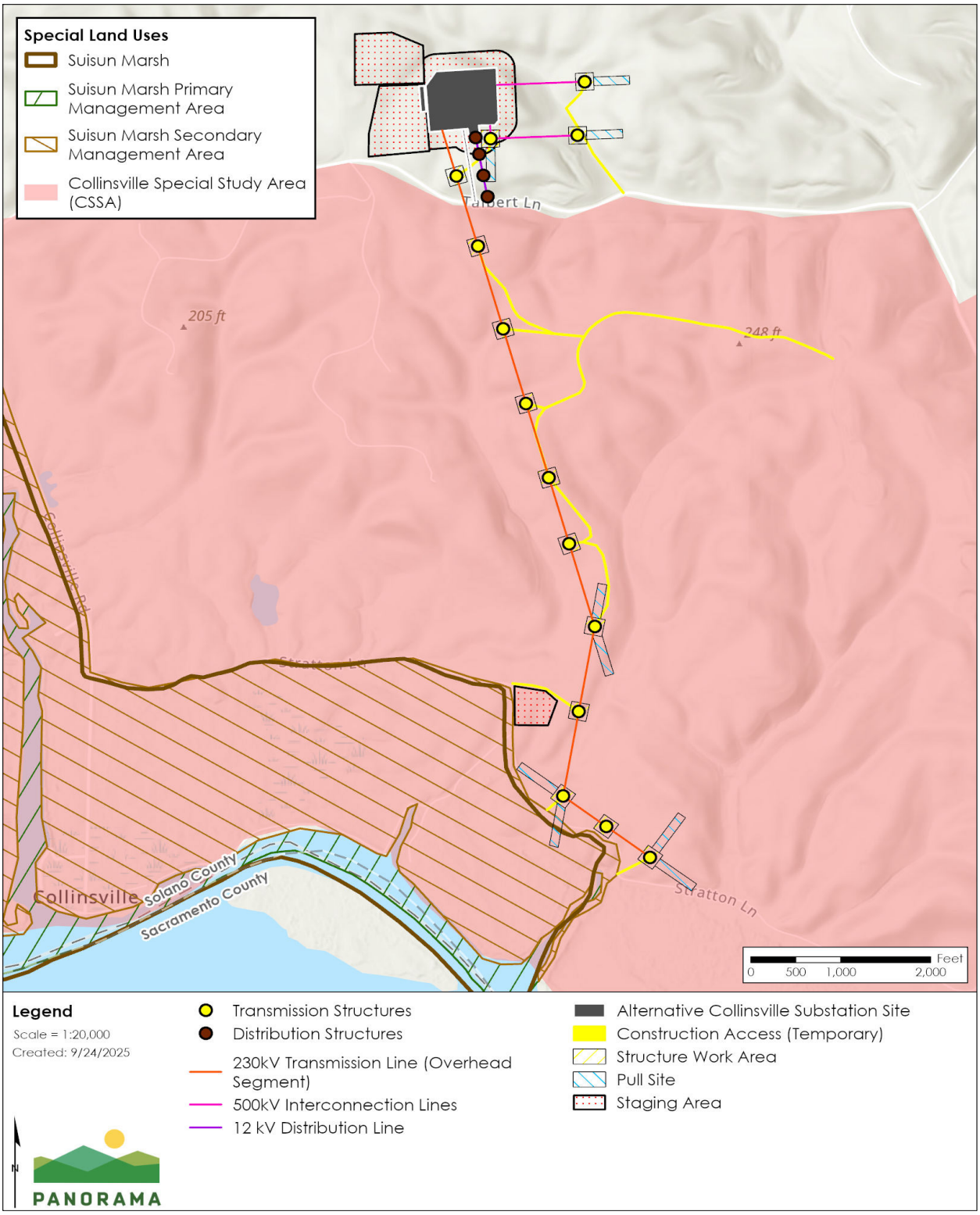
Source: (Solano County 2023a; 2023b).

Figure 4.11-10 Primary and Secondary Zones of the Delta with respect to Alternative 1



Source: (DWR 2022)

Figure 4.11-11 Special Land Uses and Suisun Marsh Management areas in the Alternative 1 Area



Source: (BCDC 2020)

4.11.2 Alternative 2: Collinsville Substation East of Wind Energy Substations

Environmental Setting – Alternative 2

Alternative 2 involves relocating the proposed LSPGC Collinsville Substation to a different site, approximately 3.0 miles north of the location proposed under the Proposed Project. Alternative 2 would also include an approximately 1,200-foot-long segment of PG&E 500 kV interconnection lines and a four-mile-long segment of LSPGC 230 kV overhead line, as well as an approximately 0.3-mile-long PG&E 12 kV distribution line. Alternative 2 would not involve changes to any of the other Proposed Project component, which would have the same impacts as described throughout this Draft EIR for the Proposed Project or the other alternatives if selected in combination with Alternative 2.

Alternative 2 would be located within lands designated and zoned for Agriculture (A-160 and ASM-160) in the Solano County General Plan and a small portion of the LSPGC 230 kV overhead segment would be sited on lands designated as Water as shown in Figure 4.11-12 and Figure 4.11-13 (Solano County 2023a; 2023b). Approximately 0.5 miles of the LSPGC 230 kV overhead segment and a staging area neighboring Stratton Lane is located within the secondary management zone of the Delta and approximately 0.2 acre of a pull site location would be within the Suisun Marsh Priority Habitat Restoration Area. Approximately 1.6 mile of the LSPGC 230 kV overhead segment would be sited within the CSSA. Alternative 2 would not involve changes to any of the other Proposed Project component, which would have the same impacts as described throughout this Draft EIR for the Proposed Project or the other alternatives if selected in combination with Alternative 2.

Impact Analysis – Alternative 2

Impact LU-1: Would Alternative 2 physically divide an established community? *(No impact)*

Alternative 2 neighbors the community of Collinsville, similar to the Proposed Project and Alternative 1, located along Collinsville Road. Alternative 2 would generally be located within an undeveloped area, near the existing SMUD wind farm. None of the Alternative 2 LSPGC or PG&E project components would physically divide the community of Collinsville or any other communities in the vicinity. Collinsville Road and Stratton Lane would be used to access the Project site during construction and operation; however, no physical changes to existing roads are proposed that could result in impacts on an established community. No impact from physically dividing an established community would occur.

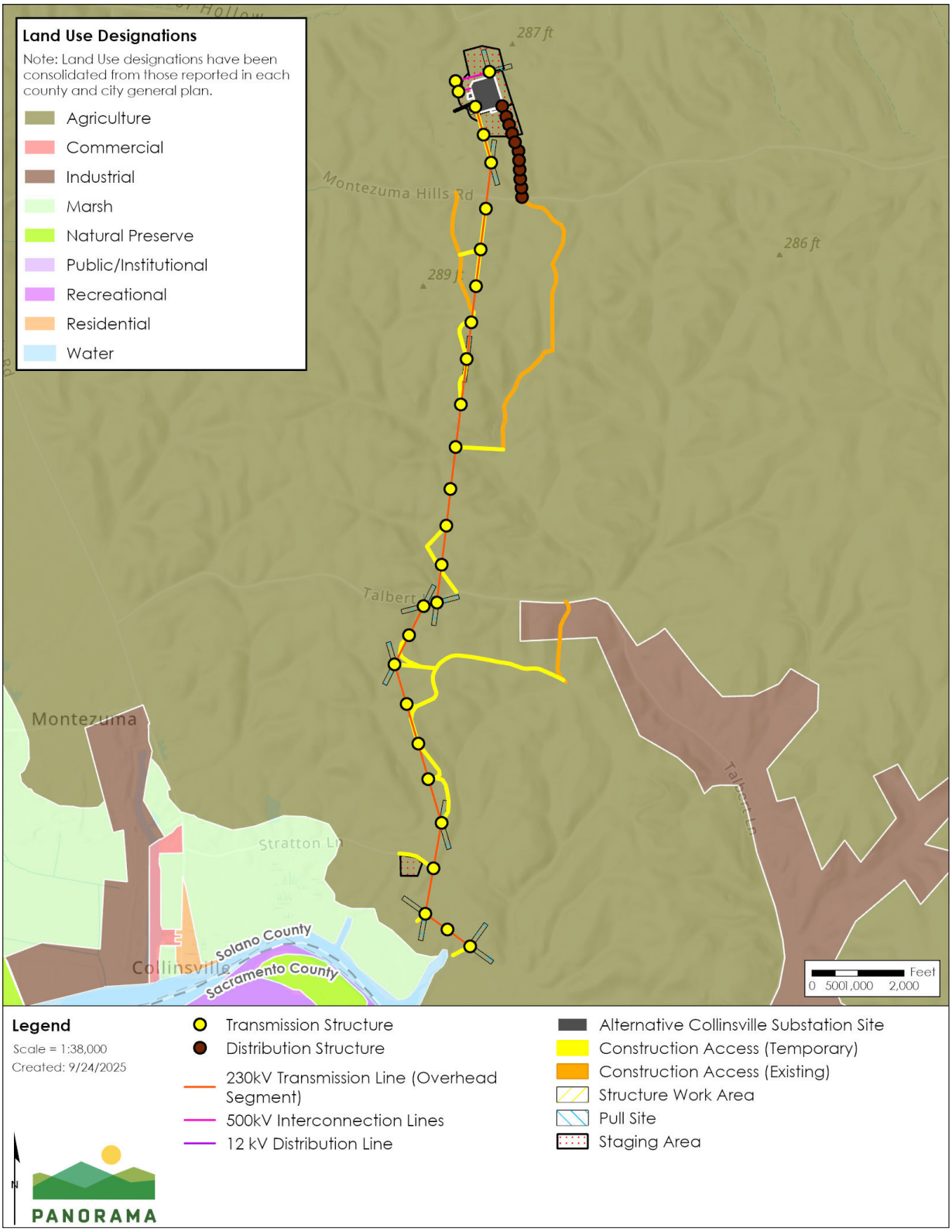
Impact LU-2: Would Alternative 2 cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect? *(Less than signficant)*

Alternative 2, similar to Alternative 1, would largely avoid impacts to the Suisun Marsh Priority Habitat Restoration Area, in comparison to the Proposed Project. Alternative 2 would locate the LSPGC Collinsville Substation Site outside of the habitat restoration area and the secondary management zone of the Delta, as shown in Figure 4.11-12, therefore there would be no permanent conversion of lands within the Suisun Marsh Priority Habitat Restoration Area

under Alternative 2. Alternative 2 would also avoid the Secondary Management Areas identified in the Suisun Marsh LPP, except for approximately 0.7 acre of one temporary conductor pull site that extends south of Stratton Lane (refer to Figure 4.11-15).

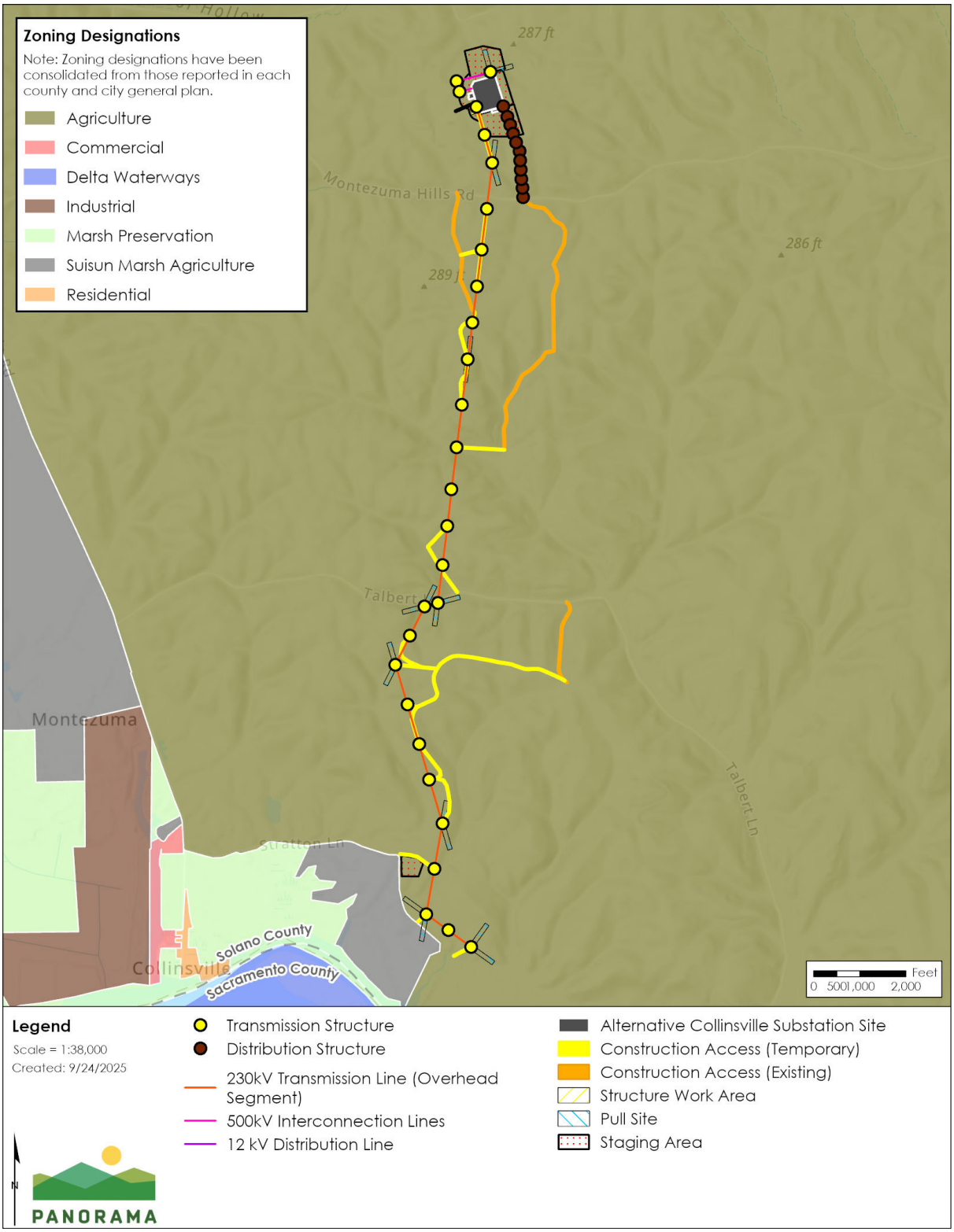
While Alternative 2 does overlap the CSSA, as shown in Figure 4.11-15, Alternative 2 would be consistent with existing development in the area and would have no impact on the residential character of the Collinsville community such that the Alternative 2 would conflict with the CSSA land use plan. Alternative 2 would be compatible with the SMPP, Delta Plan, and CSSA land use plan and impacts would be less than significant.

Figure 4.11-12 General Plan Land Use Designation within the Alternative 2 Area



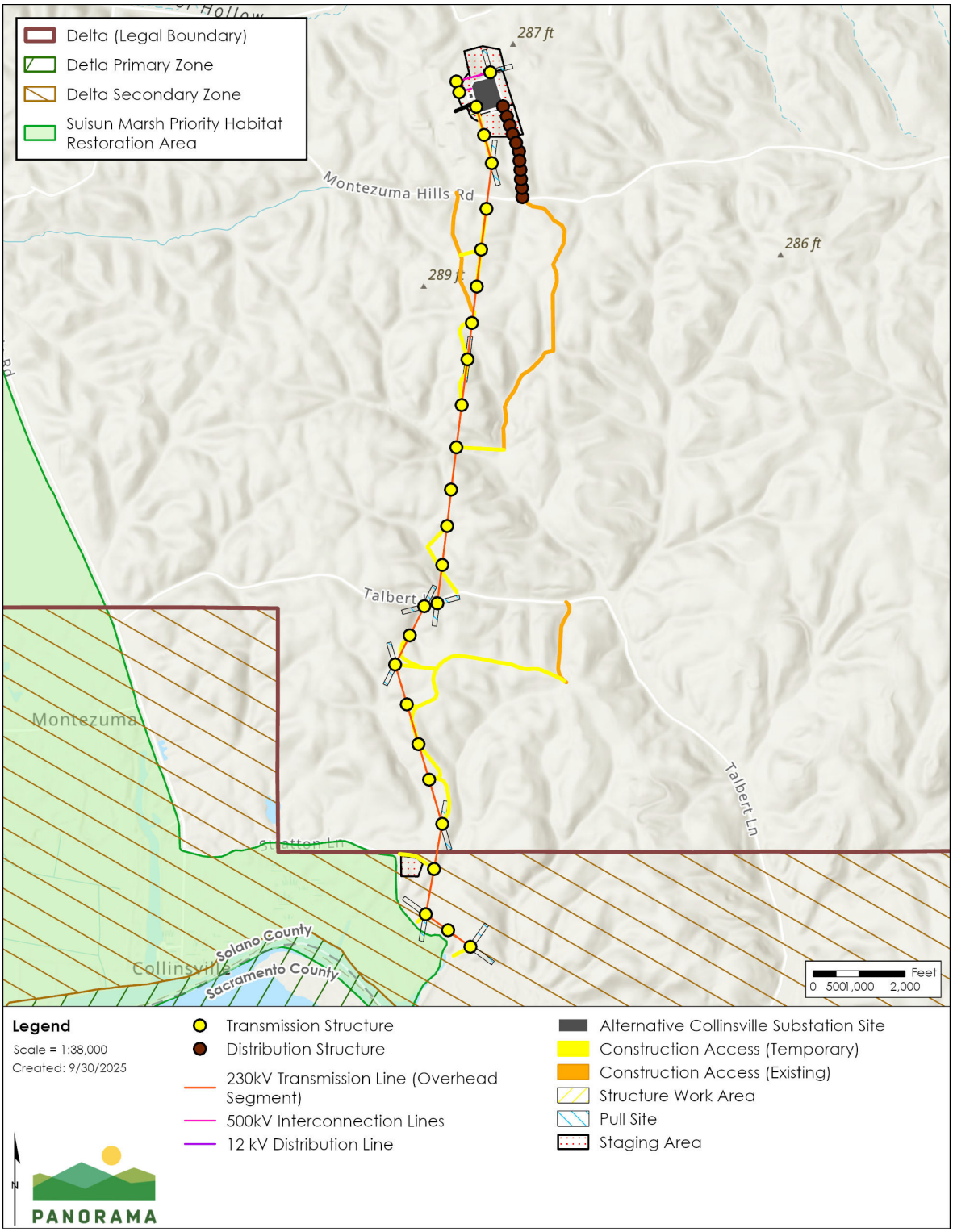
Source: (Solano County 2023a; 2023b).

Figure 4.11-13 Zoning Categories within the Alternative 2 Area



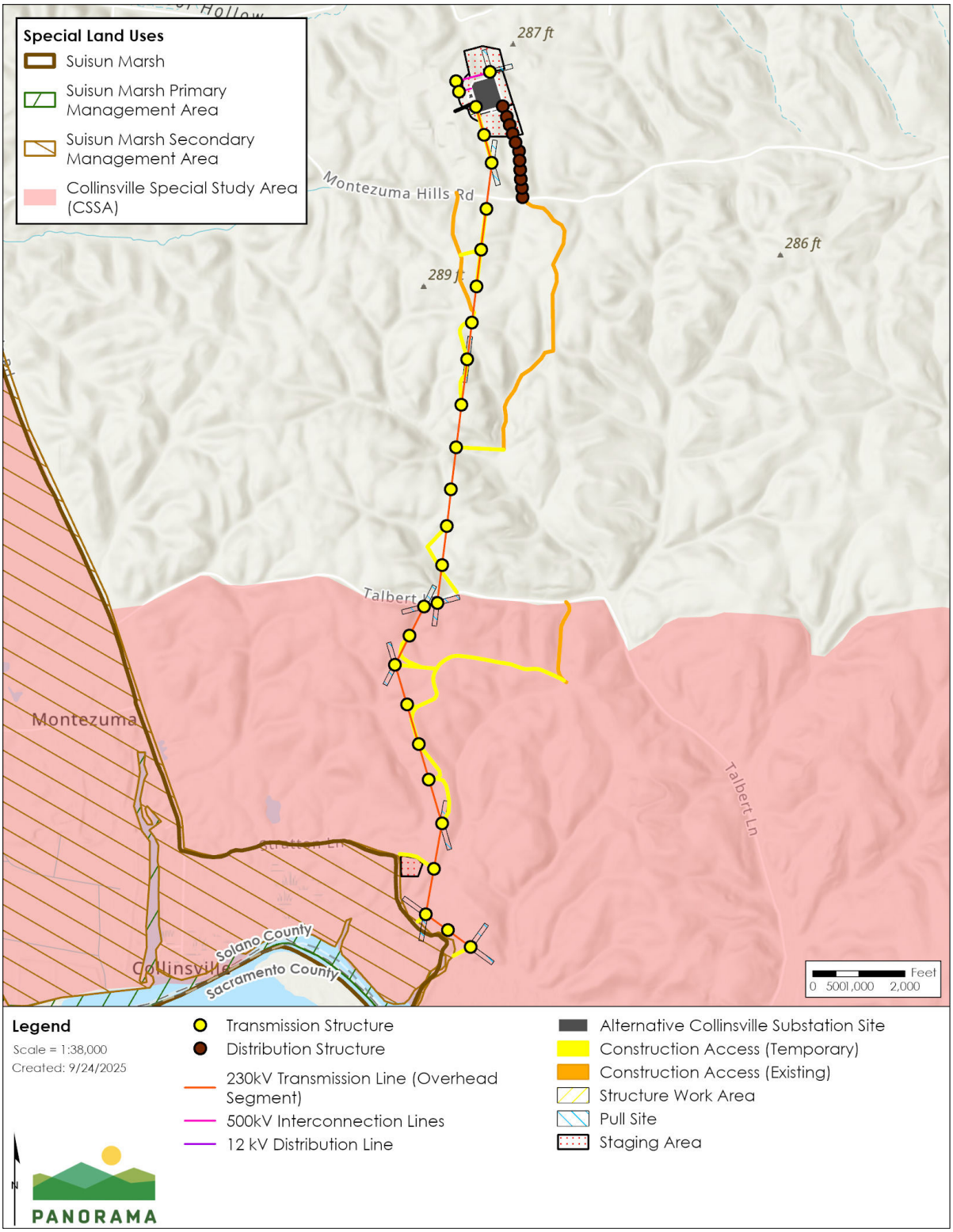
Source: (Solano County 2023a; 2023b).

Figure 4.11-14 Primary and Secondary Zones of the Delta with respect to Alternative 2



Source: (DWR 2022)

Figure 4.11-15 Special Land Uses and Suisun Marsh Management areas in the Alternative 2 Area



Source: (BCDC 2020)

4.11.3 Alternative 3: 500 kV Interconnection Lines on Entirely TSPs

Environmental Setting – Alternative 3

Alternative 3 involves constructing the PG&E 500 kV interconnection lines on entirely TSPs, instead of the combination of LSTs and three-pole TSPs under the Proposed Project. The 500 kV interconnection lines would be in the same general alignment as the Proposed Project PG&E 500 kV interconnection lines. Alternative 3 is the same environmental setting discussed in Section 4.11.1. Alternative 3 would not involve changes to any of the other Proposed Project component, which would have the same impacts as described throughout this Draft EIR for the Proposed Project or the other alternatives if selected in combination with Alternative 3.

Impact Analysis – Alternative 3

Alternative 3 has an identical alignment to the Proposed Project, therefore the analysis presented in Section 4.11.4 is applicable to Alternative 3. Alternative 3 would have a less than significant impact in regard to the physical division of an established community (Impact LU-1) and would not itself conflict with any land use policies, regulations, or plans, however implementation of Alternative 3 would not reduce impacts to less than significant levels as the location of structures would not change under this alternative (Impact LU-2). Refer to the above analysis presented in Section 4.11.4 for a full examination of impacts.

4.11.4 Alternative 4: 230 kV Overhead Segment Alternative Route

Environmental Setting – Alternative 4

Alternative 4 involves relocation of a short segment of the LSPGC 230 kV overhead segment between the proposed LSPGC Collinsville Substation and the Delta, west of the proposed LSPGC 230 kV overhead segment route. Additionally, the northern end of the LSPGC 230 kV submarine segment would be rerouted to meet up with the southern end of the Alternative 4 230 kV submarine segment. Alternative 4 would not involve changes to any of the other Proposed Project component, which would have the same impacts as described throughout this Draft EIR for the Proposed Project or the other alternatives if selected in combination with Alternative 4.

Alternative 4 would be located within lands designated as agricultural for approximately 0.3 mile and designated as marsh lands for the remaining approximately 0.3 mile, as shown in Figure 4.11-16. The entire LSPGC 230 kV overhead segment is zoned as agriculture (ASM-160) as shown in Figure 4.11-17 (Solano County 2023a; 2023b). Alternative 4 would also relocate an approximately 0.3-mile-long segment of the submarine cables to the west of the Proposed Project resulting in an approximately 0.1 mile increase in the length of the submarine cables. Approximately 500 feet of the relocated 230 kV submarine segment would be on land designated as water and zoned as marsh preservation, the remainder of the relocated portion of the submarine segment is on lands designated as marsh and recreational space and zoned as Agriculture and delta waterways, as shown in Figure 4.11-16 and Figure 4.11-17. The entire LSPGC 230 kV overhead segment, the access roadway, and a small portion of the relocated LSPGC 230 kV submarine segment under Alternative 4 would fall within the secondary

management zone of the Delta and the Suisun Marsh Priority Habitat Restoration area under the Delta Plan. The remaining 0.3 mile of the relocated 230 kV submarine segment would fall within the primary management zone of the Delta, as shown in Figure 4.11-18. Alternative 4 falls entirely within the CSSA and the Suisun Marsh Secondary Management Areas identified in the Suisun Marsh LPP, as shown in Figure 4.11-19. Alternative 4 would not involve changes to any of the other Proposed Project component, which would have the same impacts as described throughout this Draft EIR for the Proposed Project or the other alternatives if selected in combination with Alternative 4.

Impact Analysis – Alternative 4

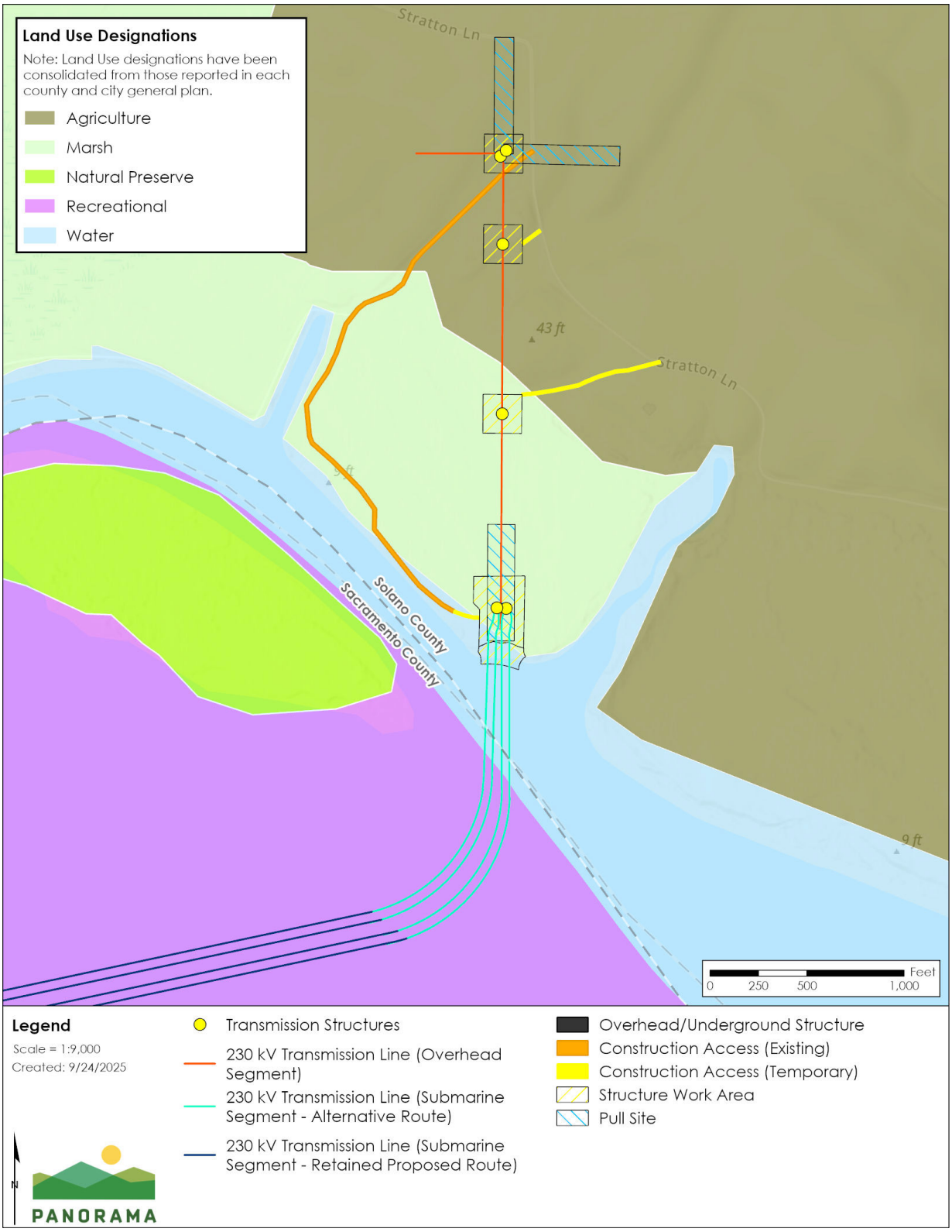
Impact LU-1: Would Alternative 4 physically divide an established community? *(No impact)*

Alternative 4 neighbors the community of Collinsville, similar to the Proposed Project, located along Collinsville Road. Alternative 4 would not physically divide the community of Collinsville or any other communities in the vicinity, similar to the Proposed Project. Collinsville Road and Stratton Lane would be used to access the Project site during construction and operation; however, no physical changes to existing roads are proposed that could result in impacts on an established community. No impact from physically dividing an established community would occur.

Impact LU-2: Would Alternative 4 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? *(Less than signficant with mitigation)*

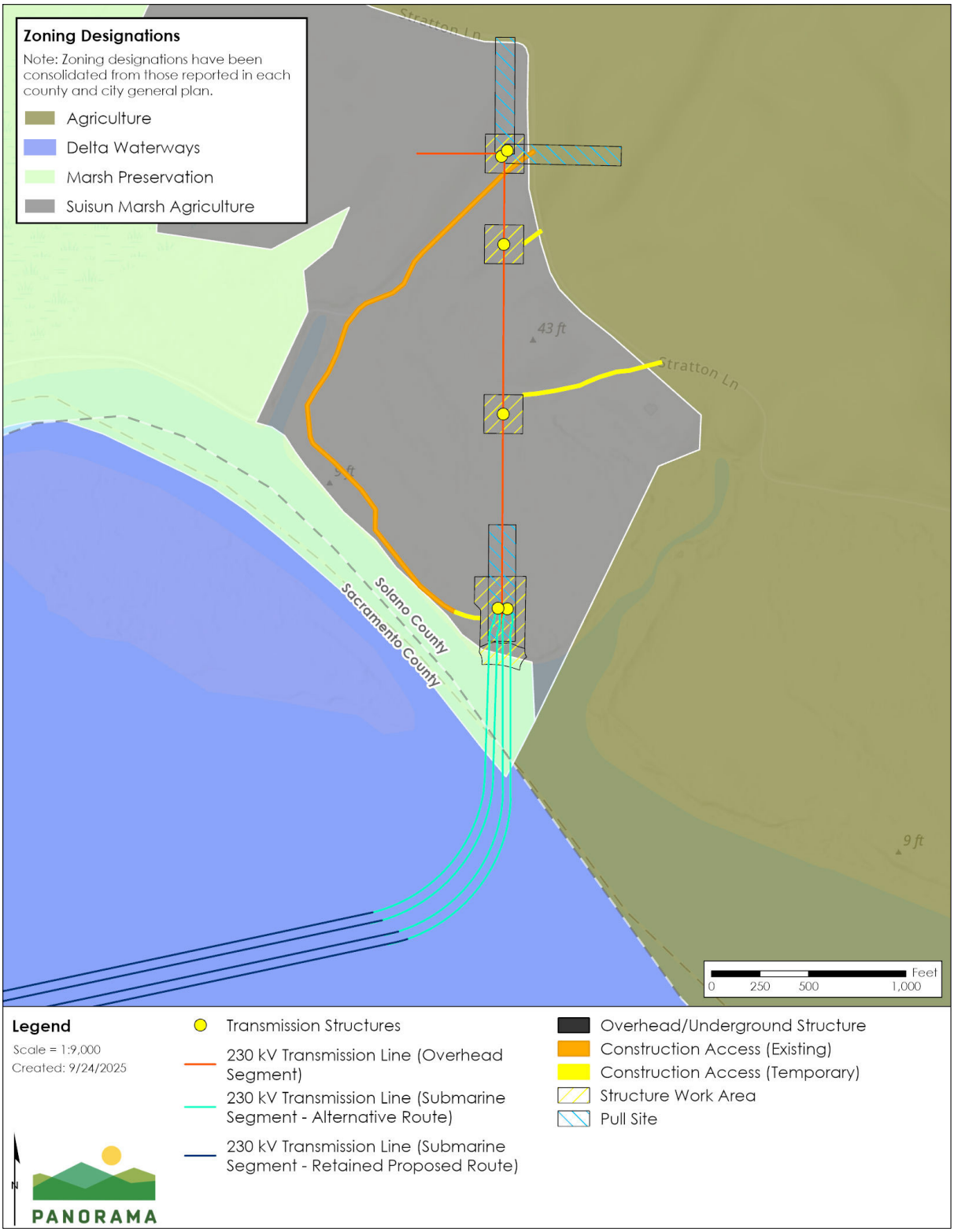
Under Alternative 4, there would be no permanent conversion of lands within the Suisun Marsh Priority Habitat Area as delineated in the Delta Plan; however the entire LSPGC 230 kV overhead segment would fall within the Suisun Marsh as delineated in the SMPP and Suisun Marsh LPP, as shown in Figure 4.11-19. The SMPP requires that development of electric lines within the Marsh 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. Under the Proposed Project, the 230 kV overhead segment would avoid the Marsh entirely; therefore Alternative 4 would involve additional transmission facilities within Secondary Management Areas identified in the SMPP and Suisun Marsh LPP in comparison to the Proposed Project. Alternative 4 would involve installation of an overhead transmission line, which may conflict with SMPP policies. Alternative 4 would implement MM BIO-2 (refer to Section 4.4: Biological Resources), which would ensure that all areas temporarily disturbed by construction activities are restored. As discussed for the Proposed Project (Impact LU-2), discretionary permits from BCDC and Solano County would be required for development within Suisun Marsh. While Alternative 4 does overlap the CSSA, as shown in Figure 4.11-19, Alternative 4 would be consistent with existing development in the area and would have no impact on the residential character of the Collinsville community such that the Alternative 4 would conflict with the CSSA land use plan. Impacts would be less than signficant with implementation of mitigation and with applicable permits from BCDC and Solano County.

Figure 4.11-16 General Plan Land Use Designation within the Alternative 4 Area



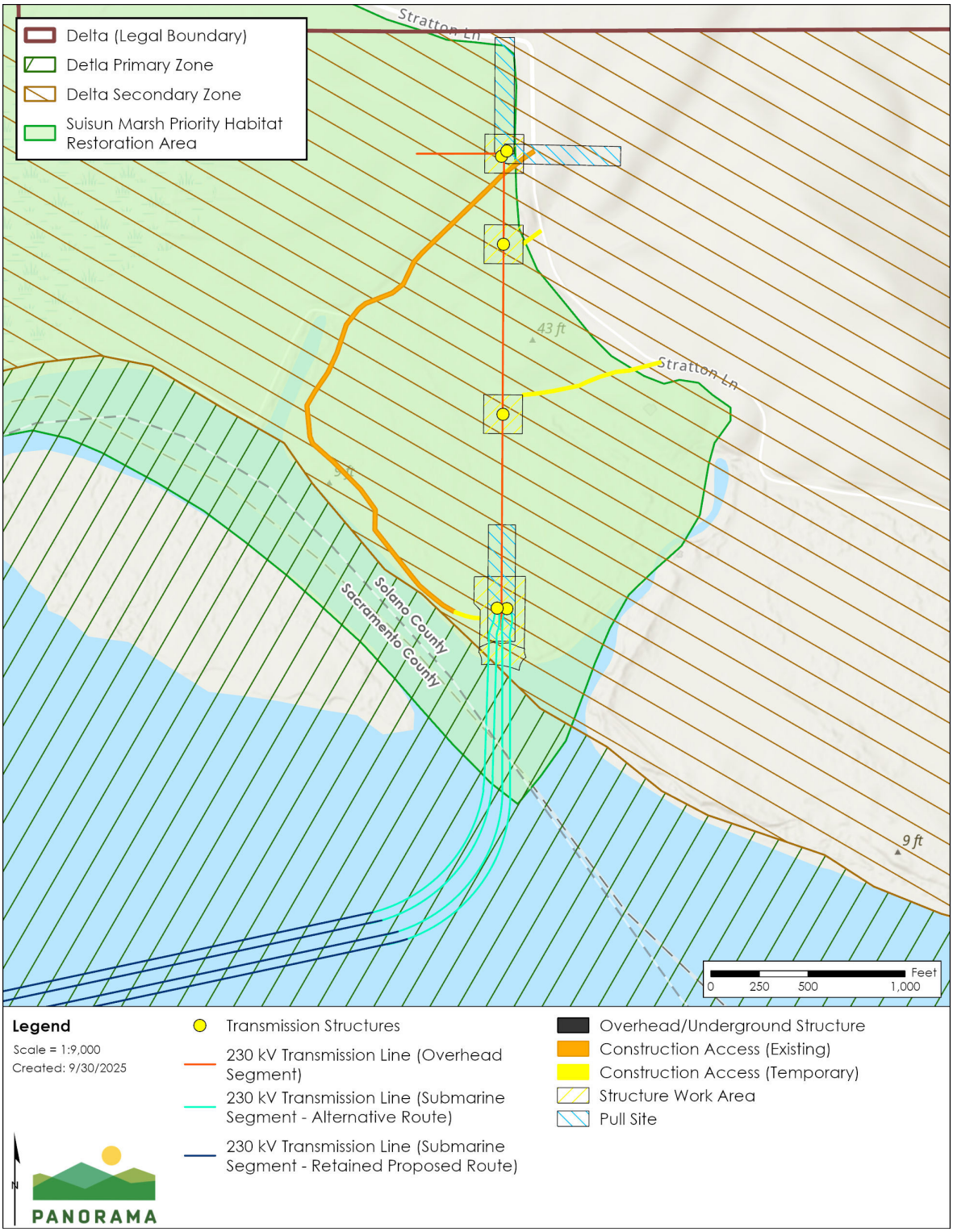
Source: (Solano County 2023a; 2023b)

Figure 4.11-17 Zoning Categories within the Alternative 4 Area



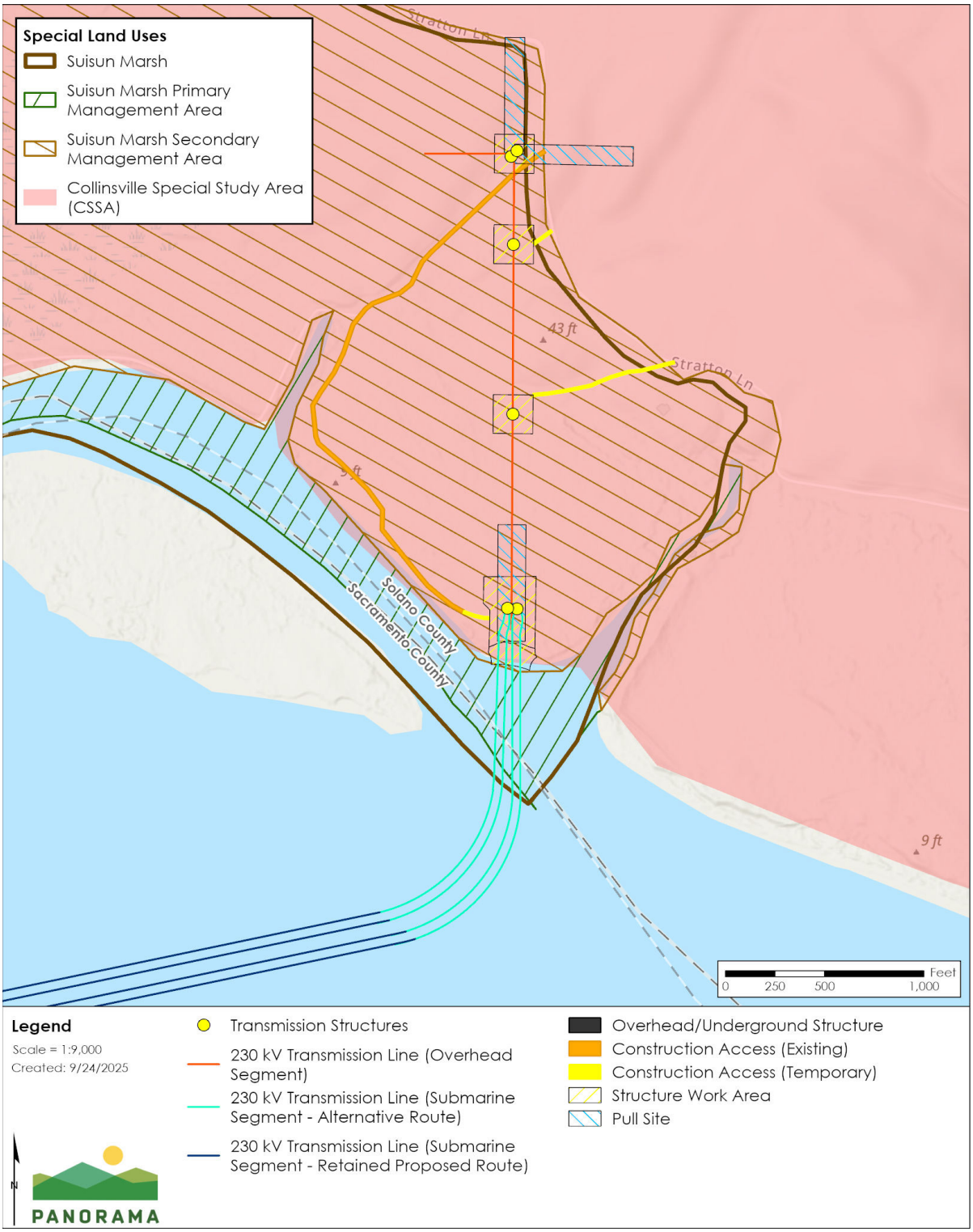
Source: (Solano County 2023a; 2023b).

Figure 4.11-18 Primary and Secondary Zones of the Delta with respect to Alternative 4



Source: (DWR 2022)

Figure 4.11-19 Special Land Uses and Suisun Marsh Management areas in the Alternative 4 Area



Source: (BCDC 2020)

4.11.5 Alternative 5: 230 kV Submarine Segment Alternative Route

Environmental Setting – Alternative 5

Alternative 5 involves rerouting a portion of the proposed LSPGC 230 kV submarine segment to the east of its current alignment as it approaches the southern shoreline in Pittsburg. The submarine segment cable would be installed in the same manner as the Proposed Project. Alternative 5 would not involve changes to any of the other Proposed Project component, which would have the same impacts as described throughout this Draft EIR for the Proposed Project or the other alternatives if selected in combination with Alternative 5.

Impact Analysis – Alternative 5

Impact LU-1: Would Alternative 5 physically divide an established community? *(No Impact)*

Alternative 5 would occur entirely in-water and would not physically divide an established community. No impact would occur.

Impact LU-2: Would Alternative 5 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? *(Less than significant)*

Alternative 5 would result in identical impacts to the Proposed Project in regards to land use impacts resulting from the construction and operation of the LSPGC 230 kV submarine segment. While a portion of the submarine segment alignment under Alternative 5 also falls within the Suisun Marsh boundaries as outlined in the SMPRP, it would be installed below the bed of the Delta and would not conflict with any restoration efforts of habitat resources. Therefore, identical to the LSPGC 230 kV Submarine Segment under the Proposed Project discussed in Section 4.11.4, impacts related to conflicts with a land use plan adopted for the purpose of avoiding or mitigating environmental effects would be less than significant.

4.11.6 Alternative 6a/6b: Underground Portions of the 230 kV Transmission Line within Suisun Marsh Protection Plan Management Areas

Environmental Setting – Alternative 6a/6b

Alternative 6a/6b would locate the LSPGC 230 kV transmission line on primarily PG&E-owned property south of the proposed Collinsville Substation site (similar to Alternative 4). Alternative 6a/6b would be installed in conduit underground. Alternative 6a differs from Alternative 6b only at the northern end of the segment where options are provided for connection to the Proposed Project Collinsville Substation or Alternatives 1 or 2. Two overhead riser structures would be installed at the northern end of the Alternative 6a/6b underground duct bank where the LSPGC 230 kV line would transition between an overhead and underground position. Alternative 6a/6b would not involve changes to any of the other Proposed Project component, which would have the same impacts as described throughout this Draft EIR for the Proposed Project or the other alternatives if selected in combination with Alternative 6a/6b.

Alternative 6a/6b are located on lands designated as Agriculture and Marsh, and zoned as Suisun Marsh Agriculture (ASM-160) and General Agricultural lands under Alternative 6a/6b

as shown in Figure 4.11-20 through Figure 4.11-23 (Solano County 2023a; 2023b). The rereouted portion of the LSPGC 230 kV submarine segment under Alternative 6a/6b are designated as Water and Recreational Lands and zoned as Delta waterways as shown in Figure 4.11-20 through Figure 4.11-23 (Solano County 2023a; 2023b). Alternative 6a/6b falls within the Delta Secondary Zone on land, and within the Delta Primary Zone on the Delta shoreline where the LSPGC 230 kV transmission line transitions to a submarine position as shown in Figure 4.11-24 and Figure 4.11-25. The on-land portion of Alternative 6a/6b would be located entirely within the CSSA and nearly entirely within the Suisun Marsh Secondary Management Areas identified in the Suisun Marsh LPP, as shown in Figure 4.11-26 and Figure 4.11-27.

Impact Analysis – Alternative 6a/6b

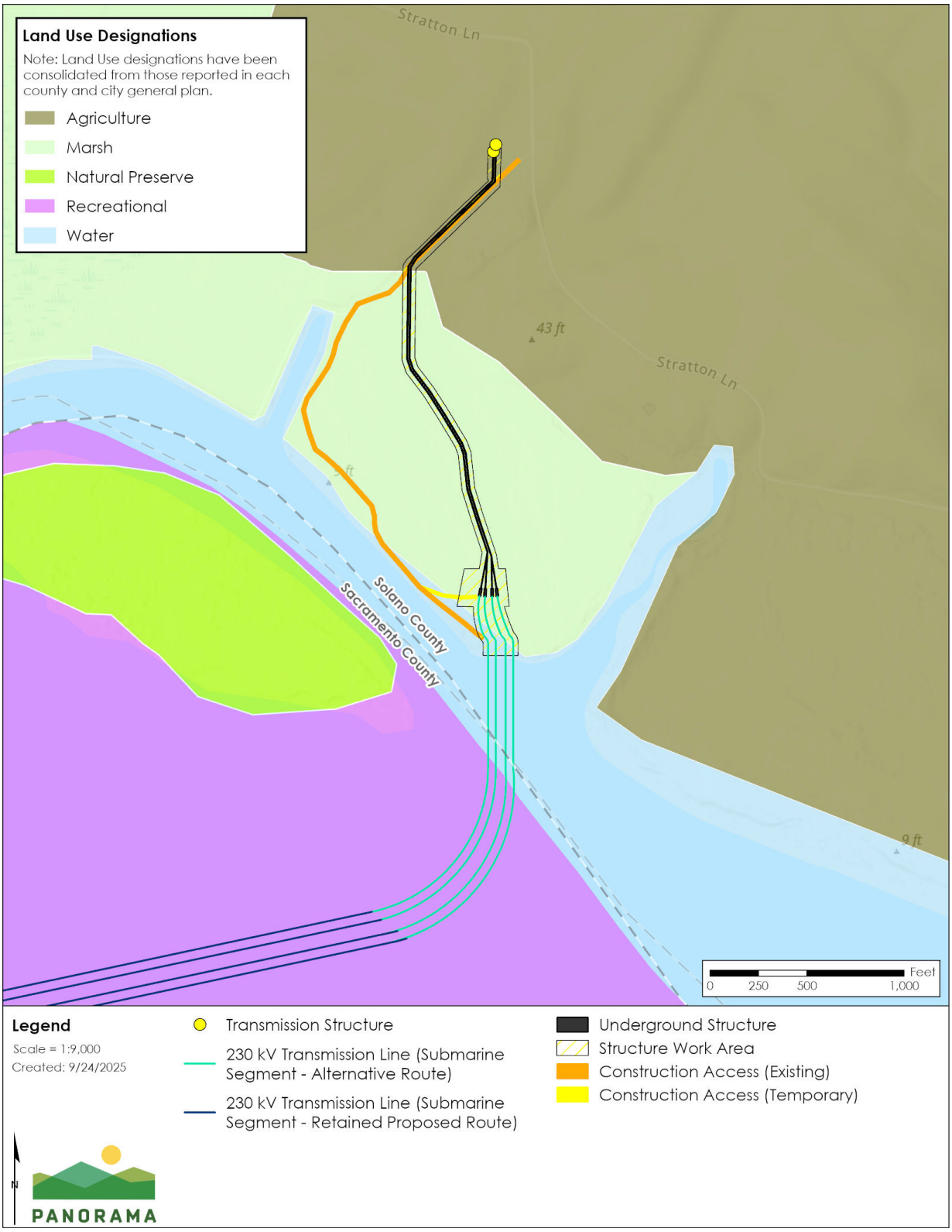
Impact LU-1: Would Alternative 6a/6b physically divide an established community? *(No impact)*

Alternative 6a/6b neighbors the community of Collinsville, similar to the Proposed Project, located along Collinsville Road. Alternative 6a/6b would not physically divide the community of Collinsville or any other communities in the vicinity. Collinsville Road, Stratton Lane, and the proposed access roadway included in Alternative 6a/6b would be used to access the Project site during construction and operation; however, no physical changes to existing roads are proposed that could result in impacts on an established community. The roadway proposed as part of Alternative 6a/6b would not be located near the Community of Collinsville. No impact from physically dividing an established community would occur.

Impact LU-2: Would Alternative 6a/6b 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? *(Less than significant)*

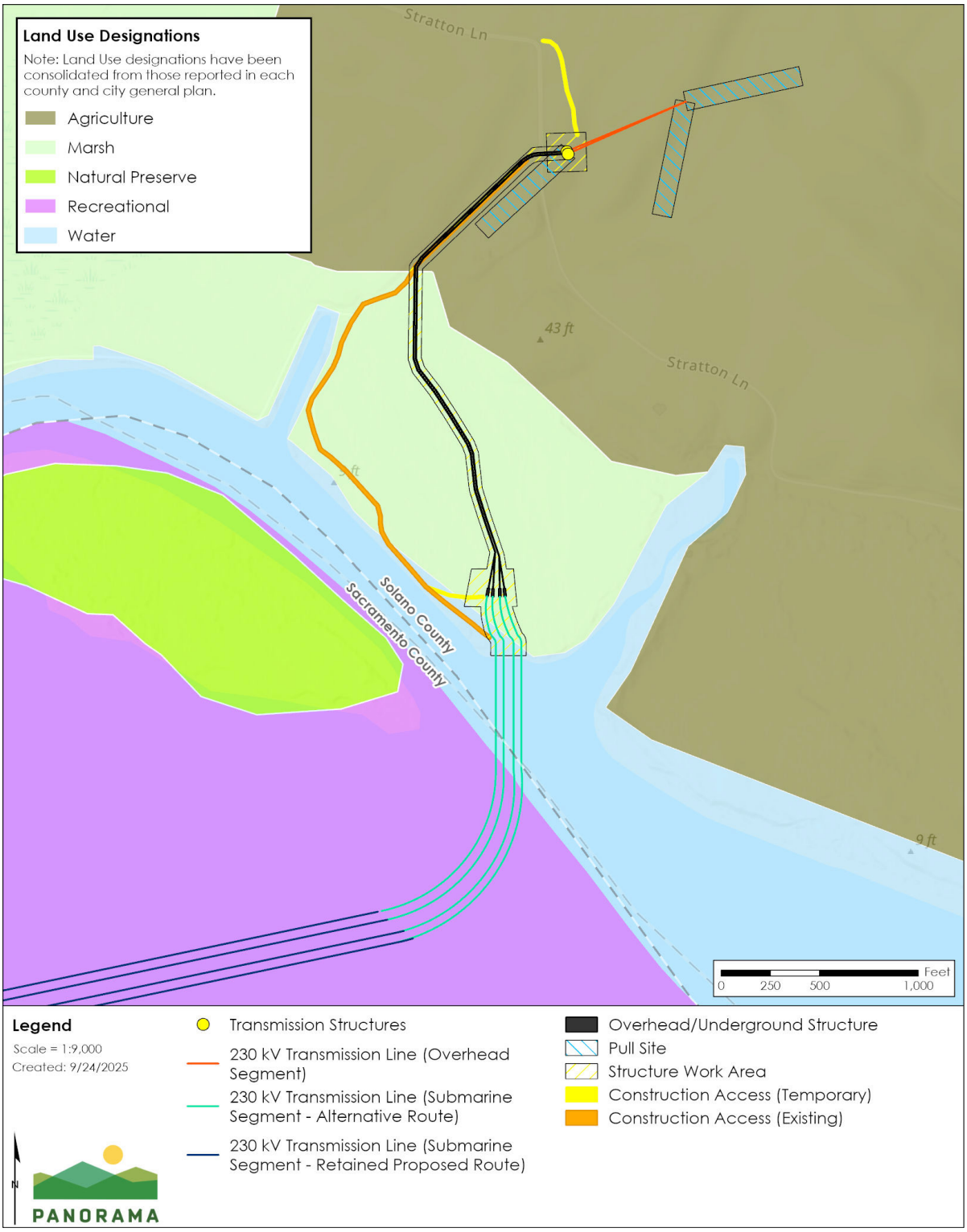
Under Alternative 6a/6b, there would be no permanent conversion of lands within the Suisun Marsh Priority Habitat Area as delineated in the Delta Plan; however the entire LSPGC 230 kV overhead segment would fall within the Suisun Marsh as delineated in the SMPP, as shown in Figure 4.11-26 and Figure 4.11-27. The SMPP requires that development of electric lines within the Marsh 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. Alternative 6a/6b was designed to install portions of the LSPGC 230 kV transmission line in an underground position on land within the Suisun Marsh Protection Plan Secondary Management Areas to address SMPP and Suisun Marsh LPP requirements, in the event that the 230 kV alignment was modified similar to Alternative 4. As with Alternative 4, Alternative 6a/6b would involve additional transmission facilities within the Secondary Management Areas identified in the SMPP and Suisun Marsh LPP in comparison to the Proposed Project. As discussed for the Proposed Project (Impact LU-2), discretionary permits from BCDC and possibly Solano County would be required for development within Suisun Marsh. While Alternative 6a/6b overlaps the CSSA, as shown in Figure 4.11-26 and Figure 4.11-27, Alternative 6a/6b would have no impact on the residential character of the Collinsville community such that the Alternative 6a/6b would conflict with the CSSA land use plan. Impacts would be less than signficant with applicable permits from BCDC and Solano County.

Figure 4.11-20 General Plan Land Use Designation within the Alternative 6a Area



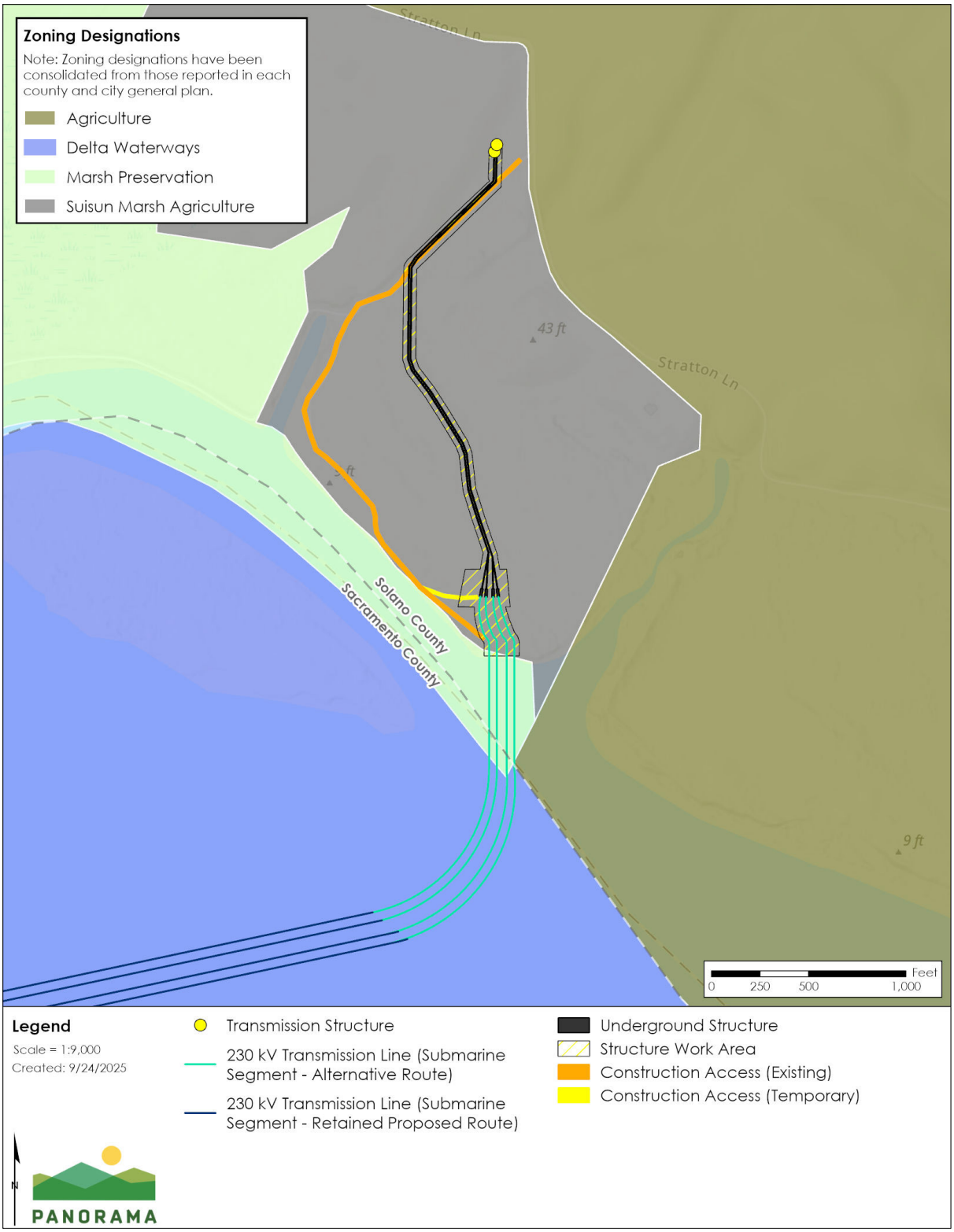
Source: (Solano County 2023a; 2023b).

Figure 4.11-21 General Plan Land Use Designation within the Alternative 6b Area



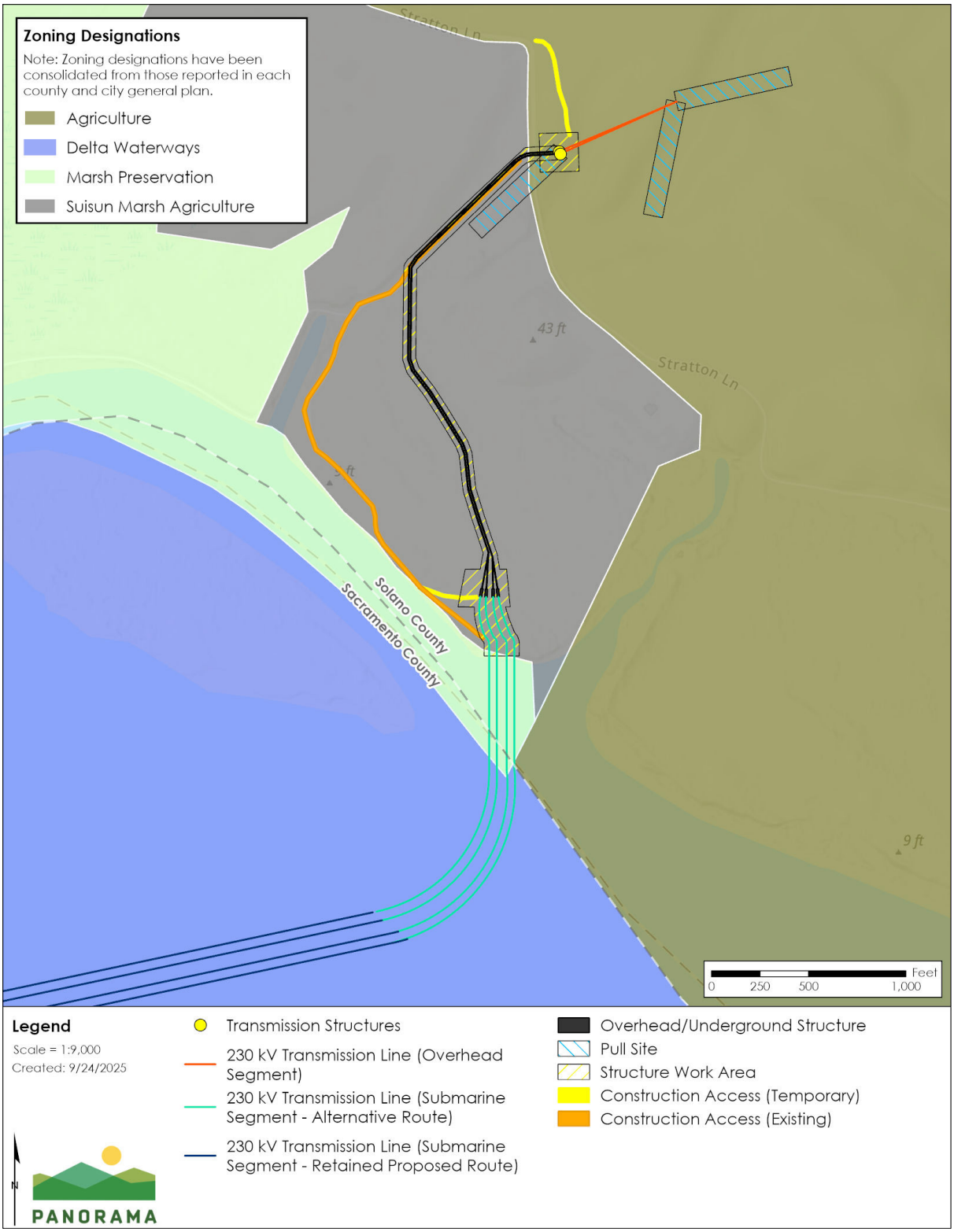
Source: (Solano County 2023a; 2023b).

Figure 4.11-22 Zoning Categories within the Alternative 6a Area



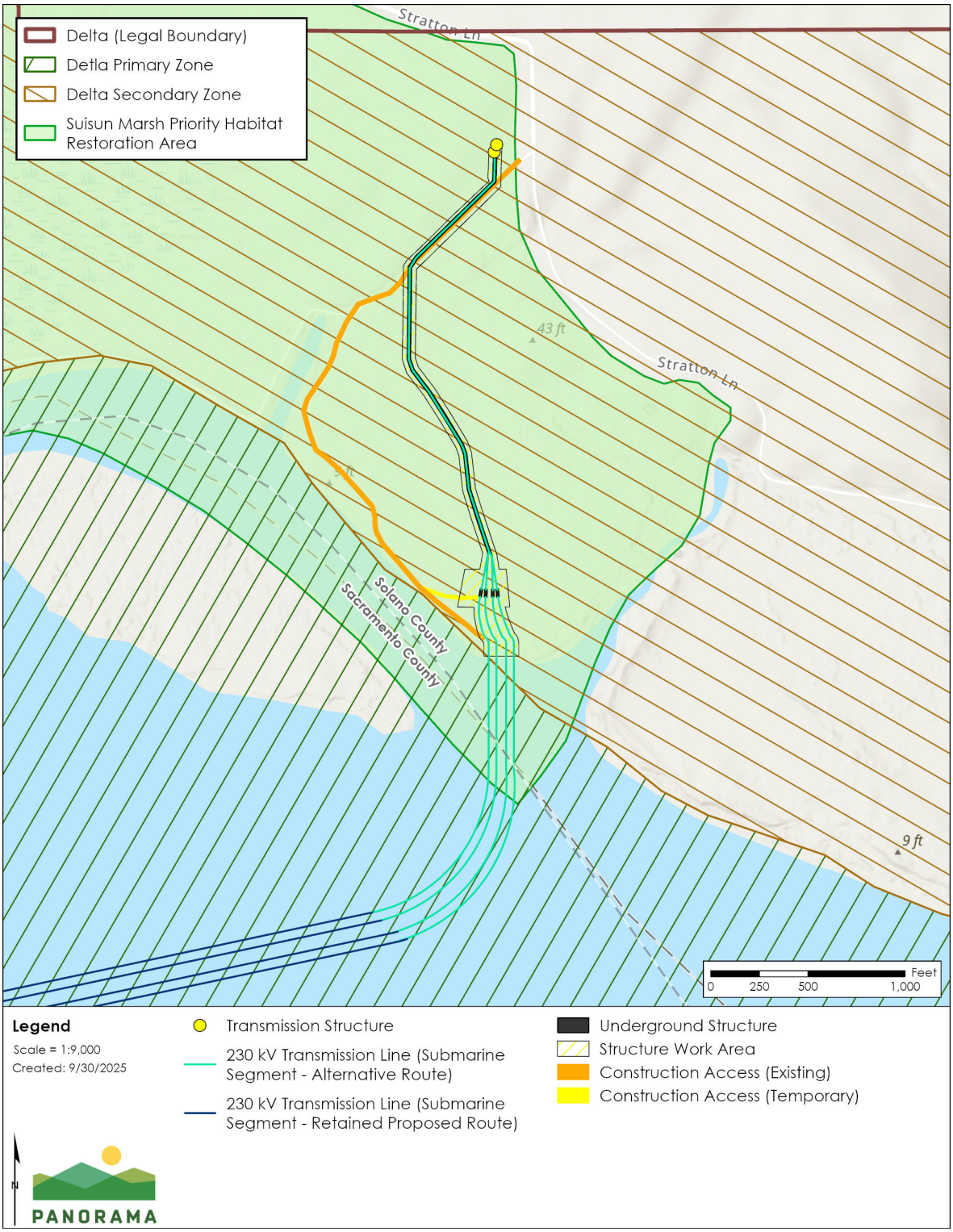
Source: (Solano County 2023a; 2023b).

Figure 4.11-23 Zoning Categories within the Alternative 6b Area



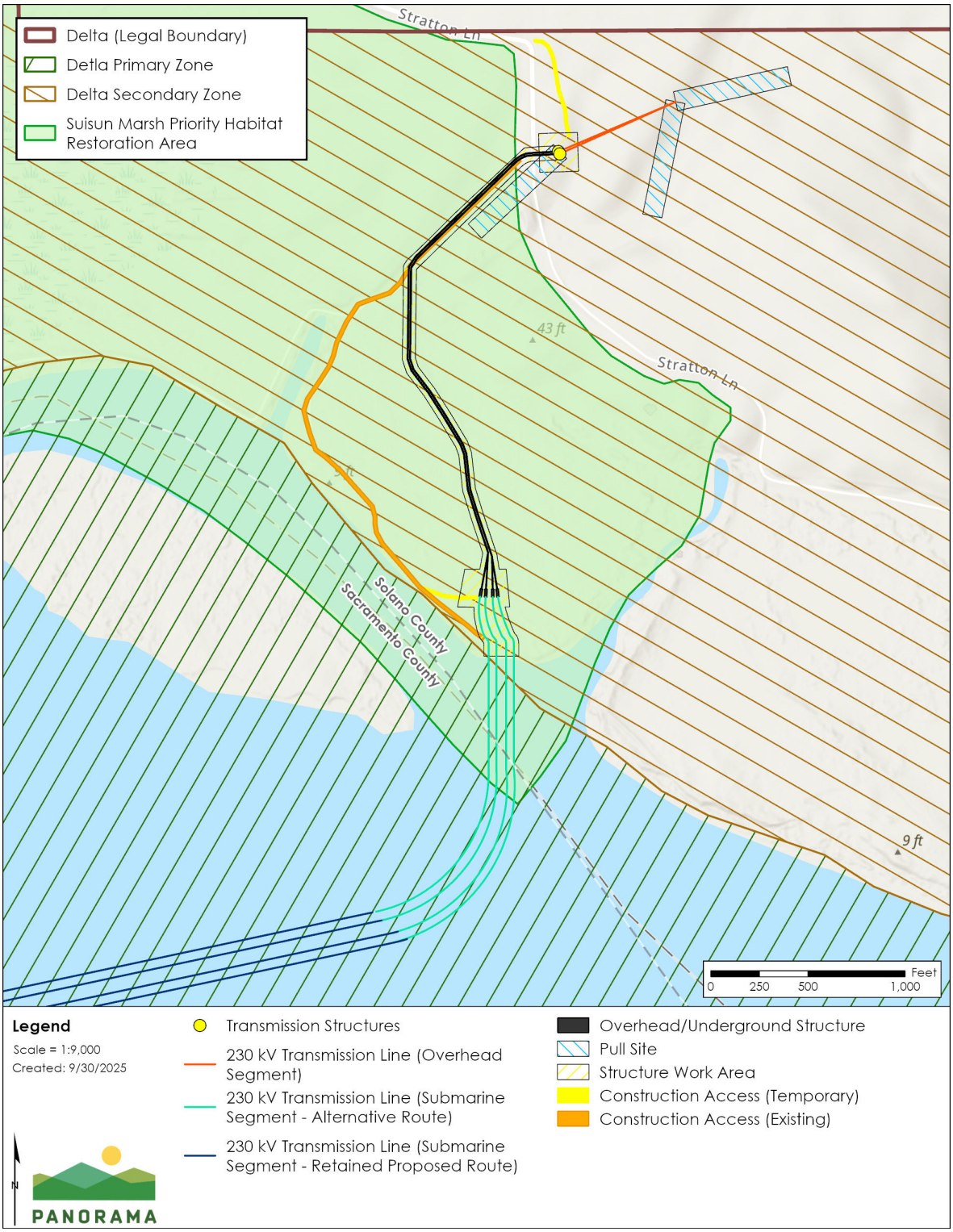
Source: (Solano County 2023a; 2023b).

Figure 4.11-24 Primary and Secondary Zones of the Delta with respect to Alternative 6a



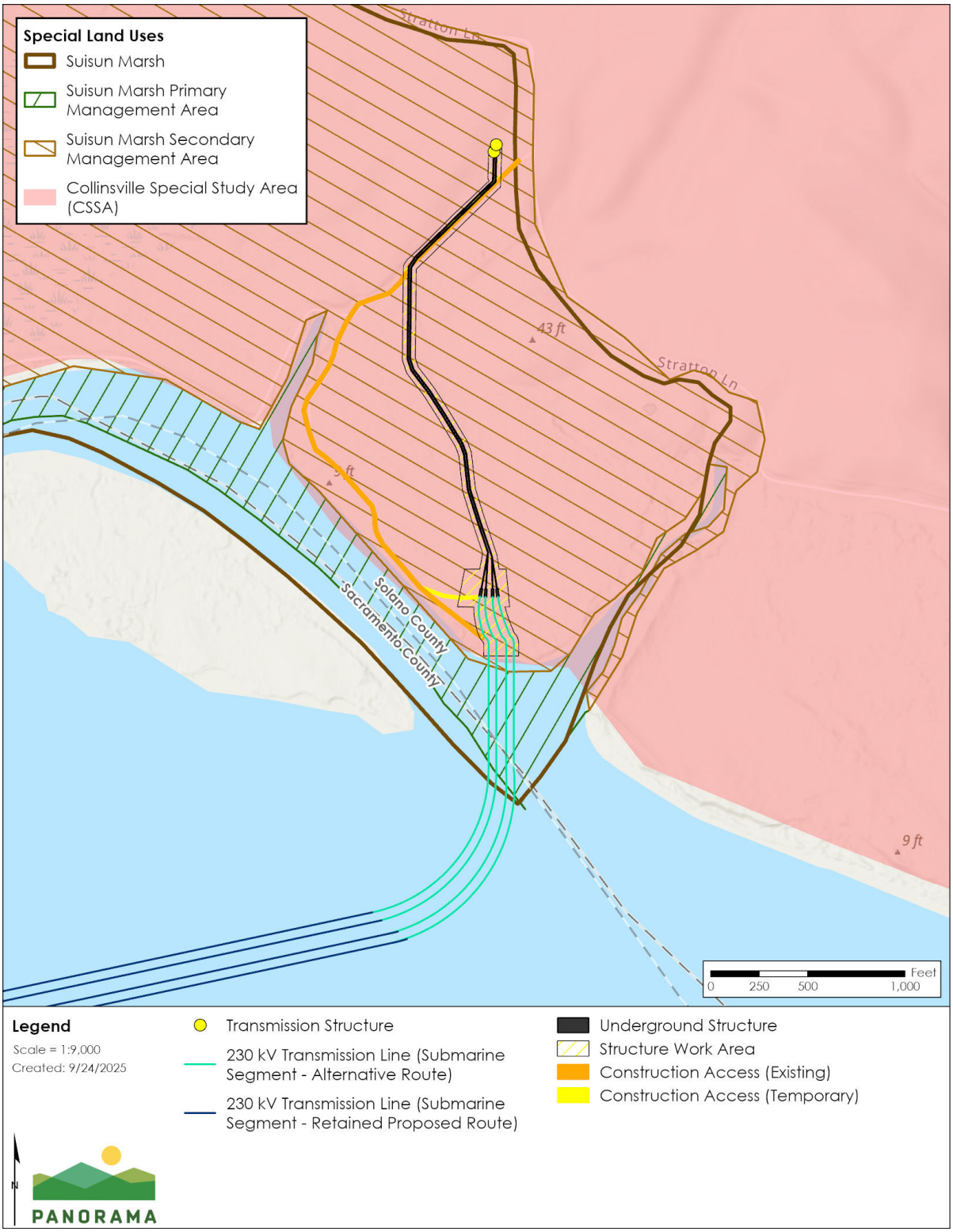
Source: (DWR 2022)

Figure 4.11-25 Primary and Secondary Zones of the Delta with respect to Alternative 6b



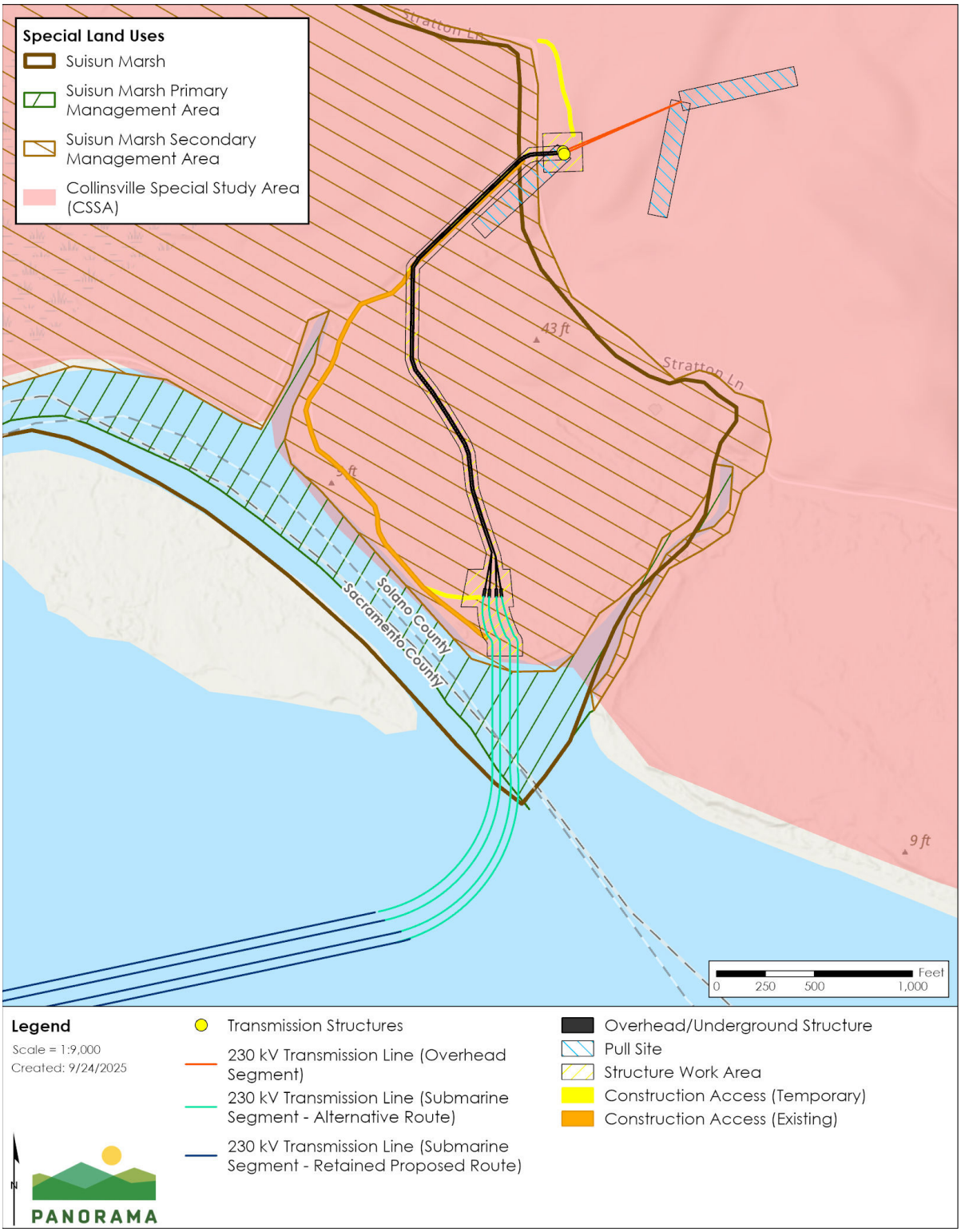
Source: (DWR 2022)

Figure 4.11-26 Special Land Uses and Suisun Marsh Management areas in the Alternative 6a Area



Source: (BCDC 2020)

Figure 4.11-27 Special Land Uses and Suisun Marsh Management areas in the Alternative 6b Area



Source: (BCDC 2020)

4.11.7 No Project Alternative

Environmental Setting – No Project Alternative

Under the No Project Alternative, the LSPGC Collinsville Substation and associated LSPGC 230 kV transmission line, PG&E 500 kV interconnection lines, and PG&E 12 kV distribution line would not be constructed. The existing land use and planning conditions described in Section 4.11.1 would apply to the No Project Alternative.

Impact Analysis – No Project Alternative

The No Project Alternative would not physically divide an established community (Impact LU-1). The No Project Alternative would not conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect (Impact LU-2). No land use and planning impacts would occur under the No Project Alternative.

4.11.8 Mitigation Measures

LSPGC Mitigation Measures

MM AG-1 (refer to Section 4.2: Agriculture and Forestry Resources)

MM BIO-2 (refer to Section 4.4: Biological Resources)

PG&E Mitigation Measures

MM BIO-2 (refer to Section 4.4: Biological Resources)

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4.12 Mineral Resources

This section presents the environmental setting and analysis of impacts on mineral resources resulting from the Proposed Project and alternatives. This section includes information on existing mineral resources and applicable regulations, environmental impacts, and mitigation measures to reduce or avoid significant effects for the Proposed Project and alternatives, where feasible.

The following scoping comments are relevant to the analysis of mineral resources as discussed in the Scoping Report (Appendix B):

- The Project should be designed to minimize conflicts with the San Francisco Bay and Delta Sand Mining Project and minerals leases in the area.
- The EIR should analyze cumulative impacts with nearby mining leases and United States Army Corps of Engineers (USACE) activities.

4.12.1 Environmental Setting

Definitions

According to the U.S. Geological Survey (USGS), a *mineral resource* or *energy resource* is defined as a concentration of naturally occurring solid, liquid, or gaseous materials in or on the Earth's crust in such form that economic extraction of a commodity is currently or potentially feasible (U.S. Bureau of Mines and USGS 1976).

Mineral Resource Classification and Designation

The California Geological Survey (CGS) is required by the Surface Mining and Reclamation Act of 1975 (SMARA) to conduct Mineral Land Classification (MLC) studies to identify and map *mineral resource zones* (MRZs). MRZs are intended to prevent the development of incompatible land uses in areas determined to have substantial mineral resource deposits. California mineral land classification system category descriptions are provided in Table 4.12-1. Classifications MRZ-2a and MRZ-2b are considered to have the highest economic importance since the resource significance has been identified and either determined or inferred through evidence. MRZ-3a and MRZ-3b are considered to have moderate economic importance based on the likelihood of the resource significance but undetermined presence. MRZ-1 and MRZ-4 are considered to have low economic importance because the presence of significant resources is unlikely or unknown.

Table 4.12-1 California Mineral Land Classification System Category Descriptions

Mineral resource zone category	Category description	Definition
MRZ-1	NA	Area of no mineral resource significance
MRZ-2a	Reserves, marginal reserves,	Area of identified mineral resource significance
MRZ-2b	Inferred resources	Area of identified mineral resource significance
MRZ-3a	Known mineral occurrence	Area of undetermined mineral resource significance
MRZ-3b	Inferred mineral occurrence	Area of undetermined mineral resource significance
MRZ-4	No known mineral occurrence	Area of unknown mineral significance

Source: (CDOC n.d.-a)

Environmental Setting by Project Component

According to the Mineral Resources Data System (MRDS), which serves as a collection of reports describing metallic and nonmetallic mineral resources throughout the world, current mineral extraction activities within 5 miles of the Proposed Project are limited to calcium, stone products, sand and gravel, pumice, sandstone, and clay (Mason and Arndt [2005] 1996; Contra Costa County 2024).

LSPGC Collinsville Substation

Mineral Resource Zones (MRZs)

The area surrounding the proposed Collinsville Substation site is categorized as MRZ-1 (O'Neal and Gius 2018). The area has no mineral resource significance according to the MLC.

Mineral Resource Recovery Sites

There are no active mineral resource recovery sites in proximity to the proposed Collinsville Substation site.

LSPGC 230 kV Transmission Line (Overhead, Submarine, and Underground Segments)

Mineral Resources Zones (MRZs)

The proposed LSPGC 230 kV overhead segment alignment falls within MRZ-1 and MRZ-4 (O'Neal and Gius 2018). The LSPGC 230 kV submarine segment and underground segment are not located within any MRZs (Contra Costa County 2024; O'Neal and Gius 2018; O'Neal et al. 2018; Davis 1986; 1987; 1986). The area has no known mineral resource significance according to the MLC.

Mineral Resource Recovery Sites

The LSPGC 230 kV submarine segment would cross the Lind Marine, Hanson Aggregates, and Suisun Associates (collectively, Suisun Associates) active dredging operation in the Suisun Bay (Suisun Bay/Western Delta, Lease No. 7781) (CSLC 2012; Suisun Associates 2013; U.S. Army Corps of Engineers (USACE) 2015), as shown in Figure 4.12-1. The San Francisco Bay and Delta Sand Mining Project (2012) provided the CSLC the ability to grant 10-year mineral extraction leases for sand and gravel mining at delineated areas of the Central San Francisco Bay, Suisun Bay, and the western Sacramento San Joaquin River Delta area, with the option to allow leaseholders to reapply for an additional 10-year lease. Under this project, Suisun Associates was awarded Lease No. 7781. Suisun Associates conducts sand mining operations through intentional dredging of sand and fine-to-medium gravel to be sold and used for commercial purposes. The dredging operations use 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 (CSLC) 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 that result in frequent sand movement replenishment and scour of fines from sand deposits (RWQCB 2015; Suisun Associates 2013). There are no other active mineral resource recovery sites in proximity to the LSPGC 230 kV transmission line segments.

LSPGC Telecommunication Interconnection Lines

Mineral Resources Zones (MRZs)

The proposed LSPGC telecommunication interconnection lines site is not located within any defined MRZ (Contra Costa County 2024; Davis 1987; 1986). The area has no mineral resource significance according to the MLC.

Mineral Resource Recovery Sites

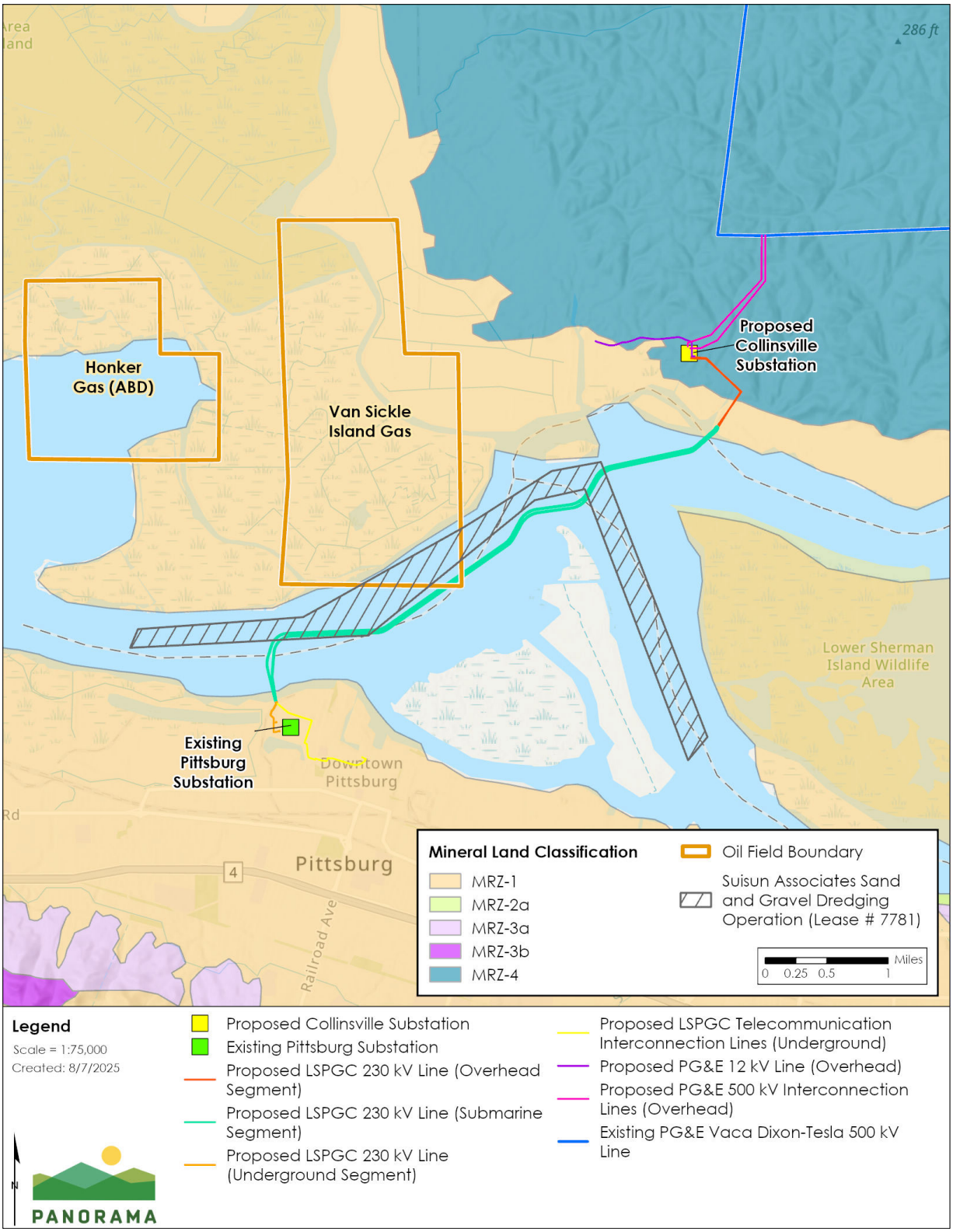
There are no active mineral resource recovery sites in proximity to the proposed LSPGC underground communication lines area.

PG&E 500 kV Interconnection Lines, 500 kV Transposition Structures, and 12 kV Distribution Line

Mineral Resources Zones (MRZs)

The area surrounding the proposed PG&E 500 kV interconnection lines, 12 kV distribution lines, and transposition sites A and C are within MRZ-1 and MRZ-4. Transposition Site B falls within MRZ-4 (O'Neal and Gius 2018). The area surrounding Transposition Site D is not located within any MRZ zone (Davis 1986). The area has no known mineral resources according to the MLC.

Figure 4.12-1 Mineral Resources in Proximity to the Proposed Project



Source: (DOC CalGEM 2020; CDOC 2020; Suisun Associates 2013; Davis 1987; 1986; O'Neal and Gius 2018)

Mineral Resource Recovery Sites
There are no active mineral resource recovery sites in close proximity to the proposed PG&E 500 kV interconnection lines, transposition structures, or proposed 12 kV distribution line site. The Contra Costa General Plan identifies a *regionally significant mineral resource* (RSMR) area of domengine sandstone approximately 3 miles southwest proposed PG&E Transposition Site D (Contra Costa County 2024).

PG&E Substation Modifications

Mineral Resources Zones (MRZs)
The existing PG&E Pittsburg Substation is located within MRZ-1 (Davis 1986). The existing Vaca-Dixon Substation is located within MRZ-1 and MRZ-4 (O'Neal and Gius 2018). The existing PG&E Tesla Substation is not located within any MRZ zone (Davis 1986). The area surrounding the existing substations have no known mineral resources according to the MLC.

Mineral Resource Recovery Sites
No mineral resource recovery sites occur within the existing PG&E substations and associated modification areas.

Active Oil and Gas Wells
The southeastern portion of the Van Sickle Island Gas oil and gas field overlaps the LSPGC 230 kV submarine segment. Transposition Site B falls within the Deverton Creek Gas oil and gas field. All of the wells within the Deverton Creek Gas and Van Sickle Island Gas oil and gas fields have been cancelled or plugged or are idle, with the exception of one active well located approximately 1.2 miles northeast of Transposition Site B (CDOC n.d.-c). Figure 4.12-1 details the oil and gas field boundary with respect to the Proposed Project area.

4.12.2 Regulatory Setting

Federal
There are no federal mineral resource regulations applicable to the Proposed Project.

State

California Surface Mining and Reclamation Act of 1975
The Surface Mining and Reclamation Act of 1975 (SMARA) establishes statewide policies for surface mining and reclamation. The SMARA provides regulations for mining operations that assure that environmental impacts are minimized and mined lands are reclaimed to a usable condition (California Department of Conservation (CDOC), n.d.-b). Mineral resource zones are designated by the CGS where access to important mineral resources may be threatened, according to provisions of the 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 California Department of Conservation's (CDOC's) Office of Mine Reclamation (OMR) and the State Mining and Geology Board (SMGB) are jointly charged with ensuring proper administration of the SMARA requirements. The SMGB promulgates

regulations to clarify and interpret the SMARA 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 (CCR title 14 §§ 3500-3505).

Local

The CPUC has sole and exclusive jurisdiction over the siting and design of the Proposed Project. Pursuant to 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."

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. The General Plan does not identify any mineral resource recovery sites in proximity to the Proposed Project area. The Resources Chapter of the Solano County General Plan contains the following policy relevant to the Proposed Project (Solano County 2008):

- 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.

Sacramento County General Plan

The Sacramento County General Plan (2017) includes goals, objectives, policies, and implementation measures related to mineral resources that identify key resources within the county, facilitate resource protection and urban growth, and designate and protect areas for future mining. Mineral resources are addressed in the Sacramento County General Plan Conservation Element, which includes the following relevant goal, objective, and policy (Sacramento County 2017):

- Goal: Mineral resources protected for economic extraction with minimal adverse impacts.
  - Objective: Ten percent and twenty percent of demand for aggregates met by recycled or substitute materials by 2010 and 2020 respectively.
    - 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 (2024) 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. The General Plan does not identify any mineral resource recovery sites in proximity to the Proposed Project. Mineral resources are addressed in the Contra Costa County General Plan Conservation, Open Space, and Working Lands chapter and contains the following goal relevant to the Proposed Project (Contra Costa County 2024):

- Goal P13.1: Protect valuable mineral resources by prohibiting incompatible projects and land uses (i.e., those that would directly or indirectly interfere with extraction, processing, or transportation of mineral resources) within the MRAs identified in the General Plan.

City of Pittsburg General Plan
The City of Pittsburg does not have any mineral resource policies relevant to the Proposed Project (City of Pittsburg 2024).

4.12.3 Approach to Impact Analysis

The analysis of impacts on mineral resources applies the impact criteria and significance thresholds defined in the following subsection. The LSPGC applicant proposed measures (APMs) and PG&E construction measures (CMs) are considered when making the impact determinations for mineral resources. Impacts are evaluated for the Proposed Project including separate analysis of LSGPC and PG&E project components, analysis of LSPGC and PG&E project components combined where appropriate, cumulative impacts, and alternatives. Mitigation measures are defined to reduce or avoid significant impacts, where feasible.

Impact Criteria and Thresholds of Significance

The following impact criteria have been derived from Appendix G of the CEQA Guidelines to evaluate impacts on mineral resources. Appendix G of the CEQA Guidelines ask whether a project would:

- Impact MIN-1: 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?
- Impact MIN-2: 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?

Applicant Proposed Measures and Construction Measures

No LSPGC APMs or PG&E CMs are relevant to the mineral resources impact analysis.

4.12.4 Impact Analysis – Proposed Project

Table 4.12-2 presents a summary of the CEQA impact criteria and the impacts on mineral resources for each criteria that would occur during construction, operation, and maintenance of the Proposed Project.

Table 4.12-2 Summary of Impacts on Mineral Resources for the Proposed Project

Impact criteria: Would the project …	APMs/CMs applied	Significance Before Mitigation	Mitigation Measures Required	Significance After Mitigation
Impact MIN-1: 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?	NA	S	MM MIN-1	SU
Impact MIN-2: 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?	NA	S	MM MIN-1	SU

Notes:

NA = not applicable

S = significant

SU= significant and unavoidable

Impact MIN-1: Would the Proposed 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? ***(Significant and unavoidable)***

Construction

LSPGC Collinsville Substation and LSPGC 230 kV Overhead Segment

Per the State Geologist's land classifications under SMARA, the proposed Collinsville Substation site and the proposed LSPGC 230 kV overhead segment are located within MRZ-1 and MRZ-4 and do not contain any known mineral resources. As a result, no significant mineral resources are known to occur in the vicinity of these facilities, and construction would not lead to the depletion of any known mineral resources; therefore, no impact would occur.

LSPGC 230 kV Submarine Segment

Installation of the LSPGC 230 kV submarine segment would overlap the Suisun Associates sand and gravel dredging operation (Lease No. 7781) in the Suisun Bay and may temporarily reduce access to a portion of the lease area while the submarine cables are being installed. LSPGC would obtain a lease agreement and a lease encumbrance permit from the CSLC ensuring LSPGC's access to the area during construction of the submarine segment cables; however, the overall availability of sand and gravel resources would be largely unaffected by construction activities for the submarine segment due to the size of the lease area and short duration of construction within the lease area, which would be approximately 4.5 months for cable installation. Therefore, construction of the submarine segment would not result in the loss of availability of known mineral resources that would be of value to residents of the region or the state, and impacts would be less than significant.

LSPGC 230 kV Underground Segment, and LSPGC Telecommunication Interconnection Lines

Per the State Geologist's land classifications under SMARA, the proposed LSPGC 230 kV underground segment and LSPGC telecommunication interconnection lines do not fall within any identified MRZ and do not contain any known mineral resources. This being the case, no significant mineral resources are known to occur in the vicinity of these facilities, and construction would not lead to the depletion of any known mineral resources; therefore, no impact would occur.

PG&E Components

Per the State Geologist's land classifications under SMARA, the proposed PG&E interconnection lines, transposition structures, proposed 12 kV distribution line, and existing PG&E Pittsburg Substation are all located within MRZ-1 or MRZ-4 or not within any identified MRZ zone and do not contain known mineral resources. This being the case, no significant mineral resources are known to occur in the vicinity of these facilities, and PG&E construction activities would not lead to the depletion of any known mineral resources; therefore, no impact would occur.

Operation and Maintenance

LSPGC Collinsville Substation and LSPGC 230 kV Overhead Segment

As described previously, the proposed Collinsville Substation site and LSPGC 230 kV overhead segment are located within MRZ-1 and MRZ-4. This being the case, no significant mineral resources are known to occur in the vicinity of these Project sites, and operation and maintenance of the Proposed Project would not lead to the depletion of any known mineral resources; therefore, no impact would occur.

LSPGC 230 kV Submarine Segment

Operation of the LSPGC 230 kV submarine segment would permanently restrict dredging for sand mining within 75 feet of the outer edge of the cables on either side, which would restrict minerals extraction within approximately 44 acres of the Suisun Associates sand and gravel dredging operation (Lease No. 7781) in the Suisun Bay. LSPGC has completed a scour analysis along the proposed submarine segment path and has defined the depth of the cable at approximately 6 to 15 feet to account for USACE maintenance dredging activities (Coast and Harbor Engineering 2025). Additionally, the CSLC has an existing lease for sand and gravel mining in the area, and CSLC requires LSPGC to coordinate with the entities who hold the sand and gravel mining lease to resolve conflicts prior to granting an easement to LSPGC within the existing sand and gravel mining lease. However, even after coordination, the dredging operator Suisun Associates has indicated that it would not continue sand and gravel mining operations in an approximately 52-acre area of the total 886-acre lease area after cable installation due to risk of cable strike (J. Niven and S. Heim, "Re: *ext* Collinsville Progress Meeting Agenda 7/17/25," July 23, 2025). Therefore, the impact on the availability of mineral resources would be significant. MM MIN-1 (refer to Section 4.12.13) requires LSPGC to design the submarine cable to avoid impacts on proposed sand and gravel mining operations to the extent feasible and

coordinate with individuals with sand and gravel mining leases in the area to minimize impacts on the sand and gravel mining operations. While MM MIN-1 would reduce the impact on sand and gravel mining, the presence of the submarine cable would still restrict areas available for mining and the resulting impact on the availability of mineral resources would be significant and unavoidable.

LSPGC 230 kV Underground Segment, and LSPGC Telecommunication Interconnection Lines

As described previously, the proposed LSPGC 230 kV underground segment and LSPGC telecommunication interconnection lines are not located within any identified MRZ. This being the case, no significant mineral resources are known to occur in the vicinity of these facilities, and operation and maintenance of the Proposed Project would not lead to the depletion of any known mineral resources; therefore, no impact would occur.

PG&E Components

As described previously, the proposed PG&E interconnection lines, transposition structures, proposed 12 kV distribution line, and the existing PG&E Pittsburg Substation are located within MRZ-1 and MRZ-4 or not within any identified MRZ. This being the case, no significant mineral resources are known to occur in the vicinity of these facilities, and operation and maintenance would not lead to the depletion of any known mineral resources; therefore, no impact would occur.

Impact MIN-2: Would the Proposed 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? ***(Significant and unavoidable)***

LSPGC Project Components

With the exception of the LSPGC submarine cables, the LSPGC project components would not be located on any mineral resource recovery sites identified as locally important in local general plans or any other applicable land use plans. The San Francisco Bay and Delta Sand Mining Project delineates sand and gravel mineral resources within the proposed location of the LSPGC submarine cables (CSLC 2012). During construction and operation of the submarine cables, the sand and gravel resources would remain widely available; however, the location of the submarine cable within the mining area would affect access to gravel and sand mineral resources defined in the San Francisco Bay and Delta Sand Mining Project (CSLC 2012). As discussed in Impact, MIN-1, the presence of the cables would result in the loss of access to 52 acres of the sand and gravel mining lease area. The CSLC has issued the existing lease (Lease No. 7781) for sand and gravel mining in the area and is currently updating the lease. During agency outreach efforts, CSLC indicated they will require LSPGC to coordinate with Suisun Associates to resolve conflicts prior to granting an easement to LSPGC within the existing sand and gravel mining lease. However, as discussed in Impact MIN-1, presence of the submarine cable would preclude sand and gravel mining within approximately 44 acres of the lease assuming a 75-foot setback from the cables and the dredging operator has indicated that it would not continue sand and gravel mining operations in an approximately 52-acre area of the

lease area after cable installation due to risk of cable strike(CSLC "Agency Meeting - California State Lands Commission," June 12, 2025; J. Niven and S. Heim, "Re: *ext* Collinsville Progress Meeting Agenda 7/17/25," July 23, 2025) The resulting impact on a locally important mineral resource recovery site would be significant.

MM MIN-1 (refer to Section 4.12.13) requires avoidance of conflicts with the sand and gravel mining activities to the extent feasible and coordination with entities involved in sand and gravel mining to minimize impacts on their operations. While MM MIN-1 would reduce the impact on sand and gravel mining, the presence of the submarine cable would still restrict areas available for mining and the resulting impact on the availability of a locally important mineral resources would be significant and unavoidable.

PG&E Project Components

The PG&E project components would not be located on any mineral resource recovery sites identified as locally important in local general plans or any other applicable land use plans. The Contra Costa General Plan does identify a RSMR area of domengine sandstone approximately 3 miles southwest of the proposed PG&E Transposition Site D. Transposition Site D would be installed within PG&E's existing ROW and would not impact the domengine sandstone RSMR. No locally important mineral resources have been identified in proximity to the proposed PG&E 500 kV interconnection lines, transposition sites, proposed 12 kV distribution line, or existing Pittsburg Substation area. Therefore, the PG&E 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, and no impact would occur.

4.12.5 Impact Analysis – Cumulative

CEQA defines a cumulative impact as "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" (CEQA Guidelines Section 15130(a)(1)). Cumulative impacts can result from "individually minor but collectively significant projects taking place over a period of time" (CEQA Guidelines Section 15355). An EIR must discuss cumulative impacts if the incremental effect of a project, combined with the effects of other projects, is "cumulatively considerable" (CEQA Guidelines Section 15130(a)). Projects within the cumulative analysis study area include all of the projects listed in Table 4.0-1 of Section 4: Environmental Analysis. The types of projects that could combine to result in adverse cumulative impacts for mineral resources include mineral resource recovery projects and dredging operations that overlap the Proposed Project in a manner that would limit the availability of mineral resources.

The proposed LSPGC 230 kV submarine segment would cross the USACE annual maintenance dredging path included under the Maintenance Dredging of the Federal Navigation Channels in San Francisco Bay Project (USACE 2015). The maintenance dredging path for the navigational USACE channel overlaps with a portion of the gravel mining lease (Lease Number 7781) and the San Francisco Bay and Delta Sand Mining Project. The maintenance dredging activities within the navigational channel removes sand that would otherwise be available for sand mining within the mineral lease. The impact of the Proposed Project setbacks from the

submarine cable and the maintenance dredging removal of sand within the navigational channel would combine and reduce the overall availability of sand and gravel mineral resources. The cumulative impact would be significant.

The Proposed Project would impact approximately 52 acres of the mineral lease area (see impact MIN-1), which would contribute considerably to the cumulative impact on availability of sand and gravel mining resources. MM MIN-1 (refer to Section 4.12.13) requires LSPGC to coordinate with mineral rights holders to minimize conflicts with the active mineral extraction areas to the maximum extent feasible. LSPGC would notify active lease holders of the anticipated in-water construction dates and provide cable location and depth information to avoid dredging interference. While these activities would reduce impacts on sand and gravel mining, the area of the cable and a buffer for safety would remain unavailable for sand and gravel mining and the project's contribution to the cumulative impact would remain considerable and therefore significant and unavoidable.

4.12.6 Alternative 1: Collinsville Substation North of Talbert Lane

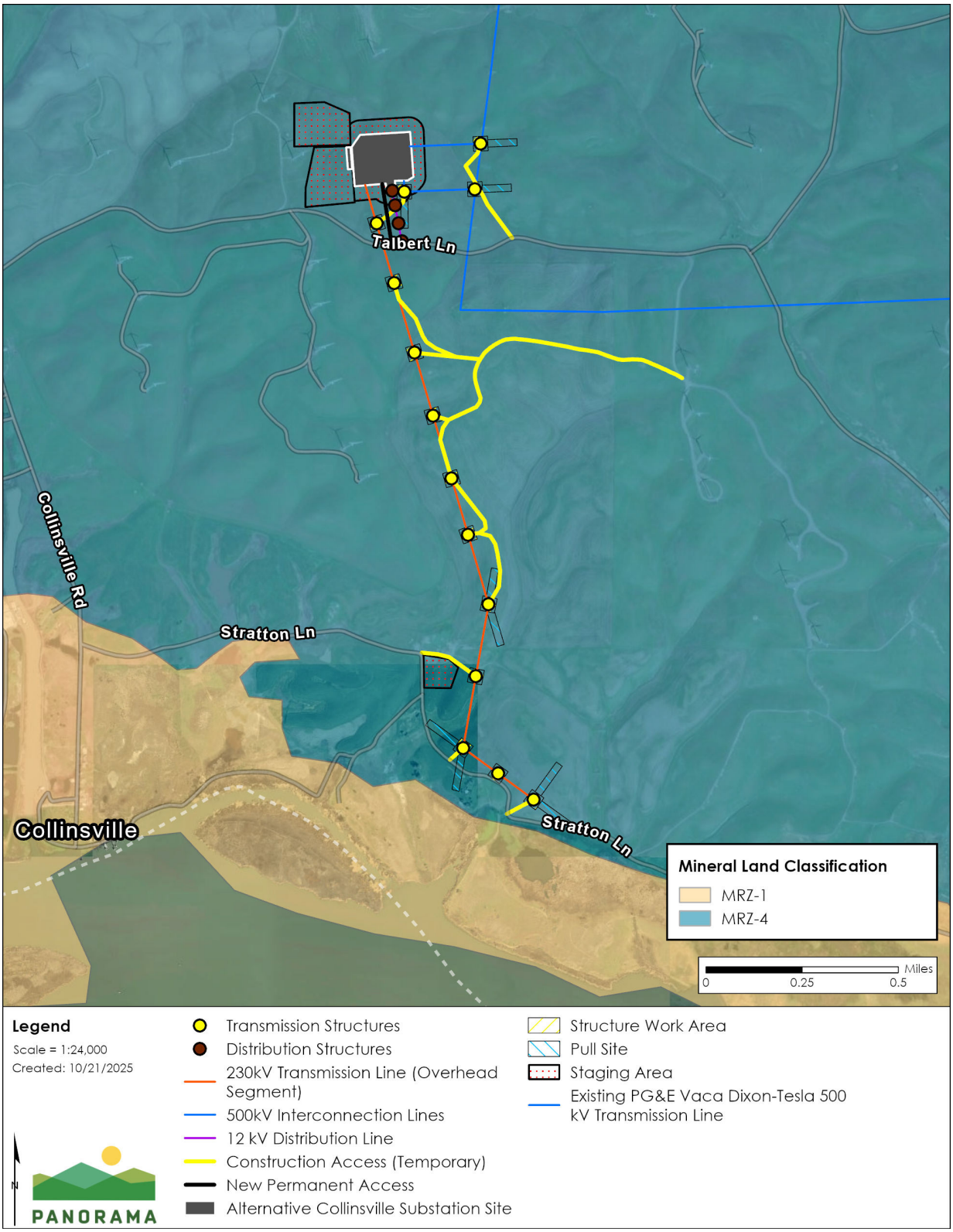
Environmental Setting – Alternative 1

Alternative 1 involves relocating the proposed LSPGC Collinsville Substation to a different site, approximately 1.2 miles north of the Proposed Project substation site. Alternative 1 would also include an approximately 500-foot segment of PG&E 500 kV interconnection lines, approximately 700-foot segment of 12 kV distribution line, and an approximately 2-mile-long segment of LSPGC 230 kV overhead line. The overhead segment in Alternative 1 is not located within or in proximity to mineral resource recovery sites. Alternative 1 would not involve changes to any of the other Proposed Project components, which would have the same impacts as described throughout this EIR for the Proposed Project or the other alternatives if selected in combination with Alternative 1.

Impact Analysis – Alternative 1

Alternative 1 components would be located on lands designated as MRZ-1 and MRZ-4 (Figure 4.12-2), which are zones unlikely to contain mineral resources. Alternative 1 would thus not 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 (Impact MIN-1). No Alternative 1 components are located within a mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan. Thus Alternative 1 would not result in loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan (Impact MIN-2).

Figure 4.12-2 Mineral Resources in Proximity to Alternative 1



Source: (O'Neal and Gius 2018).

4.12.7 Alternative 2: Collinsville Substation East of Wind Energy Substations

Environmental Setting – Alternative 2

Alternative 2 involves relocating the proposed LSPGC Collinsville Substation to a different site, approximately 3.0 miles north of the location proposed under the Proposed Project. Alternative 2 would also include an approximately 1,200-foot-long segment of PG&E 500 kV interconnection lines and a four-mile-long segment of LSPGC 230 kV overhead line, as well as an approximately 0.3-mile-long PG&E 12 kV distribution line. Alternative 2 is not located within or in proximity to mineral resource recovery sites. Alternative 2 would not involve changes to any of the other Proposed Project components, which would have the same impacts as described throughout this EIR for the Proposed Project or the other alternatives if selected in combination with Alternative 2.

Impact Analysis – Alternative 2

Alternative 2 components would be located on lands designated as MRZ-1 and MRZ-4, which are zones unlikely to contain mineral resources (Figure 4.12-3). Alternative 2 would thus not 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 (Impact MIN-1). No Alternative 2 components are located within a mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan. Alternative 2 would not result in loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan (Impact MIN-2).

4.12.8 Alternative 3: 500 kV Interconnection Lines on Entirely TSPs

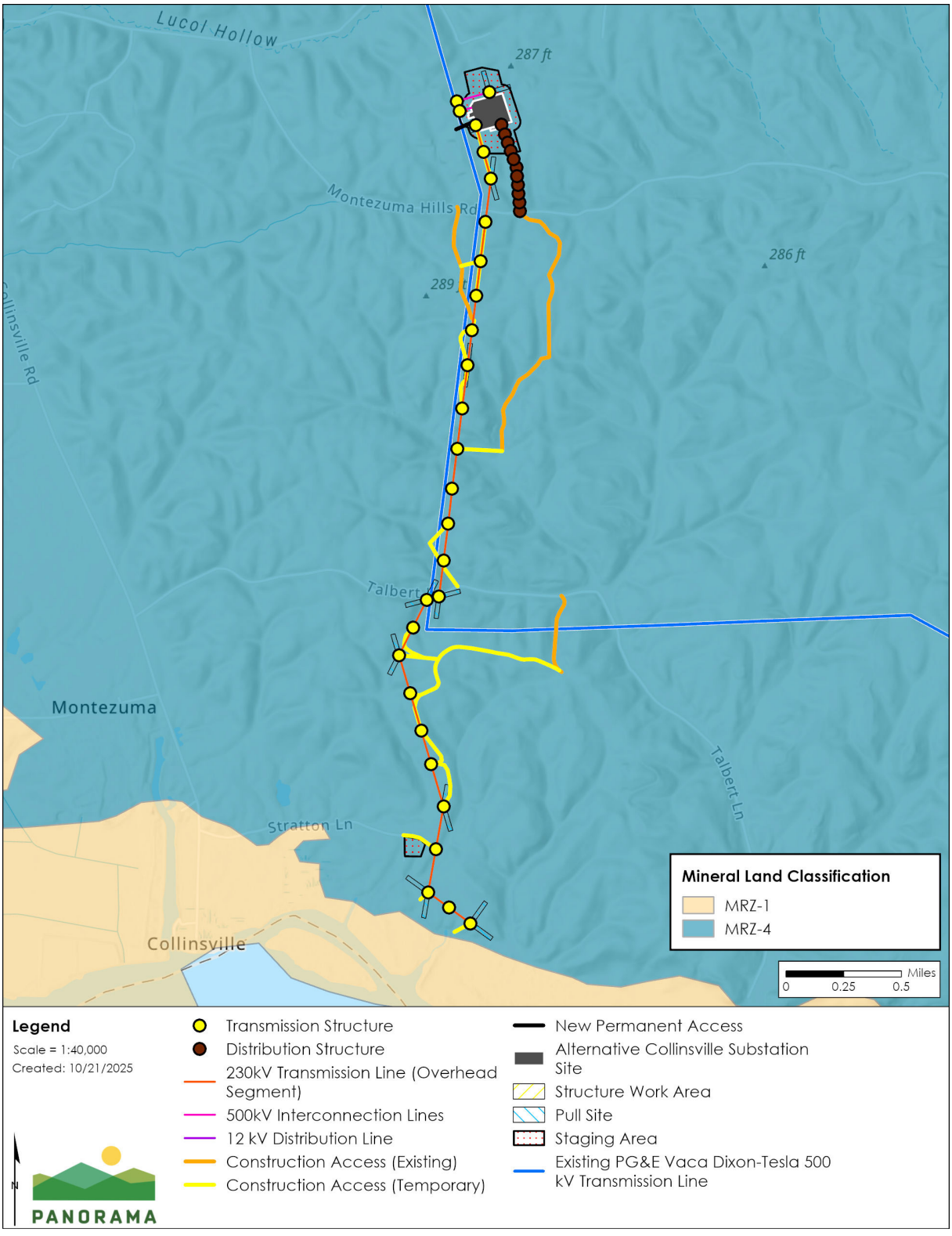
Environmental Setting – Alternative 3

Alternative 3 involves constructing the PG&E 500 kV interconnection lines on entirely TSPs, instead of the combination of LSTs and three-pole TSPs under the Proposed Project. The 500 kV interconnection lines would be in the same general alignment as the Proposed Project PG&E 500 kV interconnection lines. Alternative 3 would not involve changes to any of the other Proposed Project components, which would have the same impacts as described throughout this EIR for the Proposed Project or the other alternatives if selected in combination with Alternative 3.

Impact Analysis – Alternative 3

Alternative 3 involves changes to PG&E 500 kV interconnection lines structures, occurring within the same general alignment as the Proposed Project, on the southern side of the Delta within Solano County. The impacts would the same as those described for the PG&E project components in Section 4.12.4. No impact would occur.

Figure 4.12-3 Mineral Resources in Proximity to Alternative 2



Source: (O'Neal and Gius 2018)

4.12.9 Alternative 4: 230 kV Overhead Segment Alternative Route

Environmental Setting – Alternative 4

Alternative 4 involves relocation of a short segment of the LSPGC 230 kV overhead segment between the proposed LSPGC Collinsville Substation and the Delta, west of the proposed LSPGC 230 kV overhead segment route. Additionally, the northern end of the LSPGC 230 kV submarine segment would be rerouted to meet up with the southern end of the Alternative 4 230 kV submarine segment. Alternative 4 would not involve changes to any of the other Proposed Project components, which would have the same impacts as described throughout this EIR for the Proposed Project or the other alternatives if selected in combination with Alternative 4.

Impact Analysis – Alternative 4

Alternative 4 would be located on lands designated as MRZ-1 and MRZ-4 (Figure 4.12-4), which are zones unlikely to contain mineral resources. Alternative 4 would thus not 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 (Impact MIN-1). Alternative 4 is not located within a mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan. Alternative 4 would thus not result in loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan (Impact MIN-2).

4.12.10 Alternative 5: 230 kV Submarine Segment Alternative Route

Environmental Setting – Alternative 5

Alternative 5 involves rerouting a portion of the proposed LSPGC 230 kV submarine segment to the east of its current alignment as it approaches the southern shoreline in Pittsburg. The submarine segment cable would be installed in the same manner as the Proposed Project to reduce the total area where the submarine cables would be within a sand and gravel mining lease as shown on Figure 4.12-5. Alternative 5 would not involve changes to any of the other Proposed Project components, which would have the same impacts as described throughout this EIR for the Proposed Project or the other alternatives if selected in combination with Alternative 5.

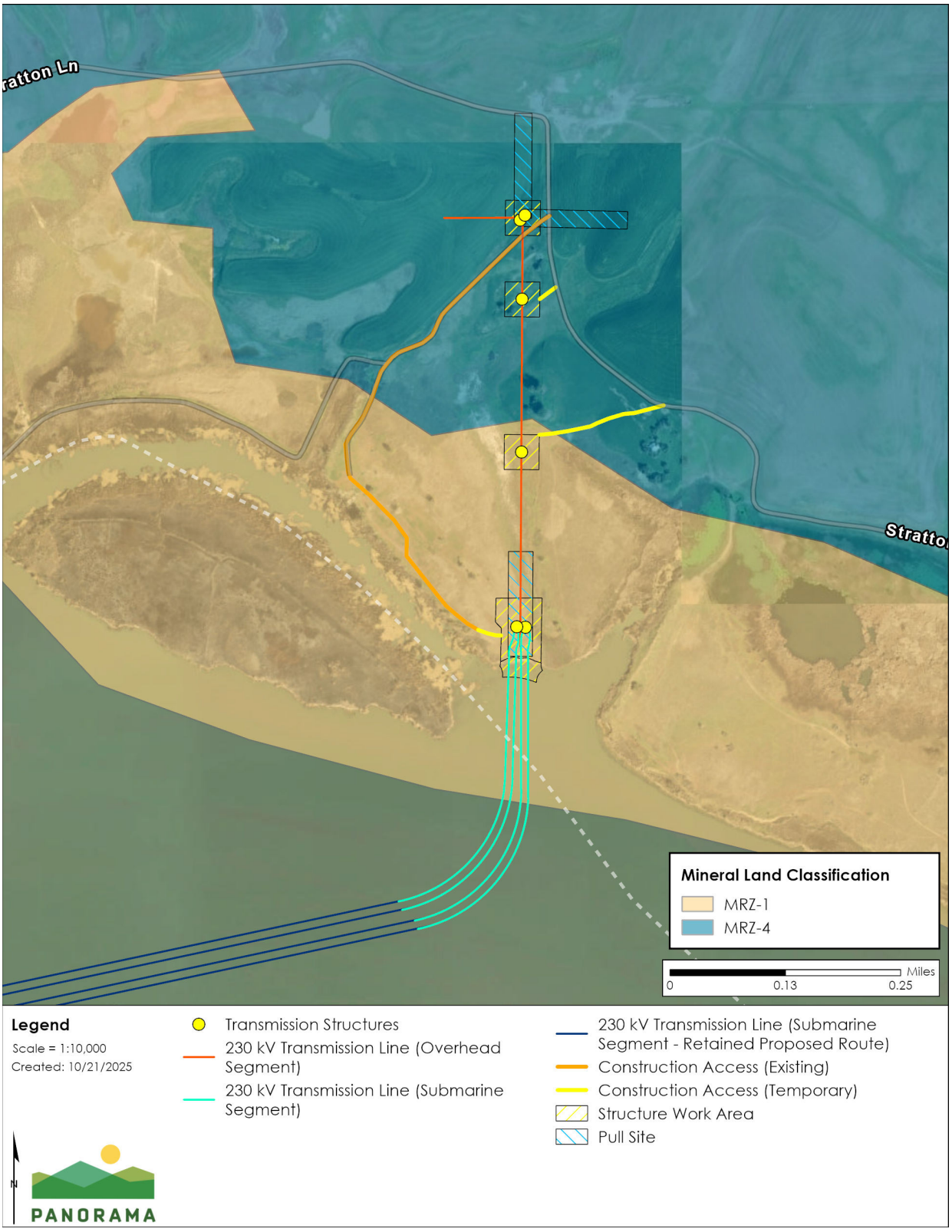
Impact Analysis – Alternative 5

Impact MIN-1: Would Alternative 5 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? (*Significant and unavoidable*)

Impact MIN-2: Would Alternative 5 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? (*Significant and unavoidable*)

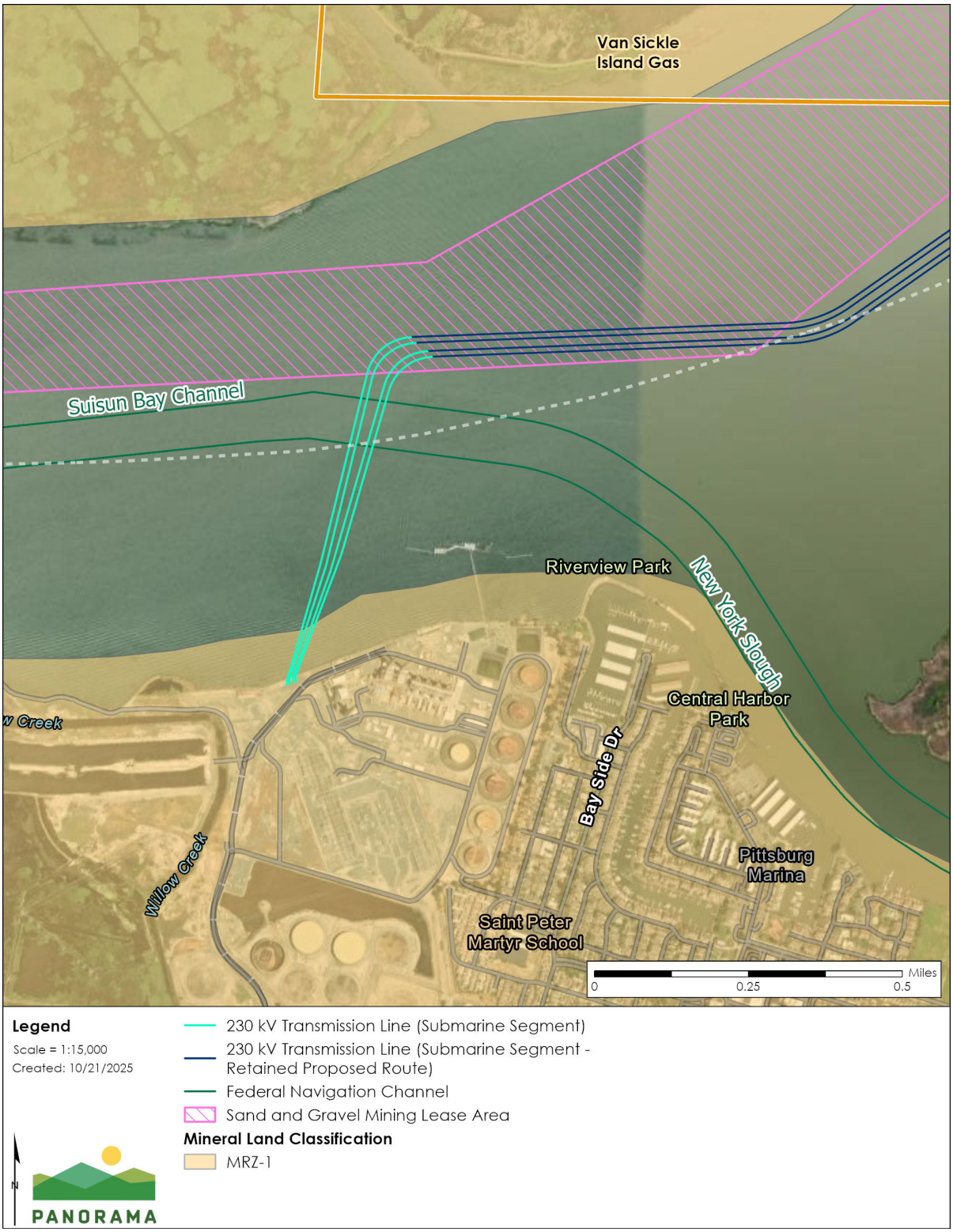
Approximately 0.07 mile of the Alternative 5 cable alignment would be located within a sand and gravel mining area. The impact of the Alternative 5 cable segment in the sand and gravel mining lease area would be approximately 26 acres accounting for a 75-foot setback from the cables.

Figure 4.12-4 Mineral Resources in Proximity to Alternative 4 and 6a/6b



Source: (O'Neal and Gius 2018).

Figure 4.12-5 Mineral Resources in Proximity to Alternative 5



*Source: (Suisun Associates 2013; J. Niven and S. Heim, "Re: *ext* Collinsville Progress Meeting Agenda 7/17/25," July 23, 2025)*

Since Alternative 5 only relocates a segment of the submarine cables, the impact from the Proposed Project submarine cables would remain the same as the Proposed Project in the northern portion of the submarine segment. The impact of Alternative 5 in combination with the Proposed Project submarine cables along the remainder of the submarine segment would be 38 acres accounting for a 75-foot setback from the outer edge of the cables. The loss of access to 38 acres of the sand and mining lease area would result in loss of availability of a known mineral resource of value to the region and a locally important mineral resource, which would be a significant impact. MM MIN-1 (refer to Section 4.12.13) would be implemented and requires LSPGC to design the submarine cable to avoid impacts on proposed sand and gravel mining operations to the extent feasible and coordinate with individuals with sand and gravel mining leases in the area to minimize impacts on the sand and gravel mining operations. While MM MIN-1 would reduce the impact on sand and gravel mining, and would result in an overall reduction in the impact to the sand and gravel mining lease, the presence of the Alternative 5 submarine cable would still restrict areas available for mining by approximately 38 acres and the impact from loss of availability of known mineral resource of value to the region and locally important mineral resource would remain be significant and unavoidable. The impact on access to mineral resource recovery areas would be reduced by approximately 6 acres in comparison to the Proposed Project.

4.12.11 Alternative 6a/6b: Underground Portions of the 230 kV Transmission Line within Suisun Marsh Protection Plan Management

Environmental Setting – Alternative 6a/6b

Alternative 6a/6b would locate the LSPGC 230 kV transmission line on primarily PG&E-owned property south of the proposed Collinsville Substation site (similar to Alternative 4). Alternative 6a/6b would be installed in conduit underground. Alternative 6a differs from Alternative 6b only at the northern end of the segment where options are provided for connection to the Proposed Project Collinsville Substation or Alternatives 1 or 2. Two overhead riser structures would be installed at the northern end of the Alternative 6a/6b underground duct bank where the LSPGC 230 kV line would transition between an overhead and underground position. Alternative 6a/6b is not located within or in proximity to mineral resource recovery sites. Alternative 6a/6b would not involve changes to any of the other Proposed Project components, which would have the same impacts as described throughout this EIR for the Proposed Project or the other alternatives if selected in combination with Alternative.

Alternative 6a/6b would be located on lands designated as MRZ-1 and MRZ-4 as shown Figure 4.12-4 (O'Neal and Gius 2018). Alternative 6a/6b is not located within a mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan and there are no active mineral resource recovery sites in proximity to the Alternative 6a/6b alignment.

Impact Analysis – Alternative 6a/6b

Alternative 6a/6b would be located on lands designated as MRZ-1 and MRZ-4, which are zones unlikely to contain mineral resources. Alternative 6a/6b would thus not 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 (Impact MIN-1). Alternative 6a/6b is not located within a mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan. Alternative 4 would thus not result in loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan (Impact MIN-2).

4.12.12 No Project Alternative

Environmental Setting – No Project Alternative

Under the No Project Alternative, the LSPGC Collinsville Substation and associated LSPGC 230 kV transmission line, PG&E 500 kV interconnection lines, and PG&E 12 kV distribution line would not be constructed. The existing mineral resource environment described in Section 4.12.1 would apply to the No Project Alternative.

Impact Analysis – No Project Alternative

The No Project Alternative would not have the 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 (Impact MIN-1) or 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 (Impact MIN-2). No impact on mineral resources would occur under the No Project Alternative.

4.12.13 Mitigation Measures

LSPGC Mitigation Measures

MM MIN-1: Coordinate with Mineral Lease Holders

LSPGC shall obtain CSLC authorization for installation of the LSPGC 230 kV submarine cables within CSLC jurisdiction. At least 60 days prior to the installation of the submarine cables, LSPGC shall coordinate with the Suisun Associates, and any other applicable mineral rights holders to identify and map active or leased mineral extraction areas for sand dredging within or adjacent to the submarine cables. The project shall be designed and implemented to avoid interference with existing mineral resource leases to the maximum extent feasible.
Where avoidance is not feasible, LSPGC shall implement the following:

- Notify active lease holders in proximity to the submarine cables about the proposed in-water construction dates.
- Provide the submarine cable locations and depth to active lease holders to avoid dredging in the area.

PG&E Mitigation Measures

No mitigation measures are required.

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4.13 Noise

This section presents the environmental setting and analysis of potential impacts from noise and vibration generated by the Proposed Project and alternatives. This section describes the existing ambient noise levels in the Proposed Project area, applicable regulations, and environmental impacts, and provides mitigation measures to reduce or avoid significant effects for the Proposed Project and alternatives, as applicable.

The following scoping comments are relevant to the analysis of noise and vibration (Appendix B):

- Mitigation for significant impacts due to construction and noise should be identified.
- The EIR must analyze noise impacts during construction and operation of the Project, including increases in ambient noise levels and consistency with local noise regulations.
- The EIR should discuss "corona noise" generated by high voltage transmission lines, which is a high-pitched noise due to the ionization of air around the conductors.

4.13.1 Environmental Setting

Definitions

The words *sound* and *noise* are often used interchangeably. However, while sound is a normal and often desirable element of the natural and built environment, *noise* is a more subjective term with a generally negative connotation. Sound refers to a vibration that propagates as an acoustic wave through a medium such as air, water, or solid matter that is perceived by animals and humans through an auditory system, which includes the ear and auditory nervous system. The word *noise*, on the other hand, refers to sound that causes disturbance, annoyance, or some other undesirable effect due to factors such as the amplitude or some other quality that makes the sound unpleasant. *Vibration* is an oscillatory motion through a solid medium and that is experienced by humans and animals as a physical sensation and that can affect the built environment.

Acoustic waves, or sound waves, are measured in amplitude and frequency. *Amplitude* is the height of the acoustic wave while *frequency* measures the rate of oscillation of the waves. *Sound pressure level*, a logarithmic measurement of effective pressure of a sound wave relative to a reference value, is the most common descriptor used to characterize the loudness of an ambient sound level. Sound pressure level is measured in *decibels* (dB), with 0 zero dB corresponding roughly to the threshold of human hearing and 120 to 140 dB corresponding to the threshold of pain (OSHA 2022).

A-weighted Decibels

Normally, the human ear is most sensitive to sounds in the middle frequencies (1,000 to 8,000 Hertz) and is less sensitive to sounds in the lower and higher frequencies. 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. Any sound level to which the A-weighting scale has been applied is expressed in A-weighted decibels, or dBA. Table 4.13-1 lists sound levels of common sources and environments and their A-weighted sound pressure level, or dBA.

Table 4.13-1 Sound Levels of Common Sources and Environments

Source or environment	Sound pressure level (dBA)
Jet taking off (200 feet away)	130
Heavy equipment operation	120
Night club	110
Construction site	100
Boiler room	90
Freight train (100 feet away)	80
Classroom chatter	70
Conversation (3 feet away)	60
Urban residence	50
Soft whisper (5 feet away)	40
North Rim of Grand Canyon	30
Silent study room	20

Notes:

dbA = A-weighted decibel

Source: (U.S. Department of Labor Occupational and Safety Health Administration [OSHA] 2022)

Statistical Noise Descriptors

A given level of sound 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 disrupted. To usefully characterize the ambient sound environment of a community, sound levels must be measured over time to account for the fact that ambient sounds in a given community vary continuously. To account for this variance, statistical descriptors have been developed to quantify fluctuating environmental sound levels. The most commonly used indices for measuring community noise levels include the equivalent sound level (L_{eq}), the day-night sound

level (L_{dn} or DNL), the community noise equivalent level (CNEL), and the instantaneous maximum sound level (L_{max}).

- **Equivalent sound level (L_{eq})**: The equivalent sound level is used to quantify the overall sound level over a specified period of time in terms of a single numerical value. The L_{eq} is the average of the varying A-weighted sound levels for a given time period, which is equivalent to a constant A-weighted sound level for the same time period.
- **Maximum sound level (L_{max}):** The instantaneous maximum noise level measured during a period of time.
- **Day-night average sound level (L_{dn} or DNL)**: The average of the A-weighted sound levels occurring during a 24-hour period, accounting for the greater sensitivity of most people to nighttime sounds by penalizing, or "weighting" sound levels at nighttime, defined as 10:00 p.m. to 7:00 a.m. by adding 10 dBA to consider the greater annoyance of nighttime noises.
- **Community noise equivalent level (CNEL)**: The average of the A-weighted sound levels occurring during a 24-hour period, weighting sounds during the evening hours, defined as 7:00 p.m. to 10:00 p.m., by 5 dBA and by 10 dBA during nighttime hours (10 p.m. to 7:00 a.m.).
- **L_n**: Used to quantify the sound level that is equaled or exceeded *n* percent of the measurement time.
- **L_{50}:** Median sound level, or the sound level that is not exceeded for 50 percent of the measurement time.

Peak Particle Velocity

Vibration is quantified using *peak particle velocity* (PPV), which is the maximum instantaneous peak of the vibration signal. PPV is most frequently used to describe the impact of groundborne vibration on buildings.

Sound Attenuation

Sound level decreases, or *attenuates*, with distance from the source. This basic attenuation rate is referred to as the *geometric spreading loss*. The basic rate of geometric spreading loss depends on whether a given noise source is a point source or a line source. A *point source*, such as an idling vehicle or construction equipment, attenuates at a rate of 6 dB per doubling of distance from the source. However, sound attenuation from a point source might increase by 1.5 dB from 6 dB to 7.5 dB for each doubling of distance due to ground absorption and reflective wave canceling. These factors are collectively referred to as *excess ground attenuation*. The basic geometric spreading loss rate is used where the ground surface between a noise source and a receiver is reflective, such as parking lots or a smooth body of water. A *line source* is a widely distributed source of sound, such as a street with moving vehicles. Sound from line sources attenuates at a lower rate than that from point sources, typically approximately 3 dBA per doubling of distance. Excess ground attenuation can increase this 1.5 dBA to 4.5 dBA per doubling of distance. Atmospheric effects, such as wind and temperature gradients, can also influence noise attenuation rates from both line and point sources of noise. However, unlike ground

attenuation, atmospheric effects are constantly changing and difficult to predict (FHWA 2017). *Insertion loss* is the reduction in noise level at a specific receptor due to the placement of a sound control device, such as a sound wall, or the presence of another comparable barrier such as an earthen berm or natural ridge, in the line-of-sight between the sound source and the receptor (FHWA 2017)

Groundborne Vibration

Groundborne vibration is vibration that is transmitted by wave energy through the ground. Groundborne vibration propagates from sources such as railways and impact-pile driving into nearby structures and buildings. The vibration energy spreads out as it travels through the ground, causing the vibration amplitude to decrease with distance away from the source. Groundborne vibration in buildings is typically perceived as the rattling of windows or items on shelves or the motion of building surfaces. Groundborne vibrations transmitted from site activities to a residential neighborhood can cause anxiety as well as annoyance and can disturb sleep, work, or leisure activities, and groundborne vibration has the potential to cause damage to structures, particularly historic structures that may be fragile. The intensity of groundborne vibration is quantified as PPV expressed 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. For the purposes of this analysis, continuous or frequent intermittent vibration sources are significant when their PPV exceeds the vibration damage criterion of 0.3 inch per second for older residential structures, 0.1 inch per second for fragile or historic structures (Caltrans 2020).

Corona

Corona occurs during transfer of electricity through conductors when an electrical field on the surface of a conductor becomes larger than the critical electric field for air so that, at certain points, there is very little electrical discharge with pauses. The so-called "corona effect" is the production of sound by the corona that is described as humming, buzzing, crackling, or sputtering. The size of corona and the sound levels produced by the corona effect depend on the voltage level, weather conditions, and the state of the surface of the insulator.

Project Setting

The Proposed Project site 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.

Currently, no ground- or air-vibrating sources or activities (e.g., mine blasting, pile driving, locomotives) are present in the Proposed Project site 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 site vicinity are expected to be negligible.

The proposed Collinsville Substation site is approximately 12.6 miles from Travis Air Force Base, and the closest work area for the Proposed Project, Transposition Site A, is located approximately 4.4 miles from Travis Air Force Base (U.S. Department of Homeland Security 2023) . The entire Proposed Project site is outside of the Travis Air Force Base's 60 CNEL contour (line of equal sound level) (County of Solano, Department of Resource Management 2015). 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 site.

Ambient Sound Levels

A Noise and Vibration Impact Assessment was conducted within the Proposed Project area in November 2023 (Arcadis U.S., Inc. 2024). Long-term (24 hours) measurements were taken at a residential land use along Collinsville Road (NM2 in Figure 4.13-1), approximately 4,300 feet west of the proposed Collinsville Substation site and 4,100 feet west of the proposed 230 kV overhead segment alignment. The ambient sound levels recorded at this location are expected to be representative of the existing ambient noise conditions at the nearest noise-sensitive receptors to the Collinsville Substation site (NR1 and NR2) as well as along the proposed 230 kV overhead segment alignment. Short-term (1-hour) measurements were taken at a location near the existing PG&E Pittsburg Substation and approximately 100 feet north of the proposed LSPGC telecommunication lines interconnection (NM1 in Figure 4.13-1). Ambient sound levels measured at this location are expected to be representative of the ambient noise conditions at the residential areas along the proposed LSPGC telecommunications line interconnection alignment.

Table 4.13-2 lists the measured daytime ambient equivalent sound levels (L_{eq}[day]) and nighttime ambient equivalent sound levels (L_{eq}[night]) for the two measurement locations along with the calculated day-night sound levels (L_{dn}).

Table 4.13-2 Summary of Measured Ambient Daytime, Nighttime and Day-Night Ambient Sound Levels in the Proposed Project Area

Measurement location	Measurement duration	Measured ambient Leq (day) (dBA)	Measured ambient Leq (night) (dBA)	Calculated Ambient Ldn, dBA
NM1: Short-term noise measurement location near residential receptor NR3 on Halsey Court and approximately 2,200 feet southeast of the southern edge of the Delta	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)	46	40	48
NM2: Long-term measurement location near residential receptor NR2 and approximately 4,300 feet west-southwest of the	24 hours (started at 8:00 a.m. on Monday September 25 and ended 8:00 a.m. on Tuesday September 26)	48	42	50

Measurement location	Measurement duration	Measured ambient Leq (day) (dBA)	Measured ambient Leq (night) (dBA)	Calculated Ambient Ldn, dBA
proposed LSPGC Collinsville Substation site				

Source: (Arcadis U.S., Inc. 2024)

Noise-Sensitive Receptors

Noise-sensitive receptors include residences, hospitals, places of worship, libraries and schools. The Proposed Project area north of the Delta is within a region predominantly occupied by agricultural land uses. However, there are five noise-sensitive receptors located in proximity to this portion of the Proposed Project site. In the city of Pittsburg, there are numerous noise-sensitive receptors in proximity to the Proposed Project site (i.e., the existing PG&E Pittsburg Substation and proposed LSPGC telecommunications interconnection lines).

Figure 4.13-1 and Figure 4.13-2 show the nearest noise-sensitive receptors and vibration sensitive-receptor to the Proposed Project site, labeled as NR1 through NR 7. Table 4.13-3 lists the nearest noise-sensitive receptor to each Proposed Project component site along with the jurisdiction in which each receptor is located.

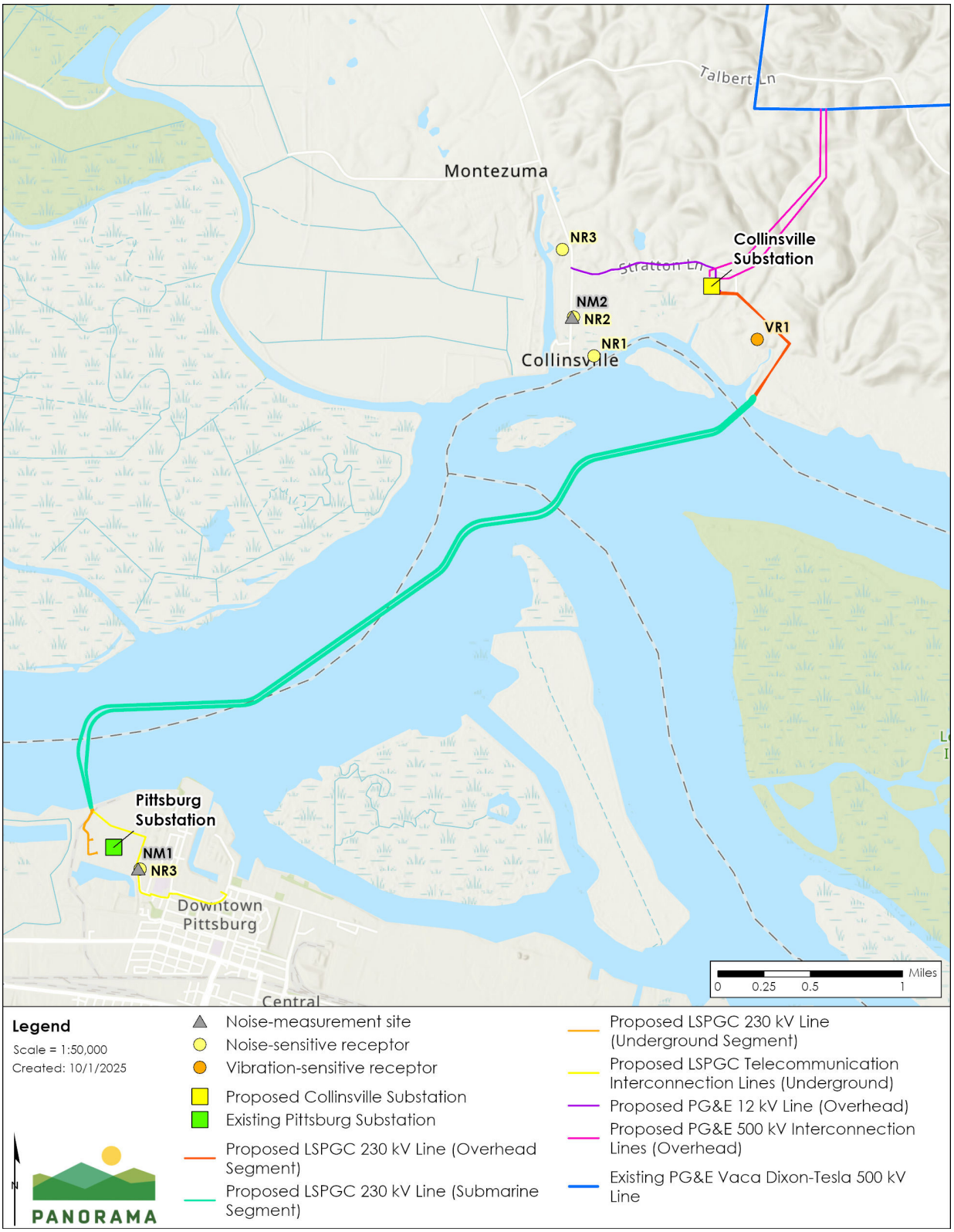
Table 4.13-3 Nearest Sensitive Receptors to the Proposed Project Site by Component

Proposed Project Component	Nearest noise-sensitive receptor	Approximate distance (feet)	Jurisdiction
LSPGC Collinsville Substation	NR1: Single-family residences along Latin Road	3,545	Solano County
LSPGC 230 kV overhead segment	NR2: Single-family residences along Collinsville Road	4,107	Solano County
LSPGC 230 kV submarine segment (northern approach)	NR1: Single-family residence along Latin Road	4,400	Solano County
LSPGC 230 kV submarine segment	NR1: Single-family residence along Latin Road	2,700	Solano County
LSPGC 230 kV submarine segment	NR3: Single-family residences along Halsey Court and Halsey Way	2,300	Contra Costa County
LSPGC 230 kV underground segment	NR3: Single-family residences along Halsey Court and Halsey Way	2,500	City of Pittsburg

Proposed Project Component	Nearest noise-sensitive receptor	Approximate distance (feet)	Jurisdiction
LSPGC telecommunication lines interconnection	NR3: Single-family residences along Halsey Court and Halsey Way	<5 to 45	City of Pittsburg
PG&E 500 kV interconnection lines	NR1: Single-family residences along Latin Road	4,025	Solano County
PG&E 12 kV distribution line	NR2: Single-family residences along Collinsville Road	1,331	Solano County
PG&E Pittsburg Substation	NR3: Single-family residences along Halsey Court and Halsey Way	290	City of Pittsburg
PG&E Pittsburg Substation staging yard east	NR3: Single-family residences along Halsey Court and Halsey Way	950	City of Pittsburg
PG&E Pittsburg Substation staging yard east	NR3: Single-family residences along Halsey Court and Halsey Way	1,520	City of Pittsburg
PG&E Transposition Site A	NR4: Single-family residence	1,475	Contra Costa County
PG&E Transposition Site B	NR5: Single-family residence	670	Contra Costa County
PG&E Transposition Site C	NR6: Single-family residence	2,000	Contra Costa County
PG&E Transposition Site D	NR7: Single-family residence	330	Contra Costa County

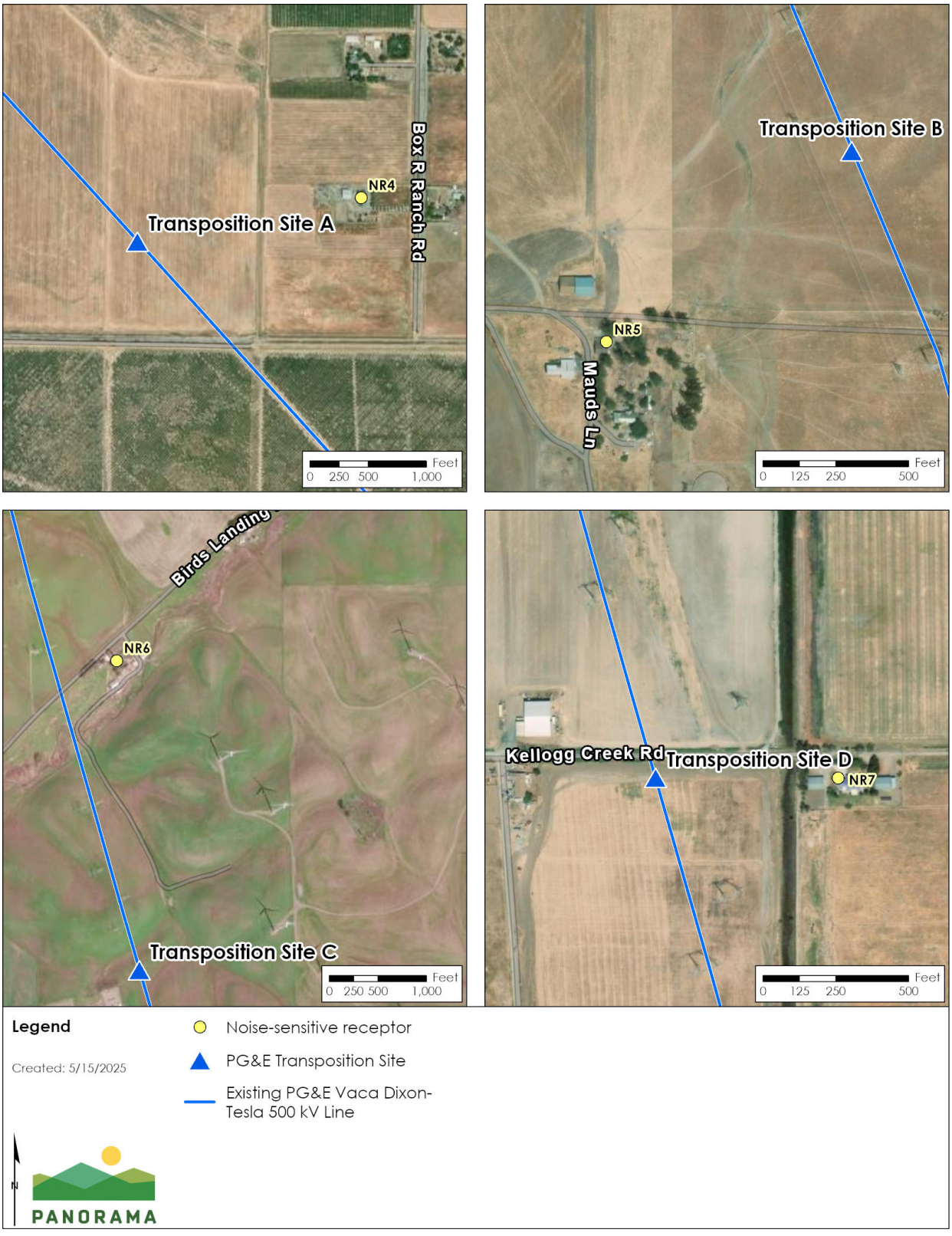
A levee separates the nearest sensitive receptor in Solano County (NR1, a group of residences along Latin Lane) from the Delta. The levee includes a road, Latin Lane, along its crest, consistent with typical flood-control levees in the Sacramento–San Joaquin Delta that meet or approximate California's Urban Levee Design Criteria for 200-year flood protection (DWR 2012). The levee is expected to fully obstruct the line of sight between in-water construction activity and the sensitive receptors in Collinsville. According to FHWA's Highway Traffic Noise: Analysis and Abatement Guidance (2011), well-designed barriers, including large earthen berms, can reduce noise levels by as much as 15 to 20 dBA, depending on height, material density, and topographic conditions.

Figure 4.13-1 Sensitive Receptors in Proximity to the Proposed Project Site



Source: (Arcadis U.S., Inc. 2024)

Figure 4.13-2 Sensitive Receptors in Proximity PG&E Transposition Sites



Source: (Arcadis U.S., Inc. 2024)

An 8-foot tall concrete sound wall separates the nearest sensitive receptor in the City of Pittsburg (NR3, a group of residences along Halsey Court and Halsey Way) from the adjacent industrial area (Google 2025). The wall is constructed from solid concrete with integrated support posts and capstones, consistent with standard acoustical barrier designs used to shield residential areas from adjacent industrial land uses. Based on FHWA and Caltrans guidance (FHWA 2006; Caltrans 2020) the soundwall would result in a 10 dBA reduction in noise levels.

Vibration-Sensitive Structures

Hastings Adobe (VR1) is a historic structure that, due to its construction methods, is sensitive to vibration. Hastings Adobe, located approximately 553 feet from the LSPGC 230 kV overhead segment, is shown in Figure 4.13-1. Hastings Adobe was nominated to the National Register of Historic Places in 1972. Built in 1846 near Collinsville, Hastings Adobe is a historic adobe structure with thick earthen walls, originally part of a failed Mormon colony plan (Bowen 2000). As a vibration-sensitive structure, its age, unreinforced earthen construction, and historic significance make it particularly vulnerable to structural damage from nearby groundborne vibration.

4.13.2 Regulatory Setting

Federal, state, and local regulations were reviewed for applicability to the Proposed Project and alternatives.

Federal

EPA Noise Level Guidelines

In 1974, the United States Environmental Protection Agency (EPA) published the information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety, which establishes guidelines for noise levels to protect public health and welfare with an adequate margin of safety (EPA 1974). The EPA 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. However, these criteria do not constitute enforceable federal regulations or standards. Administrators of the EPA 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 EPA has since delegated regulatory authority to local entities.

Federal Aviation Administration (FAA) Order 1050.1F

FAA Order 1050.1F provides the Federal Aviation Administration's standards for evaluating aircraft noise impacts (FAA 2015). Under this order, 65 dBA CNEL is identified as the threshold above which noise exposure is generally considered incompatible with residential and other sensitive land uses. For projects located within 2 miles of a public use airport or within an airport land use plan area, this 65 CNEL contour serves as the benchmark for determining whether people residing or working in the project area would be exposed to excessive aircraft-related noise under federal regulations.

There are no federal noise standards that directly regulate noise from the operation of electrical transmission lines and substation facilities.

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 Land Use and Climate Innovation provides non-binding noise compatibility guidelines for land use planning (OPR 2017, app. D). It recommends maximum CNEL or Ldn noise levels for different land uses**.** For example, 60 dBA CNEL is typically the upper limit for residential areas.

California Department of Transportation

Caltrans provides guidance for analysis of groundborne vibration through its Transportation and Construction Vibration Guidance Manual (Caltrans 2020). The Proposed Project is not subject to Caltrans regulations because the Caltrans Traffic Noise Analysis Protocol (which implements 23 CFR 772) only applies to Caltrans and local agency projects that require FHWA approval (Caltrans 2006), and the Proposed Project is not a Caltrans project nor does it require FHWA approval. However, these guidelines serve as a useful tool to evaluate vibration impacts on structures and residents. Table 4.13-4 and Table 4.13-5 list the thresholds for evaluating the potential for groundborne vibration to damage structures and the typical human response when exposed to various intensities of both transient and continuous/frequent sources of groundborne vibration. Under Caltrans guidance, the 0.04 in./sec PPV threshold for "distinctly perceptible" is used as threshold for human annoyance.

Table 4.13-4 Groundborne Vibration Significance Thresholds for Structural Damage

Structure Type	Transient sources, maximum PPV (in./sec) [1]	Continuous/frequent intermittent sources maximum PPV (in./sec) [2]
Extremely fragile historic buildings, ruins, ancient monuments	0.12	0.08
Fragile buildings	0.2	0.1
Historic and some old buildings	0.5	0.25
Older residential structures	0.5	0.3
New residential structures	1.0	0.5
Modern industrial/commercial buildings	2.0	0.5

Notes:

1. Transient sources create a single isolated vibration event, such as blasting or drop balls.
2. Continuous/frequent intermittent sources include pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.

Source: (Caltrans 2020)

Table 4.13-5 Groundborne Vibration Significance Thresholds for Human Response

Human Response	Transient sources, maximum PPV (in./sec) [1]	Continuous/frequent intermittent sources maximum PPV (in./sec) [2]
Severe	2.0	0.4
Strongly perceptible	0.9	0.10
Distinctly perceptible	0.25	0.04
Barely perceptible	0.04	0.01

Notes:

1. Transient sources create a single isolated vibration event, such as blasting or drop balls.
2. Continuous/frequent intermittent sources include pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.

Source: (Caltrans 2020)

California Noise Exposure Regulations

The State of California addresses worker exposure to noise levels through the California Noise Exposure Regulations California Code of Regulations (CCR) title 8 section 5095. Adopted by the California Division of Occupational Safety and Health, these regulations limit worker exposure to noise levels of 85 dB or lower over an 8-hour period, which is consistent with federal OSHA standards. The State has not established noise exposure standards for non-workplace environments.

California Airport Land Use Planning Handbook

The California Airport Land Use Planning Handbook provides statewide guidance for assessing airport-related land use compatibility (Caltrans 2011). It establishes 65 dBA CNEL as the threshold above which residential and other sensitive land uses are generally considered incompatible with aircraft noise. Local Airport Land Use Commissions (ALUCs) often adopt this threshold in their Airport Land Use Compatibility Plans (ALUCPs) to guide development around airports. Projects located within an ALUCP boundary or near a private airstrip are typically evaluated against this criterion to determine whether the project would expose residents or workers to excessive airport-related noise.

Local

Pursuant to 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."

Modifications to PG&E's existing Tesla Substation in Alameda County would occur within the substation fence line and would not require ground-disturbing activities. Therefore, plans and policies of Alameda County were not assessed in this analysis. Construction activities within Sacramento County would be limited to the in-water trenching and cable installation in the

Sacramento River. While these activities would generate some noise in the immediate vicinity, there are no onshore receptors within 0.5 mile of this site; therefore, plans and policies of Sacramento County are not assessed in this analysis.

Solano County General Plan

The Solano County General Plan's Public Health & Safety Element mandates noise reduction and abatement strategies. Solano County has established an acceptable outdoor area sound level for non-transportation noise sources at residential land uses of 55 dBA L_{eq} and 70 L_{max} for daytime hours (7:00 a.m. to 10:00 p.m.) and 50 dBA L_{eq} and 65 L_{max} for nighttime hours (10:00 p.m. to 7:00 a.m. (Solano County 2024). Table 4.13-6 lists the acceptable noise standards within Solano County according to land use, time (day or night), and exterior versus interior setting.

Table 4.13-6 Solano County Non-transportation Noise Standards

Receiving land use	Daytime: L_{eq}/L_{max} outdoor area (dBA)	Nighttime: L_{eq}/L_{max} outdoor area (dBA)	Day and night: L_{eq}/L_{max} interior (dBA)
All residential	55/70	50/65	35/55
Transient lodging [1]	55/75	—	35/55
Hospitals and nursing Homes [2,3]	55/75	—	35/55
Theaters and auditoriums [3]	—	—	30/50
Churches, meeting halls, schools, libraries, etc. [3]	55/75	—	35/60
Office buildings [3]	60/75	—	45/65
Commercial buildings [3]	55/75	—	45/65
Playground, parks, etc. [3]	65/75	—	—
Industry [3]	60/80	—	50/70

Notes:

The standards shall be reduced by 5 dBA for sounds consisting primarily of speech or music, and for recurring impulsive sounds. If the existing ambient noise level exceeds the standards, then the noise level standards shall be increased at 5 dBA increments to encompass the ambient.

Interior-noise-level standards are applied within noise-sensitive areas of the various land uses, with windows and doors in the closed positions.

1. Outdoor activity areas of transient lodging facilities are not commonly used during nighttime hours.
2. 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.
3. The outdoor activity areas of these uses (if any) are not typically used during nighttime hours.

Source: (Solano County 2024, tbl. HS.5)

The Solano County General Plan Public Health and Safety Element also uses Community Noise Equivalent Level (CNEL) to evaluate the compatibility of land uses with ambient noise

environments. The guidelines identify CNEL thresholds for normally acceptable, conditionally acceptable, and normally unacceptable sound levels at various land uses, as provided in Table 4.13-7, below.

Table 4.13-7 Solano County Community Noise Equivalent Level (CNEL) Land Use Compatibility Guidelines

Land use	Normally acceptable	Conditionally acceptable	Normally unacceptable
Residential – Low Density	≤60 dBA CNEL	60–70 dBA CNEL	>70 dBA CNEL
Residential – Multi-Family	≤65 dBA CNEL	65–70 dBA CNEL	>70 dBA CNEL
Schools, Libraries, Churches	≤70 dBA CNEL	70–80 dBA CNEL	>80 dBA CNEL
Commercial	≤70 dBA CNEL	70–80 dBA CNEL	>80 dBA CNEL
Industrial, Utilities	≤ 75dBA CNEL	75–85 dBA CNEL	>85 dBA CNEL

Source: (Solano County 2024)

The following policy contained in the Solano County General Plan Public Health and Safety Chapter are applicable to noise impacts for the Proposed Project:

- Require noise abatement measures to ensure that noise levels will not exceed those indicated in Tables HS-4 and HS-5.
- Require buffering between noise-sensitive land uses and noise sources unless a detailed noise analysis is conducted, and noise abatement measures can be taken to reduce noise to acceptable levels, as shown on Tables HS-4 and HS-5.
- Where development projects produce, or are affected by, nontransportation-related noise, require the inclusion of project features that will enable the project to achieve acceptable levels specified in Table HS-5, as measured at outdoor activity areas of existing and planned noise-sensitive land uses.
- Require noise mitigation to reduce construction and other short-term noise impacts as a condition of approval for development projects by applying the performance standards outlined in Table HS-5. The total noise level resulting from new sources and ambient noise shall not exceed the standards in Table HS-5, as measured at outdoor activity areas of any affected noise-sensitive land use except:

  - If the ambient noise level exceeds the standard in Table HS-5, the standard becomes the ambient level plus 5 dB.
  - Reduce the applicable standards in Table HS-5 by 5 dB if they exceed the ambient level by 10 or more dB

- Where it is not possible to reduce noise levels in outdoor activity areas to 60 dB or less using practical application of the best-available noise reduction measures, an exterior noise level of up to 65 dB may be allowed, provided that all available exterior noise level reduction measures have been implemented.

Solano County Noise Ordinance

The Solano County Noise Ordinance (chapter 28.1 of the County Code) sets out standards and provisions related to generation of noise within Solano County. Section 28.1-10 defines noise-sensitive uses as "receiving premises used for nonresidential purposes that are sensitive to noise, such as hospitals, hotels, churches, community care facilities, and schools," and section 28.1-20 makes it unlawful to cause noise in exceedance of the standards set out in the chapter or that is "offensive to persons of normal sensitivities," including due to "proximity and timing in relation to any noise-sensitive uses or sleeping areas within occupied dwellings." Section 28.1-40 provides a residential and agricultural zoning exterior noise level standard of 55 dBA L_{eq} for daytime hours (7:00 a.m. to 7:00 p.m.) and 50 dBA L_{eq} for nighttime hours (7:00 p.m. to 7:00 a.m.) (see Table 4.13-8).

Table 4.13-8 Solano County Noise Ordinance Permissible Exterior Noise Level by Land Use

Land use	Permissible noise level 7 a.m. to 7 p.m. ($L_{eq, dBA}$)	Permissible noise level 7 p.m. to 7 a.m. (L_{eq} , dBA)
Residential	55	50
Agricultural	55	50

Source: (Solano County 2017)

Section 28.1-50 of the Solano County Noise Ordinance sets out specific regulations for construction noise. Section 28.1-50(a)(1) restricts construction and demolition activities within 500 feet of a residential district to 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. and prohibits construction and demolition activities on Sundays and federal holidays. Section 28.1-50(a)(2) prohibits construction causing the noise level to exceed the permissible noise levels plus 20 dBA for more than 2 minutes or 90 dBA at any time for the land use where the measurement is taken. Additionally, section 28.1-50(3) states that any construction noise that does exceed the permissible noise levels set out in section 28.1-40 must only occur between the hours of 9 a.m. and 4 p.m., Monday through Friday. Per section 28.1-50(4), construction noise during times otherwise prohibited by the Noise Ordinance may be allowed if determined to be in the public interest by the noise control officer (Solano County 2017).

Table 4.13-9 Solano County Noise Ordinance for Construction Noise

Construction noise condition	Permitted timeframe
Construction noise within 500 feet of a residential district that does not exceed the noise standards	7:00 a.m. to 6:00 p.m. Monday–Friday; 8:00 a.m. to 5:00 p.m. Saturday
Construction noise that exceeds noise standards by up to 20 dBA	9:00 a.m. to 4:00 p.m. Monday–Friday
Construction noise that exceeds noise standards by >20 dBA, up to 90 dBA, for no more than 2 cumulative minutes per hour	9:00 a.m. to 4:00 p.m. Monday–Friday
Construction noise exceeding 90 dBA at the receiving property line	Never

Construction noise condition	Permitted timeframe
Construction noise from emergency construction by public agencies	Exempt from restrictions

(Solano County 2017)

Contra Costa County General Plan

The Contra Costa General Plan's Health and Safety Element addresses the impacts that noise and vibration can have on human quality of life, including impacts to health from prolonged exposure to excessive noise levels. Contra Costa County sets land use compatibility standards for noise as measured according to the day-night equivalent sound level (DNL), with the normally acceptable noise exposure threshold for residential land uses being 60 dB and other noise-sensitive receptors being 65 dB (Contra Costa County 2024, tbl. HS-3).

The following goal and associated policies in the Contra Costa County General Plan Health and Safety Element are relevant to the Proposed Project (Contra Costa County 2024, Noise and Vibration):

> **Goal HS-14**: An acceptable noise environment in all areas of the county.
>
> **Policy HS-P14.5:** Protect noise-sensitive land uses listed in Table HS-3 from adverse noise impacts by requiring mitigation to the degree feasible for projects that would increase long-term noise in excess of the following thresholds, when measured at the sensitive use's property line:
>
> a. Greater than 1.5 dBA DNL increase for ambient noise environments of 65 dBA DNL and higher
> b. Greater than 3 dBA DNL increase for ambient noise environments of 60 to 64 DNL
> c. Greater than 5 dBA DNL increase for ambient noise environments of less than 60 dBA DNL
>
> **Policy HS-P14.7**: Condition entitlements to limit noise-generating construction activities to the following:
>
> a. Weekdays and non-holidays unless site-specific conditions warrant exceptions
> b. Within 1,000 feet of noise-sensitive uses: 7:30 a.m. to 5:00 p.m.
> c. Over 1,000 feet from noise-sensitive uses: 7:00 a.m. to 6:00 p.m.
>
> **Policy HS-P14.8**: Require a traffic noise analysis for development projects where the project would generate more than 40 percent of daily trips over existing average daily traffic (ADT) on impacted roadway segments. Projects below this threshold are assumed to have no significant traffic noise impact because they would increase noise levels by less than 1.5 dBA DNL, which is the most restrictive threshold for determining a significant traffic noise impact. This screening policy does not apply to projects involving a substantial number of new operational truck trips (e.g., warehouses)

City of Pittsburg General Plan

The City of Pittsburg General Plan (City of Pittsburg 2024) Noise Element contains the following policies and action that are relevant to the Proposed Project:

Policy 13-P-1.7 Limit generation of loud noises on construction sites adjacent to existing development to normal business hours between 8:00 AM and 5:00 PM.

*Policy 13-P-1.8***:** Reduce the impact of truck traffic noise on residential areas by limiting such traffic to appropriate truck routes. Consider methods to restrict truck travel times in sensitive areas**.**

Policy 13-A-1.e: In making a determination of impact significance under the California Environmental Quality Act (CEQA), a substantial increase will occur if ambient noise levels experience a substantial permanent increase. Generally, a 3 dB increase in noise levels is barely perceptible, and a 5 dB increase in noise levels is clearly perceptible. Therefore, increases in noise levels shall be considered to be substantial when the following occurs:

- When existing noise levels are less than 60 dB, a 5 dB increase in noise will be considered substantial.
- When existing noise levels are between 60 dB and 65 dB, a 3 dB increase in noise will be considered substantial.
- When existing noise levels exceed 65 dB, a 1.5 dB increase in noise will be considered substantial.

Policy 13-P-1.11: Require the preparation of ground-borne vibration studies by qualified professionals when construction activities include vibration sensitive uses and significant site grading, foundation work, or underground work would occur within less than 100 feet of existing structures.

Policy 13-P-1.12: Require development projects to reduce adverse construction vibration impacts to sensitive receptors, as feasible, when vibration related construction activities are to occur within 100 feet from existing sensitive receptors. Measures to reduce noise and vibration effect may include, but are not limited to:

- Phase demolition, earth-moving and ground-impacting operations so as not to occur in the same time period.
- The pre-existing condition of all buildings within a 100-foot radius will be recorded in order to evaluate damage from construction activities. Fixtures and finishes within a 100-foot radius of construction activities susceptible to damage will be documented (photographically and in writing) prior to construction. All damage will be repaired back to its pre-existing condition.
- Substituting vibration-generating equipment with equipment or procedures that would generate lower levels of vibration. For instance, in comparison to

impact piles, drilled piles or the use of a sonic or vibratory pile driver are preferred alternatives where geological conditions would permit their use.

- Other specific measures as they are deemed appropriate by the implementing agency to maintain consistency with adopted policies and regulations regarding vibration.

The General Plan Noise Element specifies that a 5 dB change in ambient noise levels is often considered a "significant impact." It also includes a land use compatibility matrix that defines acceptable noise exposure levels for various land uses. According to this matrix, exterior noise levels up to 60 dBA CNEL at residential land uses are considered "normally acceptable," noise levels between 60 and 70 dBA CNEL are considered "conditionally acceptable," depending on implementation of mitigation or sound insulation, and levels above 70 dBA CNEL are considered "normally unacceptable" for residential land use.

City of Pittsburg Noise Ordinance

The City of Pittsburg's Municipal Code chapter 9.4 Noise, section 9.44.010, Prohibitions, 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." Section 9.44.010 also prohibits the "creation of any excessive noise on any street adjacent to any school, institution of learning, church or court while the same is in use, or adjacent to any hospital, which unreasonably interferes with the workings of such institution, or which disturbs or unduly annoys patients in the hospital, provided conspicuous signs are displayed in such streets indicating that the same is a school, hospital, church or court street." Additionally, section 9.55.010(J) specifies that operation of certain equipment including pile drivers, hammers, or "other appliance, the use of which is attended by loud or unusual noise," may not be operated between the hours of 10 p.m. and 7 a.m. (i.e., nighttime hours). Other prohibitions listed in section 9.55.010 relevant to the operation of heavy equipment (e.g., exhausts) prohibit the operation of such without use of a muffler or other such device to deaden the noise (City of Pittsburg 2025a). Municipal Code Chapter 18.82, section 18.82.035 further clarifies the prohibition of any construction or other activity occurring adjacent a residential district that generates noise levels in excess of 65 dBA at the property line outside of the house of 8 a.m. to 5 p.m., Monday through Friday (City of Pittsburg 2025b). Additionally, the Building and Construction Ordinance (Municipal Code 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.

4.13.3 Approach to Impact Analysis

The analysis of noise impacts applies the impact criteria and significance thresholds defined in the following subsection. The applicant proposed measures (APMs) and construction measures (CMs) identified by LSPGC and PG&E, respectively, are considered when making the impact determinations. Impacts are evaluated for the Proposed Project, including LSGPC and PG&E project construction combined for overlapping construction activities and analyzed separately

where the construction would not overlap as well as analyses of cumulative impacts and of project alternatives. Mitigation measures are defined to reduce or avoid significant impacts, where feasible.

Calculation of Noise Levels

Construction noise levels at noise-sensitive receptors were estimated based on individual equipment noise levels as listed in the Federal Highway Administration's (FHWA's) Roadway Construction Noise Model (RCNM), Version 1.0: User's Guide (FHWA 2006). Input variables used were the equipment type, number of units operating concurrently, the acoustical usage factor for each piece of equipment, and distances between the Proposed Project site and the nearest sensitive receptor at each project component. Project-generated noise levels were calculated for individual components and activities at distances of 50, 100, 250, 500, 1000, and 2000 feet as well as at the nearest receptor to each. Overlapping of activities was determined according to the provided construction schedule, and the combined noise levels at the identified receptors were calculated by logarithmically summing the noise levels from each activity for each overlap period to determine the minimum and maximum daily L_{eq} noise levels for each consecutive overlap period as well as the percentage of days that noise levels would exceed a given threshold. While the Proposed Project area in Collinsville includes soft dirt, grasses, and bushes where the ground attenuation rate is anticipated to be 7.5 dB per doubling of distance, the modeling conservatively analyzed the area assuming no ground absorption.

For the analysis of noise impacts from waterborne vessels and equipment at NR1 in Solano County and both waterborne vessels and terrestrial work at NR3 in the city of Pittsburg, a 10 dBA noise level reduction was applied to account for shielding of noise from the Delta by the levee and shielding of noise from the Delta and Pittsburg Substation, respectively, based on FHWA guidance (FHWA 2011) and Caltrans guidance (Caltrans 2020).

Evaluation of Consistency with Noise Standards

The city and county noise standards for exterior noise were applied in each jurisdiction to first evaluate whether the noise level generated during construction or operation and maintenance would exceed the numeric noise standards applied for the receiving land use. If the noise level generated during temporary construction activities exceeded the exterior noise standard in the jurisdiction, noise levels would be significant if they also occurred outside of hours when construction noise is allowed to exceed the local noise standards.

Calculation of Vibration Levels

Vibration levels for Proposed Project construction activities were calculated for the five types of equipment representing the most significant source of groundborne vibration: drill rig, large bulldozer, loaded truck, vibratory roller, vibratory hammer, and impact pile driver. Using reference vibration levels at 25 feet, vibration levels from each type of construction equipment, except impact pile driver, were calculated using the formulas provided by Caltrans (Caltrans 2020). Attenuated vibration levels were calculated for distances of 250, 500, and 1500 feet. The nearest vibration sensitive structure to the project, Hastings Adobe, is approximately 250 feet from a Proposed Project access road and over 500 feet from the 230 kV overhead segment. The nearest residence is over 1,500 feet from the Proposed Project.

Impact Criteria and Thresholds of Significance

The impact criteria have been derived from Appendix G of the CEQA Guidelines to evaluate impacts on mineral resources. Appendix G of the CEQA Guidelines asks whether the project would:

- Impact NOI-1: 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?
- Impact NOI-2: Result in generation of excessive groundborne vibration or groundborne noise levels?
- Impact NOI-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, expose people residing or working in the project area to excessive noise levels?

Applicant Proposed Measures and Construction Measures

The LSPGC APMs and PG&E CMs identified in Section 2: Project Description, that are relevant to the noise impact analysis are listed in Table 4.13-10, below.

Table 4.13-10 APMs and CMs Relevant to Noise

LSPGC APMs and PG&E CMs
APM 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.
CM 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.

LSPGC APMs and PG&E CMs
• 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.

4.13.4 Impact Analysis – Proposed Project

Table 4.13-11 presents a summary of the CEQA significance criteria and impacts on noise that would occur during construction, operation, and maintenance of the Proposed Project.

Table 4.13-11 Summary of Impacts on Noise for the Proposed Project

Impact criteria: Would the project …	APMs/CMs applied	Significance prior to mitigation	Mitigation measures required	Significance with mitigation
Impact NOI-1: 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?	APM PUB-1 CM NOI-1	S	MM NOI-1 MM NOI-2 MM NOI-3 MM NOI-4 MM NOI-5	SU
Impact NOI-2: Result in generation of excessive groundborne vibration or groundborne noise levels?	None	LTS	None	NA
Impact NOI-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, expose people residing or working in the project area to excessive noise levels?	None	NI	None	NA

Notes:

LTS = less than significant

NA = not applicable

NI = no impact

S = significant

SU = significant and unavoidable

Impact NOI-1: Would the Proposed Project generate 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? *(Significant and unavoidable)*

Construction

Overview

Construction of the Proposed Project 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, helicopters) and on-road sources (e.g., vehicle trips transporting workers, equipment, materials). The noise levels at receptors would depend on the type of construction activity, equipment being used, duration of the construction activity, 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 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. This analysis conservatively assumes that all construction equipment as defined in Section 2: Project Description, Table 2-9 at each portion of the Proposed Project site (i.e., for each Proposed Project component) would operate concurrently for the entire duration of a given workday although all construction equipment would not actually operate concurrently.

Construction activities at all Proposed Project components would generally be scheduled to occur during daytime hours (7 a.m. to 7 p.m.), 6 days per week (Monday through Saturday). LSPGC may require up to 30 days of night work to support schedule recovery, such as due to weather delays, or for system commissioning of the proposed LSPGC Collinsville Substation.

Noise levels generated by equipment that would be used in construction of the Proposed Project are listed in Table 4.13-12. Impacts from Project-generated construction noise are discussed in further detail by project component below.

Table 4.13-12 Typical Noise Levels from Construction Equipment

Construction equipment	Noise level (dB, L_{max} at 50 feet)
Air compressor (50 HP)	78
Auger drill rig	84
Auger drill rig truck	79
Backhoe (2x4)	78
Compactor (ground)	83
Concrete truck	79
Concrete pump truck	81

Construction equipment	Noise level (dB, L_{max} at 50 feet)
Crane: 35 ton (manlift)	81
Crane: 200 ton	81
Crane	81
Dozer, D4 type	82
Dozer, D6 type	85
Dump truck 10–12 yd.	76
Excavator	81
Flatbed truck	74
Forklift: 15,000-lb.	77
Forklift: 10,000-lb.	77
Forklift: 25,000-lb.	77
Front end loader	79
Generator: 25 kW	81
Gradall	83
Helicopter, heavy duty	97
Helicopter, light duty	90
Loader (4-5 Yd, 230 HP)	79
Manlift: 40 foot	75
Manlift: 120 foot	75
Mini excavator	81
Motor grader	85
Pickup truck: 1/2 ton	75
Pickup truck 1 ton	75
Pneumatic tools	85
Pressure digger: lo-drill (tracked)	84
Roller	80
Scraper	84
Skid steer loader	85
Tractor	84
Welder/torch	74

Construction equipment	Noise level (dB, L_{max} at 50 feet)
Wire puller	85
Wire trailer/tensioner	85
Welding truck	74
Tug boat	87
Support vessel	81
Deck generator (170 HP)	81

Source: (Epsilon Associates Inc. 2006; FHWA 2006)

Proposed Project Components

Proposed Project component sites are located within Solano County, the city of Pittsburg, and Contra Costa County. Table 4.13-13, below, lists the Proposed Project components and activities, proposed construction activity schedule, nearest sensitive receptor to each component and distance to the receptor, and jurisdiction within which each analyzed receptor is located.

Table 4.13-13 LSPGC Project Component Construction Schedule and Nearest Sensitive Receptors

Component and activity	Schedule	Nearest receptor: Distance to receptor (feet)	Jurisdiction
Collinsville Substation: Site development	May 1, 2026–August 1, 2026	NR1: 3,545	Solano
Collinsville Substation: below grade	July 14, 2026–January 14, 2027	NR1: 3,545	Solano
Collinsville Substation: above grade	January 2, 2027–February 11, 2028	NR1: 3,545	Solano
Collinsville Substation: Site and ROW restoration	February 1, 2028–July 17, 2028	NR1: 3,090	Solano
230 kV overhead segment: access road	May 1, 2027–May 19, 2027	NR2: 4,107	Solano
230 kV overhead segment: structure foundation installation	May 20, 2027–June 15, 2027	NR2: 4,107	Solano
230 kV overhead segment: structure installation	May 20, 2027–June 15, 2027	NR2: 4,107	Solano
230 kV overhead segment: conductor installation (with helicopter)	July 16, 2027–August 15, 2027	NR2: 4,107	Solano
230 kV overhead: conductor installation (without helicopter)	July 16, 2027–August 15, 2027	NR2: 4,107	Solano

Component and activity	Schedule	Nearest receptor: Distance to receptor (feet)	Jurisdiction
230 kV submarine segment: northern transition approach	June 15, 2027–November 30, 2027	NR1: 4,400	Solano
230 kV submarine segment: cable installation	July 1, 2027–October 31, 2027	NR1: 2,750	Solano/Pittsburg
230 kV underground segment	June 1, 2027–August 23, 2027	NR3: 1,900	Solano
Telecommunication interconnection lines	June 1, 2027–October 1, 2027	NR3: 500	Pittsburg
12 kV distribution	June 1, 2026–August 1, 2026	NR1: 2,351	Solano
500 kV interconnection: structure foundation installation	May 17, 2027–August 25, 2027	NR1: 4,025	Solano
500 kV interconnection: structure installation (with helicopter)	July 29, 2027–September 23, 2027	NR1: 4,025	Solano
500 kV interconnection: structure installation (without helicopter)	July 29, 2027–September 23, 2027	NR1: 4,025	Solano
500 kV interconnection: conductor installation (with helicopter)	September 24, 2027–November 19, 2027	NR1: 4,025	Solano
500 kV interconnection: conductor installation (without helicopter)	September 24, 2027–November 19, 2027	NR1: 4,025	Solano
Pittsburg Substation Upgrades	May 1, 2027–May 31, 2028	NR3: 250	Pittsburg
Pittsburg Substation staging yard east	May 1, 2027–May 31, 2028	NR3: 290	Pittsburg
Pittsburg Substation staging yard west	May 1, 2027–May 31, 2028	NR3: 1,520	Pittsburg
Transposition Site A: foundation installation	June 1, 2027–July 28, 2027	NR4: 1,000	Solano
Transposition Site A: structure and conductor installation	January 18, 2028–February 29, 2028	NR4: 1,000	Solano
Transposition Site B: foundation installation	June 1, 2027–July 28, 2027	NR5: 900	Solano
Transposition Site B: structure and conductor installation	January 18, 2028–February 29, 2028	NR5: 900	Solano

Component and activity	Schedule	Nearest receptor: Distance to receptor (feet)	Jurisdiction
Transposition Site C: foundation installation	June 1, 2027–July 28, 2027	NR6: 3,000	Solano
Transposition Site C: structure and conductor installation	January 18, 2028–February 29, 2028	NR6: 1,100	Solano
Transposition Site D: foundation installation	June 1, 2027–July 28, 2027	NR7:	Contra Costa
Transposition Site D: structure and conductor installation	January 18, 2028–February 29, 2028	NR8: 345	Contra Costa

Noise levels that would be generated by each Proposed Project activity were calculated at distances of 50, 250, 500, 1,000, and 2,000 feet.

Solano County

As discussed above, two sensitive receptors were identified in Solano County for the evaluation of noise impacts from construction of the Proposed Project, NR1 (single-family residences along Latin Lane) and NR2 (single-family residences along Collinsville Road). Construction activities for LSPGC and PG&E project components would overlap at each receptor, and noise generated by individual construction activities at each component site would overlap at the two receptors. The most significant impacts from Proposed Project noise would result at NR2. Noise levels resulting from overlapping construction activities at NR2 are therefore presented in detail below. See Appendix I for further detailed analysis of noise levels that would result at NR1 from the Proposed Project. For the Transposition Sites located within Solano County, noise levels were evaluated for the nearest sensitive receptor to each site: NR4, NR5, and NR6.

Daytime Construction

Construction of the Proposed Project would require use of heavy equipment that would generate noise. Peak noise levels would be experienced at NR2 due to the proximity to overlapping LSPGC and PG&E construction activities. Table 4.13-14, below, lists each overlapping activity period, the proposed construction schedule and duration for each overlap period, and the noise levels that would result at NR2.

Table 4.13-14 Proposed Project Construction Noise Levels at NR2

Overlapping activities	Schedule	Work days	Project-generated noise (dBA, L_{eq})	Combined project and existing (dBA, L_{eq})	Exceeds daytime threshold (55 dBA)?	Change from existing ambient noise levels (dBA, L_{eq})
Collinsville Substation: Site development	May 1, 2026–May 31, 2026	26	55	56	Yes	8

Overlapping activities	Schedule	Work days	Project-generated noise (dBA, L_{eq})	Combined project and existing (dBA, L_{eq})	Exceeds daytime threshold (55 dBA)?	Change from existing ambient noise levels (dBA, L_{eq})
Collinsville Substation: Site development + 12 kV distribution	June 1, 2026–July 13, 2026	37	63	63	Yes	15
Collinsville Substation: Site development + Collinsville Substation: Below-grade + 12 kV distribution	July 14, 2026–July 31, 2026	16	64	64	Yes	16
Collinsville Substation: Below-grade	August 1, 2026–December 31, 2026	132	57	57	Yes	9
Collinsville Substation: Below-grade	January 1, 2027–January 1, 2027	1	57	57	Yes	9
Collinsville Substation: Below-grade + Collinsville Substation: abovegrade + Collinsville Substation PG&E IT Work	January 2, 2027–January 13, 2027	10	60	60	Yes	12
Collinsville Substation: abovegrade + Collinsville Substation PG&E IT Work	January 14, 2027–April 30, 2027	92	57	57	Yes	9
Collinsville Substation: abovegrade + 230 kV overhead: access road + Collinsville Substation PG&E IT Work	May 1, 2027–May 18, 2027	15	57	58	Yes	10
Collinsville Substation: abovegrade + Collinsville Substation PG&E IT Work	May 19, 2027–May 19, 2027	1	57	57	Yes	9
Collinsville Substation: abovegrade; 230 kV overhead: structure foundation installation; 230 kV overhead: structure installation + Collinsville Substation PG&E IT Work	May 20, 2027–May 31, 2027	10	58	58	Yes	10

Overlapping activities	Schedule	Work days	Project-generated noise (dBA, L_{eq})	Combined project and existing (dBA, L_{eq})	Exceeds daytime threshold (55 dBA)?	Change from existing ambient noise levels (dBA, L_{eq})
Collinsville Substation: abovegrade; 230 kV overhead: structure foundation installation; 230 kV overhead: structure installation; 500 kV interconnection: structure foundation installation + Collinsville Substation PG&E IT Work	June 1, 2027–June 14, 2027	12	59	59	Yes	11
Collinsville Substation: abovegrade + Northern Transition Approach + 500 kV interconnection: structure foundation installation + Collinsville Substation PG&E IT Work	June 15, 2027–June 30, 2027	14	58	58	Yes	10
Collinsville Substation: abovegrade + Submarine cable + Northern Transition Approach + 500 kV interconnection: structure foundation installation + Collinsville Substation PG&E IT Work	July 1, 2027–July 15, 2027	13	58	59	Yes	11
Collinsville Substation: abovegrade + 230 kV Conductor installation (with helicopter) + Submarine cable + Northern Transition Approach + 500 kV interconnection: structure foundation installation + Collinsville Substation PG&E IT Work	July 16, 2027–July 27, 2027	10	63	63	Yes	15
Collinsville Substation: abovegrade; Northern Transition Approach; Submarine cable; 230 kV Conductor installation (with helicopter) + Collinsville Substation PG&E IT Work	July 28, 2027–July 28, 2027	1	63	63	Yes	15

Overlapping activities	Schedule	Work days	Project-generated noise (dBA, L_{eq})	Combined project and existing (dBA, L_{eq})	Exceeds daytime threshold (55 dBA)?	Change from existing ambient noise levels (dBA, L_{eq})
Collinsville Substation: abovegrade; Northern Transition Approach; Submarine cable; 230 kV Conductor installation (with helicopter); 500 kV interconnection: structure installation (with helicopter); 500 kV interconnection: conductor installation (with helicopter) + Collinsville Substation PG&E IT Work	July 29, 2027–August 14, 2027	15	69	68	Yes	20
Collinsville Substation: abovegrade; Northern Transition Approach; Submarine cable; 500 kV interconnection: structure installation (with helicopter); 500 kV interconnection:conductor installation (with helicopter) + Collinsville Substation PG&E IT Work	August 15, 2027–August 31, 2027	14	67	67	Yes	19
Collinsville Substation: abovegrade; Northern Transition Approach; Submarine cable; 500 kV interconnection: structure installation (with helicopter); 500 kV interconnection:conductor installation (with helicopter)	September 1, 2027–September 22, 2027	19	67	67	Yes	19
Collinsville Substation: abovegrade + 230 kV overhead:structure installation + Submarine cable + Northern Transition Approach	September 23, 2027–September 23, 2027	1	57	57	Yes	9

Overlapping activities	Schedule	Work days	Project-generated noise (dBA, L_{eq})	Combined project and existing (dBA, L_{eq})	Exceeds daytime threshold (55 dBA)?	Change from existing ambient noise levels (dBA, L_{eq})
Collinsville Substation: abovegrade + 230 kV overhead:structure installation + Submarine cable + Northern Transition Approach + 500 kV interconnection:conductor installation (with helicopter)	September 24, 2027–October 30, 2027	32	62	62	Yes	14
Collinsville Substation: abovegrade + 230 kV overhead:structure installation + Northern Transition Approach + 500 kV interconnection:conductor installation (with helicopter)	October 31, 2027–November 18, 2027	16	60	60	Yes	12
Collinsville Substation: abovegrade + 230 kV overhead:structure installation + Northern Transition Approach	November 19, 2027–November 29, 2027	9	57	57	Yes	9
Collinsville Substation: abovegrade	November 30, 2027–January 31, 2028	54	56	57	Yes	9
Collinsville Substation: abovegrade; Collinsville Substation: Site and ROW restoration	February 1, 2028–July 17, 2028	144	58	59	Yes	11

Table 4.13-15 summarizes the noise levels that would result from Proposed Project construction at NR2. The noise modeling conservatively assumed no attenuation from ground absorption.

Table 4.13-15 Summary of Proposed Project Construction Noise Levels at NR2

Category	Noise levels from 7 a.m. – 7 p.m., Monday–Saturday
Maximum noise level (dBA, Leq)	68
Days above 55 dBA, Leq	694
Percentage of days above 55 dBA, Leq	100%

The Solano County Noise ordinance permits construction noise to exceed the exterior noise standard of 55 dBA by 20 dBA (75 dBA total) when construction occurs during the hours of 9 a.m. to 4 p.m. Proposed Project construction is scheduled from 7 a.m. to 7 p.m. As shown in Table 4.13-15 construction of the Proposed Project would exceed the Solano County 55 dBA, L_{eq} daytime noise standard at NR2 for all days when construction occurs before 9 a.m. and after 4 p.m., which would be a significant impact.

MM NOI-1 restricts the use of helicopters to the hours of 9 a.m. to 4 p.m., Monday through Saturday. MM NOI-2 requires the installation of sound barriers (e.g., blankets attached to the substation fence or other acoustic barrier) to reduce noise levels at sensitive receptors. Reduction in the hours of substation construction to 9 a.m. to 4 p.m. Monday through Saturday would be infeasible because it would substantially extend the construction duration and would conflict with the project objectives. While the mitigation measures would reduce noise levels at the nearest receptor, the noise would still exceed 55 dBA Leq before 9 a.m. and after 4.p.m. for up to 248 days based on the construction schedule and overlapping construction activities. The impact from exceedance of the Solano County construction noise standards (construction before 9 a.m. or after 4 p.m.) and exceedance of the daytime noise standard for residential properties would remain significant and unavoidable.

Nighttime Construction

LSPGC has proposed construction at the substation and 230 kV overhead segment for up to 30 days at night to meet the construction schedule. Nighttime construction activities would conflict with the Solano County construction hours (9 a.m. to 4 p.m.) and noise levels generated at the nearest receptor would exceed the nighttime noise standard of 45 dBA Leq at NR2 in Solano County as summarized in Table 4.13-14. The impact from nighttime construction would be significant. MM NOI-2 requires installation of a sound barrier that would reduce the noise level at receptors; however, noise levels would still exceed the 45 dBA Leq nighttime noise standard and the impact from exceedance of nighttime noise standards would be significant and unavoidable during the 30 days of nighttime construction.

In addition, work on the 230 kV submarine segment would occur seven days a week and 24 hours per day. As discussed in Section 2: Project Description, while hydroplow installation would occur 24 hours per day, typical work hours (7 a.m. to 7 p.m.) would apply for all other submarine segment construction activities. Accordingly, nighttime noise would be generated only for select equipment that would be operated at night for hydroplow activities. A complete list of equipment that would be used for in-water work to install the 230 kV submarine segment is provided in Section 2: Project Description. Table 4.13-19, below, lists the equipment that would be operated at night and the noise levels (L_{max}) generated by that equipment at a reference distance of 50 feet (FHWA 2006).

Table 4.13-16 Equipment Noise Levels for 230 kV Submarine Segment Nighttime Work

Construction equipment	Noise level at 50 feet (dBA L_{max})
Water Pumps	78

Construction equipment	Noise level at 50 feet (dBA L_{max})
Deck Generator	81
Deck Equipment 100 hp diesel	81
Deck Generator - 100kW	81
Small Boats	85

Source: (Caltrans 2020; Epsilon Associates Inc. 2006)

The Solano County nighttime noise standard is 45 dBA L_{eq}. If noise generated by the installation of the 230 kV submarine segment would exceed the 55 dBA threshold during the daytime from 7 a.m. to 7 p.m. or the nighttime 45 dBA threshold from 7 p.m. to 7 a.m., a significant impact would result. Noise impacts from installation of the 230 kV submarine segment would be greatest at NR1. Table 4.13-20, below, summarizes the maximum noise levels that would result from installation of the 230 kV submarine segment at NR1. The noise generated from submarine segment construction would not exceed daytime or nighttime local noise standards and the impact from submarine segment construction would be less than significant.

Table 4.13-17 230 kV Submarine Segment Sunday and Nighttime Noise Levels at NR1

Schedule	Schedule	Work days	Project-generated noise (dBA, L_{eq})	Combined project and existing dBA (L_{eq})	Significance threshold (dBA, L_{eq})	Exceeds threshold?
Daytime	July 1, 2027–October 31, 2027	122	52	53	55	No
Nighttime	July 1, 2027–October 31, 2027	122	38	43	45	No

Transposition Sites: NR4, NR, and NR6

Due to the distance from other project components, noise generated by construction activities at Transposition Sites A, B, and C would not overlap with that of other project components. The construction activities at the transposition sites would also not overlap. Therefore, the Proposed Project construction activities for Transposition Sites A, B, and C are analyzed independent of other Proposed Project noise. As discussed in Section 4.13-1: Environmental Setting, the existing ambient noise levels at NR4, NR5, and NR6 are assumed to be 30 dBA based on the baseline noise level of agricultural and rural-residential land in the Caltrans Technical Noise Supplement (Caltrans 1998). Table 4.13-21, below, lists the nearest sensitive receptor, distance to the receptor, and noise levels that would result from Proposed Project construction at the nearest receptor during construction at each transposition site.

Table 4.13-18 Proposed Project Construction Noise Levels at NR4, NR5, and NR6

Component and activity	Nearest sensitive receptor	Distance to receptor (feet)	Work days	Project noise (dBA, Leq)	Combined project and and existing (dBA, Leq)	Exceeds threshold?	Change from existing ambient noise levels (dBA, L_{eq})
Transposition site A: foundation installation	NR4; single-family residence	1,000	48	58	58	Yes	28
Transposition site A: structure and conductor installation	NR4; single-family residence	1,000	36	62	62	Yes	32
Transposition site B: foundation installation	NR5: single-family residence	900	48	59	59	Yes	29
Transposition site B: structure and conductor installation	NR5: single-family residence	900	36	63	63	Yes	33
Transposition site C: foundation installation	NR6: Single-family residence at Birds Landing Road	1,100	48	57	57	Yes	27
Transposition site C: structure and conductor installation	NR6: Single-family residence at Birds Landing Road	1,100	36	61	61	Yes	31

The Solano County Noise ordinance permits construction noise to exceed the exterior noise standard of 55 dBA when construction occurs during the hours of 9 a.m. to 4 p.m. The ordinance allows for a 20 dB exceedance of the exterior noise standard during this timeframe, which would be 75 dBA. Noises between 75 and 90 dBA would only be permitted for two minutes per hour. As shown in Table 4.13-21, noise levels resulting from Proposed Project

construction activities at NR 4, NR5, and NR6 would exceed the 55 dBA L_{eq} daytime noise standard outside of the Solano County construction hours of 9 a.m. to 4 p.m., Monday through Saturday. The impact from exceedance of the local noise standards would be significant. MM NOI-3 restricts construction activities at Transposition Sites A, B, and C to the hours of 9 a.m. to 4 p.m., Monday through Saturday. With implementation of MM NOI-3, construction would occur during the hours approved in the local noise standards and noise levels would not exceed the 75 dBA L_{eq} construction noise level at any receptor during approved construction hours. The construction impact from generation of noise in excess of local standards would be less than significant with mitigation.

City of Pittsburg

Daytime Construction

Noise standards applicable to construction within the City of Pittsburg include the City of Pittsburg Municipal Code section 18.82.840, which restricts construction noise resulting in noise levels exceeding 65 dBA, L_{eq} at the property line of adjacent residential development to between the of the hours of 8 a.m. to 5 p.m., Monday through Friday (City of Pittsburg 2025b). Additionally, section 9.44.010 prohibits the "creation of any excessive noise on any street adjacent to any school, institution of learning, church or court while the same is in use (City of Pittsburg 2025a). Table 4.13-22 lists the individual Proposed Project components constructed within the City of Pittsburg, distance from NR3 (nearest receptor), and noise levels that would result from individual Proposed Project construction activities from each activity in combination with the existing daytime ambient noise level of 46 dBA, L_{eq}.

Table 4.13-19 Proposed Project Construction Noise Levels at NR3

Component and activity	Distance to component (feet)	Combined project and existing (dBA, Leq)[1]	Increase in Noise Level (dBA, Leq)
230 kV Submarine cable installation	2,400	53	7
230 kV Southern transition approach	2,400	56	10
230 kV underground segment	1,900	52	6
Pittsburg Substation upgrades	250	60	14
Pittsburg Substation staging yard east	290	62	16
Pittsburg Substation staging yard west	290	46	0
Telecommunication interconnection lines	45	90	44

Notes:

[1] The maximum combined noise level includes a 10 dBA reduction in noise as a result of the existing sound walls along the residential development.

As shown in Table 4.13-22, noise levels resulting from construction would result in an increase in noise levels at receptors; however, the City of Pittsburg does not limit construction noise levels, so long as construction occurs between 8 a.m. and 5 p.m. Construction that occurs

outside of the City of Pittsburg construction hours would be limited to 65 dBA, L_{eq}. Construction activities at all Proposed Project components would generally be scheduled to occur during daytime hours (7 a.m. to 7 p.m.), 6 days per week (Monday through Saturday). Construction before 8 a.m. and after 5 p.m. and all day Saturday would on conflict with the City of Pittsburg noise ordinance if the noise level exceeds 65 dBA.

All activities with the exception of the telecommunication interconnection line construction would be below 65 dBA and would not conflict with the City of Pittsburg noise ordinance. Table 4.13-23 lists the noise levels that would result from installation of the telecommunication lines in combination with existing ambient noise levels at distances of 45, 100, 250, 500, and 1,000 feet along with the change in existing ambient noise levels. Installation of the telecommunication interconnections line would exceed 65 dBA, L_{eq} at NR3 and at receptors within 1,000 feet of the proposed HDD pits. The impact would be significant.

Table 4.13-20 Telecommunication Interconnection Lines Construction Noise Levels, Attenuated

	20 feet	45 feet (NR3)	100 feet	250 feet	500 feet	1,000 feet
Project-generated noise level (dBA, Leq)	97	90	83	76	69	63
Combined existing project-generated noise level (dBA, Leq)	97	90	83	76	69	64
Change from existing ambient noise levels (dBA, L_{eq})	51	44	37	30	23	18

LSPGC has proposed APM PUB-1, which requires the coordination of construction within 320 feet of Saint Peter Martyr School with the school's administration to conduct construction when school is out of session. While APM PUB-1 would avoid noise impacts adjacent to a school in compliance with section 9.44.010, the construction noise at residential development would exceed 65 dBA and would still extend beyond the permitted hours of 8 a.m. to 5 p.m., Monday through Friday. MM NOI-4 limits construction activities for installation of the telecommunication interconnection lines to the hours of 8:00 a.m. to 5:00 p.m., Monday through Friday. With implementation of MM NOI-4, noise levels would not exceed local standards and the impact would be less than significant with mitigation.

Nighttime Construction

The 230 kV submarine segment construction would occur 7 days a week and 24 hours per day. The City of Pittsburg prohibits construction noise resulting in noise levels exceeding 65 dBA, L_{eq} at the property line of adjacent residential development outside of the hours of 8 a.m. to 5 p.m. Monday through Friday. According to the City of Pittsburg General Plan, a 5 dB increase in noise level would be considered significant and noise levels of 60 dBA CNEL at residential properties are considered normally acceptable. Table 4.13-25 shows the noise levels that would result at the nearest residential receptor in the City of Pittsburg (NR3) from installation of the 230 kV submarine segment at the nearest point to the receptor (2,400 feet).

Table 4.13-21 230 kV Submarine Segment Construction Noise Levels at NR3

Time	Schedule	Work days	Project-generated noise (dBA, L_{eq})	Combined project and existing dBA (L_{eq})	Significance threshold (dBA, L_{eq})	Exceeds threshold?	Change from existing ambient noise levels (dBA, L_{eq})
Daytime	July 1, 2027–October 31, 2027	18	53	54	65	No	8
Nighttime	July 1, 2027–October 31, 2027	122	39	43	60; 5 dBA increase	No	3

As shown in Table 4.13-25, above, installation of the 230 kV submarine segment would not exceed 5 dBA above existing noise levels (46 dBA) and the impact would be less than significant.

Contra Costa County

Transposition Site D is located in unincorporated Contra Costa County. The Contra Costa General Plan limits noise-generating construction activities to weekdays and non-holidays unless site-specific conditions warrant exceptions. The Contra Costa General Plan also limits noise-generating activities within 1,000 feet of noise sensitive uses to the hours of 7:30 a.m. to 5 p.m. The nearest sensitive receptor to Transposition Site D is NR 7, located at a distance of 345 feet from the site. Table 4.13-26, below, shows the noise levels that would result from Proposed Project construction activities at NR 7.

Table 4.13-22 Proposed Project Construction Noise Levels at NR7

Component and activity	Nearest senstiive receptor	Distance to receptor (feet)	Work days	Project noise (dBA, Leq)	Change from existing ambient noise levels (dBA, L_{eq})
Transposition Site D: foundation installation	NR4	345	48	67	37
Transposition Site D: structure and conductor installation (inclusive of helicopters)	NR4	345	36	71	41

Construction activities at Transposition Site D would occur within 1,000 feet of a sensitive receptor between 7:00 a.m. and 7:00 p.m., which would generate noise levels in excess of local noise standards when construction occurs before 7:30 a.m. or after 5:30 p.m. MM NOI-5 limits construction at Transposition Site D to the hours of 7:30 a.m. to 5:30 p.m., Monday through Friday. With implementation of MM NOI-5, the impact from generation of noise in excess of local standards would be less than significant**.**

Operation and Maintenance

LSPGC Collinsville Substation

The primary sources of noise associated with operation of the Collinsville Substation would be from six, single phase step-down autotransformers and their associated cooling fans (seventh autotransformer is a spare), two heating, ventilation, and air conditioning (HVAC) units mounted on the sides of a control enclosure), eight HVAC units mounted on the sides of two GIS halls (four HVAC units per GIS hall), and two 10-ohm series reactors per 230 kV line (triangle arrangement). The autotransformers would be of mineral oil immersed type for ONAN/ONAF/ONAF2 (300/375/500 mega volt ampere [MVA]) multistage cooling (Arcadis U.S., Inc. 2024). The predicted sound levels generated by operation of the Collinsville Substation at the nearest residential land use located at a distance of 3,545 feet from the proposed substation site would be 32 dBA Leq. The maximum noise level would be less than ambient noise levels at the residential land use and would not exceed any local noise standards. The impact would be less than significant.

LSPGC 230 kV Overhead Segment

The LSPGC 230 kV overhead segment would be operated in Solano County. Corona-generated audible noise in fair and foul weather from the proposed 230 kV overhead segment was predicted, as described in the Noise and Vibration Impact Report (Arcadis U.S., Inc. 2024).

The predicted audible noise level for the proposed 230 kV overhead segment in fair weather at the edges of the ROW is approximately 9 dBA, increasing to 11 dBA within the ROW under the line (Arcadis U.S., Inc. 2024). In foul weather, the audible noise level from the proposed LSPGC 230 kV overhead segment is expected to increase to approximately 34 dBA at the edges of the ROW and 36 dBA under the line within the ROW. The noise levels generated by operation of proposed LSPGC 230 kV overheard segment was calculated at the nearest receptor (NR2; 4,107 feet) to be 0 dBA in fair weather and 8 dBA in foul weather; both levels are well below the existing ambient daytime and nighttime noise levels of 48 dBA and 42 dBA, respectively. Noise generated by operation of the 230 kV overhead segment would therefore not cause an exceedance of noise levels in conflict with local noise regulations, and the impact would be less than significant.

LSPGC 230 kV Transmission Line Submarine Segment, Underground Segment, and Telecommunication Lines

The 230 kV submarine and underground segments and telecommunication interconnection lines would be buried below ground and would not generate any audible noise. Therefore, there would be no impacts to noise from operation of these Proposed Project components.

PG&E 500 kV Interconnection Lines
The PG&E 500 kV interconnection lines would be operated in Solano County. There are no sensitive noise receptors within one-quarter mile (1,320 feet) from the proposed 500 kV interconnection lines alignment.

Corona-generated audible noise in fair and foul weather from the proposed PG&E 500 kV interconnection lines were predicted, as described in the Noise and Vibration Impact Assessment Report (Arcadis U.S., Inc. 2024). The audible noise level in fair weather conditions at the edges of the ROW would be approximately 38 dBA, increasing to approximately 41 dBA within the ROW under the line. In foul weather, the audible noise level from the line increases to approximately 63 dBA at the edges of the ROW and approximately 66 dBA under the line within the ROW. Noise generated by operation of the proposed PG&E 500 kV interconnection lines would not be audible at the nearest sensitive receptor due to the intervening distance. Therefore, the impact would be less than significant.

PG&E 12 kV Distribution Line
The PG&E 12 kV distribution line would be operated in Solano County. Noise generated by the operation of a 12 kV distribution line would be minimal and not expected to result in perceptible increases in ambient noise levels. Unlike high voltage transmission lines (200 kV and above), low voltage 12 kV distribution lines do not produce corona noise that could exceed the ambient noise levels. While brief, infrequent noise impacts could still be considered significant, this would only be the case when that noise is perceptible to the human ear. Noise generated by a 12 kV distribution line is imperceptible at the ground level. Therefore, operation of the 12 kV distribution line would not cause an increase in ambient noise or result in an exceedance of applicable noise standards, and impacts would be less than significant.

PG&E Substation Modifications
The substation modifications would occur within an existing substation and would not result in generation of noise above the level of the existing substation equipment. No noise impact would occur.

Impact NOI-2: Would the Proposed Project generate excessive groundborne vibration or groundborne noise levels? *(Less than significant)*

Construction

Overview
Proposed Project construction activities involve the use of equipment that would generate groundborne vibration, the most significant sources being pressure diggers, D8 sag bulldozers, water, concrete, dump trucks, vibratory roller, and vibratory hammer. Table 4.13-28 lists the types of Proposed Project equipment that are significant sources of groundborne vibration along with the schedule, and duration.

Table 4.13-23 Vibration-generating Equipment by Project Activity

Component/ activity	Vibration-generating equipment	Schedule	Duration (days)
Collinsville substation: site development	Vibratory Roller, water truck, dump truck	May 1, 2026–August 1, 2026	26
Collinsville substation: below-grade construction	Pressure digger, water truck, concrete truck, dump truck	July 14, 2026–January 14, 2027	76
Collinsville substation: cleanup and restoration	Water truck, dump truck	February 1, 2028–July 17, 2028	138
Collinsville substation: PG&E IT work	Water truck, concrete truck, dump truck	January 1, 2027–August 31, 2027	202
230 kV overhead segment: access road construction	Water truck, dump truck	May 1, 2027–May 19, 2027	333
230 kV overhead segment: conductor installation	D8 sag dozer, water truck	July 16, 2027–August 15, 2027	24
230 kV overhead segment: foundation installation	Pressure digger, water truck, concrete truck, dump truck	May 20, 2027–June 15, 2027	16
12 kV distribution line	Pressure digger, concrete truck, dump truck	June 1, 2026–August 1, 2026	51
500 kV interconnection lines: foundation installation	Pressure digger, water truck, concrete truck, dump truck	May 17, 2027–August 25, 2027	70
500 kV interconnection lines: structure installation	Water truck	July 29, 2027–September 23, 2027	40
500 kV interconnection lines: conductor installation	D8 sag dozer, water truck	September 24, 2027–November 19, 2027	40
230 kV submarine segment: northern transition approach	Dump truck	June 15, 2027–November 30, 2027	70
230 kV submarine segment: southern transition approach	Vibratory hammer, dump truck	July 1, 2027–October 31, 2027	122
Pittsburg substation modifications	Pressure digger, water truck, concrete truck, dump truck	May 1, 2027–May 31, 2028	250
Transposition Site A: foundation installation	Pressure digger, D8 sag dozer, water truck, concrete truck, dump truck	June 1, 2027–July 28, 2027	36
Transposition Site A: structure and conductor installation	Water truck	January 18, 2028–February 29, 2028	36

Component/ activity	Vibration-generating equipment	Schedule	Duration (days)
Transposition Site B: foundation installation	Pressure digger, D8 sag dozer, water truck, concrete truck, dump truck	June 1, 2027–July 28, 2027	36
Transposition Sites B: structure and conductor installation	Water truck	January 18, 2028–February 29, 2028	36
Transposition Site C: foundation installation	Pressure digger, D8 sag dozer, water truck, concrete truck, dump truck	June 1, 2027–July 28, 2027	36
Transposition Sites C: structure and conductor installation	Water truck	January 18, 2028–February 29, 2028	36
Transposition Site D: foundation installation	Pressure digger, D8 sag dozer, water truck, concrete truck, dump truck	June 1, 2027–July 28, 2027	36
Transposition Sites D: structure and conductor installation	Water truck	January 18, 2028–February 29, 2028	36
Telecommunications interconnection lines	Dump truck, concrete truck	June 1, 2027–October 1, 2027	103

Source: (Arcadis U.S., Inc. 2024)

Helicopters would also be used for construction of the 230 kV overhead segment and would land at and take off from the staging yards at the proposed Collinsville Substation staging yards. Helicopters are not considered sources of groundborne vibration under Caltrans (2020) or FTA (2018) guidance. Although helicopters generate low-frequency noise that may cause windows or other building elements to rattle, this is an airborne phenomenon—not groundborne vibration. Takeoff and landing would be brief and infrequent and would not be expected to generate perceptible groundborne vibration. Therefore, helicopter use would not result in perceptible groundborne vibration at any receptor, and groundborne vibration or noise impact from helicopter use would be less than significant.

Groundborne noise is the audible sound generated inside buildings as a result of groundborne vibration (FTA 2018). It is typically associated with continuous sources like rail transit or tunnel boring machines and is most perceptible in quiet indoor environments. Construction equipment such as vibratory rollers and other surface-level activities are not generally associated with perceptible groundborne noise as the vibration levels are not high enough to generate secondary audible effects inside nearby structures (FTA 2018; Caltrans 2020). Therefore, groundborne noise impacts from construction would be less than significant and are not further analyzed.

LSPGC Project Components

A vibration-sensitive cultural site, the Hastings Adobe structure, is located 250 feet from the nearest Proposed Project access road/work area. Hastings Adobe is a fragile historic structure eligible for listing under the National Register of Historic Places as discussed in Section 4.5: Cultural Resources (NRHP 1972). The nearest residential structure to the Collinsville Substation is a residence located 3,545 feet away. The nearest residence to the underground segment is approximately 2,000 feet from the underground segment work area. Additionally, there are single-family residences located as close as 20 feet to the proposed LSPGC telecommunications interconnection lines.

Table 4.13-29, below lists the Proposed Project construction equipment that would generate the most groundborne vibration and provides attenuated vibration levels for each type of equipment.

Table 4.13-24 Attenuated Groundborne Vibration Generated by Proposed Project Construction Equipment

Construction equipment	Caltrans reference vibration level, PPV at 25 ft. (in./sec)	Maximum PPV (in./sec) 250 ft.	Maximum PPV (in./sec) 500 ft.	Maximum PPV (in./sec) 1500 ft.	Threshold for structural damage (in./sec PPV)[3]	Exceeds threshold?
D8 sag dozer	0.089	0.003	0.005	0.002	0.1 (fragile buildings)/0.3 (modern residential)	No
Pressure digger	0.089	0.003	0.005	0.002	0.1 (fragile buildings)/0.3 (modern residential)	No
Water, concrete, and dump trucks	0.076	0.002	0.004	0.001	0.1 (fragile buildings)/0.3 (modern residential)	No
Vibratory roller [1]	0.210	0.007	0.011	0.004	0.1 (fragile buildings)/0.3 (modern residential)	No
Vibratory hammer [2]	0.650	0.021	0.033	0.011	0.1 (fragile buildings)/0.3 (modern residential)	No

Notes:

1. Only used during site development phase of the new substation construction.
2. Only used during the southern transition approach phase of the 230 kV underground segment construction.

3. The threshold reflects the Caltrans vibration threshold for structural damage to fragile buildings. Applied to the Project, this is the threshold for damage at the Hastings Adobe, the most vibration sensitive structure in the vicinity of the Proposed Project.

Source: (Caltrans 2020; Arcadis U.S., Inc. 2024)

The Caltrans vibration threshold for structural damage to fragile historic buildings such as Hastings Adobe is 0.1 in/sec PPV for continuous/intermittent sources and 0.2 in/sec PPV for transient sources. Construction equipment, including vibratory rollers, is considered to be a continuous/intermittent source (Caltrans 2020, tbl. 8). Vibration from Proposed Project construction equipment, including a vibratory roller used for preparation of a temporary access road, would attenuate to below the 0.1 in/sec PPV level within 250 feet of the source. As stated, the Hastings Adobe structure is located approximately 250 feet from the nearest vibratory roller usage associated with Proposed Project construction. Therefore, the vibration impact on the Hastings Adobe site would be less 0.1 in/sec PPV and the groundborne vibration impacts on the Hastings Adobe site would be less than significant.

Use of the vibratory hammer during construction of the underground vault at the 230 kV underground segment would produce the greatest amount of vibration. The nearest residence is located approximately 4,400 feet away from the construction. The vibration levels would be imperceptible at a distance of 4,400 feet from the vibratory hammer and the impact from groundborne vibration would be less than significant.

For construction of the proposed LSPGC telecommunications line interconnection, the equipment that would generate the most substantial groundborne vibration would be loaded trucks. The Caltrans vibration threshold for structural damage to residential buildings, including older residential buildings, is 0.3 in/sec PPV (Caltrans 2020). Vibration generated by loaded trucks used for construction of the proposed LSPGC telecommunication lines interconnection would attenuate to below the 0.3 in/sec PPV threshold within 10 feet of the source. Residential structures would be approximately 20 feet from the work areas and vibration associated with use of loaded trucks would therefore not cause any cosmetic or structural damage to the residential structures adjacent the alignment. Impacts from groundborne vibration would be less than significant.

PG&E Project Components

PG&E project component construction would not generate groundborne noise. The Hastings Adobe cultural site is located 1,900 feet from the proposed 500 kV interconnection lines. Due to the distance between the 500 kV transmission line and the Hastings Adobe, the construction activities would have no vibration impact at Hastings Adobe.

The nearest structures to the PG&E project component sites would be residences located 250 feet from the proposed staging areas at the Pittsburg Substation. As shown in Table 4.13-29, groundborne vibration from use of loaded trucks would not exceed thresholds for damage to modern residential structures at a distance of 250 feet. Therefore, impacts would be less than significant.

Operation and Maintenance

LSPGC Project Components

Operation of the LSPGC Collinsville Substation would not involve the use of any equipment or heavy machinery that would be a source of groundborne vibration. Electrical transmission lines and telecommunication lines do not generate vibration. Therefore, no impact from generation of groundborne vibration or noise would occur.

PG&E Project Components

Electrical transmission lines and support structures do not generate vibration. Therefore, no impact from generation of groundborne vibration or noise would occur.

Impact NOI-3: Would the Proposed Project be 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, or if the project would expose people residing or working in the project area to excessive noise levels? ***(No impact)***

The LSPGC and PG&E 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. The Proposed Project is approximately 12 miles southeast of Travis Air Force Base (TAFB) and would be within Zone D of the TAFB Land Use Compatibility Plan. The Proposed Project would not introduce any residential uses or structures to the area and the Proposed Project would be operated remotely. Therefore, the Proposed Project would not expose people residing or working at the site to excessive noise levels from locations within an airport land use plan and no impact would occur.

4.13.5 Impact Analysis – Cumulative

The area of geographic analysis for cumulative noise and vibration impacts comprises a 1 mile radius around the Proposed Project site in Solano County due to the undeveloped nature of the area and lack of structures to absorb noise and a 0.5-mile radius in the City of Pittsburg due to the existing development and structures which would absorb and block noise. The Proposed Project would have no impact from location within the vicinity of an airport and would thus not contribute to cumulative impacts from noise associated with location in the vicinity of an airport.

Projects located within 1 mile of the Proposed Project site within Solano County are as follows:

- **Humboldt 500 kV Substation, with 500/115 kV Transformer, and a 500 kV line to Collinsville**: This project would include a new 500 kV transmission line to the proposed Collinsville Substation and would be located within 0.5 mile of the Proposed Project site.
- **Potential Future California Forever Shipbuilding Project**: The exact location of the project is not currently known, but could include activities along the shoreline of the Sacramento-San Joaquin River approximately 1 mile east of the Proposed Project.

Projects located within 0.5 mile of the Proposed Project from which construction noise could overlap with that of the Proposed Project within the City of Pittsburg are as follows:

- **Bay Walk Mixed Use Project**: This is located adjacent to the Pittsburg Substation portion of the Proposed Project site and would entail both demolition and construction activities that would generate construction noise as close as 1,000 feet from NR3 during the three phases of the project.
- **Harbor View Project**: This project entails the construction of 227 residential units and associated infrastructure approximately 0.3 mile east of the proposed LSPGC telecommunication interconnection lines alignment along Marina Boulevard.

Temporary or permanent increase in ambient noise levels in excess of standards established in the local general plan or noise ordinance

If noise from construction or operation of the Proposed Project were to overlap and combine with that generated by other nearby projects at sensitive receptors, that could result in a cumulatively significant impact. Due to terrain and intervening structures, some receptors would be partially shielded from noise generated by nearby projects, reducing combined levels relative to unshielded conditions.

Noise generated by operation of the Collinsville Substation would be less than ambient noise levels and imperceptible. Therefore, noise from operation of the Collinsville Substation has no potential to result in significant cumulative impacts with other current and future projects.

Construction of the Proposed Project would not overlap with construction of the Humboldt 500 kV Transmission Line to Collinsville or potential future California Forever Shipbuilding Project. Construction of the Bay Walk Mixed Use Project and Harbor View Project have the potential to overlap with Proposed Project activities at the Pittsburg Substation and telecommunication interconnection lines in the City of Pittsburg. As with the Proposed Project, the 8-foot soundwall surrounding this residential development would provide shielding from construction noise at the Bay Walk Mixed Use Project. Due to the 0.3-mile separation between the telecommunication interconnection line construction and Harbor View Project and substantial number of intervening buildings/structures which would absorb the noise, the Proposed Project and Harbor View Project the cumulative noise from project construction at sensitive receptors would be imperceptible and less than significant. The Proposed Project's incremental contribution would be less than cumulatively considerable.

Groundborne Noise and Vibration

Vibration generated by construction activities for the Bay Walk Mixed Use Project and Harbor View Project would be similar to the Proposed Project and attenuate rapidly with distance as shown in Table 4.13-29. Due to the distance of 1,000 feet between the Proposed Project and nearest cumulative project, the cumulative vibration impact would be substantially below the threshold for structural damage 0.3 in/sec PPV and would be imperceptible at the nearest receptor. The impact from groundborne vibration would be less than significant, and the Proposed Project's incremental contribution would be less than cumulatively considerable.

4.13.6 Alternative 1: Collinsville Substation North of Talbert Lane

Environmental Setting – Alternative 1

Alternative 1 involves relocating the proposed LSPGC Collinsville Substation to a different site, approximately 1.2 miles north of the Proposed Project substation site. Alternative 1 would also include an approximately 500-foot segment of PG&E 500 kV interconnection lines, approximately 700-foot segment of 12 kV distribution line, and an approximately 2-mile-long segment of LSPGC 230 kV overhead line. Alternative 1 would not involve changes to any of the other Proposed Project components, which would have the same impacts as described throughout this Draft EIR for the Proposed Project or the other alternatives if selected in combination with Alternative 1.

The nearest sensitive receptor to the Alternative 1 substation site is a single-family residence located at a distance of approximately 1 mile from the substation site (NR2a1), as shown in Figure 4.13-3. Table 4.13-30 lists the distances from NR2a1 to each project component under Alternative 1. Hastings Adobe is a vibration-sensitive structure located approximately 460 feet from the Alternative 1 realigned 230 kV overhead segment and 65 feet from a pulling site for Alternative 1.

Table 4.13-25 Alternative 1 Distance to Nearest Sensitive Receptors

Alternative 1 Component	Distance from NR2a1 (feet)
Collinsville Substation	5,400
Collinsville Substation staging yard	4,700
230 kV overhead segment	5,560
500 kV interconnection lines	6,080
12 kV distribution line	5,870

Source: (Esri 2025)

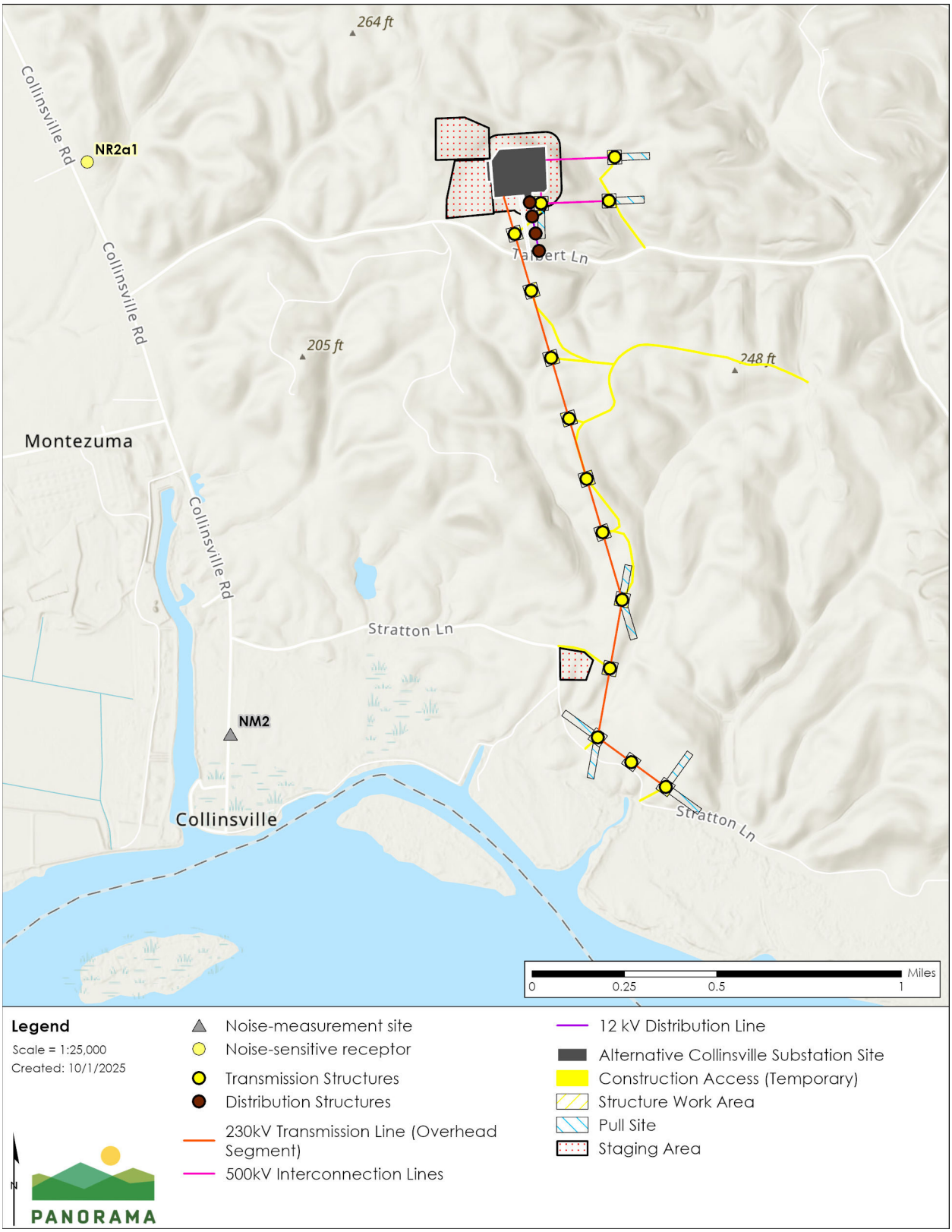
Impact Analysis – Alternative 1

Alternative 1 would avoid significant and unavoidable noise impacts caused by the Proposed Project substation construction activities by moving the substation location away from receptors. Noise impacts from the other Proposed Project components would remain unchanged. Operation and maintenance activities would not change and noise impacts would be the same as for the Proposed Project. Alternative 1 would have no impact from location within the vicinity of a private airstrip or within 2 miles of a public airport or public use airport (Impact NOI-3) and the impact is not discussed further.

Impact NOI-1: Would Alternative 1 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? (*Less than significant*)

Alternative 1 relocates the proposed substation, 230 kV overhead segment, 12 kV distribution line, and 500 kV interconnection lines away from noise-sensitive receptors. The closest sensitive receptor to Alternative 1 activities is NR2a1, located approximately 1 mile from the Alternative 1 substation location. As described in Section 4.13.1: Environmental Setting, topography, absorptive ground surfaces (e.g., dirt, grass, or scattered bushes and trees), and atmospheric effects reduce noise levels. Intervening grassy hills block NRa1 from the substation site and associated staging areas such that there is no line of sight. The hill would act as an earthen berm, blocking sound from the receptor. Due to the distance between the receptor and Alternative 1 substation activities, intervening hills, and absorptive ground surface (i.e., dirt and

Figure 4.13-3 Sensitive Receptors in the Proximity to Alternative 1



grass), noise from Alternative 1 substation construction at the nearest receptor would be less than significant.

Impact NOI-2: Would Alternative 1 result in generation of excessive groundborne vibration or groundborne noise levels? (*Less than significant*)

Hastings Adobe, a vibration sensitive receptor, would be located approximately 65 feet from an Alternative 1 pull site and approximately 460 feet from the Alternative 1 230 kV overhead segment. Vibration dissipates rapidly over distance and would not be perceptible at distances farther than 250 feet. As shown in Table 4.13-29, vibration produced by loaded trucks such as those used at the pulling site and use of a pressure digger for pole foundation construction would not exceed the 0.1 in/sec PPV threshold for fragile structures at a distance of 25 feet. Therefore, installation of the 230 kV overhead segment structure at a distance of 460 feet and activities at the pulling site located approximately 65 feet from Hastings Adobe structure would not generate excessive groundborne vibration at Hastings Adobe. Alternative 1 would not require use of a vibratory hammer or vibratory roller for the 230 kV overhead segment construction. Similar to the Proposed Project, Alternative 1 activities would not result in groundborne noise. As such, the impact from groundborne vibration and groundborne noise would be less than significant.

4.13.7 Alternative 2: Collinsville Substation East of Wind Energy Substations

Environmental Setting – Alternative 2

Alternative 2 involves relocating the proposed LSPGC Collinsville Substation to a different site, approximately 3.0 miles north of the location proposed under the Proposed Project. Alternative 2 would also include an approximately 1,200-foot-long segment of PG&E 500 kV interconnection lines and a four-mile-long segment of LSPGC 230 kV overhead line, as well as an approximately 0.3-mile-long PG&E 12 kV distribution line. Alternative 2 would not involve changes to any of the other Proposed Project components, which would have the same impacts as described throughout this Draft EIR for the Proposed Project or the other alternatives if selected in combination with Alternative 2.

The nearest noise-sensitive receptor to the Alternative 2 substation site would be a single-family residence located at a distance of approximately 3,780 feet from the substation site (NR2a2), which is the same nearest sensitive receptor to the Transposition C site (Proposed Project NR6) (see Figure 4.13-2). Hastings Adobe is a vibration-sensitive structure located approximately 460 feet from the Alternative 2 realigned 230 kV overhead segment (in the same location as Alternative 1). Table 4.13-33 lists the distances from the project components and the nearest sensitive receptors under Alternative 2.

Table 4.13-26 Alternative 2 Distance to Nearest Sensitive Receptors

Alternative 2 Component	Distance from NR2a2 (feet)
Collinsville Substation	3,780
Collinsville Substation staging yard	3,060

Alternative 2 Component	Distance from NR2a2 (feet)
230 kV overhead segment	5,700
500 kV interconnection lines	1,130
12 kV distribution line	1,240

Source: (Esri 2025)

Impact Analysis – Alternative 2

Alternative 2 evaluates the noise levels from construction of the Collinsville Substation at a location farther away from receptors. All other project components would be constructed as described for the Proposed Project. Alternative 2 would avoid significant unavoidable noise impacts caused by the Proposed Project substation construction activities by moving the substation location away from receptors. Noise impacts from the other Proposed Project components would remain unchanged. Operation and maintenance activities would not change and noise impacts would be the same as for the Proposed Project. The analysis below focuses on construction impacts and operation is not discussed further. Alternative 2 would have no impact related to location within the vicinity of a private airstrip or within 2 miles of a public airport or public use airport (Impact NOI-3) and the impact is not discussed further.

Impact NOI-1: Would Alternative 2 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? (*Less than significant*)

Alternative 2 relocates the proposed substation, 230 kV overhead segment, 12 kV distribution line, and 500 kV interconnection lines away from noise-sensitive receptors. The closest sensitive receptor to Alternative 2 activities is NR2a2, located approximately 3,780 feet north of the Alternative 2 substation location. As described in Section 4.13.1: Environmental Setting, topography, absorptive ground surfaces (e.g., dirt, grass, or scattered bushes and trees), and atmospheric effects reduce noise levels. Intervening grassy hills block NRa2 from the substation site and associated staging areas such that there is no line of sight between the receptor and the substation. The hill would act as an earthen berm, blocking sound from the receptor. Due to the distance between the receptor and Alternative 2 activities, intervening hills, and absorptive ground surface (i.e., dirt and grass), noise from Alternative 2 construction would be less than significant.

Impact NOI-2: Would Alternative 2 result in generation of excessive groundborne vibration or groundborne noise levels? (*Less than significant*)

Hastings Adobe, a vibration sensitive receptor, would be located approximately 65 feet from an Alternative 2 pull site and approximately 460 feet from the Alternative 2 230 kV overhead segment. Vibration dissipates rapidly over distance and would not be perceptible at distances farther than 250 feet. As shown in Table 4.13-29, vibration produced by loaded trucks such as those used at the pulling site and use of a pressure digger for pole foundation construction would not exceed the 0.1 in/sec PPV threshold for fragile structures at a distance of 25 feet.

Therefore, installation of the 230 kV overhead segment structure at a distance of 460 feet and activities at the pulling site located approximately 65 feet from Hastings Adobe structure would not generate excessive groundborne vibration at Hastings Adobe. Alternative 2 would not require use of a vibratory hammer or vibratory roller for the 230 kV overhead segment construction. Similar to the Proposed Project, Alternative 2 activities would not result in groundborne noise. As such, the impact from groundborne vibration and groundborne noise would be less than significant.

4.13.8 Alternative 3: 500 kV Interconnection Lines on Entirely TSPs

Environmental Setting – Alternative 3

Alternative 3 involves constructing the PG&E 500 kV interconnection lines on entirely TSPs, instead of the combination of LSTs and three-pole TSPs under the Proposed Project. The 500 kV interconnection lines would be in the same general alignment as the Proposed Project PG&E 500 kV interconnection lines. No vibration-sensitive receptors are located in proximity to Alternative 3. Alternative 3 would not involve changes to any of the other Proposed Project components, which would have the same impacts as described throughout this Draft EIR for the Proposed Project or the other alternatives if selected in combination with Alternative 3.

Impact Analysis – Alternative 3

Alternative 3 evaluates the noise levels from construction of TSPs instead of a combination of LSTs and TSPs. All other project components would be constructed as described for the Proposed Project and significant unavoidable impacts related to construction of the substation would still occur. Alternative 3 would not result in significant impacts from the generation of groundborne vibration or groundborne noise levels (Impact NOI-2) or from exposure of people residing or working in the project area to excessive noise levels due to location in the vicinity of a private air strip, airport land use plan, or public airport (Impact NOI-3).

Alternative 3 would involve construction activities that could generate noise. Operation and maintenance activities for the 500 kV interconnection line would not change and operational corona noise impacts would be the same as for the Proposed Project. The analysis below focuses on construction impacts and operation is not discussed further.

Impact NOI-1: Would Alternative 3 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? (*Less than significant*)

As with the Proposed Project, Alternative 3 would involve construction noise from installation of TSPs that could be audible at sensitive receptors on Collinsville Road (NR1 and NR 2). Equipment required for ground preparation and foundation installation at each TSP location would be similar to those required for LSTs. Noise levels from installation of TSPs would be 46 dBA at NR 2 (Table 4.13-15). Noise levels would not exceed the 55 dBA noise standard for residential properties in Solano County and would be similar to the ambient noise level in the area. TSP installation would thus not generate a substantial temporary increase in ambient noise

levels in excess of standards established in the general plan or noise ordinance and the impact would be less than significant.

Helicopters would not be used to set the TSPs, reducing noise during the structure installation phase. However, helicopters would still be used for conductor installation and noise levels for Alternative 3 500 kV interconnection line construction would be consistent with the Proposed Project. Similar to the Proposed Project, the use of helicopter takeoff and landing at the staging yard would generate noise in excess of the Solano County noise standards for construction (in excess of 55 dBA Leq between the hours of 7 a.m. and 9 a.m. and 4 p.m. and 7 p.m.). The impact from helicopter noise would be significant. MM NOI-1 limits the hours of helicopter use in Solano County to the construction noise hours consistent with County code. With implementation of MM NOI-1, noise levels generated from helicopter use would not exceed local standards and would be less than significant.

4.13.9 Alternative 4: 230 kV Overhead Segment Alternative Route

Environmental Setting – Alternative 4

Alternative 4 involves relocation of a short segment of the LSPGC 230 kV overhead segment between the proposed LSPGC Collinsville Substation and the Delta, west of the proposed LSPGC 230 kV overhead segment route. Additionally, the northern end of the LSPGC 230 kV submarine segment would be rerouted to meet up with the southern end of the Alternative 4 230 kV submarine segment. The 230 kV overhead segment and the 230 kV submarine segment and northern transition approach would be located closer to both NR1 and NR2 than under the Proposed Project. Table 4.13-36 provides the distances from each Alternative 4 component to NR1 and NR2. Alternative 4 would not involve changes to any of the other Proposed Project components, which would have the same impacts as described throughout this Draft EIR for the Proposed Project or the other alternatives if selected in combination with Alternative 4.

Table 4.13-27 Alternative 4 Distance to Nearest Sensitive Receptors

Alternative 4 Component	Distance from NR1 (feet)	Distance from NR2 (feet)
230 kV overhead segment	3,940	4,990
Distance from northern transition approach	2,750	3,965

Impact Analysis – Alternative 4

Alternative 4 would affect construction activities and associated noise levels at receptors. Operation and maintenance activities would not change as a result of Alternative 4 and noise impacts would be the same as for the Proposed Project and imperceptible at any receptor. The analysis below focuses on construction impacts and operation is not discussed further. Alternative 4 would have no impact related to location within the vicinity of a private airstrip or within 2 miles of a public airport or public use airport (Impact NOI-3) and the impact is not discussed further.

Impact NOI-1: Would Alternative 4 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? (*Significant and unavoidable*)

Alternative 4 relocates the 230 kV overhead and submarine segments closer to receptors. Noise generated from construction of the Alternative 4 230 kV submarine cable would be approximately 51 dBA at the nearest receptor. 230 kV overhead segment construction would generate noise levels between 56 dBA (without helicopters) and 61 dBA (with helicopters) and would exceed the Solano County 55 dBA daytime noise standard. The impact from generation of temporary noise in excess of local standards would be significant. MM NOI-1 restricts the use of helicopters to the hours of 9 a.m. to 4 p.m., Monday through Saturday, during which time temporary construction noise resulting in noise levels above the 55 dBA daytime standard is permitted, up to 75 dBA. It is not feasible to limit ground-based construction of the 230 kV overhead segment to the hours of 9 a.m. to 4 p.m. without extending the construction schedule, which would not meet project objectives. Even with implementation of MM NOI-1, construction noise from ground-based equipment would still exceed the 55 dBA threshold because MM NOI-1 does not limit the use of ground-based equipment. The impact from generation of noise during construction of the 230 kV overhead segment would remain significant and unavoidable.

Impact NOI-2: Would Alternative 4 result in generation of excessive groundborne vibration or groundborne noise levels? (*Less than significant*)

The Alternative 4 construction would generally be further from the Hastings Adobe site than the Proposed Project; however a new access road would be located approximately 250 feet from the Hastings Adobe structure. As noted in Table 4.13-29, vibration from use of dozers and loaded trucks would dissipate to less than 0.1 in/sec PPV within 250 feet of construction activities. The vibration impact on the Hastings Adobe structure due to Alternative 4 construction would be less than significant. Alternative 4 TSP installation would be located over 2,500 feet from the nearest residential receptor. Groundborne vibration would not be perceptible at a distance of over 2,500 feet and would be less than significant. Alternative 4 would not generate groundborne noise. The impact from Alternative 4 construction would be less than significant.

4.13.10 Alternative 5: 230 kV Submarine Segment Alternative Route

Environmental Setting – Alternative 5

Alternative 5 involves rerouting a portion of the proposed LSPGC 230 kV submarine segment to the east of its current alignment as it approaches the southern shoreline in Pittsburg. The submarine segment cable would be installed in the same manner as the Proposed Project. Alternative 5 would not involve changes to any of the other Proposed Project components, which would have the same impacts as described throughout this Draft EIR for the Proposed Project or the other alternatives if selected in combination with Alternative 5.

Impact Analysis – Alternative 5

Alternative 5 evaluates noise levels from construction the 230 kV submarine cable alignment. All other project components would be constructed as described for the Proposed Project and significant unavoidable impacts related to construction of the substation would still occur. Alternative 5 would not result in significant impacts from the generation of groundborne vibration or groundborne noise levels (Impact NOI-2) or from exposure of people residing or working in the project area to excessive noise levels due to location in the vicinity of a private airstrip, airport land use plan, or public airport (Impact NOI-3).

Alternative 5 would involve additional site preparation activities and would relocate a segment of submarine cable. Operation and maintenance activities would not change and noise impacts would be the same as for the Proposed Project. The analysis below focuses on construction impacts and operation is not discussed further.

Impact NOI-1: Would Alternative 5 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? (*Less than significant*)

Under Alternative 5, the relocated portion of 230 kV submarine segment alignment would be located approximately 2,400 feet away from the nearest receptor in the City of Pittsburg. Although Alternative 5 would involve activities for site preparation in the channel, the activities would involve the same equipment analyzed for the Proposed Project submarine segment and would be at a greater distance than the closest point of the Proposed Project submarine segment analyzed in Table 4.13-25. The nearest point of the Alternative 5 submarine segment to a sensitive receptor would be the same as the Proposed Project submarine segment at the connection to the underground segment. Similar to the Proposed Project, noise from Alternative 5 construction of the 230 kV submarine segment would not result in noise levels above 65 dBA during daytime, 60 dBA at nighttime or a 5 dBA increase in ambient noise levels at an adjacent residential development. Alternative 5 construction noise would not exceed the standards established in the local general plan or noise ordinance and would be less than significant.

4.13.11 Alternative 6a/6b: Underground portions of the 230 kV Transmission Line within Suisun Marsh Protection Plan Management Areas

Environmental Setting – Alternative 6a/6b

Alternative 6a/6b would locate the LSPGC 230 kV transmission line on primarily PG&E-owned property south of the proposed Collinsville Substation site (similar to Alternative 4). Alternative 6a/6b would be installed in conduit underground. Alternative 6a differs from Alternative 6b only at the northern end of the segment where options are provided for connection to the Proposed Project Collinsville Substation or Alternatives 1 or 2. Two overhead riser structures would be installed at the northern end of the Alternative 6a/6b underground duct bank where the LSPGC 230 kV line would transition between an overhead and underground position The nearest sensitive receptors and existing ambient noise levels for Alternatives 6a and 6b are the same as the Proposed Project (NR1 and NR2). The distance to NR 1 and NR 2 for Alternative 6a/6b would be reduced as the underground segment is located closer to receptors than the Proposed Project 230 kV overhead segment. Alternative 6a/6b would not involve changes to any of the other Proposed Project components, which would have the same impacts as described throughout this Draft EIR for the Proposed Project or the other alternatives if selected in combination with Alternative 6a/6b.

Impact Analysis – Alternative 6a/6b

Alternative 6a/6b evaluates the noise levels from underground construction of a 230 kV transmission line instead of the 230 kV overhead segment. Under Alternative 6a all other project components would be constructed as described for the Proposed Project and significant unavoidable impacts related to construction of the substation would still occur. Under Alternative 6b the proposed Collinsville Substation would avoid significant unavoidable noise levels associated with the construction of the substation.

Operation and maintenance activities would not change and noise impacts would be the same as for the Proposed Project. The analysis below focuses on construction impacts and operation is not discussed further. Alternative 6a/6b would not expose people residing or working in the project area to excessive noise levels due to location in the vicinity of a private airstrip, airport land use plan, or public airport (Impact NOI-3) and the impact is not discussed further.

Impact NOI-1: Would Alternative 6a/6b 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? (*Significant and unavoidable*)

Alternative 6a/6b relocates the 230 kV transmission line approximately 1,000 feet closer to receptors along Collinsville Road (NR1 and NR2). Construction methods and noise-generating equipment would be the same as for the 230 kV underground segment on the Pittsburg side of the Delta under the Proposed Project and would not require helicopters. Table 4.13-40, below, shows the attenuated noise levels that would be generated from construction of the 230 kV underground segment on the north side of the Delta.

Table 4.13-28 Alternative 6a/6b Construction of 230 kV Underground Segment Attenuated Noise Levels

Alternative Segment	Schedule	Project generated noise at 50 feet (dBA, L_{eq})	Project generated noise at 250 feet (dBA, L_{eq})	Project generated noise at 500 feet (dBA, L_{eq})	Project generated noise at 1000 feet (dBA, L_{eq})	Project generated noise at 2000 feet (dBA, L_{eq})	Project generated noise NR1, 3,460 feet (dBA, L_{eq})
230 kV underground segment (north)	June 1, 2027–August 23, 2027	94	80	74	68	62	57

Alternative 6a/6b would result in noise levels exceeding the 55 dBA daytime standard outside of the permitted hours for temporary construction noise exceeding the standard at NR1, which would be a significant impact. Limiting construction to the hours of 9 a.m. to 4 p.m., consistent with the Solano County zoning code, is not feasible as the shortened hours of construction would extend the construction duration and would not meet project objectives for the in service date. As a result, the Alternative 6a/6b construction would generate noise in excess of noise standards in the local general plan and the impact would remain significant and unavoidable.

Impact NOI-2: Would Alternative 6a/6b result in generation of excessive groundborne vibration or groundborne noise levels? (*Less than significant*)

The Alternative 6a/6 underground segment and access road would be over 1,000 feet from the Hastings Adobe structure. As noted in Table 4.13-29, vibration from all vibration-generating equipment potentially used for construction would dissipate within 250 feet of construction activities to levels lower than 0.1 in/sec PPV, which is the vibration threshold for fragile buildings. The duct bank would involve use of a vibratory hammer; however, at a distance of over 1,000 feet, the vibration impact would be less than 0.1 in/sec PPV and thus less than significant. No Alternative 6a/6b construction would occur within 250 feet of Hastings Adobe structure. The impact would be less than significant.

4.13.12 No Project Alternative

Environmental Setting – No Project Alternative

Under the No Project Alternative, the LSPGC Collinsville Substation and associated LSPGC 230 kV transmission line, PG&E 500 kV interconnection lines, and PG&E 12 kV distribution line would not be constructed. The existing noise conditions described in Section 4.13.1 would apply to the No Project Alternative.

Impact Analysis – No Project Alternative

Under the No Project Alternative, noise levels at sensitive receptors in Solano County, the city of Pittsburg, and Contra Costa County would remain the same as existing conditions. The No Project Alternative would have no impact on noise. The No Project Alternative would not result

in generation of a substantial temporary or permanent increase in ambient noise levels (Impact NOI-1). The No Project Alternative would not result in generation of excessive groundborne vibration or groundborne noise levels (Impact NOI-2). The No Project Alternative would not be located in the vicinity of a private airstrip or airport (Impact NOI-3).

4.13.13 Mitigation Measures

LSPGC Project Components

MM NOI-1: Helicopter Use Limitations in Solano County
Helicopter operations, including structure installation, conductor stringing, and material transport, shall be limited to the hours of 9:00 a.m. to 4:00 p.m., Monday through Friday, excluding federal holidays. No helicopter use shall occur within Solano County outside of the specified hours unless specifically authorized by the CPUC for safety, emergency response, or other approved exceptions. This requirement shall be incorporated into all construction schedules and contractor agreements and enforced throughout project implementation at the specified locations.

MM NOI-2 Construction Acoustic Barrier Installation at Collinsville Substation Site
The applicant shall install an acoustic barrier (e.g., sound blanket or similar) at the Collinsville Substation site between the substation work area an sensitive receptors. The acoustic barrier shall be engineered to achieve a noise reduction of approximately 10 dBA at the source. The barrier shall be designed by a qualified acoustical engineer. LSPGC shall submit a Barrier Design Memorandum demonstrating the predicted reduction based on accepted analytical methods to the CPUC within 30 days prior to substation construction. The acoustic barrier shall be maintained in good repair for the duration of substation construction.

MM NOI-4: Construction Hour Limitations for the Telecommunication Interconnection Lines
To minimize noise impacts on existing residential development within the City of Pittsburg, construction activities for installation of the telecommunication interconnection lines shall be limited to the hours of 8:00 a.m. to 5:00 p.m., Monday through Friday, consistent with local noise control standards. No construction activities for installation of the telecommunication lines interconnection shall occur outside of this window unless otherwise authorized by the City of Pittsburg or required for safety, emergency response, or agency-approved deviations.

PG&E Project Components

MM NOI-1: Helicopter Use Limitations in Solano County
See text above.

MM NOI-3: Construction Hours Limitation at Transposition Sites in Solano County
Construction activities at Transposition Sites A, B, and C shall be limited to the hours of 9:00 a.m. to 4:00 p.m., Monday through Friday, excluding federal holidays. No construction activities for transposition structure construction shall occur outside of the Solano County

construction hours of 9:00 a.m. to 4:00 p.m. unless required for safety or emergency response or otherwise approved by Solano County.

MM NOI-5: Construction Hour Restriction at Transposition Site D
All construction activities at Transposition Site D shall be limited to the hours of 7:30 a.m. to 5:00 p.m., Monday through Friday, excluding federal holidays as approved by the Conta Costa County General Plan. This restriction shall apply to all equipment operation and material handling activities conducted at Transposition Site D.

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4.14 Population and Housing

This section presents the environmental setting and analysis of impacts on population and housing resulting from the Proposed Project and alternatives. This section includes existing population and housing information applicable regulations, environmental impacts, and mitigation measures to reduce or avoid significant effects for the Proposed Project and alternatives, where feasible.

None of the scoping comments submitted relate to population and housing (refer to Appendix B).

4.14.1 Environmental Setting

Regional Setting

Population Estimates

Population estimates for cities and counties within the Proposed Project area are presented in Table 4.14-1. According to the U.S. Census Bureau, between 2010 and 2020, the population grew by 8.4 percent in Solano County, 10.2 percent in Sacramento County, 12 percent in Contra Costa County, and 16.2 percent in the City of Pittsburg. The California Department of Finance projects that from 2020 to 2030, the population in Solano County will grow by approximately 1.5 percent, Sacramento County by 4.8 percent, and Contra Costa County by approximately 2.1 percent (State of California Department of Finance 2024). Additionally, the City of Pittsburg General Plan 2023-2031 Housing Element estimates a population increase of 17.5 percent during the same period (City of Pittsburg 2024a). These population projections suggest that communities in the Proposed Project site vicinity are expected to experience continued growth through 2040.

Table 4.14-1 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; State of California Department of Finance 2024; City of Pittsburg 2024a), (State of California Department of Finance 2024), (City of Pittsburg 2024a)

Housing Estimates

Housing data and vacancy rates for each county and city in the Proposed Project area are presented in Table 4.14-2. According to the U.S. Census Bureau, vacancy rates in Solano County, Sacramento County, Contra Costa County, and the City of Pittsburg decreased between 2010 and 2020. In 2020, a total of 46,440 vacant housing units were available across these counties.

Table 4.14-2 Housing Data in the Proposed Project Vicinity

Area	2010 Total units	2010 Vacant units	2010 Vacancy rate	2020 Total units	2020 Vacant units	2020 Vacancy rate
Solano County	152,698	10,940	7.2%	162,237	6,313	3.9%
Sacramento County	555,932	41,987	7.6%	587,551	23,106	3.9%
Contra Costa County	400,263	24,899	6.2%	423,342	16,313	3.9%
City of Pittsburg	21,126	1,599	7.6%	24,078	708	2.9%

Source: (U.S. Census Bureau 2020)

The California Department of Housing and Community Development, in coordination with local councils of government, assigns a Regional Housing Needs Allocation (RHNA) every 5 years to each local government in California. The RHNA determines the total number of new housing units a local government must plan for, including the required levels of affordability to address local housing needs (ABAG 2025). The Association of Bay Area Governments (ABAG) serves as the council of government for Contra Costa County, Solano County, and the City of Pittsburg, while the Sacramento Area Council of Governments serves Sacramento County.

According to the Contra Costa County General Plan Housing Element, 1,841 housing units were approved to meet the county's RHNA goal for the 2014 to 2022 cycle (Contra Costa County 2014). For the 2021 to 2029 cycle, Sacramento County approved 522 housing units (Sacramento County 2022). Solano County approved nine housing units for the 2014 to 2022 RHNA cycle , and the City of Pittsburg approved 1,122 housing units to satisfy its 2014 to 2022 RHNA goal (City of Pittsburg 2024a).

Approved Housing Developments

Several pending housing developments are located near the Proposed Project site in the City of Pittsburg. According to the City of Pittsburg's planning website, the Bay Walk Mixed-Use Project, Harbor View Project, East Street Estates, and Liberty Subdivision Phase II are all pending approval and are within 1 mile of the Proposed Project (City of Pittsburg 2025).

The Bay Walk Mixed-Use Project would be developed on a 1,046-acre site adjacent to PG&E's existing Pittsburg Substation. The mixed-use development is planned in three phases, with 698 residential units to be constructed in Phase I, 445 residential units in Phase II, and 561

residential units in Phase III. A construction start date is not specified for the Bay Walk Mixed-Use Project; however, the proposed development is expected to be constructed over approximately 10 years in three phases. The project documents do not provide an estimated population increase (City of Pittsburg 2024b).

The Harbor View Project would construct approximately 227 residential units and commercial space approximately 0.4 mile east of the proposed LSGPC telecommunication interconnection lines. The project could result in a population increase of 756 people. A construction timeline has not been specified for the Harbor View Project (City of Pittsburg 2023).

The East Street Estates Project would construct eight single-family dwellings in an existing subdivision located approximately 0.4 mile southeast of the proposed LSPGC telecommunication interconnection lines. A construction timeline has not been specified for the East Street Estates Project, and project documents do not provide an estimated population increase.

Liberty Subdivision Phase II would construct approximately 16 single-family homes approximately 0.6 mile southeast of the proposed LSPGC telecommunication interconnection lines. A construction timeline has not been specified for the Liberty Subdivision Phase II Project, and project documents do not provide an estimated population increase.

No other approved or pending housing developments were identified within 1 mile of the Proposed Project site based on a review of the Solano County, Sacramento County, and Contra Costa County planning websites. One potential future project, California Forever, could add between 40,000 to 160,000 housing units in Solano County. However, no application for the development has been filed and therefore the specifics of any future housing development in proximity to the Proposed Project are not known and are highly speculative.

Construction Labor Estimates

Construction labor estimates for cities and counties within the Proposed Project area are shown in Table 4.14-3.

Table 4.14-3 Construction Labor Estimates

City/county	Number of construction workers
Solano County	22,164
Sacramento County	54,490
Contra Costa County	47,026
Total	**123,680**

Source: (U.S. Census Bureau 2021)

Environmental Setting by Project Component

No housing occurs in any portion of the Proposed Project site.

LSPGC Collinsville Substation
The proposed LSPGC Collinsville Substation would be located entirely in Solano County. The prior description of population and housing in Solano County is applicable to the Collinsville Substation site.

LSPGC 230 kV Transmission Line

Overhead Segment
The LSPGC 230 kV overhead segment would be located entirely in Solano County. The prior description of population and housing in Solano County is applicable to the LSPGC 230kV overhead segment.

Submarine Segment
The LSPGC 230 kV submarine segment would be located under the Sacramento-San Joaquin River Delta. No housing or human populations occur within the waterway.

Underground Segment
The approximately 0.6-mile-long LSPGC 230 kV underground segment would begin at the southern onshore underground utility vault, where the submarine transmission cables transition to underground transmission cables, located near the city of Pittsburg and adjacent to the Sacramento–San Joaquin River Delta and the Pittsburg Substation. The descriptions of population and housing in Solano County and city of Pittsburg are applicable to the 230 kV underground segment.

LSPGC Telecommunication Interconnection Lines
The proposed LSPGC telecommunication interconnection lines would be located entirely in Contra Costa County. The prior description of population and housing in Contra Costa County is applicable to the telecommunication lines.

PG&E 500 kV Interconnection Lines, 500 kV Transposition Structures, and 12 kV Distribution Line
The proposed PG&E 500 kV interconnection lines; Transposition Sites A, B, and C; and 12 kV distribution line are in Solano County. Transposition Site D is located in Contra Costa County. The prior descriptions of population and housing in Solano County and Contra Costa County are applicable to the PG&E 500 kV interconnection lines, 500 kV transposition structures, and 12 kV distribution line.

PG&E Substation Modifications
Modifications to the existing PG&E Pittsburg Substation would occur entirely within the existing substation located within the city of Pittsburg. Other substation modifications are proposed at PG&E's existing Vaca Dixon Substation in Solano County northeast of the city of Vacaville and at PG&E's existing Tesla Substation near the community of Midway. All substation modification activities are proposed to occur within the existing boundaries of the substations.

4.14.2 Regulatory Setting

Federal

No federal regulations related to population or housing would apply to the Proposed Project.

State

On January 12, 2022, the California Department of Housing and Community Development (HCD) approved the ABAG Regional Housing Needs Allocation (RHNA) Plan. HCD requires Bay Area jurisdictions plan to accommodate 441,776 additional housing units during the 2023 to 2031 period. As part of the RHNA, the HCD determines the total number of new homes the Bay Area needs to build and how affordable those homes need to be in order to meet the housing needs of people at all income levels (ABAG 2025).

ABAG's RHNA Plan five statutory objectives are summarize below:

1. Increase housing supply and mix of housing types, with the goal of improving housing affordability and equity in all cities and counties within the region.
2. Promote infill development and socioeconomic equity; protect environmental and agricultural resources; encourage efficient development patterns; and achieve greenhouse gas reduction targets.
3. Improve intra-regional jobs-to-housing relationship, including the balance between low-wage jobs and affordable housing units for low-wage workers in each jurisdiction.
4. Balance disproportionate household income distributions (more high-income allocation to lower-income areas, and vice-versa)
5. Affirmatively further fair housing.

Local

Pursuant to 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."

Sacramento County and Alameda County policies are not included as there are no population or housing policies in those areas relevant to the Proposed Project.

Solano County General Plan

The 2023-2031 Housing Element of the Solano County General Plan (Solano County 2024) contains goals, objectives, policies, and programs that guide housing development to meet the needs of residents in unincorporated Solano County. The 2023-2031 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 2023-2031 Housing Element does not contain any population or housing policies relevant to the Proposed Project.

Contra Costa County General Plan

The Contra Costa County General Plan Housing Element (Contra Costa County 2014) 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.

City of Pittsburg General Plan

The City of Pittsburg General Plan's 2023-2031 Housing Element (City of Pittsburg 2024a) contains an analysis of local housing needs by examining project population growth, household characteristics, demographic factors, housing constraints, and more. The 2023-2031 Housing Element identifies available housing sites and proposes goals, policies, and programs to meet the housing needs of the community. The 2023-2031 Housing Element does not contain any population or housing policies relevant to the Proposed Project.

4.14.3 Approach to Impact Analysis

The analysis of impacts on population and housing applies the impact criteria and significance thresholds defined in the following subsection. The LSPGC Applicant Proposed Measures (APMs) and PG&E Construction Measures (CMs) are considered when making the impact determinations for utilities and service systems. Impacts are evaluated for the Proposed Project including separate analysis of LSGPC and PG&E project components, analysis of LSPGC and PG&E project components combined where appropriate, cumulative impacts, and alternatives. Mitigation measures are defined to reduce or avoid significant impacts, where feasible.

Impact Criteria and Thresholds of Significance

The following impact criteria questions have been derived from Appendix G of the CEQA Guidelines to evaluate impacts on population and housing. Appendix G of the CEQA Guidelines ask whether a project would:

- Impact POP-1: Would the project induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?
- Impact POP-2: Would the project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

Applicant Proposed Measures and Construction Measures

No LSPGC APMs or PG&E CMs are applicable to population and housing.

4.14.4 Impact Analysis – Proposed Project

Table 4.14-4 presents a summary of the impact analysis determinations for population and housing associated with the Proposed Project.

Table 4.14-4 Summary of Impacts on Population and Housing for the Proposed Project

Impact criteria: Would the project …	APMs/CMs applied	Significance prior to Mitigation	Mitigation Measures Required	Significance with Mitigation
Impact POP-1: Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	NA	NI	—	—
Impact POP-2: Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	NA	NI	—	—

Notes:

NA = not applicable

NI = no impact

Impact POP-1: Would the Proposed Project induce substantial unplanned population growth in an area, (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)? ***(No impact)***

Construction

LSPGC Project Components

The Proposed Project does not include the construction of new homes or businesses and, as a result, would not directly induce substantial temporary or permanent population growth in the area. Construction of the Proposed Project is expected to begin in early 2026 and take approximately 27 months to complete. The Proposed Project would require up to approximately 206 workers per day during peak construction periods; however, the average on-site workforce would likely be approximately 72 workers per day. It is anticipated that the labor demand would generally be met by workers from Contra Costa, Sacramento, and Solano counties, with contracted workers likely sourced from nearby communities, including the City of Pittsburg. As shown in Table 4.14-3, approximately 123,680 construction workers are available across the counties within which the Proposed Project area is located. Therefore, the workforce necessary for Proposed Project construction could generally be accommodated locally. Due to the temporary nature of construction and the fact that the workforce would be sourced from surrounding communities, construction of the Proposed Project would have minimal to no short-term impacts on population and, therefore, would result in no impact.

PG&E Project Components

The proposed PG&E project components would require a portion of the workers required for overall construction of the Proposed Project. As similar to the LSPGC project components, construction of the PG&E project components would not directly induce substantial temporary

or permanent population growth as the workforce would be sourced from surrounding communities. Therefore, no impacts related to population growth are anticipated.

Operation and Maintenance

LSPGC Project Components

Once operational, the Proposed Project would supply power to the surrounding area and provide additional power to the northern Bay Area. The Proposed Project is needed to comply with the CAISO 2021–2022 Transmission Plan, which outlines necessary upgrades to the California electric grid to ensure resource deliverability in support of state policy goals and resource adequacy requirements. The Proposed Project would not serve new users or expand service areas and would not indirectly induce population growth. The LSPGC project components would use existing access roads, including the publicly accessible Stratton Lane, as primary access to the LSPGC Collinsville Substation. Any new access roadways, such as the LSPGC Collinsville Substation driveway, would be privately maintained and limited to construction, operation, and maintenance use only. These roadways would not be open to the public or support new development. Therefore, the Proposed Project would not involve the construction of new infrastructure that could contribute to population growth. As a result, no impact on population growth from the operation of the LSPGC project components would occur.

LSPGC would operate the substation and transmission line remotely and conduct routine inspections of the LSPGC project components as needed. The inspection activities would include equipment fit-up inspections, basic electrical testing, maintenance and repair of permanent access roads, preventive maintenance to ensure service reliability, and emergency response work as needed. The proposed LSPGC Collinsville Substation would undergo as needed monthly or quarterly inspections while the proposed LSPGC 230 kV overhead segment, LSPGC 230 kV underground segment, and LSPGC telecommunication interconnection lines would each require annual inspections at a minimum. The LSPGC 230 kV submarine segment would not require planned maintenance. Because maintenance and inspections would be non-routine and conducted on an as-needed basis, the maintenance of the LSPGC project components would not create new permanent employment and would have no impact on population growth.

PG&E Project Components

Existing unpaved roads located on private lands would provide access the PG&E project components. Therefore, the PG&E project components would not involve the construction of new infrastructure that could contribute to population growth. Therefore, no impact on population growth from the operation of the PG&E project components would occur.

PG&E would operate the PG&E project components remotely and conduct as-needed routine inspections of the PG&E project components. Ongoing maintenance and inspection activities conducted would be similar to those for the existing PG&E Vaca-Dixon Line. Maintenance and inspections would not create any new employment. No population growth would be induced

by the operation and maintenance of the PG&E project components, and no impact would occur.

Impact POP-2: Would the Proposed Project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere? *(No impact)*

LSPGC Project Components

There is no housing located on the Proposed Project site for LSPGC project components. Therefore, construction of the Proposed Project components would not displace any existing populations or housing, and no replacement housing would be required. Therefore, no impacts would occur.

PG&E Project Components

There is no housing located on the Proposed Project site for PG&E project components. Therefore, construction of the PG&E project components would not displace any existing populations or housing, and no replacement housing would be required. As a result, no impacts would occur.

4.14.5 Impact Analysis – Cumulative

CEQA defines a cumulative impact as "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" (CEQA Guidelines Section 15130(a)(1)). Cumulative impacts can result from "individually minor but collectively significant projects taking place over a period of time" (CEQA Guidelines Section 15355). An EIR must discuss cumulative impacts if the incremental effect of a project, combined with the effects of other projects, is "cumulatively considerable" (CEQA Guidelines Section 15130(a)). The Proposed Project would not directly or indirectly induce unplanned population growth in the area, or displace existing people or housing, requiring the construction of replacement housing elsewhere. Therefore, the Proposed Project would not contribute to any cumulative impacts related to population and housing. No cumulative impacts related to population or housing would occur.

4.14.6 Alternative 1: Collinsville Substation North of Talbert Lane

Environmental Setting – Alternative 1

Alternative 1 involves relocating the proposed LSPGC Collinsville Substation to a different site, approximately 1.2 miles north of the Proposed Project substation site. Alternative 1 would also include an approximately 500-foot segment of PG&E 500 kV interconnection lines, approximately 700-foot segment of 12 kV distribution line, and an approximately 2-mile-long segment of LSPGC 230 kV overhead line. The Alternative 1 substation site, 500kV interconnection lines, and 230 kV overhead segments would be located in unincorporated Solano County, in an area characterized by agricultural and open space uses. These areas are not designated for residential use in the Solano County General Plan, and no housing units or residential structures are located within or directly adjacent to the alternative alignment. Alternative 1 would not involve changes to any of the other Proposed Project components,

which would have the same impacts as described throughout this Draft EIR for the Proposed Project or the other alternatives if selected in combination with Alternative 1.

No portion of the Alternative 1 alignment is located within incorporated city limits, residentially zoned areas, or areas designated in the RHNA planning documents as targeted for future housing development. Based on a review of Solano County planning documents, no approved or proposed housing developments are located within or adjacent to the Alternative 1 alignment. Therefore, implementation of Alternative 1 would not involve residential land uses, would not conflict with adopted housing plans or policies, and would not displace any existing housing or residents.

Impact Analysis – Alternative 1

Construction and operation of Alternative 1 would not include any residential development, expansion of public infrastructure, or result in housing displacement. Similar to the Proposed Project, Alternative 1 would have no impact on unplanned population growth (Impact POP-1) or displacement of people or housing (Impact POP-2).

4.14.7 Alternative 2: Collinsville Substation East of Wind Energy Substations

Environmental Setting – Alternative 2

Alternative 2 involves relocating the proposed LSPGC Collinsville Substation to a different site, approximately 3.0 miles north of the location proposed under the Proposed Project. Alternative 2 would also include an approximately 1,200-foot-long segment of PG&E 500 kV interconnection lines and a four-mile-long segment of LSPGC 230 kV overhead line, as well as an approximately 0.3-mile-long PG&E 12 kV distribution line. All components of Alternative 2 would be located in unincorporated Solano County, in a rural area dominated by agricultural, wind, energy, and open land uses. Alternative 2 would be adjacent to existing wind energy infrastructure and would not be located within or near any residential zoning designations or incorporated city limits. According to the Solano County General Plan, Alternative 2 alignment does not include lands designated or zoned for residential development. Alternative 2 would not involve changes to any of the other Proposed Project components, which would have the same impacts as described throughout this Draft EIR for the Proposed Project or the other alternatives if selected in combination with Alternative 2.

There are no existing homes or occupied structures within or adjacent to the Alternative 2 Collinsville Substation site or associated transmission line corridors. Similarly, none of the parcels crossed by the transmission lines are designated for residential use in local housing planning documents such as the RHNA. No proposed or approved housing developments are located in or near the Alternative 2 area.

Impact Analysis – Alternative 2

Construction and operation of Alternative 2 would not include any residential development, expansion of public infrastructure, or result in housing displacement. Similar to the Proposed

Project, Alternative 2 would have no impact on unplanned population growth (Impact POP-1) or displacement of people or housing (Impact POP-2).

4.14.8 Alternative 3: 500 kV Interconnection Lines on Entirely TSPs

Environmental Setting – Alternative 3

Alternative 3 involves constructing the PG&E 500 kV interconnection lines on entirely TSPs, instead of the combination of LSTs and three-pole TSPs under the Proposed Project. The 500 kV interconnection lines would be in the same general alignment as the Proposed Project PG&E 500 kV interconnection lines. The environmental setting for Alternative 3 is the same as the setting for the PG&E 500 kV interconnection lines addressed in Section 4.14.1. Alternative 3 would not involve changes to any of the other Proposed Project components, which would have the same impacts as described throughout this Draft EIR for the Proposed Project or the other alternatives if selected in combination with Alternative 3.

Impact Analysis – Alternative 3

Construction and operation of the PG&E 500 kV interconnection segment on entirely tubular steel poles (TSPs) would not involve residential development, expansion of public-serving infrastructure, or removal of housing. Similar to the Proposed Project, Alternative 3 would have no impact on unplanned population growth (Impact POP-1) or displacement of people or housing (Impact POP-2).

4.14.9 Alternative 4: 230 kV Overhead Segment Alternative Route

Environmental Setting – Alternative 4

Alternative 4 involves relocation of a short segment of the LSPGC 230 kV overhead segment between the proposed LSPGC Collinsville Substation and the Delta, west of the proposed LSPGC 230 kV overhead segment route. Additionally, the northern end of the LSPGC 230 kV submarine segment would be rerouted to meet up with the southern end of the Alternative 4 230 kV submarine segment. The surrounding areas consists of rural, undeveloped land within a utility corridor, with no existing housing or urban infrastructure. Alternative 4 would not involve changes to any of the other Proposed Project components, which would have the same impacts as described throughout this Draft EIR for the Proposed Project or the other alternatives if selected in combination with Alternative 4.

Impact Analysis – Alternative 4

Construction and operation of the relocated LSPGC 230 kV overhead segment between the proposed LSPGC Collinsville Substation and the Delta would occur entirely on PG&E-owned, non-residential land and would not involve residential development, expansion of public-serving infrastructure, or removal of existing housing. Similar to the Proposed Project, Alternative 4 would have no impact on unplanned population growth (Impact POP-1) or displacement of people or housing (Impact POP-2).

4.14.10 Alternative 5: 230 kV Submarine Segment Alternative Route

Environmental Setting – Alternative 5

Alternative 5 involves rerouting a portion of the proposed LSPGC 230 kV submarine segment to the east of its current alignment as it approaches the southern shoreline in Pittsburg. The submarine segment cable would be installed in the same manner as the Proposed Project. No housing occurs within the Alternative 5 segment within the Sacramento River. Alternative 5 would not involve changes to any of the other Proposed Project components, which would have the same impacts as described throughout this Draft EIR for the Proposed Project or the other alternatives if selected in combination with Alternative 5.

Impact Analysis – Alternative 5

The Alternative 5 relocated submarine segment within the Delta would be located entirely underwater and would not involve residential development, expansion of public-serving infrastructure, or removal of existing housing. Similar to the Proposed Project, Alternative 5 would have no impact on unplanned population growth (Impact POP-1) or displacement of people or housing (Impact POP-2).

4.14.11 Alternative 6a/6b: Underground Portions of the 230 kV Transmission Line within Suisun Marsh Protection Plan Management

Environmental Setting – Alternative 6a/6b

Alternative 6a/6b would locate the LSPGC 230 kV transmission line on primarily PG&E-owned property south of the proposed Collinsville Substation site (similar to Alternative 4). Alternative 6a/6b would be installed in conduit underground. Alternative 6a differs from Alternative 6b only at the northern end of the segment where options are provided for connection to the Proposed Project Collinsville Substation or Alternatives 1 or 2. Two overhead riser structures would be installed at the northern end of the Alternative 6a/6b underground duct bank where the LSPGC 230 kV line would transition between an overhead and underground position. The environmental setting for Alternatives 6a/6b is substantially the same as that described for the Proposed Project in Section 4.14.1.

Impact Analysis – Alternative 6a/6b

Construction and operation of the underground 230 kV transmission line segments south of the proposed substation and within the Suisun Marsh Protection Plan Management Areas would occur entirely on PG&E-owned, non-residential land. Work would be limited to installation of underground duct bank, transition vaults, and associated access needs within existing utility corridors and rights-of-way. These activities would not involve residential development, expansion of public-serving infrastructure, or removal of existing housing.

Similar to the Proposed Project, Alternative 6a/6b would not induce unplanned population growth (Impact POP-1), as the underground transmission line would not generate demand for new housing or businesses. In addition, no displacement of people or housing (Impact POP-2)

would occur, as the alternative does not affect residential properties or require relocation of existing uses.

4.14.12 No Project Alternative

Environmental Setting – No Project Alternative

Under the No Project Alternative, the LSPGC Collinsville Substation and associated LSPGC 230 kV transmission line, PG&E 500 kV interconnection lines, and PG&E 12 kV distribution line would not be constructed. The existing environmental setting for population and housing described in Section 4.14.1 would apply to the No Project Alternative.

Impact Analysis – No Project Alternative

The No Project Alternative would involve no new construction activity, no expansion of infrastructure that could facilitate growth, and no changes to existing residential areas. The existing distribution of population and housing in the surrounding area would remain as it is under current conditions. Accordingly, there would be no temporary or permanent effects on residential development, expansion of public-serving infrastructure, or removal of existing housing. The No Project Alternative would therefore result in no impact related to unplanned population growth (Impact POP-1) or displacement of people or housing (Impact POP-2).

4.14.13 Mitigation Measures

LSPGC Mitigation Measures

No mitigation is required.

PG&E Mitigation Measures

No mitigation is required.

4.14.14 References

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4.15 Public Services

This section presents the environmental setting and analysis of impacts on public services resulting from the Proposed Project and alternatives. This section includes information on existing public services and applicable regulations, environmental impacts, and mitigation measures to reduce or avoid significant effects for the Proposed Project and alternatives, where feasible.

None of the scoping comments submitted relate to public services (refer to Appendix B).

4.15.1 Environmental Setting

Fire stations, police stations, schools, parks, and hospitals serving the Proposed Project area are shown in Figure 4.15-1. County-level responses and planning regarding emergency services in the Proposed Project vicinity are coordinated by the Solano County Office of Emergency Services (OES), Contra Costa Office of the Sheriff Emergency Services Division, and Sacramento County Office of Emergency Service (SacOES).

Fire Protection and Emergency Services

LSPGC Collinsville Substation and LSPGC 230 kV Overhead Segment

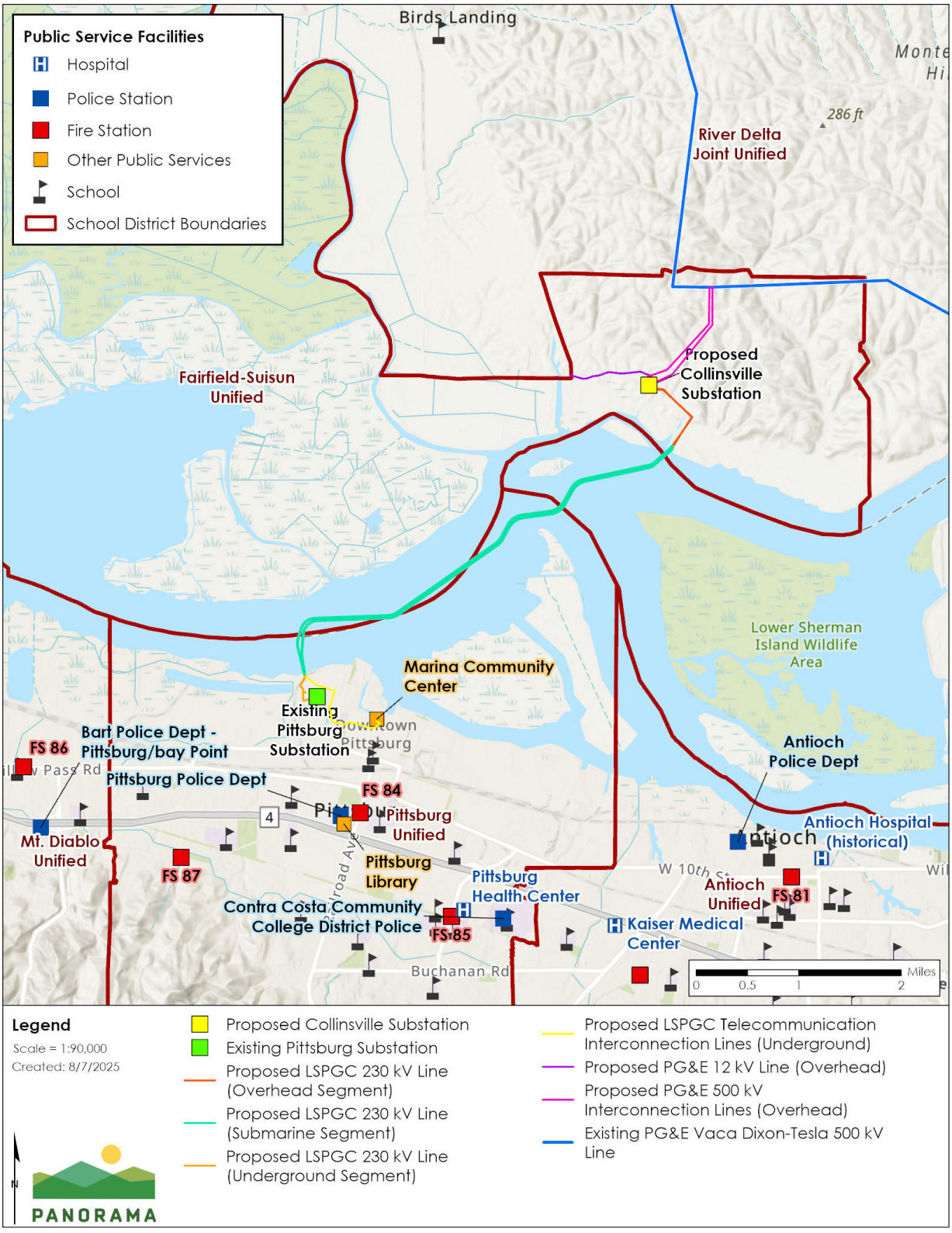
The nearest fire station to the proposed LSPGC Collinsville Substation and LSPGC 230 kV overhead segment is Montezuma Fire Protection District (FPD) Station 52, which is located at 2151 Collinsville Road in Birds Landing, approximately 4 miles northwest of the Collinsville Substation site.

Dispatch of fire services for Montezuma FPD is facilitated by the Solano County Sheriff's Office Emergency Communications Center. The Montezuma FPD does not report out their average response time; however, the Solano County General Plan established the goal of facilitating coordination among city and county fire agencies and districts to improve response times (Solano County 2008). According to the 2022 to 2023 Solano County Emergency Dispatch Report, the average processing time from the receipt of the 911 call to dispatch for the unincorporated areas of Solano County by the Solano County Sheriff's Department and Montezuma FPD is 62 seconds (Solano County Civil Grand Jury 2023).

LSPGC 230 kV Underground Segment and LSPGC Telecommunication Interconnection Lines

Portions of the Proposed Project area in the city of Pittsburg would be within the jurisdiction of ConFire. The proposed LSPGC 230 kV underground segment and LSPGC telecommunication interconnection line are located approximately 1.5 mile and 1 mile northwest of Contra Costa Fire Station 84 located at 1903 Railroad Avenue in Pittsburg, respectively.

Figure 4.15-1 Public Service Facilities in Proximity to the Proposed Project Site



Source: (CDE 2022; Herberger and Herrera 2011; Solano County 2024; Contra Costa County 2024b; ESRI® 2010; CalOES 2019)

The Con Fire Operations Division provides emergency and non-emergency services to the community and maintains 24 fully staffed stations and two more stations staffed with paid-on-call Reserve Firefighters. Minimum daily staffing is 77 personnel (Contra Costa Fire Protection District, n.d.). The Contra Costa Regional Fire Communications Center dispatches fire and medical emergency services. The average response time of Con Fire is not publicly available; however, the Contra Costa County General Plan established 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 (Solano County 2008).

LSPGC 230 kV Submarine Segment

No fire response is required for the Sacramento-San Joaquin River Delta. Fire response is not applicable to portions of the Proposed Project area within the Sacramento-San Joaquin River Delta.

PG&E 500 kV Interconnection Lines and 12 kV Distribution Line

The PG&E 500 kV interconnection lines and 12 kV distribution line alignments are under the jurisdiction of Montezuma FPD. The nearest fire station to the PG&E 500 kV interconnection lines and 12 kV distribution line alignments is the Montezuma FPD Station 52, located approximately 3.6 miles northwest of the PG&E 500 kV interconnection lines and 12 kV distribution line alignments.

PG&E Transposition Sites

Transposition Site A and associated work areas are within the Vacaville FPD jurisdiction and located approximately 3.3 miles south of the Vacaville FPD Station 65. Vacaville FPD Station 65 is located at 6080 A Street in Elmira (Vacaville Fire Protection District 2025; Solano County 2020). Transposition Site B and C and associated work areas fall within the Montezuma FPD jurisdiction, and the nearest station for both sites is Station 52 in Birds Landing (Solano County 2020). Transposition Site D and associated work areas fall within the ConFire and East Contra Costa County Fire Protection District (ECCCFPD) jurisdictions and are located approximately 2 miles south of ECCCFPD Station 99 (formerly 59) located at 1685 Bixler Road (Con Fire 2025; Contra Costa LAFCO 2013).

PG&E Substation Modifications

The existing PG&E Vaca-Dixon Substation is located within the Vacaville FPD jurisdiction and located approximately 3.6 miles north of the Vacaville FPD Station 65 (Vacaville Fire Protection District 2025; Solano County 2020). The existing PG&E's Pittsburg Substation is located within the jurisdiction of ConFire and is approximately 1 mile northwest of Contra Costa Fire Station 84. The existing PG&E Tesla Substation is located within the Alameda County Fire District jurisdiction, and the nearest fire station is Fire Station 8, located at 323 Southgate Drive in Livermore, located approximately 8 miles west of the existing substation (Alameda County Fire Department 2025).

Police Services

LSPGC Collinsville Substation and LSPGC 230 kV Overhead Segment

The LSPGC Collinsville Substation site and proposed LSPGC 230 kV overhead segment alignment are located within the jurisdiction of the Solano County Sheriff's Office. The Solano County Sheriff's Office serves Solano County; their office is located in Fairfield at 530 Union Avenue, approximately 16 miles northwest of the LSPGC Collinsville Substation site (Solano County 2025a). As stated above, the average processing time by the Solano County Sherriff's Office from the receipt of the 911 call to dispatch is 62 seconds for the unincorporated areas of Solano County (Solano County Civil Grand Jury 2023). The LSPGC Collinsville Substation site is located approximately 10 miles southwest of the City of Rio Vista Police Department, which is under the purview of the Solano County Sheriff's Office, located at 50 Poppy House Road in Rio Vista (Solano County 2025b)

LSPGC 230 kV Submarine Segment

No police services are required for the Sacramento-San Joaquin River Delta. Police response is not applicable to portions of the Proposed Project area within the Sacramento-San Joaquin River Delta.

LSPGC 230 kV Underground Segment and Telecommunication Interconnection Lines

The City of Pittsburg Police Department, under the purview of the Contra Costa County Sheriff Department, is located at 65 Civic Avenue in Pittsburg, approximately 1.4 mile southeast of LSPGC telecommunication interconnection lines, as shown in Figure 4.15-1 (CalOES 2019). As of 2019, the City of Pittsburg Police Department had approximately 80 sworn officers (California State Controller, n.d.). The City of Pittsburg Police Department's current average response time is not publicly available. The Antioch Police Department, under the purview of the Contra Costa County Sheriff Department, is located approximately 4 miles east of the proposed LSPGC telecommunication interconnection lines alignment. The Antioch Police Department has 115 sworn officers and 33 non-sworn employees.(City of Antioch 2025). The Antioch Police Department's current average response time is not publicly available.

PG&E 500 kV Interconnection Lines and 12 kV Distribution Line

The proposed PG&E 500 kV interconnection lines and 12 kV distribution line alignments are also located within the jurisdiction of the Solano County Sheriff's Office (Solano County 2008) The Solano County Sheriff's Office is approximately 15 miles northwest of the proposed PG&E 500 kV interconnection lines and 12 kV distribution line alignments. As stated above, the average processing time by the Solano County Sherriff's Office from the receipt of the 911 call to dispatch is 62 seconds for the unincorporated areas of Solano County (Solano County Civil Grand Jury 2023). The proposed PG&E 500 kV interconnection lines and 12 kV distribution line alignments are located approximately 9 miles southwest of the City of Rio Vista Police Department (CalOES 2019)

PG&E Transposition Sites

The Solano County Sheriff's Office would also serve PG&E Transposition Sites A, B, and C, with the nearest stations being the Vacaville Police Department, located at 660 Merchant Street in

Vacaville, and Rio Vista Police Department (Solano County 2025c). The nearest police station to Transposition Site D is the Brentwood Police Station, under the purview of the Contra Costa County Sheriff Department, which is located at 9100 Brentwood Boulevard in Brentwood, approximately 4.5 miles northwest of Transposition Site D (CalOES 2019).

PG&E Substation Modifications
The Solano County Sheriff's Office also serves the existing PG&E Vaca-Dixon Substation, with the nearest stations being the Vacaville Police Department, located approximately 5 miles southwest of the substation (Solano County 2025c). PG&E's existing Pittsburg Substation is located approximately 1 mile northwest of the City of Pittsburg Police Department (CalOES 2019). The existing PG&E Tesla Substation is under the purview of the Alameda County Sheriff Department; however, no police stations are located nearby this structure. The nearest police facility to the existing PG&E Tesla Substation is the Livermore Police Department located at 1110 South Livermore Avenue in Livermore, located approximately 10 miles west of the substation (CalOES 2019)

Hospitals

LSPGC Collinsville Substation and LSPGC 230 kV Overhead Segment
NorthBay Health Medical Center is the nearest hospital to the LSPGC Collinsville Substation site and proposed LSPGC 230 kV overhead segment alignment (NorthBay Health, n.d.). The NorthBay Health Medical Center, located at 1200 B Gale Wilson Blvd in Fairfield, is approximately 17 miles northwest of the LSPGC Proposed Collinsville Substation and proposed 230 kV overhead segment alignment.

LSPGC 230 kV Submarine Segment
The proposed LSPGC 230 kV submarine segment alignment falls fully within the Sacramento-San Joaquin River Delta. No hospital or medical services are applicable to portions of the Proposed Project area within the Sacramento-San Joaquin River Delta.

LSPGC 230-kV 230 kV Underground Segment and Telecommunication Interconnection Lines
Concord Medical Center is the nearest hospital to the proposed LSPGC 230 kV underground segment and proposed telecommunication interconnection lines. Concord Medical Center is located at 2540 East Street in Concord, approximately 8 miles southwest of the proposed LSPGC telecommunication interconnection lines (John Muir Health, n.d.). Closer to the Proposed Project site is the Pittsburg Health Center, located at 2311 Loveridge Road in the City of Pittsburg, approximately 2 miles southeast of the proposed LSPGC telecommunication interconnection lines (Contra Costa Health 2025). Additionally, a Kaiser Medical Center located at 3400 Delta Fair Boulevard in Antioch is approximately 3 miles east of the proposed LSPGC telecommunication interconnection lines (Kaiser Permanente 2025b).

PG&E 500 kV Interconnection Lines and 12 kV Distribution Line
NorthBay Health Medical Center is the nearest hospital to the proposed PG&E 500 kV interconnection lines and 12 kV distribution line. NorthBay Health Medical Center is

approximately 16 miles northwest from the PG&E 12 kV distribution line and 16.5 miles northwest from the proposed PG&E 500 kV interconnection lines. (NorthBay Health, n.d.).

PG&E Transposition Sites
NorthBay VacaValley Hospital is located at 1000 Nut Tree Road in Vacaville, approximately 5 miles northwest of Transposition Site A (NorthBay Health 2025). NorthBay Health Medical Center is the nearest hospital to Transposition Site B and Transposition Site C, located approximately 11 miles and 15 miles northwest of the structures, respectively. The nearest hospital to Transposition Site D is the Antioch Medical Center, located at 4501 Sand Creek Road in Antioch, approximately 9 miles northwest of the structure (Kaiser Permanente 2025a).

PG&E Substation Modifications
Vacaville Medical Center, located at 1 Quality Drive in Vacaville is the nearest hospital to the existing PG&E Vaca-Dixon Substation, located approximately 1.5 miles southwest of the substation (Kaiser Permanente 2025c). The Pittsburg Health Center is located approximately 2.4 miles southeast of the existing PG&E Pittsburg Substation (Contra Costa Health 2025).The nearest hospital to the existing PG&E Tesla Substation is Sutter Tracy Community Hospital, located at 1420 North Tracy Boulevard, approximately 7 miles northeast of the substation (Sutter Health 2025).

Schools

LSPGC Collinsville Substation and 230 kV Overhead Segment
The Proposed Collinsville Substation site and 230 kV overhead segment alignment are located within the Fairfield-Suisun Unified School District in Solano County. Other school districts nearby include the River Delta Unified School District located in Solano and Sacramento counties (CDE 2022). No school facilities occur within one mile of the LSPGC Collinsville Substation site or LSPGC 230 kV overhead segment.

LSPGC 230 kV Submarine Segment
The proposed LSPGC 230 kV submarine segment falls fully within the Sacramento-San Joaquin River Delta. No school facilities or districts are applicable to portions of the Proposed Project within the Sacramento-San Joaquin River Delta.

LSPGC 230 kV Underground Segment and Telecommunication Interconnection Lines
The proposed LSPGC 230 kV underground segment and telecommunication interconnection lines are located within the Pittsburg Unified School District in Contra Costa County. Other nearby districts include the Antioch Unified School District in Contra Costa County (CDE 2022). As detailed in Table 4.15-1, the proposed LSPGC telecommunications line is located approximately 0.2 mile from Marina Vista Elementary School and runs along Halsey Way adjacent to the south side of St. Peter Martyr School. Figure 4.15-1 shows these school locations in relation to the Proposed Project area.

PG&E 500 kV Interconnection Lines and 12 kV Distribution Line

The proposed PG&E 500 kV interconnection lines and 12 kV distribution line are located within the Fairfield-Suisun Unified School District in Solano County. Other school districts nearby include the River Delta Unified School District located in Solano and Sacramento counties (CDE 2022). No school facilities occur within one mile of the PG&E 500 kV interconnection lines and 12 kV distribution line.

PG&E Transposition Sites

Transposition Site A is within the Travis Unified School District. Transposition Site B and Transposition Site C are within the River Delta Joint Unified School District. Transposition Site D is within the Liberty Union High School District (CDE 2022). No school facilities are located within one mile of the transposition sites.

PG&E Substation Modifications

The existing PG&E Vaca-Dixon Substation is located within the Vacaville Unified School District, and the existing PG&E Tesla Substation is within the Lammersville Joint Unified School District. The existing PG&E Pittsburg Substation is located within the Pittsburg Unified School District. Schools in the vicinity of the Proposed Project site within the City of Pittsburg are listed in Table 4.15-1 and shown in Figure 4.15-1. Work occurring at the existing PG&E Tesla and Vaca-Dixon substations would occur within the existing substation fence lines, and no schools are located within 1 mile of the existing substations

Table 4.15-1 Public Schools within 1 Mile of the Proposed Project

School name	Public or private	Approximate proximity to the Proposed Project site	Address
Marina Vista Elementary School	Public	0.2 mile southeast of the proposed LSPGC telecommunications lines	50 East 8th Street, Pittsburg
Parkside Elementary School	Public	0.8 mile southwest of the proposed LSPGC telecommunications lines	985 West 17th Street, Pittsburg
Pittsburg High School	Public	1 mile southeast of the proposed LSPGC telecommunications lines	1750 Harbor Street, Pittsburg
Riverside High	Public	0.3 mile southeast of the proposed LSPGC telecommunications lines	1025 Black Diamond Street, Pittsburg

Source: (Pittsburg Unified School District, n.d.)

Parks

Several parks and recreational areas, including the Sacramento-San Joaquin River Delta, Suisun Marsh, Lower Sherman Island Wildlife Area, Brown Island, Winter Island, and City of Pittsburg parks, are located within 1 mile of the Proposed Project. For a complete list and discussion of recreational and park facilities in the vicinity of the Proposed Project, see Section 4.16: Recreation.

Other Services

Other public facilities within 1 mile of the Proposed Project area include a library, Pittsburg City Hall, and a community center, as listed in Table 4.15-2. The proposed LSPGC telecommunications lines crosses the Marina Community Center property in the City of Pittsburg.

Table 4.15-2 Other Public Service Facilities within 1 Mile of the Proposed Project

Public service facility	Proximity to the Proposed Project	Address
Marina Community Center	Within proposed LSPGC telecommunication lines	340 Marina Boulevard, Pittsburg
Pittsburg Library	1 mile south of the proposed LSPGC telecommunication lines	80 Power Avenue, Pittsburg
Pittsburg City Hall	0.9 mile south of the proposed LSPGC telecommunication lines	65 Civic Avenue, Pittsburg

Source: (City of Pittsburg Recreation Department, n.d.; Contra Costa County Library, n.d.; City of Pittsburg 2025)

4.15.2 Regulatory Setting

Federal

There are no federal regulations applicable to public services.

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 (International Code Council, Inc. 2022, 9).

California Public Resources Code Sections 4292, 4293, and 4295

California Public Resources Code (PRC) section 4292 states the following (Findlaw 2023a)

> [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 (Findlaw 2023b):

> [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:
>
> For any line which is operating at 2,400 or more volts, but less than 72,000 volts, four feet
>
> For any line which is operating at 72,000 or more volts, but less than 110,000 volts, six feet
>
> 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.

PRC section 4295 states the following (Findlaw 2023c)

> A person is not required by Section 4292 or 4293 to maintain any clearing on any land if such person does not have the legal right to maintain such clearing, nor do such sections require any person to enter upon or to damage property which is owned by any other person without the consent of the owner of the property.

Local

The CPUC has sole and exclusive state jurisdiction over the siting and design of the Proposed Project. Pursuant to 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." Sacramento County and Alameda County policies are not included as there are no public services in Sacramento County or Alameda County relevant to the Proposed Project.

Solano County General Plan

Chapter 8: Public Facilities and Services of the Solano County General Plan addresses public service systems and facilities and contains the following policies and implementation programs relevant to the Proposed Project (Solano County 2008):

- **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.

Contra Costa County General Plan

The Public Facilities/Services Element of the Contra Costa County General Plan contains the following public safety response time standards relevant to the Proposed Project (Contra Costa County 2024a):

- Sheriff Response Times: Average law enforcement response time of five minutes or less for Priority 1 calls (where a threat to people may exist).
- Fire Response Times:
  - Four minutes or less response time for the arrival of the first engine company at a fire suppression incident, 90 percent of the time.
  - Six minutes or less response time for the arrival of the second engine company at a fire suppression incident, 90 percent of the time.
  - Eight minutes or less response time for an initial full alarm assignment at a fire suppression incident that does not involve a high-rise building, 90 percent of the time
  - Ten minutes and 10 seconds or less response time for an initial full alarm assignment at a fire suppression incident that involves a highrise building, 90 percent of the time.
- Emergency Medical Services Response Times:
  - Four minutes or less response time for the arrival of a unit with a first responder, 90 percent of the time.
  - Eight minutes or less response time for the arrival of an advanced life support company, 90 percent of the time.

City of Pittsburg General Plan

The Safety and Resiliency Section of the City of Pittsburg General Plan contains the following policy relevant to the Proposed Project (City of Pittsburg 2024).

- **11-P-1.8:** Ensure that all areas of the city are accessible to emergency response providers. Keep emergency access routes free of traffic impediments
- **11-P-1.10:** Require development to provide additional access roads when necessary to provide for safe access of emergency equipment and civilian evacuation concurrently.

4.15.3 Approach to Impact Analysis

The analysis of impacts on public services applies the impact criteria and significance thresholds defined in the following subsection. The LSPGC applicant proposed measures (APMs) and PG&E construction measures (CMs) are considered when making the impact determinations for public services, as shown in Table 4.15-3. Impacts are evaluated for the Proposed Project including separate analysis of LSGPC and PG&E project components, analysis of LSPGC and PG&E project components combined where appropriate, cumulative impacts, and alternatives. Mitigation measures are defined to reduce or avoid significant impacts, where feasible.

Impact Criteria and Thresholds of Significance

The following impact criteria have been derived from Appendix G of the CEQA Guidelines to evaluate impacts associated with public services. Appendix G of the CEQA Guidelines asks whether a project would:

- Impact PUB-1: 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?

Applicant Proposed Measures and Construction Measures

The LSPGC APMs and PG&E CMs identified in Section 2: Project Description that are relevant to the public services impact analysis are provided in Table 4.15-3.

Table 4.15-3 APMs and CMs Relevant to Public Services

LSPGC APMs and PG&E CMs
APM 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.
APM TRA-2: Road and Lane Closure Plan. LSPGC shall develop a Traffic Control Plan for the proposed project which includes a Road and Lane Closure plan that outlines how LSPGC will handle road and lane closures to allow for safe vehicle, bicyclist, and pedestrian passage when road and lane closures occur. The plan shall be prepared in coordination with local jurisdictions where road and lane closures would occur. Upon determination of the final construction schedule and precise locations and durations of road and lane closures, the plan shall describe locations and durations of: • Lane closures • Bicycle lane closures • Sidewalk or pedestrian path closures • Measures to be included in the plan that would allow for safe vehicle, bicyclist, and pedestrian passage shall adhere to the California Manual on Uniform Traffic Control Devices. Potential measures include: - Signage directing motorists, pedestrians, and bicyclists to an efficient, safe detour around the closure - Flaggers and/or signage to halt traffic at road closures or direct traffic at lane closures and to allow traffic to pass when construction is halted - Requirements for notifications and a process for communication with affected residents and landowners prior to the start of construction. - Emergency service providers would be notified of the timing, location, and duration of construction activities. - Requirement that emergency vehicle access is maintained at all times.
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.

LSPGC APMs and PG&E CMs
• 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.
CM 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.
CM 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.
CM FIRE-1: Fire Risk Management. PG&E would follow relevant California Public Resource Code provisions and the then-current company-specific standard for preventing and mitigating fires while performing PG&E work. PG&E would utilize a project-specific safety plan to outline and ensure compliance with safe work practices, training, and fire response. Examples of the measures in the wildfire prevention and mitigation standard include, but are not limited to, the following practices: • When working on unpaved roads where the ignitions may be probable due to dry vegetation, park vehicles in an area cleared of vegetation (e.g., paved, gravel or cleared to bare mineral soil) or otherwise where suitable to avoid fire ignitions. • During dry months, all motorized equipment driving on unpaved or gravel/dirt right-of-way or roads must have installed State-approved spark arrestor. • When traveling to the jobsite, or when operating on unimproved roadways, passenger vehicles are to carry one dry chemical fire extinguisher (rated ABC) and one round point shovel. • Trucks (1/2 ton or larger) and all-terrain vehicles (ATVs) are to carry one dry chemical fire extinguisher (rated ABC), one round point shovel and one, 5-gallon backpack pump-type fire extinguisher. • Heavy machinery or equipment (e.g., tractors, tub grinders, whole tree chippers, excavators, bulldozers) must have one dry chemical fire extinguisher (rated ABC), one round point shovel and one 5-gallon backpack pump-type fire extinguisher in the operating area but these are not required to be affixed to heavy machinery or equipment. • In addition, during "red flag warning" advisory conditions (as determined by the National Weather Service) or other very high fire risk conditions, certain work activities will be curtailed or temporarily stopped unless work is deemed an emergency. • All flammable chemicals must be clearly labeled and stored in approved containers away from ignition sources.

4.15.4 Impact Analysis – Proposed Project

Table 4.15-4 presents a summary of the CEQA significance criteria and impacts on public services that would occur during construction, operation, and maintenance of the Proposed Project.

Table 4.15-4 Summary of Impacts to Public Services for the Proposed Project

Impact criteria: Would the project …	APMs/CMs applied	Significance Before Mitigation	Mitigation Measures Required	Significance with Mitigation
Impact PUB-1: 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?	APM FIRE-1 APM TRA-2 CM FIRE-1 CM TRA-1 CM TRA-2	LTS	None	NA
• Police Protection?	None	LTS	None	NA
• Schools?	APM PUB-1	LTS	None	NA
• Parks?	None	LTS	None	NA
• Other public facilities?	None	LTS	None	NA

Notes:

LTS = less than significant

NA= not applicable

Impact PUB-1: Would the Proposed 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 for any of the public services? ***(Less than significant)***

Overview

The Proposed Project would not directly or indirectly induce population growth, as discussed in Section 4.14: Population and Housing. The Proposed Project would thus not create a demand for new government facilities. The analysis below addresses whether the Proposed Project would impact service ratios, response times, or other performance objectives for emergency service providers and other public services and therefore require the construction of new or physically altered facilities.

Fire

Construction

LSPGC Collinsville Substation and LSPGC 230 kV Overhead Segment and Submarine Segment
The LSPGC Collinsville Substation and 230 kV overhead segment are located in areas of high risk for wildland fires. Specifically, the proposed LSPGC 230 kV overhead segment, and a short portion of the terrestrial portion of the 230 kV submarine segment would be within a very high FHSZ in an LRA. Additionally, the proposed Collinsville Substation would be within a high FHSZ in an LRA (CAL FIRE 2025) (refer to Section 4.20: Wildfire). The portion of the 230 kV submarine segment within the Delta would be constructed underwater, which would not generate a need for fire services. Traffic control procedures, including lane closures, may be implemented intermittently along Stratton Lane during substation construction. Stratton Lane does not provide access to any residential or commercial properties that would require fire service during temporary lane closures and alternative service is available on Talbert Lane. In addition, LSPGC proposes APM TRA-2, which includes temporary traffic control and coordination with emergency response service providers during road or lane closures. The resulting impact on fire response services due to lane or road closures would not require the construction of new facilities and would be less than significant.

Construction of the LSPGC Collinsville Substation and 230 kV overhead segment would involve use of heavy equipment in and adjacent to areas containing vegetation. The use of heavy equipment and hot work associated with construction (e.g., welding) would increase fire risk in the area (see also Section 4.9: Hazards and Hazardous Materials). 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 project-specific CFPP outlining procedures for fire reporting, response, and prevention as well as crew training and coordination with federal and local fire officials. With implementation of APM FIRE-1, construction of the Collinsville Substation and 230 kV overhead segment would not create significant demand for fire services, and the impact on fire response would not require the construction of new facilities and would be less than significant.

LSPGC 230 kV Underground Segment and Telecommunication Interconnection Line
The LSPGC 230 kV underground segment and telecommunication interconnection lines are not located in areas of high risk for wildland fires (refer to Section 4.20: Wildfire); however, construction of the 230 kV underground segment and telecommunication interconnection lines would require temporary lane closures in the City of Pittsburg. Temporary lane closures would be coordinated with applicable counties and the City of Pittsburg and fire response providers through the encroachment permit process; however, if not properly coordinated with fire response providers, these temporary lane or road closures could affect the response times of emergency vehicles if an emergency were to occur in the area at the time of lane or road closure. Delays to emergency vehicles resulting from lane and road closures would be a significant impact on fire response times. APM TRA-2 requires the preparation and implementation of a Traffic Control Plan in coordination with the local jurisdiction that addresses lane and road

closures and requires coordination with emergency response as well as use of traffic control procedures. Therefore, with implementation of APM TRA-2, the impact on emergency fire response times during construction would not require the construction of new facilities and would be less than significant.

PG&E 500 kV Interconnection Lines and 12 kV Distribution Line

The PG&E 500 kV interconnection lines and PG&E 12 kV distribution line within a mapped high FHSZ in an LRA (CAL FIRE 2025). (refer to Section 4.20: Wildfire). The PG&E 500 kV interconnection line crossing of Stratton Lane and installation of the structures adjacent Stratton Lane could require temporary lane or road closures on Stratton Lane. The 12 kV distribution line would be constructed along Stratton Lane and construction may require temporary lane closure. PG&E has proposed CM TRA-1 and CM TRA-2**,** which include coordination with emergency response services and traffic control procedures during any lane or road closures. In addition, as discussed for the Collinsville Substation, Stratton Lane does not provide access to any land use that would require emergency fire response. The resulting impact on emergency response during PG&E lane closures would not require the construction of new facilities and would be less than significant.

Similar to the LSPGC Collinsville Substation, the PG&E 500 kV interconnection lines and 12 kV distribution line are located in an area of high fire risk. Construction activities for the PG&E 500 kV interconnection lines would involve use of heavy equipment in and adjacent to areas containing vegetation. The use of heavy equipment and hot work associated with construction (e.g., welding) would increase fire risk in the area (see also Section 4.9: Hazards and Hazardous Materials). The potential for wildfires to be initiated by construction would be reduced through the implementation of CM FIRE-1, which includes implementation of PG&E fire control procedures including fire response training and specific procedures during fire season. With implementation of CM FIRE-1, the impact on demand for fire response services would not require the construction of new facilities and would be less than significant.

PG&E 500 kV Transposition Structures

The PG&E 500 kV transposition structures are not located in areas of high risk for wildland fires (refer to Section 4.20: Wildfire). Construction activities for the 500 kV transposition structures would not require hot work. The potential for ignition of a fire by the transposition activities would be very low. No construction work for the transposition structures would occur in roads and the construction activities would therefore not affect the response capabilities the Montezuma FPD, Vacaville FPD, and ECCCFPD. Therefore, the potential impact on fire response due to construction of the transposition structures would not require the construction of new facilities and would be less than significant.

PG&E Substation Modifications

PG&E's existing Tesla Substation is located within a CAL FIRE *state responsibility area* (SRA) for wildfire whereas the existing Pittsburg Substation and Vaca-Dixon Substation are not located in areas of high risk for wildfires. Construction activities within PG&E's existing substations would not affect fire response as the existing substation has been cleared of all fuels/vegetation

and there are no public roads within the substation that would provide access for fire service. Construction within PG&E's existing substations would therefore have no impact on fire response services.

Operation and Maintenance

LSPGC Project Components

The LSPGC Collinsville Substation and 230 kV overhead and submarine segment north of the Delta are located in areas of high and very high risk for wildland fires (refer to Section 4.20: Wildfire). LSPGC project components would be operated and monitored remotely. Facilities would be inspected quarterly and a small, specialized team of existing personnel would perform any necessary maintenance activities. The presence of maintenance workers would not impact fire response capabilities and maintenance activities would not require road closures that could impact the ingress and egress of emergency responders. The LSPGC project components would increase long-term fire risk by introducing overhead electrical lines to the Proposed Project area, which would increase the potential for an electrical line to start a wildfire. Electrical transmission lines in California are required to comply with fire break clearance requirements in GO 95, PRC section 4292 and title 14, section 1254 of the CCR. Accordingly, LSPGC would need to trim or remove flammable vegetation in the area surrounding the Proposed Project facilities. Project-specific vegetation clearances would be determined through compliance with applicable regulatory requirements. Therefore, due to compliance with applicable regulatory requirements for fire safety from electrical transmission lines, the LSPGC project components would have a less than significant impact on the demand for fire response and would not require the construction of new facilities.

PG&E Project Components

The PG&E project components are located in areas of high risk for wildfires (refer to Section 4.20: Wildfire). PG&E would continue its regular inspections (i.e., monthly and annually) and routine maintenance at its existing substations. The PG&E 500 kV transmission facilities would be inspected annually by existing staff conducting routine patrols, either on the ground or using a helicopter or drone, and any climbing inspections would be conducted on an as-needed basis. The substations are unmanned and the minor modifications to the substation would not create a fire risk at any existing substation or change regional or local response to an emergency. Additionally, no temporary lane closures would be required during operation and maintenance of the PG&E project components. The PG&E project components would introduce long-term fire risk due to the overhead electrical lines, which would increase wildfire ignition risk. Electrical transmission lines in California are required to comply with fire break clearance requirements in GO 95, PRC section 4292 and title 14, section 1254 of the CCR. Accordingly, LSPGC would need to trim or remove flammable vegetation in the area surrounding the Proposed Project facilities. Project-specific vegetation clearances would be determined through compliance with applicable regulatory requirements. Therefore, operation and maintenance of the PG&E project components would have a less-than-significant impact on the demand for fire response and would not require the construction of new facilities.

Police Protection

Construction

LSPGC Project Components

LSPGC would implement security measures during construction of the LSPGC project components to reduce potential need for police services. Perimeter security fencing would be installed around the outer limits of the LSPGC Collinsville Substation work area. Temporary lighting would be installed at the substation for security purposes during construction to reduce the threat of theft or vandalism. 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. Through the use of proper security measures, construction of the LSPGC project components would not create an increased demand for police protection services that would create a need for new facilities. Construction of the 230 kV underground segment and telecommunication interconnection lines may require temporary lane closures in the city of Pittsburg. Delays to emergency vehicles, including police protection resulting from lane and road closures, could result in a significant impact to police response times. LSPGC proposes APM TRA-2, which includes temporary traffic control and coordination with emergency response service providers during road or lane closures. The resulting impact on police response services due to lane or road closures would be less than significant and would not require the construction of new facilities.

PG&E Project Components

PG&E would implement security measures during construction of the PG&E project components to reduce potential need for police services. Temporary perimeter and/or security fencing would be installed at the PG&E staging areas if necessary. Temporary lighting would be installed for security purposes during construction to reduce the threat of theft or vandalism. 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. Through the use of proper security measures, construction of PG&E project components would not create an increased demand for police protection services that would create a need for new facilities. Temporary lane closures may be required during construction activities associated with the 12 kV distribution line. While it is very unlikely that police services would be required to respond to an emergency on Stratton Lane, temporary lane and road closures could affect response times of emergency vehicles if an emergency were to occur in the area at the time of lane or road closure. CM TRA-1 requires PG&E to obtain any necessary transportation and encroachment permits from the California Department of Transportation and the local jurisdictions, as required, to prevent excessive congestion or traffic hazards during construction and thus impacts from construction associated with PG&E facilities would not impact emergency service response capabilities. CM TRA-2 requires PG&E to coordinate any road closures needed with emergency service providers at least 24 hours prior to implementation, including specification of which road or lanes would be closed; the anticipated date, time, and duration of closures; and a contact telephone number. Therefore, after implementation of CM TRA-1 and CM TRA-2,

the impact on police response services would not require the construction of new facilities and would be less than significant.

Operation and Maintenance

LSPGC Project Components

LSPGC project components would be operated and monitored remotely. Facilities would be inspected quarterly and a small, specialized team of existing personnel would perform any necessary maintenance activities. LSPGC would implement long-term security measures during operation and maintenance of the LSPGC project components to reduce potential need for police services. 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 and would have one gate integrated with electronic access card readers. The proposed LSPGC Collinsville Substation would also include indoor and outdoor physical security cameras, which would be routed through a network video recorder located in the WAN control panel and communicated to the LSPGC control center for monitoring. LSPGC project components occurring in the city of Pittsburg are underground facilities that would not require security provisions. Through the use of proposed security measures, operation and maintenance of the LSPGC project components would not create an increased demand for police protection services that would create a need for new facilities. The impact on police demand would be less than significant.

PG&E Project Components

PG&E would continue its regular inspections (e.g., monthly and annually) and routine maintenance at its existing substations. The PG&E 500 kV facilities would be inspected annually by existing staff conducting routine patrols, either on the ground or using a helicopter or drone and any climbing inspections would be conducted on an as-needed basis. The substations are unmanned and would have small worker crews during routine maintenance activities. PG&E would maintain existing security provisions included at the existing PG&E substation facilities. Additionally, the PG&E telecommunication yard, where a PG&E-owned microwave tower and communications equipment enclosures would be installed for the LSPGC telecommunication lines paths, would include a separate fence and gate for PG&E access via the shared driveway connecting Stratton Lane east of the proposed Collinsville Substation. The telecommunications yard fence would be an approximately 10-foot-tall wall or expanded metal fence barrier. Through the use of proposed security measures, operation and maintenance of the PG&E project components would not create an increased demand for police protection services that would create a need for new facilities. The impact on police demand would be less than significant.

Schools, Parks, and Other Public Facilities

Construction

LSPGC Collinsville Substation and LSPGC 230 kV Overhead and Submarine Segments
Construction of the proposed LSGPC Collinsville Substation and LSPGC 230 kV overhead and submarine segments would not occur in proximity to any school, park, hospital, or other public service facility area or adjacent to any such facilities. As described in Section 4.16:Recreation, several parks and recreational areas occur near the LSPGC Collinsville Pittsburg Substation and 230 kV overhead segment as well as along the 230 kV submarine segment in the Sacramento San-Joaquin Delta (Delta); however, construction of these facilities 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, construction of the LSPGC Collinsville Substation and 230 kV overhead and submarine segments would not precipitate the need to expand schools or create a need for new parks or other public facilities, and impacts would be less than significant.

LSPGC 230 kV Underground Segment and Telecommunication Interconnection Line
Construction of the proposed 230 kV underground segment and telecommunication lines would not occur in proximity to any schools or hospitals and would not affect any schools or hospitals. The telecommunications lines would be located 0.2 mile from Marina Vista Elementary School and approximately 1 mile from other public schools in the city of Pittsburg. Temporary lane or road closures during installation of the telecommunications lines would not affect access to a public school that would necessitate modifications to the school access. The impact on public schools would thus be less than significant. While not a public school, APM PUB-1 requires coordination for construction in front of Saint Peter Martyr School to minimize any temporary impacts on access during installation of the telecommunication interconnection lines. As described in Section 4.16: Recreation, several parks and recreational areas occur near the LSPGC 230 kV underground segment and telecommunication interconnection lines in the city of Pittsburg. Construction of the 230 kV underground segment and telecommunication interconnection lines may require temporary lane closures in the city of Pittsburg; however, these temporary lane closures would not impact access to these recreational facilities or precipitate the need for additional parks, and the impact on parks would be less than significant.

The proposed LSPGC telecommunication interconnection lines 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 and would thus not affect use of the community center. Additionally, Project construction would also not require the closure of roads or lanes used to access the Pittsburg Library. Therefore, no new or expanded other public facilities would need to be constructed as result of construction of the 230 kV underground segment or telecommunication interconnection lines, and impacts would be less than significant.

PG&E Project Components
Construction of the PG&E project components would not occur within any school, park, hospital, or other public service facility area or adjacent to any such facilities. Construction of the PG&E project components would not affect access to any schools, parks, or other public facilities. This being the case, the impact on schools, parks, and other public services during PG&E project component construction would be less than significant.

Operation and Maintenance

LSPGC Project Components
LSPGC project components would be operated and monitored remotely. Facilities would be inspected quarterly and a small, specialized team of existing personnel would perform any necessary maintenance activities. Operation and maintenance of LSPGC project components would not affect demand for public services since it would not create a permanent workforce and would not affect access to any school, park, or other public service. Therefore, operation and maintenance of the LSPGC project components would have a less-than-significant impact on the schools, parks, and other public facilities.

PG&E Project Components
Similar to LSPGC project components, PG&E project components would not create a permanent workforce and would not affect access to any school, park, or other public facility. Therefore, operation and maintenance of the PG&E project components would have a less-than -significant impact on the demand for schools, parks, and other public facilities.

4.15.5 Impact Analysis – Cumulative

CEQA defines a cumulative impact as "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" (CEQA Guidelines section 15130(a)(1)). Cumulative impacts can result from "individually minor but collectively significant projects taking place over a period of time" (CEQA Guidelines section 15355). An EIR must discuss cumulative impacts if the incremental effect of a project, combined with the effects of other projects, is "cumulatively considerable" (CEQA Guidelines section 15130(a)).

The Proposed Project would not directly or indirectly induce unplanned population growth such that the demand for public services would increase. Therefore, the Proposed Project would not contribute to any cumulative impacts related to population demand for public services, including the increased need for parks, schools, or other public facilities. Further, the Proposed Project would not contribute to any cumulative impacts on schools, parks, or other public facilities.

The Proposed Project may require temporary lane closures in the city of Pittsburg, which is in close proximity to the following planned projects: Contra Costa Resilient Shoreline Plan, Bay Walk Mixed Use Project (Phases I, II, and III), Central Harbor Park and Boat Launch Area Updates, Harbor View Project, AT&T Rooftop Wireless Facility, East Street Estates, Athens Painting, East Bay Auto Sales, and Liberty Subdivision Phase II. Temporary lane closures

required by the Proposed Project would be coordinated with applicable counties and the City of Pittsburg and emergency response providers through the encroachment permit process; however, if not properly coordinated with emergency response providers and, in the event that these lane closures coincide with lane closures required by the aforementioned projects in the city of Pittsburg, the cumulative impact on emergency response could be significant. LSPGC has proposed APM TRA-2, which includes coordination with emergency service providers prior to any lane closures and procedures, such as use of flaggers, to reduce impacts. Therefore, with implementation of APM TRA-2, the Proposed Project's contribution to a significant cumulative impact on emergency response would be reduced to less-than-significant levels, and the incremental contribution of the Proposed Project to the cumulative impact on public services would not be cumulatively considerable.

4.15.6 Alternative 1: Collinsville Substation North of Talbert Lane

Environmental Setting – Alternative 1

Alternative 1 involves relocating the proposed LSPGC Collinsville Substation to a different site, approximately 1.2 miles north of the Proposed Project substation site. Alternative 1 would also include an approximately 500-foot segment of PG&E 500 kV interconnection lines, approximately 700-foot segment of 12 kV distribution line, and an approximately 2-mile-long segment of LSPGC 230 kV overhead line. The Alternative 1 LSPGC substation site, PG&E 500 kV interconnection lines, and LSGPC 230 kV overhead segment would be within Solano County and would fall under the service jurisdiction of the same Solano County emergency service providers as the Proposed Project discussed in Section 4.15.1. Alternative 1 would not involve changes to any of the other Proposed Project component, which would have the same impacts as described throughout this Draft EIR for the Proposed Project or the other alternatives if selected in combination with Alternative 1.

Impact Analysis – Alternative 1

Impact PUB-1: Would Alternative 1 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? ***(Less than significant)***

Similar to the Proposed Project, Alternative 1, would not directly or indirectly induce population growth or create a demand for new government facilities. Alternative 1 would not occur in proximity to any school, park, hospital, or other public service facility area Alternative 1 would not prevent access to boat launches specifically used to enter regional or local recreational areas and facilities. Similar to the Proposed Project, construction of Alternative 1 may require temporary road closures during transmission line stringing activities over public roadways, which could affect response times of emergency vehicles if an emergency were to occur in the area at the time of lane or road closure. As with the Proposed Project, APM TRA-2 (implement Road and Lane Closure Plan) and PG&E TRA-2 (coordinate road closures with emergency service providers) would be implemented under this alternative. The Alternative 1

impact on public services would not require construction of new public facilities and would be less than significant.

4.15.7 Alternative 2: Collinsville Substation East of Wind Energy Substations

Environmental Setting – Alternative 2

Alternative 2 involves relocating the proposed LSPGC Collinsville Substation to a different site, approximately 3.0 miles north of the location proposed under the Proposed Project. Alternative 2 would also include an approximately 1,200-foot-long segment of PG&E 500 kV interconnection lines and a four-mile-long segment of LSPGC 230 kV overhead line, as well as an approximately 0.3-mile-long PG&E 12 kV distribution line. The Alternative 2 LSPGC substation site, PG&E 500 kV interconnection lines, PG&E 12 kV distribution line, and LSPGC 230 kV overhead segment would be within Solano County and would fall under the service jurisdiction of the same Solano County emergency service providers as the Proposed Project discussed in Section 4.15.1. Alternative 2 would not involve changes to any of the other Proposed Project component, which would have the same impacts as described throughout this Draft EIR for the Proposed Project or the other alternatives if selected in combination with Alternative 2.

Impact Analysis – Alternative 2

Impact PUB-1: Would Alternative 2 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? *(Less than significant)*

Similar to the Proposed Project, Alternative 2, would not directly or indirectly induce population growth or create a demand for new government facilities. Alternative 2 would not occur in proximity to any school, park, hospital, or other public service facility area. Alternative 2 would not prevent access to boat launches specifically used to enter regional or local recreational areas and facilities. Similar to the Proposed Project, construction of Alternative 2 may require temporary road closures during transmission line stringing across roadways, which could affect response times of emergency vehicles if an emergency were to occur in the area at the time of lane or road closure. As with the Proposed Project, APM TRA-2 (implement Road and Lane Closure Plan) and PG&E TRA-2 (coordinate road closures with emergency service providers) would be implemented under Alternative 2. The Alternative 2 impact on public services would not require construction of new public facilities and would be less than significant.

4.15.8 Alternative 3: 500 kV Interconnection Lines on Entirely TSPs

Environmental Setting – Alternative 3

Alternative 3 involves constructing the PG&E 500 kV interconnection lines on entirely TSPs, instead of the combination of LSTs and three-pole TSPs under the Proposed Project. The 500 kV

interconnection lines would be in the same general alignment as the Proposed Project PG&E 500 kV interconnection lines. The Alternative 3 LSPGC substation site, PG&E 500 kV interconnection lines, and LSGPC 230 kV overhead segment would be within Solano County and would fall under the service jurisdiction of the same Solano County emergency service providers as the Proposed Project discussed in Section 4.15.1. Alternative 3 would not involve changes to any of the other Proposed Project component, which would have the same impacts as described throughout this Draft EIR for the Proposed Project or the other alternatives if selected in combination with Alternative 3.

Impact Analysis – Alternative 3

Impact PUB-1: Would Alternative 3 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? ***(Less than significant)***

Alternative 3 would be constructed within the same general alignment as the Proposed Project PG&E 500 kV interconnection lines and would consequently have the same potential impacts to public services as those described in Section 4.15.4. As with the Proposed Project 500 kV interconnection lines, the impact on public services would be less than significant.

4.15.9 Alternative 4: 230 kV Overhead Segment Alternative Route

Environmental Setting – Alternative 4

Alternative 4 involves relocation of a short segment of the LSPGC 230 kV overhead segment between the proposed LSPGC Collinsville Substation and the Delta, west of the proposed LSPGC 230 kV overhead segment route. Additionally, the northern end of the LSPGC 230 kV submarine segment would be rerouted to meet up with the southern end of the Alternative 4 230 kV submarine segment. The Alternative 4 relocation of the LSPGC 230 kV overhead segment would be located within Solano County and would fall under the service jurisdiction of the same Solano County emergency service providers as the Proposed Project discussed in Section 4.15.1. Alternative 4 would not involve changes to any of the other Proposed Project component, which would have the same impacts as described throughout this Draft EIR for the Proposed Project or the other alternatives if selected in combination with Alternative 4.

Impact Analysis – Alternative 4

Impact PUB-1: Would Alternative 4 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? ***(Less than significant)***

Similar to the Proposed Project, Alternative 4, would not directly or indirectly induce population growth or create a demand for new government facilities. Alternative 4 would not occur in proximity to any school, park, hospital, or other public service facility area. Alternative

4 would not require the closure of any boat launches specifically used to enter regional or local recreational areas and facilities. Alternative 4 does not cross any public roads and is not anticipated to require temporary road closures. The Alternative 4 LSPGC 230 kV overhead segment would have the same wildfire risk as the Proposed Project LSPGC 230 kV overhead segment. Alternative 4 would not require the construction of new public facilities and the impact on public services would be less than significant.

Alternative 5: 230 kV Submarine Segment Alternative Route

Environmental Setting – Alternative 5

Alternative 5 involves rerouting a portion of the proposed LSPGC 230 kV submarine segment to the east of its current alignment as it approaches the southern shoreline in Pittsburg. The submarine segment cable would be installed in the same manner as the Proposed Project. As with the Proposed Project 230 kV submarine segment there are no public service providers in the Delta. Therefore, there are no public services in the Alternative 5 area. Alternative 5 would not involve changes to any of the other Proposed Project component, which would have the same impacts as described throughout this Draft EIR for the Proposed Project or the other alternatives if selected in combination with Alternative 5.

Impact PUB-1: Would Alternative 5 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? *(No impact)*

Alternative 5 occurs in the Delta and would not fall under the jurisdiction of any emergency service provider, nor have the potential to impact emergency services capabilities. There would be no impact on public services associated with Alternative 5 construction, operation, and maintenance.

4.15.10 Alternative 6a/6b: Underground Portions of the 230 kV Transmission Line within Suisun Marsh Protection Plan Management

Environmental Setting – Alternative 6a/6b

Alternative 6a/6b would locate the LSPGC 230 kV transmission line on primarily PG&E-owned property south of the proposed Collinsville Substation site (similar to Alternative 4). Alternative 6a/6b would be installed in conduit underground. Alternative 6a differs from Alternative 6b only at the northern end of the segment where options are provided for connection to the Proposed Project Collinsville Substation or Alternatives 1 or 2. Two overhead riser structures would be installed at the northern end of the Alternative 6a/6b underground duct bank where the LSPGC 230 kV line would transition between an overhead and underground position. Alternative 6a/6b would neighbor the nonurbanized Community of Collinsville area, similar to the 230 kV overhead segment described for the Proposed Project and Alternative 4. Alternative 6a/6b would be located within Solano County and would fall under the service jurisdiction of

the same Solano County emergency service providers as the Proposed Project discussed in Section 4.15.1.

Impact Analysis – Alternative 6a/6b

Similar to the Proposed Project, Alternative 6a/6b, would not directly or indirectly induce population growth or create a demand for new government facilities. Alternative 6a/6b would not occur in proximity to any school, park, hospital, or other public service facility area. Alternative 6a/6b would not require the closure of any boat launches specifically used to enter regional or local recreational areas and facilities. Alternative 6a/6b does not cross any public roads and is not anticipated to require temporary road closures. Alternative 6a/6b would be accessed using existing unpaved roads and temporary access roads. Alternative 6a/6b would not require the construction of new public facilities and the impact on public services would be less than significant.

4.15.11 No Project Alternative

Environmental Setting – No Project Alternative

Under the No Project Alternative, the LSPGC Collinsville Substation and associated LSPGC 230 kV transmission line, PG&E 500 kV interconnection lines, and PG&E 12 kV distribution line would not be constructed. The existing environmental setting for public services described in Section 4.15.1 would apply to the No Project Alternative.

Impact Analysis – No Project Alternative

The No Project Alternative would not have the potential to 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 (Impact PUB-1). No impact to public services would occur under the No Project Alternative.

4.15.12 Mitigation Measures

LSPGC Mitigation Measures

No mitigation is required.

PG&E Mitigation Measures

No mitigation is required.

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4.16 Recreation

This section presents the environmental setting and analysis of impacts on recreation resulting from the Proposed Project and alternatives. This section describes existing recreational resource information, applicable regulations, and environmental impacts and provides mitigation measures to reduce or avoid significant effects for the Proposed Project and alternatives, where feasible.

No scoping comments are relevant to the analysis of recreation (Appendix B).

4.16.1 Environmental Setting

Recreational area is defined as any facility that is used for recreational activities, including the following:

- National, state, county, city or private park (e.g., dog park)
- Bicycle path
- Trail
- Open space preserve
- Cultural center
- Museum
- Campground

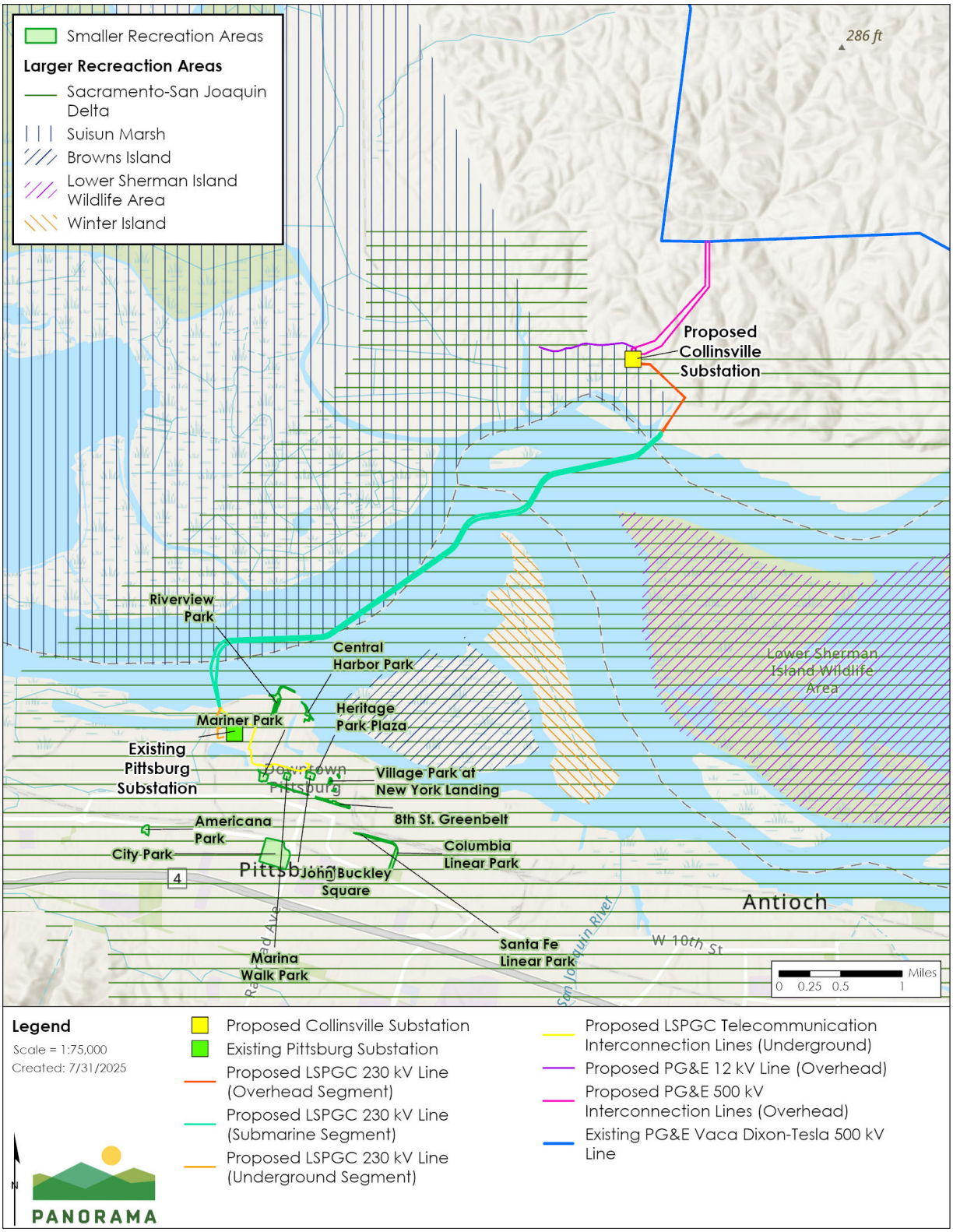
Recreational facilities in the vicinity of the Proposed Project are shown on Figure 4.16-1, Figure 4.16-2, and listed in Table 4.16-1.

Recreational Areas

National Recreation Areas

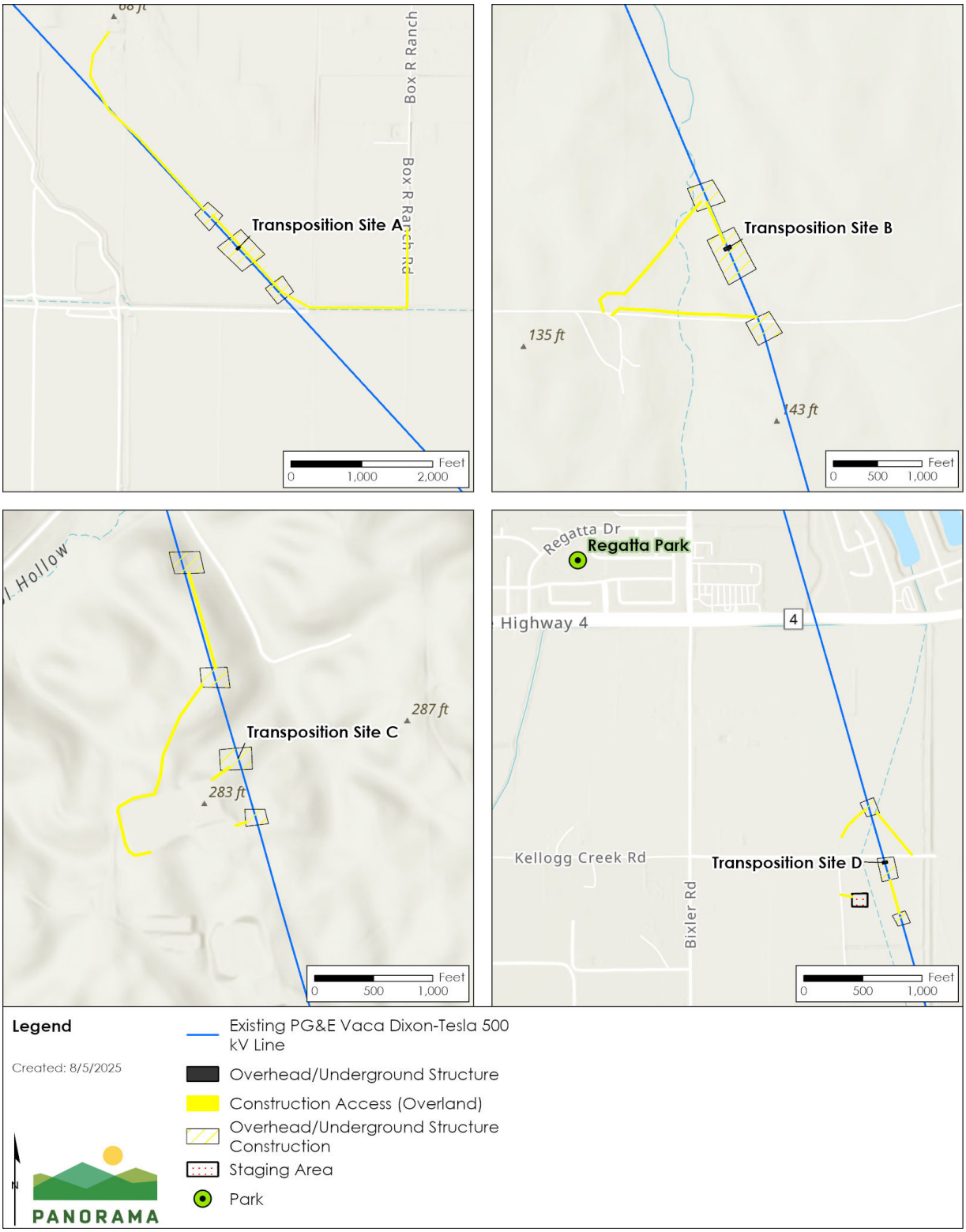
No National Recreation Areas are located within the Proposed Project vicinity. The closest national recreational areas to the Proposed Project are the Port Chicago Naval Magazine and the John Muir National Historic Site which are located approximately 7.5 miles and 13 miles west of the Proposed Project area, respectively (U.S. National Park Service, n.d.).

Figure 4.16-1 Parks and Recreational Facilities within Proposed Project Vicinity



Source: (DWR 2024; City of Pittsburg 2023; 2024)

Figure 4.16-2 Parks and Recreational Facilities in vicinity to the Transposition Structures



Source: (DWR 2024; City of Pittsburg 2023; 2024)

Table 4.16-1 Recreational Areas and Facilities within the Proposed Project Vicinity

Recreational area or facility	Approximate distance from the Proposed Project (miles)	Nearest Proposed Project component	Facility size (acres)	Amenities and/or uses
Suisun Marsh	0 (within)	LSPGC Collinsville Substation, LSPGC 230 kV submarine segment, and PG&E 12 kV distribution line, PG&E 500 kV interconnection lines	85,000	Waterfowl hunting, water sports, nature walks, picnicking, and sightseeing
Lower Sherman Island Wildlife Area	0.5	LSPGC 230 kV submarine segment	3,100	Hunting, fishing, water and wind sports, wildlife observation, environmental education
Browns Island	0.6	LSPGC 230 kV submarine segment	600	Fishing, wildlife and plant viewing
Winter Island	0.3	LSPGC 230 kV submarine segment	500	Kayak, wildlife viewing
Delta Waterways	0 (within)	LSPGC 230 kV submarine segment	85,000	Fishing, powerboating, sailing, kayaking, and canoeing
Americana Park	0.9	LSPGC 230 kV underground segment	2.5	Barbecue grills, picnic tables, play equipment
John Buckley Square	0.01	LSPGC telecommunication interconnection lines	2.4	Play equipment, benches, open lawn, walking loop, sport fields, bathrooms
Central Harbor Park	0.4	LSPGC telecommunication interconnection lines	1.5	Boat launch, restrooms, open lawn, benches
City Park	0.6	LSPGC telecommunication interconnection lines	28.0	Barbecue grills, restrooms, picnic tables, play equipment, exercise equipment, bocce ball courts, horseshoes, baseball/softball fields, soccer fields
Columbia Linear Park	0.9	LSPGC telecommunication interconnection lines	4.4	Picnic tables, barbeque grills, drinking fountains, pedestrian sky bridge
Heritage Park Plaza	0.02	LSPGC telecommunication interconnection lines	0.2	Artistic site with waterfall, murals, picnic tables, round bollards

Marina Walk Park	0.01	LSPGC telecommunication interconnection lines	1.7	Picnic tables, play equipment
Mariner Park	0.1	LSPGC telecommunication interconnection lines	3.6	Barbecue grills, restrooms, picnic tables, baseball fields, open play areas
Riverview Park	0.3	LSPGC telecommunication interconnection lines	4.0	Restrooms, play equipment, fishing dock
Santa Fe Linear Park	0.7	LSPGC telecommunication interconnection lines	2.6	Barbecue grills, picnic tables
Village Park at New York Landing	0.2	LSPGC telecommunication interconnection lines	0.8	Picnic tables, open play areas
8th Street Greenbelt	0.2	LSPGC telecommunication interconnection lines	4.0	Barbecue grills, picnic tables, play equipment
Regatta Park	0.8	Transposition Site D	4.4	Walking paths, play equipment

Source: (City of Pittsburg 2024; CDFG 2007; DSC 2013; Suisun Principal Agencies 2014; Contra Costa Special Districts Association, n.d.; East Bay Regional Park District, n.d.; City of Pittsburg Recreation, n.d.; Pacer Walking App, n.d.; California Department of Water Resources 2025)

State Recreation Areas

No state recreation areas are located in the Proposed Project vicinity. The closest state recreation areas to the Proposed Project site are the Mount Diablo State Park, which is located approximately 10 miles south of the proposed LSPGC telecommunication interconnection lines, and the Brannan Island State Recreational Area, which is located approximately 7 miles east of the LSPGC Collinsville Substation site (California State Parks, n.d.).

Sacramento–San Joaquin River Delta

The Sacramento-San Joaquin River Delta (Delta) spans 738,000 acres throughout Contra Costa, Sacramento, San Joaquin, Solano, and Yolo counties (DPC, n.d.). As described in the Delta Stewardship Council's (DSC) Delta Plan, the Delta supports a variety of recreational activities including, but not limited to onshore and offshore fishing, annual fishing derbies, boating, birdwatching, hunting, campgrounds, picnic areas, and hiking trails, such as Delta de Anza Regional Trail, discussed below. The Delta waterways are specifically known for fishing, powerboating, sailing, kayaking, and canoeing (DSC 2013). In the five counties surrounding the Delta waterways, approximately 102,000 vessels were registered in 2018 that could potentially be used for recreational activities in the Delta (DBW 2018). Overall, the Delta receives an estimated 12 million annual visitors (Sacramento San Joaquin Delta Conservancy 2024).

The proposed LSPGC 230 kV submarine segment would be located within the Delta waterways. The closest boat launches to the Proposed Project site are located in the City of Pittsburg Marina, approximately 0.8 mile east of the proposed LSPGC 230 kV submarine segment.

Riverview Park, located in the City of Pittsburg, has a dock that is used for fishing in the Delta and is located approximately 0.5 mile from the proposed LSPGC 230 kV submarine segment.

Suisun Marsh

According to the Suisun Marsh Protection Plan, the Suisun Marsh covers approximately 85,000 acres of tidal marsh, managed wetlands, and waterways in southern Solano County. The Suisun Marsh and Delta boundaries overlap by approximately 4,300 acres (DSC 2013). A majority of the Suisun Marsh wetlands are categorized as managed wetlands under the jurisdiction of California Department of Fish and Wildlife (CDFW) and private duck clubs seeking to enhance the production of preferred waterfowl food plants (BCDC n.d.). Approximately 50,000 acres of the managed wetlands are maintained as private waterfowl hunting clubs located on publicly owned wildlife management areas and refuges (BCDC n.d.). The primary recreational activities in the Suisun Marsh include waterfowl hunting, fishing, and upland game hunting (BCDC n.d.). The Suisun Marsh can be accessed by boat or car.

Portions of the proposed LSPGC Collinsville Substation site, 230 kV submarine segment alignment, and PG&E 500 kV interconnection lines, and 12 kV distribution line are located within the Suisun Marsh, as shown in Figure 4.16-1.

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 at the confluence of the Sacramento and San Joaquin rivers within the Delta in Sacramento County. The LSIWA is only accessible to recreationalists by boat (CDFG 2007). The proposed LSPGC 230 kV submarine segment would be located approximately 0.4 mile west of the LSIWA, as depicted in Figure 4.16-1. Recreational activities in LSIWA include wildlife viewing and hunting.

Browns Island

The East Bay Regional Park District manages the approximately 600-acre Browns Island, which is located off of the city of Pittsburg's northern coast in the Delta (East Bay Regional Park District, n.d.). The proposed LSPGC 230 kV submarine segment would be located approximately 0.6 mile northwest 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, n.d.).

Winter Island

The Department of Water Resources (DWR) manages the approximately 500-acre Winter Island, which is located in adjacent to Browns Island, off of the city of Pittsburg's northern coast in the Delta (California Natural Resources Agency, n.d.). The proposed LSPGC 230 kV submarine segment is located 0.3 mile northwest of Winter Island. Prior to being managed by DWR, the island functioned as a privately owned duck hunting area. No recreational facilities exist on the

island, and it is only accessible by boat (Contra Costa County, n.d.). The area underwent tidal habitat restoration in 2018 (California Natural Resources Agency, n.d.).

Local Parks

Twelve municipal parks are located within 1 mile of the Proposed Project within the city of Pittsburg, as shown in Figure 4.16-1. Figure 4.16-2 shows recreational facilities in proximity to the proposed transposition sites. Table 4.16-1 provides information on the amenities provided and each park and the approximate size. No municipal parks are located within 1 mile of the Proposed Project in Solano County or Sacramento County.

Trails

No trails occur in the Proposed Project vicinity. The nearest trail to the Proposed Project site is the Delta de Anza Regional Trail (Delta Protection Commission 2022; East Bay Regional Parks District, n.d.), which is used for hiking, bicycling, and equestrian use (Delta Protection Commission 2022). The nearest portion of the trail is approximately 1.5 miles south of the LSPGC telecommunication interconnection lines (East Bay Regional Parks District, n.d.).

4.16.2 Regulatory Setting

Federal

There are no federal regulations applicable to the Proposed Project with respect to recreation.

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 2020).

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 recreation:

> **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.

Suisun Marsh Preservation Act

The Nejedly-Bagley-Z'berg Suisun Marsh Preservation Act of 1974 directed the BCDC and 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 that require implementation by the legislature (Public Resources Code § 29004(b)). The plan outlines policies that promote the preservation of waterfowl hunting, fishing, and other recreational opportunities in the Suisun Marsh.

Suisun Marsh Habitat Management, Preservation, and Restoration Plan
The Suisun Marsh Habitat Management, Preservation, and Restoration Plan 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. One of the primary Suisun Marsh Habitat Management, Preservation, and Restoration Plan objectives relevant to recreation is to "maintain waterfowl hunting heritage and expand opportunities for hunting, fishing, bird watching, and other nature-oriented recreational activities" (Suisun Principal Agencies 2014).

Sacramento-San Joaquin Delta Reform Act of 2009
The Sacramento-San Joaquin Delta Reform Act of 2009 created the Delta Stewardship Commission (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 2007). In 2007, the CDFW

adopted the LSIWA Land Management Plan (LMP), which is a guiding document that ensures public uses and operation and maintenance activities on Lower Sherman Island are compatible with the conservation of species and habitats. The LMP includes the following goal relevant to recreation (CDFG 2007):

> Provide long-term opportunities for hunting and increase opportunities for wildlife-dependent recreation.

Delta Protection Act of 1992

The Delta Protection Act of 1992 established the Delta Protection Commission and declared the Delta as a natural resource of statewide, national, and international significance and is the policy of the State to recognize, preserve, and protect Delta resources for the use and enjoyment of current and future administrations.

Local

The CPUC has sole and exclusive state jurisdiction over the siting and design of the Proposed Project. Pursuant to 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."

Solano County General Plan

The Parks and Recreation Element of the Solano County General Plan provides an overview of the existing recreational facilities and an analysis of recreational needs throughout the county (Solano County 2008). 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 General Plan

The Public Facilities Element of the Sacramento County General Plan 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 (Sacramento County 2019). The Public Facilities Element of the Sacramento County General Plan does not contain any policies relevant to the Proposed Project. The Delta Protection Element of the Sacramento County General Plan contains policies specific to recreational use of the Delta; however, none of the policies are relevant to the Proposed Project (Sacramento County 2014).

Contra Costa County General Plan

The Public Facilities and Services Element of the Contra Costa County General Plan details the existing recreational parks, trails, and facilities available to the public (Contra Costa County

2024). This section describes the goals, policies, and implementation measures designed to protect and enhance recreational opportunities throughout the county. The Contra Costa County General Plan does not contain any policies relevant to the Proposed Project.

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 (East Bay Regional Park District [EBRPD] 2013). 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.

Alameda County

PG&E's proposed work at the PG&E existing Tesla Substation located in Alameda County would occur within the substation fence line and would not impact recreational facilities; therefore, recreational policies within Alameda County are not relevant to this analysis.

City of Pittsburg General Plan

The City of Pittsburg General Plan 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 (City of Pittsburg 2024). The City of Pittsburg General Plan does not contain any policies relevant to the Proposed Project.

4.16.3 Approach to Impact Analysis

The analysis of impacts on recreation applies the impact criteria and significance thresholds defined in the following subsection. The LSPGC applicant proposed measures (APMs) and PG&E construction measures (CMs) are considered when making the impact determinations. Impacts are evaluated for the Proposed Project include separate analyses of LSGPC and PG&E project components, cumulative impacts, and alternatives. Mitigation measures are defined to reduce or avoid significant impacts, where feasible.

Impact Criteria and Thresholds of Significance

The following impact criteria questions have been derived from Appendix G of the CEQA Guidelines to evaluate impacts on recreation. Appendix G of the CEQA Guidelines ask whether a project would:

- Impact REC-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?
- Impact REC-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?
- Impact REC-3: Would the project reduce or prevent access to a designated recreation facility or area?

- Impact REC-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?
- Impact REC-5: Would the project damage recreational trails or facilities?

Applicant Proposed Measures and Construction Measures

The proposed LSPGC APMs identified in Section 2: Project Description that are relevant to the recreation analysis are provided in Table 4.16-2. No PG&E construction measures (CMs) are applicable to the analysis of recreational impacts.

Table 4.16-2 APMs Relevant to Recreation

LSPGC APMs
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 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.
APM TRA-2: Road and Lane Closure Plan. LSPGC shall develop a Traffic Control Plan for the proposed project which includes a Road and Lane Closure plan that outlines how LSPGC will handle road and lane closures to allow for safe vehicle, bicyclist, and pedestrian passage when road and lane closures occur. The plan shall be prepared in coordination with local jurisdictions where road and lane closures would occur. Upon determination of the final construction schedule and precise locations and durations of road and lane closures, the plan shall describe locations and durations of: • Lane closures • Bicycle lane closures • Sidewalk or pedestrian path closures • Measures to be included in the plan that would allow for safe vehicle, bicyclist, and pedestrian passage shall adhere to the California Manual on Uniform Traffic Control Devices. Potential measures include: - Signage directing motorists, pedestrians, and bicyclists to an efficient, safe detour around the closure. - Flaggers and/or signage to halt traffic at road closures or direct traffic at lane closures and to allow traffic to pass when construction is halted. - Requirements for notifications and a process for communication with affected residents and landowners prior to the start of construction. - Emergency service providers would be notified of the timing, location, and duration of construction activities. - Requirement that emergency vehicle access is maintained at all times.

4.16.4 Environmental Analysis – Proposed Project

Table 4.16-3 presents a summary of the CEQA significance criteria and impacts on recreation that would occur as a result of construction, operation, and maintenance of the Proposed Project.

Table 4.16-3 Summary of Proposed Project Impacts on Recreation

Impact criteria: Would the project …	APMs/CMs applied	Significance Before Mitigation	Mitigation Measures Required	Significance After Mitigation
Impact REC-1: 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?	None	NI	None	—
Impact REC-2 Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	None	NI	None	—
Impact REC-3: Reduce or prevent access to a designated recreation facility or area?	APM REC-1 APM TRA-2	LTS	None	NA
Impact REC-4: 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?	APM REC-1	LTS	None	NA
Impact REC-5: Damage recreational trails or facilities?	APM REC-1	LTS	None	NA

Notes:

LTS = less than significant

NA = not applicable

NI = no impact

Impact REC-1: Would the Proposed 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? ***(No impact)***

The Proposed Project would not directly or indirectly induce population growth, as discussed in Section 4.14: Population and Housing. Several neighborhood or regional parks are located in proximity to the Proposed Project site, as detailed in Table 4.16-1, however construction workers would not be expected to use any specific neighborhood or regional park. Any use of neighborhood or regional parks by construction workers would be dispersed and temporary in nature. The Proposed Project would thus not directly increase the use of existing neighborhood and regional parks or other recreational areas such that substantial physical deterioration would occur. The analysis below addresses whether the Proposed Project would directly or indirectly cause physical deterioration of parks or other recreational facilities.

Construction

LSPGC Project Components

Several neighborhood or regional parks are located in proximity to the LSPGC project components in the City of Pittsburg, as detailed in Table 4.16-1, however construction workers would not be expected to use any specific neighborhood or regional park during construction activities and any use of a neighborhood or regional parks by construction workers, such as during lunch breaks, would be dispersed and temporary in nature. Construction of LSPGC project components would not affect any nearby marina facilities. The cables for the 230 kV submarine segment would be buried and would not affect recreational facilities in water or increase recreational uses of the Delta. While the LSPGC project components in City of Pittsburg would be located within 1 mile of neighborhood parks, the construction activities would not cause physical deterioration of any park or recreational facility. Therefore, no impact would occur.

PG&E Project Components

Several neighborhood or regional parks are located in proximity to the PG&E project components located in the City of Pittsburg, as detailed in Table 4.16-1, however construction workers would not be expected to use any specific neighborhood or regional park during construction activities and any use of a neighborhood or regional parks by construction workers, such as during lunch breaks, would be dispersed and temporary in nature. Therefore, the construction activities would not cause physical deterioration of any park or recreational facility, and no impact would occur.

Operations and Maintenance

LSPGC Project Components

LSPGC project components would be operated and monitored remotely. Facilities would be inspected quarterly and a small, specialized team of existing personnel would perform any necessary maintenance activities. LSPGC project components would not be located within or adjacent any neighborhood or regional parks or recreational facilities. Therefore, operation and maintenance activities would not cause physical deterioration to any neighborhood or regional park or recreational facility. Therefore, no impact would occur.

PG&E Project Components

PG&E would continue its regular inspections (e.g., monthly and annually) and maintenance at its existing substations. The PG&E 500 kV transmission facilities would be inspected annually by existing staff conducting routine patrols, either on the ground or using a helicopter or drone and any climbing inspections would be conducted on an as-needed basis. The PG&E project components are not located within any park or recreational facility and would not cause physical deterioration to any park or recreational facility. Therefore, operation and maintenance activities would not cause physical deterioration of any recreational facility, and no impact would occur.

Impact REC-2: Would the Proposed Project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment? *(No impact)*

The Proposed Project would not include the creation of any new recreational facilities. The Proposed Project would not induce population growth such that new recreational facilities would be required to accommodate population needs. The construction workforce for the Proposed Project would be sourced from surrounding communities (refer to Section 4.14: Population and Housing). Hotels and short-term rentals are available in the Proposed Project area vicinity, including Suisun City, Fairfield, and Pittsburg, therefore no on-site temporary housing would be constructed. Because the Proposed Project would not include construction or expansion of any recreational facilities and would not induce population growth requiring new recreational facilities, no impact would occur.

Impact REC-3: Would the Proposed Project reduce or prevent access to a designated recreation facility or area? *(Less than significant)*

Construction

LSPGC Project Components

Construction of the 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 cables would be installed from a barge moving along the cable route through the Delta and would take approximately 4 to 5 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, the barge size is estimated to be approximately 260 feet by 72 feet. In addition, a temporary in-water work area on the north shore of approximately 0.3 acres and on the south shore of approximately 0.4 acres would be required to bring the submarine cables onshore. The total approximately 0.7-acre work area would be unavailable to other recreational uses for the 4 to 5 months of construction. To reduce the potential impacts associated with access restrictions to the Delta, LSPGC would implement APM REC-1, which requires 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, LSPGC has proposed APM REC-1 would require a Local Notice to Mariners 15 days prior to the start of in-water construction activities. Because the area of reduced access due to the barge and in-water work would be limited to approximately 0.7 acre of the entire Delta which spans 738,000 acres and LSPGC would implement APM REC-1 to avoid conflicts with recreational users, the impact on access to recreational access in the Delta would be less than significant.

As shown in Figure 4.16-1 and Table 4.16-1, construction of the proposed LSPGC telecommunication interconnection lines would occur adjacent to City of Pittsburg parks.

Temporary impacts to sidewalks, bike lanes, and driveways may occur during construction of the proposed LSPGC telecommunication interconnection lines, which could potentially result in temporary reduction in access to recreational facilities. LSPGC has proposed APM TRA-2, which includes preparation and implementation of a traffic control plan to provide safe pedestrian and bicycle access to designated recreational facilities or areas during construction of the telecommunication interconnection lines. With implementation of APM TRA-2, construction of the proposed LSPGC telecommunication interconnection lines would not significantly reduce access to designated recreational areas, and impacts would be less than significant.

PG&E Project Components

The PG&E project components would be located in areas where the primary land uses are agriculture, utility operations, and wind farms. Although certain PG&E project components would be located within 1 mile of the Suisun Marsh and the Delta, construction would not prevent access to boat launches used to enter those recreational areas. No other designated recreational areas are located within 1 mile of PG&E work areas. Therefore, construction of the PG&E project components would not reduce or prevent access to a designated recreational facility or area, and no impact would occur.

Operation and Maintenance

LSPGC Project Components

LSPGC project components would be operated and monitored remotely. Facilities would be inspected quarterly, and a small, specialized team of existing personnel would perform any necessary maintenance activities. Operation and maintenance activities associated with the LSPGC 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. LSPGC would inspect the cable using sonar. In the event of a damaged segment of cable, LSPGC would need to splice in a segment of repaired cable and lay the replaced cable using a hydroplow and barge in the same manner as the initial construction. The cable repair activities would involve the same equipment as construction and would be more limited to the area of the damaged/repaired cable segment and of a shorter duration than construction. Any repaired cable segments would exist adjacent to the original cable and the damaged cable would be abandoned in place or removed if directed by a regulatory agency. The presence of the buried submarine cable beneath the riverbed would not affect access to recreational areas. As a result, the impact on access to a recreational facility would be less than significant.

PG&E Project Components

PG&E would continue its regular inspections (e.g., monthly and annually) and maintenance at its existing substations. The PG&E 500 kV transmission facilities would be inspected annually by existing staff conducting routine patrols, either on the ground or using a helicopter or drone, and any climbing inspections would be conducted on an as-needed basis. Operation and maintenance activities associated with the PG&E project components would not require the closure of any roads or prevent access to any recreational areas or facilities. Therefore, operation

and maintenance activities for PG&E project components would have no impact on access to recreational areas or facilities.

Impact REC-4: Would the Proposed 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? ***(Less than significant)***

Construction

LSPGC Project Components

Suisun Marsh

LSPGC project components would not be constructed in areas containing neighborhood or regional parks. Construction of the LSPGC project components would not affect any marina facilities. Portions of the proposed LSPGC Collinsville Substation, 230 kV overhead segment, and 230 kV submarine segment are located within the Suisun Marsh. The Suisun Marsh is valued by recreationalists for activities such as waterfowl hunting, fishing, and upland game hunting. The extent of the Suisun Marsh is approximately 85,000 acres. Construction activities would be temporary, occurring over the course of 27 months, and would not cause substantial changes in the Suisun Marsh area as all temporary impacts would be restored. The resulting impact on the recreational value of Suisun Marsh would be less than significant.

Delta

The proposed LSPGC 230 kV submarine segment would be located within the Delta waterways. The Delta waterways are valued by recreationalists for fishing, powerboating, sailing, kayaking, and canoeing opportunities. Installation of the 230 kV submarine segment would occur outside of the spawning window for fish species; therefore, fishing opportunities in the Delta would be largely unaffected by construction of the 230 kV submarine segment even though the installation would cause sedimentation as described in Section 4.10: Hydrology and Water Quality.

The submarine segment cables would be installed by a hydroplow towed behind a barge moving along the cable route through the Delta over the course of 4 to 5 months, which would temporarily affect recreationalists' ability to fish, boat, sail, kayak, and canoe within the 0.7-acre work area for the duration of cable installation. The installation of each cable would take between 10 to 15 days, 4 to 5 days of which would be for embedding the cable beneath the riverbed. Cable installation would take place for 24 hours per day and would not stop until the cable has been completely installed. The cables would be buried approximately 6 to 15 feet below the sediment surface of the Delta waterways. Recreationalists utilizing the Delta are familiar with the presence of other boats within the Delta waterways. While the barge would be larger than typical boats utilizing the Delta, the barge would be mobile and the presence of the barge would be temporary, therefore the barge and construction activities would be relatively consistent with the existing scenic environment of the Delta and is unlikely to result in impacts to the scenic quality experienced by recreationalists. LSPGC would implement APM REC-1, which requires 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 restriction. Additionally, APM REC-1 requires LSPGC to provide a Local Notice to Mariners 15 days prior to the start of in-water construction activities. Because construction activities would be temporary and would avoid the spawning season, construction of the submarine segment would have a less-than-significant impact on the recreational value of the Delta, and the impact would be less than significant.

PG&E Project Components

PG&E project components would not be constructed in areas containing neighborhood or regional parks. Portions of the proposed PG&E 500 kV interconnection lines and 12 kV distribution line are located within Suisun Marsh, which is valued by recreationalists for activities such as waterfowl hunting, fishing, and upland game hunting. The extent of the Suisun Marsh is approximately 85,000 acres, and the portions of the 500 kV interconnection lines overlapping the Suisun Marsh are located in areas that are inaccessible to the public for recreational use (i.e., within a wind farm) and therefore would not affect waterfowl hunting or upland game hunting opportunities. The 12 kV distribution line is located adjacent a road. Construction activities would be temporary and would be isolated to the area directly adjacent Stratton Lane, which does not provide significant recreational value. Therefore, construction of the PG&E project components would have a less than significant impact on recreational value of Suisun Marsh.

Operation and Maintenance

LSPGC Project Components

Suisun Marsh

Portions of the proposed LSPGC Collinsville Substation, 230 kV overhead segment, and 230 kV submarine segment would be within Suisun Marsh. The extent of the Suisun Marsh is approximately 85,000 acres. The submarine segment would be buried below the maintained navigational channel depth (6 to 15 feet) and would have no impact on recreational values. Areas within the Collinsville Substation fenced facility would not be accessible for hunting or other recreational uses during the operational phase. The portion of Suisun Marsh containing the substation site does not contain any recreational trails or facilities nor does it have unique recreational values. Development of the substation would not have a substantial effect on fishing or hunting activities in Suisun Marsh and would thus not affect the recreational value of the Suisun Marsh. The 230 kV overhead segment would not block recreational access as the transmission poles would be interspersed with open space areas. The 230 kV overhead segment would not affect waterfowl hunting, fishing, or upland game hunting opportunities. The Proposed Project impacts on the recreational value of Suisun Marsh would be less than significant.

Delta

The proposed LSPGC 230 kV submarine segment cables would be located within the Delta; however, once installed, the submarine cables would be below the maintained navigational

channel depth and, therefore, would not affect fishing, powerboating, sailing, kayaking, or canoeing .In area areas where the cables cannot otherwise meet the required burial depths (6 to 15 feet) of the U.S. Army Corps of Engineers (USACE), concrete mattresses may be placed in the riverbed as a cable protection measure, and would be approximately 8-feet wide by 20-feet-long (per cable). The concrete mattresses are not anticipated to impact Delta recreational activities as they would be buried in the riverbed, would not be visible to recreationalists and would not affect water-based recreation activities. In the event of a damaged segment of cable, LSPGC would need to splice in a segment of repaired cable and lay the replaced cable using a hydroplow in the same manner as the initial construction. The cable repair activities would involve the same equipment as construction and would also be timed to avoid the spawning season in compliance with agency permits and requirements. The cable repair activities would have the same impact on recreational activities as the initial construction but would be limited to the area of the damaged/repaired cable segment. Any repaired cable segments would exist adjacent to the original cable and the damaged cable would be abandoned in place or removed if directed by a regulatory agency. The repaired cable segment would be within the LSPGC easement from CSLC. During the operational life of the Proposed Project, the submarine cables, concrete mattresses, and repaired or replaced cable segments, would all exist below the sediment surface of the Delta waterways and therefore would not reduce the scenic quality of the recreational resource or impact recreational uses of the Delta as they would not be seen by recreationalists utilizing the Delta waterways or occur at depths in which recreationalists would simultaneously occur. Therefore, operation and maintenance of the Proposed Project submarine cables would have a less than significant impact on recreational value of the Delta during operation.

PG&E Project Components

Portions of the PG&E 500 kV interconnection lines and 12 kV distribution line would be within Suisun Marsh. The extent of the Suisun Marsh is approximately 85,000 acres. The portion of the LSPGC and PG&E project components overlapping the Suisun Marsh would be located in areas that are either inaccessible to the public for recreational use (i.e., within a wind farm) or adjacent Stratton Lane. Presence of the poles would not affect recreational use of the area due to the distance between the poles as recreational uses would be able to continue between the structures. In addition, the poles would not impact hunting or fishing opportunities and thus would not affect the recreational value of the area. The impact on recreational value would be less than significant.

Impact REC-5: Would the Proposed Project damage recreational trails or facilities? *(No impact)*

No recreational trails or facilities are located within or adjacent to the Proposed Project work areas, as discussed in Impact REC-1. The nearest trail to any of the Proposed Project components is the Delta de Anza Regional Trail, located approximately 1.5 miles south of the LSPGC telecommunication interconnection lines. Construction and operation and maintenance work for the Proposed Project would not occur within any recreational trail or facilities; therefore, no damage to recreational trails or facilities would occur.

4.16.5 Impact Analysis – Cumulative

CEQA defines a cumulative impact as "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" (CEQA Guidelines Section 15130(a)(1)). Cumulative impacts can result from "individually minor but collectively significant projects taking place over a period of time" (CEQA Guidelines Section 15355). An EIR must discuss cumulative impacts if the incremental effect of a project, combined with the effects of other projects, is "cumulatively considerable" (CEQA Guidelines Section 15130(a)).

The geographic scope for the analysis of cumulative impacts associated with recreation includes the Proposed Project site plus a 1-mile buffer as the Proposed Project would not generate any use of recreational facilities and would not contribute to increased usage in combination with other projects. A 1-mile buffer is thus conservative in consideration of indirect impacts on recreation and impacts on access. The Proposed Project would have no impact on physical deterioration of parks or recreational facilities, construction or expansion of recreational facilities, or damage to trails or recreational facilities. This being the case, the Proposed Project would have no contribution to cumulative impacts on those resources and the cumulative impact would not be significant.

Recreational Access

The Proposed Project would temporarily affect access to recreational areas in the Delta and would be located near recreational facilities in the City of Pittsburg. The Bay Walk Mixed Use Project (Phases I, II, and III) cumulative project construction could overlap with the construction of the Proposed Project in the City of Pittsburg as both projects involve activities in roadways adjacent to recreational areas. In the event that construction of the Proposed Project and Bay Walk Mixed Use Project (Phase I, II, and/or III) require overlapping road closures, access to adjacent recreational areas could be temporarily restricted, and the cumulative impact on access to recreational areas would be significant. The implementation of APM TRA-2 includes LSPGC coordination with local jurisdictions regarding where road and lane closures would occur at the horizontal directional drilling (HDD) locations for the telecommunication lines. Therefore, due to the temporary construction window of 4 months in the City of Pittsburg, a small area of impact at the HDD locations, and implementation of APM TRA-2, the Proposed Project's contribution to a significant cumulative impact would be less than considerable and thus less than significant.

Recreational Value

The proposed LSPGC 230 kV submarine segment is located within the Delta, which is valued by recreationists for the scenic quality of the area and fishing, powerboating, sailing, kayaking, and canoeing opportunities. The Maintenance Dredging of the Federal Navigation Channels in San Francisco Bay, San Francisco Bay and Delta Sand Mining Project, and Sacramento River 30-foot Channel (O&M) projects all involve dredging within the Delta waterways. In the event that these dredging activities overlap with construction of the 230 kV submarine segment or maintenance of a damaged cable, opportunities for recreational use of the Delta would be temporarily reduced at the location of each boat/ship. However, given the large size of the Delta

and that all dredging, construction, and maintenance activities would be expected to be conducted within CDFW and NMFS work windows to avoid impacts on spawning fish, construction of the submarine segment in combination with cumulative projects would result in a less-than-significant cumulative impact on recreational values (fishery resources). Additionally, during the operational life of the Proposed Project, the submarine cables would exist 6 to 15 feet below the sediment surface of the Delta waterways and therefore would not reduce the scenic quality of the recreational resource as they would not be seen by recreationalists utilizing the Delta waterways. Therefore, the Proposed Project would not have the ability to combine with the other dredging activities occurring in the Delta waterways to result in an impact on the scenic quality of the area.

4.16.6 Alternative 1: Collinsville Substation North of Talbert Lane

Environmental Setting – Alternative 1

Alternative 1 involves relocating the proposed Collinsville Substation to a different site, approximately 1.2 miles north of the Proposed Project substation site. Alternative 1 would also include an approximately 500-foot segment of PG&E 500 kV interconnection lines, approximately 700-foot segment of 12 kV distribution line, and an approximately 2-mile-long segment of LSPGC 230 kV overhead line. Alternative 1 would not involve changes to any of the other Proposed Project components, which would have the same impacts as described throughout this Draft EIR for the Proposed Project or the other alternatives if selected in combination with Alternative 1.

The Alternative 1 substation site, 500 kV interconnection lines, and 230 kV overhead segment TSPs would not be located within the Suisun Marsh or any other recreational areas. A small portion of an Alternative 1 pull site location near Stratton Lane for the 230 kV overhead segment would be located within Suisun Marsh. Alternative 1 involves terrestrial components and none of the Alternative 1 structures are located in Delta waterways. No recreational trails are located within or adjacent to Alternative 1.

Impact Analysis – Alternative 1

Similar to the Proposed Project, Alternative 1 would not include the creation of any new recreational facilities or induce population growth such that new recreational facilities would be required to accommodate population needs. Construction workers for Alternative 1 would also be sourced from surrounding communities and any use of neighborhood or regional parks by construction workers, such as during lunch breaks, would be dispersed and temporary in nature and would not be expected to result in substantial physical deterioration of recreational facilities. Alternative 1 would not 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 (REC-1) or include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment (REC-2). The following analysis considers impacts from the Alternative 1 230 kV pulling site occurring within the Suisun Marsh, as the Alterative 1 substation, 500 kV interconnection lines, and 230 kV transmission line structures would not be located within any

recreational areas and would not prevent access to recreational facility or area, change the character of a recreational area, or damage recreational trails or facilities.

Impact REC-3: Would Alternative 1 reduce or prevent access to a designated recreation facility or area? ***(Less than significant)***

Impact REC-4: Would Alternative 1 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? ***(Less than significant)***

Impact REC-5: Would Alternative 1 damage recreational trails or facilities? ***(Less than significant)***

A portion of an Alternative 1 pull site is located within Suisun Marsh. The Alternative 1 230 kV stringing could require temporary road closures for up to a day and would temporarily locate equipment within the pull site in Suisun Marsh for approximately 1 day. Alternative 1 would not prevent access to boat launches used to enter regional or local recreational areas and facilities. No recreational trails or facilities are located within or adjacent to Alternative 1. The impact from temporary use of a pull site within Suisun Marsh would not affect waterfowl hunting, fishing, or upland game hunting opportunities and would result in less than significant impacts on the recreational character of the Suisun Marsh due to the limited area affected (approximately 0.7 acre) and approximately 1 day of use. No permanent facilities would be located within Suisun Marsh. The Alternative 1 impact on recreational access to Suisun Marsh, recreational character of Suisun Marsh, and damage to Suisun Marsh would be less than significant.

4.16.7 Alternative 2: Collinsville Substation East of Wind Energy Substations

Environmental Setting – Alternative 2

Alternative 2 involves relocating the proposed Collinsville Substation to a different site, approximately 3.0 miles north of the location proposed under the Proposed Project. Alternative 2 would also include an approximately 1,200-foot-long segment of PG&E 500 kV interconnection lines and a four-mile-long segment of LSPGC 230 kV overhead line, as well as an approximately 0.3-mile-long PG&E 12 kV distribution line. Alternative 2 would not involve changes to any of the other Proposed Project components, which would have the same impacts as described throughout this Draft EIR for the Proposed Project or the other alternatives if selected in combination with Alternative 2.

The Alternative 2 substation site, 500 kV interconnection lines, 12kV distribution line, and 230 kV overhead segment TSPs would not be located within the Suisun Marsh or any other recreational areas. A small portion of an Alternative 2 pull site location near Stratton Lane for the 230 kV overhead segment would be located within Suisun Marsh. Alternative 2 involves terrestrial components and none of the Alternative 2 structures are located in Delta waterways. No recreational trails are located within or adjacent to Alternative 2

Impact Analysis – Alternative 2

Similar to the Proposed Project, Alternative 2 would not include the creation of any new recreational facilities or induce population growth such that new recreational facilities would be required to accommodate population needs. Construction workers for Alternative 2 would also be sourced from surrounding communities and any use of a neighborhood or regional parks by construction workers, such as during lunch breaks, would be dispersed and temporary in nature and would not be expected to result in substantial physical deterioration of recreational facilities. Alternative 2 would not 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 (REC-1) or include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment (REC-2). The following analysis considers impacts from the Alternative 2 230 kV pulling site occurring within the Suisun Marsh, as the Alterative 2 substation, 500 kV interconnection lines, and 230 kV transmission line structures would not be located within any recreational areas and would not prevent access to recreational facility or area, change the character of a recreational area, or damage recreational trails or facilities.

Impact REC-3: Would Alternative 2 reduce or prevent access to a designated recreation facility or area? ***(Less than significant)***

Impact REC-4: Would Alternative 2 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? ***(Less than significant)***

Impact REC-5: Would Alternative 2 damage recreational trails or facilities? ***(Less than significant)***

A portion of an Alternative 2 pull site is located within Suisun Marsh. The Alternative 2 230 kV stringing could require temporary road closures for up to a day and would temporarily locate equipment within the pull site in Suisun Marsh for approximately 1 day. Alternative 2 would not prevent access to boat launches used to enter regional or local recreational areas and facilities. No recreational trails or facilities are located within or adjacent to Alternative 2. The impact from temporary use of a pull site within Suisun Marsh would not affect waterfowl hunting, fishing, or upland game hunting opportunities and would result in less than significant impacts on the recreational character of the Suisun Marsh due to the limited area affected (approximately 0.7 acre) and approximately 1 day of use. No permanent facilities would be located within Suisun Marsh. The Alternative 2 impact on recreational access to Suisun Marsh, recreational character of Suisun Marsh, and damage to Suisun Marsh would be less than significant.

4.16.8 Alternative 3: 500 kV Interconnection Lines on Entirely TSPs

Environmental Setting – Alternative 3

Alternative 3 involves constructing the PG&E 500 kV interconnection lines on entirely TSPs, instead of the combination of the LSTs and three-pole TSPs under the Proposed Project. The 500 kV interconnection lines would be in the same general alignment as the Proposed Project PG&E

500 kV interconnection lines. Alternative 3 would not involve changes to any of the other Proposed Project components, which would have the same impacts as described throughout this Draft EIR for the Proposed Project or the other alternatives if selected in combination with Alternative 3.

The 500 kV interconnection lines would be in the same general alignment as the Proposed Project PG&E 500 kV interconnection lines; therefore, the environmental setting for Alternative 3 is the same environmental setting discussed in Section 4.16.1.

Impact Analysis – Alternative 3

Alternative 3 involves changes to PG&E 500 kV interconnection lines structures, occurring within the same general alignment as the Proposed Project. As with the Proposed Project 500 kV interconnection lines, Alternative 3 would have no impact on physical deterioration of a recreational facility (REC-1), construction or expansion of recreational facilities (REC-2), access to recreational facilities (REC-3). The Alternative 3 impacts on recreational value of the area (REC-4) and damage to recreational facilities (REC-5) due to impacts on Suisun Marsh would be less than significant and as described PG&E project components described in Section 4.16.4. Because the TSPs would be in the same area as the Proposed Project, Alternative 3 would not result in any new impacts on recreation.

4.16.9 Alternative 4: 230 kV Overhead Segment Alternative Route

Environmental Setting – Alternative 4

Alternative 4 involves relocation of a short segment of the LSPGC 230 kV overhead segment between the proposed LSPGC Collinsville Substation and the Delta, west of the proposed LSPGC 230 kV overhead segment route. Additionally, the northern end of the LSPGC 230 kV submarine segment would be rerouted to meet up with the southern end of the Alternative 4 230 kV submarine segment. Alternative 4 would not involve changes to any of the other Proposed Project components, which would have the same impacts as described throughout this Draft EIR for the Proposed Project or the other alternatives if selected in combination with Alternative 4.

The Alternative 4 230 kV overhead segment and submarine segment would be located almost within the Suisun Marsh recreational area and the submarine Segment would be located within the Delta. No recreational trails are located within or adjacent to Alternative 4.

Impact Analysis – Alternative 4

Alternative 4, similar to the Proposed Project, would not include the creation of any new recreational facilities or induce population growth such that new recreational facilities would be required to accommodate population needs. Construction workers for Alternative 4 would also be sourced from surrounding communities and any use of neighborhood or regional parks by construction workers, such as during lunch breaks, would be dispersed and temporary in nature and would not be expected to result in substantial physical deterioration of recreational facilities. Alternative 4 would not 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 (REC-1) or include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment (REC-2). The following analysis considers impacts from the Alternative 4 230 kV overhead segment and submarine segment within Suisun Marsh and the Delta waterways.

Impact REC-3: Would Alternative 4 reduce or prevent access to a designated recreation facility or area? ***(Less than significant)***

Impact REC-4: Would Alternative 4 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? ***(Less than significant)***

Impact REC-5: Would Alternative 4 damage recreational trails or facilities? ***(Less than significant)***

Similar to the Proposed Project, Alternative 4 would have temporary construction impacts to the Suisun Marsh. Alternative 4 would not require the closure of any roads or prevent access to boat launches used to enter regional or local recreational areas and facilities. No recreational trails or facilities are located within or adjacent to Alternative 4. Additionally, Alternative 4 would result in less than significant impacts on the recreational character of the Suisun Marsh as it would not affect waterfowl hunting, fishing, or upland game hunting opportunities (Refer to Section 4.16.4).

Under Alternative 4, a small portion of the submarine segment would be relocated along the northern shore of the Delta and, similar to the Proposed Project, would fall within the Delta waterways. The submarine segment cables would be installed by identical methods to the Proposed Project and would not occur during spawning season (refer to Section 4.16.4). LSPGC would implement APM REC-1, which requires LSPGC to 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 restriction. Additionally, APM REC-1 requires LSPGC to provide a Local Notice to Mariners 15 days prior to the start of in-water construction activities. The Alternative 4 impact on recreational access to Delta, recreational character of Delta, and damage to Delta would be less than significant.

4.16.10 Alternative 5: 230 kV Submarine Segment Alternative Route

Environmental Setting – Alternative 5

Alternative 5 involves relocation of a portion of the proposed LSPGC 230 kV submarine segment to the east of its current alignment as it approaches the southern shoreline in Pittsburg. The submarine segment cable would be installed in the same manner as the Proposed Project. Alternative 5 would not involve changes to any of the other Proposed Project components, which would have the same impacts as described throughout this Draft EIR for the Proposed Project or the other alternatives if selected in combination with Alternative 5. Alternative 5 would be located within the Delta waterways.

Impact Analysis – Alternative 5

Alternative 5, similar to the Proposed Project, would not include the creation of any new recreational facilities or induce population growth such that new recreational facilities would be required to accommodate population needs. Construction workers for Alternative 5 would also be sourced from surrounding communities and any use of a neighborhood or regional parks by construction workers, such as during lunch breaks, would be dispersed and temporary in nature and would not be expected to result in substantial physical deterioration of recreational facilities. No recreational trails or facilities are located within or adjacent to Alternative 5. Alternative 4 would not 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 (REC-1) or include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment (REC-2).

Impact REC-3: Would Alternative 5 reduce or prevent access to a designated recreation facility or area? ***(Less than significant)***

Impact REC-4: Would Alternative 5 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? ***(Less than significant)***

Impact REC-5: Would Alternative 5 damage recreational trails or facilities? ***(Less than significant)***

Alternative 5 would require installation of the submarine cables using the same methods as the Proposed Project. Alternative 5 submarine segment would be located within Delta waterways similar to the Proposed Project and the impacts on recreational activities would be similar to the Proposed Project submarine segment as described in Section 4.16.4. Alternative 5 would temporarily impact recreational access to the Delta to the same extent as the Proposed Project submarine segment during construction and cable repair activities. Similar to the Proposed Project, LSPGC would implement APM REC-1, which requires LSPGC to 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 restriction. Additionally, APM REC-1 requires LSPGC to provide a Local Notice to Mariners 15 days prior to the start of in-water construction activities. LSPGC would also conduct the work within the approved regulatory work windows. The Alternative 5 submarine cable would be buried beneath the Delta sediments similar to the Proposed Project. Alternative 5 is located within a ridgeline area where more extensive site preparation would be required, which would prolong the duration of in water work. In addition, the frequency of Alternative 5 maintenance activities is anticipated to be greater than the Proposed Project due to the increased potential for scour over the life of the facilities. While Alternative 5 would extend the duration of in-water work by 2 weeks, the area of impact would be the same as the Proposed Project submarine cables and the overall impact on recreational access, recreational character, and the recreational area would be less than significant.

4.16.11 Alternative 6a/6b: Underground Portions of the 230 kV Transmission Line within Suisun Marsh Protection Plan Management

Environmental Setting – Alternative 6a/6b

Alternative 6a/6b would locate the LSPGC 230 kV transmission line on primarily PG&E-owned property south of the proposed LSPGC Collinsville Substation site (similar to Alternative 4). Alternative 6a/6b would be installed in conduit underground. Alternative 6a differs from Alternative 6b only at the northern end of the segment where options are provided for connection to the Proposed Project Collinsville Substation or Alternatives 1 or 2. Two overhead riser structures would be installed at the northern end of the Alternative 6a/6b underground duct bank where the LSPGC 230 kV line would transition between an overhead and underground position. Alternative 6a/6b would not involve changes to any of the other Proposed Project components, which would have the same impacts as described throughout this Draft EIR for the Proposed Project or the other alternatives if selected in combination with Alternative 6a/6b.

Alternative 6a/6b would involve installing portions of the LSPGC 230 kV transmission line in an underground position on land within the Suisun Marsh Protection Plan Management Areas. The location of Alternative 6a/6b would neighbor the nonurbanized Community of Collinsville area, similar to the 230 kV overhead segment described for the Proposed Project and Alternative 4. No recreational trails are located within or adjacent to Alternative 6a/6b.

Impact Analysis – Alternative 6a/6b

Alternative 6a/6b, similar to the Proposed Project, would not include the creation of any new recreational facilities or induce population growth such that new recreational facilities would be required to accommodate population needs. Construction workers for Alternative 6a/6b would also be sourced from surrounding communities and any use of neighborhood or regional parks by construction workers, such as during lunch breaks, would be dispersed and temporary in nature and would not be expected to result in substantial physical deterioration of recreational facilities. Alternative 6a/6b would not 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 (REC-1) or include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment (REC-2). The following analysis considers impacts from the Alternative 6a/6b 230 kV overhead segment and submarine segment within Suisun Marsh and the Delta waterways.

Impact REC-3: Would Alternative 6a/6b reduce or prevent access to a designated recreation facility or area? ***(Less than significant)***

Impact REC-4: Would Alternative 6a/6b 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? ***(Less than significant)***

Impact REC-5: Would Alternative 6a/6b damage recreational trails or facilities? ***(Less than significant)***

Similar to the Proposed Project, Alternative 6a/6b would have temporary construction impacts to the Suisun Marsh. Alternative 6a/6b would not require the closure of any roads or prevent access to boat launches used to enter regional or local recreational areas and facilities.

Alternative 6a/6b would involve installing portions of the 230 kV transmission line in an underground position on land within the Suisun Marsh Protection Plan Management Areas, however Alternative 6a/6b would result in less than significant impacts on the recreational character of the Suisun Marsh as it would not affect waterfowl hunting, fishing, or upland game hunting opportunities (Refer to Section 4.16.4). Additionally, under Alternative 6a/6b, a portion of the submarine segment would be relocated along the northern shore of the Delta, similar to the Proposed Project, and would fall within the Delta waterways. The submarine segment cables would be installed by identical methods to the Proposed Project and would not occur during spawning season (refer to Section 4.16.4). LSPGC would implement APM REC-1, which requires LSPGC to 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 restriction. Additionally, APM REC-1 requires LSPGC to provide a Local Notice to Mariners 15 days prior to the start of in-water construction activities. The Alternative 6a/6b impact on recreational access to Delta, recreational character of Delta, and damage to Delta would be less than significant.

4.16.12 No Project Alternative

Environmental Setting – No Project Alternative

Under the No Project Alternative, the LSPGC Collinsville Substation and associated LSPGC 230 kV transmission line, PG&E 500 kV interconnection lines, and PG&E 12 kV distribution line would not be constructed. The existing parks and recreational facility conditions described in Section 4.16.1 would apply to the No Project Alternative.

Impact Analysis – No Project Alternative

The No Project Alternative would not have the potential to cause physical deterioration to a recreational facility (Impact REC-1), nor would there be construction or expansion of recreational facilities (Impact REC-2), change in access to recreational facilities (Impact REC-3), change in the character of a recreational facility (Impact REC-4), or damage to a recreational trail or facility (Impact REC-5). No impact on recreational facilities would occur under the No Project Alternative.

4.16.13 Mitigation Measures

LSPGC Mitigation Measures

No mitigation is required.

PG&E Mitigation Measures

No mitigation is required.

4.16.14 References

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4.17 Transportation

This section presents the environmental setting and analysis of impacts on transportation resulting from the Proposed Project and alternatives. This section describes existing transportation information, applicable regulations, and environmental impacts and provides mitigation measures to reduce or avoid significant effects for the Proposed Project and alternatives, where feasible.

The following scoping comments are relevant to the analysis of transportation as discussed in the Scoping Report (Appendix B):

- The EIR should analyze impacts to the state right-of-way resulting from project-related temporary access points and identify appropriate mitigation relevant to transportation and noise, if necessary.
- The EIR should address navigation impacts in coordination with the California State Lands Commission (CSLC) and United States Army Corps of Engineers (USACE), ensuring all appropriate permits/approvals are obtained.
- Caltrans provides resources to be used for transportation impact analysis.

The relevant scoping comments applicable to the transportation impact criteria have been addressed in this section. Potential impacts related to transportation noise are addressed in Section 4.13: Noise.

4.17.1 Environmental Setting

The environmental setting for transportation includes descriptions of the existing roadway, bicycle, pedestrian, transit, railroad, air, and water facilities in and connected to the Proposed Project area. The transportation study area extends beyond the Proposed Project area and includes federal, state, county, and local roadways and other transportation facilities (e.g., railroads, marinas and navigable water channels, and airports and airspace) that could be affected by the Proposed Project.

Roadway System

The Proposed Project area encompasses a network of state, county, and city roadways. The United States Department of Transportation (USDOT) Federal Highway Administration (FHWA) classifies urban and rural roadways by road function. Each functional class is based on the type of service the road provides to the motoring public, and the designation is used for data and planning purposes. Design standards are tied to functional class. Each class has a range of characteristics, such as allowable lane widths, shoulder widths, and speed limits (FHWA 2023). The definition of the main roadway functional classes is provided below.

Interstate Highways

Interstate Highways, also referred to as *interstates,* are the highest classification of arterials and were designed and constructed with mobility and long-distance travel in mind. Roadways in

this functional classification category are officially designated as Interstates by the Secretary of Transportation, and all routes that comprise the Dwight D. Eisenhower National System of Interstate and Defense Highways belong to the Interstate functional classification category and are considered Principal Arterials.

Freeways and Expressways
Roadways in this functional classification category look very similar to interstates. While there can be regional differences in the use of the terms *freeway* and *expressway*, for the purpose of functional classification, the roads in this classification have directional travel lanes, they are usually separated by some type of physical barrier, and their access and egress points are limited to on- and off-ramp locations or a very limited number of at-grade intersections. Like interstates, these roadways are designed and constructed to maximize their mobility function, and abutting land uses are not directly served by them.

Principal Arterials
These roadways serve major centers of metropolitan areas and provide a high degree of regional mobility as well as access to rural areas. Abutting land uses can be directly served by principal arterials via driveways to specific parcels and at-grade intersections with other roadways. Urban areas may have multiple principal arterials that radiate out from the urban center to serve the surrounding region while a rural area may be served by a single arterial.

Minor Arterials
Minor arterials provide service for trips of moderate length, serve geographic areas that are smaller than their higher arterial counterparts, and offer connectivity to the higher arterial system. In an urban context, these roadways interconnect and augment the higher arterial system, provide intra-community continuity, and may carry local bus routes. Minor arterials in rural areas are typically designed to provide relatively high overall travel speeds, with minimum interference to through movement.

Collectors
Collectors are major and minor roads that connect local roads and streets with arterials. Collectors provide less mobility than arterials at lower speeds and for shorter distances. They balance mobility with land access. The posted speed limit on collectors is usually between 35 and 55 miles per hour (mph).

Local Roads
Local roads provide limited mobility providing primary access to residential areas, businesses, farms, and other local areas. They are not intended for use in long-distance travel, except at the origin or destination end of the trip. Local roads, with posted speed limits usually between 20 and 45 mph, account for the largest percentage of all roadways in terms of mileage in the U.S.

Level of Service
Level of Service (LOS) is used to rank traffic operation on various types of facilities based on traffic volumes and roadway capacity using a series of letter designations ranging from A to F. Generally, LOS A represents free flow conditions and LOS F represents forced flow or

breakdown conditions. A unit of measure that indicates a level of delay generally accompanies the LOS designation. As explained below in Section 4.17.2: Regulatory Setting, "SB 743," transportation analyses under the CEQA formerly focused on reductions in LOS but no longer do.

Regional Highway Network

The regional circulation system in the vicinity of the Proposed Project site is comprised of interstate highways, state highways, and county and local and private roadways in Solano, Contra Costa, Alameda, and Sacramento[1] counties, and the City of Pittsburg (see Figure 4.17-1). Interstate and state highways in proximity to the Proposed Project site include Interstate 80 (I-80), Interstate 680 (I-680), Interstate 580 (I-580), Interstate (I-5), State Route 12 (SR 12), State Route 4 (SR 4), and State Route 160 (SR 160). Table 4.17-1 lists the 2023 *annual average daily traffic* (AADT) volumes for interstate and state highways that would be used to access the work areas/staging areas associated with each of the Proposed Project components. This is the most current published data as of 2025.

Table 4.17-1 Existing Traffic Volumes on Regional Interstates and Highways (2023)

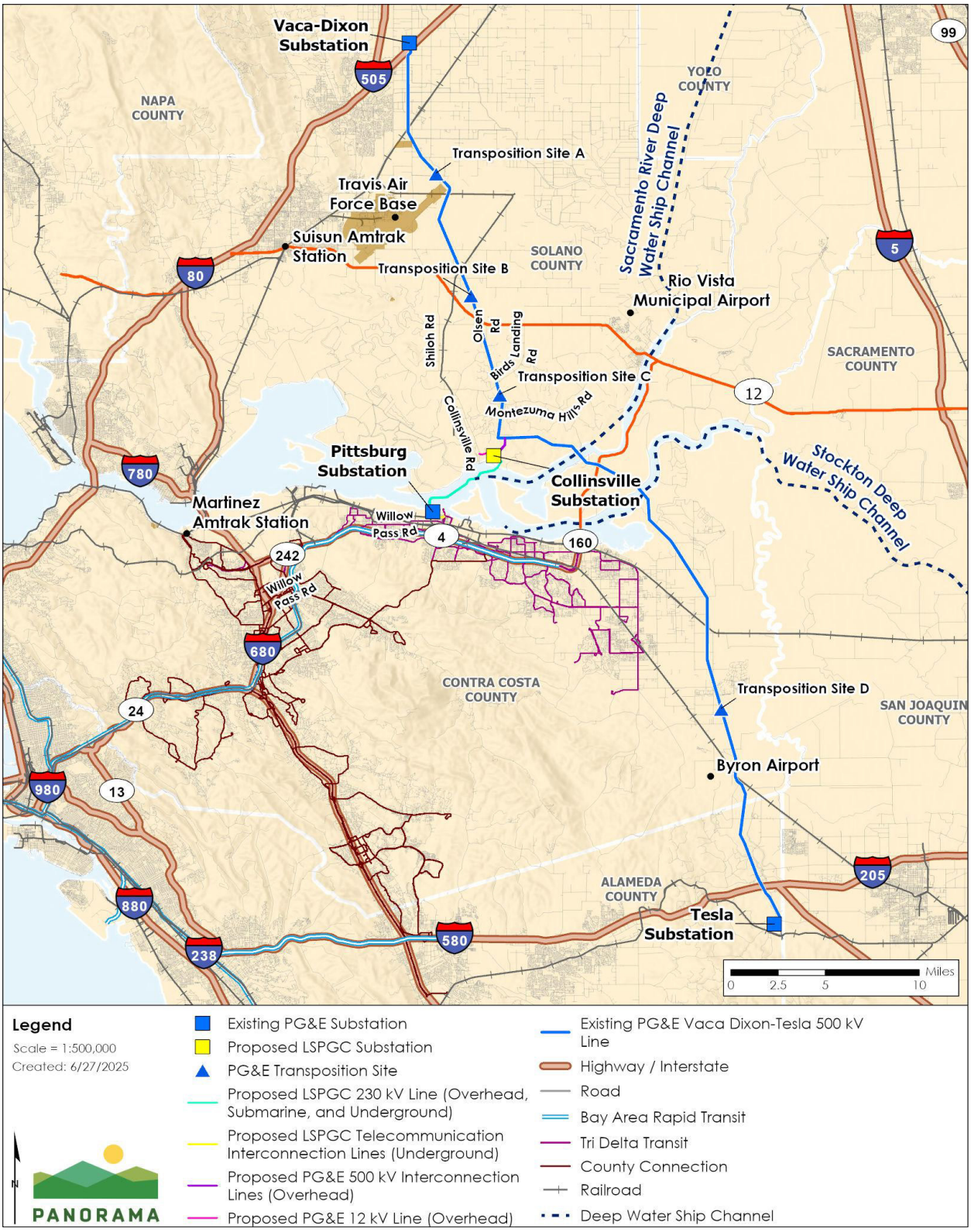
Roadway	Jurisdiction (Location)	Roadway classification	Traffic volume (AADT)
SR 12	Solano County (Route 113)	Highway	17,700
I-80	Solano County (Route 12 junction)	Interstate	206,000
I-680	Solano County (Route 4 junction)	Interstate	139,000
I-5	Sacramento County/Yolo County Line	Interstate	59,000
SR 4	Contra Costa County; City of Pittsburg	Freeway	161,000
SR 160	Contra Costa County (18th Street/Main Street)	Highway	40,500

Source: (Caltrans 2023d)

I-5, I-80, and I-680 are major north-south regional transportation interstate highways. I-580 is a major east-west regional transportation interstate highway. I-80 and SR 12 are the major regional transportation corridors in the Proposed Project area. I-80 carries a sizeable amount of through traffic between the core of the San Francisco Bay Area and the Sacramento region and runs southwest to northeast in Solano County, connecting the three largest cities in the county—Vallejo, Fairfield, and Vacaville—as well as Dixon. I-80 generally has 6 to 10 lanes at various points within Solano County and is accessed by a series of freeway interchanges. The I-80/SR 12 interchange is located approximately 16 miles northwest of the Proposed Project Components near the community of Collinsville. I-80 provides access to the PG&E Vaca-Dixon Substation (less than one-half mile west of the I-80/N. Meridian Road interchange) and PG&E 500 kV

[1] There are no land-based Proposed Project components within Sacramento County.

Figure 4.17-1 Regional Transportation Network in the Vicinity of the Proposed Project Components



Source: (Bay Area Rapid Transit, n.d.; Caltrans, n.d.; Amtrak, n.d.; ArcGIS, n.d.; City of Pittsburg, n.d.-b)

transposition sites A, B and C (approximately 12 miles east of I-80 via the I-80/SR 12 and I-80/ N. Meridian Road interchanges).

I-680 is located approximately 10 miles west of the Proposed Project site in the City of Pittsburg. I-580 provides access to PG&E 500 kV transposition site D approximately 10 miles north of the I-580/Vasco Road interchange and the PG&E Tesla Substation approximately 2 miles west of the I-580/West Patterson Pass Road interchanges, respectively. These highways vary in width and number of lanes depending on the area and have posted speed limits of 65 mph.

I-80 intersects with SR 12 near the City of Fairfield approximately 16 miles northwest of the Proposed Project components near the community of Collinsville. SR 12 is designated by the Solano Transit Authority (STA) as a Route of Regional Significance and is the major east-west corridor through Solano County. It functions as a four-lane expressway from its junction with I-80 west of Suisun City to Walters Road. From Walters Road to the City of Rio Vista, SR 12 narrows to a two-lane rural major arterial. Caltrans operates SR 12 as a state highway. SR 12 would be the primary regional route to the work areas/staging areas for the Proposed Project components in the northern part of Solano County and the southern part of Solano County.

I-680 intersects with SR 4 near the City of Martinez, approximately 10 miles west of the City of Pittsburg. Both I-680 and SR 4 provide access to the PG&E Pittsburg Substation and the proposed alignments for the LSPGC 230 kV transmission line and telecommunication interconnection lines. SR 4 is defined as a Route of Regional Significance in the Contra Costa Transportation Authority's East County Action Plan for Routes of Regional Significance. SR 4 has four travel lanes in each direction and is a major east-west regional route in Contra Costa County. It would be the primary regional route to the work areas/staging areas for the Proposed Project components in the City of Pittsburg.

Table 4.17-2 contains the 2022 traffic volumes associated with portions of SR 12 in Solano County and SR 4 in Contra Costa County that would be used to access the work areas/staging areas for the Proposed Project components. 2022 data is the most recent data available.

Table 4.17-2 Existing Traffic Volumes on State Route 12, State Route 4, and State Route 113 (2022)

Intersection	Average daily trips	Peak hour trips
SR 12 west of SR 113 (Birds Landing Road)	17,000	1,950
SR 12 in Rio Vista east of SR 113	20,900	3,050
SR 113 (Birds Landing Road) at SR 12	4,650	510
SR 4 at San Marco Boulevard in western half of the City of Pittsburg	152,000	11,200
SR 4 at Railroad Avenue in the center of the City of Pittsburg	160,000	11,400
SR 4 at Hillcrest Avenue west of the City of Pittsburg toward SR 160	117,000	9,400

Source: (Caltrans 2024)

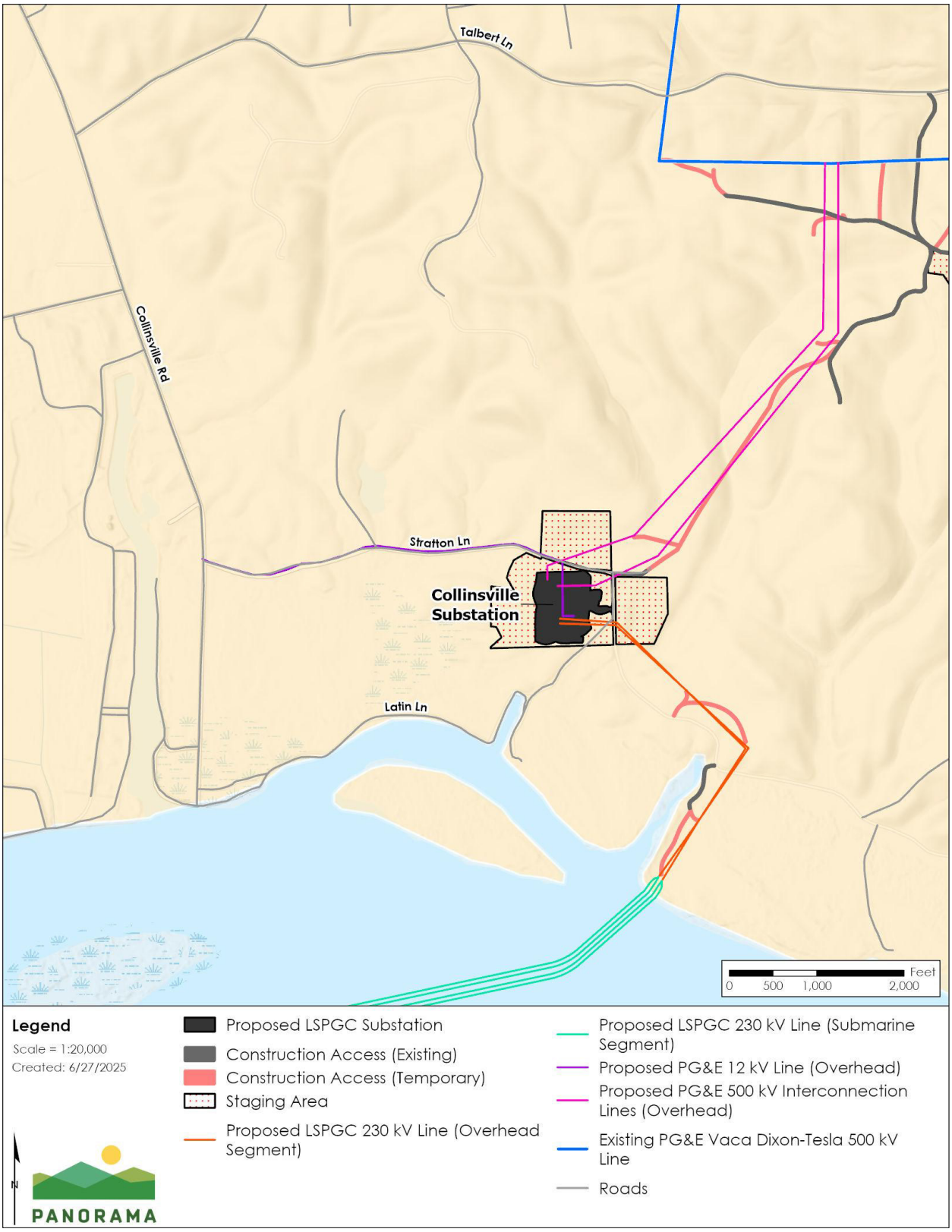
Local Roadway Network

Local roadways that would provide access to the Proposed Project site during construction and operation and maintenance of the Proposed Project are listed in Table 4.17-3. Estimated traffic volumes for local roadways are provided in Table 4.17-4. Local roadways are shown on Figure 4.17-2 (Collinsville), on Figure 4.17-3 and Figure 4.17-4 (City of Pittsburg), and in Appendix A: Detailed Route Maps.

Table 4.17-3 Local Roads Providing Access to Proposed Project Components

Project Component	Local roads	Detailed route maps
PG&E Vaca-Dixon Substation	N. Meridian Road from Weber Road exit at I-80	Map 16
PG&E transposition site A	Box R Ranch Road, Hay Road, Lewis Road from Weber Road exit at I-80	Map 17
PG&E transposition site B	Mauds Lane from SR 12	Map 18
PG&E transposition site C	Montezuma Hills Road and Birds Landing Road from SR 12	Map 19
LSPGC Collinsville Substation and 230 kV transmission line overhead and submarine segments, and the PG&E 12 kV distribution line and telecommunication yard	Stratton Lane from SR 12 via Birds Landing Road and Collinsville Road	Maps 4 through 9
PG&E 500 kV interconnection lines	Talbert Lane from SR 12 via Birds Landing Road, Collinsville Road, and Stratton Lane	Maps 13 through 15
LSPGC 230 kV transmission line underground and submarine segments and PG&E Pittsburg Substation	Willow Road and Railroad Avenue from SR 4	Maps 13 through 15
LSPGC telecommunication interconnection lines	Marina Boulevard, Herb White Way, Halsey Way, Halsey Court accessed from Willow Road or Railroad Avenue exits at SR 4	Maps 13 through 15
PG&E transposition site D	Kellogg Creek Road and Byron Highway from SR 4	Map 20
PG&E Tesla Substation	Patterson Pass Road and Midway Road from I-580	Map 21

Figure 4.17-2 Local Transportation Network – Collinsville, Solano County



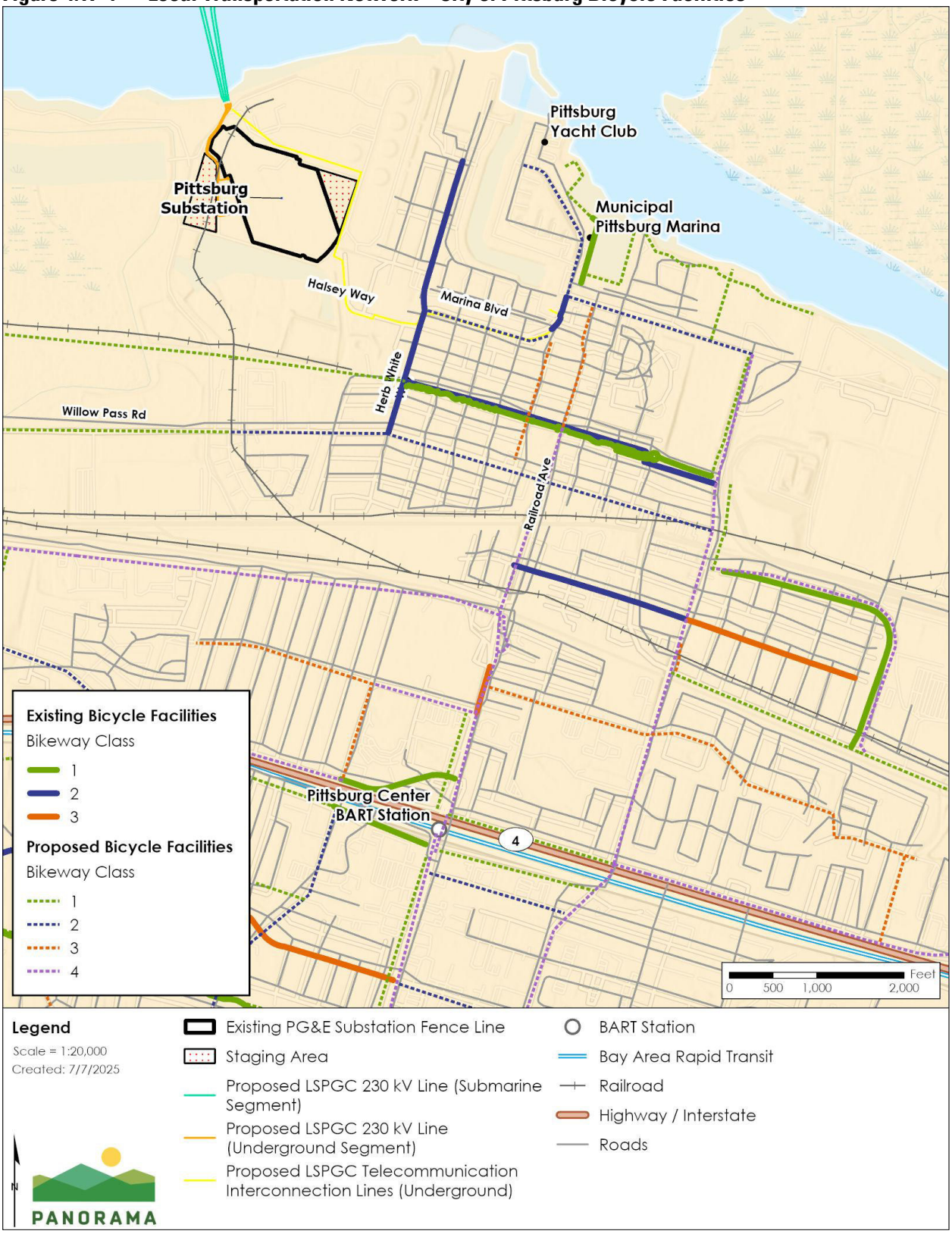
Source: (U.S. Census Bureau, n.d.)

Figure 4.17-3 Local Transportation Network – City of Pittsburg Transit and Truck Routes



Source: (City of Pittsburg 2025e; n.d.-b; Caltrans, n.d.; Bay Area Rapid Transit, n.d.)

Figure 4.17-4 Local Transportation Network – City of Pittsburg Bicycle Facilities



Source: (City of Pittsburg, n.d.; n.d.-a; Bay Area Rapid Transit, n.d.)

Table 4.17-4 Estimated Traffic Volumes on Public Access Roadways (2022)

Roadway	Classification	Number of lanes	Jurisdiction	Estimated traffic volumes [a]
SR 113 (Birds Landing Road) at SR 12	Arterial: (north of SR 12) collector: (south of SR 12)	2	Solano County	See Table 4.17-2.
Shiloh Road	Collector	2	Solano County	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
Olsen Road	Local	2	Solano County	INA
Willow Pass Road/West 10th Avenue	Major arterial	2	City of Pittsburg	15,000–55,000 VPD
Willow Pass Road	Major arterial	4	City of Pittsburg	15,000–55,000 VPD
Railroad Avenue	Major arterial	2-4	City of Pittsburg	15,000–55,000 VPD
Marina Boulevard	Collector	2	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

Notes:

[a] Information not available (INA); vehicles per day (VPD)

Source: (Caltrans 2024; City of Pittsburg 2024, tbl. 7)

The Proposed Project sites in Solano County south of SR 12 are in a rural area approximately 0.5-mile northeast of the community of Collinsville. The Proposed Project sites north of SR 12 are also in a rural area of Solano County.

In Solano County the local circulation system in the vicinity of the Proposed Project sites is primarily composed of maintained, one- and two-lane roadways with no posted speed limits. Existing paved roads are typically maintained by the counties or cities while unpaved roads are typically on private lands within existing undeveloped areas or areas developed with Sacramento Municipal Utility District (SMUD) wind farms or PG&E's existing transmission infrastructure. Local roads that serve the community of Collinsville and provide access to the work areas/staging areas for the Proposed Project are limited. Stratton Lane is an east-west public road with no posted speed limit. It is located immediately north of the proposed LSPGC Collinsville Substation site. Latin Lane is another east-west public road with no posted speed limit. It is located along the north shore of the Delta south of the proposed LSPGC Collinsville Substation site. The paved and unpaved roads in the immediate vicinity of each

portion of the Proposed Project site would be used during construction and operations and maintenance (O&M).

Most of the Proposed Project sites within Contra Costa County are in a developed area within the City of Pittsburg. The proposed PG&E transposition site D and the existing PG&E Tesla Substation are in rural areas in southeastern Contra Costa County and northeastern Alameda County, respectively.

The local circulation system near the Proposed Project sites in the City of Pittsburg is a mix of urban roadways. Existing roads in the City of Pittsburg range from two- to four-lane major arterials such as Railroad Avenue,[2] Willow Pass Road, and West 10th Street to two-lane residential streets such as Halsey Way: all with posted speed limits. Railroad Avenue (via West 10th Street) and Willow Pass Road would be the primary access roads for the work areas/staging areas in the City of Pittsburg. Railroad Avenue and San Marco Boulevard exits off SR 4 are to the east and west of the Proposed Project sites in the City of Pittsburg, respectively. The primary access roads for PG&E transposition site D and the PG&E Tesla Substation work areas/staging areas in Contra Costa and Alameda counties are maintained, one- and two-lane roadways such as Vasco Road, Camino Diablo, Byron Highway, Kellogg Creek Road, Midway Road and Patterson Pass Road with access from I-580 interchanges at Vasco Road and Patterson Pass Road.

The LSPGC 230 kV transmission line submarine segment alignment is located in the Sacramento-San Joaquin Delta, which spans several counties, including Sacramento, Solano, and Contra Costa counties, with the northern approach located in Solano County and the southern approach located in the City of Pittsburg in Contra Costa County. Construction traffic associated with this LSPGC project component would use the roadway network described above to access the work areas/staging areas on the north and south shores of the Delta at the northern approach and southern approach as well as marinas where barges, tugboats, and other watercraft associated with the installation of the submarine cable would be launched.

Vehicle Miles Traveled

In accordance with Senate Bill (SB) 743, 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 4.17-5 lists the average daily VMT in Solano County and Contra Costa County in 2022.

[2] Railroad Avenue connects the cities of Walnut Creek and Clayton and is defined as a Route of Regional Significance in the CCTA's East County Action Plan for Routes of Regional Significance.

Table 4.17-5 Average Daily Vehicle Miles Traveled

Jurisdiction	Rural average daily VMT in 2022	Urbanized average daily VMT in 2022	Total average daily VMT in 2022
Solano County	3,271.08	10,403.41	13,674.49
Contra Costa County	951.42	21,141.95	22,093.37

Source: (Caltrans 2023)

Public Transit

Solano County

There are no public transit systems in Solano County that serve the Proposed Project sites.

Contra Costa County

Tri Delta Transit

The Eastern Contra Costa County Transit Authority (ECCTA) operates Tri Delta Transit. Tri Delta Transit serves Pittsburg, Antioch, Oakley, Brentwood, and the unincorporated areas of east Contra Costa County, including Bay Point. Within the City of Pittsburg, Tri Delta Transit operates 12 bus routes. Tri Delta Transit operates 15 local "weekday" and six "weekends and holiday" buses (Tri Delta Transit 2025a). Route 387 provides broader weekday service between 4:45 a.m. and 10:15 p.m. from the Antioch BART station to the Pittsburg-Bay Point BART station, with stops along Willow Pass Road, West 10th Street, and Black Diamond Street within one half mile of the PG&E Pittsburg Substation and LSPGC telecommunication interconnection lines(Tri Delta Transit 2025b). Route 381 provides service from the Pittsburg Marina on Marina Boulevard to Los Medanos College at East Leland Road and Lakeview Circle, via Railroad Avenue with stops along Railroad Avenue. Route 381 operates every 30 minutes on weekdays between 7:00 AM and 6:30 p.m. and every hour on weekends between 7:30 a.m. and 11:00 p.m. (Tri Delta Transit 2025c).

County Connection

The Central Contra Costa Transit Authority (CCCTA) operates County Connection buses. The 93x Kirker Pass Express is the only bus line that operates in the City of Pittsburg. It is approximately three miles south of the existing PG&E Pittsburg Substation and provides service on Kirker Pass Road and Buchanan Road between Walnut Creek BART and Antioch BART. Service hours are from 5:00 AM to 8:00 AM and from 4:00 PM to 8:00 PM on weekdays only (County Connection 2025).

San Francisco Bay Area Rapid Transit District

The San Francisco Bay Area Rapid Transit District (BART) is a heavy-rail public transit system that connects the San Francisco Peninsula with communities in the East Bay and South Bay. BART service currently extends as far as Millbrae, Richmond, Antioch, Dublin/Pleasanton, and Berryessa/North San José. BART operates in five counties (San Francisco, San Mateo, Alameda, Contra Costa, and Santa Clara) with 131 miles of track and 50 stations. There are two BART stations in Pittsburg: the Pittsburg/Bay Point Station and the Pittsburg Center Station. The

closest BART station is the Pittsburg Center BART Station located at the Railroad Avenue overcrossing of SR 4 within 2 miles of the work areas/staging areas associated with the PG&E Pittsburg Substation and the alignments for the LSPGC 230 kV transmission line and telecommunication interconnection lines.

Bicycle Facilities

There are four types of bicycle facilities identified in the California Highway Design Manual; Bike paths (class I), bike lanes (class II), bike routes (class III) and cycle tracks (class IV) (Caltrans 2020). Class I bicycle facilities, also termed shared-use or multi-use paths, are paved right-of-way for exclusive use by bicyclists, pedestrians and those using non-motorized modes of travel. Class I bicycle facilities are physically separated from vehicular traffic and can be constructed in roadway right-of-way or exclusive right-of-way. Class I bicycle facilities provide critical connections where roadways are absent or are not conducive to bicycle travel. Class II bicycle facilities are defined by pavement striping and signage used to allocate a portion of a roadway for exclusive or preferential bicycle travel. Class II bicycle facilities are one-way facilities on either side of a roadway. Whenever possible, class II bicycle facilities should be enhanced with treatments that improve safety and connectivity by addressing site-specific issues, such as additional warning or wayfinding signage. Class III bicycle facilities provide shared use with motor vehicle traffic within the same travel lane. Designated by signs, class III bicycle facilities provide continuity to other bike facilities or designate preferred routes through corridors with high demand. Whenever possible, class III bicycle facilities should be enhanced with treatments that improve safety and connectivity, such as the use of "sharrows," or shared lane markings to delineate that the road is a shared-use facility. Class IV bicycle facilities, also referred to as protected bikeways, are exclusive bike facilities that combine the user experience of a separated path with the on-street infrastructure of a conventional bike lane. A class IV bicycle facility is physically separated from motor traffic and distinct from the sidewalk.

There are no existing state, regional, or county-designated bicycle facilities near the Proposed Project site in Solano County. The closest bicycle facilities are the Central County Bikeway and Grizzly Island Trail in Suisun City which are class I bicycle facilities that generally run east–west on the north and south side of SR 12, respectively, about 16 miles northwest of the Proposed Project site near the community of Collinsville. The Central County Bikeway generally runs from the Fairfield/Suisun Amtrak station to the intersection of Peterson Road/Walter Road and then continues as a class IV bikeway on the north side of Peterson Road. Grizzly Island Trail generally runs from Marina Boulevard to Sunset Avenue. Approximately 7 miles north of the Proposed Project components near the community of Collinsville SR 12 at the SR 113/Birds Landing Road roundabout includes pavement marking for share bicycle use but no other bicycle facilities. The Solano Countywide Active Transportation Plan proposes class III bicycle facilities on SR 113/Birds Landing Road from the SR 12 intersection north to Hawkins Road and a feasibility study for a class II or class III bicycle facilities on SR 12 from Rio Vista to Walters Road (STA 2020). The Proposed Project components in Solano County would be accessed via local roads such as Collinsville Road, Stratton Lane, Montezuma Hills Roads, and Talbot Lane as well as private roadways which do not have bicycle facilities.

Existing bicycle facilities near the Proposed Project components in the City of Pittsburg include class II bicycle facilities along Willow Pass Road, West 10th Street, West 8th Street, Herb White Way, Bay Side Drive, and Marina Boulevard with class I bicycle facilities along West 8th Street between Herb White Way and Harbor Street and along Marina Boulevard north of East 5th Street. Along Railroad Avenue class II bicycle facilities are present south of East 10th Street and north of Civic Avenue. The Pittsburg Moves Active Transportation Plan proposes class II bicycle facilities on East 3rd Street (City of Pittsburg 2020). The Proposed Project site in the City of Pittsburg would be accessed via SR 4 at San Marco Boulevard and Railroad Avenue and local roads such as Willow Pass Road, West 10th Avenue, and Herb White Way which have bicycle facilities.

There are no existing state, regional, or county designated bicycle facilities near the Proposed Project components in southeastern Contra Costa County and northeastern Alameda County near PG&E transposition site D and the PG&E Tesla Substation, respectively.

Pedestrian Facilities

There are no existing state, regional, or county designated trail facilities near the Proposed Project components in Solano, Contra Costa, and Alameda counties and the City of Pittsburg. Pedestrian facilities such as sidewalks near the Proposed Project components in Solano County are limited to SR 12 in the City of Rio Vista.

The proposed LSPGC Collinsville Substation would be accessed via Stratton Lane and other private roadways which do not have sidewalks. There are no public sidewalks within the existing PG&E Vaca-Dixon, Tesla, or Pittsburg substations as access is restricted to authorized personnel. However, a network of residential sidewalks exists in the City of Pittsburg adjacent to the PG&E Pittsburg substation and along the alignment for the proposed LSPGC telecommunication interconnection lines, including along Marina Boulevard, Herb White Way, Halsey Way, and Halsey Court.

Rail

Railroad activity in Solano County consists of freight and passenger operations. Solano County has two major rail lines, each with several spurs that run through the major population centers of the county. One originates in the southwest corner of the City of Vallejo, and one crosses into Solano County over the George Miller Jr. Memorial Bridge in Benicia. The nearest freight and passenger rail lines to the Proposed Project components in Solano County are approximately 16 miles northwest of the Proposed Project components near the community of Collinsville.

The Union Pacific Railroad operates the rail lines which extend from the southwest portion to the northern portion of Solano County. These two lines meet in Suisun City and continue to Sacramento as one line. The Union Pacific Railroad carries substantial amounts of freight traffic through Solano County to connect West Coast ports and inland markets. This requires the operation of frequent and long freight trains.

The Capitol Corridor Amtrak line runs from the City of Sacramento to the City of Davis and then to Suisun City/Fairfield. The closest stations are in Suisun City near I-80 and the City of

Martinez near I-680 on the south side of the Delta about 10 miles west of the existing PG&E Pittsburg Substation. Capitol Corridor/Amtrak trains pass through Suisun City on a regular weekly schedule with 12 trains operating daily.

The nearest rail line to the Proposed Project components near the community of Collinsville crosses SR 12 west of Mauds Lane. After crossing SR 12, 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. The Western Railway Museum at SR 12 and Mauds Lane (Rio Vista Junction) owns 21 miles of track that were formerly part of the Sacramento Northern main line. The museum has restored electrification to approximately 5.5 miles of track and offers 11-mile round trip excursions using a variety of regional interurban railway cars.

The Burlington Northern & Santa Fe (BNSF) railroad is located approximately 1 mile south of the existing PG&E Pittsburg Substation in Contra Costa County.

Air Traffic

Helicopter use is anticipated to support the construction of Proposed Project components including the PG&E 500 kV interconnection lines and PG&E transposition site C, and PG&E transposition site D. As shown in Table 4.17-6, Rio Vista Municipal Airport and the Travis Air Force Base are located within 12 miles of the Proposed Project components in Solano County, and Byron Airport and Stockton Metropolitan Airport are located within 20 miles of the Proposed Project components in Contra Costa County (U.S. Department of Transportation 2025b). The Rio Vista Airport is a general aviation airport with two runways and one helipad covering 273 acres in unincorporated Solano County about 3 miles northwest of the City of Rio Vista. Travis Air Force Base hosts the 60th Air Mobility Wing, encompasses 6,260 acres and provides three runways. Byron Airport is a general aviation airport with two runways covering approximately 1,300 acres in unincorporated southeastern Contra Costa County about 3 miles south of the town of Byron. The Proposed Project components in Solano County are within the airport influence area of the Travis AFB.

Table 4.17-6 Existing Airports

Airport Name	Location	Distance from Proposed Project Components (miles)
Travis Air Force Base	Solano County	12 miles northwest of LSPGC Collinsville Substation
Rio Vista Airport	Solano County	10 miles northeast of LSPGC Collinsville Substation
Byron Airport	Contra Costa County	3.5 miles southwest of PG&E transposition site D
Stockton Metropolitan Airport	San Joaquin County	20 miles east of PG&E transposition site D

Water Transportation

USACE maintains two navigational channels in the Delta that would be crossed by the proposed 4.5-mile LSPGC 230 kV transmission line submarine segment—the San Joaquin Ship

Channel and the Sacramento Deep Water Ship Channel. These navigational channels are maintained at depths of 30 and 35 feet, respectively, with existing channel depths at a range between 35 and 90 feet at the proposed crossing locations. The proposed LSPGC 230 kV transmission line submarine segment would be located on lands owned by the state, the City of Pittsburg, and a private landowner. The right-of-way along the proposed submarine segment would typically range between 170 to 700 feet to accommodate up to four cables typically spaced approximately 50 to 90 feet apart; however, the final right-of-way width may vary in locations and will not be determined until final engineering is complete.

Marinas

Various marinas for public use and private boating tours are located throughout the Delta, including the privately-owned Arrowhead Harbor (Prospect Island), Snug Harbor Resort (Ryer Island), and the Delta Marina (Rio Vista). The California Division of Boating and Waterways (DBW) Sacramento-San Joaquin Delta Boating Needs Assessment projected that boating activities would total more than 8 million visitor days annually by 2020 (California State Parks Division of Boating and Waterways 2002). The privately owned Pittsburg Yacht Club and the municipal Pittsburg Marina are located approximately 0.5 mile and 0.7 mile, respectively, southeast of the southern terminus of the proposed LSPGC 230 kV transmission line submarine segment.

Vessel Traffic and Ferries

The nearest designated ferry route is operated by Vallejo Baylink Ferry and is located at the Vallejo Terminal in the City of Vallejo approximately 19 miles west of the Proposed Project site near the community of Collinsville. There are no ferry routes within the vicinity of the proposed northern launch point for the submarine segment, the submarine segment, or the southern terminus for the submarine segment of the LSPGC 230 kV transmission line.

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. The Alameda County Office of Disaster Preparedness and Emergency Management (DPEM) is responsible for developing, maintaining, and distributing the Alameda County Emergency Operations Plan and for coordinating the response to large-scale incidents and disasters.

Roadways that would be utilized during a potential evacuation in the vicinity of the Proposed Project components in Solano County include, but are not limited to, Collinsville Road, SR 113/Birds Landing Road, SR 12, SR 160, I-80, I-680, and I-5. Roadways that would be utilized during a potential evacuation in the vicinity of the Proposed Project components in the City of Pittsburg and eastern Contra Costa and Alameda counties include Railroad Avenue, Willow

Pass Road, Midway Road, Patterson Pass Road, Byron Highway, Kellogg Creek Road, SR 4, I-680, I-580, I-205, and I-5.

4.17.2 Regulatory Setting

Federal

Federal Highway Administration

The Federal Highway Administration (FHWA), an agency of the USDOT, provides stewardship over the construction and preservation of the nation's highways, bridges, and tunnels. They provide research, technical assistance, standards, and financial assistance to state and local agencies for the design, construction, and maintenance of roads. FHWA also provides regulation and guidance related to work zone safety, mobility, and temporary traffic control device implementation.

Federal Aviation Administration

The Federal Aviation Administration (FAA), an agency that is part of the U.S. Department of Transportation (USDOT), is responsible for regulating civil aviation, including the oversight of air traffic and aeronautical obstructions. All airports and navigable airspace not administered by the U.S. Department of Defense are under the jurisdiction of the FAA. The FAA requires applicants to submit a Notice of Proposed Construction or Alteration and receive approval prior to ground disturbance associated with a project. Title 14 Section 77.13 states that an aviation obstruction would be created if any equipment is positioned such that it would be more than 200 feet above the ground or would exceed an imaginary surface extending outward and upward from applicable airport runways at the following slopes: 100:1 within 20,000 feet, 50:1 within 10,000 feet, and 25:1 within 5,000 feet. The FAA also poses restrictions on helicopter flights carrying external loads in congested areas. Helicopter flights with external loads in congested areas require submittal of a Congested Area Plan to the FAA (14 CFR §133.33).

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.

14 CFR §133.33 Operating Rules

14 CFR §133.33 outlines the operating requirements for use of a helicopter. Specifically, helicopter use must meet the following requirements:

1. No person may conduct a rotorcraft external-load operation without, or contrary to, the Rotorcraft-Load Combination Flight Manual prescribed in §133.47.
2. No person may conduct a rotorcraft external-load operation unless—
   (1) The rotorcraft complies with §133.19; and
   (2) The rotorcraft and rotorcraft-load combination is authorized under the Rotorcraft External-Load Operator Certificate.

3. Before a person may operate a rotorcraft with an external-load configuration that differs substantially from any that person has previously carried with that type of rotorcraft (whether or not the rotorcraft-load combination is of the same class), that person must conduct, in a manner that will not endanger persons or property on the surface, such of the following flight-operational checks as the Administrator determines are appropriate to the rotorcraft-load combination:
   (1) A determination that the weight of the rotorcraft-load combination and the location of its center of gravity are within approved limits, that the external load is securely fastened, and that the external load does not interfere with devices provided for its emergency release.
   (2) Make an initial liftoff and verify that controllability is satisfactory.
   (3) While hovering, verify that directional control is adequate.
   (4) Accelerate into forward flight to verify that no attitude (whether of the rotorcraft or of the external load) is encountered in which the rotorcraft is uncontrollable or which is otherwise hazardous.
   (5) In forward flight, check for hazardous oscillations of the external load, but if the external load is not visible to the pilot, other crewmembers or ground personnel may make this check and signal the pilot.
   (6) Increase the forward airspeed and determine an operational airspeed at which no hazardous oscillation or hazardous aerodynamic turbulence is encountered.
4. 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. Notwithstanding the provisions of part 91 of this chapter, and except as provided in § 133.45(d), the holder of a Rotorcraft External-Load Operator Certificate may conduct external-load operations, including approaches, departures, and load positioning maneuvers necessary for the operation, below

500 feet above the surface and closer than 500 feet to persons, vessels, vehicles, and structures, if the operations are conducted without creating a hazard to persons or property on the surface.

6. No person may conduct rotorcraft external-load operations under IFR[3] unless specifically approved by the Administrator. However, under no circumstances may a person be carried as part of the external-load under IFR.

14 CFR §77 Safe, Efficient Use, and Preservation of the Navigable Airspace

14 CFR §77, also known as "Safe, Efficient Use, and Preservation of the Navigable Airspace," covers the requirements for notifying the FAA of proposed construction or alterations that could affect air navigation, along with standards for determining obstructions. Pursuant to 14 CFR §77.9, if requested by the FAA, or if a project sponsor proposes any of the following types of construction or alteration, a notice must be filed with the FAA:

(a) Any construction or alteration that is more than 200 feet above ground level (AGL) at its site.

(b) Any construction or alteration that exceeds an imaginary surface extending outward and upward at any of the following slopes:

(1) 100 to 1 for a horizontal distance of 20,000 feet from the nearest point of the nearest runway of each airport described in paragraph (d) of this section with its longest runway more than 3,200 feet in actual length, excluding heliports.

(2) 50 to 1 for a horizontal distance of 10,000 feet from the nearest point of the nearest runway of each airport described in paragraph (d) of this section with its longest runway no more than 3,200 feet in actual length, excluding heliports.

(3) 25 to 1 for a horizontal distance of 5,000 feet from the nearest point of the nearest landing and takeoff area of each heliport described in paragraph (d) of this section.

(c) Any highway, railroad, or other traverse way for mobile objects, of a height which, if adjusted upward 17 feet for an Interstate Highway that is part of the National System of Military and Interstate Highways where overcrossings are designed for a minimum of 17 feet vertical distance, 15 feet for any other public roadway, 10 feet or the height of the highest mobile object that would normally traverse the road, whichever is greater, for a private road, 23 feet for a railroad, and for a waterway or any other traverse way not previously mentioned, an amount equal to the height of the highest mobile object that would normally traverse it, would exceed a standard of paragraph (a) or (b) of this section.

(d) Any construction or alteration on any of the following airports and heliports:

(1) A public use airport listed in the Airport/Facility Directory, Alaska Supplement, or Pacific Chart Supplement of the U.S. Government Flight Information Publications;

[3] Instrument Flight Rules.

(2) A military airport under construction, or an airport under construction that will be available for public use;
(3) An airport operated by a Federal agency or the DOD.
(4) An airport or heliport with at least one FAA-approved instrument approach procedure.

(e) A notice need not be filed for construction or alteration of:

(1) 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;
(2) Any air navigation facility, airport visual approach or landing aid, aircraft arresting device, or meteorological device meeting FAA-approved siting criteria or an appropriate military service siting criteria on military airports, the location and height of which are fixed by its functional purpose;
(3) Any construction or alteration for which notice is required by any other FAA regulation.
(4) Any antenna structure of 20 feet or less in height, except one that would increase the height of another antenna structure.

Hazardous Materials Transportation Act of 1974

The United States Department of Transportation (USDOT) 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 (USDOT 2025a).

State

California Department of Transportation

Interstate highways are governed by the FHWA and the USDOT. The California Streets and Highways Code section 70-8 assigns responsibility for meeting or exceeding the FHWA guidelines to the California Transportation Commission and, thereby, to Caltrans.

The Division of Transportation Planning within Caltrans is primarily responsible for the maintenance, development, and support of transportation facilities within the state. However, the Division of Transportation Planning partners with counties and cities in planning, managing, and maintaining the transportation system.

All work on or over Caltrans facilities would require coordination with the Caltrans District 4 (Oakland) office, issuance of an encroachment permit, and approval of traffic control plans based on the 2014 (or latest) California Manual on Uniform Traffic Control (Caltrans 2014). The

California Manual on Uniform Traffic Control Devices (CA MUTCD) provides principles and guidance for the implementation of temporary traffic control to ensure the provision of reasonably safe and effective movement of all roadway users (e.g., motorists, bicyclists, pedestrians) through or around temporary traffic control zones while reasonably protecting road users, workers, responders to traffic incidents, and equipment. The Caltrans Encroachment Permits Manual provides information on the permitting process, describes departmental policies, and maintains uniform methods and procedures related to the issuance of encroachment permits (Caltrans 2023c). Chapter 200 describes the general provisions of a Caltrans encroachment permit including standards of construction and requirements for public traffic control.

California Vehicle Code

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. Caltrans can issue a special permit to operate or move a vehicle or combination of vehicles or special mobile equipment of a size or weight of vehicle or load exceeding the maximum limitations specified in the California Vehicle Code. Caltrans can issue the following special permits:

- Single Trip Permit -- loads greater than 8'-6" wide, 14'-0" high, and over 80,000 pounds.
- Annual Permit -- loads up to 12'-0" wide, 14'-0" high, and Kingpin to Rear Axle (KPRA) 40'-0" maximum (except as specifically allowed per CVC). Travel on red routes is prohibited.
- Repetitive Permit -- loads up to 12'-0" wide, 14'-6" high, and 90'-0" long.
- Sea Container Permit -- 4-Axle tractor and 3-Axle trailer of maximum Overall Length (OAL) of 65'-0", and Kingpin to Rear Axle (KPRA) 40'-0" maximum, transporting intermodal cargo containers on state highways in the vicinity of the Port of Los Angeles and the Port of Long Beach.
- Variance Permit -- vehicles greater than 15'-0" wide, 17'-0" high, and 135'-0" long, or on special hauling equipment which exceeds the Department's standard method of weight classification.

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 rights-of-way. Caltrans reviews all requests from utility companies that plan to conduct activities within state highway rights-of-way. 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' jurisdiction.

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 right-of-way, 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.

Senate Bill 743

On September 27, 2013, Senate Bill (SB) 743 was signed into law, building on previous climate-focused and transportation legislative changes from the Sustainable Communities and Climate Protection Act of 2008 (SB 375) and the California Global Warming Solutions Act of 2006 or Assembly Bill (AB) 32. SB 743 created a shift in transportation impact analysis under CEQA from a focus on automobile delay, as measured by LOS and similar metrics, toward a focus on reducing VMT. SB 743 also includes amendments that revise the definition of "infill opportunity zones" to allow cities and counties to opt out of traditional LOS standards established by Congestion Management Programs and required the Governor's Office of Planning and Research (now the Office of Land Use and Climate Innovation) to update the *CEQA Guidelines* and establish criteria for determining the significance of transportation impacts. SB 743 states that upon certification of the new criteria, automobile delay, as described solely by LOS or similar measures of vehicular capacity or traffic congestion, would not be considered a significant impact on the environment under CEQA, except in certain locations specifically identified in the new criteria.

The criteria contained in *CEQA Guidelines* Section 15064.3, were certified and adopted in December 2018 and applied statewide on July 1, 2020. *CEQA Guidelines* Section 15064.3 states that VMT is the most appropriate metric to assess transportation impacts and that, with limited exceptions, a project's effect on automobile delay does not constitute a significant environmental impact.

In 2018, the Governor's Office of Land Use and Climate Innovation issued a technical advisory to provide guidance on assessing project impacts under CEQA (Governor's Office of Planning and Research (OPR) 2018). Specifically, the technical advisory focuses on using VMT as the primary metric for transportation impact analysis and suggests thresholds for determining significance. The advisory also includes guidance on mitigation measures and considerations for various project types.

Local

Pursuant to 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."

Solano County

Solano County General Plan

The Solano County General Plan was adopted in 2008 and contains policies related to transportation and circulation (Solano County 2008). The General Plan is the guide for both land development and conservation in the unincorporated portions of the county. It contains the policy framework necessary to fulfill the community's vision for Solano County in 2030. The Transportation and Circulation Chapter 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 to accommodate planned growth consist with the general plan's Land Use Chapter. The following policies from the General Plan are relevant to the Proposed Project:

> *Policy TC.P-1* Maintain and improve current transportation systems to remedy safety and congestion issues, and establish specific actions to address these issues when they occur.
>
> *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.I-2* Promote development review and mitigation (including the use of transportation impact fees) that focuses on upgrading county roads to County design standards if the new development significantly contributes to the need to upgrade these roads, whether the new development occurs inside or outside of a city.
>
> *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.
>
> *Policy TC.P-12* Maintain and improve the design of the current roadway system to serve areas where growth is desired and anticipated as identified in the General Plan Land Use Diagram, while minimizing conversion of agricultural and open space areas.

Policy TC.I-11 Review roadway widening needs on major county roadways when reviewing proposed new developments to ensure that adequate right-of-way will be available.

Policy LU.P-31 Require that all development within the airport influence areas of public and military airports complies with the Airport Land Use Commission compatibility polices and criteria as set forth in the airports' land use compatibility plans.

Policy TC.P-20 Support the continued safe operation of current general-aviation airports and heliports and encourage complementary land uses near such facilities.

Policy TC.I-18 Apply appropriate site planning practices and development standards in areas near general-aviation airports and heliports so that aircraft are not disturbed by nearby buildings, overhead wires, cell phone towers, or other possible obstructions.

Solano Transportation Authority

Comprehensive Transportation Plan 2040

The Solano Transportation Authority (STA) Comprehensive Transportation Plan 2040, approved in June 2020, serves as a blueprint for the 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 (STA 2020).

Comprehensive Transportation Plan Arterials, Highways and Freeways Element

The STA is responsible for preparing and updating the Arterials, Highways and Freeways Element of the STA Comprehensive Transportation Plan 2040. 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 2020). 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.

Congestion Management Plan

The STA serves as the Congestion Management Agency (CMA) for Solano County. As the CMA, the STA must, under State law, prepare a Congestion Management Program (CMP) and update it every two years. The CMP is meant to outline the CMA's strategies for managing the performance of the regional transportation within its county. The CMP for Solano County incorporates various strategies and measures to improve congestion management on the Solano County multi-modal transportation system, including LOS monitoring of a designated CMP

roadway network (Solano County Transportation Authority 2023). Traffic operations are monitored on 60 roadway segments including segments in the Proposed Project, i.e., SR 12 between Napa County and Rio Vista Bridge and SR 113/Birds Landing Road between SR 12 and I-80. In future CMP updates VMT will be used as a metric for monitoring the CMP network.

Solano County Active Transportation Plan
In 2020 the STA prepared and adopted the Solano County Active Transportation Plan (ATP). It promotes 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. The Solano County ATP consolidated previous active transportation planning efforts such as the 2011 Solano Countywide Bicycle Transportation Plan, the 2012 Solano Countywide Pedestrian Transportation Plan, and the Safe Routes to School and Safe Routes to Transit Plans into one cohesive plan. The Solano County ATP establishes countywide priorities and provides project lists and program guidance which STA and local jurisdictions can use (Solano County Transportation Authority 2020).

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.

Contra Costa County

Contra Costa County General Plan
The Contra Costa County 2045 General Plan was adopted in November 2024 (Contra Costa County 2024). The purpose of the Contra Costa County General Plan is to express the broad goals and policies, and specific implementation measures, which will guide decisions on future growth, development, and the conservation of resources through the year 2045. The Transportation 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 relevant policies for transportation are provided below:

> *Policy TR-P1.4* Work with project applicants and property owners to establish community facilities districts or other funding mechanisms to pay for construction, operation, and maintenance of new transportation infrastructure and programs without creating an undue financial burden on existing residents, businesses, or the County. Consider that new, innovative infrastructure may cost more to maintain than facilities installed in the past, and that the increase in ongoing maintenance costs is a potential reason to deny a development application.
>
> *Policy TR-P2.1* In addition to any required California Environmental Quality Act (CEQA) review, evaluate the traffic operations effects of proposed projects in accordance with the County's Transportation Analysis Guidelines and other appropriate policy supplements and transportation plans, and best practices. When operational deficiencies

are identified, the treatments to address those deficiencies should first prioritize reducing the project's vehicular trips and collision risks, and may secondarily consider adding vehicular capacity so long as the safety and movement of active modes are not compromised. Exceptions to the level of service (LOS) operational standards presented in the Transportation Analysis Guidelines may be granted if the treatments necessary to address operational deficiencies would conflict with other priorities in this General Plan and if the project is otherwise consistent with this Plan.

Policy TR-P2.2 Prioritize expansion of bicycle, micromobility, and pedestrian infrastructure (e.g., Class IV separated bikeways) to address the significant latent demand for these active transportation modes.

Policy TR-P3.3 Provide or require new projects to install energy-efficient street lighting to improve public safety and comfort in urbanized areas. Prioritize installation in Impacted Communities, particularly at parks, transit stops, alleyways, bike and pedestrian paths, trails, and other high-need areas, consistent with community preferences.

Policy TR-P1.2 Require transportation infrastructure serving new development to be designed using best practices, contemplating existing and planned land uses, roadways, bicycle and pedestrian facilities, transit facilities, and connections to adjoining areas.

Policy TR-P2.4 Ensure that fee programs include active transportation facilities, and require new development to contribute funds, right-of-way, and/or provide active transportation facilities themselves.

Contra Costa Transportation Authority

Contra Cost Countywide Comprehensive Transportation Plan

The 2017 Countywide Comprehensive Transportation Plan (CTP) is the Contra Costa Transportation Authority's most recent, broadest policy and planning document. It identifies the criteria for analyzing transportation impacts and sets forth plans for future roadway improvements in Contra Costa County. In addition, the 2017 CTP relies on collaboration with and between partners, both on the countywide and regional levels. Each of Contra Costa County's five Regional Transportation Planning Committees created an Action Plan, which identifies a complete list of actions to be completed as a result of the Action Plan. The majority of the Proposed Project components in Contra Costa County are located within the East County Action Plan except for the PG&E Tesla Substation which is in Alameda County.

East County Action Plan

The 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 triggers preparation of a transportation impact study and notification of neighboring jurisdictions. TRANSPLAN requires any proposed project that generates more than 100 net new peak hour vehicle trips and for which an environmental document is being prepared to issue a Notice of Intent (Contra Costa Transportation Authority 2023).

Congestion Management Plan

The Contra Costa Transportation Authority (CCTA) serves as the Congestion Management Agency (CMA) for Contra Costa County. As the CMA, the CCTA must, under State law, prepare a Congestion Management Program (CMP) and update it every two years. The CMP is meant to outline the CMA's strategies for managing the performance of the regional transportation within its county. The CMP for Contra Costa County incorporates various strategies and measures to improve congestion management on the Contra Costa County multi-modal transportation system, including LOS monitoring of a designated CMP roadway network. CCTA updated the CMP in 2021 to include changes from LOS to VMT statewide under SB 743, as well as potential impacts to the CMP legislation, of which LOS is currently a required performance measure (Contra Costa Transportation Authority 2021).

CCTA developed the Contra Costa County Transportation Analysis Guidelines to aid in the preparation of traffic analysis for projects. The Contra Costa County Transportation Analysis Guidelines establish a uniform approach, methodology, and tool set to evaluate the impacts of land use decisions and related transportation projects on the county transportation system (Contra Costa County Department of Conservation and Development 2020). The Contra Costa County Transportation Analysis Guidelines were adopted in 2020 to include guidance for both CEQA VMT and non-CEQA LOS analyses.

Transportation Analysis Guidelines

On July 15, 2020, the CCTA adopted criteria, standards, and thresholds for the assessment of VMT in the Approval of the Vehicle Miles Traveled Analysis Methodology for Land Use Projects in the Growth Management Program Implementation Guide. The methods and thresholds adopted by CCTA follow the guidance and recommendations of OPR pertaining to the implementation of SB 743. Current CCTA guidance related to VMT is as follows:

- Residential Projects should use the home-based VMT per capita metric to evaluate project generated VMT. The project generated home-based VMT per resident constitutes a significant impact if it is higher than 85 percent of the home-based VMT per resident in the subject municipality or unincorporated Authority subregion (for areas outside of municipalities) or 85 percent of the existing county-wide average home-based VMT per resident, whichever is less stringent.

- Employment-Generating Projects should use the home-work VMT per worker metric for their project generated VMT estimates. The project generated home-work VMT per worker constitutes a significant impact if it is higher than 85 percent of the home-work VMT per worker in the subject municipality or unincorporated Authority subregion (for areas outside of municipalities) or 85 percent of the existing Bay Area region-wide average home-work VMT per worker, whichever is less stringent.
- Other Uses and Projects need to be analyzed using a methodology developed by the Lead Agency specifically for the project, taking into account the specific methodologies and thresholds identified in Approval of the Vehicle Miles Traveled Analysis Methodology for Land Use Projects in the Growth Management Program.
- Mixed-Use Projects may be analyzed using a combination of techniques.

CCTA guidance provides the following criteria to screen projects out of conducting a project-level VMT analysis:

- CEQA Exemption – Any project that is exempt from CEQA is not required to conduct a VMT analysis.
- Small projects – Small projects can be presumed to cause a less-than-significant VMT impact. Small projects are defined as having 10,000 sf or less of non-residential space or 20 residential units or less, or otherwise generating less than 836 VMT per day.
- Local-Serving Uses – Projects that consist of Local-Serving Uses can generally be presumed to have a less-than-significant impact absent substantial evidence to the contrary, because local serving projects would primarily draw users and customers from a relatively small geographic area that will lead to short-distance trips and trips that are linked to other destinations.
- Projects Located in Transit Priority Areas (TPAs) – Projects located within a TPA can be presumed to have a less-than-significant impact absent substantial evidence to the contrary.
- Projects located in Low VMT Areas – residential and employment-generating projects located within a low VMT-generating area can be presumed to have a less-than-significant impact absent substantial evidence to the contrary. A Low VMT area is defined as follows:
  - For housing projects: Cities, towns and unincorporated portions within Contra Costa that have existing home-based VMT per capita that is 85 percent or less of the existing county-wide average.
  - For employment-generating projects: Cities, towns, and unincorporated portions within Contra Costa that have existing home-work VMT per worker that is 85 percent or less of the existing regional average.

If screening criteria are not met, a proponent must analyze the project's VMT using methodologies outlined in the City's guidelines. The minimum project size for VMT analysis is based on a maximum generation of 110 average daily trips (ADT) per day.

Contra Costa Countywide Bicycle and Pedestrian Plan
The CCTA updated the Contra Costa Countywide Bicycle and Pedestrian Plan in 2018 to reflect current policies, best practices, and standards for walking and bicycling and reflect current funding and planning efforts for bicycle and pedestrian projects (Contra Costa County 2018). The Contra Costa Countywide Bicycle and Pedestrian Plan includes approaches for supporting pedestrian and bicycle safety and planning for a "low-stress Countywide Bikeway Network".

City of Pittsburg

City of Pittsburg General Plan
The City of Pittsburg General Plan contains policies for transportation (City of Pittsburg 2024). The following policies from the General Plan are relevant to the Proposed Project:

> *Policy 7-P-1.5* Implement and continue to increase efforts to reduce regional VMT by supporting land use patterns and site designs that promote active modes of transportation, and public transit.
>
> *Policy 7-P-1.7* Strive to maintain delay-based level of service (LOS) D for motor vehicle traffic as the minimum acceptable service standard for all signalized and stop-controlled intersections at all times (including during peak periods) unless maintenance of LOS D would, in the City's judgement, be infeasible and/or conflict with the achievement of other City goals identified in this General Plan. Congestion in excess of LOS D may be acceptable in these cases, provided that provisions are made to improve traffic flow and/or promote multimodal or non-vehicular transportation as part of a development project or City-initiated project. In the designated Downtown core, as defined by the City's General Plan and illustrated by the City's Subdivision map, LOS E would be considered as an acceptable service standard to account for the more urban, pedestrian-oriented character of the area.
>
> *Policy 7-A-1.a* Evaluate projects traffic and Vehicle Miles Traveled (VMT) impacts of development projects based on the City's Transportation Impact Analysis Guidelines to determine transportation impacts to all users, including pedestrians, bicyclists, transit riders, and motorists, and to require projects to address impacts consistent with the requirements of CEQA.
>
> *Policy 7-A-1.b* Require proposed development projects with VMT levels above the City's threshold to consider reasonable and feasible project modifications and other measures during the project design and review stage and the environmental review stage that would reduce VMT effects in a manner consistent with the City's sustainability goals, the City's Transportation Impact Analysis Guidelines, and with State guidance on VMT reduction.

Policy 7-A-1.d Require new development to pay its fair share of the costs of street and other transportation improvements in conformance with the goals and policies established in this Circulation Element and the Transportation Impact Mitigation Fee (TIMF) program. Use the adopted regional and local TIMF ordinances, as may be amended or replaced, to ensure that all new developments pay a fair share of the cost of transportation improvements, or require mitigation for development proposals that are not part of the TIMF program which contribute more than one percent of the volume to an existing roadway or intersections.

Policy 7-A-1.e Use traffic calming tools and speed reduction strategies in new development and the design of roadway improvements to assist in implementing complete street principles and encouraging active transportation. Possible tools include roundabouts, raised intersections, curb extensions, reduced roadway width, high visibility crosswalks, and rapid flashing beacons.

Policy 7-A-1.h Implement vehicle weight limit restrictions on roadways near sensitive uses like schools and residential neighborhoods to prohibit cut-through truck traffic prior to approving new industrial development or other development with high levels of truck traffic.

Policy 7-A-1.i Strongly discourage pass-through vehicle traffic and speeding on local residential streets.

Policy 7-A-1.j Continue to designate, and monitor, and maintain appropriate truck routes to support truck mobility to serve local and regional commerce and to discourage unnecessary through traffic on local streets and in residential areas.

Pittsburg Moves: Active Transportation Plan

The City's Pittsburg Moves: Active Transportation Plan was adopted in 2021 (City of Pittsburg 2025). The Plan calls for: 1) emphasizing land use patterns and development projects that promote walking and bicycling; 2) creating a walking and bicycling network that enhances safety, access, comfort, and convenience for everyone; 3) maintaining the network so that it is attractive, comfortable, and free of hazards; and 4) implementing a range of education, encouragement, enforcement, and evaluation programs that support walking and bicycling. The Plan recommends over 250 bicycle and pedestrian improvement projects throughout the city and provides a comprehensive crosswalk policy for marking and enhancing crosswalks. Near the Proposed Project components, a class II bicycle facility is planned for East 3rd Street.

Transportation Analysis Guidelines

The City of Pittsburg's Department of Mobility and Infrastructure is responsible for the safe transportation of people and goods throughout the city of Pittsburg, and for managing the planning, operations, and improvement of the public rights-of-way (City of Pittsburg 2025). During the development application process that falls within the jurisdiction of Department of City Planning, the Department of Mobility and Infrastructure's Planning, Policy and Permits Bureau evaluates the potential impact of land development proposals on the city's

comprehensive transportation network using the City's Transportation Impact Analysis Guidelines.

The City's guidelines define the following criteria that can screen projects out of conducting project-level VMT analysis:

- CEQA exemption – Any project exempt from CEQA is not required to conduct a VMT analysis.
- Small projects – Small projects generate or attract fewer than 110 trips per day. Based on research for small project triggers, this may equate to non-residential projects of 10,000 square feet or less and single-family residential projects of 10 units or less, or otherwise generating less than 836 VMT per day.
- Small scale, local-serving retail – Local-serving retail projects are defined as projects of less than 50,000 square feet in size on the basis that they attract trips that would otherwise travel longer.
- Small and active transportation projects – Screened transportation projects are transit projects, bicycle and pedestrian projects, and roadway projects that do not result in an increase in vehicle capacity.
- Public services – Police stations, fire stations, public utilities, and parks do not generally generate VMT. Instead, these land uses are often built in response to development from other land uses (e.g., office and residential). Therefore, these land uses can be presumed to have less-than-significant impacts on VMT. However, this presumption would not apply if the project is sited in a location that would require employees or visitors to travel substantial distances and the project is not located within one half-mile of a major transit stop or does not meet the small project screening criterion.

If screening criteria are not met, a proponent must analyze the project's VMT using methodologies outlined in the City's guidelines. The minimum project size for VMT analysis is based on a maximum generation of 110 average daily trips (ADT) per day.

Sacramento County

Sacramento County General Plan

On November 9, 2011, the Sacramento County Board of Supervisors adopted an updated General Plan with a planning horizon to 2030. Key changes from the previous version include a new growth management strategy, a stronger focus on addressing existing communities and revitalizing aging commercial corridors, a new Economic Development Element, and strategies to reduce greenhouse gas emissions consistent with state law (Sacramento County 2011). The General Plan includes the following policies related to transportation that may apply to the Proposed Project:

> *Policy CI-3* Travel modes shall be interconnected to form an integrated, coordinated and balanced multi-modal transportation system, planned and developed consistent with the land uses to be served.

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-12 To preserve public safety and local quality of life on collector and local roadways, land development projects shall incorporate appropriate treatments of the Neighborhood Traffic Management Program.

Policy CI-35 The applicant/developer of land development projects shall be responsible to install bicycle and pedestrian facilities in accordance with Sacramento County Improvement Standards and may be responsible to participate in the fair share funding of regional multi-use trails identified in the Sacramento County Active Transportation Plan.

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 (Sacramento County Department of Transportation 2022).

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 (Sacramento County Department of Transportation 2020).

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 ADT per day.

4.17.3 Approach to Impact Analysis

The analysis of impacts on transportation applies the impact criteria defined in the following subsection. Applicant proposed measures (APMs) and construction measures (CMs) identified by LSPGC and PG&E, respectively, have been considered when making the impact determinations. Impacts are evaluated for the Proposed Project, including LSGPC and PG&E project components analyzed separately as well as analyses of cumulative impacts and of

project alternatives. Mitigation measures are defined to reduce or avoid significant impacts, where feasible.

Impact Criteria and Significance Thresholds

The following impact criteria questions have been derived from Appendix G of the CEQA Guidelines to evaluate impacts on transportation. Appendix G of the CEQA Guidelines asks whether a project would:

- Impact TRA-1: Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?
- Impact TRA-2: Conflict or be inconsistent with CEQA Guidelines § 15064.3, subdivision (b)?
- Impact TRA-3: Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?
- Impact TRA-4: Result in inadequate emergency access?

Applicant Proposed Measures and Construction Measures

LSPGC APMs and PG&E CMs identified in Section 2: Project Description that are relevant to the transportation impact analysis are provided in Table 4.17-7.

Table 4.17-7 APMs and CMs Relevant to Transportation

LSPGC APMs and PG&E CMs
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.
APM PUB-1: School Access. Construction of the proposed LSPGC Telecommunication Interconnection Lines 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.
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 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.
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. LSPGC would utilize the navigational study to reduce impacts to travel during construction.

LSPGC APMs and PG&E CMs
APM TRA-2: Road and Lane Closure Plan. LSPGC shall develop a Traffic Control Plan for the proposed project which includes a Road and Lane Closure plan that outlines how LSPGC will handle road and lane closures to allow for safe vehicle, bicyclist, and pedestrian passage when road and lane closures occur. The plan shall be prepared in coordination with local jurisdictions where road and lane closures would occur. Upon determination of the final construction schedule and precise locations and durations of road and lane closures, the plan shall describe locations and durations of: • Lane closures • Bicycle lane closures • Sidewalk or pedestrian path closures Measures to be included in the plan that would allow for safe vehicle, bicyclist, and pedestrian passage shall adhere to the California Manual on Uniform Traffic Control Devices. Potential measures include: • Signage directing motorists, pedestrians, and bicyclists to an efficient, safe detour around the closure • Flaggers and/or signage to halt traffic at road closures or direct traffic at lane closures and to allow traffic to pass when construction is halted • Requirements for notifications and a process for communication with affected residents and landowners prior to the start of construction. • Emergency service providers would be notified of the timing, location, and duration of construction activities. • Requirement that emergency vehicle access is maintained at all times.
CM 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.
CM 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.
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.

4.17.4 Impact Analysis – Proposed Project

Table 4.17-8 presents a summary of the CEQA significance criteria and impacts on transportation that would occur during construction, operation, and maintenance of the Proposed Project.

Table 4.17-8 Summary of Impacts Relevant to Transportation for the Proposed Project

Impact Criteria: Would the project …	APMs/CMs Applied	Significance Before Mitigation	Mitigation Measures Required	Significance After Mitigation
Impact TRA-1: Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	APM HAZ-1 APM TRA-2 APM-PUB-1 APM REC-1 CM HAZ-3 CM TRA-1 CM TRA-2	S	MM TRA-1 MM TRA-2	LTS
Impact TRA-2: Conflict or be inconsistent with CEQA Guidelines §15064.3, subdivision (b)?	NA	LTS	None	None
Impact TRA-3: Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	APM HAZ-1 APM PUB-1 APM TRA-1 APM TRA-2 APM REC-1 CM HAZ-3 CM TRA-1 CM TRA-2	S	MM TRA-1 MM TRA-2 MM TRA-3	LTS
Impact TRA-4: Result in inadequate emergency access?	APM TRA-2 CM TRA-1 CM TRA-2	LTS	None	None

Notes:

LTS = less than significant

NA = not applicable

S = significant

Impact TRA-1: Would the Proposed Project conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities? ***(Less than significant with mitigation)***

Construction

LSPGC Project Components

Roadway Circulation and Access

The LSPGC project components do not include a land use component that would result in increased demand for transportation facilities or increased trip generation as there would be no operational activity that would generate such trips. Implementation of the LSPGC project Components would not permanently alter the physical transportation network or adversely affect the implementation of any proposed transportation network improvements in Solano

County, Contra Costa County, or the City of Pittsburg. Therefore, the LSPGC project Components would not conflict with plans, programs, ordinances, or policies of Solano County, Contra Costa County or the City of Pittsburg including general plans and comprehensive transportation plans promoting a safe multi-modal transportation circulation system.

The work area/staging areas for the Collinsville Substation and 230 kV transmission line in Solano County would be accessed from SR 12, Birds Landing Road, Collinsville Road, Stratton Lane, Talbert Lane, Montezuma Hills Road, Mauds Lane, and a network of unpaved roads, new permanent access roads, and temporary access roads. Construction vehicles and equipment and workers would access the Pittsburg Substation in the City of Pittsburg from the west via the San Marco Boulevard exit from SR 4 and Willow Pass Road and from the east via the Railroad Avenue exit from SR 4 and West 10th Street. Therefore, construction vehicles associated with the LSPGC project components would be dispersed through the regional road network because access to each work area would be provided from different roads and different directions depending on origins. Furthermore, construction vehicle trips would be limited to predesignated routes to minimize the contribution of construction traffic to roadway congestion in the vicinity of the LSPGC project components in Solano and Contra Costa counties and the City of Pittsburg. Thus, traffic on existing roadways would not be significantly increased during peak construction.

As presented in Table 4.17-2 and Table 4.17-4, the majority of the roadways in the vicinity of the LSPGC project components are local, two-lane roads that are not anticipated to experience heavy traffic. In Solano County peak construction traffic during construction would represent between approximately 1 and 3 percent of the average daily trips reported along SR 12 and approximately 6 percent of the average daily trips reported along SR 113/Birds Landing Road in the vicinity of the Collinsville Substation and 230 kV transmission line south of SR 12. In Contra Costa County peak construction traffic during construction would represent between approximately 0.17 and 0.18 percent of the average daily trips reported along SR 4 and approximately 0.5 to 2 percent of the average daily trips estimated as the design capacities for Willow Pass Road, West 10th Avenue, and Railroad Avenue.

The additional vehicle trips generated by construction activities associated with the transport of heavy construction equipment to the work areas/staging areas associated with the LSPGC project components and installation of the towers, stringing of the electrical wire across roads, haul truck trips, and construction worker commutes could affect the operation of the local roadway networks temporarily disrupting traffic flow on SR 12 and local roads in Solano County and on SR 4 and local roads in the City of Pittsburg. Traffic disruptions may also occur due to temporary road or lane closures required during installation or removal of structures located adjacent to (or under) roadways, overhead and underground transmission lines, and telecommunication interconnection lines, e.g., Stratton Lane near the community of Collinsville and Marina Boulevard, Herb White Way, Halsey Way, and Halsey Court in the City of Pittsburg. The temporary addition of construction vehicle trips and temporary lane and road closures could affect vehicle circulation during construction activities and conflict with programs and policies related to the efficient movement of persons and goods on the roadway

system in the transportation plans of Solano and Contra Costa counties and the City of Pittsburg, as described in Section 4.17.2.

LSPGC would implement APM TRA-2, which requires encroachment permits and transportation permits be obtained from Caltrans and the local jurisdictions, that traffic control measures and a traffic control plan be developed in accordance with the CA MUTCD, and that notification of affected jurisdictions and applicable emergency service providers occur prior to start of construction (City of Pittsburg 2025c; Solano County 2025c). LSPGC would provide signage directing motorists, pedestrians, and bicyclists to an efficient, safe detour around the road, lane, and sidewalk closures. Flaggers or other traffic control measures would be utilized to guide traffic around active work areas in a safe manner. Construction would be conducted during daylight hours and in accordance with all necessary traffic control permits. Any road, lane, and sidewalk closures would be temporary and typically limited to one side of the street at a time and would be coordinated with Solano County and the City of Pittsburg and emergency service providers through the traffic control and encroachment permit processes. Additionally, applicable laws and permit conditions relevant to traffic control service and lane closures in the public right-of-way, including those published in the California Joint Utility Traffic Control Manual, would be adhered to as part of localized traffic control plans developed to reduce the potential for conflicts/hazards. These plans would also require notification of landowners, emergency responders, and local agencies of the planned construction activities; construction activities be coordinated with emergency service providers; and implementation of applicable traffic control measures such as those for temporary road and lane closures or width reduction or traffic diversions. APM TRA-2 would also require LSPGC to coordinate with applicable emergency service providers at least 24 hours prior to implementing any road or lane closure. Additionally, LSPGC would implement APM PUB-1 to minimize disruptions to Saint Peter Martyr School access. APM PUB-1 would require coordination with the school's administration to schedule construction of the segment of the telecommunication interconnection lines for the summer months when school is out of session.

Implementation of APM TRA-2 would ensure disruptions to traffic in the vicinity of the LSPGC project components would be minimized during construction. APM TRA-2 and APM PUB-1 would also minimize impacts from road and lane closures or width reduction or traffic diversions including sidewalk and bicycle lane closures in the vicinity of the LSPGC project components during construction and limit disruptions to school access. Therefore, there would be no conflicts with a program, plan, ordinance or policy addressing the condition of roadways and the safe and efficient movement of vehicles and impacts on the transportation circulation system would be less than significant.

Public Transit

The LSPGC project components do not include a land use component that would result in increased demand for transit facilities or increased transit ridership as there would be no operational activity that would generate such trips. As described in Section 4.17.1, there are no transit routes/stops in Solano County in the vicinity of the LSPGC project components. There would be no impact on transit operations in Solano County. Therefore, the Proposed Project

would not conflict with plans, programs, ordinances, or policies of Solano County including the General Plan and STA Comprehensive Transportation Plan promoting public transit and development of a balanced multimodal transportation system.

In the City of Pittsburg Tri Delta Transit route 387 stops are located on Willow Pass Road, West 10th Street, Black Diamond Street, Marina Boulevard, and East 3rd Street. Tri Delta Transit route 381 stops are located along Railroad Avenue at East 8th Street, East 5th Street, and Marina Boulevard. Construction truck traffic in the vicinity of the 230 kV transmission line and telecommunication interconnection lines (see Figure 4.17-3 and Figure 4.17-4) has the potential to disrupt transit operations on local roads in the City of Pittsburg. As noted above, traffic on existing roadways would not significantly increase during construction of the LSPGC project components and the effects would be short-term and periodic. Temporary road or lane closures are not proposed along Willow Pass Road, West 10th Street, or Railroad Avenue; however, temporary road and lane closures or width reduction or traffic diversions would occur on Marina Boulevard, Herb White Way, Halsey Way, and Halsey Court and could result in temporary transit delays and reduce transit access where lane and road closures occur along the bus routes. LSPGC would obtain encroachment permits from the City of Pittsburg and would implement APM TRA-2 which requires the implementation of traffic control measures and a traffic control plan in accordance with the CA MUTCD and notification processes prior to start of construction. LSPGC would provide signage directing motorists, pedestrians, and bicyclists to an efficient, safe detour around the road, lane, and sidewalk closures. Flaggers or other traffic control measures would be utilized to guide traffic around active work areas in a safe manner. While implementation of APM TRA-2 would reduce impacts on Tri Delta Transit operations, the impacts of temporary closures of bus stops or changes to bus routing would remain significant. To reduce this impact, MM TRA-1 requires advanced notification to Tri Delta Transit and any affected transit service provider at least 60 days prior to any bus stop closure or road closures that could affect bus routes. With implementation of MM TRA-1, the LSPGC project components would not conflict with plans, programs, ordinances, or policies of the City of Pittsburg or Contra Costa County including general plans and the CCTA Comprehensive Transportation Plan promoting public transit and development of a balanced multimodal transportation system, and the impact would be less than significant.

Bicycle and Pedestrian Facilities

The LSPGC project components do not include a land use component that would result in increased demand for bicycle and pedestrian facilities or increased bicycle and pedestrian trips as there would be no operational activity that would generate such trips. As described in Section 4.17.1there are no bicycle or pedestrian facilities in the vicinity of the LSPGC project components in Solano County. Therefore, the LSPGC project components would not conflict with plans, programs, ordinances, or policies addressing bicycle or pedestrian facilities in Solano County including the General Plan and the Active Transportation Plan promoting a connected bicycle and pedestrian network as part of a balanced multimodal transportation system, and the impact would be less than significant.

As described in Section 4.17.1, in the City of Pittsburg there are class II bicycle facilities on Willow Pass Road, West 10th Street, West 8th Street, Herb White Way, Bay Side Drive, and Marina Boulevard with class I bicycle facilities along West 8th Street between Herb White Way and Harbor Street and along Marina Boulevard north of East 5th Street (see Figure 4.17-4). As described in the Pittsburg Moves: Active Transportation Plan, a class II bicycle facility is planned for East 3rd Street and a class I bicycle facility is planned for Harbor Street. Temporary road or lane closures (including bicycle lanes and sidewalks) are not proposed along Willow Pass Road, West 10th Street, or Railroad Avenue but may be necessary along Marina Boulevard, Herb White Way, Halsey Way, and Halsey Court. As described, LSPGC would implement APM TRA-2 and APM PUB-1 to limit impacts on the circulation system and limit disruptions to school access from the addition of construction vehicles traveling to and from work areas/staging areas and from disruptions related to temporary road and lane closures or width reduction or traffic diversions including sidewalk and bicycle lane closures in the vicinity of the LSPGC project components. Implementation of traffic control measures would minimize impacts to bicycle and pedestrian facilities in the City of Pittsburg and Saint Peter Martyr school pick-up/drop-off operations during construction. As a result, the LSPGC project components would not conflict with plans, programs, ordinances, or policies of the City of Pittsburg including the General Plan and Pittsburg Moves: Active Transportation Plan promoting active transportation and development of a balanced multimodal transportation system and the impact would be less than significant.

Railroad Network

As described in Section 4.17.1, rail facilities/stations in the vicinity of the LSPGC project components near the community of Collinsville are approximately 16 miles northwest in Suisun City. An excursion railway is located west of and parallel to Collinsville Road. Vehicle traffic during construction is not expected to affect railroad operations as all construction vehicles would cross the railroad at the designated crossings, i.e., SR 12 near Mauds Lane. The BNSF railroad is located approximately one mile south of the LSPGC project components in the City of Pittsburg. Construction vehicle traffic associated with the 230 kV transmission line underground segment and the telecommunication interconnection lines is not expected to affect railroad operations as all construction vehicles would cross the railroad at designated crossings, i.e., at Willow Pass Road near N. Parkside Road. The LSPGC project components would not require temporary closure of railroads. No impact from a conflict with plans, policies, or ordinances related to operation of the railroad network would occur.

Water Traffic

The 230 kV transmission line submarine segment, including the northern and southern transition approaches, would be installed over an approximately 6-month period with work occurring continuously 24 hours per day and 7 days per week. A barge, tugboat, and associated equipment watercraft for in-water work is anticipated to be in the Delta for approximately 3 months. LSPGC would implement APM REC-1 to ensure that vessel traffic necessary to install the 230 kV transmission line submarine segment would be coordinated with the appropriate agency staff and to ensure coordination between LSPGC construction crews and the USCG San

Francisco Waterways Branch, the San Francisco VTC, and the City of Pittsburg's harbor master prior to any temporary in-water so Delta users are aware of access restrictions. In addition, a Local Notice to Mariners would be submitted to USCG District 11 at least 15 days prior to the start of in-water construction per regulatory requirements. Although the CCTA's 2017 Countywide Transportation Plan and the STA's Solano County Comprehensive Transportation do not include policies or ordinances regarding vessel traffic in the Delta implementation of APM REC-1 would reduce the potential for conflicts with commercial and recreation vessel traffic that intersect with LSPGC in-water work period. In light of these APMs and due to the short duration of work and coordination with regulatory agencies, the impact on vessel traffic would be less than significant. No mitigation required.

Air Traffic

Helicopters are anticipated to support the construction of the LSPGC project components. 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. Local public and/or private airports or airstrips such as Rio Vista Municipal Airport may be used to support helicopter operations (Table 4.17-5). The LSPGC project components are in the Airport Influence Area for Travis AFB. Limitations on the height of structures and notice of aircraft overflights are the only compatibility factors within this zone (see Section 4.17.2). Once in the vicinity of the landing zone for the LSPGC project component, helicopter flight paths would generally follow the Proposed Project alignment. Helicopter flight paths over urban areas and utility and agricultural operations of Solano County could conflict with plans, programs, ordinances, or policies addressing air traffic in Solano County including the General Plan and associated Airport Land Use Compatibility Plans promoting informed land development in the vicinity of airports and airport influence areas. LSPGC would implement APM HAZ-1 that would require helicopter operators to coordinate flight paths from local airports or airstrips with local air traffic control, as appropriate. APM HAZ-1 also requires LSPGC to minimize impacts on local residents from helicopter use and landing zones. While the APM requires coordination it does not specify the requirements for the contractor to ensure safe helicopter use, and the impact would remain significant. MM TRA-2 defines requirements for the helicopter contractor to avoid conflicts with air traffic and potential conflicts with policies regarding operation of helicopters. The resulting impact on air traffic would be less than significant with mitigation.

PG&E Project Components

Roadway Circulation and Access

The PG&E project components do not include a land use component that would result in increased demand for transportation facilities or increased trip generation as there would be no operational activity that would generate such trips. Implementation of the PG&E project components would not permanently alter the physical transportation network or adversely affect the implementation of any proposed transportation network improvements in Solano, Contra Costa, or Alameda counties or in the City of Pittsburg. Therefore, the PG&E project components would not conflict with plans, programs, ordinances, or policies of Solano, Contra

Costa, or Alameda counties or the City of Pittsburg including applicable general plans and comprehensive transportation plans promoting the safe multi-modal transportation circulation system.

The work area/staging areas for the 12 kV distribution line, 500 kV interconnection lines, telecommunication yard, and transposition sites B and C in Solano County would be accessed from SR 12, Birds Landing Road, Collinsville Road, Stratton Lane, Talbert Lane, Montezuma Hills Road, Mauds Lane, and a network of unpaved roads, new permanent access roads, and temporary access roads. The Vaca-Dixon Substation and transposition site A in Solano County would be accessed from I-80, N. Meridian Road, and Weber Road and Box R Ranch Road, Hay Road, Lewis Road from Weber Road, respectively. Construction vehicles and equipment and workers would access the Pittsburg Substation in the City of Pittsburg from the west via the San Marco Boulevard exit from SR 4 and Willow Pass Road and from the east via the Railroad Avenue exit from SR 4 and West 10th Street. The Tesla Substation and transposition site D in northeastern Alameda County and southeastern Contra Costa County, respectively, would be accessed from I-580 and Patterson Pass Road and Vasco Road, Byron Highway and Kellogg Creek Road, respectively. Therefore, construction vehicles would be dispersed through the regional road network because access to each work area would be provided from different roads and different directions depending on origins. Furthermore, construction vehicle trips would be limited to predesignated routes to minimize the contribution of construction traffic to roadway congestion in the vicinity of the PG&E project components in Solano, Contra Costa, and Alameda counties and the City of Pittsburg.

As described above, existing traffic would not be significantly increased at the peak of construction (i.e., an approximately 1 to 3 percent increase along SR 12 and up to 6 percent along Birds Landing Road, an approximately 0.17 and 0.18 percent increase along SR 4, and up to 2 percent along Willow Pass Road, West 10th Avenue, and Railroad Avenue [see Table 4.17-2 and Table 4.17-4]). Construction would not require lane closures on Willow Pass Road, West 10th Street, or the access road to the Pittsburg Substation. Temporary effects on traffic and transportation facilities around the Vaca-Dixon and Tesla substations and transposition sites A and D would be minor because there is sufficient roadway capacity along I-80, I-580, and local roads to accommodate construction-related traffic. Lane closures near the Vaca-Dixon and Tesla substations and transposition sites A and D are not expected.

The additional vehicle trips generated by construction activities associated with the transport of heavy construction equipment to the work areas/staging areas associated with the PG&E project components and installation of the towers, stringing of the electrical wire across roads, haul truck trips, and construction worker commutes could affect the operation of the local roadway networks temporarily disrupting traffic flow on SR 12 and local roads in Solano County and on SR 4 and local roads in the City of Pittsburg and Contra Costa and Alameda counties. Traffic disruptions may also occur due to temporary road or lane closures to ensure the safe accommodation of construction truck traffic during peak construction periods and for deliveries of oversized loads., e.g., Stratton Lane near the community of Collinsville and the access road to the Pittsburg Substation in the City of Pittsburg. The temporary addition of construction vehicle

trips and temporary lane and road closures could affect vehicle circulation during construction activities and conflict with programs and policies related to the efficient movement of persons and goods on the roadway system in the countywide transportation plans of Solano and Contra Costa counties and the City of Pittsburg, as described in Section 4.17.2.

PG&E would implement CM TRA-1 and CM TRA-2 which require encroachment permits and transportation permits be obtained from Caltrans and the local jurisdictions, that traffic control measures and a traffic control plan be developed in accordance with the CA MUTCD, and that notification of affected jurisdictions and applicable emergency service providers occur prior to start of construction (Caltrans 2023a; 2023b; 2023c; Solano County 2025c; 2025e; City of Pittsburg 2025a; 2025d). PG&E would provide signage directing motorists to an efficient, safe detour around the road or lane closures. Flaggers or other traffic control measures would be utilized to guide traffic around active work areas in a safe manner. Construction would be conducted during daylight hours and in accordance with all necessary traffic control permits. Any road or lane closures would be temporary and typically limited to one side of the street at a time and would be coordinated with Solano, Contra Costa, and Alameda counties and the City of Pittsburg and emergency service providers through the traffic control and encroachment permit processes. Additionally, applicable laws and permit conditions relevant to traffic control service and lane closures in the public right-of-way, including those published in the California Joint Utility Traffic Control Manual, would be adhered to as part of localized traffic control plans developed to reduce the potential for conflicts/hazards. These plans would also require notification of landowners, emergency responders, and local agencies of the planned construction activities; construction activities be coordinated with emergency service providers; and implementation of applicable traffic control measures such as those for temporary road and lane closures or width reduction or traffic diversions. CM TRA-2 would require PG&E to coordinate with applicable emergency service providers at least 24 hours prior to implementing any road or lane closure.

Implementation of CM TRA-1 and CM TRA-2 would ensure disruptions to traffic in the vicinity of the PG&E project components would be minimized during construction. CM TRA-1 would also minimize impacts from road and lane closures or width reduction or traffic diversions including sidewalk and bicycle lane closures in the vicinity of the PG&E project components during construction. Therefore, there would be no conflicts with a program, plan, ordinance or policy addressing the condition of roadways and the safe and efficient movement of vehicles and impacts on the transportation circulation system would be less than significant.

Public Transit

The PG&E project components do not include a land use component that would result in increased demand for transit facilities or increased transit ridership as there would be no operational activity that would generate such trips. As described in Section 4.17.1, there are no transit routes/stops in the vicinity of the PG&E project components in Solano County including the Vaca-Dixon Substation and transposition sites A through C. There would be no impact on transit operations in Solano County. Therefore, the PG&E project components would not conflict with plans, programs, ordinances, or policies of Solano County including the General

Plan and STA Comprehensive Transportation Plan promoting public transit and development of a balanced multimodal transportation system.

In the City of Pittsburg Tri Delta Transit route 387 stops are located on Willow Pass Road, West 10th Street, Black Diamond Street, Marina Boulevard, and East 3rd Street. Tri Delta Transit route 381 stops are located along Railroad Avenue at East 8th Street, East 5th Street, and Marina Boulevard. Construction truck traffic accessing the Pittsburg Substation (see Figure 4.17-3 and Figure 4.17-4) has the potential to disrupt transit operations on local roads in the City of Pittsburg. As noted above, traffic on existing roadways would not be significantly increased during construction of the PG&E project components and the effects would be short-term and periodic. Although road or lane closures are not proposed along Willow Pass Road, West 10th Street, or Railroad Avenue temporary road and lane closures, width reductions, or traffic diversions may be required to ensure the safe accommodation of construction truck traffic during peak construction periods along the designated routes used to access the Pittsburg Substation and for deliveries of oversized loads. PG&E would obtain encroachment permits and transportation permits from the City of Pittsburg and would implement CM TRA-1 which requires the implementation of traffic control measures and a traffic control plan in accordance with the CA MUTCD and notification processes prior to start of construction. PG&E would provide signage directing motorists, transit users, pedestrians, and bicyclists to an efficient, safe detour around the road, lane, and sidewalk closures. Flaggers or other traffic control measures would be utilized to guide traffic around active work areas in a safe manner. While implementation of CM TRA-1 would reduce impacts on Tri Delta Transit operations, the impacts of temporary changes to bus routing and bus stop locations would remain significant. To reduce this impact, MM TRA-1 requires advanced notification to Tri Delta Transit and any affected transit service provider at least 60 days prior to any bus stop closure or road closures that could affect bus routes. With implementation of MM TRA-1, the PG&E project components would not conflict with plans, programs, ordinances, or policies of the City of Pittsburg or Contra Costa County including general plans and the CCTA Comprehensive Transportation Plan promoting public transit and development of a balanced multimodal transportation system, and the impact would be less than significant.

Bicycle and Pedestrian Facilities

The PG&E project components do not include a land use component that would result in increased demand for bicycle and pedestrian facilities or increased bicycle and pedestrian trips as there would be no operational activity that would generate such trips. As described in Section 4.17.1, there are no bicycle or pedestrian facilities in the vicinity of the PG&E project components in Solano County. Therefore, the PG&E project components would not conflict with plans, programs, ordinances, or policies addressing bicycle or pedestrian facilities in Solano County including the General Plan and the Active Transportation Plan promoting a connected bicycle and pedestrian network as part of a balanced multimodal transportation system, and the impact would be less than significant.

As described in Section 4.17.1, in the City of Pittsburg there are class II bicycle facilities on Willow Pass Road, West 10th Street, West 8th Street, Herb White Way, Bay Side Drive, and

Marina Boulevard with class I bike paths along West 8th Street between Herb White Way and Harbor Street and along Marina Boulevard north of East 5th Street (see Figure 4.17-3 and Figure 4.17-4). There are no designated or planned bicycle lanes or sidewalks in the immediate vicinity of the Pittsburg Substation. As described in the Pittsburg Moves: Active Transportation Plan, a class II bicycle facility is planned for East 3rd Street and a class I bicycle facility is planned for Harbor Street. Temporary road or lane closures or width reduction and traffic diversions including bicycle lanes and sidewalks are not proposed along the designated traffic routes that would be used to access the Pittsburg Substation, e.g., Willow Pass Road, Railroad Avenue, and West 10th Street. All construction vehicles would cross roadways with designated bicycle lanes and sidewalks. As described, PG&E would implement CM TRA-1 to limit impacts on the circulation system from the addition of construction vehicles traveling to and from work areas/staging areas and from disruptions related to temporary road and lane closures or width reduction or traffic diversions including sidewalk and bicycle lane closures in the vicinity of the PG&E project components. Implementation of traffic control measures would minimize impacts to bicycle and pedestrian facilities in the City of Pittsburg. As a result, the PG&E project components would not conflict with plans, programs, ordinances, or policies of the City of Pittsburg including the General Plan and Pittsburg Moves: Active Transportation Plan promoting active transportation and development of a balanced multimodal transportation system and the impact would be less than significant.

Modifications to the Tesla Substation and construction activities associated with transposition site D would generate short-term increases in worker, delivery, and haul trips on I-580, Patterson Pass Road, Midway Road, Byron Highway, and Kellogg Creek Road. There are no bicycle or pedestrian facilities in the immediate vicinity of the Tesla Substation and transposition site D in the northeastern Alameda County and southeastern Contra Costa County, respectively. There would be no impact on existing or planned bicycle or pedestrian facilities in Alameda and Contra Costa counties and thus no conflict with plans, policies, or ordinances for bicycle or pedestrian facilities would occur.

Railroad Network

As described in Section 4.17.1, rail facilities/stations in the vicinity of the PG&E project components near the community of Collinsville are approximately 16 miles northwest in Suisun City. The Vaca-Dixon Substation and transposition site A are closer to the Amtrak alignment along I-80. Transposition site B is within one mile of the excursion railway depot at SR 12 and Mauds Lane. The excursion railway alignment is located west of and parallel to Collinsville Road. The BNSF railroad is located approximately one mile south of the Pittsburg Substation in the City of Pittsburg. Construction vehicle traffic associated with the Pittsburg Substation is not expected to affect railroad operations as construction vehicles would cross the railroad at designated crossings, i.e., at Willow Pass Road near N. Parkside Road. There are no railroads in the vicinity of the Tesla Substation and transposition site D in the northeastern Alameda County and southeastern Contra Costa County, respectively. The PG&E project components would not require temporary closure of railroads. No impact from a conflict with plans, policies, or ordinances related to operation of the railroad network would occur.

Air Traffic

Helicopters are anticipated to support the construction of the PG&E project components, e.g., the 500 kV interconnection lines and transposition sites B and D in Solano and Contra Costa counties. Local public and/or private airports or airstrips such as Rio Vista Municipal Airport and Byron Airport may be used to support helicopter operations (Table 4.17-6). The PG&E project components in Solano County are in the airport influence area for Travis AFB. Limitations on the height of structures and notice of aircraft overflights are the only compatibility factors within this zone (see Section 4.17.2). The PG&E Components in Contra Costa County are not in the airport influence area for Byron Airport. Once in the vicinity of the landing zone for the PG&E project components, helicopter flight paths would generally follow the 500 kV interconnection line alignment. Helicopter flight paths over urban areas and utility and agricultural operations of Solano and Contra Costa counties could conflict with plans, programs, ordinances, or policies addressing air traffic in Solano and Contra Costa counties including the applicable general plans and associated airport land use compatibility plans promoting informed land development in the vicinity of airports and airport influence areas. PG&E would implement CM HAZ-3 that would require helicopter operators to coordinate flight paths from local airports or airstrips with local air traffic control, as appropriate. CM HAZ-3 also requires PG&E to minimize impacts on local residents from helicopter use and landing zones. While the CM would reduce conflicts with air traffic it lacks detail for contractor coordination with the FAA and avoidance of conflicts with air traffic, and the impact would remain significant. MM TRA-2 defines requirements for the helicopter contractor to avoid conflicts with air traffic and potential conflicts with policies regarding operation of helicopters. The resulting conflict with a plan, policy, or ordinance adopted for air traffic operations would be less than significant with mitigation.

Operation and Maintenance

LSPGC Project Components

Operation of the Collinsville Substation and 230 kV transmission line would be conducted remotely and would not generate traffic or affect the transportation network. The 230 kV transmission line submarine cable would be buried and would not affect vessel traffic. Maintenance and inspections of the LSPGC project components would generate limited traffic on a routine basis and replacement of equipment could have similar impacts to the construction of the LSPGC project component but would be isolated to the area of equipment replacement and would require a low level of traffic associated with workers required to replace damaged equipment. Maintenance activities conducted for the LSPGC project components would not affect any pedestrian, public transit, or other transportation facilities. LSPGC maintenance activities would not conflict with any policy, plan, or standard related to a safe multi-modal transportation network and the impact would be less than significant.

PG&E Project Components

The inspection and maintenance programs for the 500 kV interconnection lines, 12 kV distribution line, telecommunication yard, substation modifications, and transposition sites A through D would be consistent with PG&E's current monthly and annual programs

across its network. All inspection and maintenance activities would be conducted by existing PG&E staff. Maintenance and inspection of PG&E project components would use vehicles and helicopters that are already employed in maintenance and inspection of the existing facilities that would be expanded by the Proposed Project. Thus, operation and maintenance activities would have a negligible impact on local and regional roadways and would not conflict with relevant federal, state, and local transportation policies, plans, and standards related to a safe multi-modal transportation network. Impacts on transportation from operations and maintenance activities would be less than significant.

Impact TRA-2: Would the Proposed Project conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)? *(Less than significant)*

CEQA Guidelines section 15064.3 (b) identifies VMT as the most appropriate measurement of transportation impacts. VMT measures the amount and distance a vehicle travels to and from a project. Higher VMT indicates increases in greenhouse gas emissions, poorer air quality, and potential collisions with other vehicles and wildlife. Increases in VMT also negatively impact other road users (e.g., pedestrians, transit users, bicyclists) (Governor's Office of Planning and Research (OPR) 2018). In accordance with the *Technical Advisory on Evaluating Transportation Impacts in CEQA*, section 21099 of the Public Resources Code states that the criteria for determining the significance of transportation impacts must promote 1) reduction of GHG emissions; 2) development of multimodal transportation networks; and 3) a diversity of land uses. Per CEQA Guidelines Section 15043.3(b)(3):

> If existing models or methods are not available to estimate the vehicle miles traveled for the particular project being considered, a lead agency may analyze the project's vehicle miles traveled qualitatively. Such a qualitative analysis would evaluate factors such as the availability of transit, proximity to other destinations, etc. For many projects, a qualitative analysis of construction traffic may be appropriate.

In accordance with CEQA Guidelines section 15043.3(b)(3), a qualitative analysis of construction traffic would be appropriate for the Proposed Project. Additionally, CEQA Guidelines section 15064.3(b)(4), "Methodology," allows lead agencies the discretion to choose the most appropriate approach to analyze a project's impacts to VMT. CEQA Guidelines section 15064.3 (a) states that "… 'vehicle miles traveled' refers to the amount and distance of automobile travel attributable to a project," where, in accordance with guidance provided by the Governor's Office of Planning and Research, automobiles refer to on-road passenger vehicles, specifically cars and light trucks (Governor's Office of Planning and Research (OPR) 2018). Because the Proposed Project does not involve any development or land use changes, the VMT analysis herein relies primarily on construction worker commute trips and trips associated with operation and maintenance activities.

Construction

Proposed Project Combined VMT

Although different phases of construction would require different numbers of construction personnel, on average an estimated 97 worker vehicle trips per day are anticipated over the 27-month construction period with different numbers of construction worker trips destined to various project sites. Workers would commute to and from the work areas/staging areas associated with the Proposed Project components from adjacent rural and urbanized areas in the San Francisco Bay Area region. Workers 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 accommodation (e.g., hotels or other short-term rentals in the region) during construction.

The VMT generated by the worker commute trips during construction is summarized in Table 4.17-9. VMT generated by construction workers would be temporary during the 27-month construction period. The Proposed Project construction would also not conflict with multimodal transportation networks as discussed in Impact TRA-1. Because Proposed Project construction would not generate permanent VMT and would not conflict with multimodal transportation networks, the generation of VMT from construction of the Proposed Project would not conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b), and would be less than significant.

Table 4.17-9 Anticipated Construction Worker Commute Vehicle Miles Traveled [a]

Proposed Project Components	Maximum Daily VMT	Average	Total VMT
LSPGC Project Components	21,600	7,359	5,033,600
PG&E Project Components	12,440	5,425	2,696,040
Total	**33,400**	**11,301**	**7,729,640**

Notes:

[a] Daily VMT will vary depending on factors such as material availability, resource availability, and construction scheduling. The maximum daily total sum of VMT for worker vehicles has been presented. Calculations were estimated using the construction equipment list, construction schedule, and assumptions presented in Appendix E: Air Quality and GHG Calculations

Source: Insignia Environmental 2025

LSPGC Project Components

Approximately 67 percent of all worker vehicle trips would be attributable to the LSPGC project components, i.e., approximately 65 average daily worker commutes over the 27-month construction period. VMT generated by construction worker commutes during project construction would not be newly generated; instead, it would be redistributed throughout the regional roadway network based on the different worksites to which workers travel each day. Because construction workers travel on the regional roadway network to access various sites and because the Proposed Project areas are in proximity to population centers (e.g., City of Vacaville, City of Pittsburg, City of Stockton), construction workers would not generate a

substantial number of new trips as compared to existing conditions. Additionally, redistributed VMT from construction worker commutes could increase or decrease depending on the locations of the workers' housing and the locations of the projects they are working on. It is possible that VMT could slightly increase given the rural location of the LSPGC project components in Solano County; however, due to the temporary nature of project construction activities, when construction is completed, construction-related vehicle trips and therefore VMT attributed to the project construction would cease. The resulting impact from generation of VMT by construction worker commutes attributable to the LSPGC project components would be less than significant.

PG&E Project Components

Approximately 32 percent of all worker vehicle trips would be attributable to the PG&E project components, i.e., approximately 43 average daily worker commutes over the 27-month construction period. For the same reasons discussed above for the LSPGC project components, construction worker commutes associated with the PG&E project components would not generate a substantial number of new VMT as compared to existing conditions, and redistributed VMT from construction worker commutes could increase or decrease depending on the locations of the workers' housing and the locations of the projects they are working on. Similarly, VMT could slightly increase given the rural location of the PG&E project components in Solano County and in southeastern Contra Cost County and northeastern Alameda County. However, due to the temporary nature of project construction activities, when construction is completed construction-related vehicle trips and therefore VMT attributed to the project construction would cease. The resulting impact from VMT generation by worker commutes attributable to the PG&E project components would be less than significant.

Operation and Maintenance

The Proposed Project would not generate new worker trips during operation and would not generate daily VMT during maintenance. Any net increase in VMT from routine inspection and maintenance activities would be negligible and would generate far fewer than the 110 trips per day threshold provided in the 2018 *Technical Advisory on Evaluating Transportation Impacts in CEQA*. Operation and maintenance of the Proposed Project would not conflict or be inconsistent with CEQA Guidelines Section 15064.3, and the impact would be less than significant.

Impact TRA-3: Would the Proposed Project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)? *(Less than significant with mitigation)*

Construction

LSPGC Project Components

Roadways

Many of the existing paved and unpaved roads in the rural area of Solano County near the community of Collinsville that would be used to access work areas/staging areas associated with the Collinsville Substation and the 230 kV transmission line alignment (e.g., SR 12,

Collinsville Road, Birds Landing Road, Stratton Lane) are currently used by vehicles and equipment associated with utility operations in the Solano Wind Resource Area and surrounding agricultural operations. Thus, construction of the Collinsville Substation and the 230 kV transmission line would not introduce incompatible uses from the temporary use of heavy trucks or construction equipment on the surrounding roadways. As discussed in Section 4.17.1, there are no existing transit, bicycle, or pedestrian facilities located within 0.25 mile of construction activities. Therefore, construction activities would not create potentially hazardous conditions for people walking or bicycling or interfere with walking or bicycling accessibility.

Construction of the Collinsville Substation and the 230 kV transmission line would include minor grading, vegetation trimming/removal, and/or the application of road base for roadway improvements and the construction of temporary and permanent access roads. All temporary and permanent roads would be located on private property or within approved easements, including the shared driveway connecting to Stratton Lane for LSPGC access to the Collinsville Substation (and separate PG&E access to the telecommunication yard). All temporary access roads would be limited to construction personnel use only. As required, temporary and permanent road improvements would be designed in accordance with all relevant County roadway design standards (Solano County 2025). Improvements would not include any design features that would substantially increase traffic hazards, such as sharp curves or dangerous intersections.

Although construction activities are expected to have a low probability of generating hazardous conditions for motorists, bicyclists, and pedestrians, the potential for significant impacts remains during peak construction activities when higher volumes of construction truck traffic would be accessing work areas/staging areas and when large equipment would be transported to site. To address this, LSPGC would implement APM TRA-2, which mandates preparation and execution of a project-specific traffic control plan prior to initiation of any encroachment or lane closure activities. LSPGC would obtain all applicable encroachment and transportation permits, including those required for oversized vehicle movement, from the appropriate regulatory agencies prior to commencement of construction (Caltrans 2023a; 2023c; 2023b; Solano County 2025c; 2025e). These permits require implementation of agency-approved traffic control measures that adhere to the CA MUTCD to reduce potential transportation-related hazards, protect the safety of the traveling public, and that result in the restoration of any disturbed right-of-way to pre-construction conditions or to the satisfaction of Solano County. Thus, implementation of APM TRA-2 would ensure that LSPGC remains in compliance with permit conditions, incorporates traffic control best management practices, and mitigates potential conflicts between construction activities and existing roadway users. Furthermore, LSPGC would be required to comply with applicable local and state roadway design standards when restoring work areas, thereby minimizing the potential for increased hazards associated with design deficiencies or incompatible uses. Thus, construction activities associated with the Collinsville Substation and 230 kV transmission line would not result in a substantial increase in transportation-related hazards due to project design features or use incompatibility.

However, damage to roadways from heavy construction equipment could create a road hazard should the damaged area not be repaired during construction. APM TRA-2 requires the development of road and lane closure, or width reduction or traffic diversion plans include measures to provide for the safe movement of vehicles, bicyclists, and pedestrians throughout construction. While adherence to APM TRA-2 and general provisions in local encroachment permits reduces impacts from incompatible construction use of road, bicycle, and pedestrian facilities, it does not have sufficient detail for the contractor to avoid traffic safety hazards related to road damage during construction, and the impact would remain significant. To reduce this impact, MM TRA-3 requires LSPGC to document pre- and post-construction conditions of roads, sidewalks, and bicycle facilities on pre-designated routes and work areas such as Stratton Lane and to repair damaged facilities to pre-construction conditions or better within 10 days of reported road damage. With implementation of MM TRA-3, construction of the Collinsville Substation and the 230 kV transmission line would not increase hazards on existing roadway facilities or introduce incompatible uses and would ensure that any disturbed transportation facilities would be returned to pre-construction conditions or better within 10 days and to their original condition following project construction within 60 days. Impacts would be less than significant with mitigation.

Construction of the 230 kV transmission line and telecommunication interconnection lines in the City of Pittsburg would not include any permanent or temporary roads; however, modification of existing roadways to provide for the safe access of construction vehicles and equipment to work areas/staging areas is expected. As an industrial center, the City of Pittsburg generates a fair amount of freight and trucking activities due to major industries(City of Pittsburg 2024). Existing roads in the City of Pittsburg (e.g., Willow Pass Road, West 10th Avenue, Railroad Avenue) that would be used to access work areas/staging areas associated with 0.3-mile-long 230 kV transmission line alignment and the 1.2-mile-long telecommunication interconnection lines alignment are part of the City's network of designated truck routes (City of Pittsburg 2025). Thus, construction of the 230 kV transmission line and the telecommunication interconnection lines would not introduce incompatible uses from the temporary use of heavy trucks or construction equipment on the surrounding roadways.

As described in Section 4.17.1, there are existing transit, bicycle, and pedestrian facilities located within 0.25 mile of construction activities in the City of Pittsburg. Although construction vehicle trips would be limited to predesignated routes some disruption to traffic flow may occur when construction vehicles enter and exit the work areas/staging areas associated with the 230 kV transmission line and the telecommunication interconnection lines. Temporary impacts on Tri Delta Transit route 381 and route 387 buses and stops on Willow Pass Road, West 10th Street, Black Diamond Street, Marina Boulevard, and Railroad Avenue may occur due to construction trucks traveling to and from the work areas/staging areas associated with the 230 kV transmission line and telecommunication interconnection lines. Construction work areas/staging areas associated with the 230 kV transmission line would not intersect with any transit, bicycle or pedestrian facilities and would not require any work in the City rights-of-way (see Figure 4.17-3 and Figure 4.17-4). Temporary travel lane and sidewalk closures along Marina

Boulevard, Herb White Way, Halsey Way, and Halsey Court and bicycle facility closures along Marina Boulevard and Herb White Way would be required during the approximately 4-month construction period for underground installation of the telecommunication interconnection lines. Although use of a HDD boring method for installation of the fiber optic lines would limit disruptions to surface transportation along the alignment and the duration of the disruption would be short term (typically lasting less than 1 week) and localized construction activities could create temporarily hazardous conditions for people driving, walking, or bicycling and interfere with transit, walking or bicycling accessibility. During closures, pedestrian and bicycle traffic would typically be provided with a protected route parallel to the work area(s) and/or directed to the sidewalk on the other side of the street and an alternate bicycle facility on a parallel street such as West 8th Street. Because alternative routes would be provided during project construction, such activity would not substantially interfere with pedestrian accessibility. Additionally, as described in Impact TRA-1, LSPGC would implement APM TRA-2 requiring adherence to the measures in the encroachment and transportation permits from the City of Pittsburg for work in the City rights-of way, and the development and approval of corresponding traffic control plans prior to encroachment or lane closure activities (City of Pittsburg 2025a; 2025d) . The general provisions of an encroachment permit require that LSPGC provide lights, barriers, warning signs, and other safeguards as necessary to protect the traveling public and restore any portion of the street, sidewalk area, or other encroachment which has been disturbed by work to their former condition. As described above, damage to roadways from heavy construction equipment could create a road hazard should the damaged area not be repaired during construction, APM TRA-2 does not have sufficient detail to avoid traffic safety hazards related to road damage during construction, and MM TRA-3 would be required to reduce the impact to a less-than-significant level. Furthermore, APM TRA-2 does not include sufficient detail related to coordination with transit service providers on the road and lane closure plans or width reduction or traffic diversion plans that could temporarily affect bus circulation and/or bus stops that intersect with the work areas associated with the telecommunication interconnection lines and repair of transit infrastructure during and after construction, resulting in a significant impact. MM TRA-1, identified above in Impact TRA-1, would ensure proper coordination/notification on route and/or bus stop location changes and would limit hazards to transit users related to damage of transit infrastructure (shelters and benches) during construction. With implementation of MM TRA-1 and MM TRA-3, construction of the LSPGC project components in the City of Pittsburg would not increase hazards on existing roadway facilities or introduce incompatible uses and would ensure that any disturbed transit and transportation facilities would be returned to pre-construction conditions or better within 10 days and to their original condition following project construction within 60 days. Impacts would be less than significant with mitigation.

Air Traffic

Helicopters are anticipated to support the construction of the Collinsville Substation and the associated 230 kV transmission line in Solano County. These activities may include transportation of construction workers, delivery of equipment and materials to temporary construction areas, refueling at local airports, hardware installation, and/or installation/removal

of overhead conductor/cable. 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 such as Rio Vista Municipal Airport, may be used to support helicopter operations (see Table 4.17-6).

The use of helicopters during construction could impact air traffic patterns and pose hazards to residents along their flight paths. Helicopters could potentially carry external loads into congested areas (i.e., city, town, or open-air assembly of people) during construction activities. Helicopter flights with external loads in congested areas require submittal of a Congested Area Plan to the FAA (14 CFR § 133.33) for approval. A Congested Area Plan would include the anticipated work dates, a detailed description of the work to be performed, safety control measures, and appropriate emergency response procedures. Helicopters would also be used in a military flight area. APM HAZ-1 requires that LSPGC comply with all applicable FAA regulations regarding air traffic within 2 miles of the LSPGC project components in Solano County and the City of Pittsburg, formally communicate all helicopter operations with local airports before and during Proposed Project construction, and manage helicopter use and landing zones to minimize impacts on residents. While APM HAZ-1 requires compliance with FAA regulations, coordination with the FAA and local airports such as Travis AFB and Rio Vista Municipal Airport, and helicopter use/landing zone management controls to limit impact on residents the APM does not have sufficient detail for the contractor to avoid traffic safety hazards with air traffic and the impact would remain significant. To reduce this impact, MM TRA-2 defines requirements for the helicopter contractor to coordinate with the FAA to ensure safe use of helicopters during construction. Thus, the impact from helicopter use would be less than significant with mitigation.

Vessel Traffic

USACE maintains two navigational channels crossed by the proposed 230 kV transmission line 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, the cables would be below any planned dredging within these channels.

The submarine segment, including the northern and southern transition approaches, would be installed over an approximately 6-month period with work occurring continuously 24 hours per day and 7 days per week. A barge, tugboat, and associated equipment watercraft for in-water work is anticipated to be in the Delta for approximately 3 months. The continuous presence of the vessels in the Delta at different locations along the 4.5-mile alignment over 3 months could create hazardous conditions for other Delta users resulting in a significant impact. LSPGC would implement APM REC-1 to ensure all vessel traffic necessary to install the 230 kV transmission line submarine segment would be coordinated with the appropriate agency staff and that coordination between LSPGC construction crews and 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 District 11 at least 15 days prior to the start of in-water construction per regulatory requirements and APM REC-1. Due to coordination of vessel traffic with the appropriate agencies, notification of in-water work with the appropriate agencies for dissemination to Delta users, and the limited duration of in-water work, the impact on the safety of vessel traffic would be less than significant.

PG&E Project Components

Roadways

Construction of the 12 kV distribution line, the 500 kV interconnection lines, the telecommunication yard, and transposition site C would require temporary use of both paved and unpaved roadways in the southern Solano County near the community of Collinsville, including SR 12, Collinsville Road, Birds Landing Road, and Stratton Lane, Talbert Lane, and Montezuma Hills Road. These roads are currently utilized by heavy vehicles supporting utility operations in the Solano Wind Resource Area and surrounding agricultural activities. Thus, construction of the PG&E project components would not introduce incompatible uses from the temporary use of heavy trucks or construction equipment on the surrounding roadways. Modifications to the Vaca-Dixon Substation and construction of transposition sites A and B in northern Solano County would require temporary use of I-80, N. Meridian Road, SR 12, and local paved roads in northern Solano County (see Table 4.17-1 and Table 4.17-2). These roadways routinely accommodate freight, construction, and utility traffic, and no new use conflicts would arise from project-related vehicle activity. There are no existing transit, bicycle, or pedestrian facilities located within 0.25 mile of construction activities. Therefore, construction activities would not create potentially hazardous conditions for people walking or bicycling or interfere with walking or bicycling accessibility.

Construction of the PG&E project components in Solano County would include minor grading, vegetation trimming/removal, and/or the application of road base for roadway improvements and the construction of temporary and permanent access roads. Modifications to the Vaca-Dixon Substation would occur on site and are not expected to require temporary lane closures. All temporary and permanent roads associated with the 500 kV interconnection lines and transposition sites A through C would be located on private property or within approved easements, including the shared driveway connecting to Stratton Lane for PG&E access to the telecommunication yard. All temporary access roads would be limited to construction personnel use only. As required, temporary and permanent road improvements would be designed in accordance with all relevant County roadway design standards (Solano County 2025). Improvements would not include any design features that would substantially increase traffic hazards, such as sharp curves or dangerous intersections.

Although construction activities are expected to have a low probability of generating hazardous conditions for motorists, bicyclists, and pedestrians, the potential for significant impacts remains during peak construction activities when higher volumes of construction truck traffic would be accessing work areas/staging areas and when large equipment would be transported

to site. To address this, PG&E would implement CM TRA-1, which mandates preparation and execution of a project-specific traffic control plan prior to initiation of any encroachment or lane closure activities. PG&E would obtain all applicable encroachment and transportation permits, including those required for oversized vehicle movement, from the appropriate regulatory agencies prior to commencement of construction(Caltrans 2023a; 2023c). These permits require implementation of agency-approved traffic control measures that adhere to the CA MUTCD (Caltrans 2014) to reduce potential transportation-related hazards and protect the safety of the traveling public, and that result in the restoration of any disturbed right-of-way to pre-construction conditions or to the satisfaction of the permitting agency. Implementation of CM TRA-1 would ensure that PG&E remains in compliance with permit conditions, incorporates traffic control best management practices, and mitigates potential conflicts between construction activities and existing roadway users. Furthermore, PG&E would be required to comply with applicable local and state roadway design standards when restoring work areas, thereby minimizing the potential for increased hazards associated with design deficiencies or incompatible uses. Construction activities associated with the PG&E project components near the community of Collinsville would not result in a substantial increase in transportation-related hazards due to project design features or use incompatibility. Due to the low level of vehicle traffic generated on roads for PG&E construction, the impact would be less than significant.

Modifications to the Pittsburg Substation would occur on site and are not expected to require temporary lane closures and/or bicycle lane and sidewalk closures in the nearby residential area in the City of Pittsburg. Construction truck traffic would utilize roads already designated as truck routes, including Willow Pass Road, West 10th Street, and Railroad Avenue (City of Pittsburg 2025). As an established industrial hub, the City routinely accommodates freight and construction traffic (City of Pittsburg 2024). Thus, modifications to the Pittsburg Substation would not introduce incompatible uses from the temporary use of heavy trucks or construction equipment on the surrounding roadways.

As described in Impact TRA-1, there are existing transit, bicycle, and pedestrian facilities located within 0.25 mile of construction activities traffic. Construction activities associated with the modifications to the Pittsburg Substation would not intersect with any bicycle or pedestrian facilities (see Figure 4.17-3 and Figure 4.17-4). Although construction vehicle trips would be limited to predesignated routes some disruption to traffic flow may occur when construction vehicles travel to and from the Pittsburg Substation. Temporary impacts on Tri Delta Transit route 381 and route 387 buses and stops on Willow Pass Road, West 10th Street, and Railroad Avenue may occur due to construction truck traffic. During peak construction periods and when large equipment is being delivered to the Pittsburg Substation construction truck traffic could create temporarily hazardous conditions for people walking or bicycling and interfere with transit, walking or bicycling accessibility which would be significant. As described in Impact TRA-1, PG&E would implement CM TRA-1 requiring adherence to the measures in any required encroachment and transportation permits from the City of Pittsburg and the development and approval of corresponding traffic control plans prior to encroachment or lane

closure activities, as needed (City of Pittsburg 2025a; 2025d). In addition, PG&E construction activities would occur within the Pittsburg Substation and would not affect any public roads. Due to the limited traffic required for construction at the Pittsburg Substation, PG&E construction at the Pittsburg Substation would generate a less than significant hazard in the City of Pittsburg.

Modifications to the Tesla Substation and construction of transposition site D would require temporary use of I-580, SR 4, Patterson Pass Road, North Vasco Road, and Byron Highway and local paved roads in northeastern Alameda County and southeastern Contra Costa County (see Table 4.17-1 and Table 4.17-2). These roadways routinely accommodate freight, construction, and utility traffic, and no new use conflicts would arise from project-related vehicle activity. There are no existing transit, bicycle, or pedestrian facilities located within 0.25 mile of construction activities. Therefore, construction activities would not create potentially hazardous conditions for people walking or bicycling or interfere with walking or bicycling accessibility, and impacts would be less than significant.

Modifications to the Tesla Substation would occur on site and are not expected to require temporary lane closures. Construction activities at transposition site D would include minor grading, vegetation trimming/removal, and/or the application of road base for temporary access roads. All temporary roads associated with the transposition site D would be located on private property or within approved easements and would be limited to construction personnel use only. As required, temporary and permanent road improvements would be designed in accordance with all relevant County roadway design standards (Contra Costa County 2025). Improvements would not include any design features that would substantially increase traffic hazards, such as sharp curves or dangerous intersections. Consequently, the introduction of construction traffic and equipment associated with the Tesla Substation and transposition site D would not represent an incompatible use of the transportation system in the vicinity of the Proposed Project areas and impacts would be less than significant.

Air Traffic

Helicopters are anticipated to support the construction of the 500 kV interconnection lines and transposition site C in Solano County and transposition site D in eastern Contra Costa County. These activities may include transportation of construction workers, delivery of equipment and materials to temporary construction areas, refueling at local airports, hardware installation, and/or installation/removal of overhead conductor/cable. 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 such as Rio Vista Municipal Airport and Byron Airport, may be used to support helicopter operations (see Table 4.17-6).

The use of helicopters could impact air traffic patterns and pose hazards to residents along their flight paths. Although helicopters would be carrying loads over rural areas and would only be used for a limited time over the 27-month construction period the addition of new aircraft could increase safety risks. Thus, due to potential for conflicts with other air traffic in the area

including military air traffic, the impact on air traffic safety would be significant. CM HAZ-3 would require PG&E compliance with FAA regulations. PG&E would consult with the FAA to develop helicopter flight plans that would include measures to ensure load operations avoid occupied structures and roadways and identify locations of traffic control where external load operations would cross public roadways. Helicopter operators would be required to coordinate flight paths from local airports or airstrips with local air traffic control, as appropriate. CM HAZ-3 also requires PG&E to minimize impacts on local residents from helicopter use and landing zones. While CM HAZ-3 requires compliance with FAA regulations, coordination with the FAA and local airports such as Travis AFB and Rio Vista Municipal Airport, and helicopter use/landing zone management controls to limit impact on residents the CM does not have sufficient detail for the contractor to avoid traffic safety hazards with air traffic and the impact would remain significant. MM TRA-2 defines requirements for the helicopter contractor to coordinate with the FAA to ensure safe use of helicopters during construction. Thus, the impact from helicopter use would be less than significant with mitigation.

Operation and Maintenance

LSPGC Project Components

No roadway improvements associated with the 230 kV transmission line or the telecommunication interconnection lines are proposed in the City of Pittsburg. All permanent roads would be located in Solano County in the immediate vicinity of the Collinsville Substation and 230 kV transmission line on private property or within approved easements and would be designed in accordance with all relevant County roadway design standards. Thus, all roadway improvements and modifications would be designed and constructed to allow for the safe and efficient movement of all modes of travel.

The Collinsville Substation, 230 kV transmission line, and telecommunication interconnection lines would be unstaffed and remotely monitored during operation. Typical operation and maintenance activities would primarily involve routine inspections, preventative maintenance, and repair of the existing facilities and would not require temporary road and lane closures, width reduction or traffic diversions, or use of helicopters. Operation and maintenance activities would not require the construction, redesign, or alteration of any public roadways, and the types of vehicles accessing the Proposed Project area during operational activities would be consistent with those used under existing conditions (e.g., medium- and heavy-duty vehicles). Operation and maintenance of the LSPGC project components would not present incompatible use or design features that would substantially increase hazards on road, bicycle, or pedestrian facilities. As a result, impacts would be less than significant.

The 230 kV transmission line submarine segment would be buried beneath sediment in the navigational channel and would not affect navigation within the channel. The presence of the 230 kV transmission line submarine segment would have no impact on boat traffic during operation. Maintenance of the 230 kV transmission line submarine segment would require installation of a replacement segment of cable using methods that are similar to construction. The impact on marine vessel traffic during maintenance activities would be less than significant.

PG&E Project Components

No roadway improvements associated with the Pittsburg Substation are proposed in the City of Pittsburg. Roadway improvements are not proposed in Contra Costa or Alameda counties for transposition site D or the Tesla Substation or in Solano County for the Vaca-Dixon Substation and transposition sites A, B and C. All permanent roads would be located in Solano County in the immediate vicinity of the telecommunication yard and 500 kV transmission line on private property or within approved easements and would be designed in accordance with all relevant County roadway design standards. Thus, all roadway improvements and modifications would be designed and constructed to allow for the safe and efficient movement of all modes of travel.

The modified substations and the new telecommunication yard, 500 kV transmission lines, 12 kV distribution line, and transposition sites would be unstaffed and remotely monitored during operation. Typical operation and maintenance activities would primarily involve routine inspections, preventative maintenance, and repair of the existing facilities and would not require temporary road and lane closures, lane width reduction or traffic diversions, or the use of helicopters. Operation and maintenance activities would not require the construction, redesign, or alteration of any public roadways, and the types of vehicles accessing the PG&E project components during operational activities would be consistent with those used under existing conditions (e.g., medium- and heavy-duty vehicles). Operation and maintenance of the PG&E project components would not present incompatible use or design features that would substantially increase hazards on road, bicycle, or pedestrian facilities. As a result, impacts would be less than significant.

Impact TRA-4: Would the Proposed Project result in inadequate emergency access? *(Less than significant)*

Construction

LSPGC Project Components

The existing network of public and private roads in Solano County near the community of Collinsville would be used to access the Collinsville Substation site and tower structure work areas and staging areas associated with the 230 kV transmission line (see Figure 4.17-1 and Figure 4.17-2). Improvements to existing roads and roadway intersections and construction of temporary and permanent access roads would comply with County roadway standards and specifications as required (Solano County 2025). Construction of road improvements and temporary and permanent access roads and any required road and lane closures or width reduction or traffic diversion plans for construction (i.e., Stratton Lane) would have the potential to result in inadequate emergency access. However, as described in Impact TRA-3, LSPGC would implement APM TRA-2 to reduce hazard impacts on other roadway users associated with roadway improvements, road or lane closures, construction truck traffic, and delivery of oversized loads. APM TRA-2 requires LSPGC to obtain encroachment permits for any construction work that would occur in Solano County and Caltrans rights-of way, as needed (Solano County 2025c) and transportation permits for delivery of oversized loads as needed (Solano County 2025f; 2025e). as well as coordination with applicable emergency service

providers at least 24 hours prior to implementing any road or lane closure or width reduction or traffic diversions. Flaggers or other traffic control measures would be utilized to guide traffic around active work areas in a safe manner.

As required under APM TRA-2 and local and state regulations, LSPGC would prepare and submit traffic control plans prepared in accordance with the latest County requirements and the latest version of the CA MUTCD. LSPGC would adhere to the guidelines set forth in the CATTCH, which were developed in accordance with the CA MUTCD. Section 6B.01.7D of the CA MUTCD states that the needs of emergency service providers should be assessed and appropriate coordination made when developing a traffic control plan. Additionally, construction activities would be required to comply with the standards set forth in the 2022 California Fire Code as adopted by reference in the Solano County Code, Chapter 6.3 Building Standards (Solano County 2025a; 2025b). Section 3311.1 of the 2022 California Fire Code identifies minimum requirements to provide required emergency access during construction activities (State of California, 2025). Therefore, with the implementation of traffic control plans that meet local and state requirements including coordination of any road or lane closures with applicable emergency service providers adequate emergency access would be maintained during all construction activities and the impacts of the LSPGC project components on emergency access during construction would be less than significant. No mitigation required.

The existing network of public roads in the City of Pittsburg would be used to access the work areas/staging areas associated with the 0.3-mile 230 kV transmission line underground segment and 1.2-mile-long telecommunication interconnection lines (see Figure 4.17-3 and Figure 4.17-4). Construction of temporary and permanent access roads would not be required; however, temporary road or lane closures would be required along Marina Boulevard, Herb White Way, Halsey Way, and Halsey Court for installation of the telecommunication interconnection lines. Required road and lane closures or width reduction or traffic diversions would have the potential to result in inadequate emergency access. However, as described in Impact TRA-3, LSPGC would implement APM TRA-2 to reduce hazard impacts on other roadway users associated with roadway improvements, road or lane closures, construction truck traffic, and delivery of oversized loads. APM TRA-2 requires LSPGC to obtain encroachment permits for any construction work that would occur in City rights-of way (City of Pittsburg 2025) and transportation permits for equipment delivery and oversized loads as needed (City of Pittsburg 2025d) as well as coordination with local emergency service providers.

As required under APM TRA-2 and local and state regulations LSPGC would prepare and submit traffic control plans prepared in accordance with the latest City requirements and the latest version of the CA MUTCD. Requirements include an assessment of emergency service provider needs, appropriate coordination with emergency service providers when developing a traffic control plan, and compliance with the standards set forth in Section 3311.1 of 2022 California Fire Code which identifies minimum requirements for emergency access during construction activities (State of California 2025). The 2022 California Fire Code is adopted by reference in the Pittsburg Municipal Code, Chapter 15, Buildings and Construction (City of

Pittsburg 2025c). Therefore, with the implementation of APM TRA-2 and traffic control plans that meet local and state requirements including coordination of any road or lane closures or width reduction or traffic diversions with applicable emergency service providers adequate emergency access would be maintained during all construction activities and impacts of the LSPGC project components on emergency access during construction would be less than significant. No mitigation required.

PG&E Project Components

Solano County

The existing network of public and private roads in Solano County near the community of Collinsville would be used to access the telecommunication yard site and tower structure work areas and staging areas associated with the 12 kV distribution line, the 500 kV interconnection lines, and transposition site C (see Figure 4.17-1 and Figure 4.17-2). The Vaca-Dixon Substation and transposition sites A and B would be accessed by the existing network of public roads in Solano County (see Figure 4.17-1). Any required road and lane closures or width reduction or traffic diversions for construction (i.e., Stratton Lane) would have the potential to result in inadequate emergency access. PG&E would implement CM TRA-2 to address impacts on emergency access from road and lane closures or width reduction or traffic diversions. CM TRA-2 requires that PG&E coordinate with applicable emergency service providers at least 24 hours prior to implementing any road or lane closure. Flaggers or other traffic control measures would be utilized to guide traffic around active work areas in a safe manner. With implementation of CM TRA-2, the impact on emergency access in Solano County would be less than significant.

City of Pittsburg

As required under CM TRA-1 and CM TRA-2 and local and state regulations, PG&E would prepare and submit traffic control plans prepared in accordance with the latest City requirements and the latest version of the CA MUTCD. Requirements include an assessment of emergency service provider needs, appropriate coordination with emergency service providers when developing a traffic control plan, and compliance with the standards set forth in Section 3311.1 of 2022 California Fire Code which identifies minimum requirements for emergency access during construction activities (Solano County 2025b; State of California 2025). Therefore, with the implementation of CM TRA-1 and CM TRA-2 and traffic control plans that meet local and state requirements including coordination of any road or lane closures or width reduction or traffic diversions with applicable emergency service providers adequate emergency access would be maintained during all construction activities and the impacts of the PG&E project components on emergency access during construction would be less than significant.

The existing network of public roads in the City of Pittsburg would be used to access the work areas/staging areas associated with the modifications to the Pittsburg Substation (see Figure 4.17-3 and Figure 4.17-4). Modifications to the Pittsburg Substation would occur on site and would not require the construction of temporary and permanent access roads. However, road

and lane closures or width reduction or traffic diversions may be required to ensure the safe accommodation of construction truck traffic during peak construction periods and for deliveries of oversized loads. Road and lane closures or width reduction or traffic diversions would have the potential to result in inadequate emergency access. However, as described in Impact TRA-3, PG&E would implement CM TRA-1 to reduce hazard impacts on other roadway users associated with roadway improvements, road or lane closures, construction truck traffic, and delivery of oversized loads. CM TRA-1 requires LSPGC to obtain encroachment permits for any construction work that would occur in City rights-of way (City of Pittsburg 2025) and transportation permits for equipment delivery and oversized loads as needed (City of Pittsburg 2025d). CM TRA-2 would require coordination with local emergency service providers.

As required under CM TRA-1 and CM TRA-2 and local and state regulations PG&E would prepare and submit traffic control plans prepared in accordance with the latest City requirements and the latest version of the CA MUTCD. Requirements include an assessment of emergency service provider needs, appropriate coordination with emergency service providers when developing a traffic control plan, and compliance with the standards set forth in Section 3311.1 of 2022 California Fire Code which identifies minimum requirements for emergency access during construction activities. The 2022 California Fire Code is adopted by reference in the Pittsburg Municipal Code, Chapter 15, Buildings and Construction (City of Pittsburg 2025b; State of California 2025). Therefore, with the implementation of CM TRA-1, CM TRA-2, and traffic control plans that meet local and state requirements including coordination of any road or lane closures or width reduction or traffic diversions with applicable emergency service providers adequate emergency access would be maintained during all construction activities and the impacts of the PG&E project components on emergency access during construction would be less than significant.

Alameda and Contra Costa County

The Tesla Substation and transposition site D would be accessed by the existing network of public roads in Alameda and Contra Costa counties (see Figure 4.17-1). Temporary access roads associated with transposition site D would be located on private property or within approved easements. Modifications to the Tesla Substation would occur on site and would not require the construction of temporary and permanent access roads or temporary road and lane closures or width reductions and traffic diversions. Therefore, modifications to the Tesla Substation and construction of transposition site D would not impede emergency evacuation or emergency response.

Operation and Maintenance

LSPGC Project Components

The LSPGC Collinsville Substation and 230 kV transmission line are located in a relatively isolated area of Solano County away from major communities and roadways. The community of Collinsville primarily uses Collinsville Road for regional access and would most likely use this roadway in the event of an emergency. The LSPGC project components would not permanently alter Collinsville Road. All permanent roads would be located on private property

or within approved easements. The LSPGC project components would not impede emergency evacuation or emergency response as the Collinsville Substation and 230kV transmission line are unmanned and would have small worker crews during routine maintenance activities. Therefore, the LSPGC project components would not affect an emergency response plan or emergency evacuation plan.

PG&E Project Components

Except for the Pittsburg Substation, the PG&E project components are located in isolated areas of Solano County and Alameda and Contra Costa counties away from major communities and roadways. All permanent roads would be located on private property or within approved easements. The PG&E project components would not impede emergency evacuation or emergency response as they would be unmanned and would have small worker crews during routine maintenance activities. The existing PG&E substations (Pittsburg, Vaca-Dixon, and Tesla) are located on PG&E property with access provided by existing roads. The substations are unmanned and would have small worker crews during routine maintenance activities. PG&E would not increase permanent worker staff at the substations. The proposed modifications would not change the overall use of the sites in a manner that would change regional or local response to an emergency. Therefore, the PG&E project components would not affect an emergency response plan or emergency evacuation plan. Impacts would be less than significant.

4.17.5 Impact Analysis – Cumulative

CEQA defines a cumulative impact as "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" (CEQA Guidelines section 15130(a)(1)). Cumulative impacts can result from "individually minor but collectively significant projects taking place over a period of time" (CEQA Guidelines Section 15355). An EIR must discuss cumulative impacts if the incremental effect of a project, combined with the effects of other projects, is "cumulatively considerable" (CEQA Guidelines Section 15130(a)).

The geographic scope for the analysis of cumulative impacts associated with transportation are the transportation networks in the City of Pittsburg and in Solano, Sacramento, Contra Costa, and Alameda counties. The types of projects that could combine to result in adverse cumulative impacts for transportation include residential, commercial, infrastructure, and transmission projects that would share the same transportation systems (i.e., roads, air space, navigable waters) as the Proposed Project and have overlapping construction and/or operational timelines. Projects within the cumulative analysis study area include all of the projects listed in Table 4.0-1 and shown on Figure 4.0-1.

Transit Services and Facilities, Bicycle Facilities, and Pedestrian Facilities

As discussed above, installation of the proposed LSPGC telecommunication interconnection lines would result in temporary impacts to City of Pittsburg's streets (Marina Drive, Herb White Way, Halsey Way, Halsey Court) and would result in temporary bus stop closures. APM TRA-2 and CM TRA-1 require LSPGC and PG&E to obtain transportation and encroachment permits

from Caltrans and the local jurisdictions and to comply with permit requirements designed to prevent excessive congestion or traffic hazards during construction. LSPGC and PG&E would develop road and lane closure or width reduction or traffic diversion plans as required by the encroachment permits. The cumulative development projects in the City of Pittsburg include residential development projects (Bay Walk Mixed Use Project and Harbor View Project Launch Project, East Street Estates, and Liberty Subdivision), a parking facility, and improvements to an existing auto sales facility. The cumulative projects would be located within private parcels and would not involve bus stop closures on city streets. As a result, a significant cumulative impact from the Proposed Project in combination with the cumulative projects would not occur.

Vehicle Miles Traveled

VMT is by nature a cumulative impact that is addressed through State of California policy. Of the cumulative projects, the California Forever LP Project would have the greatest potential impact on VMT as the project could add upwards of 400,000 new residents to Solano County. As discussed in Impact TRA-2, the Proposed Project would not generate permanent VMT. The temporary VMT generated during construction would not overlap with the VMT generated by occupation of housing for the potential California Forever LP Project as the timeline for the project is in the future and has not been defined. Therefore, a cumulative impact from the Proposed Project VMT in combination with the potential future California Forever LP Project would not occur.

Transportation Hazards

Road and Lane Closures

None of the cumulative projects propose to use Stratton Lane at the same time as the Proposed Project and there would be no cumulative impact from road or lane closures on Stratton Lane. None of the cumulative projects would involve road or lane closures on the roads where construction would occur for the telecommunication interconnection lines in the City of Pittsburg. As a result, the cumulative impact of road and lane closures or width reduction and traffic diversions would be less than significant.

Helicopter Use

The only cumulative project that would be likely to use helicopters is the future Humboldt-Collinsville Transmission Line. The Humboldt-Collinsville Transmission line is a future project, and construction would not overlap with the Proposed Project. As the use of helicopters would not overlap, there would be no cumulative impact from use of helicopters for the Proposed Project and cumulative projects. As a result, the cumulative impact from helicopter use would be less than significant.

Vessel Traffic

The cumulative projects that involve vessel traffic in proximity to the Proposed Project include the San Francisco Bay and Delta Sand Mining Project and USACE maintenance dredging and projects that could affect vessel traffic include tidal habitat restoration (Chipps Island Tidal Habitat and Montezuma Tidal and Seasonal Wetlands), and emergency levee repair (Sickle Island) projects. If the cumulative project schedules all overlapped and had vessels in the

channel in proximity to the Proposed Project during cable installation activities, they could result in a significant cumulative impact on marine vessel traffic safety. LSPGC has proposed APM REC-1 to ensure coordination between LSPGC construction crews and applicable agencies for all in-water work and to ensure notification processes for other Delta users, including other construction crews associated with dredging and mining projects to address conflicts with marine vessels. Due to the implementation of APM REC-1 and coordination with USACE and the construction crews associated with dredging, mining the Proposed Project contribution to a cumulative impact on marine vessel traffic safety would be less than significant.

Emergency Access

Construction of the Proposed Project components would not impair implementation of or physically interfere with an adopted emergency response or evacuation plan. Potential 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. The Proposed Project would only affect emergency access during construction and would not have an impact on emergency access during operation. None of the cumulative projects that have overlapping construction schedules are located near Stratton Lane. In the City of Pittsburg all of the cumulative projects would be located within private parcels and would not affect emergency access in proximity to the LSPGC telecommunication lines during installation of the telecommunication lines. Due to the absence of overlapping construction in roadways in proximity to the Proposed Project, the cumulative impact on emergency access would be less than significant.

4.17.6 Alternative 1: Collinsville Substation North of Talbert Lane

Environmental Setting – Alternative 1

Alternative 1 involves relocating the proposed LSPGC Collinsville Substation to a different site, approximately 1.2 miles north of the Proposed Project substation site. Alternative 1 would also include an approximately 500-foot segment of PG&E 500 kV interconnection lines, approximately 700-foot segment of 12 kV distribution line, and an approximately 2-mile-long segment of LSPGC 230 kV overhead line. Alternative 1 would not involve changes to any of the other Proposed Project components, which would have the same impacts as described throughout this Draft EIR for the Proposed Project or the other alternatives if selected in combination with Alternative 1.

The Alternative 1 substation site is located north of Talbert Lane. The environmental setting for transportation described in Section 4.17.1 would apply to Alternative 1 with the exception that substation site would be accessed from Talbert Lane via Collinsville Road. The portion of Talbert Lane between Collinsville Road and the Alternative 1 substation site is an unpaved road approximately twenty feet wide. Talbert Lane east and south of the substation site provides access to the wind farm and residential and agricultural parcels. Stratton Lane and existing access roads within the wind farm would provide access to the Alternative 1 230 kV overhead segment.

Impact Analysis – Alternative 1

There are no public transit, bicycle or pedestrian facilities, railroads, or marine vessel access or facilities in the Alternative 1 area. Alternative 1 would involve increased duration of site preparation and LSPGC 230 kV overhead segment construction as compared to construction of the Proposed Project 230 kV overhead segment, but reduced activity level associated with PG&E 500 kV interconnection line and PG&E 12 kV distribution line construction. Alternative 1 would involve a comparable number of workers and vehicle trips to the Proposed Project. The analysis below addresses impacts on public roadways and air traffic within the Alternative 1 area. Impacts TRA-1 and TRA-4 are addressed together because the same APMs and mitigation measures address both impacts for Alternative 1.

Impact TRA-1: Would Alternative 1 conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities? ***(Less than significant with mitigation)***

Impact TRA-4: Would Alternative 1 result in inadequate emergency access? ***(Less than significant)***

LSPGC Project Components

Construction - Roadway Circulation and Access

Construction of the alternative substation location and associated infrastructure reflected in Alternative 1 would not permanently alter the physical transportation network or adversely affect the implementation of any proposed transportation network improvements in Solano County. Therefore, the LSPGC project components would not conflict with plans, programs, ordinances, or policies of Solano County including general plans and comprehensive transportation plans promoting a safe multi-modal transportation circulation system.

The work area/staging areas for the Alternative 1 LSPGC Collinsville Substation and LSPGC 230 kV overhead transmission line in Solano County would be accessed from SR 12, Collinsville Road, Stratton Lane, Talbert Lane and a network of unpaved roads, new permanent access roads, and temporary access roads. Construction vehicles associated with Alternative 1 would be dispersed through the regional road network because access to each work area would be provided from different roads and different directions depending on origins. Construction vehicle trips would also be limited to predesignated routes to minimize the contribution of construction traffic to roadway congestion in the vicinity of Alternative 1 in Solano County. Thus, traffic on existing roadways would not be significantly increased compared to baseline conditions during peak construction.

As presented in Table 4.17-2 and Table 4.17-4, the majority of the roadways in the vicinity of Alternative 1, including Talbert Lane, are local, two-lane roads that are not anticipated to experience heavy traffic. Alternative 1 peak construction traffic during construction would represent between approximately 1 and 3 percent of the average daily trips reported along SR 12 and approximately 6 percent of the average daily trips reported along SR 113/Birds Landing Road in the vicinity of the Alternative 1 Collinsville Substation and 230 kV transmission line south of SR 12.

Alternative 1 could disrupt traffic due to temporary road or lane closures on Talbert Lane during LSPGC 230 kV overhead segment construction across the roadways or during large delivery or haul truck turning into the Alternative 1 staging areas. Temporary lane and road closures could affect vehicle circulation during construction activities and conflict with programs and policies related to the efficient movement of persons and goods on the roadway system in the transportation plans of Solano County, as described in Section 4.17.2. The increased heavy truck travel on access roads including Talbert Lane and temporary lane or road closure on Talbert Lane could create a safety hazard for any other vehicles using Talbert Lane. LSPGC would implement APM TRA-2, which requires encroachment permits and transportation permits be obtained from Caltrans and the local jurisdictions, that traffic control measures and a traffic control plan be developed in accordance with the CA MUTCD, and that notification of affected jurisdictions and applicable emergency service providers occur prior to start of construction (Solano County 2025c). Flaggers or other traffic control measures would be utilized to guide traffic around active work areas in a safe manner. Construction across roadways would be conducted during daylight hours and in accordance with all necessary traffic control permits. Any road or lane closures would be temporary (a few minutes during the delivery or stringing activity) and typically limited to one side of the street at a time and would be coordinated with Solano County and emergency service providers through the traffic control and encroachment permit processes. Additionally, applicable laws and permit conditions relevant to traffic control service and lane closures in the public right-of-way, including those published in the California Joint Utility Traffic Control Manual, would be adhered to as part of localized traffic control plans developed to reduce the potential for conflicts/hazards. These plans would also require notification of landowners, emergency responders, and local agencies of the planned construction activities; construction activities be coordinated with emergency service providers; and implementation of applicable traffic control measures such as those for temporary road and lane closures or width reduction or traffic diversions. APM TRA-2 would also require LSPGC to coordinate with applicable emergency service providers at least 24 hours prior to implementing any road or lane closure.

Implementation of APM TRA-2 would ensure disruptions to traffic in the vicinity of the LSPGC project components including emergency access would be minimized during construction. Therefore, there would be no conflicts with a program, plan, ordinance or policy addressing the condition of roadways and the safe and efficient movement of vehicles, and impacts on the transportation circulation system as well as emergency access would be less than significant.

The Alternative 1 impact on roadway circulation and access would be equivalent to the impacts of the Proposed Project elements that are replaced by Alternative 1.

Construction - Air Traffic

Helicopters are anticipated to support the Alternative 1 construction of the 230 kV overhead segment. Local public and/or private airports or airstrips such as Rio Vista Municipal Airport may be used to support helicopter operations (Table 4.17-5). The LSPGC project components are in the Airport Influence Area for Travis AFB. Limitations on the height of structures and notice of aircraft overflights are the only compatibility factors within this zone (see Section 4.17.2).

Alternative 1 components are less than 200 feet tall and would comply with the height limits in the zone. Once in the vicinity of the landing zone for the LSPGC project component, helicopter flight paths would generally follow the Alternative 1 230 kV overhead alignment. Helicopter flight paths over urban areas and utility and agricultural operations of Solano County could conflict with plans, programs, ordinances, or policies addressing air traffic in Solano County including the General Plan and associated Airport Land Use Compatibility Plans promoting informed land development in the vicinity of airports and airport influence areas. LSPGC would implement APM HAZ-1 that would require helicopter operators to coordinate flight paths from local airports or airstrips with local air traffic control, as appropriate. APM HAZ-1 also requires LSPGC to minimize impacts on local residents from helicopter use and landing zones. While the APM requires coordination it does not specify the requirements for the contractor to ensure safe helicopter use, and the impact would remain significant. To reduce this impact, MM TRA-2 defines requirements for the helicopter contractor to avoid conflicts with air traffic and potential conflicts with policies regarding operation of helicopters. The resulting Alternative 1 impact on air traffic would be less than significant with mitigation.

The Alternative 1 impact on air traffic would be equivalent to the impacts of the Proposed Project elements that are replaced by Alternative 1.

Operation and Maintenance

Operation of the Alternative 1 substation and 230 kV overhead segment would not require routine access. The Alternative 1 facilities would be operated remotely. Maintenance activities would be isolated to the area of equipment replacement and would require a low level of traffic associated with workers required to replace damaged equipment. Maintenance activities conducted for the Alternative 1 LSPGC project would not conflict with any policy, plan, or standard related to the transportation network and would not affect emergency access. The impact during operation and maintenance would be less than significant.

The Alternative 1 impact on transportation during operation and maintenance would be equivalent to the impacts of the Proposed Project elements that are replaced by Alternative 1.

PG&E Project Components

The Alternative 1 500 kV interconnection lines and 12 kV distribution line do not cross any roadways and would not require any closures of public roadways. The 500 kV interconnection line would be constructed using land-based construction equipment and would not require use of helicopters. PG&E construction activities under Alternative 1 would require deliveries to the staging area adjacent to the Alternative 1 substation site. The deliveries could require temporary lane or road closures (a few minutes) as large delivery trucks with large turning radius enter or exit the staging area. PG&E would implement CM TRA-1 and CM TRA-2 as needed, which require encroachment permits and transportation permits be obtained from Caltrans and the local jurisdictions, that traffic control measures and a traffic control plan be developed in accordance with the CA MUTCD, and that notification of affected jurisdictions and applicable emergency service providers occur prior to start of construction (Caltrans 2023a; 2023b; 2023c; Solano County 2025c; 2025e). Flaggers would be used to guide large delivery trucks and

manage traffic during deliveries. With implementation of CM TRA-1 and CM TRA-2, the impact from conflict with a plan for the circulation system and impact on emergency access would be less than significant.

Similar to the Proposed Project, the Alternative 1 PG&E project components would be integrated into PG&E's operation and maintenance program. As PG&E Alternative 1 project components are not located on any roadways, Alternative 1 PG&E operation and maintenance activities would have no impact on roadway circulation or on emergency access.

The Alternative 1 PG&E components would be shorter than the equivalent Proposed Project components and would have less impact on transportation than the Proposed Project 500 kV interconnection lines and 12 kV distribution lines. However, the total impact of Alternative 1 on transportation would be equivalent to the total impact of the Proposed Project components that are replaced by Alternative 1.

Impact TRA-2: Would Alternative 1 conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)? ***(Less than significant)***

Combined LSPGC and PG&E Project Components

VMT was calculated for Alternative 1 in combination with the Proposed Project in other segments (refer to Appendix E). The VMT generated by worker commute trips during Alternative 1 construction is summarized in Table 4.17-10. VMT generated by construction workers would be temporary during the approximately 2-year construction period. Alternative 1 construction would not conflict with multimodal transportation networks as no other modes of transportation occur in the Alternative 1 area. Because Alternative 1 construction would not generate permanent VMT and would not conflict with multimodal transportation networks, the generation of VMT from construction of Alternative 1 would not conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b), and the impact would be less than significant.

Table 4.17-10 Anticipated Construction Worker Commute Vehicle Miles Traveled [a]

Alternative 1 Components	Maximum Daily VMT	Average	Total VMT
LSPGC Project Components	20,880	7,572	5,179,360
PG&E Project Components	19,040	5,800	2,801,280
Total	**28,880**	**11,668**	**7,980,640**

Notes:

[a] Daily VMT will vary depending on factors such as material availability, resource availability, and construction scheduling. The maximum daily total sum of VMT for worker vehicles reflects differences in the peak day of construction for the various PG&E and LSPGC components. Calculations were estimated using the construction equipment list, construction schedule, and assumptions for Alternative 1 as presented in Section 3: Description of Alternatives.

Alternative 1 operation and maintenance would not generate VMT on a daily basis as Alternative 1 would be operated remotely and would not require maintenance every day.

Alternative 1 operation and maintenance VMT would not conflict with or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b) and the impact would be less than significant. The impact on VMT would be equivalent to the Proposed Project.

Impact TRA-3: Would Alternative 1 substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)? ***(Less than significant with mitigation)***

LSPGC Project Components

Roadway

LSPGC construction of the 230 kV overhead segment could require temporary lane or road closures on Talbert Lane. LSPGC construction of the Alternative 1 substation and 230 kV overhead segment would increase heavy truck traffic on Collinsville Road, Talbert Lane, and Stratton Lane, particularly adjacent staging areas (Talbert Lane and Stratton Lane). Damage to roadways from heavy construction equipment could create a road hazard should the damaged area not be repaired during construction. APM TRA-2 requires the development of road and lane closure or width reduction or traffic diversion plans include measures to provide for the safe movement of vehicles, bicyclists, and pedestrians throughout construction. While adherence to APM TRA-2 and general provisions in local encroachment permits reduces impacts from incompatible construction use of roads it does not have sufficient detail for the contractor to avoid traffic safety hazards related to road damage during construction, and the impact would remain significant. To reduce this impact, MM TRA-3 requires LSPGC to document pre- and post-construction conditions for the roads adjacent construction including Talbert Lane and Stratton Lane and to repair damaged facilities to pre-construction conditions or better within 10 days of reported road damage. With implementation of MM TRA-3, construction of the Alternative 1 Collinsville Substation and the 230 kV transmission line would not increase hazards on existing roadway facilities or introduce incompatible uses and would ensure that any disturbed transportation facilities would be returned to pre-construction conditions or better within 10 days and to their original condition following project construction within 60 days. Impacts from construction would be less than significant with mitigation.

The Alternative 1 facilities are not located within roadways. The 230 kV overhead segment would span Talbert Lane and would not conflict with vehicle traffic. Maintenance of Alternative 1 components would be conducted within the Alternative 1 substation or Alternative 1 access roads and permanent maintenance pads. Maintenance activities would not create a safety hazard due an incompatible use. LSPGC Alternative 1 operation and maintenance would have no impact on traffic hazards. The Alternative 1 impact on roadway hazards would be equivalent to the Proposed Project.

Air Traffic

LSPGC would use helicopters to construct the Alternative 1 230 kV overhead segment. Use of helicopters would increase air traffic in the area. LSPGC would implement APM HAZ-1 that would require helicopter operators to coordinate flight paths from local airports or airstrips with local air traffic control, as appropriate. APM HAZ-1 also requires LSPGC to minimize

impacts on local residents from helicopter use and landing zones. While the APM requires coordination it does not specify the requirements for the contractor to ensure safe helicopter use, and the impact on air traffic safety would remain significant. MM TRA-2 defines requirements for the helicopter contractor to avoid conflicts with air traffic and potential conflicts with policies regarding operation of helicopters. The resulting Alternative 1 impact on air traffic hazards would be less than significant with mitigation. The Alternative 1 impact on air traffic hazards would be equivalent to the Proposed Project.

PG&E Project Components

Construction of the Alternative 1 500 kV interconnection lines and 12 kV distribution lines would generate minimal traffic on area roadways. While PG&E project components would require deliveries of equipment for the new facilities, due to the small number of new structures (nine TSPs and four wooden poles) required for Alternative 1 and because all PG&E construction activities would occur outside of public roads, the impact on traffic hazards from PG&E Alternative 1 construction would be less than significant.

PG&E operation and maintenance activities would be conducted from PG&E access roads outside of public roadways. Alternative 1 operation and maintenance activities would not create a traffic hazard as activities would not be conducted on public roads, thus no impact from traffic hazards would occur. The Alternative 1 impact on roadway hazards would be equivalent to the Proposed Project.

4.17.7 Alternative 2: Collinsville Substation East of Wind Energy Substations

Environmental Setting – Alternative 2

Alternative 2 involves relocating the proposed LSPGC Collinsville Substation to a different site, approximately 3.0 miles north of the location proposed under the Proposed Project. Alternative 2 would also include an approximately 1,200-foot-long segment of PG&E 500 kV interconnection lines and a 4-mile-long segment of LSPGC 230 kV overhead line, as well as an approximately 0.3-mile-long PG&E 12 kV distribution line. Alternative 2 would not involve changes to any of the other Proposed Project components, which would have the same impacts as described throughout this Draft EIR for the Proposed Project or the other alternatives if selected in combination with Alternative 2.

The Alternative 2 substation site is located north of Montezuma Hills Road. The environmental setting for transportation described in Section 4.17.1 would apply to Alternative 2 with the exception that substation site would be accessed from Montezuma Hills Road via Birds Landing Way from Collinsville Road. Existing access roads within the windfarm also provide access to Alternative 2 work areas.

Impact Analysis – Alternative 2

There are no public transit, bicycle or pedestrian facilities, railroads, or marine vessel access or facilities in the Alternative 2 area. The analysis below addresses impacts on public roadways

and air traffic within the Alternative 2 area. Impacts TRA-1 and TRA-4 are addressed together because the same APMs and mitigation measures address both impacts for Alternative 2.

Impact TRA-1: Would Alternative 2 conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities? ***(Less than significant with mitigation)***

Impact TRA-4: Would Alternative 2 result in inadequate emergency access? ***(Less than significant)***

LSPGC Project Components

Roadway Circulation and Access

The alternative substation location and associated infrastructure reflected in Alternative 2 would not permanently alter the physical transportation network or adversely affect the implementation of any proposed transportation network improvements in Solano County. Therefore, the Alternative 2 LSPGC project components would not conflict with plans, programs, ordinances, or policies of Solano County including general plans and comprehensive transportation plans promoting a safe multi-modal transportation circulation system.

The work area/staging areas for the Alternative 2 Collinsville Substation and 230 kV overhead transmission line in Solano County would be accessed from SR 12, Collinsville Road, Birds Landing Way, Montezuma Hills Road, Stratton Lane, Talbert Lane and a network of unpaved roads, new permanent access roads, and temporary access roads. Construction vehicles associated with Alternative 2 would be dispersed through the regional road network because access to each work area would be provided from different roads and different directions depending on origins. Construction vehicle trips would also be limited to predesignated routes to minimize the contribution of construction traffic to roadway congestion in the vicinity of Alternative 2 in Solano County. Thus, traffic on existing roadways would not be significantly increased compared to baseline conditions during peak construction.

As presented in Table 4.17-2 and Table 4.17-4, the majority of the roadways in the vicinity of Alternative 2, including Montezuma Hills Road, are local, two-lane roads that are not anticipated to experience heavy traffic. Alternative 2 peak construction traffic during construction would represent between approximately 1 and 3 percent of the average daily trips reported along SR 12 and approximately 6 percent of the average daily trips reported along SR 113/Birds Landing Road in the vicinity of the Alternative 1 Collinsville Substation and 230 kV transmission line south of SR 12.

Alternative 2 could disrupt traffic due to temporary road or lane closures on Montezuma Hills Road and Talbert Lane during 230 kV overhead segment construction across the roadways or during large delivery or haul truck turning into the Alternative 2 staging areas. Temporary lane and road closures could affect vehicle circulation during construction activities and conflict with programs and policies related to the efficient movement of persons and goods on the roadway system in the transportation plans of Solano County, as described in Section 4.17.2. The increased heavy truck travel on access roads including Montezuma Hills Road and Stratton Lane and temporary lane or road closure on Montezuma Hills Road and Talbert Lane could

create a safety hazard for any other vehicles using Montezuma Hills Road, Talbert Lane, and Stratton Lane. LSPGC would implement APM TRA-2, which requires encroachment permits and transportation permits be obtained from Caltrans and the local jurisdictions, that traffic control measures and a traffic control plan be developed in accordance with the CA MUTCD, and that notification of affected jurisdictions and applicable emergency service providers occur prior to start of construction (Solano County 2025c). Flaggers or other traffic control measures would be utilized to guide traffic around active work areas in a safe manner. Construction across roadways would be conducted during daylight hours and in accordance with all necessary traffic control permits. Any road or lane closures would be temporary (a few minutes during the delivery or stringing activity) and typically limited to one side of the street at a time and would be coordinated with Solano County and emergency service providers through the traffic control and encroachment permit processes. Additionally, applicable laws and permit conditions relevant to traffic control service and lane closures in the public right-of-way, including those published in the California Joint Utility Traffic Control Manual, would be adhered to as part of localized traffic control plans developed to reduce the potential for conflicts/hazards. These plans would also require notification of landowners, emergency responders, and local agencies of the planned construction activities; construction activities be coordinated with emergency service providers; and implementation of applicable traffic control measures such as those for temporary road and lane closures or width reduction or traffic diversions. APM TRA-2 would also require LSPGC to coordinate with applicable emergency service providers at least 24 hours prior to implementing any road or lane closure.

Implementation of APM TRA-2 would ensure disruptions to traffic in the vicinity of the LSPGC project components including emergency access would be minimized during construction. Therefore, the conflicts with a program, plan, ordinance or policy addressing the condition of roadways and the safe and efficient movement of vehicles and impacts on the roadway circulation system as well as emergency access during Alternative 2 construction would be less than significant.

Operation of the Alternative 2 substation and 230 kV overhead segment would not require routine vehicle access. The Alternative 2 facilities would be operated remotely. Maintenance activities would be isolated to the area of equipment replacement and would require a low level of traffic associated with workers required to replace damaged equipment. Maintenance activities conducted for Alternative 2 would not conflict with any policy, plan, or standard related to the transportation network and would not affect emergency access. The impact during operation and maintenance would be less than significant.

Alternative 2 impacts on roadway circulation and access would be equivalent to the Proposed Project.

Air Traffic

Helicopters are anticipated to support Alternative 2 construction of the 230 kV overhead segment. Local public and/or private airports or airstrips such as Rio Vista Municipal Airport may be used to support helicopter operations (Table 4.17-5). The LSPGC project components are

in the Airport Influence Area for Travis AFB. Limitations on the height of structures and notice of aircraft overflights are the only compatibility factors within this zone (see Section 4.17.2). Alternative 2 components are less than 200 feet tall and would comply with the height limits in the zone. Once in the vicinity of the landing zone for the LSPGC project component, helicopter flight paths would generally follow the Alternative 2 230 kV overhead alignment. Helicopter flight paths over urban areas and utility and agricultural operations of Solano County could conflict with plans, programs, ordinances, or policies addressing air traffic in Solano County including the General Plan and associated Airport Land Use Compatibility Plans promoting informed land development in the vicinity of airports and airport influence areas. LSPGC would implement APM HAZ-1 that would require helicopter operators to coordinate flight paths from local airports or airstrips with local air traffic control, as appropriate. APM HAZ-1 also requires LSPGC to minimize impacts on local residents from helicopter use and landing zones. While the APM requires coordination it does not specify the requirements for the contractor to ensure safe helicopter use, and the impact would remain significant. MM TRA-2 defines requirements for the helicopter contractor to avoid conflicts with air traffic and potential conflicts with policies regarding operation of helicopters. The resulting Alternative 2 construction impact on air traffic would be less than significant with mitigation.

LSPGC would conduct Alternative 2 operation and maintenance activities by land-based vehicles. Operation and maintenance activities would have no impact on air traffic. Alternative 2 impacts on air traffic would be equivalent to the Proposed Project.

PG&E Project Components

The Alternative 2 500 kV interconnection lines and 12 kV distribution line do not cross any roadways and would not require any closures of public roadways. The 500 kV interconnection line would be constructed using land-based construction equipment and would not require use of helicopters. PG&E construction activities under Alternative 2 would require deliveries to the staging area adjacent to the Alternative 2 substation site. The deliveries could require temporary lane or road closures (a few minutes) as large delivery trucks with large turning radius enter or exit the staging area. PG&E would implement CM TRA-1 and CM TRA-2 as needed, which require encroachment permits and transportation permits be obtained from Caltrans and the local jurisdictions, that traffic control measures and a traffic control plan be developed in accordance with the CA MUTCD, and that notification of affected jurisdictions and applicable emergency service providers occur prior to start of construction (Caltrans 2023a; 2023b; 2023c; Solano County 2025c; 2025e). Flaggers would be used to guide large delivery trucks and manage traffic during deliveries. With implementation of CMs TRA-1 and TRA-2, the impact from conflict with a plan for the circulation system and impact on emergency access during construction would be less than significant.

Similar to the Proposed Project, the Alternative 2 PG&E project components would be integrated into PG&E's operation and maintenance program. As PG&E Alternative 2 project components are not located on any roadways, Alternative 2 PG&E operation and maintenance activities would have no impact on roadway circulation or on emergency access.

The Alternative 2 PG&E components would be shorter than the equivalent Proposed Project components and would have less impact on transportation than the Proposed Project 500 kV interconnection lines and 12 kV distribution lines. However, the total impact of Alternative 2 impact on transportation would be equivalent to the Proposed Project components that are replaced by Alternative 2.

Impact TRA-2: Would Alternative 2 conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)? *(Less than significant)*

Combined LSPGC and PG&E Project Components

VMT was calculated for Alternative 2 in combination with the Proposed Project in other segments (refer to Appendix E). The VMT generated by worker commute trips during Alternative 2 construction is summarized in Table 4.17-11. VMT generated by construction workers would be temporary during the approximately 2-year construction period. Alternative 2 construction would not conflict with multimodal transportation networks as no other modes of transportation occur in the Alternative 2 area. Because Alternative 2 construction would not generate permanent VMT and would not conflict with multimodal transportation networks, generation of VMT from construction of Alternative 2 would not conflict with or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b), and the impact would be less than significant.

Table 4.17-11 Anticipated Construction Worker Commute Vehicle Miles Traveled [a]

Alternative 2 Components	Maximum Daily VMT	Average	Total VMT
LSPGC Project Components	19,160	8,031	5,493,520
PG&E Project Components	19,040	5,800	2,801,280
Total	**28,880**	**12,127**	**8,294,800**

Notes:

[a] Daily VMT will vary depending on factors such as material availability, resource availability, and construction scheduling. The maximum daily total sum of VMT for worker vehicles reflects differences in the peak day of construction for the various PG&E and LSPGC components. Calculations were estimated using the construction equipment list, construction schedule, and assumptions for Alternative 2 as presented in Section 3: Description of Alternatives.

Alternative 2 operation and maintenance would not generate VMT on a daily basis as Alternative 2 would be operated remotely and would not require maintenance every day. Alternative 2 operation and maintenance VMT would not conflict with or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b) and the impact would be less than significant.

Impact TRA-3: Would Alternative 2 substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)? ***(Less than significant with mitigation)***

LSPGC Project Components

Roadways

LSPGC construction of the 230 kV overhead segment could require temporary lane or road closures on Montezuma Hills Road and Talbert Lane. LSPGC construction of the Alternative 2 substation and 230 kV overhead segment would increase heavy truck traffic on Birds Landing Way and Montezuma Hills Road as well as some increased travel on Talbert Lane, and Stratton Lane, particularly adjacent staging areas (Talbert Lane and Montezuma Hills Road). Damage to roadways from heavy construction equipment could create a road hazard should the damaged area not be repaired during construction. APM TRA-2 requires the development of road and lane closure or width reduction or traffic diversion plans include measures to provide for the safe movement of vehicles, bicyclists, and pedestrians throughout construction. While adherence to APM TRA-2 and general provisions in local encroachment permits reduces impacts from incompatible construction use of roads it does not have sufficient detail for the contractor to avoid traffic safety hazards related to road damage during construction, and the impact would remain significant. To reduce this impact, MM TRA-3 requires LSPGC to document pre- and post-construction conditions for the roads adjacent construction including Montezuma Hills Road and Stratton Lane and to repair damaged facilities to pre-construction conditions or better within 10 days of reported road damage. With implementation of MM TRA-3, construction of the Alternative 2 Collinsville Substation and the 230 kV transmission line would not increase hazards on existing roadway facilities or introduce incompatible uses and would ensure that any disturbed transportation facilities would be returned to pre-construction conditions or better within 10 days and to their original condition following project construction within 60 days. Impacts from construction would be less than significant with mitigation.

The Alternative 2 facilities are not located within roadways. The 230 kV overhead segment would span Montezuma Hills Road and Talbert Lane and would not conflict with vehicle traffic. Maintenance of Alternative 2 components would be conducted within the Alternative 2 substation or Alternative 2 access roads and work areas and would not create a safety hazard due an incompatible use. LSPGC Alternative 1 operation and maintenance would have no impact on traffic hazards.

Air Traffic

The impact of Alternative 2 construction on air traffic is discussed in Impact TRA-1 and Impact TRA-3 above.

PG&E Project Components

Construction of the Alternative2 500 kV interconnection lines and 12 kV distribution lines would generate minimal traffic on area roadways. While PG&E project components would require deliveries of equipment for the new facilities, due to the small number of new structures

(nine TSPs and four wooden poles) required for Alternative 2 and because all PG&E construction activities would occur outside of public roads, the impact on traffic hazards from PG&E Alternative 2 construction would be less than significant.

PG&E operation and maintenance activities would be conducted from PG&E access roads outside of public roadways. Alternative 2 operation and maintenance activities would not create a traffic hazard as activities would not be conducted on public roads, thus no impact from traffic hazards would occur.

4.17.8 Alternative 3: 500 kV Interconnection Lines on Entirely TSPs

Environmental Setting – Alternative 3

Alternative 3 involves constructing the PG&E 500 kV interconnection lines on entirely TSPs, instead of the combination of LSTs and three-pole TSPs under the Proposed Project. The 500 kV interconnection lines would be in the same general alignment as the Proposed Project PG&E 500 kV interconnection lines. Alternative 3 would not involve changes to any of the other Proposed Project components, which would have the same impacts as described throughout this Draft EIR for the Proposed Project or the other alternatives if selected in combination with Alternative 3.The environmental setting for Alternative 3 transportation is the same as the setting for the PG&E 500 kV interconnection lines addressed in Section 4.17.1.

Impact Analysis – Alternative 3

Alternative 3 would generally involve reduced helicopter use compared to the Proposed Project and would rely more on land-based construction vehicles due to installation of TSPs instead of LSTs. However, the intensity of construction including vehicle miles traveled and construction duration would be equivalent to the Proposed Project. Similar to the Proposed Project, Alternative 3 would be consistent with CEQA Guidelines Section 15064.3, subdivision (b) as discussed in Impact TRA-2 in Section 4.17.4and is not discussed further. Impacts TRA-1, TRA-3, and TRA-4 are discussed below. Impacts TRA-1 and Impact TRA-3 are addressed because the same APMs and mitigation measures address both impacts for Alternative 3.

Impact TRA-1: Would Alternative 3 conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities? ***(Less than significant with mitigation)***

Impact TRA-3: Would Alternative 3 substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)? ***(Less than significant with mitigation)***

Alternative 3 would not, by itself, affect transit or bicycle or pedestrian facilities because no bicycle or pedestrian facilities occur in the Alternative 3 area. Similar to the Proposed Project, Alternative 3 would require use of the same access roads including access within the wind farm, which are not publicly accessible. Alternative 3 would also require conductor stringing across Stratton Lane. Similar to the Proposed Project 500 kV interconnection lines, PG&E would implement CM TRA-1 and CM TRA-2, which would ensure disruptions to traffic in the vicinity of Alternative 3 would be minimized during construction and would protect traffic safety

during conductor stringing across Stratton Lane. Similar to the Proposed Project 500 kV interconnection lines, the impact from conflict with a plan or program addressing roadway circulation and the traffic hazard during conductor stringing across Stratton Lane would be less than significant.

Alternative 3 would require less helicopter use during construction than the Proposed Project because the TSPs would be constructed more with cranes and land-based construction vehicles than helicopters; however, helicopters would still be used for transport of materials and conductor stringing. PG&E would implement CM HAZ-3 that would require helicopter operators to coordinate flight paths from local airports or airstrips with local air traffic control, as appropriate. While the CM would reduce conflicts with air traffic, the CM lacks detail for contractor coordination with the FAA and avoidance of conflicts with air traffic, and the impact from conflicts with a transportation plan for air traffic and potential traffic safety hazard would remain significant. To reduce this impact, MM TRA-2 defines requirements for the helicopter contractor to avoid conflicts with air traffic and potential conflicts with policies regarding operation of helicopters and defines requirements for air traffic safety. The resulting conflict with a plan, policy, or ordinance adopted for air traffic operations and impact on air traffic safety would be less than significant with mitigation. Alternative 3 impacts from conflict with a plan, policy, or ordinance adopted for air traffic operations and impacts on air traffic safety would be equivalent to the Proposed Project 500 kV interconnection lines.

Impact TRA-4: Would Alternative 3 result in inadequate emergency access? *(Less than significant)*

The PG&E 500 kV interconnection lines that would be on TSPs under Alternative 3 would be constructed primarily within the wind farm which does not have any public access roads used for emergency access. Alternative 3 could require temporary closure of Stratton Lane during conductor stringing across Stratton Lane or construction of TSPs adjacent to Stratton Lane. Temporary lane or road closure of Stratton Lane could affect emergency access along Stratton Lane. Similar to the Proposed Project, PG&E would implement CM TRA-1 and CM TRA-2 and comply local and state regulations for traffic control including appropriate coordination with emergency service providers when developing a traffic control plan, and compliance with the standards set forth in Section 3311.1 of 2022 California Fire Code which identifies minimum requirements for emergency access during construction activities (Solano County 2025b; State of California 2025). Therefore, with the implementation of CM TRA-1 and CM TRA-2 and traffic control plans the impact on emergency access during construction would be less than significant. The Alternative 3 impact on emergency access would be equivalent to the Proposed Project 500 kV interconnection lines.

4.17.9 Alternative 4: 230 kV Overhead Segment Alternative Route

Environmental Setting – Alternative 4

Alternative 4 involves relocation of a short segment of the LSPGC 230 kV overhead segment between the proposed LSPGC Collinsville Substation and the Delta, west of the proposed LSPGC 230 kV overhead segment route. Additionally, the northern end of the LSPGC 230 kV

submarine segment would be rerouted to meet up with the southern end of the Alternative 4 230 kV submarine segment. Alternative 4 would not involve changes to any of the other Proposed Project components, which would have the same impacts as described throughout this Draft EIR for the Proposed Project or the other alternatives if selected in combination with Alternative 4.

Alternative 4 is located on private lands and within the Delta. No public roadways, bicycle facilities, public transit, or pedestrian facilities are located within the Alternative 4 site. Access to the Alternative 4 site would be provided via Stratton Lane, and existing unpaved access road within the private property and via boat for the submarine segment.

Impact Analysis – Alternative 4

Alternative 4 would have no impact on plans or policies addressing the circulation system for public roadways as Alternative 4 is entirely on private property. No public roadways would be affected. Alternative 4 would have no impact on emergency access (Impact TRA-4) as the alternative would not affect any roadways used for emergency access. Alternative 4 construction would involve the same number of workers, duration, and vehicle miles traveled as the Proposed Project overhead 230 kV segment (refer to Impact TRA-2 in Section 4.17.4). Alternative 4 would be consistent with CEQA Guidelines Section 15064.3, subdivision (b) as discussed in Impact TRA-2 in Section 4.17.4and is not discussed further. Alternative 4 would not affect any public roadways, and the analysis of Impacts TRA-1 and TRA-3 below focus on the Alternative 4 submarine segment impacts on marine vessel traffic. Impacts TRA-1 and Impact TRA-3 are addressed together because the same APMs and MMs address both impacts for Alternative 4.

Impact TRA-1: Would Alternative 4 conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities? ***(Less than significant)***

Impact TRA-3: Would Alternative 4 substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)? ***(Less than significant)***

The Alternative 4 230 kV submarine segment installation would require a barge, tugboat, and associated watercraft for in-water work. The duration of installation for the Alternative 4 segment would be equivalent to the duration of the Proposed Project submarine segment that is replaced by Alternative 4. The total duration of submarine segment construction (including the Proposed Project segment that is not replaced by Alternative 4) is anticipated to last approximately 3 months and would occur 24 hours a day. LSPGC would implement APM REC-1 to ensure that vessel traffic necessary to install the 230 kV transmission line submarine segment would be coordinated with the appropriate agency staff and to ensure coordination between LSPGC construction crews and the USCG San Francisco Waterways Branch and the San Francisco VTC prior to any temporary in-water activities so Delta users are aware of access restrictions. In addition, a Local Notice to Mariners would be submitted to USCG District 11 at least 15 days prior to the start of in-water construction per regulatory requirements. Although

the STA's Solano County Comprehensive Transportation Plan does not include policies or ordinances regarding vessel traffic in the Delta, implementation of APM REC-1 would reduce the potential for conflicts with commercial and recreation vessel traffic that intersect with LSPGC in-water work period and would reduce potential for hazards with marine vessel traffic. In light of these APMs and due to the short duration of work and coordination with regulatory agencies, the impact on vessel traffic and safety would be less than significant. The Alternative 4 impact on transportation would be equivalent to the Proposed Project 230 kV overhead segment and submarine segment that would be replaced by Alternative 4.

4.17.10 Alternative 5: 230 kV Submarine Segment Alternative Route

Environmental Setting – Alternative 5

Alternative 5 involves rerouting a portion of the proposed LSPGC 230 kV submarine segment to the east of its current alignment as it approaches the southern shoreline in Pittsburg. The submarine segment cable would be installed in the same manner as the Proposed Project. Alternative 5 would not involve changes to any of the other Proposed Project components, which would have the same impacts as described throughout this Draft EIR for the Proposed Project or the other alternatives if selected in combination with Alternative 5.

The environmental setting for transportation for Alternative 5 is the same as the setting for the LSPGC 230 kV submarine segment addressed in Section 4.17.1. Alternative 5 is located entirely within the Sacramento-San Joaquin River Delta.

Alternative 5 involves rerouting a portion of the proposed LSPGC 230 kV submarine segment to the east of its current alignment as it approaches the southern shoreline in Pittsburg. The submarine segment cable would be installed in the same manner as the Proposed Project. The environmental setting for transportation for Alternative 5 is the same as the setting for the LSPGC 230 kV submarine segment addressed in Section 4.17.1. Alternative 5 is located entirely within the Sacramento-San Joaquin River Delta.

Impact Analysis – Alternative 5

Alternative 5 is located entirely within the Sacramento-San Joaquin River Delta and would not involve any construction activities on road. Alternative 5 construction would not generate any vehicle miles traveled because all access would be from water via marine vessels, thus Alternative 5 would have no impact under CEQA Guidelines Section 15064.3, subdivision (b) (Impact TRA-2). Alternative 5 would have no impact on emergency access (Impact TRA-4) as the alternative would not affect any emergency access routes. Alternative 5 would not affect any public roadways and the analysis of Impacts TRA-1 and TRA-3 below focuses on marine vessel traffic only. Impacts TRA-1 and Impact TRA-3 are addressed together because the same APMs and mitigation measures address both impacts for Alternative 5.

Impact TRA-1: Would Alternative 5 conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities? *(Less than significant)*

Impact TRA-3: Would Alternative 5 substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)? *(Less than significant)*

Alternative 5 would require site preparation (i.e., dredging) for two weeks in the year prior to the submarine cable installation. The Alternative 5 230 kV submarine segment installation would require a barge, tugboat, and associated watercraft for in-water work. The duration of Alternative 5 submarine segment cable installation would be the same as the Proposed Project (approximately 3 months). The Alternative 5 submarine segment installation would occur 24 hours a day. LSPGC would implement APM REC-1 to ensure that vessel traffic necessary to install the 230 kV transmission line submarine segment and conduct site preparation activities would be coordinated with the appropriate agency staff and to ensure coordination between LSPGC construction crews and the USCG San Francisco Waterways Branch, the San Francisco VTC, and the City of Pittsburg's harbor master prior to any temporary in-water activities so Delta users are aware of access restrictions. In addition, a Local Notice to Mariners would be submitted to USCG District 11 at least 15 days prior to the start of in-water construction per regulatory requirements. Although the CCTA's 2017 Countywide Transportation Plan does not include policies or ordinances regarding vessel traffic in the Delta, implementation of APM REC-1 would reduce the potential for conflicts with commercial and recreation vessel traffic that intersect with LSPGC in-water work periods and would reduce potential for hazards with marine vessel traffic. In light of these APMs, and due to the short duration of work and coordination with regulatory agencies, the impact on vessel traffic and safety would be less than significant. The Alternative 5 impact on transportation would be equivalent to the Proposed Project submarine segment that would be replaced by Alternative 5.

4.17.11 Alternative 6a/6b: Underground Portions of the 230 kV Transmission Line within Suisun Marsh Protection Plan Management Area

Environmental Setting – Alternative 6a/6b

Alternative 6a/6b would locate the LSPGC 230 kV transmission line on primarily PG&E-owned property south of the proposed Collinsville Substation site (similar to Alternative 4). Alternative 6a/6b would be installed in conduit underground. Alternative 6a differs from Alternative 6b only at the northern end of the segment where options are provided for connection to the Proposed Project Collinsville Substation or Alternatives 1 or 2. Two overhead riser structures would be installed at the northern end of the Alternative 6a/6b underground duct bank where the LSPGC 230 kV line would transition between an overhead and underground position. Alternative 6a/6b would not involve changes to any of the other Proposed Project components, which would have the same impacts as described throughout this Draft EIR for the Proposed Project or the other alternatives if selected in combination with Alternative 6a/6b.

Alternative 6a would follow a path directly from the Proposed Project Collinsville Substation on private property and would not cross any public roadways. Alternative 6b underground duct bank would cross Stratton Lane.

Alternative 6a/6b would locate the LSPGC 230 kV transmission line on primarily PG&E-owned property south of the proposed Collinsville Substation site (similar to Alternative 4). Alternative 6a/6b would be installed in conduit underground. Alternative 6a differs from Alternative 6b only at the northern end of the segment where options are provided for connection to the Proposed Project Collinsville Substation or Alternatives 1 or 2. Two overhead riser structures would be installed at the northern end of the Alternative 6a/6b underground duct bank where the LSPGC 230 kV line would transition between an overhead and underground position. Alternative 6a would follow a path directly from the Proposed Project Collinsville Substation on private property and would not cross any public roadways. Alternative 6b underground duct bank would cross Stratton Lane.

Impact Analysis – Alternative 6a/6b

Alternative 6a/6b would have no impact on transit, bicycle, or pedestrian facilities as no such facilities occur in the area. Alternative 6a/6b would not involve construction with helicopters and would also have no impact on air traffic. Alternative 6a/6b construction would involve the same number of workers, duration, and vehicle miles traveled as the Proposed Project overhead 230 kV segment (refer to Impact TRA-2 in Section 4.17.4). Alternative 6a/6b would be consistent with CEQA Guidelines Section 15064.3, subdivision (b) as discussed in Impact TRA-2 in Section 4.17.4and is not discussed further.

Alternative 6a would have no impact on plans or policies addressing the circulation system for public roadways as Alternative 6a is entirely on private property and would not affect any public roadways. Alternative 6a would also have no impact on emergency access (Impact TRA-4) as the alternative would not affect any roadways used for emergency access. Alternative 6a would not affect any public roadways and the analysis of Impacts TRA-1 and TRA-3 below focus on the Alternative 6b construction across Stratton Lane and Alternative 6a/6b submarine segment impacts on marine vessel traffic.

Impact TRA-1: Would Alternative 6a/6b conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities? *(Less than significant with mitigation)*

Roadways

Construction

Alternative 6b construction would require trenching or jack and bore construction to install the underground conduit across Stratton Lane. Due to the low volume of traffic on Stratton Lane it is assumed that open-trench construction methods could be used for installation of each duct bank. Open trench construction of the Alternative 6b underground duct bank would require temporary lane or road closures on Stratton Lane. Temporary lane and road closure could affect vehicle circulation during construction activities and conflict with programs and policies related

to the efficient movement of persons and goods on the roadway system in the transportation plans of Solano County, as described in Section 4.17.2. The temporary lane or road closure on Stratton Lane could create a safety hazard for any other vehicles using Stratton Lane. LSPGC would implement APM TRA-2, which requires encroachment permits and transportation permits be obtained from Caltrans and the local jurisdictions, that traffic control measures and a traffic control plan be developed in accordance with the CA MUTCD, and that notification of affected jurisdictions and applicable emergency service providers occur prior to start of construction (Solano County 2025c). Flaggers or other traffic control measures would be utilized to guide traffic around active work areas in a safe manner. Construction across roadways would be conducted during daylight hours and in accordance with all necessary traffic control permits. Any road or lane closures would be temporary (during daytime construction hours) and typically limited to one side of the street at a time and would be coordinated with Solano County and emergency service providers through the traffic control and encroachment permit processes. Additionally, applicable laws and permit conditions relevant to traffic control service and lane closures in the public right-of-way, including those published in the California Joint Utility Traffic Control Manual, would be adhered to as part of localized traffic control plans developed to reduce the potential for conflicts/hazards. These plans would also require notification of landowners, emergency responders, and local agencies of the planned construction activities; construction activities be coordinated with emergency service providers; and implementation of applicable traffic control measures such as those for temporary road and lane closures or traffic diversions.

Implementation of APM TRA-2 would ensure disruptions to traffic in the vicinity of Alternative 6b would be minimized during construction. Therefore, there would be no conflicts with a program, plan, ordinance or policy addressing the condition of roadways and the safe and efficient movement of vehicles and impacts on the transportation circulation system would be less than significant.

Operation and Maintenance

Operation and maintenance of Alternative 6b would not generate regular traffic and would not require lane or road closures. Access would be provided to the buried cable at vaults, which are located on private property and not within the roadway. Operation and maintenance of Alternative 6b would not conflict with a program, plan, ordinance or policy addressing the condition of roadways and the safe and efficient movement of vehicles and no impact would occur.

The Alternative 6a/6b construction, operation, and maintenance impact from conflict with a program, plan, ordinance of policy addressing the condition of the roadway and safe and efficient movement of vehicles would be equivalent to the Proposed Project 230 kV overhead segment.

Vessel Traffic

The Alternative 6a/6b 230 kV submarine segment installation would require a barge, tugboat, and associated watercraft for in-water work. The duration of installation for the Alternative

6a/6b segment would be equivalent to the duration of the Proposed Project submarine segment that is replaced by Alternative 6a/6b. The total duration of submarine segment construction (including the Proposed Project segment that is not replaced by Alternative 6a/6b) is anticipated to last approximately 3 months and would occur 24 hours a day. LSPGC would implement APM REC-1 to ensure that vessel traffic necessary to install the 230 kV transmission line submarine segment would be coordinated with the appropriate agency staff and to ensure coordination between LSPGC construction crews and the USCG San Francisco Waterways Branch and the San Francisco VTC prior to any temporary in-water activities so Delta users are aware of access restrictions. In addition, a Local Notice to Mariners would be submitted to USCG District 11 at least 15 days prior to the start of in-water construction per regulatory requirements. Although the STA's Solano County Comprehensive Transportation Plan does not include policies or ordinances regarding vessel traffic in the Delta, implementation of APM REC-1 would reduce the potential for conflicts with commercial and recreation vessel traffic that intersect with LSPGC in-water work period and would reduce potential for hazards with marine vessel traffic. In light of these APMs and due to the short duration of work and coordination with regulatory agencies, the impact on vessel traffic and safety would be less than significant.

The Alternative 6a/6b construction, operation, and maintenance impact on marine vessels from conflict with a program, plan, ordinance of policy addressing the condition of the roadway and safe and efficient movement of vehicles would be equivalent to the Proposed Project submarine segment.

Impact TRA-3: Would Alternative 6b substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)? ***(Less than significant with mitigation)***

Roadways

Alternative 6b underground duct bank construction and presence of the duct bank could create a hazard if the roadway were not properly stabilized and repaired for vehicle travel following construction. The impact from an increase in hazards due to the underground duct bank across Stratton Lane would be significant. MM TRA-3 requires documentation of pre-construction road conditions and post-construction road repair to ensure any damage to the roadway is repaired to avoid creating a hazard to vehicle traffic. With implementation of MM TRA-3, Alternative 6b would have a less than significant impact from increased hazards due to a geometric design feature.

The Alternative 6b impact on roadway hazards would be equivalent to the Proposed Project.

Vessel Traffic

The impacts on marine vessel safety are addressed in Impact TRA-1. As discussed in Impact TRA-1, the Alternative 6a/6b impact on marine vessel safety would be less than significant.

The Alternative 6b impact on marine vessels would be equivalent to the Proposed Project submarine segment.

Impact TRA-4: Would Alternative 6b result in inadequate emergency access? ***(Less than significant)***

Alternative 6b underground duct bank crosses Stratton Lane. Construction of the underground duct bank could impact emergency access as the underground construction area within the roadway (open trench) would not be open to emergency access. APM TRA-2 would require LSPGC to coordinate with applicable emergency service providers at least 24 hours prior to implementing any road or lane closure including open trench construction on Stratton Lane. Due to the limited service on Stratton Lane and low probability of emergency access on the road as well as coordination with emergency service providers, the impact of Alternative 6b construction on emergency access would be less than significant.

Alternative 6b would be buried and would be accessed from vaults outside of the public roadway. Alternative 6b operation and maintenance would have no impact on emergency access.

Alternative 6b impact on emergency access would be equivalent to the Proposed Project.

4.17.12 No Project Alternative

Environmental Setting – No Project Alternative

Under the No Project Alternative, the LSPGC Collinsville Substation and associated LSPGC 230 kV transmission line, PG&E 500 kV interconnection lines, and PG&E 12 kV distribution line would not be constructed. The existing transportation network conditions described in Section 4.17.1 would apply to the No Project Alternative.

Impact Analysis – No Project Alternative

The No Project Alternative would not conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities (Impact TRA-1). The No Project Alternative would no conflict or be inconsistent with CEQA Guidelines § 15064.3, subdivision (b) (Impact TRA-2). The No Project Alternative would not substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment) (Impact TRA-3). The No Project Alternative would not result in inadequate emergency access (Impact TRA-4). No transportation impacts would occur under the No Project Alternative.

4.17.13 Mitigation Measures

LSPGC Project Components

MM TRA-1: Transit Notification

Prior to the construction in the City of Pittsburg, LSPGC shall notify Tri Delta Transit no less than 60 days prior to construction within 20 feet of any bus stop or detours of any bus route. The notification shall include the following:

- The location and timing of construction activities within proximity to the bus stop

- The location and timing of road closures along the bus route(s) and proposed detours
- The affected bus route(s) and bus stop(s)
- Name and contact information for a responsible individual who can address any questions and meet with the transit agency to resolve any conflicts with bus operations
- Signs are posted at affected bus stops no less than 7 days before closures

If damage to transit facilities (e.g., shelters, benches, signs) occurs because of Proposed Project construction or construction vehicle traffic, LSPGC shall restore transit facilities within 60 days after the completion of construction at their own expense under the direction of and to the construction standard of the affected jurisdiction to ensure that impacted transit infrastructure is adequately repaired.

MM TRA-2: Helicopter Safety
Prior to construction, helicopter contractors shall coordinate helicopter activities for the project with the regional FAA office and obtain any required approvals to operate helicopters. FAA coordination shall include submittal of a Helicopter Lift Plan prepared by the helicopter operator to obtain approval for the helicopter operations for all routes within 1,500 feet of residences or that would cross over "congested areas" as described in 14 CFR 133.33. The Helicopter Lift Plan will identify the location of the lift, anticipated work dates, a detailed description of the work to be performed, any required notifications or coordination to local agencies or adjacent property owners to restrict work area access, any safety hazard control measures that are required, and appropriate emergency procedures. Helicopter contractors shall provide the CPUC with all required approvals, documents, and conditions of work prior to conducting helicopter activities for the Project.

MM TRA-3: Post-Construction Road Repair
Prior to construction, LSPGC/PG&E shall conduct a pre-construction road condition assessment along, but not limited to, Collinsville Road, Birds Landing Road, Montezuma Hill Road, Stratton Lane, Talbert Lane, Halsey Court, Halsey Lane, Herb White Way, and Marina Boulevard, and entrances and exits to all work areas/staging areas. LSPGC shall submit the pre-construction road condition assessment to the CPUC and the local jurisdiction (e.g., City of Pittsburg, Solano County) prior to construction. If damage to roads occurs because of project construction or construction vehicle traffic, LSPGC shall restore damaged roadways within 10 days of the reported damage to ensure continued safety for roadway users during the construction period and within 60 days after the completion of construction at their own

expense under the direction of and to the construction standard of the affected local jurisdiction to ensure that impacted roads are adequately repaired.

PG&E Project Components

MM TRA-2 Helicopter Safety (see above)

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4.18 Tribal Cultural Resources

This section presents the environmental setting and analysis of impacts on tribal cultural resources resulting from the Proposed Project and alternatives. This section describes existing tribal cultural resources, applicable regulations, and environmental impacts and provides mitigation measures to reduce or avoid significant effects for the Proposed Project and alternatives, where feasible.

The following scoping comments are relevant to the analysis of cultural resources as detailed in the Scoping Report (Appendix B):

- The EIR should analyze ground disturbance impacts on cultural and tribal cultural resources.
- The CPUC should conduct consultation with California Native American tribes that are traditionally and culturally affiliated with the geographic area of the Proposed Project.
- Any mitigation measures agreed upon in consultation shall be included in the environmental document and adopted mitigation monitoring and reporting program.
- The lack of surface evidence of archaeological resources including tribal cultural resources does not preclude their subsurface existence.

4.18.1 Definitions

Assembly Bill (AB) 52, enacted in September 2014, recognizes that California Native American tribes have expertise with regards to their tribal history and practices. CEQA now requires an analysis of impacts on tribal cultural resources to consider Native American tribes' knowledge and concerns. *Tribal cultural resources* is defined as follows under PRC section 21074(a):

1. Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either of the following:
   a. Included or determined to be eligible for inclusion in the CRHR
   b. Included in a local register of historical resources as defined in PRC section 5020.1(k)
2. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in PRC §5024.1(c). In applying the criteria set forth in PRC §5024.1(c), the lead agency shall consider the significance of the resource to a California Native American tribe.
3. A cultural landscape that meets the criteria of PRC §21074(a) is also a tribal cultural resource if the landscape is geographically defined in terms of the size and scope.
4. A historical resource as described in PRC section 21084.1, a unique archaeological resource as defined in PRC section 21083.2, or a non-unique archaeological

resource as defined in PRC section 21083.2 may also be a tribal cultural resource if it meets the criteria of PRC section 21074(a).

4.18.2 Environmental Setting

Ethnography

The ethnographic setting is summarized from the *Cultural Resource Assessment Report for the Collinsville 500/230kV Substation Project Contra Costa, Solano, and Sacramento Counties, California* (Chronicle Heritage 2024). The *area of potential effect/area of potential impact* (API) is located within the shared/transitional ethnographic territory of the Bay Miwok/Ohlone and Patwin groups of Native Americans. The API is the area within which a project may directly or indirectly cause changes in the character or use of tribal cultural resources, should any be present. The direct API is the area that would be directly and physically impacted by the Proposed Project. For the Proposed Project, the vertical direct API on land extends up to 55 feet below the ground surface to account for the maximum depth of the drilled pier foundations and in water the vertical API extends up to 16 feet to account below the channel bottom for the depth of the submarine cable. The tallest structure would be the microwave tower up to 200 feet tall. The horizontal API extends to the limits of the right-of-way (416 acres), which varies based on the project component as provided in Table 2-2 of Section 2: Project Description. The horizontal API allows for adjustments to the placement of Proposed Project components, work areas, pull areas, and staging areas within the ROW. The indirect API includes accounts for visual, audible, or atmospheric intrusions; shadow effects; vibrations from construction activities; or change in access or use as a result of the Proposed Project (Caltrans 2020).The following section briefly summarizes characteristics of each group.

The Bay 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. 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. The Bay Miwok were hunter-gatherers, taking advantage of the abundant natural resources in the Delta and alluvial plains. This lush environment was able to sustain a relatively dense population despite the lack of agriculture. Like many other California groups, acorns were a staple carbohydrate of Bay Miwok foodways. Baskets were used for cooking, as utensils, storage containers, water jugs, and as trays for leaching and drying acorn meal. The Bay Miwok were active in managing and improving their environment through fire. By burning grass and brush annually, they were able to better control their natural resources. Their foraging for deer and rabbits was improved by eliminating much of the area in which the deer and rabbits would hide. Periodic burning also kept them safe from predators and neighbors and improved the land's productivity.

The Bay Miwok were organized into groups, or *tribelets,* of usually related intermarried families occupying a specific territory and speaking the same language or dialect. 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 brought Bay Miwok people together included regional festivals and religious dances. The division of labor within California tribelets was 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. The Bay Miwok village Ompin was located approximately 1 mile east of the Proposed Project area (Bennyhoff 1977).

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.

The Patwin People

The Patwin comprise the southern branch of the Wintun people in Northern California who were native inhabitants of California since approximately 1500 B.P. The extent of the Wintun territory 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. Alfred Kroeber, in Handbook of the Indians of California, estimates that the 1770 population of the Wintun, including the Patwin, Nomlaki, and Wintu proper, was 12,000 individuals (Kroeber 1925). Permanent habitation sites of the Patwin were noted 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. 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 Proposed Project site. In the late 1790s, 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. The Patwin no longer hold the land grant and it was sold to the Mesa brothers, as discussed below. Another village site, Tolenas, was identified by Alfred Kroeber, in Handbook of the Indians of California, about 15 miles northwest of the Proposed Project site (Kroeber 1925).

The Patwin were organized into a principal village and a few satellite settlements. 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 chiefs.

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.

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's informants, however, did not report familiarity with many plants (e.g., buckeye, hazelnut, manzanita) 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 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 (ducks, geese, mudhens, quail) were also captured using nets. Fish were also a prime resource, and certain fishing sites were privately owned. Fish (such as salmon, sturgeon, perch, chub, sucker, hardhead, pike, and trout) and other riverine resources (such as 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 tule reeds.

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; baby carriers; and 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, butchering) and ceremonial (such as 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.

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.

Outreach to Native American Tribes

Applicant Outreach

The Native American Heritage Commission (NAHC) was contacted by Chronicle Heritage on May 5, 2023, to request a search of the Proposed Project API in the Sacred Lands File (SLF). The NAHC responded on June 1, 2023, indicating that SLF search results were negative, and

provided a list of 23 contacts, representing 14 tribes with traditional affiliations to the area, to contact for any additional findings. On June 26, 2023, LSPGC sent letters to these 23 tribal contacts to notify representatives of Proposed Project plans and to request any information of known Native American cultural resources in the Proposed Project API or the vicinity. Two responses were received: from Yvonne Perkins, Tribal Historic Preservation Officer (THPO) and Cultural Resource Chairperson of the Yocha Dehe Wintun Nation, and from Irene Zwierlein, Chairperson of the Mutsun Tribal Band of Mission San Juan Bautista.

On August 1, 2023, THPO Yvonne Perkins responded to LSPGC outreach stating that the Cultural Resources Department had reviewed the Proposed Project information and concluded that the Proposed API 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 Project API and requested formal consultation between the lead agency of the Proposed Project and the Wintun Cultural Resources Department (Chronicle Heritage 2024). A response from Irene Zwierlein 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. In the event that any cultural sensitivity is encountered in the records search results, Zwierlein's recommendations include cultural sensitivity training for all individuals and personnel who will be moving 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.

CPUC Outreach

The CPUC sent a request to the NAHC for a SLF search and AB 52 consultation list on September 11, 2024. The NAHC responded on September 13, 2024, stating that the SLF search was negative (Appendix J) and provided a list of 41 contacts from 23 Native American tribes identified as having traditional cultural affiliation with the Proposed Project area. The CPUC mailed and emailed AB 52 notification letters to all 41 Native Americans representatives on the NAHC list on December 20, 2024 (Appendix J). The Confederated Village of Lisjan Nation requested AB 52 consultation on January 9, 2025 for Solano and Contra Costa County portions of the Proposed Project. The Yocha Dehe Wintun Nation requested AB 52 consultation for all portions of the Proposed Project on February 28, 2025.

On January 28, 2025, the CPUC sent a supplemental request for SLF search and AB 52 consultation for the supplemental API to address changes in the Proposed Project geographic scope and to include areas of the Proposed Project where modifications to existing PG&E facilities are proposed. The NAHC responded on January 30, 2025, stating that the SLF search was negative (Appendix J) and provided a list of contacts that included four contacts for two additional tribes not included on the original list, as well as four updated contacts for the Amah Mutsun Tribal Band of Mission San Juan Bautista replacing the prior contacts identified by the NAHC. The CPUC sent supplemental AB 52 notification letters to the eight additional Native American representatives on the February 6, 2025. No additional responses were received.

In total, the CPUC submitted AB 52 notification letters to 24 Native American tribes, as follows:

1. Amah Mutsun Tribal Band
2. Amah Mutsun Tribal Band of Mission San Juan Bautista
3. Buena Vista Rancheria of Me-Wuk Indians
4. Cachil Dehe Band of Wintun Indians of the Colusa Indian Community
5. Calaveras Band of Mi-Wuk Indians
6. Chicken Ranch Rancheria of Me-Wuk Indians
7. Confederated Villages of Lisjan Nation
8. Cortina Rancheria - Kletsel Dehe Band of Wintun Indians
9. Costanoan Rumsen Carmel Tribe
10. Grindstone Rancheria of Wintun-Wailaki
11. Guidiville Rancheria of California
12. Indian Canyon Mutsun Band of Costanoan
13. Ione Band of Miwok Indians
14. Jackson Rancheria Band of Miwuk Indians
15. Muwekma Ohlone Tribe of the SF Bay Area
16. Nashville Enterprise Miwok-Maidu-Nishinam Tribe
17. Northern Valley Yokut / Ohlone Tribe
18. Pakan'yani Maidu of Strawberry Valley Rancheria
19. The Ohlone Indian Tribe
20. Tule River Indian Tribe
21. United Auburn Indian Community of the Auburn Rancheria
22. Wilton Rancheria
23. Wuksachi Indian Tribe/Eshom Valley Band
24. Yocha Dehe Wintun Nation

Two tribes requested AB 52 consultation, including the Confederated Village of Lisjan Nation and Yocha Dehe Winton Nation. Two other tribes responded but did not request AB 52 consultation, including Amah Mutsun Tribal Band of Mission San Juan Bautista who requested a SLF search and cultural resource record search and Native American monitoring in sensitive areas and provided recommendations for treatment of ancestral remains. In addition, Chicken Ranch Rancheria of Me-Wuk Indians responded and stated they have no questions, comments, or concerns about the project. The remaining tribes did not respond to the CPUC's notices.

AB 52 Consultation

The CPUC conducted AB 52 consultations with both the Confederated Village of Lisjan Nation and Yocha Dehe Winton Nation. During consultations, the Native American representatives discussed the presence of significant tribal cultural resources including a potential village site along the northern bank of the Sacramento River near the Proposed Project. The consulting tribes expressed concern about the overall sensitivity of the area and requested monitoring of ground disturbing activities in the area, cultural sensitivity training, regular meetings between tribal representatives and contractors, and reburial of isolated artifacts outside of the Proposed Project API. The mitigation measures were reviewed by consulting tribes during AB 52

consultation. The input of consulting Native Americans is reflected in the mitigation measures (see Section 4.18.8).

4.18.3 Regulatory Setting

Federal, state, and local regulations were reviewed for applicability to the Proposed Project.

Federal

National Historic Preservation Act

Authorized by the National Historic Preservation Act of 1966, as amended (NHPA) and administrated by the National Park Service (NPS), the National Register of Historic Places (NRHP) is the official list of the nation's historic places deemed worthy of preservation, and 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 36 CFR 60.4. Properties listed or formally determined eligible for listing in the NRHP are automatically listed in the California Register of Historical Resources (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 (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 manmade, 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.

Native American Graves Protection and Repatriation Act (NAGPRA)
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, Indian 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.

The Act recognizes the rights of lineal descendants, Indian Tribes, and Native Hawaiian organizations (NHOs) 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 (Department) has published the following rules under the title "Native American Graves Protection and Repatriation Act Regulations":

- RIN 1024-AC07, 1993 Proposed Rule (58 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); and
- RIN 1024-AE00, Disposition of Unclaimed Cultural Items Final Rule (80 FR 68465, November 5, 2015).
- 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, 2022 Proposed Rule).

The final rule in 43 CFR Part 10 R1N1024-AE19 revises and replaces definitions and procedures for lineal descendants, Indian Tribes, Native Hawaiian organizations, museums, and federal agencies to implement the Native American Graves Protection and Repatriation Act of 1990. 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, Indian Tribes, and Native Hawaiian organizations. The final rule is effective January 12, 2024.

State

Native American Heritage Commission

Public Resources Code (PRC) section 5097.91 established the NAHC, the duties of which include inventorying places of religious or social significance to Native Americans and identifying known graves and cemeteries of Native Americans on private lands. Section 5097.98 of the Public Resource Code specifies a protocol to be followed when the NAHC receives notification of a discovery of Native American human remains from a county coroner.

Assembly Bill 52

AB 52 amended PRC section 5097.94 and added PRC sections 21073, 21074, 21080.3.1, 21080.3.2, 21082.3, 21083.09, 21084.2, and 21084.3. AB 52 established that tribal cultural resources must be considered under CEQA and provided for additional Native American consultation requirements for the lead agency. PRC section 21074 describes a tribal cultural resource as a site, feature, place, cultural landscape, sacred place, or object that is considered of cultural value to a

California Native American tribe. A tribal cultural resource meets either of the following criteria:

- On the California Register of Historical Resources or a local historic register or eligible for the California Register of Historical Resources.
- A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in PRC section 5024.1(c).

AB 52 formalizes the lead agency's tribal consultation process, requiring the lead agency to initiate meaningful consultation with California Native American groups that are traditionally and culturally affiliated with a project site, including tribes that may not be federally recognized. Lead agencies are required to begin consultation prior to the release of a negative declaration, mitigated negative declaration, or environmental impact report for a proposed project. PRC § 21084.2 establishes that "a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment." Substantial adverse change to a tribal cultural resource is not defined in PRC § 21084.2. Effects on tribal cultural resources should be considered under CEQA. Section 6 of AB 52 adds section 21080.3.2 to the PRC, which states that parties may propose mitigation measures "capable of avoiding or substantially lessening potential significant impacts to a tribal cultural resource or alternatives that would avoid significant impacts to a tribal cultural resource." Further, if a California Native American tribe requests consultation regarding project alternatives, mitigation measures, or significant effects to tribal cultural resources, the consultation must include those topics (PRC § 21080.3.2(a)). The environmental document and the mitigation monitoring and reporting program (where applicable) must include any mitigation measures that are adopted (PRC section 21082.3(a)).

Local

Pursuant to 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."

Solano County General Plan

The Solano County General Plan includes goals, policies, and implementation measures related to the protection of the tribal cultural resources. The Resources Chapter of the Solano County General Plan includes the following policies that are relevant to the Proposed Project (Solano County 2008):

> **Policy RS.P-38:** Identify and preserve important prehistoric and historic structures, features, and communities.
>
> **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 Conservation Element of the Sacramento County General Plan considers tribal cultural 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 tribal cultural resources that are relevant to the Proposed Project (Sacramento County 2017):

> **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-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-157**: Monitor projects during construction to ensure crews follow proper reporting, safeguards, and procedures.

Contra Costa County General Plan

The Conservation, Open Space, and Working Lands Element of the Contra Costa County General Plan contains nine sections designed to promote conservation, preservation, and enhancement of species, habitats, open spaces, working lands, and natural and cultural resources. The following policy from the Historic and Cultural Resources and the Scenic Resources sections of the Conservation Element are relevant to the Proposed Project (Contra Costa County 2024):

> **Policy COS-P10.8** Emphasize native people, immigrant populations, and the environmental and cultural heritage of the region as significant themes related to historic preservation. Consider natural, agricultural, ranching, mining, commercial, industrial, residential, political, transportation, recreation, education, maritime, and military themes when evaluating the significance of historic resources.

Policy COS-P11.1 Respect and protect tribal cultural resources, including historic, cultural, and sacred sites; cultural landscapes; views of or access to resources; and objects with cultural value to California Native American tribes.*[1]

Policy COS-P11.2 Establish and maintain collaborative relationships with local Native American tribal representatives to facilitate tribal consultation and preservation of tribal cultural resources.*

Policy COS-P11.4 Consult with culturally affiliated tribes to identify and appropriately address tribal cultural resources through the discretionary development review process.*

Policy COS-P11.5 Consult with culturally affiliated tribes to assess the sensitivity of sites and protect recorded and unrecorded tribal cultural resources.*

Policy COS-P11.9 Avoid impacts of development on Native American archaeological resources and tribal cultural resources whenever possible. When impacts cannot be avoided, mitigate to the maximum feasible extent.*

Policy COS-P11.10 Consult with culturally affiliated tribes when developing mitigation measures to avoid or minimize impacts on tribal cultural resources. Mitigation could include, but is not limited to, a cultural resources treatment agreement between the developer and affected tribe(s) that addresses the treatment and disposition of cultural resources and human remains and tribal monitoring during earth-disturbing activities.*

Policy COS-P11.11 Upon discovery of a burial, human remains, or suspected human remains, require immediate halt to ground-disturbing activities such as excavation and grading, protection of the area surrounding the find, notification of the County Coroner, and compliance with the provisions of California Health and Safety Code Section 7050.5, including California Public Resources Code Section 5097.98, if applicable. If human remains are determined to be Native American, require the applicant to consult with the Most Likely Descendants list to determine appropriate treatment, as prescribed in Public Resources Code Section 5097 et seq.*

Policy COS-P11.12 Encourage landowners to relinquish ownership of Native American cultural artifacts found on project sites to the culturally affiliated tribe for proper treatment and disposition.

Alameda County

PG&E's proposed work at PG&E's existing Tesla Substation located in Alameda County would occur within the substation fence line and would not require ground disturbance. No tribal

[1] Asterisks identify policies and actions that mitigate potential environmental impacts, as described in the Contra Costa County General Plan Environmental Impact Report.

cultural resources occur within the substation fenceline. Therefore, resource plans and policies for Alameda County were not assessed.

City of Pittsburg General Plan

The City of Pittsburg General Plan's Resource Conservation and Open Space Element contains the following policies relating to cultural resources protection relevant to the Proposed Project (City of Pittsburg 2024):

> **Policy 10-P-7.3**: Protect archaeological/paleontological sites from destruction in order to preserve and interpret them for future scientific research, and public educational programs.
>
> **Policy 10-A-7.c**: Halt construction immediately and conduct an archaeological investigation to collect all valuable remnants if archaeological resources are found during ground-breaking for new urban development.
>
> **Policy 10-A-7.h:** Require the preparation of a resource mitigation plan and monitoring program for new development by a qualified archaeologist in the event that archaeological resources are uncovered.
>
> **Policy 10-A-7.k***:* Require all new development, infrastructure, and other ground-disturbing projects to comply with the following conditions in the event of an inadvertent discovery of cultural resources or human remains:
>
> > If human remains are discovered during any ground disturbing activity, work shall stop until the Development Services Director and the Contra Costa County Coroner have been contacted; if the human remains are determined to be of Native American origin, the Native American Heritage Commission (NAHC) and the most likely descendants have been consulted; and work may only resume when measures to relocate or preserve the remains in place, based on the above consultation, have been taken and approved by the Development Services Director.
> >
> > If archaeological resources are encountered during construction or ground disturbing activity, work within 50 feet of the find shall be halted and a qualified archaeologist meeting the Secretary of Interior's Professional Qualification Standards for archaeology (National Park Service 1983) shall immediately be contacted to evaluate the find pursuant to Public Resources Code Section 21083.2. If necessary, the evaluation may require preparation of a treatment plan and archaeological testing for determining California Register of Historical Resources eligibility. If the discovery proves to be significant under CEQA and cannot be avoided by the project, additional work may be warranted, such as data recovery excavation, to mitigate any significant impacts to significant resources. If the resource is of Native American origin, the NAHC shall be contacted to ensure that the Most Likely Descendant can assess the find. Any

reports required to document and/or evaluate unanticipated discoveries shall be submitted to the City of Pittsburg for review and approval and submitted to the Northwest Information Center in Sonoma State after completion. Recommendations contained within prepared reports shall be implemented throughout the remainder of ground disturbance activities.

In the event of the identification of cultural resources on a development project site, a professionally qualified archaeologist and Tribal representative shall monitor ground-disturbing construction conducted during project implementation. The monitors shall observe ground-disturbing construction to identify potential archaeological deposits and avoid or limit damage to such deposits. The monitors shall have the discretion to reduce the intensity of monitoring, or suspend such monitoring, if field conditions clearly indicate that no potential intact archaeological deposits could be encountered. Should an intact archaeological deposit be identified, the monitors shall be empowered to temporarily halt construction in the vicinity of the find. The archaeologist shall, in consultation with the Tribal representative and City, evaluate the eligibility of the deposit for inclusion in the California Register of Historical Resources. If the deposit is eligible, the project shall attempt to feasibly avoid damage to the deposit (e.g., redesign or capping). If avoidance is not feasible, the archaeologist shall, in consultation with the Tribal representative and City, develop and implement a plan to recover the scientifically consequential data represented by the deposit in a manner respectful of tribal concerns. A report of the finds of any resource evaluation and/or data recovery efforts shall be submitted to the Northwest Information Center in Sonoma State as a condition for access to its archives.

4.18.4 Approach to Impact Analysis

The analysis of tribal cultural resources applies the impact criteria and significance thresholds defined in the following subsection. The LSPGC applicant proposed measures (APMs) and PG&E construction measures (CMs) are considered when making the impact determinations for utilities and service systems. Impacts are evaluated for the Proposed Project, including separate analyses of LSGPC and PG&E project components, cumulative impacts, and alternatives. Mitigation measures are defined to reduce or avoid significant impacts, where feasible.

Impact Criteria and Thresholds of Significance

The following impact criteria have been derived from Appendix G of the CEQA Guidelines to evaluate impacts on tribal cultural resources. Appendix G of the CEQA Guidelines asks whether a project would:

- Impact TCR-1: 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:

- 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
- 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?

Applicant Proposed Measures and Construction Measures

LSPGC APMs and PG&E CMs identified in Section 2: Project Description that are relevant to the tribal cultural resources impact analysis are provided in Table 4.18-1.

Table 4.18-1 APMs and CMs Relevant to Tribal Cultural Resources

LSPGC APMs and PG&E CMs
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 100-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 100-foot buffer cannot be avoided, then monitoring would be required.

LSPGC APMs and PG&E CMs
APM CUL-3: Inadvertent Discoveries. In the event that previously unidentified cultural resources are uncovered during implementation of the Proposed Project, all work within 100 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.
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.
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 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 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.

LSPGC APMs and PG&E CMs

CM CUL-3: Unanticipated Cultural Resources Discoveries ***(Superseded by MM CUL-2)***.

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.

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.

4.18.5 Impact Analysis – Proposed Project

Table 4.18-2 presents a summary of the CEQA significance criteria and impacts on tribal cultural resources that would occur during construction, operation, and maintenance of the Proposed Project.

Table 4.18-2 Summary of Impacts on Tribal Cultural Resources for the Proposed Project

Impact Criteria: Would the project …	APMs/CMs Applied	Significance Prior To Mitigation	Mitigation Measures Required	Significance With Mitigation
Impact TCR-1: 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.	APM CUL-1 APM CUL-2 APM CUL-3 APM CUL-4 CM CUL-1 CM CUL-2 CM CUL-3*	S	MM CUL-1 MM CUL-2	SU

Notes:

S = significant

SU = significant and unavoidable

* CM CUL-3 is superseded by MM CUL-2

Impact TCR-1: Would the Proposed Project 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? *(Significant and unavoidable)*

Construction

LSPGC Project Components

No listed or eligible CRHR resources that could be tribal cultural resources were documented within the API for the Proposed Project, as discussed further in Section 4.5: Cultural Resources. During consultation between the CPUC and representatives of the Confederated Village of Lisjan Nation and Yocha Dehe Winton Nation, it was discussed that there is a high potential for tribal cultural resources to occur within the Proposed Project area, including a village on the north shore of the Delta. The Proposed Project involves installation of the buried cable along the shoreline using a hydroplow and drilling of foundations for the riser poles adjacent the shoreline. The 230 kV overhead segment would also require excavation near the shore in areas that are highly sensitive for tribal cultural resources including a potential historic Native American village and burials. Geoarchaeological studies indicate that at the onshore transition to the submarine segment there is a high possibility for buried tribal cultural resources (Chronicle Heritage 2024), as the Bay has been ringed with Native American habitations for thousands of years. In addition, there is historical documentation suggesting that a historic Native American village may have been located along the northern bank of the Sacramento-San Joaquin River approximately 1 mile east of the Proposed Project area (Bennyhoff 1977), but given the uncertainty of its exact location there is a possibility a village could be buried beneath the sediments in the Proposed Project area providing another line of evidence supporting the high sensitivity of the area. The disturbance of sediments along the north shore for construction of the 230 kV overhead segment and transition to the submarine segment has the potential to encounter tribal cultural resources. Damage to a tribal cultural resource during use of the hydroplow, foundation excavation/drilling, trenching or other earthwork would cause a substantial adverse change in the significance of the resource, which would be a significant impact. LSPGC has proposed APM CUL-1: Worker's Environmental Awareness Program, APM CUL-2: Avoid Environmentally Sensitive Areas, APM CUL-3: Inadvertent Discoveries, and APM CUL-4: Paleolandform Testing to minimize impacts on cultural resources, including tribal cultural resources. The APMs require worker training on cultural resource protections, surveys

for any modified work areas and avoidance of any discoveries of cultural resources with a 100-foot buffer, investigation of any discoveries of cultural resources by an archaeologist and treatment of any precontact resources in consultation with Native Americans, and paleolandform testing prior to construction. The impact on tribal cultural resources after implementation of the APMs would remain significant along the north shore of the Delta due to the area's high sensitivity for buried tribal cultural resources. The Project would be required to implement MM CUL-1, which defines specific requirements for pre-construction testing in the area of the submarine segment and transition structure and specifies requirements for Native American monitoring (refer to Section 4.18.8). While MM CUL-1 would minimize impacts on tribal cultural resources, it may not be possible to avoid a historic Native American village site if one occurs in the area of construction and the Proposed Project impacts on tribal cultural resources would remain significant and unavoidable.

PG&E Project Components

No listed or eligible CRHR resources that could be tribal cultural resources were documented within the API for the Proposed Project, as discussed further in Section 4.5: Cultural Resources. None of the PG&E project components are located near the Delta in areas that have been identified as sensitive for tribal cultural resources. The areas of the PG&E 500 kV interconnection lines, 12 kV distribution line, transposition sites, and existing substations were not identified as sensitive for cultural resources during consultations with Native American representatives from the Confederated Village of Lisjan Nation and Yocha Dehe Winton Nation. While there is a low potential to encounter tribal cultural resources during PG&E construction, the installation of new transmission and distribution structures still has some potential to encounter a buried tribal cultural resource during ground disturbing activities. PG&E has proposed CM CUL-1: Worker Awareness Training, CM CUL-2: Flag and Avoid Known Resources, CM CUL-3: Unanticipated Cultural Resources Discoveries. The CMs require worker training on avoidance of cultural resources, flagging known sites for avoidance, and halting work in the vicinity of a find. While the CM CUL-1 and CM CUL-2 would reduce impacts on tribal cultural resources and would be retained, the CM CUL-3 does not require consultation with Native Americans to define treatment for any inadvertent discoveries, and the impact on a tribal cultural resource would remain significant. MM CUL-2 would supersede CM CUL-3 which defines procedures for inadvertent discoveries of cultural resources including tribal cultural resources and requires consultation with Native Americans to define treatment methods for any inadvertent discoveries of tribal cultural resources (refer to Section 4.18.8). Because the mitigation would be implemented in consultation with Native Americans, impacts on the significance of a tribal cultural resource would be less than significant with mitigation.

Operation and Maintenance

LSPGC Project Components

Operation and maintenance activities would generally not involve new ground disturbance or activities that could affect the significance of a historic resources. However, the submarine cable may need to be replaced in the event of a defective cable. Replacement of the onshore segment of submarine cable would require trenching and earthwork in areas that have high sensitivity

for cultural resources. Even though the area would have been investigated and disturbed during construction, cable replacement still has the potential to encounter new sediments and impact the significance of a tribal cultural resource due to the high sensitivity of the area. LSPGC would need to obtain separate authorization for the cable replacement activities and would need to implement APM CUL-1: Worker's Environmental Awareness Program, APM CUL-2: Avoid Environmentally Sensitive Areas, and APM CUL-3: Inadvertent Discoveries or similar measures to reduce impacts. The APMs require worker training on cultural resource protections, surveys for any modified work areas and avoidance of any discoveries of cultural resources with a 50-foot buffer and investigation of any discoveries of cultural resources by an archaeologist. Due to the reduced potential to encounter new sediments during cable replacement and implementation of the APMs, the impact on cultural resources during operation and maintenance would be less than significant.

PG&E Project Components

PG&E operations and maintenance would be conducted from areas disturbed during construction and would not involve activities that would have the potential to affect the significance of tribal cultural resource given the absence. Therefore, no impact would occur.

4.18.6 Impact Analysis – Cumulative

The geographic scope for the analysis of the cumulative impacts associated with tribal cultural resources is the Proposed Project site plus a 1-mile buffer.

As discussed in Impact TCR-1, based on AB 52 consultation, there is the potential for tribal cultural resources to occur along the north bank of the Sacramento River. The California Forever potential future shipbuilding project also occurs in areas along the north bank of the Sacramento River that have a similar sensitivity for the presence of tribal cultural resource. If tribal cultural resources occur in the Proposed Project site and the California Forever shipbuilding area, the cumulative impact on tribal cultural resources would be significant. The Proposed Project would be implemented in compliance with PG&E APMs and LSPGC CMs. These measures would reduce the Proposed Project contribution to the significant cumulative impact on tribal cultural resources; however, the Proposed Project contribution would remain significant, as discussed in Impact TCR-1. Implementation of MM CUL-1 and MM CUL-2, would require monitoring in areas that are sensitive for tribal cultural resources and specify procedures for inadvertent discoveries of tribal cultural resources (refer to Section 4.18.8). However, because the Proposed Project may not be able to avoid the significant tribal cultural resources, the Proposed Project's individual impact would be significant and unavoidable. Considered cumulatively with the California Forever shipbuilding project, the proposed project's contribution to the significant cumulative impact would be cumulatively considerable and would be significant and unavoidable.

4.18.1 Alternative 1: Collinsville Substation North of Talbert Lane

Environmental Setting – Alternative 1

Alternative 1 involves relocating the proposed LSPGC Collinsville Substation to a different site, approximately 1.2 miles north of the Proposed Project substation site. Alternative 1 would also include an approximately 500-foot segment of PG&E 500 kV interconnection lines and an approximately 2-mile-long segment of LSPGC 230 kV overhead line. Alternative 1 would not involve changes to any of the other Proposed Project components, which would have the same impacts as described throughout this Draft EIR for the Proposed Project or the other alternatives if selected in combination with Alternative 1.

Alternative 1 API

The horizontal API for Alternative 1 includes all staging areas, pull sites, access roads, and permanent disturbance areas for Alternative 1 as shown in Section 3: Description of Alternatives. The vertical API extends up to 55 feet for TSP foundations.

Alternative 1 Tribal Cultural Resources

The Alternative 1 substation, 500 kV interconnection lines, 12 kV distribution line, and 230 kV overhead segment would be located in areas with low sensitivity for tribal cultural resources based on consultation with Native American representatives of the Confederated Village of Lisjan Nation and Yocha Dehe Winton Nation. During CPUC's consultations with these Nations, the Alternative 1 substation site was preferred to the Proposed Project site due to the increased distance from the Sacramento River and potential village sites. A portion of an Alternative 1 230 kV overhead segment pulling site extends within the geographic boundaries of the Hastings Adobe multicomponent site. Precontact resources have been recorded in that area and there is a high potential for buried tribal cultural resources to occur within the Hastings Adobe site.

Impact Analysis – Alternative 1

Impact TCR-1: Would Alternative 1 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? *(Less than significant with mitigation)*

LSPGC Project Components

Construction in Hastings Adobe Site

A pulling site for the 230 kV overhead segment extends into the geographic boundary of the Hastings Adobe multicomponent site and specifically within an area that is likely to contain buried precontact archaeological deposits, which are likely tribal cultural resources. Any ground disturbance such as anchoring of the truck during pulling and tensioning within the Hastings Adobe site could destroy a tribal cultural resource, which would result in a significant adverse change in the significance of a tribal cultural resource and cause a significant impact. MM CUL-3 requires that the pulling site either be adjusted to avoid the geographic limits of the Hastings Adobe site or any activities within the Hastings Adobe site avoid ground disturbance (e.g., no anchoring) (refer to Section 4.18.8). With implementation of MM CUL-3, the impact on the Hastings Adobe site from use of the pulling site on tribal cultural resources would be less than significant.

Inadvertent Discoveries During Construction

The Alternative 1 substation would be set within the Montezuma Hills in an area that has low potential to encounter tribal cultural resources. While the consulting Tribes indicated there is low sensitivity for tribal cultural resources within the Alternative 1 Collinsville Substation site or 230 kV overhead segment, there is some potential to encounter tribal cultural resources during excavation or earthwork for the substation and pole installation. LSPGC has proposed APM CUL-1: Worker's Environmental Awareness Program, APM CUL-2: Avoid Environmentally Sensitive Areas, APM CUL-3: Inadvertent Discoveries, and APM CUL-4: Paleolandform Testing to minimize impacts on cultural resources, including tribal cultural resources. The APMs require worker training on cultural resource protections, surveys for any modified work areas and avoidance of any discoveries of cultural resources with a 100-foot buffer, investigation of any discoveries of cultural resources by an archaeologist and treatment

of any precontact resources (including tribal cultural resources) in consultation with Native Americans, and paleolandform testing prior to construction. The impact on tribal cultural resources from Alternative 1 construction would be less than significant with implementation of APMs due to the location of Alternative 1 facilities in areas of low sensitivity for tribal cultural resources.

Operation and Maintenance
The Alternative 1 substation and 230 kV overhead segment operation would not involve earthwork or ground disturbance in previously undisturbed sediments. Therefore, operation of the Alternative 1 segment would have no impact on tribal cultural resources.

PG&E Project Components

Construction
The Alternative 1 500 kV interconnection lines and 12 kV distribution line would be in areas of low sensitivity for tribal cultural resources based on consultation with Native American representatives of the Confederated Village of Lisjan Nation and Yocha Dehe Winton Nation; no tribal cultural resources are known to occur in the Alternative 1 area. While there is a low potential to encounter tribal cultural resources during PG&E construction, the installation of new transmission and distribution structures still has some potential to encounter a buried tribal cultural resource during ground disturbing activities. PG&E has proposed CM CUL-1: Worker Awareness Training, CM CUL-2: Flag and Avoid Known Resources, CM CUL-3: Unanticipated Cultural Resources Discoveries. The CMs require worker training on avoidance of cultural resources, flagging known sites for avoidance, and halting work in the vicinity of a find. While CM CUL-1 and CM CUL-2 would reduce impacts on tribal cultural resources, CM CUL-3 does not require consultation with Native Americans to define treatment for any inadvertent discoveries, and the impact on a tribal cultural resource would remain significant. MM CUL-2 would supersede CM CUL-3 which defines procedures for inadvertent discoveries of cultural resources including tribal cultural resources and requires consultation with Native Americans to define treatment methods for any inadvertent discoveries (refer to Section 4.18.8). Impacts on the significance of a tribal cultural resource would be less than significant with mitigation.

Operation and Maintenance
Alternative 1 PG&E operations would not involve earthwork or ground disturbance. Therefore, no impact on tribal cultural resources would occur during PG&E operations.

4.18.2 Alternative 2: Collinsville Substation East of Wind Energy Substations

Environmental Setting – Alternative 2

Alternative 2 involves relocating the proposed LSPGC Collinsville Substation to a different site, approximately 3.0 miles north of the location proposed under the Proposed Project. Alternative 2 would also include an approximately 1,200-foot-long segment of PG&E 500 kV interconnection lines and a four-mile-long segment of LSPGC 230 kV overhead line, as well as

an approximately 0.3-mile-long PG&E 12 kV distribution line. Alternative 2 would not involve changes to any of the other Proposed Project components, which would have the same impacts as described throughout this Draft EIR for the Proposed Project or the other alternatives if selected in combination with Alternative 2.

Alternative 2 API

The horizontal API for Alternative 2 includes all staging areas, pull sites, access roads, and permanent disturbance areas for Alternative 2 as shown in Section 3: Description of Alternatives. The vertical API extends up to 55 feet for TSP foundations.

Alternative 2 Tribal Cultural Resources

The Alternative 2 substation, 500 kV interconnection lines, 12 kV distribution line, and 230 kV overhead segment would be located in areas with low sensitivity for tribal cultural resources based on consultation with Native American representatives of the Confederated Village of Lisjan Nation and Yocha Dehe Winton Nation. During CPUC's consultations with these Nations, the Alternative 2 substation site was preferred to the Proposed Project site due to the increased distance from the Sacramento River and potential village sites. A portion of an Alternative 2 230 kV overhead segment pulling site extends within the geographic boundaries of the Hastings Adobe multicomponent site. Precontact resources have been recorded in that area and there is a high potential for buried tribal cultural resources to occur within the Hastings Adobe site.

Impact Analysis – Alternative 2

Impact TCR-1: Would Alternative 2 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? *(Less than significant with mitigation)*

LSPGC Project Components

Construction in Hastings Adobe Site

A pulling site for the Alternative 2 230 kV overhead segment extends into the geographic boundary of the Hastings Adobe multicomponent site and specifically within an area that is likely to contain buried precontact archaeological deposits, which are likely tribal cultural

resources. Any ground disturbance including anchoring of the truck during pulling and tensioning within the Hastings Adobe site could destroy a tribal cultural resource, which would result in a significant adverse change in the significance of a tribal cultural resource and cause a significant impact. MM CUL-3 requires that the pulling site either be adjusted to avoid the geographic limits of the Hastings Adobe site or any activities within the Hastings Adobe site avoid ground disturbance (e.g., no anchoring) (refer to Section 4.18.8). With implementation of MM CUL-3, the impact on tribal cultural resources from use of the pulling site within the Hastings Adobe site would be less than significant.

Inadvertent Discoveries During Construction

The Alternative 2 substation would be set within the Montezuma Hills in an area that has low potential to encounter tribal cultural resources. While no tribal cultural resources are known to occur in the Alternative 2 area and Native American representatives of the Confederated Village of Lisjan Nation and Yocha Dehe Winton Nation indicated that the Alternative 2 area has low sensitivity for tribal cultural resources, there is some potential to encounter tribal cultural resources during excavation or earthwork for the substation and 230 kV TSP installation. LSPGC has proposed APM CUL-1: Worker's Environmental Awareness Program, APM CUL-2: Avoid Environmentally Sensitive Areas, APM CUL-3: Inadvertent Discoveries, and APM CUL-4: Paleolandform Testing to minimize impacts on cultural resources, including tribal cultural resources. The APMs require worker training on cultural resource protections, surveys for any modified work areas and avoidance of any discoveries of cultural resources with a 100-foot buffer, investigation of any discoveries of cultural resources by an archaeologist and treatment of any precontact resources (including tribal cultural resources) in consultation with Native Americans, and paleolandform testing prior to construction. The impact on tribal cultural resources from Alternative 2 construction would be less than significant with implementation of APMs due to the location of Alternative 2 facilities in areas with low potential to encounter tribal cultural resources in the Alternative 2 area as well as development of treatment measures in consultation with Native Americans for any inadvertent discovery of tribal cultural resources.

Operation and Maintenance

The Alternative 2 substation and 230 kV overhead segment operation would not involve earthwork or ground disturbance in previously undisturbed sediments. Therefore, operation of the Alternative 2 segment would have no impact on tribal cultural resources.

PG&E Project Components

Construction

The Alternative 2 500 kV interconnection lines and 12 kV distribution line would be in areas of low sensitivity for tribal cultural resources based on consultation with Native American representatives of the Confederated Village of Lisjan Nation and Yocha Dehe Winton Nation; no tribal cultural resources are known to occur in the Alternative 2 area. While there is a low potential to encounter tribal cultural resources during PG&E construction, the installation of new transmission and distribution structures still has some potential to encounter a buried

tribal cultural resource during ground disturbing activities. PG&E has proposed CM CUL-1: Worker Awareness Training, CM CUL-2: Flag and Avoid Known Resources, CM CUL-3: Unanticipated Cultural Resources Discoveries. The CMs require worker training on avoidance of cultural resources, flagging known sites for avoidance, and halting work in the vicinity of a find. While CM CUL-1 and CM CUL-2 would reduce impacts on tribal cultural resources, CM CUL-3 does not require consultation with Native Americans to define treatment for any inadvertent discoveries, and the impact on a tribal cultural resource would remain significant. MM CUL-2 would supersede CM CUL-3 which defines procedures for inadvertent discoveries of cultural resources including tribal cultural resources and requires consultation with Native Americans to define treatment methods for any inadvertent discoveries (refer to Section 4.18.8). Impacts on the significance of a tribal cultural resource would be less than significant with mitigation.

Operation and Maintenance

Alternative 2 PG&E operations would not involve earthwork or ground disturbance. Therefore, no impact on tribal cultural resources would occur during PG&E operations.

4.18.3 Alternative 3: 500 kV Interconnection Lines on Entirely TSPs

Environmental Setting – Alternative 3

Alternative 3 involves constructing the PG&E 500 kV interconnection lines on entirely TSPs, instead of the combination of LSTs and three-pole TSPs under the Proposed Project. The 500 kV interconnection lines would be in the same general alignment as the Proposed Project PG&E 500 kV interconnection lines. Alternative 3 would not involve changes to any of the other Proposed Project components, which would have the same impacts as described throughout this Draft EIR for the Proposed Project or the other alternatives if selected in combination with Alternative 3.

The environmental setting for Alternative 3 is the same as the setting for the PG&E 500 kV interconnection lines addressed in Section 4.18.2.

Impact Analysis – Alternative 3

Impact TCR-1: Would Alternative 3 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? *(Less than significant with mitigation)*

Alternative 3 involves changes to PG&E 500 kV interconnection lines structures, occurring within the same general alignment as the Proposed Project, on the northern side of the Delta within Solano County. The impacts would be the same as those described for the PG&E project components in Section 4.18.5 and PG&E would implement the same CMs for the alternative. The alternative would have the same potential to encounter buried tribal cultural resources as the Proposed Project during TSP foundation construction. Similar to the proposed project, the impact would be significant. MM CUL-2 would be implemented, superseding CM CUL-3, to address the significant impact on tribal cultural resources (refer to Section 4.18.8). Similar to the Proposed Project 500 kV interconnection lines the Alternative 3 impact would be less than significant with mitigation.

4.18.4 Alternative 4: 230 kV Overhead Segment Alternative Route

Environmental Setting – Alternative 4

Alternative 4 involves relocation of a short segment of the LSPGC 230 kV overhead segment between the proposed LSPGC Collinsville Substation and the Delta, west of the proposed LSPGC 230 kV overhead segment route. Additionally, the northern end of the LSPGC 230 kV submarine segment would be rerouted to meet up with the southern end of the Alternative 4 230 kV submarine segment. Alternative 4 would not involve changes to any of the other Proposed Project components, which would have the same impacts as described throughout this Draft EIR for the Proposed Project or the other alternatives if selected in combination with Alternative 4.

Alternative 4 API

The horizontal API for Alternative 4 includes all pull sites, access roads, work areas, and permanent disturbance areas for Alternative 4 as shown in Section 3: Description of Alternatives. The vertical API extends up to 55 feet for TSP foundations.

Alternative 4 Tribal Cultural Resources

The cultural resource record search and pedestrian cultural resource survey within the Alternative 4 parcels identified a precontact archaeological deposit associated with the Hastings Adobe Site and a precontact stone tool associated with a multicomponent historic homesite (see Section 4.5: Cultural Resources). The multicomponent historic homesite is not within the API for Alternative 4; however, the Hastings Adobe multicomponent site including areas with potential buried resources, extends within the area of an Alternative 4 access road. The presence of precontact resources indicates a high potential for subsurface archaeological deposits in the area (Insignia Environmental 2025). Based on CPUC consultation with Native American representatives of the Confederated Village of Lisjan Nation and Yocha Dehe Winton Nation, Alternative 4 is located within an area where tribal cultural resources, including a village site and/or burials are likely to occur.

Impact Analysis – Alternative 4

Impact TCR-1: Would Alternative 4 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? *(Significant and unavoidable)*

LSPGC construction of the Alternative 4 230 kV overhead segment and submarine segment including riser structures and hydroplow installation of the submarine cables on the northern bank of the Sacramento River has a high potential to cause a substantial adverse change in the significance of a tribal cultural resource due to the high potential for a village site or burials to occur within the Alternative 4 area. In addition, a new access road would be constructed within the Hastings Adobe multicomponent site, which contains precontact resources and has a high potential to contain buried tribal cultural resources. Alternative 4 ground disturbing activities including use the hydroplow, drilling of riser poles and TSP foundations, and access road construction could destroy a tribal cultural resource, which would cause a substantial adverse change in the significance of a tribal cultural resource and result in a significant impact. LSPGC has proposed APM CUL-1: Worker's Environmental Awareness Program, APM CUL-2: Avoid Environmentally Sensitive Areas, APM CUL-3: Inadvertent Discoveries, and APM CUL-4: Paleolandform Testing to minimize impacts on cultural resources, including tribal cultural resources. The APMs require worker training on cultural resource protections, surveys for any modified work areas and avoidance of any discoveries of cultural resources with a 100-foot

buffer, investigation of any discoveries of cultural resources by an archaeologist and treatment of any precontact resources in consultation with Native Americans, and paleolandform testing prior to construction. The impact on tribal cultural resources after implementation of the APMs would remain significant along the north shore of the Delta and for the new access road within the Hastings Adobe site, which has a high likelihood to contain buried tribal cultural resources. The Project would be required to implement MM CUL-1 and MM CUL-4. MM CUL-1 define specific requirements for pre-construction testing in the area of the submarine segment and transition structure and specifies requirements for Native American monitoring (refer to Section 4.18.8). MM CUL-4 requires relocation of the Alternative 4 access road to avoid the Hastings Adobe site or requires protection strategies to avoid damage or destruction of any tribal cultural resources within the Hastings Adobe site (refer to Section 4.18.8). While MM CUL-1 and MM CUL-4 would minimize impacts on tribal cultural resources from the riser pole installation and 230 kV overhead poles, it may not be possible to avoid a village site if one occurs in the area of the riser pole foundations or hydroplow cable installation. As a result, Alternative 4 impacts on tribal cultural resources would remain significant and unavoidable.

4.18.5 Alternative 5: 230 kV Submarine Segment Alternative Route

Environmental Setting – Alternative 5

Alternative 5 involves rerouting a portion of the proposed LSPGC 230 kV submarine segment to the east of its current alignment as it approaches the southern shoreline in Pittsburg. The submarine segment cable would be installed in the same manner as the Proposed Project. Alternative 5 would not involve changes to any of the other Proposed Project components, which would have the same impacts as described throughout this Draft EIR for the Proposed Project or the other alternatives if selected in combination with Alternative 5.

The environmental setting for tribal cultural resource for Alternative 5 is the same as the setting for the LSPGC 230 kV submarine segment addressed in Section 4.18.2 as Alternative 5 is located within the Sacramento-San Joquin River Delta.

Impact Analysis – Alternative 5

Impact TCR-1: Would Alternative 5 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? *(No impact)*

Alternative 5 would be located below the bed of the Sacramento-San Joquin River Delta. No tribal cultural resources are known to occur within the riverbed. Therefore, no impact on tribal cultural resources would occur from Alternative 5 construction or operation.

4.18.6 Alternative 6a/6b: Underground Portions of the 230 kV Transmission Line within Suisun Marsh Protection Plan Management Area

Environmental Setting – Alternative 6a/6b

Alternative 6a/6b would locate the LSPGC 230 kV transmission line on primarily PG&E-owned property south of the proposed Collinsville Substation site (similar to Alternative 4). The Alternative 6a/6b would be installed in conduit underground. Alternative 6a differs from Alternative 6b only at the northern end of the segment where options are provided for connection to the Proposed Project Collinsville Substation or Alternatives 1 or 2. Two overhead riser structures would be installed at the northern end of the Alternative 6a/6b underground duct bank where the LSPGC 230 kV line would transition between an overhead and underground position. Alternative 6a/6b would not involve changes to any of the other Proposed Project components, which would have the same impacts as described throughout this Draft EIR for the Proposed Project or the other alternatives if selected in combination with Alternative 6a/6b.

No precontact resources, which are likely tribal cultural resources, have been recorded within the Alternative 6a/6b API as indicated in Section 4.5: Cultural Resources (see Table 4.5-6); however, the entirety of the Alternative 6a/6b underground duct bank would be located within an area that is very sensitive for tribal cultural resources and could contain a Native American village or burials based on CPUC's consultations with Native American representatives of the Confederated Village of Lisjan Nation and Yocha Dehe Winton Nation.

Impact Analysis – Alternative 6a/6b

Impact TCR-1: Would Alternative 6a/6b 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? *(Significant and unavoidable)*

There is a high potential for a Native American village site or burials to occur within the Alternative 6a/6b underground construction area. Alternative 6a/6b ground disturbing activities from duct bank construction including trench excavation could destroy a tribal cultural resource, which would cause a substantial adverse change in the significance of a tribal cultural resource and result in a significant impact. LSPGC has proposed APM CUL-1: Worker's Environmental Awareness Program, APM CUL-2: Avoid Environmentally Sensitive Areas, APM CUL-3: Inadvertent Discoveries, and APM CUL-4: Paleolandform Testing to minimize impacts on cultural resources, including tribal cultural resources. The APMs require worker training on cultural resource protections, surveys for any modified work areas and avoidance of any discoveries of cultural resources with a 100-foot buffer, investigation of any discoveries of cultural resources by an archaeologist and treatment of any precontact resources in consultation with Native Americans, and paleolandform testing prior to construction. The impact on tribal cultural resources after implementation of the APMs would remain significant for Alternative 6a/6b duct bank construction due to the significant amount of excavation required for underground duct bank installation in an area with high sensitivity for buried tribal cultural resources and nearby presence of precontact tribal cultural resources. Alternative 6a/6b would be required to implement MM CUL-6, which defines specific requirements for pre-construction testing in the area of the underground duct bank and specifies requirements for Native American monitoring. While MM CUL-6 would minimize impacts on tribal cultural resources from the underground duct bank installation, it may not be possible to relocate the underground duct bank to avoid a village site or burials if the village site and burials were extensive throughout the area (refer to Section 4.18.8). As a result, Alternative 6a/6b impacts on tribal cultural resources would remain significant and unavoidable.

4.18.7 No Project Alternative

Environmental Setting – No Project Alternative

Under the No Project Alternative, the LSPGC Collinsville Substation and associated LSPGC 230 kV transmission line, PG&E 500 kV interconnection lines, and PG&E 12 kV distribution line would not be constructed. The existing tribal cultural resource conditions described in Section 4.18.2 would apply to the No Project Alternative.

Impact Analysis – No Project Alternative

The No Project Alternative would not result in ground disturbing activities and no new project elements would be introduced (Impact TCR-1). The No Project Alternative would have no impact on tribal cultural resources.

4.18.8 Mitigation Measures

LSPGC Mitigation Measures

MM CUL-1 (refer to Section 4.5: Cultural Resources)

MM CUL-3 (refer to Section 4.5: Cultural Resources; applies to Alternatives 1 and 2)

MM CUL-4 (refer to Section 4.5: Cultural Resources; applies to Alternatives 4)

MM CUL-6 (refer to Section 4.5: Cultural Resources; applies to Alternatives 6a/6b)

PG&E Mitigation Measures

MM CUL-2 (refer to Section 4.5 Cultural Resources)

4.18.9 References

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4.19 Utilities and Service Systems

This section presents the environmental setting and analysis of impacts on utilities and service systems resulting from the Proposed Project and alternatives. This section describes existing utilities and service systems information applicable regulations, and environmental impacts and provides mitigation measures to reduce or avoid significant effects for the Proposed Project and alternatives, as applicable.

The following scoping comment is relevant to the analysis of utilities and service systems (Appendix B):

- The EIR should analyze impacts to Sacramento Municipal Utility District (SMUD) wind turbines, underground electrical lines, and the Solano Wind Project access roads.

4.19.1 Environmental Setting

Electricity

PG&E

PG&E provides electric service to approximately 16 million people throughout a 70,000-square-mile service area in northern and central California (PG&E 2025). PG&E high voltage facilities in the vicinity of the Proposed Project include:

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

The PG&E Pittsburg Substation currently connects eight operational overhead transmission lines, including four double-circuit 230 kV and four double-circuit 115 kV lines (CEC 2017).

PG&E operates the electrical distribution system in the Proposed Project area and provides electrical service to the Collinsville area. There are no existing electrical distribution lines within the Proposed Project site north of the Delta. The portion of the Proposed Project site in the city of Pittsburg east of the PG&E Pittsburg Substation has existing distribution lines.

Sacramento Municipal Utility District

The proposed 500 kV interconnection lines alignment is transverses the Solano 4 Wind Project. The Solano 4 Wind Project was completed in spring 2024. In addition to the aboveground wind turbines visible in the area, the Solano 4 Wind Project includes multiple subsurface electrical collector lines that convey power generated from the wind turbines to an existing electrical substation north of the Proposed Project site.

Transbay Cable/NextEra Energy

Trans Bay Cable is a 53-mile direct current electrical transmission cable with a fiber-optic communication cables bundled together and buried in the San Francisco Bay. Transbay Cable extends from the Pittsburg Substation to San Francisco, CA (NextEra Energy, Inc. 2025).

Natural Gas

PG&E provides natural gas service to approximately 16 million people throughout a 70,000-square-mile service area in northern and central California (PG&E 2025). Natural gas services are provided by PG&E in Solano, Contra Costa, and Sacramento counties. In addition to PG&E's publicly operated transmission network, CPN Pipeline Company, a subsidiary of Calpine, supports Calpine's electrical power-generation operations by maintaining a network of natural gas pipelines that deliver natural gas to its natural-gas-fired power generators, such as the Los Medanos and Delta Energy Centers in Pittsburg (Calpine 2025).

A desktop review using publicly available data from the U.S. Energy Information Administration (EIA 2020) and the U.S. Department of Transportation Pipeline and Hazardous Materials Safety Administration (PHSA)'s National Pipeline Mapping System (NMPS) Public Viewer (PHSA 2025) shows the following pipelines located in proximity to the Proposed Project site:

- One intrastate natural gas pipeline, operated by Chevron Pipeline Co, and two hazardous liquid pipelines, operated each by Chevron Pipeline Company and SHPP, LP, running east-west approximately 0.85 mile south of PG&E Pittsburg Substation (PHSA 2025; EIA 2020).
- An intrastate natural gas pipeline operated by CPN Pipeline (owned by Calpine) crosses the Delta and extends from Contra Costa County to Solano County. The pipeline is parallel to the proposed LSPGC 230 kV submarine segment alignment for approximately 1.5 miles at a distance of approximately 2.8 miles (PHSMA 2025).
- An intrastate natural gas pipeline, operated by CPN (owned by Calpine) runs roughly north-south through Solano County, east of the proposed LSPGC Collinsville substation site. The proposed PGE 500 kV interconnection lines parallel the natural gas pipeline at a distance of approximately 35 feet for approximately 2,000 feet (Kinetrics AES 2025; PHMSA 2025).

High-voltage transmission lines can electromagnetically "couple" alternating current onto nearby long, metallic structures, most notably buried natural gas pipelines that run parallel. The closer and longer the parallel run, the higher the potential for induced voltage. This potential for induced voltage is normally modest but increases if a line-to-ground fault occur. Because induced voltages can accelerate corrosion and, in rare cases, exceed human-safety touch limits, industry standards (e.g., IEEE 2746 and PHMSA guidance) require transmission-to-pipeline interference studies and, where necessary, mitigation such as supplemental grounding or zinc ribbon anodes to keep induced potentials within accepted thresholds (IEEE Standards Association 2020; PHSMA 2022).

Water Supply and Infrastructure

Solano County Water Agency

The SCWA 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). 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 2025c) The SCWA primarily sources water from Lake Berryessa, which has a storage capacity of 1,602,000 acre-feet (AF). As of July 29, 2025, Lake Berryessa stored 1,438,401AF of water (SCWA 2025). Between July 21, 2024, and July 20, 2025, the lake's annual average storage volume was 1,474,732 AF, with the lowest storage being 1,332,060 acre-feet and the highest being 1,577,240 AF (Bureau of Reclamation [BOR] 2025).

Rio Vista

The water for Rio Vista is provided exclusively by groundwater from Solano Subbasin located in the southernmost portion of the Sacramento Valley Groundwater Basin and extending into the northern portion of the Sacramento-San Joaquin Delta, pumped from six groundwater wells in various locations within Rio Vista. The Solano Subbasin is designated as a medium-priority subbasin by the California Department of Water Resources (City of Rio Vista 2023). The water distribution system includes over 40 miles of pipelines and two reservoir tanks, each with a capacity of 2 million gallons. In 2024, the City of Rio Vista pumped 733,099,000 gallons of groundwater (City of Rio Vista 2025).

Collinsville Water Works

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 (SWRCB) Division of Drinking Water (SDWIS 2025).

Contra Costa Water District and Pittsburg Water

Contra Costa Water District (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. CCWD provides water to local residences and also sells untreated water to various cities, including the City of Pittsburg. CCWD sold 23.6 billion gallons of water in 2023 (Contra Costa Water District 2023). 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 (City of Pittsburg 2025d).

Groundwater Wells

The closest groundwater well to the Proposed Project site is located approximately 1,000 feet east of the proposed PG&E 500 kV Interconnection Lines and approximately 1 mile northeast of the proposed LSPGC Collinsville Substation (LS Power Grid California, LLC 2025).

State Water Project Canals

The North Bay Aqueduct is located approximately 9 miles north of the Proposed Project site. The Mokelumne Aqueduct and Contra Costa Canal are located approximately 4 miles south of the PG&E Pittsburg Substation. DWR also manages a number of canals in proximity of the Proposed Project site for habitat restoration as part of the Delta Ecosystem Enhancement (DWR 2025).

Stormwater

The Proposed Project is 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 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.

There are no existing permanent stormwater facilities near the Proposed Project in Solano County. Surface waters in the 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 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 (SWRCB 2025). Refer to Section 3.1: Hydrology and Water Quality for more information.

The City of Pittsburg manages stormwater drainage facilities in the City of Pittsburg. There are no existing storm drains north of the Pittsburg Substation. Storm drains are located along city streets east of the Pittsburg Substation.

Sewer and Wastewater

Solano County

Rio Vista Wastewater Treatment

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 (City of Rio Vista 2022). There are no sewer or wastewater lines in or near the Proposed Project site. The Beach Wastewater

Treatment Plant was designed to process 0.65 million gallons per day (mgd). Northwest Wastewater Treatment Plant was designed to process 1 mgd. The City of Rio Vista is currently planning to consolidate the Beach Wastewater Treatment Plant with the Northwest Wastewater Treatment Plant. The average combined daily sanitary flow for the Rio Vista area treated in both plants is 0.62 mgd (City of Rio Vista 2022).

Collinsville

Residences in the Collinsville 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 (Solano County 2025f).

City of Pittsburg

The Delta Diablo District provides wastewater conveyance and treatment services in the City of Pittsburg. The Delta Diablo District treats approximately 13 million gallons of wastewater and produces 6 million gallons of recycled water at the Delta Diablo Wastewater Treatment Plant daily (Delta Diablo 2025). The Delta Diablo Wastewater Treatment Plant is located approximately 5 miles southeast of the PG&E Pittsburg Substation. Underground sewer lines are located within city streets east of the PG&E Pittsburg Substation. Specifically, underground sewer lines are located on Marina Drive, Herb White Way, and Halsey Way, within the immediate vicinity of the Proposed Project site.

Solid Waste Disposal and Recycling

The Potrero Hills Landfill, Recology Hay Road Landfill, and Mt. Diablo Recycling Center serve the Proposed Project area (CalRecycle 2025b).

Potrero Hills Landfill

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, of which approximately 13.9 million cubic yards were remaining as of 2006. The estimated closure date for this facility is 2048 (CalRecycle 2025a).

Recology Hay Road Landfill

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 cubic yards. As of 2010, approximately 30.4 million cubic yards were remaining. Recology Hay Road Landfill is expected to provide capacity for solid waste until approximately 2077 (Mt. Diablo Resource Recovery 2025).

Mt. Diablo Recycling Center

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 and has the ability to process 600,000 lbs. of material daily (Mt. Diablo Resource Recovery 2025).

Telecommunications

Comcast/Xfinity, DirecTV, Dish Network, and Frontier Communications provide cable television service in the City of Pittsburg. Telephone service is generally provided by AT&T, Verizon Wireless, Sprint, and T-Mobile. Internet providers include AT&T, Xfinity, and Verizon. There is no existing telecommunications infrastructure in the Proposed Project area in Solano County. There are existing telecommunications lines in developed areas of the City of Pittsburg.

4.19.2 Regulatory Setting

Federal, state, and local regulations were reviewed for applicability to the Proposed Project.

Federal

Federal Pipeline Safety Regulations (49 CFR Part 192)

Code of Federal Regulations (CFR) Title 49 part 192, as amended by PHMSA's 2022 final rule, 87 Fed. Reg. 52237, establishes the minimum federal safety standards for on-shore natural-gas transmission pipelines. The latest revisions add section 192.473(c), requiring operators to conduct interference surveys whenever monitoring shows a significant rise in stray current or when new AC sources, such as co-located high-voltage transmission lines, are introduced, and to complete any needed remedial actions within 15 months (PHSMA 2022). The rule clarifies that these provisions apply to pipeline segments longer than 1,000 feet and do not extend to gathering or distribution mains. It also creates section 192.478, obligating operators to review gas-stream quality and update internal-corrosion programs at least once every calendar year (not to exceed 15 months). Together, these amendments ensure that pipelines paralleling proposed transmission line alignments are routinely surveyed for AC interference and promptly protected through grounding, coating repair, or other federally mandated measures.

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.

Assembly Bill 939
The Integrated Waste Management Act of 1989 (Cal. Pub. Res. Code § 40050 et seq.) requires all local and county governments to adopt a Source Reduction and Recycling Element in general plans to identify means of reducing the amount of solid waste sent to landfills. This law set reduction targets at 25 percent by 1995 and 50 percent by 2000. Senate Bill 1016 (2007) built on the Integrated Waste Management Act of 1989 by implementing simplified performance measures for meeting solid waste reduction goals.

Assembly Bill 341
California's Commercial Recycling Bill (AB 341) went into effect July 1, 2012, and set a recycling goal of 75 percent diversion by 2020. The bill is intended to reduce GHG emissions by diverting recyclable materials and to expand the opportunity for increased economic activity and green industry job creation.

California Green Building Standards Code and Senate Bill 1383
Section 4.408.1 and 5.408 of CALGreen requires jurisdictions to adopt requirements to divert from landfills at least 65 percent of the construction and demolition materials generated at the Proposed Project site. SB 1383 requires jurisdictions to have a mechanism by which they can enforce CALGreen's 65-percent construction and demolition debris recovery rate requirement. Solano County and Contra Costa County have adopted CALGreen through their respective construction and demolition (C&D) debris diversion programs (see below) (Solano County 2025d; Contra Costa County 2025a). Additionally, the City of Pittsburg adopted CALGreen effective January 1, 2023, through Pittsburg Municipal Code Chapter 15.22 (see below) (City of Pittsburg 2025a; 2025c).

California Health and Safety Code § 25150.7(d)(1)
If treated wood is developed as a waste product, the California Health and Safety Code requires treated wood to be disposed of in either a Class I hazardous waste landfill or in a composite-lined portion of a solid waste landfill that meets RWQCB-specified requirements.

California Code of Regulations (Title 27)
Title 27 (Environmental Protection) of the California Code of Regulations defines regulations for the treatment, storage, processing, and disposal of solid waste. The SWRCB maintains and regulates compliance with Title 27 (Environmental Protection) of the California Code of Regulations.

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 (AB-12 Sacramento-San Joaquin Delta Reform Act of 2009: California

Bay-Delta Authority Act 2009). 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

Section 29701 and 29702 of 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 achieves the coequal goals of providing a more reliability water supply for California and protecting and enhancing the unique values of the Delta as an evolving place (California Legislative Information 2025). 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 from the Land Use and Resource Management Plan 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.

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 2025).

State Water Resources Control Board Order 2014-0174-DWQ

The SWRCB adopted the Statewide General National Pollutant Discharge Elimination System (NPDES) 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.

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

- Certification from a Qualified SWPPP Developer (QSD)

California Government Code Section 4216 (Underground Utility Notification Law)
California Government Code section 4216 establishes requirements for the protection of underground infrastructure during excavation activities, including trenching, boring, and horizontal directional drilling (HDD). The law requires excavators to contact a regional notification center, commonly known as Underground Service Alert or "811," at least two working days prior to beginning work. Utility operators must then mark the location of underground facilities, and excavators must use reasonable care to avoid damaging marked utilities. Section 4216 applies to all forms of subsurface construction, including HDD, and is intended to prevent damage to underground water, sewer, telecommunications, electrical, and natural gas infrastructure.

Local

The CPUC has sole and exclusive state jurisdiction over the siting and design of the Proposed Project. Pursuant to 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."

Sacramento County and Alameda County policies are not included as there are no utilities or service systems in Sacramento County or Alameda County relevant to the Proposed Project.

Solano County

Solano County General Plan

The Solano County General Plan contains policies for water facilities, sewer, wastewater, solid waste, and utilities (Solano County 2008). The following policies from the General Plan Public Facilities and Services Element are relevant to the Proposed Project:

Water Facilities and Service

PF.P-14 In areas identified with marginal water supplies, require appropriate evidence of adequate water supply and recharge to support proposed development and water recharge.

PF.I-14 Review plans for new development projects to ensure that they have provided for water on-site or through a public agency.

Solid Waste

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.

Utilities

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.

PF.I-54 Direct utility companies to locate transmission lines within existing rights-of-way or other locations that minimize impacts on human populations and natural 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.

Solano County Municipal Regional Permit

Provision C.3 of the Municipal Regional Stormwater Permit requires site designs for new developments and redevelopments to minimize the area of new roofs and paving. Where feasible, pervious surfaces should be used instead of paving so that runoff can infiltrate to the underlying soil. Remaining runoff from impervious areas must be captured and used or treated using bioretention. In some developments, the rates and durations of site runoff must also be controlled. In addition, project applicants must execute agreements to allow municipalities to verify that stormwater treatment and flow-control facilities are maintained in perpetuity. The C.3 requirements are separate from, and in addition to, requirements for erosion and sediment control and for pollution prevention measures during construction (Solano Stormwater Alliance 2025).

Source Reduction and Recycling Element

Under the California Integrated Waste Management Act (Public Resources Code § 40050 et seq.), Solano County has adopted a Source Reduction and Recycling Element (SRRE) as part of its Countywide Integrated Waste Management Plan. The SRRE outlines the County's strategy for reducing the amount of solid waste sent to landfills through source reduction, recycling, composting, and public education programs. It includes an assessment of existing waste generation and disposal practices, projected future waste volumes, and the infrastructure and programs needed to meet state-mandated diversion goals. The plan reflects coordination among Solano County and its seven incorporated cities, with implementation overseen in part by a Local Task Force. The SRRE establishes a framework for long-term waste reduction consistent with the requirements of the Integrated Waste Management Act and provides the basis for evaluating solid waste service capacity and diversion compliance under CEQA (Solano County 1992).

Construction and Demolition Debris Program

Through its Building Standards and Codes (Solano County code Chapter 6.3), Solano County has adopted and enforces the requirements of CALGreen sections 4.408.1 and 5.408, which mandate that at least 65 percent of construction and demolition (C&D) debris generated at a project site be recovered through recycling, reuse, or other approved methods (Solano County 2025a). Under the County's Construction and Demolition Debris Program, all projects requiring a building permit must submit a C&D Recycling Plan and provide final weight receipts or disposal documentation demonstrating compliance before final inspections. In support of SB 1383, Solano County has established mechanisms to enforce adherence to the 65-percent diversion threshold, including the permit-hold process, submission of diversion documentation through the County's Accela tracking system, and review of haul receipts or third-party documentation (Solano County 2025b).

Solano County Solid Waste Ordinance

Solano County regulates solid waste through its Solid Waste Management Ordinance (Solano County Code Chapter 23), which governs the storage, collection, transportation, recycling, and disposal of solid waste in unincorporated areas. The ordinance authorizes the Department of Resource Management to issue permits, manage franchise agreements, and enforce requirements for waste diversion, recycling, and use of designated facilities. It also prohibits illegal dumping and establishes penalties for noncompliance, aligning local solid waste practices with state laws such as the California Integrated Waste Management Act and SB 1383 (Solano County 2025g).

Department of Resource Management Environmental Health Division

The Solano County Department of Resource Management Environmental Health Division (EHD) of the Department of Resource Management serves as the Certified Unified Program Agency (CUPA) and the Local Enforcement Agency (LEA) for solid and hazardous waste regulatory programs and administers the Solano County Solid Waste Ordinance. As the CUPA, the EHD implements and enforces state-mandated hazardous materials regulations under the California Environmental Protection Agency's Unified Program, including oversight of hazardous waste generators, hazardous materials business plans (HMBPs), aboveground petroleum storage tanks, and underground storage tanks. As the LEA, the EHD enforces solid waste management regulations under delegation from CalRecycle, including permitting and inspection of solid waste facilities. All solid and hazardous waste generated in unincorporated Solano County, including during construction activities, must be handled in accordance with applicable state and local regulations enforced by the EHD. These regulations are designed to protect public health and safety and ensure proper storage, transportation, and disposal of regulated materials (Solano County 2025e).

Contra Costa County

Contra Costa County General Plan

The Contra Costa County 2045 General Plan was adopted in November 2024 (Contra Costa County 2024). The purpose of the Contra Costa County General Plan is to express the broad

goals and policies, and specific implementation measures, which will guide decisions on future growth, development, and the conservation of resources through the year 2045. The relevant policies for utilities and service systems are provided below:

Water

PFS-P4.5 Require new development to demonstrate the availability of a safe, sanitary, and environmentally sound water delivery system with adequate capacity.

Contra Costa County Municipal Regional Stormwater Permit

The Contra Costa County Public Works Department oversees stormwater regulations for new projects by requiring features that control and treat stormwater runoff to reduce pollutants flowing to the storm drain system and waterways. Provision C.3 of the County's National Pollutant Discharge Elimination System (NPDES) permit sets specific standards requiring projects that trigger certain thresholds to install Stormwater Management Facilities (SMFs) that are sized according to specific criteria. In general, thresholds for C.3 regulated projects are as follows:

- Facilities, roads, sidewalks, and trails that create or replace 5,000 square feet of impervious surface
- Detached single family homes that create or replace 10,000 square feet of impervious surface
- Road maintenance, lane widening, and utility trenching projects contiguous over one acre

Additionally, projects creating and/or replacing at least 1 acre (43,560 square feet) of impervious surface must design their stormwater management facilities to provide both stormwater treatment and flow control functions (in order to maintain pre-project runoff volumes and durations.) In addition to treating stormwater runoff, these projects control the volume and rate at which runoff is released so that it does not contribute to erosion in waterways (Contra Costa County Public Works 2025).

Countywide Integrated Waste Management Plan

Contra Costa County adopted its Countywide Integrated Waste Management Plan (CoIWMP) in May 1993 in accordance with the California Integrated Waste Management Act (Public Resources Code § 40050 et seq.), which is adopted and implemented as part of the General Plan Public Facilities and Services Element (Contra Costa County 2008). The CoIWMP includes the Source Reduction and Recycling Element (SRRE), which outlines the County's strategy for achieving state-mandated landfill diversion goals through source reduction, recycling, composting, and other waste management programs. Under its CoIWMP, Contra Costa County submits annual reports to CalRecycle documenting progress toward waste diversion and compliance with applicable solid waste regulations. The CoIWMP serves as the guiding framework for solid waste planning and infrastructure coordination across the unincorporated county and its incorporated cities and provides the basis for assessing landfill capacity and diversion program adequacy under CEQA.

Construction & Demolition Debris Recovery Program

Contra Costa County has formally adopted CALGreen sections 4.408.1 and 5.408 through its Construction & Demolition Debris Recovery Program, which is reflected in county code and building permit review procedures (Contra Costa County 2023; 2025b). The County enforces the requirement that at least 65 percent by weight of construction and demolition debris be diverted from landfills through recycling, reuse, or other approved means. Compliance is tracked via submittal of a CALGreen waste management plan and weighted disposal documentation; permits are held until diversion plans are approved and final receipts reviewed via email to Contra Costa's Enforcement Agency. Contra Costa County implements Senate Bill 1383 through its permit-hold process, compliance reviews, and formal documentation submission systems for construction and demolition projects (Contra Costa County, n.d.).

Contra Costa County Solid Waste Collection and Transportation Ordinance

Contra Costa County regulates solid waste through its Ordinance Code, Title 4, Division 418, which governs the collection, transportation, and disposal of solid waste in unincorporated areas. Chapter 418-2 requires non-franchise haulers to obtain permits from the County's Environmental Health Division, submit to vehicle inspections, maintain operational records, and report waste volumes quarterly. Unauthorized hauling is prohibited, and enforcement mechanisms include citations and administrative penalties. The County also implements state-mandated recycling and organic waste diversion programs in compliance with SB 1383, in coordination with regional solid waste authorities.

Contra Costa County Hazardous Materials Programs

In Contra Costa County, the Hazardous Materials Programs Division of Contra Costa Health Services is responsible for enforcing local and state hazardous materials regulations. The division conducts investigations of hazardous materials complaints and violations, and initiates enforcement actions as necessary to protect public health and safety. Enforcement actions may include notices of violation, administrative orders, or referrals for civil or criminal prosecution, depending on the nature and severity of the violation. These activities ensure compliance with state hazardous materials laws and regulations, including those governing hazardous waste generation, storage, and release prevention. The program's enforcement authority supports Contra Costa County's broader role as a Certified Unified Program Agency (CUPA), overseeing hazardous materials programs countywide.

City of Pittsburg

City of Pittsburg General Plan

The City of Pittsburg General Plan contains policies for water supply, wastewater, sewer, solid waste, and stormwater (City of Pittsburg 2024). The following policies from the General Plan are relevant to the Proposed Project:

Water Conservation

12-P-2.2 Continue water conservation efforts from industrial facilities, including continued enforcement of the City's water-efficient landscape standards and participation in a wastewater reclamation efforts.

Wastewater Collection and Treatment

12-P-3.7 Reduce rainfall-dependent infiltration and inflow to maintain capacity of existing collection system and prevent sanitary sewer overflows.

Solid Waste

12-P-4.1 Enforce solid waste reduction, diversion, and recycling standards to divert increasingly larger portions of the waste stream from landfills serving the region.

12-P-4.4 Encourage residential, commercial, and industrial recycling and reuse programs through providing information on the City's website, public education campaigns, and other outreach techniques.

Stormwater

12-P-7.1 Require all development projects to demonstrate how storm water runoff will be detained or retained on-site and/or conveyed to the nearest drainage facility as part of the development review process, including consideration of the near-term and cumulative capacity of the system serving the drainage area, and as required by the City's NPDES Municipal Regional Permit. Project applicants shall mitigate any drainage impacts as necessary and shall demonstrate that the project will not result in any increase in off-site runoff during rain and flood events.

12-P-7.2 Assure through the City standards, including the Master Drainage Plan and development ordinances, that proposed new development (residential, commercial, or industrial) adequately provides for on-site and downstream mitigation of potential flood hazards, including construction of required drainage improvements.

12-P-7.6 Allow the construction of detention basins as mitigation in new developments. Ensure that detention basins located in residential neighborhoods, schools, or child-care facilities are surrounded by a gated enclosure, or protected by other safety measures.

12-A-7.a As part of project review and CEQA documentation, require an assessment of downstream drainage (creeks and channels) and City storm-water facilities impacted by potential project runoff and require development to include measures, including on-site improvements, to ensure that off-site runoff is not increased during rain and flood events.

Construction & Demolition Program

As the City of Pittsburg operates under Contra Costa County's jurisdiction for building permitting and Construction & Demolition Program enforcement, it is subject to the county's

established framework for achieving the 65-percent diversion standard. However, the City of Pittsburg also formally adopted CALGreen through its Green Building Standards Code (Municipal Code chapter 15.22) (City of Pittsburg 2025c) In practice, Pittsburg's permitted projects must comply with the County's CALGreen requirements and diversion protocols, even though the City itself has not adopted a separate ordinance.

Solid Waste Ordinance

Under Pittsburg Municipal Code Chapter 8.04, the City enforces comprehensive local regulations governing storage, collection, and disposal of solid waste. The ordinance mandates a licensing or franchise system for waste haulers, stipulates container standards and collection frequency, prohibits disposal of hazardous, medical, or liquid wastes in standard refuse containers, and requires materials such as batteries, paint, and e-waste to be directed to designated programs or facilities. Prohibited items under Schedule B must be taken to the Delta Diablo Household Hazardous Waste Facility in Antioch. The ordinance also authorizes enforcement actions—including citations and penalties—by environmental services staff, code enforcement officers, and other city officials

4.19.3 Approach to Impact Analysis

The analysis of impacts on utilities and service systems applies the impact criteria and significance thresholds defined in the following subsection. The LSPGC applicant proposed measures (APMs) and PG&E construction measures (CMs) are considered when making the impact determinations for utilities and service systems, as shown in Table 4.19-1. Impacts are evaluated for the Proposed Project including separate analysis of LSGPC and PG&E project components, analysis of LSPGC and PG&E project components combined where appropriate, cumulative impacts, and alternatives. Mitigation measures are defined to reduce or avoid significant impacts, where feasible.

Impact Criteria and Significance Thresholds

The following impact criteria questions have been derived from Appendix G of the CEQA Guidelines to evaluate impacts on utilities and service systems. Appendix G of the CEQA Guidelines ask whether a project would:

- Impact UT-1: 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?
- Impact UT-2: Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?
- Impact UT-3: Result in a determination by the waste water 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?

- Impact UT-4: 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?
- Impact UT-5: Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

In addition, analysis in this section includes the following criterion to address potential impacts on existing utility lines:

- Impact UT-6: Would the project induce voltage on an existing natural gas pipeline in a manner that would result in the physical degradation of the pipeline?

Applicant Proposed Measures and Construction Measures

The LSPGC APMs and PG&E CMs identified in Section 2: Project Description that are relevant to the utilities and service systems impact analysis are provided in Table 4.19-1.

Table 4.19-1 APMs and CMs Relevant to Utilities and Service Systems

LSPGC APMs and PG&E CMs
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.
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.

LSPGC APMs and PG&E CMs
• 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.
CM 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.

4.19.4 Impact Analysis – Proposed Project

Table 4.19-2 presents a summary of the CEQA significance criteria and impacts on utilities and service systems that would occur during construction, operation, and maintenance of the Proposed Project.

Table 4.19-2 Summary of Impacts on Utilities and Service Systems for the Proposed Project

Impact criteria: Would the project …	APMs/ CMs applied	Significance Before Mitigation	Mitigation Measures Required	Significance After Mitigation
Impact UT-1: 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?	CM HYD-2	S	MM UT-1	LTSM
Impact UT-2: Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	None	LTS	None	NA

Impact criteria: Would the project …	APMs/ CMs applied	Significance Before Mitigation	Mitigation Measures Required	Significance After Mitigation
Impact UT-3: Result in a determination by the waste water 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?	None	LTS	None	NA
Impact UT-4: 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?	None	LTS	None	NA
Impact UT-5: Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	APM GHG-1 CM GHG-1	LTS	None	NA
Impact UT-6: Induce voltage on an existing natural gas pipeline in a manner that would result in the physical degradation of the pipeline?	None	S	MM UT-2	LTSM

Notes:

LTS = less than significant

LTSM = less than significant with mitigation

S = significant

NA = not applicable

Impact UT-1: Would the Proposed 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? ***(Less than significant with mitigation)***

Electric Power

Construction

LSPGC Project Components

Electrical Demand

Temporary construction power would be provided by extending an existing PG&E 12 kV distribution line along Stratton Lane to the proposed LSPGC Collinsville Substation site, which, which PG&E permits under its standard Distribution Interconnection Package per the PG&E Distribution Interconnection Handbook (PG&E 2017). If distribution power does not become available in a timely manner, temporary generators would be used as a contingency for power during construction. If temporary generators exceeding 50 brake horsepower (bhp) are required during construction of the Collinsville Substation, LS Power would be required to obtain an

Authority to Construct and a Permit to Operate from the Bay Area Air Quality Management District (BAAQMD) prior to using the equipment. These permits regulate emissions under California law (CARB and BAAQMD requirements). Generator units below or equal to 50 bhp may be exempt but permit applicability must be confirmed with BAAQMD. Impacts from use of temporary generators are addressed in Section 4.3: Air Quality. PG&E has confirmed sufficient system capacity and interconnection capability to support temporary and construction-phase electric loads at the proposed Collinsville Substation site (CAISO 2023). PG&E's Local Capacity Area Substation List shows that adjacent substations (Pittsburg and Vaca Dixon) are designated to serve the area under standard RA planning, and PG&E's planned modifications reflect alignment with anticipated project load requirements (PG&E 2024). The impacts associated with construction of the 12kV distribution line are analyzed throughout this EIR. The impact from expansion of electric power service would thus be less than significant.

There are no existing electrical lines or facilities in the Collinsville Substation, 230 kV overhead segment, underground segment, or submarine segment sites. Construction of the proposed Collinsville Substation, 230 kV overhead segment, 230 kV underground segment, and 230 kV submarine segment would not require the relocation of any electric power facilities.

Conflicts with Electrical Lines

The proposed LSPGC telecommunication interconnection lines would be installed from Marina Drive to the PG&E Pittsburg Substation. The telecommunication lines include two new underground fiber optic cables within the City of Pittsburg's streets (Marina Blvd., Herb White Way, and Halsey Way). PG&E distribution lines are located underground along the route of the proposed telecommunication interconnection lines alignment. The new telecommunication interconnection lines would be installed using an HDD boring technique, and 19 handholes[1] would be installed along the roadway to access and maintain the telecommunication interconnection lines. While the HDD boring technique would be used to avoid potential utility lines, including existing electrical distribution lines, there is a potential for construction work on the telecommunication interconnection lines to interfere with existing buried utilities, including electrical power lines. However, pursuant to California Government Code section 4216, LSPGC would notify utility companies in advance of construction so that buried utility lines can be identified and marked and the horizontal or vertical alignment of the telecommunications lines would then be adjusted as needed to avoid interference with or damage to existing buried utilities. As a result, the LSPGC project component construction would not require the construction or relocation of any utilities and no impact would occur.

[1] A handhole is a small, shallow underground structure (or a hole) typically used for accessing and maintaining underground infrastructure such as electrical cables, telecom lines, or water pipes, allowing access for hands and arms but not full body entry.

PG&E Project Components

Electrical Demand

PG&E construction activities would not require electrical service. Construction of PG&E project components would have no impact on expansion of electrical service.

Construction within PG&E existing Pittsburg, Vaca Dixon, and Tesla substations would be conducted by PG&E consistent with PG&E design and would not require relocation of any electrical facilities. Construction of new structures at the 500 kV transposition sites would occur within PG&E right-of-way and would not require construction of any electrical lines beyond the scope of the Proposed Project analyzed in this EIR. No impact from construction of new utilities would occur.

Conflicts with Electrical Lines

Construction of the proposed PG&E 500 kV interconnection lines would require installation of approximately 10 single-circuit LSTs and nine new (three-pole) TSPs between PG&E's existing Vaca Dixon-Tesla 500 kV Transmission Line and the proposed LSPGC Collinsville Substation. PG&E would also use SMUD access roads within the Solano 4 Wind Farm to access the work areas for the 500 kV interconnection lines. The LSTs and TSPs would be mounted on drilled pier foundations. Drilling of pier foundations and heavy equipment travel have the potential to damage existing buried collector cables within the access roads. Pursuant to California Government Code section 4216, because LST and TSP installation would involve drilling into the ground, PG&E would notify SMUD before ground-disturbing activities to identify and mark SMUD buried electrical lines and would adjust pole work areas and foundation locations to avoid conflicts with SMUD electrical lines. Compliance with California Government Code section 4216 and standard utility-coordination practices would avoid conflicts with existing buried collector cables from excavation; however, damage could still occur due to heavy loads traveling over the electrical lines. If a SMUD collector cable were damaged during construction it would need to be replaced or relocated, resulting in a significant impact from construction or relocation of electrical utilities. MM UT-1 (refer to Section 4.19.13) specifies measures that PG&E would need to take to protect SMUD collector cables during heavy equipment travel on access roads. With implementation of MM UT-1, PG&E project component construction would not require the relocation or construction of electrical utilities, and the impact would be less than significant with mitigation.

Operation and Maintenance

LSPGC Project Components

The electrical demand for operation of the substation (e.g., lighting) would be supplied by the PG&E 12 kV distribution line. PG&E has confirmed sufficient system capacity and interconnection capability to support operation of the Collinsville Substation (CAISO 2023). PG&E's Local Capacity Area Substation List shows that adjacent substations (Pittsburg and Vaca Dixon) are designated to serve the area under standard RA planning, and PG&E's planned modifications reflect alignment with anticipated project load requirements (PG&E 2024).

Operation of the substation would not result in expanded electrical service and the impact on electric power service would be less than significant.

Operation and maintenance activities would not involve activities outside the boundaries LSPGC project components sites. Operation and maintenance activities would have no potential to damage or require relocation of existing electrical lines. No impact would occur from relocation of electrical lines.

PG&E Project Components

Operation and maintenance of PG&E project components would not create new electrical demand and would not require ground disturbance. Operation and maintenance of PG&E project components would have no impact from expansion of service or construction or relocation of electrical power lines.

Water

Construction

LSPGC and PG&E Project Components Combined

Construction of the Proposed Project, including both LPSGC and PG&E components, would require a total of 17.4 AF, or approximately 5.7 million gallons, of water over the 2-year construction period. Water for construction of the Proposed Project would be sourced from the SMUD well at the Solano Wind Project site that draws from the Solano Subbasin, the SWCA that draws from Lake Berryessa, and/or the City of Rio Vista, which also draws from the Solano Subbasin. The existing SMUD well at the Solano 4 Wind Project draws from the Solano Subbasin, a large groundwater basin that occupies 354,600 acres and includes the northern portion of the Delta (Sacramento Municipal Water District 2022). According to the recent groundwater modeling presented in the Solano Subbasin Groundwater Sustainability Plan, there is an overall, long-term trend of increasing groundwater storage within the groundwater system, and the sustainable yield is estimated at 190,000 AF per year (AFY), and the annual extraction as of 2021 was estimated at 180,000 AFY. In addition, the historical and projected water budgets developed for the subbasin indicates surplus groundwater conditions (Solano Subbasin Groundwater Sustainibility Agency [Solano GSA] 2021). Projected water budgets for the subbasin were developed for current and anticipated future groundwater use practices with and without climate change. Future projections include estimates of future hydrology, water supply availability, and water demand with consideration of changes in land use, population trends, water demands, and water supply availability, including State Water Project and Solano Project water (Solano GSA 2021). Therefore, groundwater extracted from the Solano Subbasin to support construction activities (i.e., 17.4 AF over 2 years) would not adversely affect basin sustainability or long-term groundwater availability. The presence of a surplus condition in both historical and projected water budgets demonstrates that sufficient groundwater resources are available to meet Proposed Project demands of 17.4 AF over 2 years without requiring new or expanded groundwater entitlements or infrastructure.

As discussed in Section 4.19.1, SCWA had an annual average of 1.4 million AF of water in storage at Lake Berryessa (equivalent to 44 billion gallons of water) from July 2024 to July 2025. The 17.4 AF of water need for construction of the Proposed Project would constitute approximately 0.01 percent of SCWA of this annual water storage (Solano County Water Agency 2023). As of August 2025, the most recent SCWA Five-Year Water Management Plan is the 2017 update, which was finalized in 2019 (SWCA 2019). According to the SCWA Five-Year Water Management Plan, SCWA's total Solano Project entitlement is 207,350 AF per year, while actual deliveries in 2017 totaled 140,605 acre-feet, indicating a surplus of approximately 66,745 AF in that year. While more recent systemwide delivery data is not publicly available, the available information indicates that SCWA's contracted supply capacity substantially exceeds typical usage volumes such that the Proposed Project usage of 17.4 AF would not overburden local water supplies.

As also discussed in Section 4.19.1, the City of Rio Vista pumped approximately 733 million gallons of groundwater in 2024 (City of Rio Vista 2025). The 5.4 million gallons of water estimated for construction of the LPSGC components constitutes over a 2-year period approximately 0.04 percent of the City of Rio Vista's annual water production. The Solano Subbasin, which supplies the City of Rio Vista, is designated a medium priority basin by the DWR. However, there is no evidence that the City's existing production levels are constrained or at capacity. The City's 2024 Consumer Confidence Report does not indicate any pumping limitations, overdraft conditions, or operational restrictions (City of Rio Vista 2025), and the City has not adopted conservation measures or reported supply shortfalls. These factors indicate. Given the limited total volume of water required for Proposed Project construction (i.e., 17.4 AF over 2 years), the City's groundwater system has sufficient capacity to accommodate the water needs of the Proposed Project without requiring new entitlements, infrastructure, or extraction permits. As a result, the Proposed Project would not require new water supply facilities and no impact from construction of new or expanded water supply facilities would occur.

LSPGC Project Components

Water Demand

Construction on the LSPGC project components would require approximately 5.4 million gallons, or approximately 16.6 AF, of water for dust control and concrete over the 2-year construction period. Water use for LSPGC project components would be a portion of the total water demand for the Proposed Project and would not require new water supply facilities, thus no impact from construction of new or expanded water supply facilities would occur.

Temporary sanitary needs during construction would be met using portable restrooms, which would be serviced by licensed providers and would not require connection to a wastewater treatment facility. The 5.4 million gallons of water estimated for construction of LSPGC project components would be used primarily for dust suppression and concrete mixing and the water use would not generate wastewater requiring wastewater treatment. Therefore, construction water use would not generate wastewater or create demand for wastewater infrastructure.

Stormwater runoff during construction would be managed through best management practices (BMPs) consistent with the Construction Stormwater General Permit and a project-specific Stormwater Pollution Prevention Plan (SWPPP) (see Section 4.10: Hydrology and Water Quality). No offsite stormwater infrastructure would be required.

Because no new water supply infrastructure would be required and construction of the LSPGC project components would not require or result in the construction of new or expanded water, wastewater treatment, or storm water drainage, no impact would occur.

Conflicts with Water Utility Lines
The LSPGC telecommunication lines would be located underground within the city of Pittsburg's streets (Marina Blvd., Herb White Way, and Halsey Way). City of Pittsburg has water lines located within the same streets as the proposed telecommunication lines. The new telecommunications line would be installed using an HDD boring technique to avoid potential utility lines, including existing water lines. There is a potential for the telecommunication line installation to damage or interfere with existing buried utilities within the telecommunication line path, including water lines. Pursuant to California Government Code section 4216 LSPGC will notify utility companies in advance of construction so that buried utility lines can be identified and marked and adjust the horizontal or vertical alignment of the telecommunications lines to avoid damage to existing buried utilities. Due to compliance California Government Code section 4216, the telecommunication line construction would not require relocation of water lines and there would be no impact from construction or relocation of water lines.

PG&E Project Components
There are no water supply pipelines or infrastructure within the PG&E project component sites. Construction of the PG&E components would require approximately 250,000 gallons, or about 0.8 AF of water. PG&E water use would be a small portion of the total Proposed Project water use and would not require new water supply facilities, thus no impact from construction of new or expanded water supply facilities would occur.

Operation and Maintenance

LSPGC Project Components
The LSPGC project components, including the proposed Collinsville Substation, would be unmanned and remotely operated. Routine maintenance of the LSPGC project components would not require water use and would therefore not impact water supply. Operation and maintenance of LSPGC project components would therefore not increase the demand for water and would not require new or expanded water treatment or wastewater treatment utilities. Maintenance of the facilities would be limited to the facility location and would not involve ground-disturbing activities that could cause relocation of any utility. No impact would occur.

PG&E Project Components
Routine maintenance of the PG&E components could include washing equipment, but water use for washing would not require water use and would therefore not impact water supply. The

Proposed Project would therefore not increase the demand for water and would not require new or expanded water treatment or wastewater treatment utilities. No impact would occur.

Wastewater and Stormwater Drainage

Construction

LSPGC Project Components

Generation of Wastewater

Construction would generate sanitary waste and groundwater removed from excavations. Sanitary waste would be collected in portable restrooms and regularly serviced by licensed sanitary waste haulers. The portable restrooms would be provided in accordance with applicable sanitation regulations established by OSHA. At peak construction, approximately 206 workers would be present on site, with a daily average of 72 workers. OSHA regulations require one 1 toilet seat and 1 urinal per 40 workers (OSHA n.d.). Using a conservative estimate of 10 gallons of sanitary waste generated per worker per day (EPA 2025), construction activities would generate up to 2,060 gallons per day, or 0.002 mgd, of sanitary waste, with an average of 720, gallons per day or 0.00072 mgd. All sanitary waste would be transported by the licensed sanitary waste service providers for off-site disposal at their contracted treatment, storage, and disposal facility under existing service contracts, most likely to the Northwest Wastewater Treatment Plant and/or Delta Diablo Wastewater Treatment Plant. As described in Section 4.19.1, the combined Beach Wastewater Treatment Plant and Northwest Wastewater Treatment Plant are currently being consolidated, with the capacity to treat an average of 0.62 mgd (City of Rio Vista 2022), and the Delta Diablo Wastewater Treatment Plant is designed to treat approximately 13 mgd (Delta Diablo 2025). These facilities there have more than adequate capacity to accommodate the 0.002 mgd sanitary waste generated during peak sanitary waste generation for the Proposed Project.

There are no existing sewer or wastewater lines within the LSPGC project component sites. Excavations for the installation of poles/foundations and trenching of the submarine cable on land may require temporary dewatering. Dewatered groundwater would be discharged on site to the surface in compliance with State regulations (i.e., State Water Board Order No. 2003-0003-DWQ, NPDES General Permit No. CAG990001) for discharge (SWRCB n.d.) to land or stored in Baker tanks (large, portable, aboveground steel tanks) or similar equipment before off-site disposal. Dewatering from Project excavations may also be used for dust control, which would further reduce the potential groundwater that needs to be disposed of offsite, if required. Due to the limited volume of groundwater that would be removed from excavations, construction of LSPGC project components would not require construction of new or expanded wastewater treatment facilities. Therefore, impacts from generation of wastewater from Proposed Project construction would be less than significant.

Generation of Stormwater Runoff

There are no storm drains in proximity to the Collinsville Substation or 230 kV transmission line. Construction of the proposed LSPGC Collinsville Substation and or 230 kV transmission

line would disturb more than 1 acre of land and would, therefore, be required to comply with State Water Resources Control Board Order No. 2022-0057-DWQ, which defines requirements for stormwater management, including preparation of a Stormwater Pollution Prevention Plan (SWPPP). Construction of LSPGC project components would not require construction of new or expanded stormwater drainage facilities due to compliance with Order No. 2022-0057-DWQ and implementation of erosion and sediment control best management practices (BMPs). The impact would be less than significant.

Conflicts with Wastewater and Stormwater Infrastructure

The LSPGC telecommunication interconnection lines would be located underground within the city of Pittsburg streets (Marina Blvd., Herb White Way, and Halsey Way). The City of Pittsburg has sewer and stormwater infrastructure located within the same streets as the proposed telecommunication lines. The new telecommunication interconnection lines would be installed using an HDD boring technique to avoid potential utility lines, including existing sewer lines or storm drains; however, there is a potential for the telecommunication line installation to damage existing buried utilities, including sewer lines and storm drains. Pursuant to California Government Code section 4216, LSPGC would notify utility companies in advance of construction so that buried utility lines can be identified and marked and the horizontal or vertical alignment of the telecommunications lines would be adjusted as needed to avoid interference with or damage to existing buried utilities. The telecommunication line construction would therefore not require relocation of sewer lines or storm drains and no impact would occur.

PG&E Project Components

Construction of PG&E project components would require similar sanitary facilities to those required for LSPGC project components. The PG&E project component sites are not located near any wastewater or stormwater drainage infrastructure and would not include or make necessary the relocation of any sewer line or storm drain. In addition to compliance with Order No. 2022-0057-DWQ to manage stormwater runoff, PG&E has proposed CM HYD-2, which includes preparation of a SWPPP to manage stormwater runoff. Due to the temporary duration of construction and small volume of wastewater and stormwater runoff generated as well as compliance with Order No. 2022-0057-DWQ and CM HYD-2, PG&E construction would not require expansion or construction of new wastewater or stormwater drainage infrastructure. No impact would occur.

Operation and Maintenance

LSPGC Project Components

LSPGC project components would be unmanned during operation and would not require wastewater infrastructure for operation or maintenance. The LSPGC project component sites drain into existing stormwater drainage infrastructure. The LSPGC Collinsville Substation would introduce approximately 11 acres of impervious surface. A stormwater detention basin would be installed on the southern portion of the proposed LSPGC Collinsville Substation site to facilitate the return of water captured on site to the groundwater basin. 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 NPDES Municipal Stormwater Permit (Provisions E.12). 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. Since the substation would include on-site stormwater management infrastructure, it would not require any off-site expansion or construction of new stormwater drainage infrastructure. Thus, the impact would be less than significant.

PG&E Project Components

The PG&E project components would be unmanned during operation and, therefore, operation would not require the construction or relocation of wastewater and stormwater drainage facilities. Therefore, no impact would occur.

Telecommunications

Construction

LSPGC Project Components

There are no telecommunication facilities in proximity to the proposed Collinsville Substation site or 230 kV transmission line alignment. The LSPGC telecommunication interconnection lines would be located underground within city of Pittsburg streets (Marina Blvd., Herb White Way, and Halsey Way). Other telecommunication infrastructure is located within the same streets as the proposed telecommunication interconnection lines. The new telecommunication interconnection lines would be installed using an HDD boring technique to avoid potential utility lines, including other telecommunication lines. There is a potential for the telecommunication lines installation to damage existing buried utilities, including telecommunication infrastructure within the telecommunication line path. Pursuant to California Government Code section 4216, LSPGC would notify utility companies in advance of construction so that buried utility lines can be identified and marked and the horizontal or vertical alignment of the telecommunications lines would then be adjusted as needed to avoid interference with or damage to existing buried utilities. As a result, the telecommunication lines would not cause relocation of any existing telecommunication facilities and the impact from extension of the telecommunication lines as part of the project would be less than significant.

PG&E Project Components

PG&E's existing Vaca Dixon-Tesla 500 kV Transmission Line is not outfitted with telecommunication lines, and there are no plans to add any as part of the Proposed Project.

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. The

proposed modifications to PG&E's existing Vaca Dixon Substation and Tesla Substation would include potential modifications to the telecommunication equipment (e.g., microwave modifications, fiber modifications), electrical equipment, line protection relays, FSC, and bus structures. All work would be within the footprints of the existing substations, and the modifications would not cause relocation or expansion of any telecommunication facilities in other aeras. Impacts would thus be less than significant.

Operation and Maintenance

LSPGC Project Components

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 lines (i.e., microwave tower and antenna) and LSPGC 230 kV Collinsville–Pittsburg Transmission Line (i.e., OPGW). Operation of the LSPGC project components would not create a demand for other telecommunications upgrades.

LSPGC would perform routine inspections and maintenance at the substation and transmission lines, as needed. Operation and maintenance activities would not require ground-disturbing activities that could affect other utility or service lines. Operation and maintenance of the LSPGC project components would not require new, expanded, or relocated telecommunications facilities. Therefore, no impact would occur.

PG&E Project Components

Telecommunications paths would occur along the proposed 500 kV interconnection lines (i.e., microwave tower and antenna). PG&E would perform routine inspections and maintenance at the transmission lines, transposition sites, and existing substations, as needed. Operation and maintenance activities would not require ground-disturbing activities that could affect other utility or service lines. Operation and maintenance of the PG&E project components would not require new, expanded, or relocated telecommunications facilities. Therefore, no impact would occur.

Natural Gas

Construction

LSPGC Project Components

Construction of the LSPGC project components would not create demand for natural gas and would not require any new or expanded natural gas infrastructure. There are no natural gas pipelines in the work areas for the Collinsville Substation or 230 kV transmission line. Construction of the Collinsville Substation and 230 kV transmission line would have no impact on natural gas utilities.

The LSPGC telecommunication interconnection lines would be located underground within city of Pittsburg streets (Marina Blvd., Herb White Way, and Halsey Way). Natural gas pipelines

may be located within the same streets as the proposed telecommunication lines. The new telecommunications lines would be installed using an HDD boring technique to avoid potential utility lines, including existing natural gas pipelines. There is potential for the telecommunication line installation to damage existing buried utilities including natural gas pipelines. Pursuant to California Government Code section 4216, LSPGC would notify utility companies in advance of construction so that buried utility lines can be identified and marked and the horizontal or vertical alignment of the telecommunications lines would be adjusted as needed to avoid damage to existing buried utilities. Due to avoidance of existing utility lines, the telecommunication line construction would not cause the relocation of natural gas lines, and no impact would occur.

PG&E Project Components

Construction of PG&E project components would not require natural gas and would thus not require construction or expansion of natural gas facilities. The proposed PG&E 500 kV interconnection lines would run parallel to a gas pipeline in Solano County along an unnamed access road off Talbert Lane for approximately 0.4 mile. Construction activities are not expected to interfere with the adjacent gas pipeline given the separation between the gas pipeline and the work areas. No natural gas lines are located within any proposed PG&E work areas. Therefore, construction of PG&E project components would not require the relocation of any natural gas pipelines, and no impact would occur.

Operation and Maintenance

LSPGC Project Components and PG&E Project Components

Operation and maintenance activities would not create a demand for natural gas. No relocation or new or expanded natural gas facilities would be required. No impact would occur.

Impact UT-2: Would the Proposed Project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years? *(Less than significant)*

Construction

LSPGC and PG&E Project Components Combined

As described for Impact UT-1, Construction of the Proposed Project, including both LPSGC and PG&E components, would require a total of 17.4 AF, or approximately 5.7 million gallons, of water over the 2-year construction period. Each of the available sources of water individually has the capacity to supply the 5.7 million gallons of water needed for construction of the Proposed Project during normal, dry, and multiple dry years. With multiple water supply options available, the small volume of water needed, and the short duration of water demand, local water supplies are sufficient to supply water needed for construction of the LSPGC project components during normal, dry, and multiple dry years, and the impact would be less than significant.

LSPGC Project Components

The total water demand for LSPGC construction is estimated at 5.4 million gallons, or 16.6 AF, over the 2-year construction period and would be a portion of the total Proposed Project water demand. As the total Proposed Project water demand would not exceed available supplies during normal, dry, and multiple dry years, LSPGC construction water demand would also not exceed available water supplies, and the impact would be less than significant.

PG&E Project Components

Construction of the PG&E components would require approximately 250,000 gallons, or 0.8 AF, of water over the construction period and would be a small portion of the total Proposed Project water demand. As the total Proposed Project water demand would not exceed available supplies during normal, dry, and multiple dry years, PG&E construction water demand would also not exceed available water supplies, and the impact would be less than significant.

Operation and Maintenance

LSPGC and PG&E Project Components

The Proposed Project would not require water sources for operation and maintenance activities as the proposed LSPGC Collinsville Substation would be unmanned. Therefore, operation and maintenance of LSPGC and PG&E project components would create no demand for water supplies, and the Proposed Project would have no effect on water supplies during normal, dry, and multiple dry years. No impact would occur.

Impact UT-3: Would the Proposed Project result in a determination by the waste water treatment provider, which serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments? ***(Less than significant)***

Construction

LSPGC Project Components

Wastewater generated during construction of the LSPGC project components would include sanitary waste and groundwater removed from excavations, as discussed in Impact UT-1. At peak construction, approximately 206 workers would be present on site, with a daily average of 72 workers. OSHA regulations require one 1 toilet seat and 1 urinal per 40 workers (OSHA n.d.). Using a conservative estimate of 10 gallons of sanitary waste generated per worker per day (EPA 2025), construction activities would generate up to 2,060 gallons per day, or 0.002 mgd, of sanitary waste, with an average of 720, gallons per day or 0.00072 mgd. Groundwater removed from excavations would be produced only during excavation activities that encounter groundwater, and dewatered groundwater would likely be disposed of as irrigation or dust control. The volume of water produced during dewatering cannot be quantified but would be limited in volume. Sanitary waste would be transported by the licensed sanitary waste service providers for off-site disposal at their contracted treatment, storage, and disposal facility. As described in Section 4.19.1, the combined Beach Wastewater Treatment Plant and Northwest Wastewater Treatment Plant are currently being consolidated, with the capacity to treat an average of 0.62 mgd (City of Rio Vista 2022), and the Delta Diablo Wastewater Treatment Plant

is designed to treat approximately 13 mgd (Delta Diablo 2025). These facilities there have more than adequate capacity to accommodate the 0.002 mgd sanitary waste generated during peak sanitary waste generation for the Proposed Project. Given the very small volume of wastewater that would be produced during construction, local wastewater treatment facilities have sufficient capacity to treat the sanitary waste, and the impact would be less than significant.

PG&E Project Components

Wastewater generated during construction of PG&E project components would include sanitary waste from workers. Construction of PG&E project components would require fewer workers than LSPGC construction activities and would generate less sanitary waste. As similar to LSPGC construction, the sanitary waste would be transported to the combined Beach Wastewater Treatment Plant and Northwest Wastewater Treatment Plant and/or the Delta Diablo Wastewater Treatment Plant, each of which has sufficient capacity to treat the sanitary waste. The impact on wastewater treatment capacity would thus be less than significant.

Operation and Maintenance

LSPGC and PG&E Project Components

The Proposed Project would be unmanned during operation and maintenance and, therefore, would not generate any wastewater. Operation and maintenance of the Proposed Project would have no impact on wastewater treatment capacity.

Impact UT-4: Would the Proposed 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? *(Less than significant)*

Construction

LSPGC and PG&E Project Components Combined

The Proposed Project would generate an estimated 2,750 cubic yards of solid waste during construction, primarily non-hazardous wastes including construction and demolition (C&D) debris, and limited quantities of vegetation and packaging waste (including metal, paper, and plastic packaging). In addition, an estimated 1,500 cubic yards of earthen spoil materials be from grading would not be suitable for reuse on site and would therefore be disposed of. Reuse and recycling rates would be consistent with CALGreen's 65-percent diversion requirement and actual material recovery performance for concrete, wood, metals, drywall, and other materials, as enforced through Solano County and Contra Costa County CUD debris diversion programs, as shown in reuse and recycling rates would be consistent with CALGreen's 65-percent diversion requirement and actual material recovery performance for concrete, wood, metals, drywall, and other materials, as enforced through Solano County and Contra Costa County C&D debris diversion programs as shown in Table 4.19-3.

Table 4.19-3 presents total construction-generated waste broken down by waste types along with the estimated percentage of each type that would be recycled based on estimates provided by the Applicant (LSPGC 2024). 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. As discussed in Section 4.19.1, Potrero Hills Landfill is scheduled to operate through 2046, with a remaining capacity of 13.9 million cubic yards as of 2006, Recology Hay Road Landfill is scheduled to operate through 2077 with a remaining capacity of 20.4 million cubic yards as of 2010, and the Mt. Diablo Recycling Center has the capacity to recycle 600,000 pounds per day. Therefore, local infrastructure has the capacity to accept all solid waste that would be generated by construction of the Proposed Project. All solid waste would be disposed of properly at those facilities 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 sets reduction rates for solid waste sent to landfills, and Solano County, Contra Costa County, and City of Pittsburg solid waste ordinances (Solano County 2025g; Contra Costa County 2025c; City of Pittsburg 2025b), as applicable. Reuse and recycling rates would be consistent with CALGreen's 65-percent diversion requirement and actual material recovery performance for concrete, wood, metals, drywall, and other materials, as enforced through Solano County and Contra Costa County C&D debris diversion programs as shown in Table 4.19-3.

Table 4.19-3 Construction-generated Waste and Recycling/Reuse Rate by Type

Waste type	Estimated portion of total waste by weight (percent)	Reuse/recycling rate (percent)
Metal	60	80
Plastic	30	50
Vegetation	10	90
Earthen spoil material	0.6	0

Source: (LSPGC 2024, tbl. 5.19-1)

LSPGC Project Components

Construction of the LSPGC Collinsville Substation would generate approximately 1,700 cubic yards of waste, and construction of the 230 kV transmission line would generate approximately 425 cubic yards of waste. The waste composition is as defined in Table 4.19-3. The capacity of each landfill/recycling center where disposal could occur is presented in Section 4.19.1. The LSPGC construction activities would comply with state requirements for diversion of solid waste. The three privately owned landfills (Potrero Hills Landfill, Recology Hay Road Landfill, and Mt. Diablo Recycling Center) each have sufficient capacity to accommodate the amount of waste anticipated to be generated by construction of the LSPGC project components. Construction would thus 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.

PG&E Project Components

Construction of PG&E project components would include demolition of LSTs and LSPs that would be removed for the 500 kV interconnection lines. Each removed tower would be transported to a staging area or a PG&E storage yard for further disassembly prior to being

recycled or disposed of at an approved facility. Other wastes generated by PG&E construction activities would include approximately 360 cubic yards generated during 500 kV interconnection lines construction and 250 cubic yards generated during civil works for PG&E components at the Collinsville Substation site. In addition, approximately 1,500 cubic yards of spoils (excess grading) would be generated during PG&E earthwork at the substation. The three privately owned landfills (Potrero Hills Landfill, Recology Hay Road Landfill, and Mt. Diablo Recycling Center) each have sufficient capacity to accommodate the amount of waste anticipated to be generated during the Proposed Project construction activities, including PG&E Project component construction. As required by CALGreen and SB 1383, the Proposed Project would implement C&D waste diversion practices to reduce landfill disposal. CALGreen requires that at least 65 percent of C&D waste be diverted through reuse or recycling while SB 1383 mandates the diversion of organic waste, including green waste and wood. Both Solano and Contra Costa counties enforce these requirements through their C&D debris recycling programs (Contra Costa County, n.d.; Solano County 2025b), and implementation would be verified during permitting and through construction waste management documentation. Construction of PG&E project components would thus not generate solid waste in excess of state or local standards or in excess of the capacity of local infrastructure, and impacts would be less than significant.

Operation and Maintenance

LSPGC and PG&E Project Components

The Proposed Project would be unmanned during operation as the Collinsville Substation would be operated remotely and would therefore not generate consistent solid waste. Small quantities of solid waste may be generated during maintenance activities, such as packaging or green waste from vegetation management, such as removing vegetation as the removed vegetation would require disposal. Waste generated by operation and maintenance would be minimal, at 10 cubic yards or less over the life of the Project. Any waste generated during operation and maintenance activities would be hauled off site to be disposed of at Potrero Hills Landfill and Recology Hay Road Landfill. Table 4.19-4 lists the composition of waste estimated to be generated during operation and maintenance of the Proposed Project and the estimated reuse/recycling rate of each waste type. “Metal” and “plastic” refer to any packaging waste that may be generated by maintenance activities, and “vegetation” refers to any removed vegetation that would be hauled off site for disposal, as described above. As discussed in Section 4.19.1, Potrero Hills Landfill is scheduled to operate through 2046, with a remaining capacity of 13.9 million cubic yards as of 2006, and Recology Hay Road Landfill is scheduled to operate through 2077 with a remaining capacity of 20.4 million cubic yards as of 2010, well in excess of the total solid waste that would be generated by operation and maintenance of the Proposed Project. Therefore, local infrastructure has the capacity to accept all solid waste that would be generated by operation and maintenance of the Proposed Project. Operation and maintenance of the Proposed Project would comply with State of California requirements for recycling, as described in Section 4.19. Mt. Diablo Recycling Center has the capacity to recycle 600,000 pounds per day, well in excess of the amount of recycled waste that would be diverted to Mt. Diablo for the life of the Project (see Table 4.19-4). Therefore, operation and maintenance of the

Proposed Project is not expected to generate waste in excess of state or local standards or landfill capacity. The impact would be less than significant.

Table 4.19-4 Operation and Maintenance and Recycling/Reuse Rate by Type

Waste type	Estimated portion of total waste by weight (percent)	Reuse/recycling rate (percent)
Metal	20	80
Plastic	60	50
Vegetation	20	90

Source: (LSPGC 2024, tbl. 5.19-1)

Construction and Operation and Maintenance Combined

As described above, waste generated by construction of the Proposed Project would not exceed local standards or the capacity of local infrastructure, nor would it impact the attainment of solid waste reduction goals. Waste generated by construction, operation, and maintenance would be minimal, at 2,760 cubic yards or less over the life of the Proposed Project and would not exceed the remaining local landfill capacity, which is estimated at 34.3 million cubic yards. Therefore, the impact would be less than significant.

Impact UT-5: Would the Proposed Project comply with federal, state, and local management and reduction statutes and regulations related to solid waste? *(Less than significant)*

Construction

LSPGC and PG&E Project Components Combined

As described above, construction debris volumes are estimated at a total of 2,750 cubic yards plus 1,500 yards of earthen spoil materials. 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. Table 4.19-3 lists the types of waste that would be generated by construction of the Proposed Project broken down by the percentage of the total and the percentage of each type of waste that would be recycled. According to estimates provided by the Applicant, approximately 90 percent of vegetation, 80 percent of metallic waste, and 50 percent of plastic waste would be reused, recycled, or composted (LSPGC 2024). The Proposed Project's reuse and recycling rates would meet CALGreen's 65-percent diversion requirement and actual material recovery performance for concrete, wood, metals, and other materials, as enforced through Solano County and Contra Costa County C&D debris diversion programs and Contra Costa County's construction waste recycling requirements (Contra Costa County 2023; n.d.; Solano County 2025b). In addition, APM GHG-1 and CM GHG-1 require that all construction and demolition waste, and not just a lower limit of 65 percent, be recycled to the extent feasible in order to reduce indirect GHG emissions. As a result, the Proposed Project reuse and recycling would exceed the waste diversion standards in CALGreen.

LSPGC Project Components

During construction, LSPGC would account for approximately 78 percent of the total waste volume, or about 1,700 cubic yards. Construction debris volumes and the percentage that would be recycled by each category of waste are listed in Table 4.19-3. Recyclable construction waste would be transported to Mt. Diablo Recycling Center or another approved 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. 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.

Construction waste management would implement required construction waste diversion practices, including the separation and recycling of recoverable materials and composting of green waste, in accordance with applicable regulations, including the California Integrated Waste Management Act of 1989 (Public Resources Code §§ 40000 et seq.), CALGreen Code (Title 24, Part 11), which mandates a minimum 65 percent diversion of construction waste, Public Resources Code §§ 42912 and 42649.8 et seq., which require construction and demolition waste diversion and organic waste recycling, and Senate Bill 1383 (Public Resources Code §§ 42652–42654), which mandates diversion of green waste and other organic materials from landfills to reduce methane emissions, typically through composting or anaerobic digestion. Project compliance would also be ensured through enforcement of local ordinances, including Solano County Code Chapter 23, Contra Costa County Ordinance Code Division 418, and City of Pittsburg Municipal Code Chapter 8.04, which implement CALGreen and establish construction waste diversion thresholds and reporting requirements (Solano County 2025g; Contra Costa County 2025c; City of Pittsburg 2025b). Because the majority of waste generated by construction would be reused or recycled and green waste would be composted in compliance with state and local waste reduction statutes and regulations, construction of LSPGC project components would not conflict with federal, state, or local management and reduction statutes and regulations related to solid waste, and the impact would be less than significant.

PG&E Project Components

PG&E project components would account for approximately 22 percent of waste generated by construction of the Proposed Project. Estimated waste volumes for PG&E project components include approximately 360 cubic yards for the transmission and distribution construction and 250 cubic yards for the substation interconnection and communication yard. As described in Impact UT-4, PG&E would recycle demolition debris from the removed LSTs and LSPs to comply with CALGreen and SB 1383 requirements for recycling of demolition waste. As required by CALGreen, PG&E would divert at least 65 percent of construction waste generated for recycling. The estimated percentage of construction waste that would be recycled is presented in Table 4.19-3. Any waste that cannot be recycled would be disposed of at an approved landfill. Because the majority of construction and demolition waste generated would be reused or recycled and green waste would be composted in compliance with state waste reduction statutes and regulations, construction of PG&E project components would not

conflict with federal, state, or local management and reduction statutes and regulations related to solid waste, and the impact would be less than significant.

Operation and Maintenance

LSPGC and PG&E Project Components

As described in Impact UT-4, the Proposed Project would not generate regular waste during operation and maintenance, and all solid waste generated during operation and maintenance would be transported off site to a licensed disposal facility in accordance with all applicable federal, state, and local laws. Any waste generated would be recycled or composted in compliance with state and local waste reduction regulations, including Solano County, Contra Costa County, and City of Pittsburg solid waste ordinances (Solano County 2025g; Contra Costa County 2025c; City of Pittsburg 2025b), which implement and enforce CalGreen, the California Integrated Waste Management Act, and SB 1383. Because the Proposed Project would comply with all with federal, state, and local management and reduction statutes and regulations related to solid waste, and the impact would be less than significant.

Impact UT-6: Would the Proposed Project induce voltage on a metallic utility line in a manner that would result in the physical degradation of the utility line? *(Less than significant with mitigation)*

A natural gas pipeline operated by CPN Pipeline is located approximately 1,500 feet away from LSPGC's proposed 230 kV overhead segment alignment, and a Calpine natural gas pipeline runs parallel and adjacent to PG&E's proposed 500 kV interconnection lines alignment for 0.4 mile and is as close as 35 feet from the nearest 500 kV interconnection line structure. The discussion below considers the potential for construction, operation, and maintenance activities to induce voltage on the pipeline in a manner that would cause deterioration of the pipeline in excess of design standards for the pipeline.

Construction

LSPGC and PG&E Project Components

Construction of LSPCG and PG&E project components would not involve activities that would induce voltage on an existing utility line. No impact would occur.

Operation and Maintenance

LSPGC Project Components

LSPGC conducted an investigation of alternative current (AC) electrical interference effects from operation of the proposed 230 kV transmission line on the existing Calpine Montezuma 8-inch gas pipeline located approximately 1,500 feet from the proposed 230 kV overhead line alignment (ARK Engineering and Technical Services 2024). The results of the study indicate that operation of the LSPGC transmission line would generate a peak AC density of 5.4 Amps/meter (A/m),[2] which is less than the design limit of 30 A/m.[2] As a result, operation of the LSPGC 230 kV overhead segments would not cause physical deterioration of the pipeline due to induced voltage. The impact would be less than significant.

PG&E Project Components

The proposed PG&E 500 kV interconnection lines alignment parallels a natural gas transmission pipeline operated by CPN Pipeline for approximately 0.4 mile. Kinetrics AES conducted an AC interference study on behalf of PG&E modeling the maximum voltage density on the nearby gas pipeline. (Kinetrics AES 2025). Insufficient information about the pipeline coating was available at the time of the study, as a result a range of characteristics were simulated (non-existent, poor, fair, good, and excellent). The study concluded that the proposed 500 kV interconnection lines would induce up to 44 volts (V) on the parallel gas pipeline, which would exceed the 30 A/m² corrosion threshold and result in physical degradation of the pipeline, which would be a significant impact. MM UT-2 (refer to Section 4.19.13) requires PG&E to coordinate with the pipeline operator (Calpine) to collect baseline measurements and tune the AC-interference model to actual conditions and installation of zinc-ribbon grounding parallel to the pipeline with regular bonds and high-resistivity crushed rock at exposed appurtenances (if thresholds are exceeded in subsequent modeling based on field conditions), and post-energization verification to ensure AC current density remains within applicable limits. With implementation of MM UT-2, the impact of the 500 kV interconnection lines on degradation of the pipeline would be less than significant.

4.19.5 Impact Analysis – Cumulative

The geographic scope for the analysis of cumulative impacts associated with utilities and service systems is the service area of the utilities that serve the Proposed Project area. The cumulative analysis considers the potential for the Proposed Project, in combination with other past, present, and reasonably foreseeable future projects, to result in significant cumulative impacts related to utilities and service systems. The types of projects that could combine to result in adverse cumulative impacts for utilities and service systems include residential, commercial, infrastructure, and transmission projects. Projects within the cumulative analysis study area include all of the projects listed in Table 4.0-1.

The following analysis addresses each of the relevant CEQA Appendix G checklist criteria and the project specific criteria, applying the cumulative standard of whether the Proposed Project would make a cumulatively considerable contribution to a significant cumulative impact.

Impact UT-1: Require or result in the relocation or construction of new or expanded water, wastewater treatment, stormwater drainage, electric power, natural gas, or telecommunications facilities?

The Proposed Project would not 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. This being the case, there would be no potential for cumulative impacts on existing utilities due to potential for relocation.

Impact UT-2: Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?

Many of the cumulative projects, including the cumulative housing development projects, would result in a permanent increase in demand for water and wastewater treatment. The

proposed California Forever Project, while in very early planning stages, is at such a large scale that the project would be anticipated to generate water and wastewater in excess of local capacity, requiring new water and wastewater treatment facilities. However, as the California Forever Project is in very early planning and has not yet filed an application to Solano County, the Proposed Project construction and associated water demand and sanitary waste generation would occur before California Forever and would not generate a cumulative impact on water and wastewater infrastructure. Over the 2-year duration of construction of the Proposed Project, the demand for water would be very low in comparison with the local water supplies, including surplus supplies, sourced from Lake Berryessa through the SCWA or the Solano Subbasin through the SMUD well at the Solano Wind 4 Project site or the City of Rio Vista. No water would be required for operation and maintenance of the Proposed Project. Therefore, the Proposed Project would not contribute significantly to any potential cumulative impact.

Impact UT-3: Result in a determination by the wastewater treatment provider that it has inadequate capacity to serve the project?

The Proposed Project would not connect to municipal wastewater infrastructure and would generate only limited sanitary waste during construction. It would not contribute to cumulative wastewater treatment demand or capacity constraints.

Impacts UT-4 and UT-5: Generate solid waste in excess of State/local standards or landfill capacity? Would the project comply with applicable solid waste regulations?

As with the Proposed Project, the cumulative projects considered would be required to conform with federal, state and local regulations pertaining to solid waste disposal and recycling, including SB 1383 and the CALGreen Code, and the programs and regulations through which CALGReen is enforced locally in Solano County and Contra Costa County. As noted above, nearby landfills have adequate capacity to accept solid waste generated by both construction and operation of the Proposed Project and to accommodate existing solid waste disposal needs along with area growth well into the future. This being the case, the Proposed Project, in combination with other cumulative projects, would not contribute to a significant cumulative impact related to solid waste disposal.

Impact UT-6: Induce voltage on a metallic utility line in a manner that would result in the physical degradation of the utility line?

The Humboldt-Collinsville 500 kV Transmission Line would add a 500 kV line into Collinsville Substation. The path of the Humboldt-Collinsville 500 kV Transmission Line is not known, but it could follow the alignment of the 500 kV interconnection lines resulting in a cumulative impact from corrosion of the Calpine natural gas pipeline. The cumulative impact would be significant.

As discussed in Impact UT-6, the Proposed Project 500 kV interconnection lines would exceed the threshold for induced voltage resulting in potential physical impacts on the Calpine natural gas pipeline. The Proposed Project contribution to the cumulative impact from induced voltage would be significant. MM UT-2 (refer to Section 4.19.13) requires PG&E to coordinate with the pipeline operator (Calpine) to collect baseline measurements and tune the AC-interference

model to actual conditions and installation of zinc-ribbon grounding parallel to the pipeline with regular bonds and high-resistivity crushed rock at exposed appurtenances (if thresholds are exceeded in subsequent modeling based on field conditions), and post-energization verification to ensure AC current density remains within applicable limits. By implementing appropriate mitigation to ensure the Proposed Project would not induce voltage in excess of 30 A/m^2 (including field measurements to evaluate existing induced voltage from past projects), the Proposed Project contribution to a significant cumulative impact on induced voltage would be less than cumulatively considerable.

4.19.6 Alternative 1: Collinsville Substation North of Talbert Lane

Environmental Setting – Alternative 1

Alternative 1 involves relocating the proposed LSPGC Collinsville Substation to a different site, approximately 1.2 miles north of the Proposed Project substation site. Alternative 1 would also include an approximately 500-foot segment of PG&E 500 kV interconnection lines, approximately 700-foot segment of 12 kV distribution line, and an approximately 2-mile-long segment of LSPGC 230 kV overhead line. Alternative 1 would not involve changes to any of the other Proposed Project component, which would have the same impacts as described throughout this Draft EIR for the Proposed Project or the other alternatives if selected in combination with Alternative 1.

The electric utility, natural gas, water supply, stormwater, sewer and wastewater, solid waste disposal and recycling, and telecommunication services described for the portions of the Proposed Project within Solano County (Section 4.19.1) would apply to Alternative 1. There are no known utilities within the Alternative 1 substation site and no natural gas lines located in proximity to Alternative 1 (CPUC 2025).

Impact Analysis – Alternative 1

Impact UT-1: Would Alternative 1 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? ***(Less than significant with mitigation)***

Water

The water demand for Alternative 1 would be approximately 57 percent greater than the Proposed Project due to a 76 percent increase in grading and compaction at the substation site. The total estimated water demand would be 27.3 AF over the 2-year construction period. Similar to the Proposed Project, as discussed in Impact UT-1, potential water supply sources during construction include an existing SMUD groundwater well within the Solano wind farm (within the Solano Subbasin), SCWA, or the City of Rio Vista (groundwater wells within the Solano Subbasin). Historical and projected water budgets developed for the Solano subbasin indicates surplus groundwater conditions (Solano Subbasin Groundwater Sustainability Agency [Solano GSA] 2021). Similarly, the SCWA Five-Year Water Management Plan indicated SCWA's total Solano Project entitlement is 207,350 AF per year, while actual deliveries in 2017 totaled

140,605 acre-feet, indicating a surplus of approximately 66,745 AF. And the City of Rio Vista pumped 733 million gallons of groundwater in 2024. Based on the potential for multiple sources of supply and the overall surplus of water in the area, Alternative 1 construction water demand of 27.3 AF would not require new or expanded water supply infrastructure. Similar to the Proposed Project, Alternative 1 operation would not create any demand for water supply. There is no water supply infrastructure in the Alternative 1 area (SWRCB 2021) and construction and operation of Alternative 1 would not require relocation of water supply infrastructure. As a result, Alternative 1 would have no impact from relocation or construction of new or expanded water supply infrastructure.

Wastewater Treatment

There is no stormwater infrastructure in the Alternative 1 site and construction of Alternative 1 would not require relocation of any stormwater infrastructure. Similar to the Proposed Project, Alternative 1 wastewater service would be provided through use of sanitary facilities. The total number of Alternative 1 workers on site daily would be comparable to the Proposed Project. Similar to the Proposed Project, there is adequate wastewater capacity to treat the sanitary waste generated by Alternative 1 and Alternative 1 would have no impact from relocation or construction of new or expanded wastewater supply infrastructure.

Stormwater Drainage

There is no stormwater infrastructure in the Alternative 1 site and construction of Alternative 1 would not require relocation of any stormwater infrastructure. Similar to the Proposed Project, Alternative 1 would involve introduction of approximately 11 acres of impervious surface, but at the Alternative 1 substation site. Similar to the Proposed Project, construction of the substation would require coverage under the Construction Stormwater General Permit and implementation of sediment and erosion control BMPs in compliance with the SWPPP and design of permanent BMPs including a stormwater detention basin to minimize stormwater runoff to avoid impacts to stormwater drainage offsite. The substation would require a grading permit from Solano County and Solano County would review the design in compliance with low impact development requirements under the MS4 permit. Due to compliance with regulatory requirements for stormwater management, Alternative 1 would have no impact from relocation or construction of new or expanded stormwater infrastructure.

Electric Power

The Alternative 1 LSPGC Collinsville substation would be powered by a short extension of the 12 kV distribution line from Talbert Lane. The Alternative 1 distribution line is considered part of the project and impacts from construction of the 12 kV line are considered in this EIR.

No SMUD electrical conduit is known to occur within the Alternative 1 substation site. SMUD collection lines occur just east of the Alternative 1 substation site, and electrical conduit within the Solano 4 Wind Project may overlap access roads used for the construction of the 230 kV overhead segment (SMUD 2025). Pursuant to California Government Code section 4216, LSPGC would notify utility companies in advance of construction so that buried utility lines can be identified and marked. If a SMUD electrical line occurs within the locations of proposed

pole/structure construction, the poles/structures could be relocated to avoid damage to existing buried utilities. However, travel with heavy loads over access roads containing SMUD electrical lines have the potential to damage the electrical lines resulting in relocation or reconstruction of the line, which would be a significant impact. MM UT-2 (refer to Section 4.19.13) specifies measures that LSPGC would need to take to protect SMUD collector cables during heavy equipment travel on access roads. With implementation of MM UT-2, Alternative 1 construction would not require the relocation or construction of electrical utilities, and the impact would be less than significant with mitigation.

Natural Gas

Alternative 1 would not require supplies of natural gas. No natural gas lines are located in proximity to the Alternative 1 site.

Impact UT-2: Would Alternative 1 have insufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years? ***(Less than significant)***

Water demand under Alternative 1 would be approximately 30 percent greater than the Proposed Project due to an approximately 40 percent increase in grading and compaction at the substation site. Construction would require approximately 22.6 AF of water over a 2-year period for construction. Similar to the Proposed Project, Alternative 1 would source water from the existing SMUD well at the Solano 4 Wind Project, Lake Berryessa through the SCWA, and/or the City of Rio Vista. All potential sources have demonstrated surplus capacity sufficient to supply water to Alternative 1, and no new entitlements or infrastructure would be required. The impact would remain less than significant.

Impact UT-3: Would Alternative 1 result in a determination by the waste water 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? ***(Less than significant)***

Alternative 1 would not connect to any wastewater system. As with the Proposed Project, portable restrooms would be used, and sanitary waste would be hauled off site by licensed providers to regional facilities with ample capacity (e.g., Delta Diablo or Rio Vista) under existing service contracts. No additional wastewater generation would occur relative to the Proposed Project. The Alternative 1 impact would be less than significant.

Impact UT-4: Would Alternative 1 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? ***(Less than significant)***

Construction under Alternative 1 would require slightly more grading, but the materials would be reused on site and would therefore require disposal. Waste types and volumes would remain consistent with the Proposed Project (estimated at 2,750 cubic yards plus spoils). All material would be managed under CALGreen and SB 1383-compliant waste diversion programs. Landfill capacity in the region would remain sufficient as compared with the Proposed Project. The Alternative 1 impact would be less than significant.

Impact UT-5: Would Alternative 1 comply with federal, state, and local management and reduction statutes and regulations related to solid waste? *(Less than significant)*

Alternative 1 would be subject to the same solid waste laws as the Proposed Project and would implement CALGreen-compliant C&D waste diversion, consistent with Solano County and Contra Costa County enforcement programs. The Alternative 1 impact would be less than significant.

Impact UT-6: Would Alternative 1 induce voltage on an existing natural gas pipeline in a manner that would result in the physical degradation of the pipeline? *(Less than significant)*

There are no buried metallic utility pipelines in proximity to the Alternative 1 500 kV interconnection lines. The 500 kV interconnection lines would thus not induce voltage on a natural gas pipeline. The Alternative 1 230 kV segment would be located in the same proximity to the Calpine pipeline as the Proposed Project 230 kV line. Similar to the Proposed Project, the Alternative 1 230 kV overhead segment would not generate AC current on the pipeline in excess of thresholds and the impact would be less than significant.

4.19.7 Alternative 2: Collinsville Substation East of Wind Energy Substations

Environmental Setting – Alternative 2

Alternative 2 involves relocating the proposed LSPGC Collinsville Substation to a different site, approximately 3.0 miles north of the location proposed under the Proposed Project. Alternative 2 would also include an approximately 1,200-foot-long segment of PG&E 500 kV interconnection lines and a four-mile-long segment of LSPGC 230 kV overhead line, as well as an approximately 0.3-mile-long PG&E 12 kV distribution line. Alternative 2 would not involve changes to any of the other Proposed Project component, which would have the same impacts as described throughout this Draft EIR for the Proposed Project or the other alternatives if selected in combination with Alternative 2.

The electric utility, natural gas, water supply, stormwater, sewer and wastewater, solid waste disposal and recycling, and telecommunication services described for the Proposed Project components within Solano County (Section 4.19.1) would apply to Alternative 2. There are no known utilities within the Alternative 2 substation site and no natural gas lines located in proximity to Alternative 2 (CPUC 2025).

Under Alternative 2, the proposed LSPGC 230 kV overhead segment alignment runs roughly parallel the north-south Calpine natural gas transmission pipeline for approximately 4 miles at varying distances of approximately 1,200 feet at the nearest point to 4,000 feet at the farthest point. The area is served by the same utility providers as the Proposed Project site and is not located near any known water or wastewater infrastructure. As with the Proposed Project, water would source from the existing SMUD well at the Solano 4 Wind Project site or trucked in from the SCWA or City of Rio Vista. The impact would remain less than significant.

Impact Analysis – Alternative 2

Impact UT-1: Would Alternative 2 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? ***(Less than significant with mitigation)***

Water

The water demand for Alternative 2 would be approximately 25 percent greater than the Proposed Project due to a 23 percent increase in grading and compaction at the substation site and increased length of 230 kV overhead line. The total estimated water demand would be 22.3 AF over the 2-year construction period. Similar to the Proposed Project as discussed in Impact UT-1, potential water supply sources during construction include an existing SMUD groundwater well within the Solano wind farm (within the Solano Subbasin), SCWA, or the City of Rio Vista (groundwater wells within the Solano Subbasin). Historical and projected water budgets developed for the Solano subbasin indicates surplus groundwater conditions (Solano Subbasin Groundwater Sustainibility Agency [Solano GSA] 2021). Similarly, the SCWA Five-Year Water Management Plan indicated SCWA's total Solano Project entitlement is 207,350 AF per year, while actual deliveries in 2017 totaled 140,605 acre-feet, indicating a surplus of approximately 66,745 AF. And the City of Rio Vista pumped 733 million gallons of groundwater in 2024. Based on the potential for multiple sources of supply and the overall surplus of water in the area, Alternative 2 construction water demand of 22.3 AF would not require new or expanded water supply infrastructure. Similar to the Proposed Project, Alternative 2 operation would not create any demand for water supply. There is no water supply infrastructure in the Alternative 2 area (SWRCB 2021) and construction and operation of Alternative 2 would not require relocation of water supply infrastructure. As a result, Alternative 2 would have no impact from relocation or construction of new or expanded water supply infrastructure.

Wastewater Treatment

There is no stormwater infrastructure in the Alternative 2 site, and construction of Alternative 2 would not require relocation of any stormwater infrastructure. Similar to the Proposed Project, Alternative 2 wastewater service would be provided through use of sanitary facilities. The total number of Alternative 2 workers on site daily would be comparable to the Proposed Project. Similar to the Proposed Project, there is adequate wastewater capacity to treat the sanitary waste generated by Alternative 2, and Alternative 2 would have no impact from relocation or construction of new or expanded wastewater supply infrastructure.

Stormwater Drainage

There is no stormwater infrastructure in the Alternative 2 site, and construction of Alternative 2 would not require relocation of any stormwater infrastructure. Similar to the Proposed Project, Alternative 2 would involve introduction of approximately 11 acres of impervious surface, but at the Alternative 2 substation site. Under Alternative 2, the longer 230 kV overhead alignment and increased grading needs could modestly increase stormwater runoff, but no off-site stormwater drainage infrastructure expansion or relocation would be required. Similar to the

Proposed Project, construction of the substation would require coverage under the Construction Stormwater General Permit and implementation of sediment and erosion control BMPs in compliance with the SWPPP and design of permanent BMPs including a stormwater detention basin to minimize stormwater runoff to avoid impacts to stormwater drainage off site. The substation would require a grading permit from Solano County, and Solano County would review the design in compliance with low impact development requirements under the MS4 permit. Due to compliance with regulatory requirements for stormwater management, Alternative 2 would have no impact from relocation or construction of new or expanded stormwater infrastructure.

Electric Power

The Alternative 2 Collinsville substation would be powered by a short extension of a 12 kV distribution line from Talbert Lane. The Alternative 2 distribution line is considered part of the project, and impacts from construction of the 12 kV line are considered in this EIR.

The Project site under Alternative 2 is within the Solano 4 Wind Project boundary and is surrounded by multiple buried electrical collector lines, and a collection line is located just south of the proposed substation site, traversing the proposed LSPGC 230 kV overhead alignment (SMUD 2025). Staging area work, construction access to the substation, and construction of the 230 kV overhead segment would require crossing the buried electrical collector lines, and travel with heavy loads over SMUD electrical lines poses the potential to damage the electrical lines, resulting in relocation or reconstruction of the line, which would be a significant impact. MM UT-2 (refer to Section 4.19.13) specifies measures that LSPGC would need to take to protect SMUD collector cables during heavy equipment travel on access roads. With implementation of MM UT-2, Alternative 2 construction would not require the relocation or construction of electrical utilities, and the impact would be less than significant with mitigation. With implementation of MM ALT-2, Alternative 2 construction would not require the relocation or construction of electrical utilities, and the impact would be less than significant with mitigation.

Telecommunications

SMUD operates an aircraft detection lighting system (ADLS) tower and microwave tower within their existing substations adjacent to the Alternative 2 substation. The Alternative 2 substation could impact SMUDs use of the microwave tower or ADLS tower and require relocation of the equipment to address the impact on the equipment operation. The impact from relocation could be significant. MM UT-3 defines the approach to evaluation of the impacts on the ADLS and microwave tower and definition of an alternative site to minimize environmental impacts. The impact from potential relocation of the SMUD ADLS tower and microwave tower would be less than significant with mitigation.

Impact UT-2: Would Alternative 2 have insufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years? ***(Less than significant)***

The water demand for Alternative 2 would be approximately 25 percent greater than the Proposed Project due to a 23 percent increase in grading and compaction at the substation site and longer length of 230 kV overhead line. The total estimated water demand would be 22.3 AF over the 2-year construction period. As with the Proposed Project, water would be sourced from the existing SMUD well or trucked to the site from the SCWA or the City of Rio Vista. All potential sources have sufficient capacity, including surplus capacity, to supply needs for construction and operation under Alternative 2, and no new entitlements or infrastructure would be required. The impact would be less than significant.

Impact UT-3: Would Alternative 2 result in a determination by the waste water 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? ***(Less than significant)***

Alternative 2 would not require connection to a municipal wastewater system. As with the Proposed Project, portable toilets would be used during construction, and wastewater would be disposed of at existing regional treatment facilities with sufficient capacity under existing service contracts. No new wastewater infrastructure would be needed. The Collinsville Substation would be unmanned, so there would be no need for sanitary facilities during operation of the Proposed Project. The impact would remain less than significant.

Impact UT-4: Would Alternative 2 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? ***(Less than significant)***

Construction under Alternative 2 would require slightly more grading, but the materials would be mostly reused on site and would generate approximately 6,000 cubic yards for disposal. Waste types would be greater than the Proposed Project. All construction waste would be handled under existing CALGreen-compliant diversion programs, and regional landfills have demonstrated adequate capacity to accept Project-generated waste along with current needs. The impact would be less than significant. All material would be managed under CALGreen and SB 1383-compliant waste diversion programs. The Alternative 2 impact from generation of solid waste in excess of capacity or impair attainment of solid waste reduction goals would be less than significant.

Impact UT-5: Would Alternative 2 comply with federal, state, and local management and reduction statutes and regulations related to solid waste? ***(Less than significant)***

Alternative 2 would be subject to the same CALGreen and SB 1383 diversion standards and local enforcement programs in Solano and Contra Costa counties as the Proposed Project. Solid waste management would comply with all applicable federal, state, and local waste management programs, statues, and regulations. The impact would remain less than significant.

Impact UT-6: Would Alternative 2 induce voltage on an existing natural gas pipeline in a manner that would result in the physical degradation of the pipeline? ***(Less than significant)***

There are no buried metallic utility pipelines in proximity to the Alternative 2 PG&E 500 kV interconnection lines. The PG&E 500 kV interconnection lines would thus not induce voltage on a natural gas pipeline. Under Alternative 2, the proposed LSPGC 230 KV overhead segment runs roughly parallel the north-south Calpine natural gas transmission pipeline for approximately 4 miles at varying distances of approximately 1,200 feet at the nearest point to 4,000 feet at the farthest point. At these distances, induced voltage on the pipeline is not expected, and no AC-corrosion or touch-voltage hazard is anticipated. The Alternative 2 230 kV overhead segment would not generate AC current on the pipeline in excess of thresholds, and the impact would be less than significant.

4.19.8 Alternative 3: 500 kV Interconnection Lines on Entirely TSPs

Environmental Setting – Alternative 3

Alternative 3 involves constructing the PG&E 500 kV interconnection lines on entirely TSPs, instead of the combination of LSTs and three-pole TSPs under the Proposed Project. The 500 kV interconnection lines would be in the same general alignment as the Proposed Project PG&E 500 kV interconnection lines. Alternative 3 would not involve changes to any of the other Proposed Project component, which would have the same impacts as described throughout this Draft EIR for the Proposed Project or the other alternatives if selected in combination with Alternative 3.

The environmental setting for Alternative 3 water supply, wastewater management, and utility service providers would be the same as the Proposed Project described in Section 4.19.1.

Impact Analysis – Alternative 3

Impact UT-1: Would Alternative 3 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? ***(Less than significant with mitigation)***

The change in structure type from LST to TSPs would have no result in the relocation or construction of new or expanded water, wastewater treatment, or stormwater drainage facilities and similar to the Proposed Project PG&E 500 kV interconnection lines, no impact would occur.

Alternative 3 use of only TSPs for the PG&E 500 kV interconnection lines would require more poles and result in additional ground disturbance. In addition, construction of Alternative 3 would require more travel over access roads containing SMUD electrical conduit. Similar to the Proposed Project, Pursuant to California Government Code section 4216, LSPGC would notify utility companies in advance of construction so that buried utility lines can be identified and marked. If a SMUD electrical line or a portion of the Calpine natural gas line occurs within the locations of Alternative 3 pole/structure construction, the poles/structures could be relocated to avoid damage to existing buried utilities. However, travel with heavy loads over access roads containing SMUD electrical lines have the potential to damage the electrical lines resulting in

relocation or reconstruction of the line, which would be a significant impact. MM UT-1 (refer to Section 4.19.13) specifies measures that PG&E would need to take to protect SMUD collector cables during heavy equipment travel on access roads. With implementation of MM UT-1, Alternative 3 construction would not require the relocation or construction of electrical utilities, and the impact would be less than significant with mitigation.

Impact UT-2: Would Alternative 3 have insufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years? ***(Less than significant)***

Under Alternative 3, water usage would be similar to that for the Proposed Project. However, differences in construction technique for TSPs versus LSTs could result in minor change to water use for concrete mixing and dust suppression. Total demand is expected to remain under 6 million gallons with Alternative 3 (in combination with Proposed Project) and would be met using the SMUD well at the Solano 4 Wind Project site, SCWA, or City of Rio Vista water supplies, all of which have adequate surplus capacity to supply water needed for construction under Alternative 3. As with the Proposed Project, no water would be needed for operation. The impact would remain less than significant.

Impact UT-3: Would Alternative 3 result in a determination by the waste water 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? ***(Less than significant)***

Similar to the Proposed Project, no connection to wastewater infrastructure would occur under Alternative 3. Portable toilets would be used during construction of Alternative 3 and Alternative 3 would involve a similar number of workers to the Proposed Project resulting in a similar volume of wastewater generated. Wastewater would be disposed of at authorized regional treatment facilities under existing service contracts. Under Alterative 3, the PG&E 500 kV interconnection lines would be unmanned during operation, and no wastewater would be generated. The impact would remain less than significant.

Impact UT-4: Would Alternative 3 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? ***(Less than significant)***

Under Alternative 3, the use of TSPs could slightly increase material waste and construction spoils due to a larger number of poles; however, the structural components would be simpler and the overall volumes of C&D waste would remain similar to the Proposed Project. Compliance with CALGreen diversion standards, as enforced through Solano County and Contra Costa County C&D waste diversion programs, would ensure that solid waste generated does not exceed state or local standards and that attainment of solid waste reduction goals are exceeded. As with the Proposed Project, solid waste generated be construction would not exceed the capacity of local disposal facilities in combination with existing needs. Alternative 3 would be unmanned during operation, and maintenance activities would generated little to no solid waste. The Alternative 3 impact would be less than significant.

Impact UT-5: Would Alternative 3 comply with federal, state, and local management and reduction statutes and regulations related to solid waste? *(Less than significant)*

Under Alternative 3, all waste handling would comply with the same federal, state, and local solid waste management regulations applicable to the Proposed Project. Recycling and diversion of waste would be similar to the Proposed Project. The Alternative 3 impact would be than significant.

Impact UT-6: Would Alternative 3 induce voltage on an existing natural gas pipeline in a manner that would result in the physical degradation of the pipeline? *(Less than significant)*

The Alternative 3 PG&E 500 kV interconnection lines alignment is approximately the same as that of the Proposed Project and parallels the PG&E natural gas transmission pipeline for approximately 0.4 mile. Similar to the Proposed Project, the PG&E 500 kV interconnection lines could induce voltage in excess of the 30 A/m^2 threshold. MM UT-2 (refer to Section 4.19.13) requires model calibration and implementation of installation of zinc-ribbon grounding parallel to the pipeline with regular bonds and high-resistivity crushed rock at exposed appurtenances (if thresholds are exceeded in subsequent modeling based on field conditions), and post-energization verification to ensure AC current density remains within applicable limits. With implementation of MM UT-2, the impact of the Alternative 3 PG&E 500 kV interconnection lines on natural gas pipeline degradation would be less than significant.

4.19.9 Alternative 4: 230 kV Overhead Segment Alternative Route

Environmental Setting – Alternative 4

Alternative 4 involves relocation of a short segment of the LSPGC 230 kV overhead segment between the proposed LSPGC Collinsville Substation and the Delta, west of the proposed LSPGC 230 kV overhead segment route. Additionally, the northern end of the LSPGC 230 kV submarine segment would be rerouted to meet up with the southern end of the Alternative 4 230 kV submarine segment. Alternative 4 would not involve changes to any of the other Proposed Project component, which would have the same impacts as described throughout this Draft EIR for the Proposed Project or the other alternatives if selected in combination with Alternative 4.

The utility providers defined in Section 4.19.1 would apply to Alternative 4. There are no existing utility lines known to be located in the Alternative 4 site.

Impact Analysis – Alternative 4

No utility lines occur within the Alternative 4 area. Construction and operation and maintenance of Alternative 4 would not 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 (Impact UT-1). Alternative 4 is also not located in proximity to a natural gas pipeline and would not induce voltage on an existing natural gas pipeline in a manner that would result in the physical degradation of the pipeline (Impact UT-6). The impacts are, therefore, not discussed further.

Impact UT-2: Would Alternative 4 have insufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years? ***(Less than significant)***

Under Alternative 4, water use for construction would be comparable to the Proposed Project. Alternative 4 would use the same water supply sources as the Proposed Project. Similar to the Proposed Project, the potential water supply sources have sufficient capacity to supply water needs of Alternative 4 under normal, dry, and multiple dry years. As with the Proposed Project, operation would not require water use. The impact on water supplies would be less than significant.

Impact UT-3: Would Alternative 4 result in a determination by the waste water 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? ***(Less than significant)***

Alternative 4 would not introduce any new operational facilities and would not change wastewater handling. Wastewater volumes generated by Alternative 4 would be comparable to the Proposed Project. Similar to the Proposed Project, wastewater generated during construction by use of portable toilets would be disposed of off-site at approved regional treatment facilities under existing service contracts, which have adequate capacity to serve the Alternative 4 demand. Impacts would be less than significant.

Impact UT-4: Would Alternative 4 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? ***(Less than significant)***

Alternative 4 would generate a comparable amount of construction-related solid waste (including packaging, spoil, and debris) to the Proposed Project. Similar to the Proposed Project, all material would be managed in accordance with state and local requirements, including the Solano County and Contra Costa County programs through which CALGreen is enforced locally. As with the Proposed Project, regional landfill capacity is sufficient to accept the quantity of solid waste estimated to be generated in combination with existing needs. In addition, Alternative 4 would involve comparable diversion of recyclable materials to the Proposed Project and would meet state and local waste reduction standards. Minimal solid waste would be generated by operation and maintenance under Alternative 4. The Alternative 4 impact from generation solid waste in excess of state or local standards or capacity would be less than significant.

Impact UT-5: Would Alternative 4 comply with federal, state, and local management and reduction statutes and regulations related to solid waste? ***(Less than significant)***

Alternative 4 would involve comparable recycling and waste diversion to the Proposed Project. Alternative 4 would comply with applicable solid waste management laws, including SB 1383 and CALGreen, enforced locally through Solano County. The impact on waste diversion would be less than significant.

Impact UT-6: Would Alternative 4 induce voltage on an existing natural gas pipeline in a manner that would result in the physical degradation of the pipeline? ***(Less than significant)***

Under Alternative 4, the modified route of the proposed LSPGC 230 kV overhead segment alignment would be further from a natural gas pipeline than the Proposed Project LSPGC 230 kV overhead segment. Similar to the Proposed Project LSPGC 230 kV overhead segment, Alternative 4 would not induce voltage on a natural gas pipeline in excess of thresholds. The impact would be less than significant.

4.19.10 Alternative 5: 230 kV Submarine Segment Alternative Route

Environmental Setting – Alternative 5

Alternative 5 involves rerouting a portion of the proposed LSPGC 230 kV submarine segment to the east of its current alignment as it approaches the southern shoreline in Pittsburg. The submarine segment cable would be installed in the same manner as the Proposed Project. Alternative 5 would not involve changes to any of the other Proposed Project component, which would have the same impacts as described throughout this Draft EIR for the Proposed Project or the other alternatives if selected in combination with Alternative 5.

No utility services or pipelines exist in the Alternative 5 area.

Impact Analysis – Alternative 5

Due to the absence of utilities or services in the Alternative 5 area, Alternative 5 would not 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 due to the absence of utilities in the area (Impact UT-1). Alternative 5 would not require water supply or wastewater supply and would not result in insufficient water supply (Impact UT-2) or inadequate wastewater capacity (Impact UT-3). Alternative 4 would not induce voltage on a natural gas pipeline (Impact UT-6). The analysis below addresses impacts from generation of waste.

Impact UT-4: Would Alternative 5 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? ***(Less than significant)***

Under Alterative 5, the type and quantity of solid waste generated would be the same as under the Proposed Project. The method and scale of construction activities for the LSPGC 230 kV submarine segment would be similar to the Proposed Project, but Alternative 5 would require site preparation for a period of 2 weeks during the year prior to the submarine cable installation. Very limited quantities of waste would be generated during submarine cable installation and the waste would be managed in accordance with all applicable standards. The waste would not exceed regional landfill capacity and would be recycled to the extent feasible in compliance with state and local standards. The Alternative 5 impact would be less than significant.

Impact UT-5: Would Alternative 5 comply with federal, state, and local management and reduction statutes and regulations related to solid waste? ***(Less than significant)***

Alternative 5 would comply with the same CALGreen and SB 1383 requirements enforced locally by Contra Costa county for the Proposed Project. The limited volume of waste generated during Alternative 5 submarine segment installation would be diverted and disposed of in accordance with local solid waste regulations. The impact would be less than significant.

4.19.11 Alternative 6a/6b: Underground portions of the 230 kV Transmission Line within Suisun Marsh Protection Plan Management Areas

Environmental Setting – Alternative 6a/6b

Alternative 6a/6b would locate the LSPGC 230 kV transmission line on primarily PG&E-owned property south of the proposed Collinsville Substation site (similar to Alternative 4). Alternative 6a/6b would be installed in conduit underground. Alternative 6a differs from Alternative 6b only at the northern end of the segment where options are provided for connection to the Proposed Project Collinsville Substation or Alternatives 1 or 2. Two overhead riser structures would be installed at the northern end of the Alternative 6a/6b underground duct bank where the LSPGC 230 kV line would transition between an overhead and underground position Alternative 6a/6b would not involve changes to any of the other Proposed Project component, which would have the same impacts as described throughout this Draft EIR for the Proposed Project or the other alternatives if selected in combination with Alternative 6a/6b.

Alternative 6a and Alternative 6b are the same, except for the northern portion of this alternative route (approximately 200 to 350 feet) which reflect slightly different connection points that would apply to the project scenarios under consideration.

Impact Analysis – Alternative 6a/6b

Alternative 6a/6b would not result in inadequate wastewater capacity (Impact UT-3), and the impact is not discussed further.

Impact UT-1: Would Alternative 6a/6b 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? ***(Less than significant)***

Water

Under Alternative 6a/6b, excavation for the approximately 0.5-mile duct bank and access roads would require approximately 0.9 AF based on the estimated total excavation and backfill of 5,100 CY (6a) or 5,400 CY (6b). Table 4.19-5, below, provides the total estimated water usage as well as the percentage increase compared with the Proposed Project for each Alternative 6a/6b scenario.

Table 4.19-5 Water Use for Alternative 6a/6b

Category	Water use (AF)	Increase compared with Proposed Project
Alternative 6a with Proposed Project	18.3	5%
Alt 6b with same substation site as Alternative 1	28.2	62%
Alternative 6b with same substation site as Alternative 2	23.2	33%

Similar to the Proposed Project as discussed in Impact UT-1, potential water supply sources during construction include an existing SMUD groundwater well within the Solano wind farm (within the Solano Subbasin), SCWA, or the City of Rio Vista (groundwater wells within the Solano Subbasin). As similar to the Proposed Project as well as Alternative 1 and Alternative 2, construction water demand for Alterative 6a/6b would not require new or expanded water supply infrastructure based on the potential for multiple sources of supply and the overall surplus of water in the area. The Alternative 6a area is identical to that of the Proposed Project with the exception of the proposed LSPGC 230 kV underground segment alignment replacing LSPGC 230 kV overhead segment, in which area there is no water supply infrastructure, and there is no water supply infrastructure in the Alternative 6b area (SWRCB 2021). Operation of Alterative 6a/6b would not require water service. Therefore, construction and operation of Alternative 6a/6b would not require relocation of water supply infrastructure, and there would be no impact from relocation or construction of new or expanded water supply infrastructure.

Wastewater Treatment

There is no stormwater infrastructure in the Alternative 6a/6b site, and construction of Alternative 6a/6b would not require relocation of any stormwater infrastructure. Similar to the Proposed Project, Alternative 6a/6b wastewater service would be provided through use of sanitary facilities. The total number of Alternative 6a/6b workers on site daily would be comparable to the Proposed Project. Similar to the Proposed Project, there is adequate wastewater capacity to treat the sanitary waste generated by Alternative 6a/6b, and Alternative 6a/6b would have no impact from relocation or construction of new or expanded wastewater supply infrastructure.

Stormwater Drainage

There is no stormwater infrastructure in the Alternative 6a/6b site. Alternative 6a/6b would be located subsurface and would not create new impervious surfaces. Alternative 6a/6b would have no impact from relocation or construction of new or expanded stormwater infrastructure.

Electric Power

Alternative 6a/6b would not create electrical demand. There are no existing utility lines located within the Alternative 6a/6b site. Alternative 6a/6b construction would thus not require the relocation or construction of electrical utilities, and the impact would be less than significant.

Natural Gas

Alternative 6a/6b would not require supplies of natural gas. No natural gas lines are located in proximity to the Alternative 6a/6b site.

Impact UT-2: Would Alternative 6a/6b have insufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years? *(Less than significant)*

Under Alternative 6a/6b, water use would increase by 5 percent compared with the Proposed Project for excavation of the duct banks and transition on the north bank of the Delta. Total water usage volumes for each scenario under Alternative 6a/6b are provided in Table 4.19-5, above. As with the Proposed Project, water would be sourced from the existing SMUD well or trucked to the site from the SCWA or the City of Rio Vista. All potential sources have sufficient capacity, including surplus capacity, to supply needs for construction and operation under Alternative 6a/6b, and no new entitlements or infrastructure would be required. The impact would be less than significant.

Impact UT-4: Would Alternative 6a/6b 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? *(Less than significant)*

Excavation for the duct banks and transition vaults under Alternative 6a would generated approximately 5,100 CY of earthen spoils and, under Alternative 6b, approximately 5,500 CY. Excavated soils would be reused on site for trench backfill where suitable. Excess and unsuitable soils would be hauled off site to an approved facility. Similar to the Proposed Project, all material would be managed in accordance with state and local requirements, including the Solano County and Contra Costa County programs through which CalGreen is enforced locally. Even assuming that 100 percent of excavation spoils under Alternative 6a/6b would be hauled off site for disposal, regional landfill capacity is sufficient to accept the quantity of solid waste estimated to be generated in combination with existing needs. As with the Proposed Project, Alternative 6a/6b would involve comparable diversion of recyclable materials and would meet state and local waste reduction standards. Minimal solid waste would be generated by operation and maintenance under Alternative 6a/6b. The Alternative 6a/6b impact from generation of solid waste in excess of state or local standards or capacity would be less than significant.

Impact UT-5: Would Alternative 6a/6b comply with federal, state, and local management and reduction statutes and regulations related to solid waste? *(Less than significant)*

Alternative 6a/6b would involve comparable recycling and waste diversion percentages to the Proposed Project. Alternative 6a/6b would comply with applicable solid waste management laws, including SB 1383 and CALGreen, enforced locally through Solano County. The impact on waste diversion would be less than significant.

Impact UT-6: Would Alternative 6a/6b induce voltage on an existing natural gas pipeline in a manner that would result in the physical degradation of the pipeline? *(Less than significant)*

There are no buried metallic utility pipelines in proximity to the Alternative 6a/6b PG&E 500 kV interconnection lines. Under Alternative 6a/b, the LSPGC 230 kV cable would be further from the Calpine natural gas transmission pipeline than the Proposed Project. The Alternative 6a/6b LSPGC 230 kV overhead segment would not generate AC current on the pipeline in excess of thresholds, and the impact would be less than significant.

4.19.12 No Project Alternative

Environmental Setting – No Project

Under the No Project Alternative, the LSPGC Collinsville Substation and associated LSPGC 230 kV transmission line, PG&E 500 kV interconnection lines, and PG&E 12 kV distribution line would not be constructed. The utility and service systems conditions described in Section 4.19.1 would apply to the No Project Alternative.

Impact Analysis – No Project

The No Project Alternative would not 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 (Impact UT-1). The No Project Alternative would not require water supply or wastewater supply and would not result in insufficient water supply (Impact UT-2) or inadequate wastewater capacity (Impact UT-3). The No Project Alternative would not generate solid waste or conflict with waste management statutes (Impacts UT-4 and UT-5). The No Project Alternative would not induce voltage on an existing gas pipeline (Impact UT-6). No utility or service systems impacts would occur under the No Project Alternative.

4.19.13 Mitigation Measures

LSPGC Project Components

MM UT-2: Protect SMUD Buried Infrastructure from Construction Loads (Alternatives 1 and 2)

Prior to completing final design of the alternative LSPGC 230 kV overhead segment, LSPGC shall coordinate with SMUD to evaluate weight limitations and structural tolerances associated with SMUD buried utilities associated with SMUD access roads that would be used for construction. If needed, LSPGC shall incorporate any design measures such as steel plating, load distribution, or alternative access routes to avoid damage to subsurface infrastructure. PG&E shall submit anticipated construction vehicle loads and proposed methods for protection of SMUD buried utilities to SMUD for review prior to construction. Final design shall reflect all requirements for utility protection agreed upon during this coordination. Documentation of SMUD's approval of the protection plan and incorporation of required measures shall be submitted to the CPUC for verification prior to construction in areas subject to this measure.

Should SMUD fail to approve the plan, the CPUC will approve the plan if it meets engineering standards and outreach to SMUD has been documented.

MM UT-3: ADLS and Microwave Tower Impacts (Alternative 2)
LSPGC shall hire a contractor specializing in microwave and radar systems to evaluate the impact of the Alternative 2 substation on the SMUD ADLS and microwave tower. LSPGC shall implement the specialists' recommendations to avoid or minimize impacts on the ADLS or microwave tower operations in the Alternative 2 Final Design, to the extent feasible. If the specialist determines that substation impact on the ADLS and/or microwave tower functions cannot be avoided, LSPGC shall compensate SMUD for relocation of the affected infrastructure. The affected utility shall be relocated to an area that does not contain sensitive biological or cultural resources and would not be affected by operation of the Alternative 2 substation. The proposed location for the relocated infrastructure and biological and cultural resource studies of the site, shall be submitted to the CPUC for review and approval 2 weeks prior to relocation of the infrastructure.

PG&E Project Components

MM UT-1: Protect SMUD Buried Infrastructure from Construction Loads
Prior to completing final design of the PG&E 500 kV interconnection lines, PG&E shall coordinate with SMUD to ensure SMUD buried utilities in SMUD access roads are protected from construction loads, including evaluating weight limitations and structural tolerances. Documentation of coordination shall be submitted to the CPUC for verification prior to construction in areas subject to this measure.

MM UT-2: Pipeline AC Interference Control
Before construction, the PG&E shall coordinate with CPN Pipeline to collect baseline AC/DC pipe-to-soil measurements and coating condition surveys along the segment where the pipeline runs parallel to the PG&E 500 kV alignment then calibrate the AC-interference model to those conditions and re-evaluate steady-state and fault cases. If the tuned model indicates the AC current density exceed the threshold of 30 A/m², PG&E shall install buried zinc-ribbon grounding parallel to the pipeline with bonds at regular intervals and place high-resistivity crushed rock at any above-grade appurtenances (e.g., the insulating flange) where touch potential could occur. The design shall achieve steady-state and fault touch/step potentials within applicable IEEE limits and AC current density at coating holidays ≤ 30 A/m². After energization, PG&E shall verify performance and adjust mitigation as needed; provide test stations and monitoring access to the operator.

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4.20 Wildfire

This section presents the environmental conditions and analysis of impacts on wildfire resulting from the Proposed Project and alternatives. This section describes existing wildfire conditions, applicable regulations, and environmental impacts and provides mitigation measures to reduce or avoid significant effects for the Proposed Project and alternatives, as applicable. Additional impact analysis related to fire hazards, emergency response, and emergency evacuation is included in Section 4.9: Hazards, Hazardous Materials, and Public Safety. Emergency access is also discussed in Section 4.17: Transportation.

The following scoping comments are relevant to the analysis of wildfire (or, broadly, fire hazards) as documented in the Scoping Report (Appendix B):

- Potential to exacerbate wildfire hazards or expose people to wildfire-related hazards (i.e., pollutants, flooding, landslides).
- Potential for earthquakes to cause the collapse of transmission structures or lines that could ignite wildfires.
- Potential for lightning over voltages that could ignite wildfires.
- Potential obstructions to local hazard mitigation plans and resident evacuations.

4.20.1 Environmental Setting

A *wildfire* (or wildland fire) is an uncontrolled fire in an area of combustible vegetation occurring in a rural area; they are unplanned and unwanted fires. Wildfires can be classified broadly or specifically by the type of vegetation present, such as forest fires, brush fires, and grass fires. Wildfires can be ignited naturally (e.g., by lightning) or by human activities and manmade features. Large, severe wildfires are major threats to people, property, and ecosystems. The likelihood of, intensity, and susceptibility to wildfire varies significantly by location depending on fuel density and topography as well as daily and seasonal conditions (e.g., heat, dryness, wind). Certain land uses and development in or near wildland areas have the potential to cause or exacerbate wildfires or hazardous post-wildfire conditions (e.g., flooding, landslides), and/or impede fire management, emergency response, or emergency evacuation.

Wildfire is influenced by many factors, including the presence and condition of fuels (vegetation), weather conditions (i.e., temperature, humidity, and wind), and topography. A fuel's composition, including moisture level, chemical makeup, and density, determines its degree of flammability. The moisture content and distribution of these fuels define how quickly a fire can spread and how intense or hot a fire may become. Some plants, shrubs, and trees contain oils or resins that promote combustion, causing them to burn more easily, quickly, or intensely than those without such oils. Dense fuels that exist close together also cause fuel to burn more freely. Weather conditions such as wind, temperature, and humidity also contribute to fire behavior. Wind is one of the most important factors because it can bring a fresh supply of oxygen to the fire and push the fire toward a new fuel source. Temperature of fuels is

determined by the ambient temperature because fuels attain their heat by absorbing surrounding solar radiation. In general, fuels will ignite more readily at high temperatures than at low temperatures. Humidity, which is the amount of water vapor in the air, affects the moisture level of a fuel. At low humidity levels, fuels become dry and, therefore, catch fire more easily and burn more quickly than when humidity levels are high. Lastly, topographical features such as elevation, slope (the steepness of the land), aspect (the direction a slope faces), or other land features can help or hinder the spread of fire. Elevation and aspect can determine how hot and dry a given area will be. Slope can determine how quickly a fire will move up or down hills.

Regional Setting

Climate and Weather

The Proposed Project area is characterized as having a Mediterranean climate with hot, dry summers and cool, dry winters (Diablo Fire Safe Council 2019). Daily summer temperatures in area average approximately 85 degrees Fahrenheit (typically varies from 42 degrees Fahrenheit to 77 degrees Fahrenheit and is rarely below 35 degrees Fahrenheit or above 87 degrees Fahrenheit) (Weather Spark, n.d.). The region receives an annual average of 20 to 30 inches of precipitation. Dry summers, low precipitation, and seasonal gusty winds generally create fire-prone conditions.

Prevailing winds in the Proposed Project area are generally from the west (CloudFire 2024b), which is consistent with the general wind patterns of the greater San Francisco Bay area, which are from the west-northwest. The Proposed Project area is subject to hot, dry, northeasterly winds, known as *Diablo winds*. The term *Diablo winds* refers to winds that flow from the east or northeast to the west up and over the Diablo Range and down into the East Bay region of the San Francisco Bay area. Diablo winds typically occur in the fall and winter months, can have a high velocity (up to 40 miles per hour or more), and can cause significant fire spreading.

A Wind Resource Area represents a region in California that is highly suitable for commercial wind power generation due to significant wind energy potential in the geographical area. These areas generally contain several operational commercial wind farms. The Proposed Project area (north of the Sacramento River) is within the Solano Wind Resource Area (CEC 2023).

Red flag warnings are issued by the National Weather Service when weather forecasts call for conditions such as low relative humidity and strong winds, which can lead to sudden increases in wildfire activity. Red flag warnings serve to alert firefighters and the public to take extra steps to prevent wildfires.

Topography

Topography at the Proposed Project site is characterized by rolling hills with elevations ranging from near sea level to approximately 300 feet (CloudFire 2024b). The topography near the proposed PG&E 500 kV interconnection lines would connect to the existing PG&E Vaca Dixon-Tesla 500 kV Transmission Line (within the Solano Wind Resource Area) is also moderately hilly. The Proposed Project site is not subject to steep slopes or mountainous terrain.

Vegetation
The Proposed Project areas occur within both developed and undeveloped areas where vegetation is present. Vegetation in and surrounding the Proposed Project site generally includes agricultural lands, which include various agricultural vegetation (i.e., row, field, and orchard crops), ornamental vegetation, grassland, shrubland, and other herbaceous alliances.

Wildfire Risk Analysis and Fire Behavior Modeling
CloudFire Inc. prepared a wildfire risk analysis for the primary, terrestrial Proposed Project components, including the LSPGC Collinsville Substation, LSPGC 230 kV transmission line overhead segment and underground segment, and PG&E 500 kV interconnection lines (CloudFire 2024a). The wildfire risk analysis did not address the proposed modifications to the existing transmission infrastructure (existing PG&E substations and transposition structures), proposed LSPGC 230 kV transmission line submarine segment, or proposed LSPGC telecommunication lines interconnection as these infrastructure are either existing and the fire risk would not change as a result of the Proposed Project or they are located in areas where there is no potential wildfire risk (e.g., buried under the Delta or streets in an urban area). 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) over a study area with inputs such as elevation, slope, wind direction and speed, and Scott/Burgan fuels modeling. The predominant surface fuel models in the Proposed Project area north of the Sacramento River are low load, dry climate grass, and agriculture. The dominant surface fuel model in the vicinity of PG&E's existing Pittsburg Substation is urban/developed (CloudFire 2024a).

The fire behavior modeling under near-worst case conditions indicated the spread rate and flame length are expected to be low to moderate. Given the dominance of low-load grass fuels in and along the Proposed Project site, such fires are uniquely suppressible as supported by the lack of large fire history in the area (CloudFire 2024a). Additionally, the 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 site (CloudFire 2024a).

Fire Hazard Severity Zones
Fire Hazard Severity Zones (FHSZs) within California are designated by the California Department of Forestry and Fire Protection (CAL FIRE). FHSZ designations are moderate, high, and very high. FHSZs are administered by the federal, State, or local government agencies that are financially responsible for preventing and suppressing wildfires in an area. These responsibility areas are categorized as State Responsibility Areas (SRAs), Local Responsibility Areas (LRAs), and Federal Responsibility Areas (FRAs).

The impact criteria for wildfire in Appendix G of the CEQA Guidelines specifically consider whether projects are in or near a FHSZ in an SRAs or any very high FHSZs (in an SRA or LRA) to determine if a detailed project-specific analysis is required. Refer to Section 4.20.3 for more information about the impact criteria for wildfire. Figure 4.20-1 depicts the established SRAs and LRAs surrounding the Proposed Project. As shown in Figure 4.20-1, the only portion of the

Proposed Project site in an SRA is PG&E's existing Tesla Substation. No other portion of the Proposed Project site is in or near an SRA (CAL FIRE 2024b).

As the Proposed Project ss not within an SRA, Figure 4.20-2 depicts the FHSZs in LRAs. As shown in Figure 4.20-2, approximately 0.3 mile of the proposed LSPGC 230 kV overhead segment and 0.1 mile of the submarine segment on the northern shore of the Delta would be within a very high FHSZ in an LRA (CAL FIRE 2025b). Additionally, most of the remaining LSPGC 230 kV overhead segment, most of the proposed LSPGC Collinsville Substation, most of PG&E 500 kV interconnection lines, and PG&E 12 kV line would be within high FHSZs (CAL FIRE 2025b). These features would also be within moderate FHSZs that surround the outer boundaries of the high FHSZs.

Wildland Urban Interface

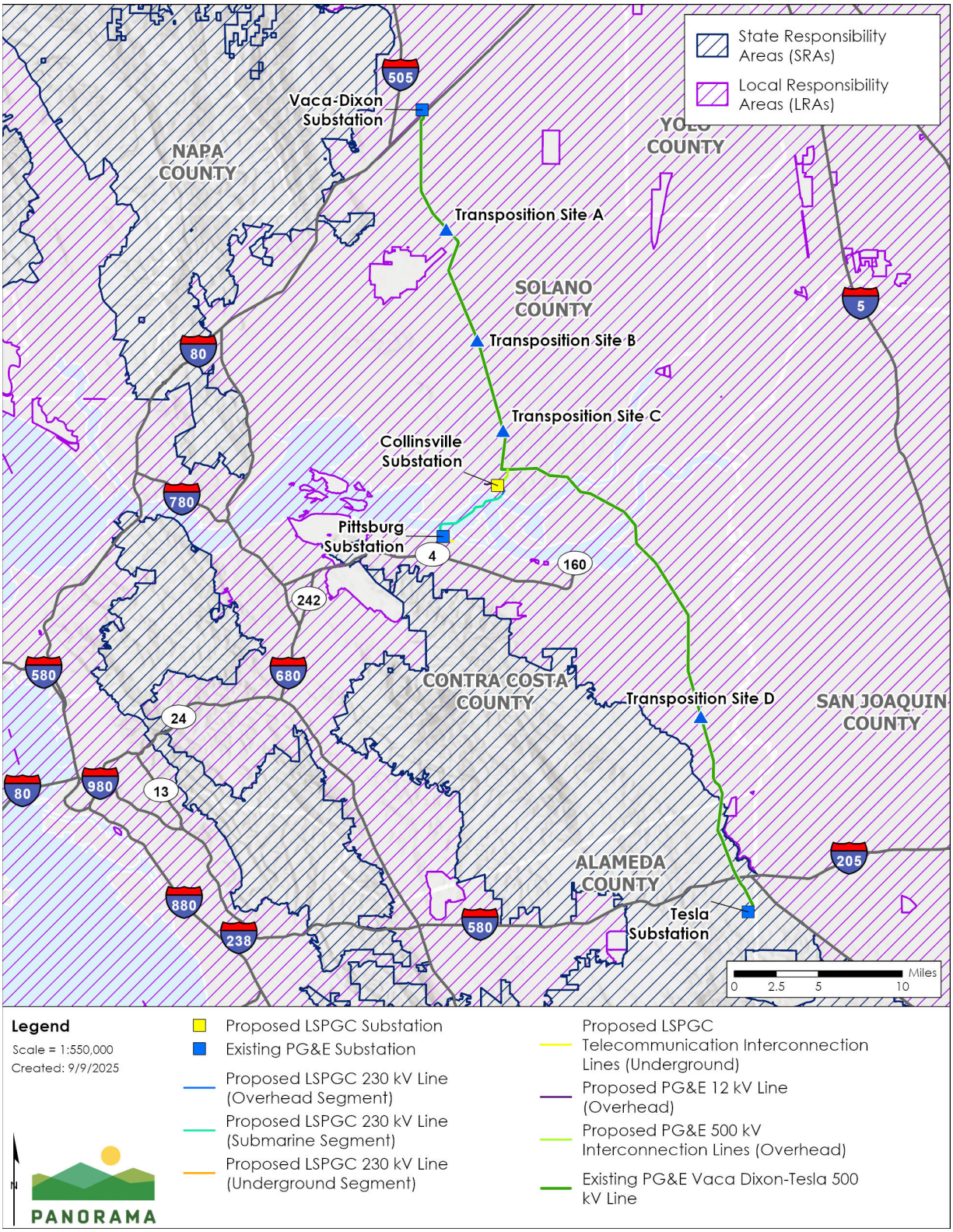
Wildland-urban interface (WUI) refers to areas where human development meets or intermingles with wildland vegetation, creating a zone highly susceptible to wildfire hazards. These regions are particularly prevalent across the state due to its diverse topography, vegetation types, and expansive suburban development into fire-prone areas. The WUI presents significant challenges for fire prevention, emergency response, and land-use planning as it combines dense housing with flammable landscapes. California's WUI zones have seen increasing wildfire activity and intensity, exacerbated by climate change, prolonged drought, and accumulated fuel loads, prompting regulatory focus from agencies such as CAL FIRE and the California Board of Forestry.

CAL FIRE publishes a statewide WUI hazard dataset as part of the Fire and Resource Assessment Program (FRAP), which includes mapping designations for the following (CAL FIRE 2022):

- Interface: Areas where urban development directly abuts wildland vegetation without significant intermixing. These zones are characterized by a clear boundary between densely built environments and adjacent wildland fuels.
- Intermix: Areas where urban development and wildland vegetation are interspersed, resulting in a mosaic of structures and natural fuels. This configuration increases the complexity of wildfire management due to the proximity of homes to flammable vegetation.
- Wildfire Influence Zone: Areas extending up to 1.5 miles from the WUI (Interface or Intermix) that contain wildfire-susceptible vegetation. These zones are identified based on the potential for embers and firebrands to travel from wildland areas into developed regions, posing additional risks to communities.

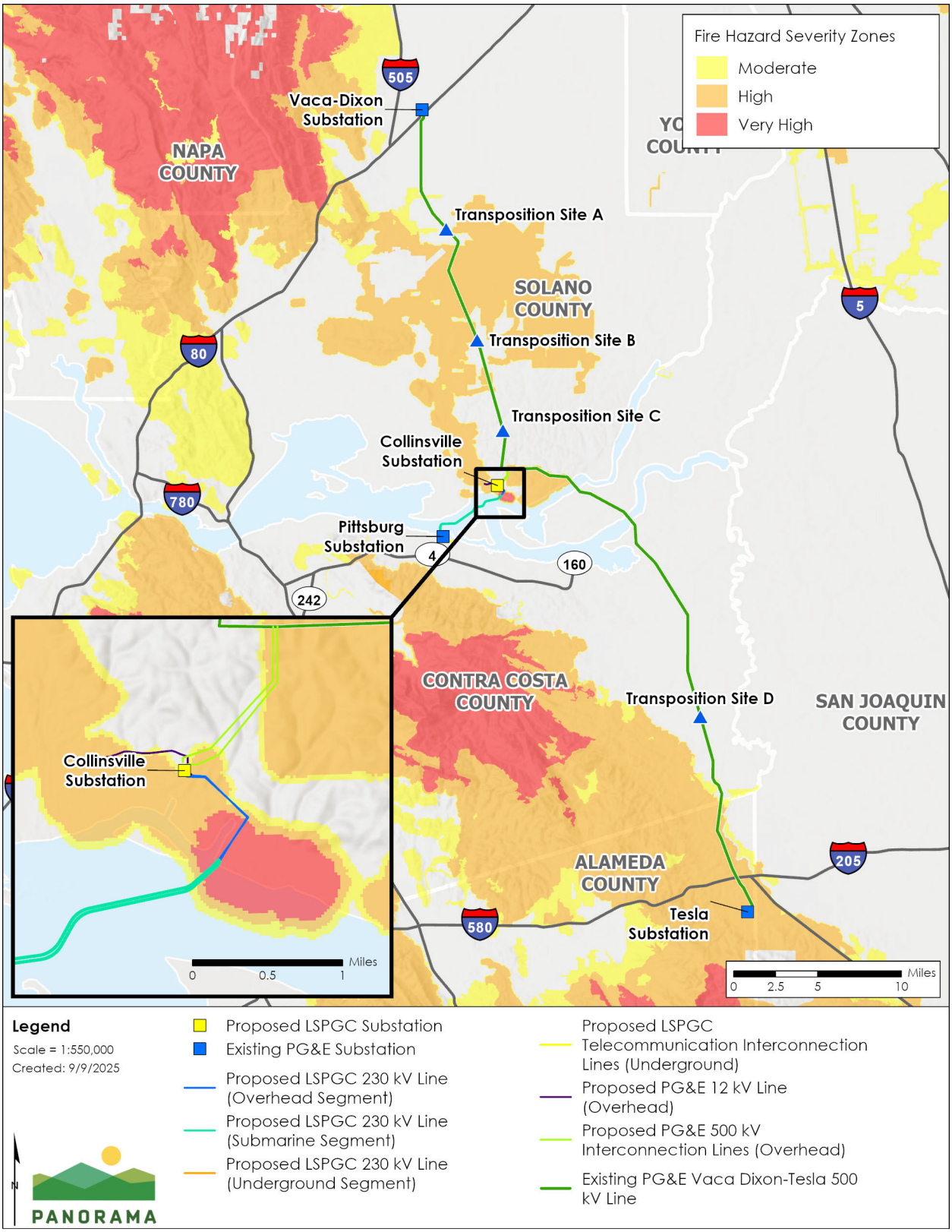
Portions of the Proposed Project site occur within or adjacent to Wildfire Influence Zones identified in CAL FIRE's WUI hazard dataset (CAL FIRE 2022). The Proposed Project components do not occur within Interface and Intermix areas; the closest Interface and Intermix areas are approximately 0.5 mile or greater from the Proposed Project site.

Figure 4.20-1 SRAs and LRAs in the Proposed Project Vicinity



Source: (CAL FIRE 2024b; 2025b)

Figure 4.20-2 Fire Hazard Severity Zones in the Proposed Project Vicinity



Source: (CAL FIRE 2024b; 2025b)

Emergency Response and Evacuation

Emergency planning and response documents for Solano, Sacramento, Contra Costa, and Alameda counties are discussed in Section 4.20.2. While any road could be used for emergency access or evacuation, the Proposed Project site is not located near and does not cross any roads that are designated as essential emergency evacuation routes, and roads that would be subject to Proposed Project activities have secondary ingress and egress. In Solano County, the closest primary emergency access and evacuation routes identified in the General Plan are SR-12 and SR-113 approximately 7.5 miles north of the proposed substation site (Solano County 2024b). In the City of Pittsburg and Contra Costa County, the closest primary emergency access and evacuation route is SR-4 approximately 1 mile south of the LSPGC telecommunication interconnection lines. Arterial and connector roads that provide access to SR-4 are identified in the Contra Costa General Plan Health and Safety Element as potential emergency evacuation routes; these roads include Bay Side Drive, Marina Boulevard, Herb White Way, Willow Pass Road/W 10th Street, Railroad Avenue, E 3rd Street, and Harbor Street (Contra Costa County 2024a). Portions of the LSPGC telecommunications interconnection lines would be located along Herbert White Way (150 feet) and Marina Boulevard (0.3 mile).

High Fire Threat Districts

In 2018, CPUC adopted High Fire Threat District (HFTD) maps identifying areas of high hazard, elevated risk, and extreme risk for destructive utility-associated wildfires in the State (CPUC 2025). The HFTDs encompass areas where stricter fire safety regulations apply to utility infrastructure and operations. Regulated electrical utility corporations are required to implement enhanced wildfire prevention measures where their facilities are located within HFTDs, as specified in their Wildfire Mitigation Plans (WMPs) that are prepared and implemented in accordance with Senate Bill (SB) 901 and Public Utilities Code Section 8386. The HFTD maps designate three district types, as follows:

- Tier 3: Extreme fire risk (including likelihood and potential impacts on people and property) from utility-associated wildfires
- Tier 2: Elevated fire risk (including likelihood and potential impacts on people and property) from utility-associated wildfires
- Zone 1: Areas identified as Tier 1 High Hazard Zones (HHZs) on the joint map developed by the USDA Forest Service and CAL FIRE

The CPUC HFTDs resemble the CAL FIRE's FHSZs, but the mapping does not directly correspond. The Proposed Project site is not located within any Tier 3, Tier 2, or Zone 1 areas identified on the CPUC HFTD maps. The closest HFTD, designated as Tier 2, is located roughly 3 miles away (CPUC 2021).

Fire Occurrence History

CAL FIRE's fire perimeters database was reviewed for fires that have occurred within the past 25 years within 1 mile of the Proposed Project site (CAL FIRE 2025a). Fire occurrence history is provided in Table 4.20-1. The only recorded fires that have occurred within 1 mile of any

portion of the Proposed Project site within the past 25 years have been located near PG&E's existing Tesla Substation.

Table 4.20-1 Fire Occurrence History within 1 mile of the Proposed Project

Year	Fire name	Cause	Acres	Proximity to Proposed Project
2019	Patterson	Arson	139	0.6 mile east of Tesla Substation
2006	Midway	Powerline	5,540	0.3 mile south of Tesla Substation
2005	Union Pacific Railroad Fires 3, 4, 5, and 6	Railroad	23	0.3 mile southwest of Tesla Substation
2002	Patterson	Unknown / unidentified	233	0.2 mile east of Tesla Substation
2000	Patterson Pass #2	Unknown / unidentified	237	0.4 mile east of Tesla Substation

Source: (CAL FIRE 2025a)

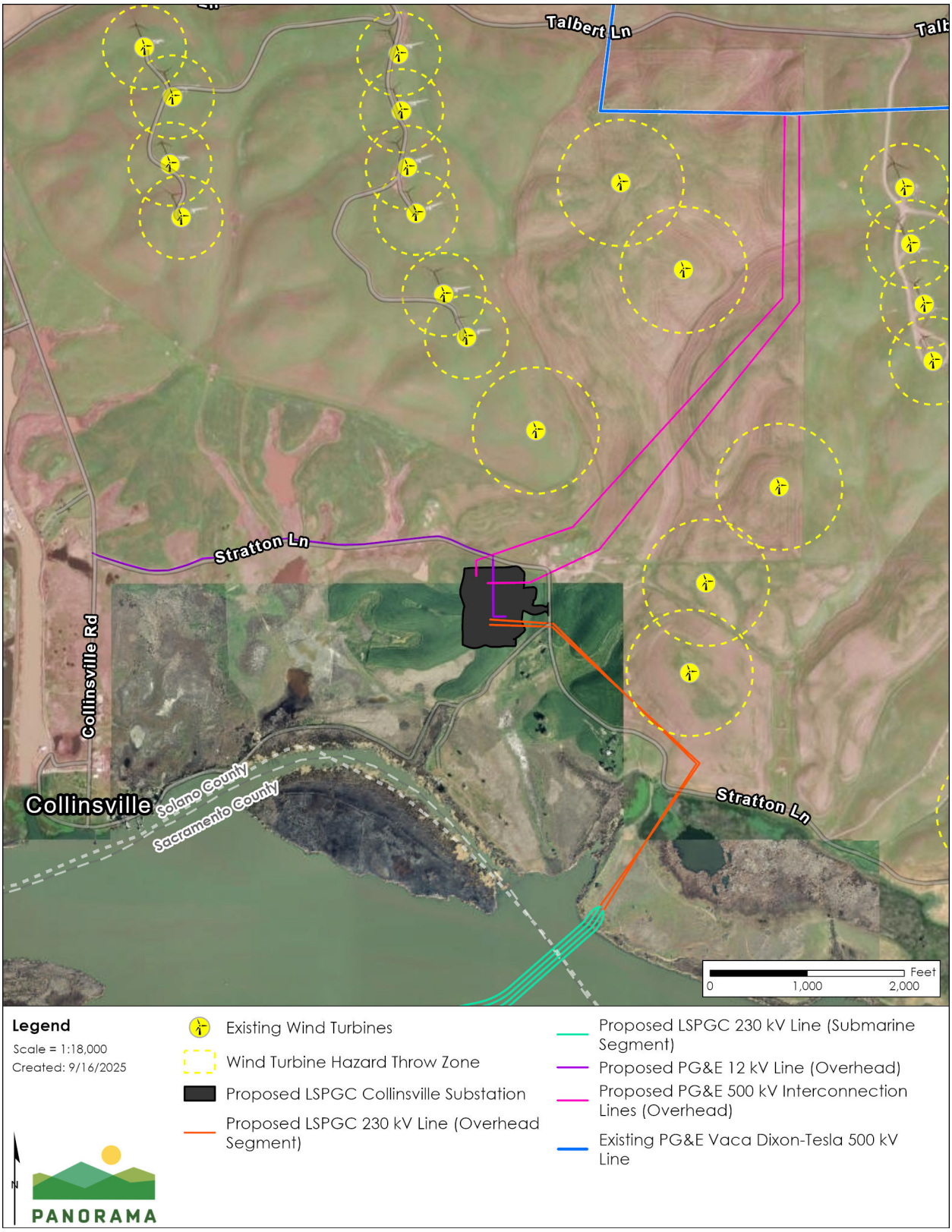
Wind Turbine Hazard Throw Zones

Existing wind turbines associated with the SMUD Solano 4 Wind Project are located in the vicinity of the proposed LSPGC Collinsville Substation and 230 kV overhead segment, and the existing PG&E 500 kV line and proposed interconnection lines. Setback buffers are considered when planning wind projects as well as development adjacent to wind projects to identify potential hazard zones in the event of mechanical failure leading to a wind turbine collapsing or blade being thrown, or if accumulated ice were thrown from a blade. If a turbine component were to strike an electrical facility, it could result in an electrical arc and potential ignition of surrounding vegetation. This unique condition introduces a reasonably foreseeable wildfire risk that is independent of typical electrical equipment failure scenarios.

There is no single universally adopted formula for determining wind turbine hazard throw zones; however, a deterministic equation is commonly used to approximate the maximum distance a blade could be thrown, which includes multiplying the total wind turbine height (hub height plus rotor radius) and by 1.1. A larger multiplier (1.5 times) may also be used where there is a high potential for accumulated ice to be thrown or when other sensitive land uses are present; however, the use of a 1.1x height buffer was deemed appropriate for the Proposed Project based on coordination with SMUD (Blake Heinlein, "Interagency Meeting between CPUC and SMUD," March 25, 2025), which is consistent with General Electric Company's general setback guidelines for onshore turbine types (General Electric Company 2018).

Wind turbine hazard throw zone buffers were developed for each existing wind turbine in the project area using location and height data published in the U.S. Wind Turbine Database (Lawrence Berkeley National Laboratory et al. 2025). Figure 4.20-3 shows the wind turbine hazard throw zones in the Proposed Project vicinity. Approximately 430 feet of the proposed LSPGC 230 kV overhead segment is within a wind turbine hazard throw zone for one wind turbine located approximately 600 feet northeast. No other Proposed Project components are within a wind turbine hazard throw zone, including the existing PG&E 500 kV Vaca Dixon-Tesla Transmission Line.

Figure 4.20-3 Wind Turbine Hazard Throw Zones in the Proposed Project Vicinity



Source: (Lawrence Berkeley National Laboratory et al. 2025)

Environmental Setting by Project Component

LSPGC Collinsville Substation

Land uses surrounding the proposed LSPGC Collinsville Substation include undeveloped areas (i.e., Suisun Marsh and the Delta), utility operations, residences, wind farms, and agricultural lands. Vegetation at the substation site and surrounding area generally consists of grassland and herbaceous alliances (i.e., groups of plants dominated by herbaceous [non-woody] species) (Insignia Environmental 2024).

The LSPGC Collinsville Substation and surrounding areas are within an LRA; these areas are designated as high and moderate FHSZ (refer to Figure 4.20-2(CAL FIRE 2025b). A small portion of the proposed substation site as well as the adjacent staging areas fall within the WUI Wildfire Influence Zone (CAL FIRE 2022).

LSPGC 230 kV Transmission Line

Vegetation along the proposed LSPGC 230 kV overhead segment and the terrestrial portion of the submarine segment generally consists of grassland and herbaceous alliances (Insignia Environmental 2024). Vegetated areas that could fuel the spread of wildfires do not occur within the submarine segment located within the Delta (under water) or the underground segment on the southern shore of the Delta, which consists of a developed area.

The proposed LSPGC 230 kV transmission line falls within an LRA; the overhead segment is located within an area designated as very high, high, and moderate FHSZ and the terrestrial portion of the submarine segment is designate as very high FHSZ (refer to Figure 4.20-2) (CAL FIRE 2025b). Roughly 400 feet of the proposed LSPGC 230 kV transmission line overhead segment crosses the WUI Wildfire Influence Zone (CAL FIRE 2022).

Approximately 430 feet of the proposed LSPGC 230 kV overhead segment is within the 1.1x wind turbine hazard throw zone identified for one wind turbine north of Stratton Lane (refer to Figure 4.20-3).

LSPGC Telecommunication Interconnection Lines

The proposed LSPGC telecommunication interconnection lines would be installed underground within the City of Pittsburg between a fiber hub installed along the 230 kV transmission line near the southern shore of the Delta and an existing fiber optic cable near the Marina Community Center, for a total length of approximately 1.2 miles. The proposed alignment of the telecommunication interconnection lines primarily follows road and utility corridors along Marina Boulevard, Herb White Way, and Halsey Court; however, approximately 0.2 mile of the telecommunication interconnection line alignment crosses land designated and zoned as Residential that abuts the roadway corridors. Ornamental vegetation (landscaping and street trees) occurs along portions of these roads and properties (Insignia Environmental 2024).

SR-4 is the closest major road identified as a potential evacuation route in the Contra Costa County General Plan (Contra Costa County 2024a). Portions of the LSPGC telecommunications interconnection lines would be located along Herbert White Way (150 feet) and Marina

Boulevard (0.3 mile), which provide arterial road network access to SR-4 via W 10th Street, Railroad Avenue, E 3rd Street, and Harbor Street.

The proposed LSPGC telecommunication interconnection lines fall within an LRA; these areas are designated as non-wildland (refer to Figure 4.20-2) (CAL FIRE 2025b). The LSPGC telecommunication interconnection lines are outside of the WUI (Contra Costa County 2020; CAL FIRE 2022).

PG&E 500 kV Interconnection Lines

Land uses surrounding the proposed PG&E 500 kV interconnection lines include undeveloped areas, utility operations, wind farms, and agricultural lands. Vegetation along the PG&E 500 kV interconnection lines generally consists of grassland and herbaceous alliances (Insignia Environmental 2024).

The PG&E 500 kV interconnection lines are within an LRA and a 0.7 mile portion is within an area designated as a high FHSZ, 0.2 mile within a moderate FHSZ, and the remainder is un-zoned (refer to Figure 4.20-2) (CAL FIRE 2025). Roughly 200 feet of the PG&E 500 kV interconnection lines cross the WUI Wildfire Influence Zone (CAL FIRE 2022).

PG&E 500 kV Transposition Sites

All proposed PG&E transposition sites are located along PG&E's existing Vaca Dixon-Tesla 500 kV Transmission Line. Transposition Sites A, B, and C are in unincorporated Solano County, and Transposition Site D is near the Census Designated Place of Byron in Contra Costa County. These areas comprise agricultural lands, which include various agricultural vegetation (i.e., row, field, and orchard crops), ornamental vegetation, grassland, shrubland, and other herbaceous alliances (Insignia Environmental 2024).

The PG&E transposition sites and surrounding areas fall within LRAs; none of these areas are designated as very high FHSZ (refer to Figure 4.20-1) (CAL FIRE 2025). A portion of one structure work area is within a moderate FHSZ and portions of two temporary access roads are within high and moderate FHSZs at Transposition Site A. Transposition Site A is also within the WUI Wildfire Influence Zone (CAL FIRE 2022).

PG&E 12 kV Distribution Line

Land uses surrounding the proposed PG&E 12 kV distribution line include undeveloped areas, utility operations, wind farms, and agricultural lands. Vegetation along either side of Stratton Lane and the surrounding area generally consists of grassland and other herbaceous alliances (Insignia Environmental 2024).

The proposed PG&E 12 kV distribution line falls within an LRA. Approximately 0.4 mile of the proposed 12 kV distribution line is within a high FHSZ and 0.2 mile is within a moderate FHSZ (refer to Figure 4.20-2) (CAL FIRE 2025). The majority of the proposed 12 kV distribution line is within the WUI Wildfire Influence Zone (CAL FIRE 2022).

PG&E Substation Modifications
PG&E's existing Pittsburg Substation is 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. PG&E's existing Vaca Dixon Substation is in Solano County, in an industrial area surrounded by commercial, industrial, residential, and open space uses. PG&E's existing Tesla Substation is in Alameda County in an agricultural area. Vegetated areas that could fuel the spread of wildfires do not occur at the existing PG&E substations, and PG&E maintains vegetation surrounding the existing substations according to State and federal wildfire prevention requirements.

PG&E's existing Pittsburg and Vaca Dixon substations and the surrounding areas are within an LRA, and PG&E's existing Tesla Substation is within an SRA designated as high FHSZ; none of the existing substations are in or adjacent to an area designated as a very high FHSZ (refer to Figure 4.20-1 and Figure 4.20-2) (CAL FIRE 2025). A portion of the existing Vaca Dixon and Tesla substations and the surrounding areas are within the WUI Wildfire Influence Zone (CAL FIRE 2022). In addition, the area surrounding the Tesla Substation is generally susceptible to fires, as shown in Table 4.20-1.

4.20.2 Regulatory Setting

Federal

National Fire Protection Association Codes, Standards, Practices, and Guides
National Fire Protection Association (NFPA) codes, standards, recommended practices, and guides are developed through a consensus standards development process approved by the American National Standards Institute. This process brings together professionals representing varied viewpoints and interests to achieve consensus on fire and other safety issues. NFPA standards are recommended guidelines and nationally accepted good practices in fire protection but are not law or "codes" unless adopted as such or referenced as such by the California Fire Code or the local fire agency.

NFPA 70, National Electrical Code
NFPA 70, National Electrical Code (NEC), sets the foundation for electrical safety in residential, commercial, and industrial occupancies. It is consistently reviewed and updated, with input from active professionals in the field, to stay ahead of the constant changes in technology and safety.

NFPA 850, Fire Protection for Electric Generating Plants and High Voltage Direct Current Converter Stations
NFPA 850, Fire Protection for Electric Generating Plants and High Voltage Direct Current Converter Stations, was prepared for the guidance of those charged with the design, construction, operation, and protection of electric generating plants and high voltage direct current converter stations. This document provides fire hazard control recommendations for the

safety of construction and operating personnel, the physical integrity of plant components, fire protection systems and equipment, and the continuity of plant operations.

National Electric Safety Code (NESC) and American National Standards Institute (ANSI) Guidelines

A variety of line and tower clearance standards are used throughout the electric transmission industry. Nationally, most transmission line owners follow the National Electric Safety Code (NESC) rules or American National Standards Institute (ANSI) guidelines, or both, when managing vegetation around transmission system equipment. The NESC deals with electric safety rules, including transmission wire clearance standards, whereas the applicable ANSI code deals with the practice of pruning and removal of vegetation.

Disaster Mitigation Act

The Disaster Mitigation Act of 2000 amended the existing statutes (the Stafford Act and the Public Works Act) to require local governments to prepare hazard mitigation plans as a condition of receiving funding from the Federal Emergency Management Agency's (FEMA) Hazard Mitigation Grant Program. The general purpose of the Disaster Mitigation Act was to reduce preventable, repetitive disaster losses by encouraging states and local jurisdictions to plan more wisely through mitigation of natural hazards, vulnerability, and risk.

National Weather Service Red Flag Fire Warning and Weather Watches

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.

State

California Public Utilities Commission

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 operation and maintenance of electrical power lines as well as fire safety hazards. The CPUC has promulgated the following rules to implement the fire safety requirements of GO 95:

- 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 in 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 in 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*, defined as a simple visual inspection of utility equipment and structures designed to identify obvious structural problems and hazards; these inspections must occur at least once per year for each piece of equipment and structure. *Detailed inspections*, meaning that 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 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 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.

Senate Bill 901 and Public Utilities Code Section 8386

SB 901, enacted in 2018, established a comprehensive legislative framework to enhance wildfire prevention, mitigation, and utility accountability in California. Among its key provisions,

SB 901 authorized the CPUC to require investor-owned utilities to prepare and implement WMPs, focusing on infrastructure hardening, vegetation management, and system operations to reduce wildfire risks. Public Utilities Code Section 8386 also mandates that California electrical corporations develop and submit annual WMPs. These WMPs are filed with the Office of Energy Infrastructure Safety; minor updates to the base plans occur annually, and more comprehensive updates to the base plans are required every 3 years (Energy Safety 2025).

LSPGC's current 2026-2028 WMP was approved by the Office of Energy Infrastructure Safety (Energy Safety) in July 2025 and outlines targeted measures to enhance wildfire risk management across its transmission assets. The WMP incorporates Energy Safety Guidelines and builds on the prior WMP and it includes a quantified wildfire risk assessment based on stochastic ignition locations/sources, probabilistic weather, probabilistic wildfire spread, multi-factor wildfire hazard intensity modeling, and integration of potential assets-at-risk in surrounding landscapes and communities (LSPGC 2025). LSPGC's current 2026-2028 WMP identifies the future Collinsville Substation project; however, the wildfire risk factors and enhanced mitigation strategies are generally focused on equipment within CPUC HFTDs. Mitigation strategies in LSPGC's current WMP that would apply to the Collinsville Substation project include integration the facilities into LSPGC's emergency management system; real-time transformer monitoring; live video surveillance via perimeter cameras and fire alarm systems; SCADA-based alarm visibility from the Primary and Backup Transmission Operations Control Centers; and planned expansion of the weather station network and weather monitoring systems (LSPGC 2025). At this time, LSPGC does not have plans to implement additional grid monitoring systems (LSPGC 2025). During operation of the Proposed Project, LSPGC would implement its current WMP to manage wildfire risk to the extent that the defined mitigation strategies apply to the Proposed Project areas and equipment.

PG&E's current 2026-2028 WMP, approved by Energy Safety in 2025, builds on the prior plans with refinements to wildfire risk modeling, inspection protocols, and system hardening priorities. PG&E's 2026-2028 WMP incorporates the fourth generation of the Wildfire Distribution Risk Model and the second generation of the Wildfire Transmission Risk Model, which integrate enhanced vegetation health indicators, expanded outage and ignition datasets, and machine learning hazard models for vegetation and avian contacts (PG&E 2025). PG&E's WMP does not identify specific, future facilities associated with the Proposed Project, and none of the PG&E facilities are located within CPUC HFTDs. During operation of the Proposed Project, PG&E would implement its current WMP to manage wildfire risk to the extent that the defined mitigation strategies apply to the Proposed Project areas and equipment.

California Fire Code

The California Fire Code (Title 24, Part 9 of the California Code of Regulations) includes provisions and standards for numerous aspects of fire prevention and response, including emergency planning and preparedness, fire service features, fire protection and life safety systems, means of egress, fire safety during construction and demolition, hazardous materials, fire flow and fire hydrant requirements, and vegetation clearance in wildfire hazard areas.

Among the California Fire Code's regulations for hazardous materials are specific requirements for the safe storage and handling of flammable and combustible liquids. Article 80 of the California Fire Code includes specific requirements for the safe storage and handling of hazardous materials. These requirements are intended to reduce the potential for the release of hazardous materials and for the mixing of incompatible chemicals and to specify secondary containment, separation of incompatible materials, and spill response procedures to reduce the potential for the release of hazardous materials that can affect public health or the environment.

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 California Code of Regulations (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 section 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 Resources Code

Section 4201 to 4204

Pursuant to PRC sections 4201 to 4204 and Government Code sections 51175 to 51189, CAL FIRE has created FHSZ maps for the state that identify areas that are within state or local responsibility for preventing or suppressing fires. The State Fire Marshal must designate areas as moderate, high, and very high FHSZs within SRAs, and recommend areas for designation as moderate, high, and very high FHSZs within LRAs. (PRC section 4202; Government Code section 51179). The State Fire Marshal's recommendations must be reviewed and adopted in ordinances by local agencies. CAL FIRE's FHSZ maps and associated GIS data are available on the CAL FIRE website (CAL FIRE 2024b; CAL FIRE 2025b). FHSZs in the project area are discussed in Section 4.20.1 and shown on Figure 4.20-2.

Section 4292

PRC section 4292 sets forth the basic requirements for clearances around poles and towers. This section requires that flammable fuels be cleared for a minimum 10-foot radius from the outer circumference of certain poles and towers (nonexempt or subject poles or towers). The minimum clearance requirements are based on the type of hardware affixed to the line at the pole or tower. The distances for clearance requirements must be measured horizontally, not along the surface of sloping ground.

As discussed in Section 2: Project Description, PRC section 1255 provides for certain exemptions for these vegetation clearances if specific conditions are met.

Section 4293

PRC section 4293 sets forth the basic requirements for clearances around electrical conductors. This section requires that all vegetation be cleared for a specific radial distance from conductors, based on the voltage carried by the conductors: 4 feet for voltages between 2,400 and 72,000 volts; 6 feet between 72,000 and 110,000 volts; and 10 feet for voltages greater than

110,000 volts. In addition, this section calls for removal or trimming of trees that are dead, decadent, rotten, decayed, or diseased, and could fall into the line or cause other surrounding trees to fall into the line.

Government Code Section 65302(g)
California Government Code section 65302(g) requires that the safety element of general plans address the protection of the community from unreasonable risks associated with wildfire. Key standards include:

- Identification of FHSZs: Safety elements must incorporate data from CAL FIRE, including maps of FHSZs.
- Risk Reduction Measures: Jurisdictions must plan for the siting of essential facilities, evacuation routes, and the protection of utilities and infrastructure from wildfire risk.
- Consistency with State Guidance: Safety elements must be reviewed for consistency with CAL FIRE's FHSZ maps, the State Fire Plan, and any applicable Board of Forestry and Fire Protection regulations.
- Consideration of Transmission Infrastructure: Given the role of utility infrastructure in wildfire ignition, safety elements must address the protection of electrical transmission facilities from wildfire hazards and the minimization of wildfire risks arising from such infrastructure.

Strategic Fire Plan for California
CAL FIRE's 2024 Strategic Plan (CAL FIRE 2024a), Transforming Tomorrow, provides a five-year framework to enhance wildfire resilience and natural resource stewardship across California. The plan prioritizes wildfire prevention and suppression through proactive measures such as prescribed burns, vegetation management, and community education. It also supports forest health, climate adaptation, and collaborative emergency preparedness with local and tribal partners. Operational improvements include workforce development and data-driven decision-making. These initiatives guide CAL FIRE's role in reducing wildfire risk and enhancing public safety, aligning with state efforts to address increasing wildfire threats in the context of climate change.

California State Hazard Mitigation Plan
The 2023 California State Hazard Mitigation Plan (SHMP), approved by FEMA on August 30, 2023, serves as the State's comprehensive strategy for reducing risks from natural hazards, including wildfires. Developed by the California Governor's Office of Emergency Services (Cal OES), the SHMP adopts an integrated, multi-sector approach to hazard mitigation, emphasizing community resilience and equity. It incorporates climate change projections into hazard assessments and introduces a new impact rating system that evaluates hazards based on probability, potential impact, and overall risk. As an Enhanced Plan under the Disaster Mitigation Act of 2000, the SHMP qualifies California for increased federal funding through programs such as the Hazard Mitigation Grant Program and Building Resilient Infrastructure

and Communities grants. The plan guides state and local agencies in implementing effective mitigation strategies to address the growing threat of wildfires and other hazards statewide.

California Power Line Fire Prevention Field Guide
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 and CPUC 2021).

California's Wildfire and Forest Resilience Action Plan
The Wildfire and Forest Resilience Action Plan is designed to strategically accelerate efforts to restore the health and resilience of California forests, grasslands, and natural places. The plan is also designed to improve fire safety in California communities and sustain the economic vitality of rural forested areas (California Wildfire & Forest Task Force 2021). The goals of the plan are as follows:

- Goal 1: Increase the pace and scale of forest health projects.
- Goal 2: Strengthen protection of communities.
- Goal 3: Manage forests to achieve the State's economic and environmental goals.
- Goal 4: Drive innovation and measure progress.

Wildland-Urban Interface Planning Guide
The WUI is any area where the built and natural environments create a set of conditions that allow for the ignition and spread of wildfire. The extent to which wildfire may impact the WUI depends on many factors, including where and how homes, businesses, and infrastructure are developed, whether conditions, and the amount, type, and arrangement of fuels. The WUI Planning Tools Guide is intended to help planners, wildfire mitigation practitioners, and other professionals and decision-makers understand the myriad of options available to support WUI planning in California. These tools are intended to affect short and long-term changes in addressing the WUI and associated wildfire hazard or risk (Mowery et al. 2022).

Fire Hazard Planning Technical Advisory
The Fire Hazard Planning Technical Advisory is one in a series of technical advisories provided by the Governor's Office of Land Use and Climate Innovation (LCI), formerly the Office of Planning and Research (OPR), as a service to professional planners, land use officials, and CEQA practitioners. The goal of this technical advisory is to provide a robust planning framework for addressing fire hazards, reducing risk, and increasing resilience across California 's communities and landscapes (Governor's Office of Planning and Research 2022).

Best Practices for Analyzing and Mitigating Wildfire Impacts of Development Projects Under the California Environmental Quality Act

This guidance is designed to help lead agencies comply with CEQA when considering whether to approve projects in wildfire-prone areas. This guidance provides suggestions for how best to comply with CEQA when analyzing and mitigating a project's impact on wildfire ignition risk, emergency access, and evacuation. This guidance is aimed at development projects (i.e., residential, recreation, or commercial) (Bonta 2022).

California Manual on Uniform Traffic Control Devices

The California Manual on Uniform Traffic Control Devices (MUTCD) is published by the California Department of Transportation (Caltrans) and is issued to adopt uniform standards and specifications for all official traffic control devices in California, in accordance with Section 21400 of the California Vehicle Code (CVC). The California MUTCD incorporates the Federal Highway Administration's Manual on Uniform Traffic Control Devices (2009 Edition).

The 11th Edition of the MUTCD was published on December 19, 2023, and is effective as of January 18, 2024. Per 23 CRF, California will have a 2-year period through January 18, 2026, to have a revised California MUTCD in conformance with the National MUTCD. California will continue to use the 2014 California MUTCD (Revision 9) during the 2-year period (Caltrans 2023).

Local

The CPUC has sole and exclusive state jurisdiction over the siting and design of the Proposed Project. Pursuant to 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."

Solano County

Solano County General Plan

According to the Solano County General Plan, the areas currently at highest risk for fires are found in western Solano County, in the foothills and mountainous watershed areas, and also in grasslands located throughout the county (Solano County 2008). The following policies from the Public Health and Safety Chapter of the Solano County General Plan are relevant to the Proposed Project:

- 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-22: Require new developments in areas of high and very high wildfire risk to incorporate fire-safe building methods and site planning techniques into the development.

- 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.
- HS.P-31: Require that all structures or new development be built with defensible space.
- HS.P-33: Minimize non-farm-related development and road construction for public use in high or very high fire hazard severity zones.
- HS.P-34: Require new developments in high or very high fire hazard severity zones to incorporate fire-safe building methods and site planning techniques into the development.
- HS.P-35: Work with fire districts, 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.
- HS.P-39: Require new development to provide adequate access for fire and emergency vehicles and equipment that meets or exceeds the standards. These standards are found in two parts of the California Fire Safe Regulations (California Code of Regulations, Title 14, Division 1.5, Chapter 7): Subchapter 2, Articles 1-5 (commencing with section 1270, SRA Fire Safe Regulations); and Subchapter 3, Article 3 (commencing with Section 1299.01, Fire Hazard Reduction Around Buildings and Structures Regulations).
- HS.P-40: Require new and existing development and infrastructure in high or very high fire hazard severity zones to establish and maintain vegetation management practices to reduce the risk of wildfire ignition and spread. This shall include responsible site planning, vegetation management, the use of native drought-tolerant and fire-resistant species, and defensible space consistent with State, local, and fire protection district regulations.
- HS.P-43: Require review by the Building Services Division, Planning Services Division and fire protection districts prior to the issuance of development permits for significant development projects conceptual landscaping plans in Very High Fire Hazard Severity Zones identified by CAL FIRE (see Figure HS-14, Wildfire Hazard Severity Zones). Plans for proposed development in such areas shall include, at a minimum:
  - Site plan to reduce the risk of fire hazards and with consideration to site conditions, including slope, structures, and adjacencies.
  - Development and maintenance of defensible space.

  - Points of ingress and egress that facilitate improved evacuation and emergency response, and provide fire equipment access and adequate water infrastructure for water supply and fire flow that meets or exceeds the standards in the California Fire Safe Regulations. This specifically includes two sections of Title 14 of the California Code of Regulations (CCR), Division 1.5, Chapter 7: Subchapter 2, Articles 1-5 (commencing with Section 1270, SRA Fire Safe Regulations); and Subchapter 3, Article 3 (commencing with Section 1299.01, Fire Hazard Reduction Around Buildings and Structures Regulations).
  - Class A roof materials for new and replacement roofs.
  - Location and source of anticipated water supply.
  - A Fire Protection Plan that includes a fire risk analysis, current fire response capabilities, fire safety requirements (defensible space, infrastructure, and building ignition resistance), mitigation measures and design considerations for non-conforming fuel modification, wildfire education and limitations, wildfire prevention maintenance, and evacuation planning.
- HS.I-17: All new development must comply with fire-resistant landscaping and defensible space requirements. These standards shall meet or exceed Title 14 of the California Code of Regulations (CCR). This specifically includes Division 1.5, Chapter 7, Subchapter 2, Articles 1-5 (commencing with Section 1270, SRA Fire Safe Regulations); and Division 1.5, Chapter 7, Subchapter 3, Article 3 (commencing with Section 1299.01, Fire Hazard Reduction Around Buildings and Structures Regulations). New development shall also comply with the California Public Resource Code Section 4291 (State Defensible Space Requirements), which requires the following:
  - Create a defensible space of at least 100 feet around the structure.
  - Remove all dead plants, grass, weeds, and other flammable vegetation from the defensible space.
  - Remove tree limbs that are within 10 feet of the chimney or stovepipe of the structure.
  - Trim tree limbs that are within 6 feet of the ground or within 10 feet of the structure.
  - Remove all dead branches, leaves, and other debris from roofs and rain gutters.
  - Create horizontal and vertical spacing between trees and shrubs to prevent the spread of fire.
  - Space trees at least 10 feet apart from each other.
  - Maintain the defensible space throughout the year, not just during fire season.
  - Obtain any necessary permits from local fire agencies before conducting any vegetation management activities.
  - Provide and maintain access to the property for emergency vehicles.

Solano County Emergency Operations Plan

The Solano County Office of Emergency Services is responsible for creating and maintaining the Solano County Emergency Operations Plan (EOP). The 2024 EOP establishes an emergency

management organization and assigns functions and tasks consistent with California's Standardized Emergency Management System and the National Incident Management System. The intent of the EOP is to provide direction on how to respond to an emergency from the outset through an extended response and into the recovery process. The EOP provides for the integration and coordination of planning efforts of Solano County Operational Area which consists of the cities/towns, special districts, and unincorporated areas within the county (Solano County 2024a).

Solano County Multi-Jurisdictional Hazard Mitigation Plan

The Solano County Multi-Jurisdictional Hazard Mitigation Plan, adopted in 2022, is a countywide plan that identifies risks and ways to minimize damage from natural and manmade disasters. The plan is a comprehensive resource document that serves many purposes such as enhancing public awareness, creating a decision tool for management, promoting compliance with State and federal program requirements, enhancing local policies for hazard mitigation capability, and providing inter-jurisdictional coordination (Solano County 2022).

Solano County Community Wildfire Protection Plan

The Solano County Community Wildfire Protection Plan (CWPP), adopted in 2023, serves multiple purposes in addressing the risk of wildfires and protecting human life and property. The CWPP aims to provide a comprehensive assessment of wildfire risk and protection needs across the county, bringing together various stakeholders involved in wildfire management and suppression. By identifying gaps and deficiencies, the CWPP provides a framework for future planning and implementation of mitigation measures. The CWPP also includes a list of actionable projects to mitigate the identified risks (Solano County 2023).

Sacramento County

The only portion of the Proposed Project that is located within Sacramento County is the submarine segment within the Delta. As the Proposed Project within Sacramento County is buried underwater, fire policies and plans within Sacramento County are not discussed.

Contra Costa County

Contra Costa County 2045 General Plan

The Contra Costa County 2045 General Plan was adopted in November 2024 (Contra Costa County 2024b). The purpose of the Contra Costa County General Plan is to express the broad goals and policies, as well as specific implementation measures, that will guide decisions on future growth, development, and the conservation of resources through the year 2045. Chapter 9 of the General Plan includes a wildfire hazards section the provides policy guidance to minimize wildfire risks to residents, infrastructure, and natural resources. The policies from Chapter 9 of the Contra Costa General Plan that are relevant to the Proposed Project are as follows:

- PFS-P1.4: Encourage, and whenever possible require, co-location and undergrounding of new utility infrastructure, such as transmission and

distribution lines, fiber-optic cables, and pipelines, in existing rights-of-way to minimize visual, operational, and environmental impacts on the community.

- PFS-P6.1: Require new development to support effective law enforcement and fire protection by providing a safe and accessible public realm for all.
- HS-P7.2: Require any construction of buildings or infrastructure within a High or Very High Fire Hazard Severity Zone in the LRA or SRA, as shown on Figure HS-10, or in areas that may be designated as the WUI to incorporate fire-safe design features that meet the State Fire Safe Regulations and Fire Hazard Reduction Around Buildings and Structures Regulation for road ingress and egress, fire equipment access, and adequate water supply.
- HS-P7.3: Require new development within a Very High Fire Hazard Severity Zone in the LRA or SRA (as shown on Figure HS-10) or in areas that may be designated as the WUI, and on a residential parcel with evacuation constraints (as shown on Figure HS-21), to prepare a traffic control plan to ensure that construction equipment or activities do not block roadways or interfere with evacuation plans during the construction period. Work with the appropriate fire protection district to review and approve the traffic control plan prior to issuance of building permits.
- HS-P7.5: Work with property owners in High or Very High Fire Hazard Severity Zones in the LRA or SRA, or in areas that may be designated as the WUI, to establish and maintain fire breaks and defensible space, vegetation clearance, emergency access roads, water supply and fire flow, signage, and firefighting infrastructure that meet adopted State, County, or community fire safety standards.
- HS-P7.10: Coordinate with energy service providers to underground power lines, especially in the WUI and High and Very High Fire Hazard Severity Zones.
- HS-P7.11: Work with energy service providers to ensure an adequate power supply to vulnerable populations during planned power shutoffs.

The Health and Safety Element of the Contra Costa County General Plan addresses emergency preparedness, response, and evacuation routes. However, it does not designate specific roads or highways as official emergency evacuation routes. The Contra Costa County General Plan identifies major routes such as I-80, I-680, I-580, SR-4, and SR-24 as potential evacuation routes (Figure HS-19 of the Health and Safety Element) (Contra Costa County 2024a). In addition, arterial and connector roads are identified in the vicinity of the Proposed Project within the City of Pittsburg that provide access to SR-4, including Bay Side Drive, Marina Boulevard, Herb White Way, Willow Pass Road/W 10th Street, Railroad Avenue, E 3rd Street, and Harbor Street (Contra Costa County 2024a). There are no evacuation constrained parcels (single-road access neighborhoods) in the project vicinity (Figure HS-20 of the Health and Safety Element) (Contra Costa County 2024a).

Contra Costa County Emergency Operations Plan

The Contra Costa County EOP applies to all emergencies in unincorporated areas of Contra Costa County that generate situations requiring planned, coordinated responses (Contra Costa County 2022). The EOP does not designate or identify specific roads or highways as emergency routes. Instead, the EOP outlines a framework for emergency response and coordination among various agencies within the county. It emphasizes a flexible, hazard-specific approach to evacuation, relying on real-time assessments and coordination through the County's OES and local emergency operations centers.

Contra Costa County Hazard Mitigation Plan

The Contra Costa County Hazard Mitigation Plan (CCCHMP) contains goals and objectives that are intended to reduce loss of life and property from natural disasters. The CCCHMP includes strategies for wildfire hazards and other natural disaster risks and mitigation action items that aim to meet the objectives and reduce the impacts of these hazards. The Contra Costa County Office of Emergency Services and Contra Costa County Department of Conservation and Development share the lead responsibility for overseeing plan implementation and maintenance strategy. The CCCHMP includes removing fuel sources, maintaining defensible space, using fire-retardant building materials, using fire-resistant plantings, and establishing water supplies for firefighting as best practices for reducing fire hazards (Contra Costa County 2018). The actions that address wildfire are as follows:

- Mitigation Objective #1: Increase resilience of infrastructure and critical facilities.
- Mitigation Objective #4: Minimize the impacts of known hazards on current and future land uses by providing incentives for hazard mitigation
- Mitigation Objective #5: Prevent or discourage new development in hazardous areas or ensure that, if building occurs in high-risk areas, it is done in a way to minimize risk.
- Mitigation Objective #6: At the local government level, continually improve understanding of the location and potential impacts of hazards, using the best available data and science.
- Mitigation Objective #7: Encourage all development to meet applicable standards for life safety.
- Mitigation Objective #12: Consider the impacts of known hazards in all planning mechanisms that address current and future land uses within the planning area
- Mitigation Objective #14: Consider open space land uses within identified high-hazard risk zones.
- Mitigation Objective #15: Retrofit, acquire, or relocate identified high-risk structures, including those known to experience repetitive losses.
- Mitigation Objective #16: Establish a partnership among all levels of government and the business community to improve and implement methods to protect property.

- Mitigation Objective #19: Identify and implement inclusive actions that reduce vulnerability for Contra Consta County residents and visitors.
- Mitigation Action #CCC-1: Where appropriate, support retrofitting or relocation of structures in high hazard areas, prioritizing structures that have experienced repetitive losses.
- Mitigation Action #CCC-3: Actively support and participate in the implementation, monitoring, maintenance, and updating of this Hazard Mitigation Plan, as outlined, and defined in Volume 1.
- Mitigation Action #CCC-50: Partner with cities and public protection agencies to delineate evacuation routes, identifying their capacity, safety, and viability under different hazard scenarios, as well as emergency vehicle routes for disaster response, and where possible, alternate routes where congestion or road failure might reasonably be expected to occur. Update as new information and technologies become available. (2045 General Plan: Health and Safety Element Action HS-A13.1)

Contra Costa County Community Wildfire Protection Plan

The Community Wildfire Protection Plan for Contra Costa County is intended to help agencies, communities, and local homeowners define, plan, and prioritize types of actions that will limit the damage associated with wildland fires (Contra Costa County 2020). The Wildfire Protection Plan analyzes fire hazard and risk in the WUI and identifies actions to mitigate wildfire effects. Actions in the plan fall into several broad categories, including education and planning, enhanced suppression capability and emergency preparedness, fuel management, and structure retrofits.

Alameda County

In Alameda County, wildfire hazard mitigation is guided by regional planning efforts and local implementation of state policies. The County is a participant in the Alameda County Local Hazard Mitigation Plan (LHMP), which identifies wildfire as a key risk and outlines strategies such as defensible space maintenance, public education, and vegetation management near critical infrastructure (Alameda County 2022b). Areas of unincorporated Alameda County that fall within SRAs are subject to CAL FIRE's oversight and applicable fire safety regulations, including those established under California Public Resources Code sections 4290 and 4291. The only Proposed Project activities in Alameda County are modifications to the existing PG&E Tesla Substation. The Proposed Project modifications would be located entirely within the developed substation and would not expand the substation. PG&E's Tesla Substation is in a high FHSZ, Figure 4.20-2 and Table 4.20-1.

Alameda County General Plan

The policies from the Safety Element of the Alameda County General Plan that are relevant to wildfire include (Alameda County 2022a):

- Policy 11 (P11): The County shall require the use of fire-resistant building materials, fire resistant landscaping, and adequate clearance around structures in "high" and "very high" fire hazard areas.

Alameda County Community Wildfire Protection Plan

The Alameda County Community Wildfire Protection Plan (CWPP) further supports collaborative efforts to reduce wildfire risk through fuel treatments and strategic land management (Alameda County 2015). The purpose of the CWPP is to protect human life and reduce loss of property, critical infrastructure, and natural resources due to wildfire. The CWPP is intended to help agencies, communities, and local homeowners define, plan, and prioritize types of actions that will limit the damage associated with the inevitable wildland fire event. The CWPP can be used to reduce the risk of conflagration by the following actions:

1. Increased collaborative planning and cooperative actions that will build useful relationships between communities and agencies.
2. Reduction of hazardous fuels in the WUI
3. Creation and maintenance for defensible space for structures and properties.
4. Reduction of structural ignitability hazards.
5. Planning of evacuation protocols and drills.

Alameda and Contra Costa County Regional Wildfire Prevention Plan

The intent of the Alameda and Contra Costa County Regional Wildfire Prevention Plan (Regional Priority Plan [RPP]) is to identify and prioritize projects at the landscape or watershed-level to address forest health and wildfire risks in the region. The RPP is intended to complement other existing fire planning documents, including CWPPs covering Alameda and Contra Costa counties, and highlight critical needs in Alameda and Contra Costa counties that would be required in order to protect natural resources from catastrophic wildfire. Another goal of the RPP is to enhance and expand on existing networks to be more inclusive of the residents of Alameda and Contra Costa counties, local agencies, and state government offices for broader coordination and planning to achieve effective fuel and fire reduction through coordination, networking, and interfacing (Alameda County and Contra Costa County 2022).

City of Pittsburg

City of Pittsburg General Plan

The City of Pittsburg General Plan 2020 designates fire risk areas based on CAL FIRE designations for FHSZs. The General Plan designates the areas of highest fire risk as the hills south of the city and describes the fire threat areas as a combination of dry, open grassland abutting development within the city. The Community Facilities Element of the City of Pittsburg General Plan includes goals and policies for fire protection (City of Pittsburg 2024). The following goals and policies are relevant to the Proposed Project:

- Policy-P-6.2: Require adequate road widths, turnarounds, and emergency access development projects for fire response trucks.

- Policy-P-6.3: Require development in areas of high fire hazard to be designed and constructed to minimize potential losses and maximize the ability of fire personnel to suppress fire incidents.

The City of Pittsburg does not publish a fixed, public "designated evacuation route" map. Instead, plans and CEQA documents consistently point to SR-4 as the primary regional egress, with evacuation relying on major arterials, including Bailey Road, Railroad Ave, Loveridge Road, Kirker Pass Road, Pittsburg-Antioch Highway, Willow Pass Road/West Leland Road, Buchanan Road, and Harbor Street to access SR-4 or move away from hazards.

4.20.3 Approach to Impact Analysis

The analysis of impacts on wildfire applies the impact criteria and significance thresholds defined in the following subsection. The LSPGC applicant proposed measures (APMs) and PG&E construction measures (CMs) are considered when making the impact determinations for wildfire, as shown in Table 4.20-2. Impacts are evaluated for the Proposed Project including separate analysis of LSGPC and PG&E project components, analysis of LSPGC and PG&E project components combined where appropriate, cumulative impacts, and alternatives. Mitigation measures are defined to reduce or avoid significant impacts, where feasible.

Following Appendix G of the CEQA Guidelines, wildfire impacts are evaluated if a project is in or near SRAs or lands classified as very high FHSZs. As discussed in Section 4.20.1, the Proposed Project components north of the Delta including the proposed LSPGC Collinsville Substation, LSPGC 230 kV overhead segment, LSPGC 230 kV submarine segment (terrestrial portion), PG&E 500 kV interconnection lines, and PG&E 12 kV distribution line are located in or near a very high fire hazard area. The existing PG&E Tesla Substation is located in an SRA. The impact analysis discussion is focused on the Proposed Project components that are in or near very high FHSZs in LRAs and the minor modification to the existing Tesla Substation. The portion of the proposed LSPGC 230 kV submarine segment within the Delta, the LSPGC 230 kV underground segment, LSPGC telecommunication lines, PG&E Pittsburg Substation, and PG&E transposition structures are not addressed as they do not occur in or near an SRA or very high FHSZ.

A separate impact analysis related to wildland fires is addressed in Section 4.9: Hazards, Hazardous Materials, and Public Safety (Impact HAZ-7). Unlike Impact WF-1 through WF-4, Impact HAZ-7 analyzes potential wildfire impacts regardless of whether a project is within a very high FHSZ or in an SRA.

Impact Criteria and Significance Thresholds

The following impact criteria questions have been derived from Appendix G of the CEQA Guidelines to evaluate impacts on wildfire. Appendix G of the CEQA Guidelines ask whether a project would:

- Impact WF-1: Substantially impair an adopted emergency response plan or emergency evacuation plan?

- Impact WF-2: 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?
- Impact WF-3: 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?
- Impact WF-4: 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?

Applicant Proposed Measures and Construction Measures

The LSPGC APMs and PG&E CMs identified in Section 2: Project Description that are relevant to the wildfire impact analysis are provided in Table 4.20-2.

Table 4.20-2 APMs and CMs Relevant to Wildfire

LSPGC APMs and PG&E CMs
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.
APM TRA-2: Road and Lane Closure Plan. LSPGC shall develop a Traffic Control Plan for the proposed project which includes a Road and Lane Closure plan that outlines how LSPGC will handle road and lane closures to allow for safe vehicle, bicyclist, and pedestrian passage when road and lane closures occur. The plan shall be prepared in coordination with local jurisdictions where road and lane closures would occur. Upon determination of the final construction schedule and precise locations and durations of road and lane closures, the plan shall describe locations and durations of: • Lane closures • Bicycle lane closures • Sidewalk or pedestrian path closures

LSPGC APMs and PG&E CMs
Measures to be included in the plan that would allow for safe vehicle, bicyclist, and pedestrian passage shall adhere to the California Manual on Uniform Traffic Control Devices. Potential measures include: • Signage directing motorists, pedestrians, and bicyclists to an efficient, safe detour around the closure • Flaggers and/or signage to halt traffic at road closures or direct traffic at lane closures and to allow traffic to pass when construction is halted • Requirements for notifications and a process for communication with affected residents and landowners prior to the start of construction. • Emergency service providers would be notified of the timing, location, and duration of construction activities. • Requirement that emergency vehicle access is maintained at all times.
CM BIO-15: Prohibitions. Prohibit trash dumping, firearms, open fires (such as barbecues), hunting, and pets (except for safety in remote locations) at work sites.
CM FIRE-1: Fire Risk Management. PG&E would follow relevant California Public Resource Code provisions and the then-current company-specific standard for preventing and mitigating fires while performing PG&E work. PG&E would utilize a project-specific safety plan to outline and ensure compliance with safe work practices, training, and fire response. Examples of the measures in the wildfire prevention and mitigation standard include, but are not limited to, the following practices: • When working on unpaved roads where the ignitions may be probable due to dry vegetation, park vehicles in an area cleared of vegetation (e.g., paved, gravel or cleared to bare mineral soil) or otherwise where suitable to avoid fire ignitions. • During dry months, all motorized equipment driving on unpaved or gravel/dirt right-of-way or roads must have installed State-approved spark arrestor. • When traveling to the jobsite, or when operating on unimproved roadways, passenger vehicles are to carry one dry chemical fire extinguisher (rated ABC) and one round point shovel. • Trucks (1/2 ton or larger) and all-terrain vehicles (ATVs) are to carry one dry chemical fire extinguisher (rated ABC), one round point shovel and one, 5-gallon backpack pump-type fire extinguisher. • Heavy machinery or equipment (e.g., tractors, tub grinders, whole tree chippers, excavators, bulldozers) must have one dry chemical fire extinguisher (rated ABC), one round point shovel and one 5-gallon backpack pump-type fire extinguisher in the operating area but these are not required to be affixed to heavy machinery or equipment. • In addition, during "red flag warning" advisory conditions (as determined by the National Weather Service) or other very high fire risk conditions, certain work activities will be curtailed or temporarily stopped unless work is deemed an emergency. • All flammable chemicals must be clearly labeled and stored in approved containers away from ignition sources.
CM 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.

4.20.4 Impact Analysis – Proposed Project

Table 4.20-3 presents a summary of the significance criteria and impacts associated with wildfire that would result from the Proposed Project. The discussion below only addresses portions of the Proposed Project in or near an SRA or very high FHSZ. Near is defined as within 1 mile for the purposes of the analysis in this section.

Table 4.20-3 Summary of Impacts on Wildfire for the Proposed Project

Impact Criteria: Would the project …	APMs/ CMs applied	Significance Before Mitigation	Mitigation Measures Required	Significance After Mitigation
Impact WF-1: Substantially impair an adopted emergency response plan or emergency evacuation plan?	APM TRA-2 CM TRA-2	LTS	None	NA
Impact WF-2: 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?	APM FIRE-1 CM BIO-15 CM FIRE-1	S	MM FIRE-1	LTS
Impact WF-3: 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?	APM FIRE-1 CM BIO-15 CM FIRE-1	S	MM FIRE-1	LTS
Impact WF-4: 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?	APM FIRE-1 CM BIO-15 CM FIRE-1	LTS	None	NA

Notes:

Following Appendix G of the CEQA Guidelines, the impact criteria for wildfire (Impact WF-1 through Impact WF-4) are evaluated only if a project is located in or near SRAs or lands classified as very high FHSZs.

LTS = less than significant

NA = not applicable

S = significant

Impact WF-1: Would the Proposed Project substantially impair an adopted emergency response plan or emergency evacuation plan? ***(Less than significant)***

Construction

LSPGC Project Components

As discussed in Section 4.20.1, Emergency Response and Evacuation Routes, the Proposed Project site is not located near, and does not cross, any roads that are designated as essential emergency evacuation routes, and roads that would be subject to Proposed Project activities have secondary ingress and egress. In Solano County, the closest primary emergency access and evacuation routes identified in the General Plan are SR-12 and SR-113 approximately 7.5 miles north of the proposed substation site (Solano County 2024b). In the City of Pittsburg and Contra

Costa County, the closest primary emergency access and evacuation route is SR-4, approximately 1 mile south of the LSPGC telecommunication interconnection lines. Arterial and connector roads that provide access to SR-4 are identified in the Contra Costa General Plan Health and Safety Element as potential emergency evacuation routes; these roads include Bay Side Drive, Marina Boulevard, Herb White Way, Willow Pass Road/W 10th Street, Railroad Avenue, E 3rd Street, and Harbor Street (Contra Costa County 2024a). Portions of the LSPGC telecommunications interconnection lines would be located along Herbert White Way (150 feet) and Marina Boulevard (0.3 mile).

Lane closures may be implemented intermittently during deliveries or construction of structures along Stratton Lane during construction of the LSPGC Collinsville Substation. There are no residential or commercial properties along Statton Lane that would require use of Stratton Lane for emergency response or evacuation. Lane closures may also be implemented intermittently along roadways where the LSPGC telecommunication interconnection lines would be constructed, including Marina Boulevard, Herb White Way, and Halsey Court. These areas within the City of Pittsburg are residential and commercial areas where emergency response or evacuation could occur. Construction activities and potential lane closures along roadways in Pittsburg would be limited to the handhole locations identified for the LSPGC telecommunication interconnection lines and not along the entire linear route. There are approximately 10 handholes along Hasley Way, 2 along Herb White Way, and 12 along Marina Boulevard.

LSPGC proposes APM TRA-2, which includes temporary traffic control and coordination with emergency response service providers during road or lane closures. APM TRA-2 would minimize impacts on emergency response as response providers would be able to use alternative routes to provide emergency response during road or lane closures and emergency response vehicles would be permitted access. In addition, any impact on access would be localized to the individual structure work area. With implementation of APM TRA-2, the impact on emergency response services during construction would be less than significant.

PG&E Project Components

Tesla Substation

PG&E's construction activities at the Tesla Substation would occur within the existing substation facility. The limited construction activities within the Tesla Substation would not block any roads or require lane closures and thus would not substantially impair any emergency response or evacuation plan.

PG&E 500 kV Interconnection Lines and 12 kV Distribution Line

Construction of PG&E 500 kV interconnection transmission lines and 12 kV distribution line could result in temporary lane or road closures on Stratton Lane, similar to construction of the LSPGC Collinsville Substation. There are no evacuation routes in proximity to Stratton Lane as discussed for the Collinsville Substation above. In addition, PG&E has proposed CM TRA-2 which requires coordination with emergency service providers at least 24 hours prior to

implementing any road or lane closure. CM TRA-2 would minimize impacts on emergency response as response providers would be able to use alternative routes to provide emergency response during road or lane closures. In addition, any impact on access would be localized to the individual structure work areas or stringing work area and the closure would be limited to the amount of time necessary to complete the activity within the roadway (a few hours). As the PG&E project components would not affect an emergency evacuation route and any temporary lane or road closures would not be located in populated areas, the impact on emergency response and evacuation during construction would be less than significant.

Operation and Maintenance

LSPGC Project Components

LSPGC project components would be operated and monitored remotely. Routine maintenance activities would be conducted within the substation and within LSPGC easements outside of public roadways. Operation and maintenance would not require any road or lane closures on roads that could be used for emergency access or evacuation. Operation and maintenance would not alter any public roadways or access for emergency service. Thus, operation and maintenance of LSPGC project components would not impede emergency evacuation or emergency response; the impact would be less than significant.

PG&E Project Components

Routine inspection and maintenance activities for PG&E project components would be conducted by accessing the improvements from Stratton Lane and access roads within the wind farm, which are not accessible to the public and are not used for emergency evacuation or response. Operation and maintenance of the PG&E Project components would not alter any public roadways or access for emergency service. Operation and maintenance of PG&E Project components would not impede emergency evacuation or emergency response; the impact would be less than significant.

Impact WF-2: Would the Proposed Project exacerbate wildfire risks by exposing project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire due to slope, prevailing winds, and other factors? ***(Less than significant with mitigation)***

Construction

LSPGC Project Components

Construction of the LSPGC Collinsville Substation and LSPGC 230 kV overhead and underground segment north of the Delta would involve the use of vehicles and equipment on dry terrain. Heat or sparks from construction vehicles and equipment could ignite dry vegetation and cause a fire. The Proposed Project components would not create any occupiable structures. The topography of the Proposed Project site consists of flat to gently rolling terrain without steep slopes that would accelerate fire spread. However, if a fire ignited during construction activities, prevailing westerly winds or occasionally, hot dry Diablo winds in the region could contribute to faster fire growth and spotting. As discussed in Section 4.20.1, fire behavior modeling was conducted for the Proposed Project. The fire behavior modeling under

near-worst case conditions indicated the spread rate and flame length are expected to be low to moderate, given the dominance of low-load grass fuels in and along the Proposed Project site and lack of large fire history in the area (CloudFire 2024a). This modeling demonstrates that while strong winds are present in the region, the combination of low-load fuels and gentle slope reduces the potential for rapid or severe fire spread. While the modeled wildfire spread rate and flame length were low to moderate, the Proposed Project construction would increase ignition risk due to the introduction of hot work and equipment on vegetation.

LSPGC would implement APM FIRE-1, which requires a Construction Fire Prevention Plan (CFPP) to reduce wildfire ignition risk during construction of LSPGC project components. The CFPP would be implemented throughout Proposed Project construction and would include procedures for preventing, responding to, and reporting fire incidents to prevent and control wildfires during construction. The CFPP would include fire safety training and restrictions and coordinated procedures with fire officials. Implementation of APM FIRE-1 would reduce the potential for fire ignition and spread during the construction of the Proposed Project and, therefore, would reduce the potential for the uncontrolled spread of wildfire. The impact from exacerbating wildfire risks and associated risk of pollutants from an uncontrolled wildfire would be less than significant.

PG&E Project Components

Tesla Substation

The proposed modifications at the Tesla Substation would occur within the existing substation fence line, which is free of vegetation and other fuels that could be incidentally ignited during construction. No construction activities are proposed outside of the existing substation footprint or existing roads in its vicinity. There is no wildfire risk from PG&E construction activities within the Tesla Substation due to the absence of any fuels within the area of construction.

PG&E 500 kV Interconnection Lines and 12 kV Distribution Line

As with the LSPGC components, the construction of the PG&E 500 kV interconnection lines and 12 kV distribution line would involve the use of vehicles and equipment on dry terrain, and heat or sparks from construction vehicles and equipment could ignite dry vegetation and cause fire. The Proposed Project would not create any occupiable structures. Like the LSPGC components, the interconnection and distribution alignments traverse flat to gently rolling terrain, where slope would not substantially exacerbate fire spread. However, strong prevailing winds in the Delta region, including periodic Diablo wind events, could contribute to the spread of fire if one were ignited. As discussed in Section 4.20.1, and summarized for LSPGC project components, the modeled wildfire spread rate and flame length were low to moderate for the Proposed Project. These results reflect the relatively low-load fuels and limited slope at the site, even accounting for the potential influence of high winds. However, the Proposed Project construction would increase ignition risk due to the introduction of hot work and equipment on vegetation.

PG&E would implement CM FIRE-1 (Fire Risk Management) and CM BIO-15 (Prohibitions). CM FIRE-1 requires fire risk management procedures, including fire response training and fire suppression equipment on all vehicles; and CM BIO-15 prohibits firearms and open fires at work sites. Implementation of CM FIRE-1 and CM BIO-15 would reduce the potential for fire ignition and spread during the construction of the Proposed Project and, therefore, would reduce the potential for the uncontrolled spread of wildfire. The impact from exacerbating wildfire risks and associated risk of pollutants from uncontrolled wildfire would be less than significant.

Operation and Maintenance

LSPGC Project Components

Operation

As discussed above, the vegetation occurring near the LSPGC Collinsville Substation and 230 kV overhead segment is characterized as low load dry climate grass and non-burnable agriculture, and the terrain is generally flat to gently rolling without steep slopes that would accelerate fire behavior. However, the area is subject to prevailing westerly winds and occasional strong Diablo winds, which could contribute to fire spread if an ignition occurred. Operation of the LSPGC Collinsville Substation and 230 kV transmission line could contribute to potential ignition sources (i.e., battery racks and other flammable materials within substation) and a new electrical line, which could increase the risk of the uncontrolled spread of wildfire.

The LSPGC Collinsville Substation and 230 kV overhead segment would be operated in compliance with all GO 95 requirements, including minimum vegetation and equipment clearances, as well as the vegetation clearance standards outlined in California PRC section 4292 and title 14, section 1254 of the CCR. To meet these requirements, LSPGC would trim or remove flammable vegetation in the area surrounding the Proposed Project facilities, as appropriate for each location. These vegetation management requirements would reduce the risk of vegetation encroaching upon the 230 kV transmission line and potentially igniting a fire. The GO 95 firebreak clearance requirements include a minimum radial clearance of 31 inches for 230 kV conductors and at least 10 feet around electrical transmission or distribution lines on certain types of land (i.e., mountainous, forest-covered, brush-covered, or grass-covered land).

As discussed in Section 4.20.1, approximately 430 feet of the proposed LSPGC 230 kV overhead segment would be within the hazard throw zone of a wind turbine within the Solano 4 Wind Project (refer to Figure 4.20-3). The hazard throw zone for wind turbines is a safety zone where development should be avoided to avoid damage to facilities and subsequent environmental impacts. As the proposed 230 kV transmission line is within the hazard throw zone, there is a reasonably foreseeable potential for a turbine to dislodge and strike the conductor which could create an electrical arc that could potentially ignite a wildfire.

As described in Section 4.20.2, LSPGC is required to prepare and implement a WMP for their service territories and facilities in accordance with SB 901 and Public Utilities Code Section 8386. LSPGC's current 2026-2028 WMP identifies the future Collinsville Substation project; however,

the wildfire risk factors and enhanced mitigation strategies are generally focused on equipment within CPUC HFTDs that were adopted in 2018, and the Proposed Project is not within or near HFTDs. Mitigation strategies in LSPGC's current WMP that would apply to the Collinsville Substation project include integration the facilities into LSPGC's emergency management system; real-time transformer monitoring; live video surveillance via perimeter cameras and fire alarm systems; SCADA-based alarm visibility from the Primary and Backup Transmission Operations Control Centers; and planned expansion of the weather station network and weather monitoring systems (LSPGC 2025). At this time, LSPGC does not have plans to implement additional grid monitoring systems (LSPGC 2025). While the LSPGC project components are not within a CPUC HFTD, they are within and near a very high FHSZs identified by CAL FIRE in 2025 which is not considered in LSPGC's existing WMP (CAL FIRE 2025b). Therefore, LSPGC's existing WMP would not be sufficient to ensure operational wildfire impacts are adequately addressed. As a result, operation of the LSPGC Collinsville Substation and 230 kV overhead segment would increase the risk of wildfire ignition and spread, which would be a significant impact.

MM FIRE-1 requires LSPGC to prepare a project-specific Wildfire Management Plan to minimize operational fire risks associated with transmission lines and electrical equipment within and near very high FHSZs, including the LSPGC Collinsville Substation and 230 kV overhead segment (refer to Section 4.20.12). The project-specific Wildfire Management Plan would define infrastructure hardening and system protection, vegetation management, and inspections to minimize wildfire ignition risk. In lieu of implementing a project-specific Wildfire Management Plan, MM FIRE-1 specifies that equivalent project-specific wildfire mitigation strategies may be incorporated into LSPGC's WMP. With increased hardening, system protection, vegetation management, and inspections, the impact from exacerbating wildfire risks and associated risk of pollutants from uncontrolled wildfire during LSPGC operations would be less than significant with mitigation.

Maintenance and Inspections

The LSPGC Collinsville Substation would be unmanned and would require quarterly inspections. Maintenance and inspection of the proposed LSPGC 230 kV overhead segment and LSPGC Collinsville Substation would require approximately one site visit per year. These activities would not involve any high fire risk activities. Impacts from risk of pollutants from uncontrolled wildfire due to maintenance and inspection of LSPGC Project components would be less than significant.

PG&E Project Components

Tesla Substation

The proposed modifications to PG&E's existing Tesla Substation would not change the footprint of the substation or involve the installation of new equipment outside of the substation fence line that could increase the potential for equipment failure that could ignite a fire. No impact on wildfire ignition or risk would occur.

PG&E 500 kV Interconnection Lines and 12 kV Distribution Line

The PG&E 500 kV interconnection line and 12 kV distribution line would be operated in compliance with all GO 95 requirements, including minimum vegetation and equipment clearances, as well as the vegetation clearance standards outlined in California PRC section 4292 and title 14, section 1254 of the CCR. To meet these requirements, PG&E would trim or remove flammable vegetation in the area surrounding the Proposed Project facilities, as appropriate for each location. These vegetation management requirements would reduce the risk of vegetation encroaching upon the PG&E 500 kV interconnection lines and 12 kV distribution line and potentially igniting a fire. The GO 95 firebreak clearance requirements include a minimum radial clearance of at least 10 feet around electrical transmission or distribution lines on certain types of land (i.e., mountainous, forest-covered, brush-covered, or grass-covered land). Similar to the LSPGC facilities, these PG&E components would operate in generally flat to gently rolling terrain, where slope would not substantially exacerbate fire spread. However, the area is subject to strong westerly winds and occasional Diablo winds that could increase the rate of fire spread if an ignition occurred.

As described in Section 4.20.2 and similar to the LSPGC project components discussed above, PG&E would implement its current 2026-2028 WMP to manage wildfire risk during operation and maintenance to the extent that the defined mitigation strategies apply to the Proposed Project areas and equipment. PG&E's WMP does not identify specific, future facilities associated with the Proposed Project, and none of the PG&E project components are located within CPUC HFTDs (PG&E 2025). While the PG&E project components are not within a CPUC HFTD, they are near (within 1 mile) of a very high FHSZs identified by CAL FIRE in 2025 which is not considered in PG&E's existing WMP (CAL FIRE 2025b). Therefore, PG&E's existing WMP would not be sufficient to ensure operational wildfire impacts are adequately addressed. As a result, operation of the 500 kV interconnection lines and 12 kV distribution line would increase the risk of wildfire ignition and spread, which would be a significant impact.

MM FIRE-1 requires PG&E to prepare a project-specific Wildfire Management Plan to minimize operational fire risks associated with transmission lines and electrical equipment within and near very high FHSZs, the 500 kV interconnection lines and 12 kV distribution line (refer to Section 4.20.12). The project-specific Wildfire Management Plan would define infrastructure hardening and system protection, vegetation management, and inspections to minimize wildfire ignition risk. In lieu of implementing a project-specific Wildfire Management Plan, MM FIRE-1 specifies that equivalent project-specific wildfire mitigation strategies may be incorporated into PG&E's WMP. With increased hardening, system protection, vegetation management, and inspections, the impact from exacerbating wildfire risks and associated risk of pollutants from uncontrolled wildfire during PG&E operations would be less than significant with mitigation.

Impact WF-3: Would the Proposed 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? ***(Less than significant with mitigation)***

Construction

LSPGC Project Components

The Proposed Project involves the installation of infrastructure, including the LSPGC Collinsville Substation and 230 kV overhead segment. The installation of this infrastructure introduces ignition risks that differ from general construction activity because energized conductors, transformers, breakers, and associated substation equipment can arc, overheat, or fail, and overhead conductors can come into contact with vegetation or other objects once installed. These risks are heightened in high wind conditions, which can cause conductor movement or debris contact. Although the terrain is generally flat and fuels are dominated by low-load grasses, the presence of new high-voltage infrastructure increases the baseline potential for fire ignition compared to existing conditions.

As discussed in Impact WF-2, construction of the LSPGC Collinsville Substation and 230 kV overhead segment would involve the use of vehicles and equipment on dry terrain. Heat or sparks from construction vehicles and equipment could ignite dry vegetation and cause a fire. LSPGC would implement APM FIRE-1 (implement a CFPP) to reduce wildfire ignition risk during construction of LSPGC project components. The CFPP would be implemented throughout Proposed Project construction and would include procedures for preventing, responding to, and reporting fire incidents. The CFPP would include fire safety training and restrictions and coordinated procedures with fire officials. Implementation of APM FIRE-1 would minimize the potential for fire ignition during the construction of LSPGC project components, and the associated potential to exacerbate wildfire ignition risk during construction. The impact would be less than significant.

PG&E Project Components

Tesla Substation

As discussed in Impact WF-2, construction at the Tesla Substation would occur entirely within the existing fenced substation yard, which is free of vegetation and already developed for electrical use. The improvements would not involve the installation of new roads, fuel breaks, emergency water sources, or new power lines or utilities outside of the existing footprint. Because no new infrastructure would be installed, and because work would not introduce new ignition sources beyond those already present at the existing substation, construction would not increase wildfire risk. No impact would occur at the Tesla Substation.

PG&E 500 kV Interconnection Lines and 12 kV Distribution Line

Construction of the PG&E 500 kV interconnection lines and PG&E 12 kV distribution line would involve the use of vehicles and equipment on dry terrain, and heat or sparks from construction vehicles and equipment could ignite dry vegetation and cause a fire. If a fire ignited during

construction activities, it could spread due to the environmental conditions of the area. PG&E would implement CM FIRE-1 (Fire Risk Management) and CM BIO-15 (Prohibitions) to minimize fire risk. CM FIRE-1 requires standard fire risk management procedures, including fire response training; and CM BIO-15 prohibits firearms and open fires at work sites. Implementation of CM FIRE-1 and CM BIO-15 would reduce the potential for fire ignition during the construction of the PG&E project components and, therefore, would reduce the potential to exacerbate wildfire ignition risk during construction and the impact would be less than significant.

Operation and Maintenance

LSPGC Project Components

Operation

As discussed in Impact WF-2, operation of the LSPGC Collinsville Substation and 230 kV overhead segment that would be installed under the Proposed Project would contribute to potential ignition sources (i.e., battery racks and other flammable materials within substation and a new electrical line). The LSPGC Collinsville Substation and 230 kV overhead segment would be operated in compliance with all GO 95 requirements, including minimum vegetation and equipment clearances, as well as the vegetation clearance standards outlined in California PRC section 4292 and title 14, section 1254 of the CCR. To meet these requirements, LSPGC would trim or remove flammable vegetation in the area surrounding the Proposed Project facilities, as appropriate for each location. These vegetation management requirements would reduce the risk of vegetation encroaching upon the 230 kV transmission line and potentially igniting a fire, and thereby minimize the degree to which the Proposed Project exacerbates wildfire risk.

As discussed in Impact WF-2, the proposed LSPGC Collinsville Substation and 230 kV overhead segment are not within a CPUC HFTD but they are within and near a very high FHSZ. The LSPGC 230 kV overhead segment is also within a hazard throw zone for a wind turbine within the Solano 4 Wind Project, and there is a reasonably foreseeable potential for a turbine to dislodge and strike the conductor which could create an electrical arc that could potentially ignite a wildfire. As discussed previously, LSPGC's existing WMP would not be sufficient to ensure operational wildfire impacts are adequately addressed. As a result, operation of the LSPGC Collinsville Substation and 230 kV overhead segment would increase the risk of wildfire ignition and spread, which would be a significant impact.

MM FIRE-1 requires LSPGC to prepare a project-specific Wildfire Management Plan to minimize operational fire risks associated with transmission lines and electrical equipment within and near very high FHSZs, including the LSPGC Collinsville Substation and 230 kV overhead segment (refer to Section 4.20.12). The project-specific Wildfire Management Plan would define infrastructure hardening and system protection, vegetation management, and inspections to minimize wildfire ignition risk. In lieu of implementing a project-specific Wildfire Management Plan, MM FIRE-1 specifies that equivalent project-specific wildfire mitigation strategies may be incorporated into LSPGC's WMP. With increased hardening, system protection, vegetation

management, and inspections, the impact from exacerbating wildfire risks would be less than significant with mitigation.

Maintenance and Inspection Activities

The LSPGC Collinsville Substation would be unmanned and would require quarterly inspections. Maintenance of the proposed LSPGC 230 kV overhead segment and Collinsville Substation would require approximately one site visit per year. These activities would not involve any high fire risk activities. Maintenance of LSPGC Project component infrastructure would not exacerbate fire risks and the impact would be less than significant.

PG&E Project Components

Tesla Substation

The proposed modifications to PG&E's existing Tesla Substation would be housed within the existing substation. The modification would not change the footprint of the substation or involve the installation of new equipment outside of the substation fence line. The equipment housed within the existing substation would not exacerbate wildfire risk as there is no flammable vegetation within the substation. No impact would occur.

PG&E 500 kV Interconnection Lines and 12 kV Distribution Lines

As discussed in Impact WF-2, the PG&E 500 kV interconnection lines and PG&E 12 kV distribution line would be operated in compliance with all GO 95 requirements, including minimum vegetation and equipment clearances, as well as the vegetation clearance standards outlined in California PRC section 4292 and title 14, section 1254 of the CCR. To meet these requirements, PG&E would trim or remove flammable vegetation in the area surrounding the Proposed Project infrastructure, as appropriate for each location. These vegetation management requirements would reduce the risk of vegetation encroaching upon the PG&E 500 kV interconnection lines and PG&E 12 kV distribution line and potentially igniting a fire. The GO 95 firebreak clearance requirements include a minimum radial clearance of at least 10 feet around electrical transmission or distribution lines on certain types of land (i.e., mountainous, forest-covered, brush-covered, or grass-covered land). Similar to the LSPGC project components, PG&E's existing WMP would not be sufficient to ensure operational wildfire impacts are adequately addressed. The resulting impact from new electrical lines in a high FHSZ would be significant.

MM FIRE-1 requires PG&E to prepare a project-specific Wildfire Management Plan to minimize operational fire risks associated with transmission lines and electrical equipment within and near very high FHSZs, including the PG&E 500 kV interconnection lines and PG&E 12 kV distribution line (refer to Section 4.20.12). The project-specific Wildfire Management Plan would define infrastructure hardening and system protection, vegetation management, and inspections and sensors to minimize wildfire ignition risk. In lieu of implementing a project-specific Wildfire Management Plan, MM FIRE-1 specifies that equivalent project-specific wildfire mitigation strategies may be incorporated into PG&E's WMP. With increased hardening, system protection,

vegetation management, and detection, the impact from exacerbating wildfire risks during PG&E operations would be less than significant with mitigation.

Impact WF-4: Would the Proposed 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? ***(Less than significant)***

Construction

LSPGC Project Components

The LSPGC Collinsville Substation site and LSPGC 230 kV overhead segment are located on gently sloping terrain and do not contain steep slopes. There are no residents or structures downslope of the Proposed Project area. Construction of the Project components would not alter drainage patterns in a way that would expose people or structures to flooding or instability risks. While construction of the LSPGC 230 kV overhead segment and LSPGC Collinsville Substation would involve the use of vehicles and equipment on dry terrain, LSPGC would implement APM FIRE-1, which would reduce the potential for a fire to be ignited or spread during construction.

The LSPGC project components would not be constructed upslope of areas where people reside or structures are located, and LSPGC would implement APM FIRE-1 to prevent and control any fire that occurs during construction. Construction of the LSPGC project components would therefore 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 and the impact would be less than significant.

PG&E Project Components

Tesla Substation

As discussed in Impacts WF-2 and WF-3, the proposed modifications at the Tesla Substation would occur within the existing substation fence line. All construction activities at the Tesla Substation would occur within the graveled substation where there is no risk of wildfire ignition due to lack of vegetation. Construction at the Tesla Substation would not expose people or structures to any significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes; no impact would occur.

PG&E 500 kV Interconnection Lines and 12 kV Distribution Line

The PG&E 500 kV interconnection lines and 12 kV distribution line are located on low to moderately sloping terrain; no steep slopes occur in the area and there are no residents or structures downslope of the PG&E 500 kV interconnection lines or PG&E 12 kV distribution line. Construction of the Project components would not alter drainage patterns in a way that would expose people or structures to flooding or instability risks. Construction of the PG&E 500 kV interconnection lines and 12 kV distribution line would involve the use of vehicles and equipment on dry terrain, and heat or sparks from construction vehicles and equipment could ignite dry vegetation and cause a fire.

As discussed for Impacts WF-2 and WF-3, PG&E would implement CM FIRE-1 (Fire Risk Management) and CM BIO-15 (Prohibitions) to minimize fire risk. CM FIRE-1 requires standard fire risk management procedures, including fire response training; CM BIO-15 prohibits firearms and open fires at work sites. Because there are no steep slopes in the area of the PG&E 500 kV interconnection lines and there are no residents or structures downslope of the structures, and implementation of CM FIRE-1 and CM BIO-15 would reduce the potential for fire ignition during the construction of the PG&E project components, construction of the PG&E project components would not expose people or structures to any significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes and the impact would be less than significant.

Operation and Maintenance

LSPGC Project Components

The LSPGC Collinsville Substation site and LSPGC 230 kV overhead segment would be located on gently sloping terrain which does not contain steep slopes. There are no residents or structures downslope of the Proposed Project area. While the LSPGC Collinsville Substation and LSPGC 230 kV overhead segment would introduce electrical equipment that would increase wildfire ignition risk in the area, due to the absence of steep slopes or any downslope structures or residents, and change in drainage, operation and maintenance of the LSPGC Collinsville Substation and LSPGC 230 kV overhead segment would not expose people or structures to significant risks of downstream flooding and landslides due to runoff, post-fire slope instability, or drainage changes, and the impact would be less than significant.

PG&E Project Components

Tesla Substation

The proposed modifications to PG&E's existing Tesla Substation would be located within the flat substation pad. The substation modifications would not involve changes to the landscape or drainage patterns that could expose people or structures to substantial risks of downslope or downstream flooding or landslides. No impact would occur.

PG&E 500 kV Interconnection Lines and 12 kV Distribution Line

The PG&E 500 kV interconnection lines and PG&E 12 kV distribution line would be located on gently sloping terrain and do not contain steep slopes. There are no residents or structures downslope of the Proposed Project area. While the PG&E 500 kV interconnection lines and PG&E 12 kV distribution line would introduce new electrical lines that would increase wildfire ignition risk in the area, due to the absence of steep slopes or any downslope structures or residents, or change in drainage patterns, operation and maintenance of the PG&E 500 kV interconnection lines and 12 kV distribution line would not expose people or structures to significant risks of downstream flooding and landslides due to runoff, post-fire slope instability, or drainage changes, and the impact would be less than significant.

4.20.5 Impact Analysis – Cumulative

The geographic extent for the analysis of cumulative impacts related to wildfire includes Solano County, Sacramento County, Contra Costa County, Alameda County, and City of Pittsburg. The cumulative impact analysis is based on fire history, fire regime, vegetation, topography, and potential wildfire behavior. A wide variety of past, present, and reasonably foreseeable development projects contribute or would contribute to the cumulative conditions for fire and fuels management within the cumulative analysis study area. The types of projects that could combine to result in adverse cumulative impact to wildfire include residential, commercial, infrastructure, and energy transmission projects. All identified cumulative projects (listed in Table 4.0-1 and shown in Figure 4.0-1) would contribute to cumulative wildfire impacts. This analysis considers whether the Proposed Project's cumulative impact is significant, and whether the effects of the Proposed Project are cumulatively considerable. A significant cumulative impact would result if the combined impacts of the Proposed Project and identified cumulative projects were significant when considered together, even if not independently significant. "Cumulatively considerable" means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects (CCR, section 15064).

The Proposed Project components north of the Delta, including the proposed LSPGC Collinsville Substation, LSPGC 230 kV overhead segment, LSPGC 230 kV submarine segment (terrestrial portion), PG&E 500 kV interconnection lines, and PG&E 12 kV distribution line, are located in or near a very high FHSZ. The existing PG&E Tesla Substation is located in an SRA. The cumulative impact analysis discussion is focused on the Proposed Project components that are in or near very high FHSZs in LRAs and the minor modification to the existing Tesla Substation in an SRA. The portion of the proposed LSPGC 230 kV submarine segment within the Delta, the LSPGC 230 kV underground segment, LSPGC telecommunication lines, PG&E Pittsburg Substation, and PG&E transposition structures would not contribute to cumulative impacts on wildfire as defined in this section, as they do not occur in or near an SRA or very high FHSZ.

Numerous past and present projects within the cumulative analysis study area have resulted in changes to the surrounding area that increased the level of human influence adjacent to wildlands. Regional highways (including SR 12 and SR 4) convey heavy volumes of traffic through wildlands in the region, and residential and industrial development and growth of incorporated cities have increased fire danger by introducing human activities to wildlands along the wildland-urban interface. Numerous construction projects of all types have resulted in increased ignition potential through use of heavy machinery and equipment for construction in undeveloped areas.

Emergency Evacuation and Emergency Response

None of the Proposed Project components are in proximity to a designated emergency evacuation route as discussed in Impact WF-1; therefore, the Proposed Project would not contribute to cumulative impacts on emergency evacuation. The Proposed Project would result in temporary lane closures along Stratton Lane in the vicinity of the LSPGC Collinsville

Substation, as well as handhole locations in the City of Pittsburg along Marina Boulevard, Herb White Way, and Halsey Court where the telecommunication interconnection lines would be located. Review of the cumulative projects identified for this analysis indicates that no other projects would require construction on Stratton Lane or the local roads serving the Proposed Project, and the only named cumulative project (the Humboldt-Collinsville 500 kV Line) is not in proximity to these roadways. Therefore, cumulative construction would not overlap in a manner that would impede emergency access to or from the Proposed Project site.

None of the cumulative projects would affect emergency access on Stratton Lane or other roads in proximity to the Proposed Project such that a cumulative impact on emergency response would occur. Therefore, the Proposed Project in combination with cumulative projects would not have a significant cumulative impact on emergency response or evacuation.

Exacerbate Wildfire Risks and Exposure to Increased Pollutant Concentrations

Both the Humboldt-Collinsville 500 kV Line and the Proposed Project would introduce new electrical infrastructure to areas in or near very high FHSZs and SRAs. While an application for the Humboldt-Collinsville 500 kV Line has not been filed, development and operation of the Humboldt-Collinsville 500 kV Line is assumed to be reasonably foreseeable in the same areas as the Proposed Project due to the interconnection at the LSPGC Collinsville Substation. Operation of both the Proposed Project and Humboldt-Collinsville 500 kV Line introduce electrical lines to the area and have the potential to ignite wildfires. Although the terrain in this portion of the Delta is flat to gently rolling and does not contain steep slopes that would accelerate fire spread, the area is subject to strong prevailing westerly winds and occasional hot, dry Diablo winds. These wind conditions could exacerbate fire growth and smoke dispersion if an ignition were to occur. Since both projects would exacerbate wildfire risk and associated exposure to increased pollutant concentrations in the event of a wildfire, the cumulative impact would be significant. As discussed in Impact WF-2, the Proposed Project impact from exposure to increased pollutant concentrations as a result of wildfire would be significant before mitigation; therefore, the incremental effects of the Proposed Project would be significant when viewed in connection with the effects of probable future projects. For these reasons, the Proposed Project would have a cumulatively considerable impact prior to mitigation.

MM FIRE-1 requires LSPGC and PG&E to prepare project-specific Wildfire Management Plans to minimize operational fire risks associated with transmission lines and electrical equipment within and near very high FHSZs and SRAs (refer to Section 4.20.12). The Wildfire Management Plans would define structure hardening and system protection, vegetation management, and inspections to reduce the risk of wildfire ignition or spread. In lieu of implementing a project-specific Wildfire Management Plan, MM FIRE-1 specifies that equivalent project-specific wildfire mitigation strategies may be incorporated into LSPGC's and PG&E's WMPs. With implementation of MM FIRE-1, the Proposed Project's incremental contribution to the cumulative impact from exacerbated fire risk and exposure to increased pollutant concentrations, viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects, would be less than cumulatively considerable.

Installation of Infrastructure that Exacerbates Fire Risk

Both the Humboldt-Collinsville 500 kV Line and the Proposed Project would install, operate, and maintain new electrical infrastructure to areas in or near very high FHSZs and SRAs. Operation of both the Proposed Project and Humboldt-Collinsville 500 kV Line would introduce electrical lines to the Proposed Project area and have the potential to ignite wildfires, which would exacerbate wildfire risks. Considered together, these projects would result in a significant cumulative impact. As discussed in Impact WF-2, the Proposed Project impact from exposure to increased pollutant concentrations as a result of wildfire would be significant before mitigation; therefore, the Proposed Project would be significant when viewed in connection with the effects of probable future projects. For these reasons, the Proposed Project would have a cumulatively considerable impact prior to mitigation.

MM FIRE-1 requires LSPGC and PG&E to prepare a project-specific Wildfire Management Plans to minimize operational fire risks associated with transmission lines and electrical equipment within and near very high FHSZs and SRAs (refer to Section 4.20.12). The Wildfire Management Plans would define structure hardening and system protection, vegetation management, and inspections to reduce the risk of wildfire ignition or spread. In lieu of implementing a project-specific Wildfire Management Plan, MM FIRE-1 specifies that equivalent project-specific wildfire mitigation strategies may be incorporated into LSPGC's and PG&E's WMPs. With implementation of MM FIRE-1, the Proposed Project's incremental contribution to the cumulative impact from exacerbated fire risk, viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects, would be less than cumulatively considerable.

Downslope or Downstream Landslides or Flooding Due to Post-Fire Runoff Instability

A wide variety of past, present, and reasonably foreseeable development projects contribute to cumulative fire conditions in the region; however, among the cumulative projects considered in this analysis, the only cumulative project located in or near a very high FHSZ or an SRA in proximity to the Proposed Project is the Humboldt-Collinsville 500 kV Line. The area of the Proposed Project and Humboldt-Collinsville 500 kV Line would be gently sloped to moderately hilly as no steep slopes occur in the vicinity. There are no residences or structures downslope of the Proposed Project where it is in proximity to the Humboldt-Collinsville 500 kV Line; therefore, the Proposed Project's cumulative impact from landslides or flooding due to post-fire runoff instability would be less than significant, and the effects of the Proposed Project are not cumulatively considerable.

4.20.6 Alternative 1: Collinsville Substation North of Talbert Lane

Environmental Setting – Alternative 1

Alternative 1 involves relocating the proposed LSPGC Collinsville Substation to a different site, approximately 1.2 miles north of the Proposed Project substation site. Alternative 1 would also include an approximately 500-foot segment of PG&E 500 kV interconnection lines, approximately 700-foot segment of 12 kV distribution line, and an approximately 2-mile-long segment of LSPGC 230 kV overhead line. Alternative 1 would not involve changes to any of the

other Proposed Project component, which would have the same impacts as described throughout this Draft EIR for the Proposed Project or the other alternatives if selected in combination with Alternative 1.

The Alternative 1 LSPGC Collinsville Substation site, PG&E 500kV interconnection lines, and PG&E 12 kV distribution line would be more than 1 mile from a very high FHSZ in an LRA; these Proposed Project components would not be in or near a very high FHSZ in an LRA or any portion of an SRA. A portion of the LSPGC 230 kV overhead segment would be within a very high FHSZ in an LRA (refer to Figure 4.20-4). No portion of Alternative 1 would be within an SRA. The topography and vegetation conditions within and surrounding the Alternative 1 LSPGC 230 kV overhead segment alignment would be the same as under the Proposed Project described in Section 4.20.1. The Alternative 1 components would not be constructed on or near any identified emergency evacuation routes. The nearest emergency evacuation routes to Alternative 1 would be the same as those described in Section 4.20.1. None of the Alternative 1 components would be located within a turbine hazard throw zone.

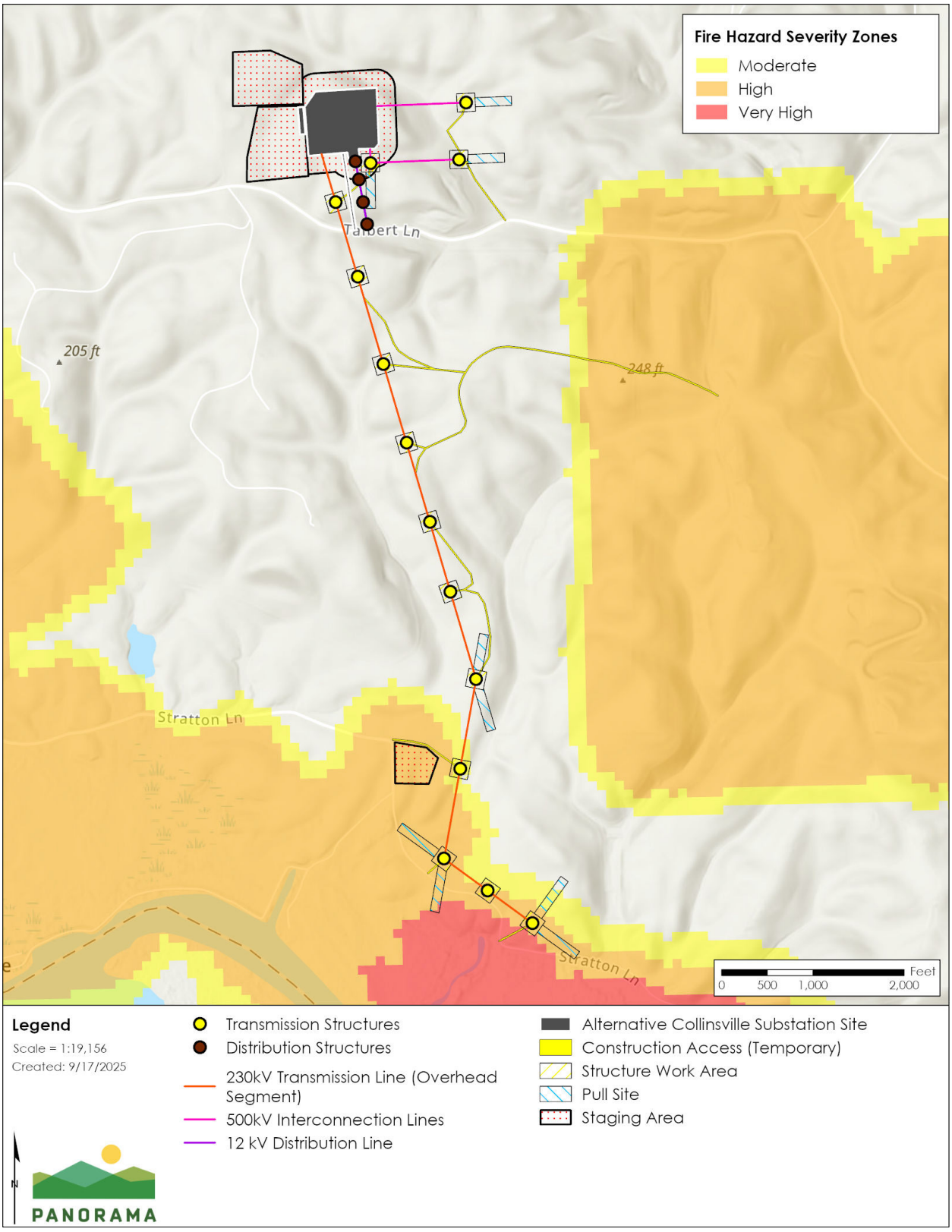
Impact Analysis – Alternative 1

The analysis below addresses the Alternative 1 LSPGC 230 kV overhead segment only, as all other Alternative 1 components would not be located in or near a very high FHSZ. Construction and operation of the Alternative 1 LSPGC Collinsville Substation, PG&E 500 kV interconnection lines, and PG&E 12 kV distribution lines would therefore not have a significant wildfire impact as defined in Section 4.20.3. Therefore, MM FIRE-1 (refer to Section 4.20.12) would not apply to Alternative 1 LSPGC Collinsville Substation, PG&E 500 kV interconnection lines, and PG&E 12 kV distribution lines.

Impact WF-1: Would Alternative 1 substantially impair an adopted emergency response plan or emergency evacuation plan? *(Less than significant)*

The Alternative 1, LSPGC 230 kV overhead segment would not be constructed on or near any identified emergency evacuation routes. As with the Proposed Project, APM TRA-2 (Implement Road and Lane Closure Plan) would be implemented to minimize impacts on emergency response during construction. APM TRA-2 would minimize impacts on emergency response as response providers would be able to use alternative routes to provide emergency response during road or lane closures for the LSPGC 230 kV overhead segment, and emergency response vehicles would be permitted access. In addition, any impact on access would be localized to the individual structure work area. With implementation of APM TRA-2, the impact on emergency response services during Alternative 1 construction would be less than significant.

Figure 4.20-4 Fire Hazard Severity Zones in the Vicinity of Alternative 1



Source: (CAL FIRE 2024b; 2025b)

Operation of Alternative 1 LSPGC 230 kV overhead segment would not result in lane closures. Operation and maintenance would not alter any public roadways or access for emergency services. Thus, operation and maintenance of the Alternative 1 LSPGC 230 kV overhead segment would not impede emergency evacuation or emergency response; the impact would be less than significant.

Alternative 1 would result in the same wildfire impacts as the Proposed Project under Impact WF-1.

Impact WF-2: Would Alternative 1 exacerbate wildfire risks by exposing project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire due to slope, prevailing winds, and other factors? ***(Less than significant)***

Impact WF-3: Would Alternative 1 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? ***(Less than significant with mitigation)***

The Alternative 1 LSPGC 230 kV overhead segment would introduce a new high-voltage electrical line to an area mapped as a high FHSZ in an LRA. The terrain along the Alternative 1 alignment is flat to gently rolling, similar to the Proposed Project, and therefore slope would not contribute to increased wildfire spread. The area experiences the same prevailing westerly winds and occasional hot, dry Diablo winds as the Proposed Project, which could influence fire behavior but are not unique to this alternative. As with the Proposed Project, LSPGC would implement APM FIRE-1 (implement a CFPP), which would reduce the potential for exacerbated wildfire risk during construction to a less-than-significant level.

During operation, the Alternative 1 LSPGC 230 kV overhead segment would increase wildfire ignition risk, which would exacerbate fire risk and associated increased risk of pollutants, resulting in a significant impact. MM FIRE-1 requires LSPGC to prepare a project-specific Wildfire Management Plan, or alternative incorporate equivalent project-specific wildfire mitigation strategies into LSPGC's WMP, to minimize operational fire risks associated with transmission lines and electrical equipment within and near very high FHSZs and SRAs, which would include the LSPGC 230 kV overhead segment under Alternative 1 (refer to Section 4.20.12). The Alternative 1 impact from exacerbated wildfire risk and associated increased risk of pollutants would be less than significant with mitigation.

Because the slope and wind conditions are similar to those under the Proposed Project, Alternative 1 would result in the same wildfire impacts as the Proposed Project under Impacts WF-2 and WF-3.

Impact WF-4: Would Alternative 1 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? ***(Less than significant)***

The Alternative 1 LSPGC 230 kV overhead segment would be located in a moderately hilly area that does not contain steep slopes. No people or structures are located downslope of the

Alternative 1 LSPGC 230 kV overhead segment. Construction of the Alternative 1 components would not result in drainage changes that would expose people or structures to significant risks. As a result, Alternative 1 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, and the impact would be less than significant.

Alternative 1 would result in the same wildfire impacts as the Proposed Project under Impact WF-4.

4.20.7 Alternative 2: Collinsville Substation East of Wind Energy Substations

Environmental Setting – Alternative 2

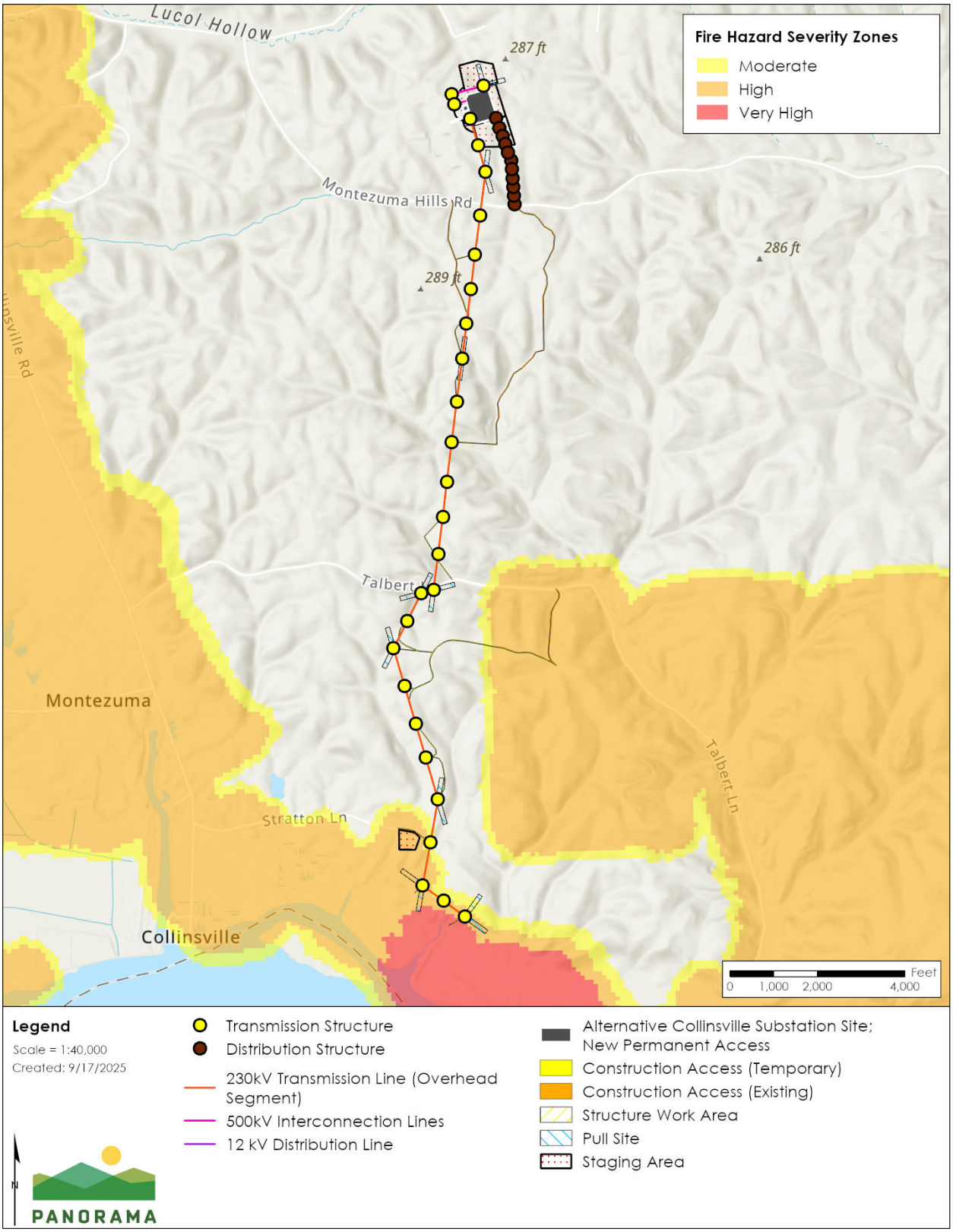
Alternative 2 involves relocating the proposed LSPGC Collinsville Substation to a different site, approximately 3.0 miles north of the location proposed under the Proposed Project. Alternative 2 would also include an approximately 1,200-foot-long segment of PG&E 500 kV interconnection lines and a four-mile-long segment of LSPGC 230 kV overhead line, as well as an approximately 0.3-mile-long PG&E 12 kV distribution line. Alternative 2 would not involve changes to any of the other Proposed Project component, which would have the same impacts as described throughout this Draft EIR for the Proposed Project or the other alternatives if selected in combination with Alternative 2.

The Alternative 2 LSPGC Collinsville Substation site, PG&E 500kV interconnection lines, and PG&E 12 kV distribution line would not be in or near a very high FHSZ in an LRA or any portion of an SRA. The nearest very high FHSZ would be located approximately 3.5 miles south of the Alternative 2 substation site. A portion of the Alternative 2 LSPGC 230 kV overhead segment would be within a very high FHSZ in an LRA. No portion of Alternative 2 would be within an SRA. The topography and vegetation surrounding the Alternative 2 LSPGC 230 kV overhead segment in and near the very high FHSZ would be the same as the Proposed Project, described in Section 4.20.1 and shown on Figure 4.20-5. Alternative 2 would not be constructed on or near any identified emergency evacuation routes. None of the Alternative 2 components would be located within a turbine hazard throw zone.

Impact Analysis – Alternative 2

The analysis below addresses the Alternative 2 LSPGC 230 kV overhead segment only as all other Alternative 2 components would not be located in or near a very high FHSZ or an SRA. Construction and operation of the Alternative 2 LSPGC Collinsville Substation, PG&E 500 kV interconnection lines, and 12 kV distribution lines would therefore not have a significant wildfire impact. Therefore, MM FIRE-1 (refer to Section 4.20.12) would not apply to the Alternative 2 LSPGC Collinsville Substation, PG&E 500 kV interconnection lines, and PG&E 12 kV distribution lines.

Figure 4.20-5 Fire Hazard Severity Zones in the Vicinity of Alternative 2



Source: (CAL FIRE 2024b; 2025b)

Impact WF-1: Would Alternative 2 substantially impair an adopted emergency response plan or emergency evacuation plan? ***(Less than significant)***

The Alternative 2, LSPGC 230 kV overhead segment would not be constructed on or near any identified emergency evacuation routes. As with the Proposed Project, APM TRA-2 (implement Road and Lane Closure Plan) would be implemented to minimize impacts on emergency response during construction by providing emergency response providers with notice of the timing, location, and duration of construction activities, and maintaining emergency vehicle access at all times. APM TRA-2 would minimize impacts on emergency response as response providers would be able to use alternative routes to provide emergency response during road or lane closures for the LSPGC 230 kV overhead segment, and emergency response vehicles would be permitted access. In addition, any impact on access would be localized to the individual structure work area. With implementation of APM TRA-2, the impact on emergency response services during Alternative 2 construction would be less than significant.

Operation of Alternative 2 LSPGC 230 kV overhead segment would not result in lane closures. Operation and maintenance would not alter any public roadways or access for emergency services. Thus, operation and maintenance of the Alternative 2 LSPGC 230 kV overhead segment would not impede emergency evacuation or emergency response, and the impact would be less than significant.

Alternative 2 would result in the same wildfire impacts as the Proposed Project under Impact WF-1.

Impact WF-2: Would Alternative 2 exacerbate wildfire risks by exposing project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire due to slope, prevailing winds, and other factors? ***(Less than significant)***

Impact WF-3: Would Alternative 2 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? ***(Less than significant with mitigation)***

The Alternative 2 LSPGC 230 kV overhead segment would introduce a new high-voltage electrical line to an area mapped as a high FHSZ in an LRA. The terrain along the Alternative 2 alignment is flat to gently rolling, similar to the Proposed Project, and therefore slope would not contribute to increased wildfire spread. The area experiences the same prevailing westerly winds and occasional hot, dry Diablo winds as the Proposed Project, which could influence fire behavior but are not unique to this alternative. As with the Proposed Project, LSPGC would implement APM FIRE-1 (implement a CFPP), which would reduce the potential for exacerbated wildfire risk during construction to a less-than-significant level.

Similar to the Proposed Project, operation of the Alternative 2 LSPGC 230 kV overhead segment would increase wildfire ignition risk and associated increased risk of pollutants, resulting in a significant impact. MM FIRE-1 requires LSPGC to prepare a project-specific Wildfire Management Plan, or alternative incorporate equivalent project-specific wildfire mitigation strategies into LSPGC's WMP, to minimize operational fire risks associated with transmission

lines and electrical equipment within and near very high FHSZs and SRAs, which would include the LSPGC 230 kV overhead segment under Alternative 2 (refer to Section 4.20.12). The Alternative 2 impact from exacerbated wildfire risk would be less than significant with mitigation.

Because the slope and wind conditions are similar to those under the Proposed Project, Alternative 2 would result in the same wildfire impacts as the Proposed Project under Impacts WF-2 and WF-3.

Impact WF-4: Would Alternative 2 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? ***(Less than significant)***

The Alternative 2 LSPGC 230 kV overhead segment would be located in a moderately hilly area that does not contain steep slopes. No people or structures are located downslope of the Alternative 2 LSPGC 230 kV overhead segment. Construction of the Alternative 2 components would not result in drainage changes that would expose people or structures to significant risks. As a result, Alternative 2 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 and the impact would be less than significant.

Alternative 2 would result in the same wildfire impacts as the Proposed Project under Impacts WF-4.

4.20.8 Alternative 3: 500 kV Interconnection Lines on Entirely TSPs

Environmental Setting – Alternative 3

Alternative 3 involves constructing the PG&E 500 kV interconnection lines on entirely TSPs, instead of the combination of LSTs and three-pole TSPs under the Proposed Project. The 500 kV interconnection lines would be in the same general alignment as the Proposed Project PG&E 500 kV interconnection lines. Alternative 3 would not involve changes to any of the other Proposed Project component, which would have the same impacts as described throughout this Draft EIR for the Proposed Project or the other alternatives if selected in combination with Alternative 3.

Impact Analysis – Alternative 3

Impact WF-1: Would Alternative 3 substantially impair an adopted emergency response plan or emergency evacuation plan? ***(Less than significant)***

Under Alternative 3, the PG&E 500 kV interconnection lines would not be constructed on or near any identified emergency evacuation routes. As with the Proposed Project, PG&E would implement CM TRA-2 (coordinate road closures with emergency service providers), which requires coordination with emergency service providers at least 24 hours prior to implementing any road or lane closure. The Alternative 3 impacts under Impact WF-1 related to impairment of an emergency response or evacuation plan would be the same as the Proposed Project and would be less than significant.

Alternative 3 would result in the same wildfire impacts as the Proposed Project under Impact WF-1.

Impact WF-2: Would Alternative 3 exacerbate wildfire risks by exposing project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire due to slope, prevailing winds, and other factors? ***(Less than significant)***

Impact WF-3: Would Alternative 3 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? ***(Less than significant with mitigation)***

Similar to the Proposed Project, Alternative 3 construction would involve use of equipment in areas that contain vegetation, which would increase fire risk. The terrain along the Alternative 3 alignment is flat to gently rolling, similar to the Proposed Project, and therefore slope would not contribute to increased wildfire spread. The area experiences the same prevailing westerly winds and occasional hot, dry Diablo winds as the Proposed Project, which could influence fire behavior but are not unique to this alternative. As with the Proposed Project, PG&E would implement CM FIRE-1 (Fire Risk Management), which requires fire management procedures to reduce wildfire ignition risk during construction. The Alternative 3 construction impacts associated with the exacerbation of wildfire risk and associated risk of increased pollutants would be less than significant.

The Alternative 3 PG&E 500kV interconnection lines would introduce new electrical components, which could ignite a wildfire, to a high FHSZ. The use of TSPs instead of a combination of LSTs and three-pole TSPs would not substantially change wildfire ignition potential because the primary ignition risks are associated with the energized conductors. However, TSPs generally have a smaller footprint and fewer structural members, which may reduce opportunities for debris accumulation or avian contact compared to LSTs. As a result, wildfire ignition risk under Alternative 3 would be comparable to, or slightly less than, the Proposed Project, but the installation of new high-voltage lines would continue to exacerbate wildfire risk overall. Similar to the Proposed Project 500 kV interconnection lines, the Alternative 3 interconnection lines would exacerbate wildfire risk and associated risk of increased pollutant concentrations, which would be a significant impact. MM FIRE-1 requires PG&E to implement wildfire hardening and system protection, enhanced vegetation management, and inspections to minimize potential for wildfires via a project-specific Wildfire management Plan or incorporating equivalent mitigation strategies in PG&E's WMP (refer to Section 4.20.12). The Alternative 3 impacts under Impacts WF-2 and WF-3 would be less than significant with mitigation.

Alternative 3 would result in wildfire impacts that are comparable to, or slightly less than, those of the Proposed Project under Impacts WF-2 and WF-3 but would not avoid the significant impacts identified for the Proposed Project.

Impact WF-4: Would Alternative 3 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? ***(Less than significant)***

Similar to the Proposed Project there are no structures or people downslope of Alternative 3, there are no steep slopes in the Alternative 3 area, and construction of Alternative 3 components would not result in drainage changes that would expose people or structures to significant risks. As with the Proposed Project PG&E 500 kV interconnection lines, Alternative 3 would not result in significant risks to people or structures associated with downslope flooding or landslides as a result of runoff, post-fire slope instability, or drainage changes. The Alternative 3 impact under Impact WF-4 would be less than significant.

Alternative 3 would result in the same wildfire impacts as the Proposed Project under Impact WF-4.

4.20.9 Alternative 4: 230 kV Overhead Segment Alternative Route

Environmental Setting – Alternative 4

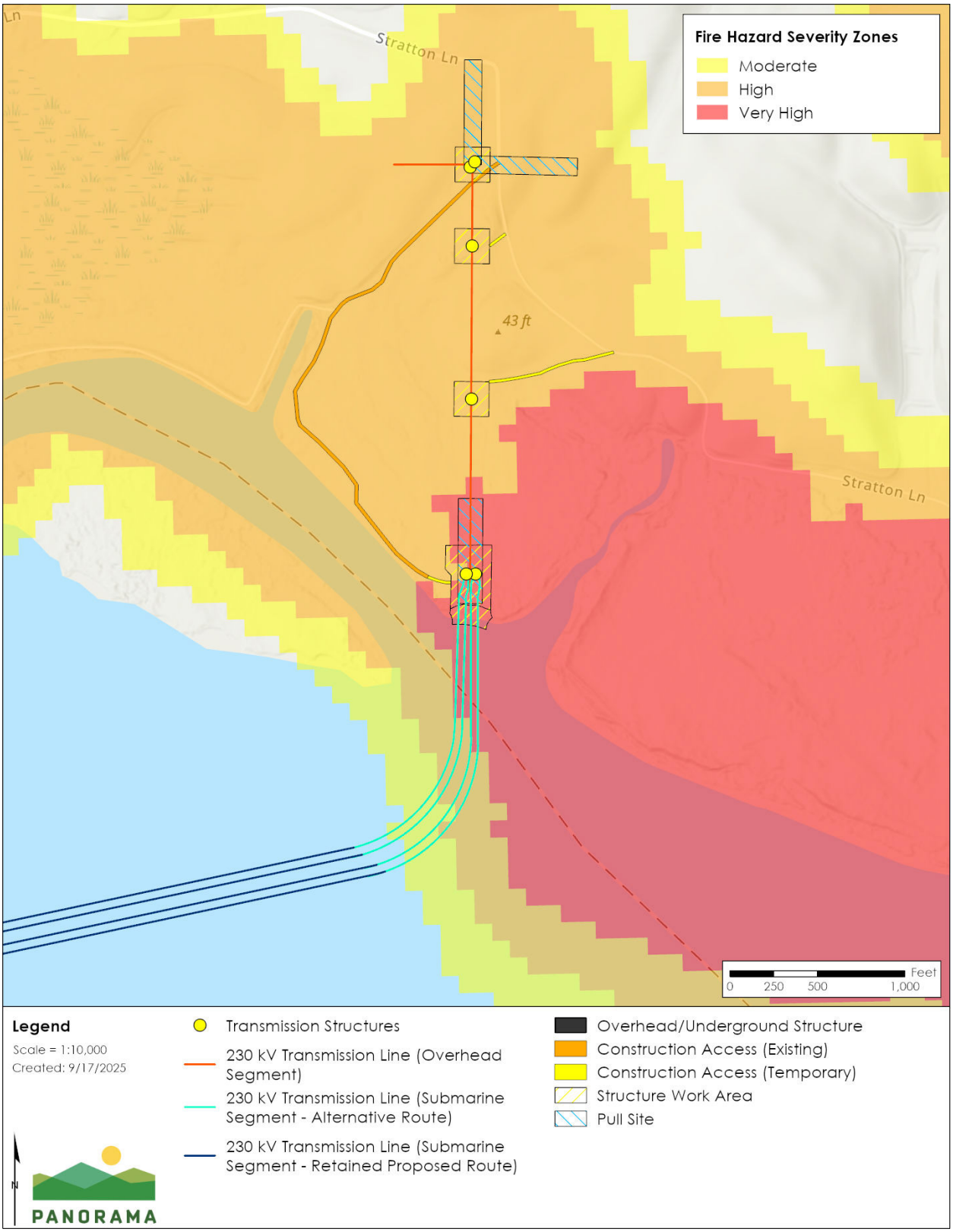
Alternative 4 also relocates a portion of the LSPGC 230 kV submarine segment. Alternative 4 involves relocation of a short segment of the LSPGC 230 kV overhead segment between the proposed LSPGC Collinsville Substation and the Delta, west of the proposed LSPGC 230 kV overhead segment route. Additionally, the northern end of the LSPGC 230 kV submarine segment would be rerouted to meet up with the southern end of the Alternative 4 230 kV submarine segment. Alternative 4 would not involve changes to any of the other Proposed Project component, which would have the same impacts as described throughout this Draft EIR for the Proposed Project or the other alternatives if selected in combination with Alternative 4.

The Alternative 4 LSPGC 230 kV overhead segment alignment and submarine segment transition structure would be within a high and very high FHSZ in an LRA (refer to Figure 4.20-6) No portion of Alternative 4 would be within an SRA. The portion of the submarine segment within the Delta would have no fire risk. The Alternative 4 LSPGC 230 kV overhead segment would not be within a wind turbine hazard throw zone.

Impact Analysis – Alternative 4

The analysis below only addresses the terrestrial portion of the Alternative 4 project components. There would be no wildfire risk associated with the submarine segment within the Delta.

Figure 4.20-6 Fire Hazard Severity Zones in the Vicinity of Alternative 4



Source: (CAL FIRE 2024b; 2025b)

Impact WF-1: Would Alternative 4 substantially impair an adopted emergency response plan or emergency evacuation plan? ***(Less than significant)***

Under Alternative 4, the LSPGC 230 kV overhead and submarine segment would not be constructed on or near any identified emergency evacuation routes. The Alternative 4 LSPGC 230 kV overhead segment and submarine segment would use existing unpaved and temporary access roads would not require construction across any public roadways; therefore, no road or lane closures would be needed. If any temporary traffic control were required, LSPGC would implement APM TRA-2 (Implement Road and Lane Closure Plan), which requires coordination with emergency service providers and maintenance of emergency access at all times. The Alternative 4 alignment would not affect access to any infrastructure or interfere with emergency response. With the absence of road closures, Alternative 4 would not affect emergency access and would have no impact on emergency response or evacuation.

Alternative 4 would result in the same wildfire impacts as the Proposed Project under Impact WF-1.

Impact WF-2: Would Alternative 4 exacerbate wildfire risks by exposing project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire due to slope, prevailing winds, and other factors? ***(Less than significant)***

Impact WF-3: Would Alternative 4 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? ***(Less than significant with mitigation)***

The Alternative 4 230 kV transmission line would be constructed in generally similar climatic and topographic conditions as the Proposed Project—flat to gently rolling terrain within the Delta subject to prevailing westerly winds and occasional Diablo winds—but would follow a slightly different alignment that traverses more disturbed and non-agricultural land. The Proposed Project components are not intended (and would not be used) for occupation; therefore, pollutants from a fire would not affect occupants of the Proposed Project. As with the Proposed Project, APM FIRE-1 (Implement a CFPP) would be implemented under this alternative. Given the similar slope and wind conditions, and the limited difference in vegetation type along the alignment, the potential impacts associated with the exacerbation of wildfire risk due to uncontrolled spread of wildfire due to slope or prevailing winds under Alternative 4 would be less than significant.

During operation, the Alternative 4 230 kV LSPGC overhead segment would increase wildfire ignition risk and associated increased risk of pollutants, resulting in a significant impact. MM FIRE-1 requires LSPGC to prepare a project-specific Wildfire Management Plan, or alternative incorporate equivalent project-specific wildfire mitigation strategies into LSPGC's WMP, to minimize operational fire risks associated with transmission lines and electrical equipment within and near very high FHSZs or SRAs, which would include the LSPGC 230 kV overhead segment under Alternative 4 (refer to Section 4.20.12). The Alternative 4 impact from

exacerbated wildfire risk and associated increased risk of pollutants would be less than significant with mitigation.

Alternative 4 would result in the same wildfire impacts as the Proposed Project under Impacts WF-2 and WF-3.

Impact WF-4: Would Alternative 4 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? *(Less than significant)*

Under Alternative 4, the LSPGC 230 kV transmission line would be constructed in generally similar climatic and topographic conditions as the Proposed Project—flat terrain subject to prevailing westerly winds—but would follow a slightly different alignment that remains within high and very high FHSZs within an LRA. The extent of alignment within the very high FHSZ would be similar or slightly less than under the Proposed Project. Construction of Alternative 4 components would not result in drainage changes that would expose people or structures to significant risks. The construction methods would be the same as were analyzed for the Proposed Project. The LSPGC 230 kV transmission line under this alternative would be in a flat area and would not cause any potential downstream flooding or landslide as a result of runoff, post-fire instability, or drainage changes. The impact under Alternative 4 would be less than significant.

Alternative 4 would result in the same wildfire impacts as the Proposed Project under Impact WF-4.

4.20.10 Alternative 5: 230 kV Submarine Segment Alternative Route

Environmental Setting – Alternative 5

Alternative 5 involves rerouting a portion of the proposed LSPGC 230 kV submarine segment to the east of its current alignment as it approaches the southern shoreline in Pittsburg. The submarine segment cable would be installed in the same manner as the Proposed Project. Alternative 5 would not involve changes to any of the other Proposed Project component, which would have the same impacts as described throughout this Draft EIR for the Proposed Project or the other alternatives if selected in combination with Alternative 5.

The LSPGC 230 kV submarine segment would be directly buried in the riverbed of the Sacramento River and would not be on land within an SRA or land classified as a very high FHSZ. This differs from the Proposed Project, which includes overhead 230 kV transmission facilities that traverse areas mapped as high and very high FHSZs; therefore, Alternative 5 would avoid placement of new electrical infrastructure within mapped wildfire hazard zones. No fire risk is associated with areas under water.

Impact Analysis – Alternative 5

Because the Alternative 5 submarine cable would be installed below the Sacramento River and would not be on land within an SRA or mapped very high FHSZ, wildfire risks associated with this alternative are negligible. As a result, the wildfire analysis for Alternative 5 is necessarily

less detailed than the alternatives involving overhead transmission lines, which present more direct ignition risks.

Alternative 5 would not impair an emergency response or emergency evacuation plan (Impact WF-1), exacerbate wildfire risks by exposing project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire due to slope, prevailing winds, and other factors (Impact WF-2), 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, nor 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 (Impact WF-4). No wildfire impacts would occur for the Alternative 5 submarine segment.

Alternative 5 would result in fewer wildfire impacts than the Proposed Project under all four thresholds, because the submarine cable would not introduce overhead electrical infrastructure in a high or very high fire hazard severity zone. Unlike the Proposed Project, Alternative 5 would avoid the significant impacts identified under Impacts WF-2 and WF-3.

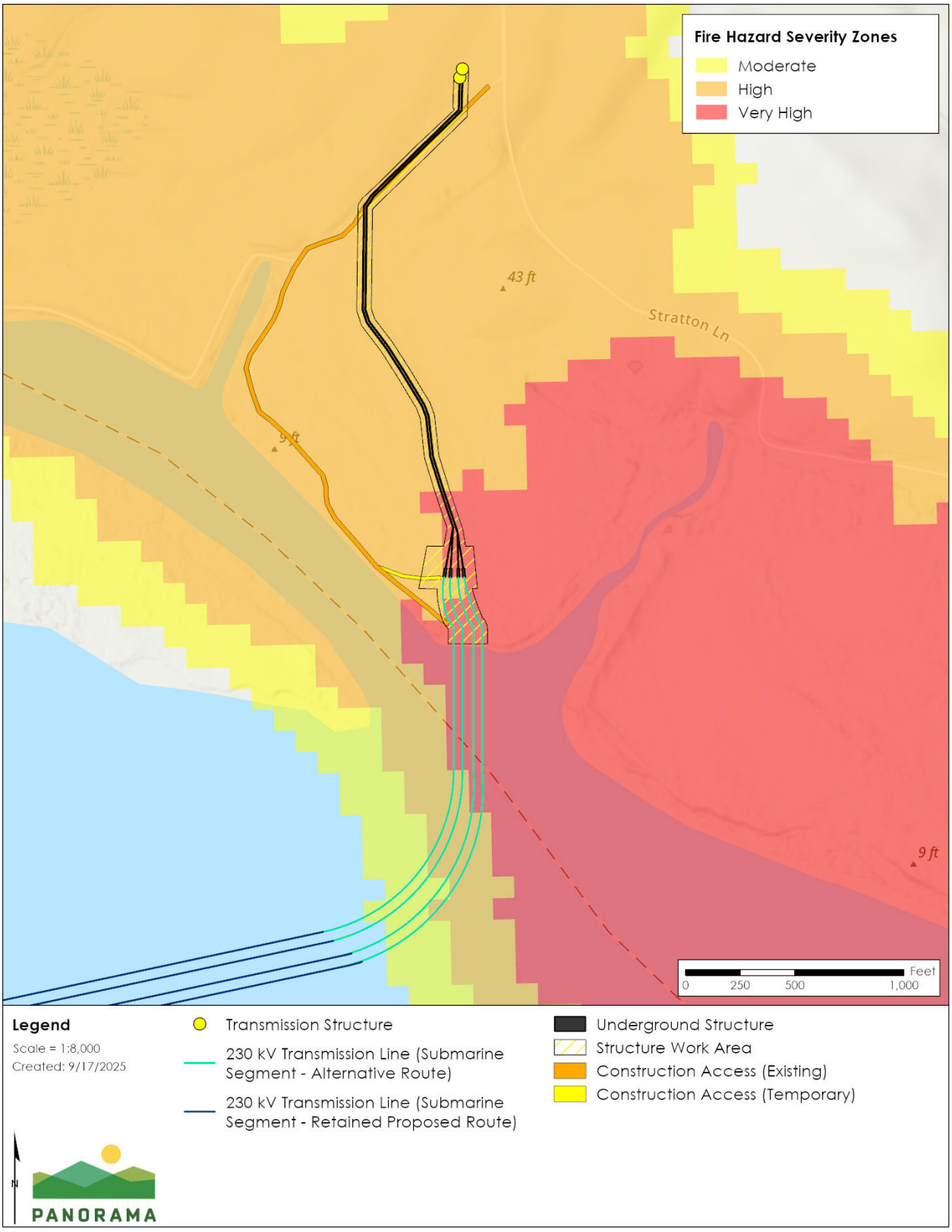
4.20.11 Alternative 6a/6b: Underground Portions of the 230 kV Transmission Line within Suisun Marsh Protection Plan Management Areas

Environmental Setting – Alternative 6a/6b

Alternative 6a/6b would locate the LSPGC 230 kV transmission line on primarily PG&E-owned property south of the proposed Collinsville Substation site (similar to Alternative 4). Alternative 6a/6b would be installed in conduit underground. Alternative 6a differs from Alternative 6b only at the northern end of the segment where options are provided for connection to the Proposed Project Collinsville Substation or Alternatives 1 or 2. Two overhead riser structures would be installed at the northern end of the Alternative 6a/6b underground duct bank where the LSPGC 230 kV line would transition between an overhead and underground position. Alternative 6a/6b would not involve changes to any of the other Proposed Project component, which would have the same impacts as described throughout this Draft EIR for the Proposed Project or the other alternatives if selected in combination with Alternative 6a/6b.

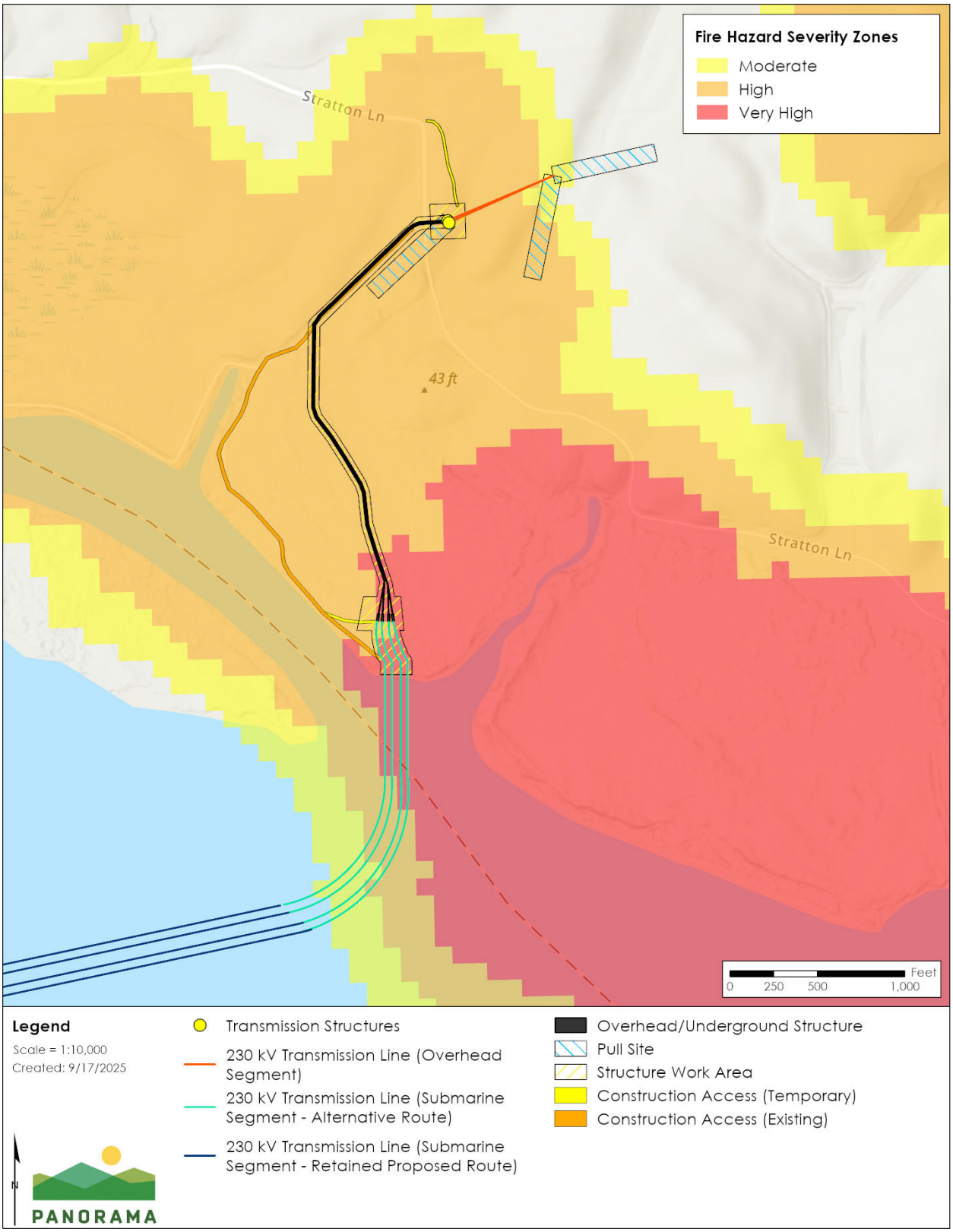
The Alternative 6a/6b LSPGC 230 kV underground segment alignment and submarine segment transition structure would be within a high and very high FHSZ in an LRA (refer to Figure 4.20-7 and Figure 4.20-8). None of the components under Alternative 4 would be within an SRA. The portion of the submarine segment within the Delta would have no fire risk. The undergrounded segments would have a negligible wildfire ignition risk compared to overhead transmission, since the conductors are not exposed to vegetation, wind, or other ignition pathways,. The Alternative 6a/6b LSPGC 230 kV underground segment would not be within a wind turbine hazard throw zone.

Figure 4.20-7 Fire Hazard Severity Zones in the Vicinity of Alternative 6a



Source: (CAL FIRE 2024b; 2025b)

Figure 4.20-8 Fire Hazard Severity Zones in the Vicinity of Alternative 6b



Source: (CAL FIRE 2024b; 2025b)

Impact Analysis – Alternative 6a/6b

The analysis below only addresses the terrestrial portion of the Alternative 6a/6b project components. There would be no wildfire risk associated with the submarine segment within the Delta.

Impact WF-1: Would Alternative 6a/6b substantially impair an adopted emergency response plan or emergency evacuation plan? *(Less than significant)*

Under Alternative 6a/6b, the LSPGC 230 kV underground and submarine segment would not be constructed on or near any identified emergency evacuation routes. Alternative 6b would include a single road crossing at Stratton Lane; however, construction at this location would not require full road closures. Any temporary lane restrictions needed to install the underground duct bank would be short-term and managed through implementation of APM TRA-2 (Implement Road and Lane Closure Plan), which requires coordination with emergency service providers and maintenance of emergency access. Alternative 6a would not require any public road crossings. With implementation of APM TRA-2 and the absence of full road closures, Alternative 6a/6b would not affect emergency access and impacts on emergency response or evacuation would be less than significant.

Alternative 6a/6b would result in the same wildfire impacts as the Proposed Project under Impact WF-1.

Impact WF-2: Would Alternative 6a/6b exacerbate wildfire risks by exposing project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire due to slope, prevailing winds, and other factors? *(Less than significant)*

Impact WF-3: Would Alternative 6a/6b 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? *(Less than significant)*

The Alternative 6a/6b 230 kV transmission line would be constructed in generally similar topographical and climatic conditions as the Proposed Project—flat to gently rolling terrain subject to prevailing westerly winds and occasional Diablo winds—but would traverse a slightly different area characterized by more marsh and wetland vegetation and lower overall fuel loads. The Proposed Project components are not intended (and would not be used) for occupation; therefore, pollutants from a fire would not affect occupants of the Proposed Project. As with the Proposed Project, APM FIRE-1 (Implement a CFPP) would be implemented under this alternative. Given the similar slope and wind conditions and the lower fuel potential along the underground alignment, the potential impacts associated with the exacerbation of wildfire risk due to uncontrolled spread of wildfire due to slope or prevailing winds under Alternative 6a/6b would be less than significant.

As the LSPGC 230 kV transmission line would be installed underground in a concrete duct bank, there would be no operational wildfire risk from the underground transmission line in a very high FHSZ. The Alternative 6a/6b underground transmission line within the very high FHSZ would not exacerbate wildfire risk and thus there would be no impact from exposing

project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire or installation or maintenance of infrastructure that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment.

Alternative 6a/6b would result in less wildfire risk and associated impact than the Proposed Project under Impacts WF-2 and WF-3, because undergrounding the 230 kV line substantially eliminates ignition risk compared to overhead transmission. Unlike the Proposed Project, Alternative 6a/6b would avoid the significant impacts identified under Impacts WF-2 and WF-3.

Impact WF-4: Would Alternative 4 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? *(Less than significant)*

The Alternative 6a/6b LSPGC 230 kV transmission line would be installed underground in a concrete duct bank and would not alter surface drainage patterns. Construction methods would be similar to those under the Proposed Project and would not result in substantial grading or modifications to existing slopes. The underground alignment would traverse gently sloping terrain, and no people or structures are located downslope of the Alternative 6a/6b components. Because undergrounding eliminates the potential for wildfire ignition along the transmission alignment, there would be no increase in post-fire slope instability or runoff-related flooding risks. Construction of Alternative 6a/6b components would therefore not expose people or structures to significant risks related to runoff, post-fire slope instability, or drainage changes. The impact under Impact WF-4 would be less than significant.

Alternative 6a/6b would result in the same wildfire impacts as the Proposed Project under Impact WF-4.

4.20.12 No Project Alternative

Environmental Setting – No Project

Under the No Project Alternative, the LSPGC Collinsville Substation and associated LSPGC 230 kV transmission line, PG&E 500 kV interconnection lines, and PG&E 12 kV distribution line would not be constructed. The existing wildfire conditions described in Section 4.20.1 would apply to the No Project Alternative.

Impact Analysis – No Project

The No Project Alternative would not impair an adopted emergency response plan or emergency evacuation plan (Impact WF-1). The No Project Alternative would not exacerbate wildfire risks or expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire (Impact WF-2). The No Project Alternative would not 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 (Impact WF-3). The No Project Alternative 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 (Impact WF-4). No wildfire impacts would occur under the No Project Alternative.

4.20.13 Mitigation Measures

LSPGC Mitigation Measures

MM FIRE-1: Wildfire Management Plan
LSPGC and PG&E shall each prepare and implement a binding, project-specific Wildfire Management Plan that addresses electrical equipment and operation and maintenance activities in very high fire hazard severity zones (FHSZ) as well as areas within 1 mile of very high FHSZs. The Wildfire Management Plan shall be submitted to the CPUC 90 days prior to project operation for review and approval. At a minimum, the plan shall include the following components:

- Infrastructure Hardening and System Protection:
  - Electrical equipment shall be constructed with non-combustible, fire-resistant materials (e.g., steel or composite poles, covered conductors, non-wood crossarms).
  - Electrical equipment shall be located outside of existing wind turbine hazard throw zones (e.g., 230 kV overhead segment).
  - Protection systems (e.g., sensors, reclosers, fuses, relays) shall be programmed to isolate faults rapidly and de-energize affected lines to reduce the likelihood of electrical arcing and fire ignition.
- Vegetation and Fuel Management:
  - Enhanced vegetation clearance shall be maintained around all infrastructure.
- Inspection, Monitoring, and Maintenance:
  - Electrical equipment shall be inspected at least annually for signs of mechanical stress and vegetation encroachment.
  - Additional inspections shall occur after high wind events, seismic activity, or other conditions that could compromise structural integrity of electrical equipment.
  - Inspection records shall be maintained and submitted annually to the CPUC.
- Emergency Response Coordination:
  - Coordinate with local fire protection agencies (e.g., CAL FIRE, local fire departments) to provide maps of access roads, equipment locations, water supplies, and communication protocols.
  - Field crews performing operation and maintenance work during wildfire season shall receive annual fire prevention and emergency response training, and be equipped with fire suppression tools, including backpack pumps and fire extinguishers.

In lieu of implementing project-specific Wildfire Management Plans, equivalent project-specific wildfire mitigation strategies may be incorporated into LSPGC's and PG&E's WMPs. A replacement of the project-specific Wildfire Management Plans would be subject to CPUC review and approval.

PG&E Mitigation Measures

MM FIRE-1: Wildfire Management Plan. See above for full description of measure.

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5 Other CEQA Considerations

This section includes other CEQA considerations pursuant to the California Public Resources Code §21100. Section 5.1 discusses energy conservation, with particular emphasis on avoiding or reducing inefficient, wasteful, and unnecessary consumption of energy (Public Resources Code §21100(b)(3)). Section 5.2 addresses the growth inducing impact of the Proposed Project (Public Resources Code §21100(b)(5)). Significant effects on the environment that would be irreversible if the project is implemented are included in Section 5.3 (Public Resources Code §21100(b)(2)(B)). Significant effects on the environment that cannot be avoided if the Proposed Project is implemented are included in Section 5.4 (Public Resources Code §21100(b)(2)(A)).

5.1 Energy Conservation

Pursuant to Appendix F: Energy Conservation in the CEQA Guidelines, an EIR must address potential energy impacts of the Proposed Project, with particular emphasis on avoiding or reducing inefficient, wasteful and unnecessary consumption of energy. Appendix F of the CEQA Guidelines describes the goal of energy conservation as the wise and efficient use of energy. The means to achieving the goal include:

- Decreasing overall per capita energy consumption;
- Decreasing reliance on natural gas and oil; and
- Increasing reliance on renewable energy sources.

5.1.1 Proposed Project Energy Conservation

A basic objective of the Proposed Project is 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, and to improve and maintain the reliability of the transmission grid and increase deliverability of renewable power. Since the Proposed Project would increase deliverability of renewable energy, the Proposed Project would ultimately assist the State in meeting goals for decreasing reliance on natural gas and oil and increasing reliance on renewable energy sources. The Proposed Project would help advance the state's renewable energy and decarbonization goals. The impact on energy conservation would be beneficial.

Construction of the Proposed Project transmission line would require the manufacture of new materials requiring the use of energy. The production of these materials would result in consumption of natural resources including fossil fuels (i.e., gasoline, diesel, and jet fuel) to power construction vehicles, equipment, and helicopters. However, demolition debris would be recycled for reuse to the greatest extent feasible. The reuse and recycling of existing components would partially offset the energy needed to produce new materials.

Construction equipment on land would be required to use engines compliant with EPA Tier 4 non-road engine standards (APM AQ-1 and CM AIR-1). Construction vehicles would minimize unnecessary idling time and would be properly tuned and maintained in accordance with manufacturer specifications (APM GHG-1). Equipment would be operated and maintained according to the manufacturer's specifications (APM GHG-1). These construction practices would minimize the use of fossil fuels. Additional details on energy consumption during construction and operation are provided in Section 4.6: Energy. The impacts from energy use would be less than significant as described in Section 4.6: Energy.

No increases in inefficiencies or unnecessary energy consumption are expected to occur as a direct or indirect consequence of the Proposed Project. Energy impacts associated with the Proposed Project would not have any measurable effect on per capita energy consumption. The Proposed Project would minimize use of fossil fuels during construction and encourage reliance on renewable energy sources for energy customers during operation. While the Proposed Project would have a substantial beneficial effect on renewable energy deliverability, the Proposed Project 500 kV interconnection lines would be installed on a combination of 10 LSTs and 4 TSPs. LSTs have substantially more cross-arms compared to TSPs, and the nature of their design creates nesting and perching habitat for avian species (Steenhof et al. 1993). The proposed installation of 10, PG&E 500 kV LSTs could increase avian activity in close proximity to existing wind turbines associated with SMUD's Solano 4 Wind Project. An increase in avian activity associated with the LSTs has the potential to increase wind turbine bird strikes. As discussed in Section 4.6: Energy of this EIR, SMUD has obtained an incidental take permit from the U.S. Fish and Wildlife Service (USFWS) for operation of the wind farm. This permit limits the number of incidental avian fatalities allowed, and exceeding these limits would violate federal requirements and trigger operational consequences, including mandatory curtailment of energy generation, which would significantly affect SMUD's capacity to provide renewable energy to customers (R. Donovan, "PG&E Collinsville Substation Lattice Tower Impact," May 7, 2025). Curtailment of renewable energy generation at SMUD's Solano 4 Wind Project site would reduce overall generation of renewable energy and SMUD's ability to comply with their renewable energy plans including IEPR, which would be a conflict with a State plan for renewable energy and the impact is significant and unavoidable. Alternatives 1, 2, and 3 propose installation of TSPs instead of LSTs for the 500 kV interconnection lines and would avoid the increased risk of bird strikes. The impact from Alternatives 1, 2, or 3 in combination with the Proposed Project in other segments on renewable energy generation would be less than significant.

5.2 Growth Inducing Effects

The discussion on growth inducing effects must address "ways in which the Proposed Project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment" (CEQA Guidelines Section 15126.2(d)).

Growth inducing effects of a proposed project are considered significant if the project directly causes population growth beyond that considered in local and regional land use plans or another relevant population growth projection. Effects would also be significant if a proposed project would provide the means to allow for population growth beyond that considered in local and regional land use plans or another relevant population growth projection.

5.2.1 Growth Caused by Direct and Indirect Employment

There would not be permanent population growth in the area due to direct employment. The Proposed Project would require up to approximately 206 workers per day during peak construction periods; however, the average on-site workforce would likely be approximately 72 workers per day as discussed in Section 4.14: Population and Housing. It is anticipated that the labor demand would generally be met by workers from Contra Costa, Sacramento, and Solano counties, with contracted workers likely sourced from nearby communities, including the City of Pittsburg. Thus, additional housing to accommodate these workers would not be required. Additionally, LSPGC would operate the substation and transmission line remotely and conduct routine inspections of the LSPGC project components as needed.

Construction and operation of the Proposed Project would not result in population growth due to direct or indirect employment (refer to Section 4.14: Population and Housing).

5.2.2 Growth Related to Provision of Additional Electric Power

The Proposed Project would not serve new users or expand service areas and would not indirectly induce population growth. The Proposed Project would increase deliverability of renewable energy on the bulk transmission grid and would not provide service to any new areas.

In addition, the Proposed Project would not modify land use or zoning designations to permit new residential or commercial development and therefore would not foster growth, remove direct growth constraints, or add a direct stimulus to growth. The Proposed Project would provide electrical transmission to meet existing and planned growth in the Greater Bay Area and would not induce additional population growth beyond that which is planned for in the region.

5.3 Significant Irreversible Changes and Irretrievable Commitments of Resources

Pursuant to Sections 15126.2(d) of the CEQA Guidelines, an EIR must address significant irreversible environmental changes and irretrievable commitments of resources that would be caused by the Proposed Project. These changes include the uses of non-renewable resources during construction and operation, long-term or permanent access to previously inaccessible areas, and irreversible damage that may result from project-related accidents.

Implementation of the Proposed Project would require temporary and permanent loss of vegetation and terrestrial and benthic habitat that could potentially support sensitive wildlife and fish species due to construction activities. However, implementation of the APMs and mitigation measures for biological resources recommended in this EIR (see Section 4.4: Biological Resources) would ensure that project-induced loss of vegetation and habitat would be less than significant.

5.3.1 Non-Renewable Resources

The use of non-renewable resources is considered an irreversible change to the environment. Construction and operation of the Proposed Project would require the direct consumption of non-renewable fossil fuels, and indirectly fossil fuels would be used to produce construction materials that may not be recycled.

During construction, non-renewable fossil fuel consumption of energy would be needed for construction vehicles, construction equipment, and helicopter use. Additionally, construction would require the manufacture of new materials, some of which would not be recyclable at the end of the Proposed Project's lifetime, and the energy required for the production of these materials, which would also result in an irretrievable commitment of natural resources. Fossil fuel consumption associated with vehicle use during operation and maintenance would be far less than during construction. Use of non-renewable resources during operation and maintenance would chiefly result from equipment. The Proposed Project would support the long-term decrease in the consumption and use of non-renewable resources by allowing increased deliverability of renewable energy. The Proposed Project would thus have a significant net beneficial impact from the reduction in generation and consumption of non-renewable energy. The No Project Alternative would, by contrast, result in continued consumption of non-renewable energy resources consistent as those resources would not be retired to meet peak demand without the ability to deliver more renewable energy.

5.3.2 Long-term or Permanent Access to Previously Inaccessible Areas

The Proposed Project area contains an existing network of paved and unpaved access roads that would be used during construction, operation, and maintenance. Existing paved roads are typically maintained by the local county 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.

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. Temporary access roads are shown in Appendix A: Detailed Route Maps. Following construction, all temporary access roads would be restored to pre-construction conditions. A new, approximately 285-foot-long, 30-foot-wide driveway would be constructed to access the proposed LSPGC Collinsville Substation and PG&E telecommunication yard via Stratton Lane on the east side of the substation. The location of the proposed new driveway is depicted in Appendix A: Detailed Route Maps. No other permanent access roads are proposed.

Therefore, the Proposed Project would not provide access to previously inaccessible areas in a way that commits future generations to similar uses.

5.3.3 Potential Accidents

During construction and operation of the Proposed Project, potential accidents could occur that could result in significant irreversible changes that cannot be reversed or completely mitigated. Major construction activities, such as site preparation and installation of components and equipment would pose the greatest risks for accidents to occur that could potentially result in significant irreversible changes.

As described in Section 4.9: Hazards and Hazardous Materials, the proposed LSPGC 230 kV overhead segment would be within a hazard throw zone of a wind turbine within the Solano 4 Wind Project. As such there is a reasonably foreseeable potential for a turbine to dislodge and contact the conductor or anyone working in the area, which would result in irreversible damage.

The Proposed Project would have acceptable service ratios, response times, and other performance objectives for emergency response, including fire and police protection, that would be available to service the project area in the event of an accident as discussed further in Section 4.15: Public Services.

5.4 Significant Environmental Effects that Cannot be Avoided

Section 15126.2(b) of the CEQA Guidelines requires that an EIR identify significant environmental effects which cannot be avoided by the Proposed Project, even with implementation of mitigation measures. The environmental impacts of the Proposed Project are described in Section 4: Environmental Impact Analysis. Impacts that are significant and cannot be reduced to less than significant levels through the application of feasible mitigation measures have been characterized as significant and unavoidable impacts. The significant and unavoidable impacts resulting from the Proposed Project are summarized below. Complete descriptions of these impacts are presented in Section 4: Environmental Impact Analysis.

Impact AQ-2: Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable or state ambient air quality standard.

In year 2 of Proposed Project construction (2027) during submarine segment construction, NOx emissions would exceed SMAQMD and BAAQMD thresholds and would thereby result in a cumulatively considerable net increase of ozone for which the project region is in non-attainment. The exceedance of air emission standards would be caused primarily by the operation of marine vessels. While LSPGC would implement APM AIR-1 and PG&E would implement CM AIR-1, which requires the use of Tier 4 construction equipment on land, the primary source of NOx emissions would be from marine vessels. Therefore, emissions would continue to exceed significance thresholds with the implementation of APM AIR-1 and CM AIR -1. MM AQ-1 requires use of Tier 4 engines for marine vessels to the extent commercially

available at the time of construction and the use of Tier 3 engines on all marine vessels where Tier 4 engines are not available. Due to the forecasted lack of Tier 4 engine availability in 2027, marine vessels with Tier 3 engines would be used, which are not capable of reducing NOx emissions below SMAQMD and BAAQMD thresholds. Therefore, the net increase of NOx, a criteria pollutant for which the project region is nonattainment, would be significant and unavoidable during the period of submarine cable installation (4.5 months). MM AQ-2 requires use of BAAQMD recommended fugitive dust control BMPs. While the use of fugitive dust control BMPs would reduce fugitive dust emissions, the emissions would still exceed BAAQMD thresholds during Year 2 and the impact would be significant and unavoidable.

Additionally, in the event of a defective cable, replacement of a submarine cable segment would require the use of watercraft similar to construction, which would similarly exceed the NOx significance thresholds resulting in a significant impact. MM AQ-1 requires use of Tier 4 engines for marine vessels to the extent commercially available at the time of maintenance activities and the use of Tier 3 engines on all marine vessels where Tier 4 engines are not available. The availability of Tier 4 marine vessels during future maintenance activities is uncertain; therefore, the maintenance activities are assumed to still exceed BAAQMD and SMAAQD thresholds for NOx (wherever the maintenance activity occurs) and the impact in SMAQMD and BAAQMD would remain significant and unavoidable for the duration of the repair activities requiring marine vessels.

Impact BIO-1D: Have substantial adverse effects, either directly or through habitat modifications, on any bird species identified as candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS.
The Proposed Project would construct LSTs within the SMUD Solano wind farm. During Proposed Project operations, the introduction of new structures that support avian perching and nesting in proximity to the wind turbines could result in increased avian collisions and mortality, which would be a significant impact. No mitigation can feasibly avoid special status avian species perching on the LSTs, as the impact would be a result of the LST structure form and location within a wind farm. Therefore, the impact from potential increases in special status avian injuries and mortality due to wind turbine interactions would remain significant and unavoidable.

Impact CUL-1: Cause a substantial adverse change in the significance of an archaeological resource as defined in CEQA Guidelines Section 15064.5.
Impact CUL-2: Cause a substantial adverse change in the significance of a historical resource pursuant to CEQA Guidelines Section 15064.5.
Impact CUL-3: Disturb any human remains, including those interred outside of dedicated cemeteries.
The Proposed Project 230 kV overhead segment including riser structures and the portion of the submarine segment installed along the northern bank of the Delta adjacent the riser structures are in an area that is very sensitive for buried archaeological resources including a potential historic Native American village, which could also contain Native American burials. If the village and associated Native American burials occur within the area of construction, drilling of

the riser poles and installation of the submarine cables with the hydroplow would cause a substantial adverse change in the significance of an archaeological and historical resource and would disturb human remains. Because the applicant does not own the land underlying the 230 kV overhead segment and transition to the submarine segment, any discovered resources could not be reburied in the same area. As a result, the impact would remain significant and unavoidable.

Impact EN-2: Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

As noted above, the PG&E proposed LSTs within the SMUD wind farm could create an increase in bird strikes/avian mortality in the wind farm. Increased bird strikes/avian mortality within the windfarm could affect SMUD's ability to operate the wind farm under their existing permit programmatic incidental take permit (ITP, Permit #MB02735B-0) from USFWS and could result in the potential curtailment of wind generation, and a reduction in renewable energy that would directly conflict with SB 100 and SB 1020. The impact to renewable energy generation would be from the introduction of LSTs into the wind farm, and no feasible mitigation measure would reduce the impact. Therefore, the impact from conflict with renewable energy state plans would remain significant and unavoidable.

Impact GHG-2: Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

Similar to Impact EN-2, the Proposed Project could create an increase in avian interactions with wind turbines due to the siting of LSTs within the SMUD wind farm. Increases in bird strikes/avian mortality in the wind farm could create operational constraints under SMUD's programmatic incidental take permit (ITP, Permit #MB02735B-0) thereby affecting wind production, resulting in a decrease in renewable energy production. As a result, the Proposed Project could conflict with SB 100, which requires increased renewable energy generation. The impact to renewable energy generation would be from the introduction of LSTs into the wind farm, and no feasible mitigation measure would reduce the impact. Therefore, the impact from conflict with an applicable policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases would remain significant and unavoidable.

Impact LU-2: 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 of the Collinsville Substation would permanenly impact approximately 12 acres and temporarily disturb approximately 16 acres of land that fall wthin the Suisun Marsh Priority Habitat Restoration Area, a priority habitat restroation area identified in the Delta Plan. The permanent conversion to a utility use of approximatley 12 acres of lands within the Suisun Marsh Priority Habitat Restoration Area would be a significant impact. LSPGC would be required to implement MM BIO-2, which ensures that areas of temporary dsistrubance are restored following distrurbance. Therefore the 16 acres of temporary distrubance within Suisun Marsh Priority Habitat Restoration Area would be restored to previous conditions. However, the 12 acres of permanent distrubance would be converted to a utility use which conflicts with

the habitat restoration goals of the Delta Plan. The conflicts is caused by the location of the Collinsville Substation within the Suisun Marish Priority Habitat Restoration Area and is significant and unavoidable.

Impact MIN-1: Result in the loss of availability of a known mineral resource that would be of value to the region and the residence of the state and MIN-2: 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.
Operation of the transmission line submarine segment would permanently restrict mining within 45 acres of an existing 838-acre sand and gravel mining lease within the location of buried submarine cables. Additionally, the operation of the 230 kV transmission lines could create the potential for an impact to the larger sand and gravel mining operation if the location of the buried 230 kV submarine segment was not properly communicated as the sand and gravel mining operation would need to avoid the buried cables. The impact from loss of availability of a known mineral resource would be significant. MM MIN-1 requires LSPGC to design the submarine cable in a way that avoids impacts on proposed sand and gravel mining operations to the extent feasible and coordinate with sand and gravel mining leases holders to minimize impacts on sand and gravel mining operations. While MM MIN-1 would reduce the impact on sand and gravel mining, the submarine cable would still restrict areas available for mining due to its location. The resulting impact on the availability of mineral resources would remain significant and unavoidable.

Impact NOI-1: 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 of the Proposed Project would exceed the Solano County construction daytime noise standard for when construction occurs before 9 a.m. or after 4 p.m., which would be a significant impact. MM NOI-1 restricts the use of helicopters to the hours of 9 a.m. to 4 p.m., Monday through Saturday and MM NOI-2 requires the installation of an acoustic barrier at the substation to reduce noise levels at sensitive receptors. Reduction in the hours of substation construction to 9 a.m. to 4 p.m. Monday through Saturday would substantially extend the construction duration by reducing construction hours by 5 hours per day and would conflict with the project objectives. A reduced construction schedule for terrestrial construction is therefore considered infeasible. While the mitigation measures would reduce noise levels at the nearest receptor, the noise would still exceed 55 dBA Leq before 9 a.m. and after 4.p.m. for 248 days during the daytime (7 a.m. to 9 a.m. and 4 p.m. to 7 p.m.) based on the proposed construction schedule. Construction noise would also exceed the nighttime noise standard for up to 30 days of nighttime construction. The impact from exceedance of the Solano County construction noise standards (construction activities occurring before 9 a.m. or after 4 p.m.) and exceedance of the daytime noise standard for residential properties would remain significant and unavoidable.

Impact TCR-1: 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.

The Proposed Project 230 kV overhead segment including riser structures and the portion of the submarine segment installed along the northern bank of the Delta adjacent the riser structures are in an area that is very sensitive for buried archaeological resources including a potential historic Native American village, which could also contain Native American burials. If the village and associated Native American burials occur within the area of construction, drilling of the riser poles and installation of the submarine cables with the hydroplow would cause a substantial adverse change in the significance of a tribal cultural resource. Because the applicant does not own the land underlying the 230 kV overhead segment and transition to the submarine segment, any discovered resources could not be reburied in the same area. As a result, the impact would remain significant and unavoidable.

5.5 References

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6 Comparison of Alternatives

6.1 Introduction

This section summarizes and compares the environmental advantages and disadvantages of the Proposed Project and the alternatives evaluated in this EIR. This comparison is based on the assessment of environmental impacts of the Proposed Project and each alternative, as identified for each resource topic in Section 4: Environmental Impact Analysis. Section 3: Description of Alternatives introduces and describes the alternatives considered in this EIR; Appendix C includes the Alternatives Screening Report, which documents all alternatives considered in the screening process, including alternatives that were considered but rejected. Section 3: Description of Alternatives and Appendix C: Alternatives Screening Report include figures of all alternatives that have been retained for analysis. Additional figures for the alternatives impact analysis are provided in Section 4: Environmental Impact Analysis for select resource topics as applicable.

Section 6.2 describes the regulatory requirements for alternatives comparison. Section 6.3 describes the methodology used for comparing alternatives. Section 6.4 presents a comparison of the alternative project components with the Proposed Project. Section 6.5 compares the No Project Alternative to the Environmentally Superior Alternative. Section 6.6 presents the Environmentally Superior Alternative.

6.2 CEQA Requirements for Alternatives Comparison

CEQA requires comparison of alternatives in CEQA Guidelines Section 15126.6(d):

> "The EIR shall include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the proposed project. A matrix displaying the major characteristics and significant environmental effects of each alternative may be used to summarize the comparison. If an alternative would cause one or more significant effects in addition to those that would be caused by the project as proposed, the significant effects of the alternative shall be discussed, but in less detail than the significant effects of the project as proposed."

CEQA also requires an EIR to identify an "environmentally superior" alternative. If the environmentally superior alternative is the No Project Alternative an environmentally superior alternative needs to be identified among the other alternatives (CEQA Guidelines Section 15126.6[e][2]).

6.2.1 Conclusion Regarding Environmentally Superior Alternative

In this section, the CPUC has identified the Environmentally Superior Alternative, as required by CEQA Guidelines Sections 15126.6(d) and (e)(2). The results of the comparisons of alternatives are presented below, with the Environmentally Superior Alternative shown first and the least environmentally preferable alternative shown last. The rationale for these conclusions is presented in Section 6.4.

1. Alternative 1 + Proposed Project in remaining segments – Environmentally Superior Alternative
2. Alternative 1 + Alternative 5 + Proposed Project in remaining segments
3. Alternative 1 + Alternative 4 + Proposed Project in remaining segments
4. Alternative 1 + Alternative 4 + Alternative 5 + Proposed Project in remaining segments
5. Alternative 1 + Alternative 6a + Proposed Project in remaining segments
6. Alternative 1 + Alternative 6a + Alternative 5 + Proposed Project in remaining segments
7. Alternative 2 + Proposed Project in remaining segments
8. Alternative 2 + Alternative 5 + Proposed Project in remaining segments
9. Alternative 2 + Alternative 4 + Proposed Project in remaining segments
10. Alternative 2 + Alternative 4 + Alternative 5 + Proposed Project in remaining segments
11. Alternative 2 + Alternative 6a + Proposed Project in remaining segments
12. Alternative 2 + Alternative 6a + Alternative 5 + Proposed Project in remaining segments
13. Alternative 3 + Proposed Project in remaining segments
14. Alternative 3 + Alternative 5 + Proposed Project in remaining segments
15. Alternative 3 + Alternative 4 + Proposed Project in remaining segments
16. Alternative 3 + Alternative 4 + Alternative 5 + Proposed Project in remaining segments
17. Alternative 3 + Alternative 6a + Proposed Project in remaining segments
18. Alternative 3 + Alternative 6a + Alternative 5 + Proposed Project in remaining segments
19. Proposed Project

6.3 Alternatives Comparison Methodology

The following methodology was used to identify, evaluate, and compare alternatives in this EIR:

- **Step 1: Identification of Alternatives.** A screening process was used to evaluate alternatives to the Proposed Project (refer to Appendix C: Alternatives Screening Report). The screening process identified six feasible alternatives that would achieve all or most of the basic project objectives (refer to Appendix C and Section 3: Description of Alternatives).

- **Step 2: Determination of Environmental Impacts.** The environmental impacts of the Proposed Project and the six alternatives were evaluated for each resource topic presented in Section 4: Environmental Impact Analysis. The significant and unavoidable impacts that would occur from the Proposed Project are presented in Table 6.3-1. The significant impacts that would be created and/or eliminated by the alternatives are summarized in Section 6.4 below. It is noted that the six alternatives only replace certain segments of the Proposed Project and require combination with the remaining segments of the Proposed Project or other alternatives to form a complete functional alternative to the Proposed Project. As a result, an "area of analysis" was developed to determine the Proposed Project impacts for only the corresponding segment(s) that would be replaced by the alternative. For example, the comparable "area of analysis" for a substation site alternative would include the substation site and all associated infrastructure that would be modified by the alternative including the 500 kV interconnection transmission lines, 12 kV distribution line, 230 kV overhead segment, and temporary staging areas and access roads.
- **Step 3: Comparison of Proposed Project and Alternatives.** The environmental impacts of the Proposed Project were compared to those of each alternative to determine the environmentally superior alternative. To evaluate the various alternatives in comparison to the Proposed Project, the Proposed Project impacts within the "area of analysis" were compared to the alternative impacts, as identified in the impact analysis in Section 4: Environmental Impact Analysis. The alternative with the least environmental impacts is identified as "1 (preferred)" within that resource area. Numeric rankings (i.e., 2 and 3) indicate progressively greater impacts with higher numeric rankings (e.g., 3 indicates more impacts than 2). Where two or more alternatives have relatively equal impacts in the area of analysis, they are noted as "1 (equally preferred)" or are assigned equal number rankings. The Proposed Project was then compared to the No Project Alternative (Section 6.5).
- **Step 4: Determination of Environmentally Superior Alternative.** Determining an environmentally superior alternative requires balancing many environmental factors. In order to identify the environmentally superior alternative, the impacts in each resource area were identified and compared within each respective area of analysis in detailed comparison tables in Section 6.4. The environmentally superior alternative reflects the combination of superior alternative components or segments. The tables present a preference ranking and a brief explanation of the ranking for each environmental resource area. If an alternative is not considered preferred for any resource area and there are no significant unavoidable impacts, it is not ranked and it is stated that there is no preference for the alternative in terms of that resource area. The comparisons presented in this section highlight situations where an alternative route or component would create impacts in one area as a consequence of avoiding impacts to another area.

6.3.1 Significant and Unavoidable Impacts of the Proposed Project

For each area of the Proposed Project where an alternative is considered, the comparison begins with a summary of the significant impacts that cannot be mitigated. Significant and unavoidable impacts of the Proposed Project and any significant impacts either created or eliminated by each alternative are listed in the tables in this section. Highlighting these areas of significant impacts identifies which alternatives would be capable of eliminating significant unavoidable environmental effects of the Proposed Project, and which alternatives would create new significant impacts. This comparison guides the identification of the environmentally superior alternative while considering all environmental resource areas equally.

This section also summarizes the advantages and disadvantages of each alternative and presents a determination of whether the Proposed Project or the alternative is considered to be environmentally superior within each resource area. The preferred alternative is identified for each resource area. An alternative identified as "preferred" in one resource area may still have significant environmental effects, but its environmental effects would be less than the other alternatives in the area of analysis.

The Proposed Project would have twelve significant and unavoidable impacts in one or more segments in the nine resource areas listed in Table 6.3-1.

Table 6.3-1 Summary of Significant and Unavoidable Impacts for the Proposed Project

Resource Area	Significant and Unavoidable Impacts
Air Quality	• Impact AQ-2: Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable or state ambient air quality standard.
Biological Resources	• Impact BIO-1D: Have substantial adverse effects, either directly or through habitat modifications, on any bird species identified as candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS.
Cultural Resources	• Impact CUL-1: Cause a substantial adverse change in the significance of an archaeological resource as defined in CEQA Guidelines Section 15064.5. • Impact CUL-2: Cause a substantial adverse change in the significance of a historical resource pursuant to CEQA Guidelines Section 15064.5. • Impact CUL-3: Disturb any human remains, including those interred outside of dedicated cemeteries.
Energy	• Impact EN-2: Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.
Greenhouse Gas Emissions	• Impact GHG-2: Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.
Land Use and Planning	• Impact LU-2: 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.

Resource Area	Significant and Unavoidable Impacts
Minerals	• Impact MIN-1: Result in the loss of availability of a known mineral resource that would be of value to the region and the residence of the state. • Impact MIN-2: 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.
Noise	• Impact NOI-1: Result in the 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.
Tribal Cultural Resources	• Impact TCR-1: 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.

6.4 Alternatives Comparison

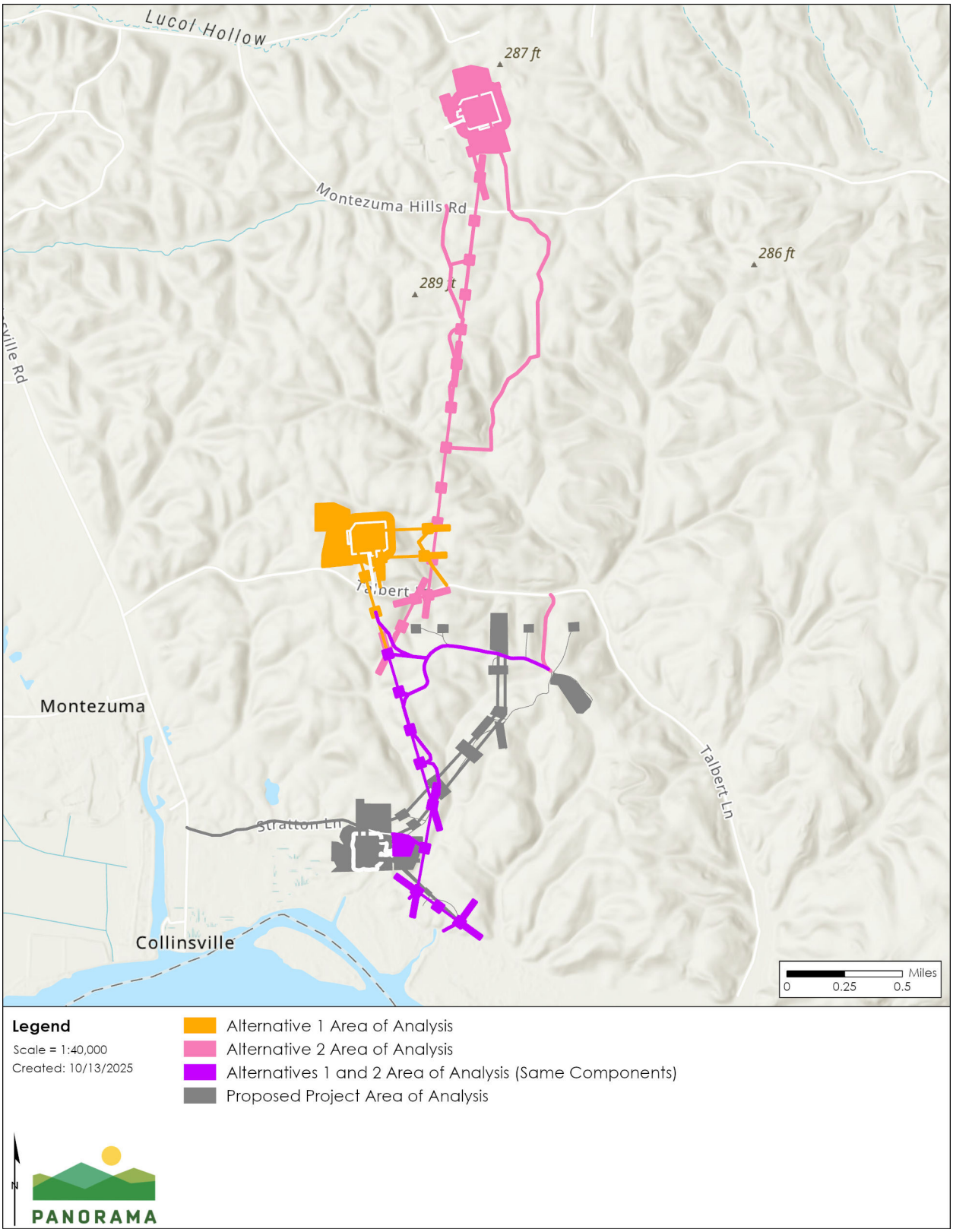
6.4.1 Proposed Project vs. Substation Site Alternatives

Overview

Two substation site alternatives to the Proposed Project were evaluated in the EIR, including Alternative 1 (north of Talbert Lane) and Alternative 2 (east of existing wind energy substations). The substation alternatives were developed to reduce the Proposed Project's significant and unavoidable impacts associated with:

- Land use and conflicts with policies protecting biological resources due to development of the substation in the Suisun Marsh Habitat Management Area;
- Noise due to generation of temporary noise in excess of standards established in the local general plan or noise ordinance; and
- Introduction of LSTs into a windfarm and associated impacts on special-status bird species, conflicts with a state plan for renewable energy, conflict with a plan adopted for the purpose of reducing greenhouse gas emissions.

Figure 6.4-1 Substation Site Alternatives Area of Analysis



This section compares the relevant segments of the Proposed Project within the area of analysis (i.e., the portion of the Proposed Project that is avoided by each alternative route or relocation) to Alternatives 1 and 2. The area of analysis for the Proposed Project and substation site alternatives is shown on Figure 6.4-1 and includes:

- LSPGC Collinsville Substation (entire substation and staging areas)
- PG&E 500 kV interconnection lines (entire length)
- 12 kV distribution line (entire length)
- 230 kV overhead segment (from each substation to the easternmost pole north of Stratton Lane)

Summary of Impacts

The Proposed Project would result in six significant and unavoidable impacts within the area of analysis for Alternatives 1 and 2. Both Alternative 1 and Alternative 2 would avoid the Proposed Project significant and unavoidable impacts on biological resources, energy, greenhouse gas emission, land use, and noise by relocating the substation to allow for shorter 500 kV interconnection lines constructed entirely with TSPs, avoiding development within the Suisun Marsh Habitat Management Area, and locating noise generating construction activities further from receptors. Alternative 2 would result in greater significant and unavoidable air quality emissions compared to the Proposed Project and Alternative 1 due to the increased 230 kV overhead transmission line construction. Table 6.4-2 compares the impacts of the two substation alternatives with significant unavoidable impacts of the Proposed Project for each environmental resource topic in the area of analysis.

Table 6.4-1 Proposed Project vs. Substation Site Alternatives Summary of Significant and Unavoidable Impacts

Alternative	Significant and Unavoidable Impacts in the Area of Analysis
Proposed Project	• Impact AQ-2: Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable or state ambient air quality standard. • Impact BIO-1D: Have substantial adverse effects, either directly or through habitat modifications, on any bird species identified as candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS. • Impact EN-2: Conflict with or obstruct a state or local plan for renewable energy or energy efficiency. • Impact GHG-2: Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases. • Impact LU-2: 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. • Impact NOI-1: Result in the 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.

Alternative	Significant and Unavoidable Impacts in the Area of Analysis
Alternative 1: Collinsville Substation North of Talbert Lane	• Similar Significant and Unavoidable Impacts to the Proposed Project: Impact AQ-2 • Eliminates Significant and Unavoidable Impacts: Impact BIO-1D, Impact EN-2, Impact GHG-2, Impact LU-2, Impact NOI-1 • No new significant and unavoidable impacts created.
Alternative 2: Collinsville Substation East of Wind Energy Substations	• Similar Significant and Unavoidable Impacts to the Proposed Project: Impact AQ-2 • Eliminates Significant and Unavoidable Impacts: Impact BIO-1D, Impact EN-2, Impact GHG-2, Impact LU-2, Impact NOI-1 • No new significant and unavoidable impacts created.

Conclusion

The Alternative 1 substation would be environmentally superior to the Proposed Project substation, 500 kV interconnection transmission lines, 12 kV distribution line, and 230 kV overhead segment within the area of analysis due to avoidance of significant and unavoidable impacts on special-status birds, greenhouse gases, and energy due to reduction in the length of the 500 kV interconnection lines and the use of 500 kV TSPs instead of LSTs; avoidance of the significant and unavoidable impact by relocating the substation outside of the Suisun Marsh Priority Habitat Management Area; and avoidance of the significant and unavoidable noise impact by relocation of the substation to a site further from receptors. Alternative 1 would have a similar air quality impact to the Proposed Project substation, 500 kV interconnection transmission lines, 12 kV distribution line, and 230 kV overhead segment construction from contribution to a cumulatively considerable net increase of criteria pollutants for which the project region is non-attainment; the impact would remain significant and unavoidable.

The Alternative 2 substation would avoid the same significant and unavoidable impacts of the Proposed Project as the Alternative 1 substation, but the Alternative 2 substation would require a considerably longer 230 kV transmission line (1.8 miles longer than Alternative 1) and would involve greater impacts on agriculture, air quality, biological resources, greenhouse gas emissions, hydrology and water quality, tribal cultural resources, and utilities and service systems than Alternative 1. As a result, the Alternative 1 substation is environmentally superior to both the Proposed Project and Alternative 2 substations within the area of analysis.

Table 6.4-2 Comparison of the Proposed Project to the Substation Alternatives

Resource Area	Proposed Project	Alternative 1: Collinsville Substation Site North of Talbert Lane	Alternative 2: Collinsville Substation East of Wind Energy Substations
Aesthetics	**No Preference.** The Proposed Project would not substantially degrade the visual character or quality of public views or create a new source of substantial light or glare. Impacts would be less than significant.	**No Preference.** Alternative 1 would not substantially degrade the visual character or quality of public views or create a new source of substantial light or glare. Impacts would be less than significant.	**No Preference.** Alternative 2 would not substantially degrade the visual character or quality of public views or create a new source of substantial light or glare. Impacts would be less than significant.
Agriculture and Forestry Resources	**Ranking = 2.** The Proposed Project substation site, 230 kV overhead segment, 500 kV interconnection lines, and 12 kV distribution line are within an area that is zoned for agricultural use, and the substation site is currently used for agricultural production. Impacts would be less than significant with mitigation.	**Ranking = 1 (Preferred).** The Alternative 1 substation site, 230 kV overhead segment, 500 kV interconnection line, and 12 kV distribution line are located in an area zoned for agricultural use. Due to the shorter 500 kV interconnection line, the total area of permanent impact on areas zoned for agricultural use is slightly less than the Proposed Project. Impacts would be less than significant with mitigation.	**Ranking = 3.** The Alternative 2 substation site, 230 kV overhead segment, 500 kV interconnection line, and 12 kV distribution line are located in an area zoned for agricultural use. Due to the much longer 230 kV overhead segment, the total area of permanent impact on areas zoned for agricultural use is larger than the Proposed Project. Impacts would be less than significant with mitigation.
Air Quality	**Ranking = 1 (Equally Preferred).** The Proposed Project would have a significant and unavoidable impact on air quality due to NOx and PM_{10} emissions in Year 2 of construction associated with intensity of activity onshore and marine vessel emissions for submarine cable installation. The impact would be significant and unavoidable.	**Ranking = 1 (Equally Preferred).** Alternative 1 would have slightly lower emissions than the Proposed Project in Year 2 of construction, but slightly greater emission during Year 3 due to a shift in the construction schedule and activities. The impact would be remain significant and unavoidable.	**Ranking = 2.** Alternative 2 would have greater emissions than the Proposed Project due to increased grading and extent of the 230 kV overhead transmission line. Emissions/impacts would be slightly greater in Year 2 and Year 3. The impact would be significant and unavoidable.
Biological Resources	**Ranking = 3.** The Proposed Project would have significant and unavoidable impacts on special-status avian species due to installation of LSTs for the 500 kV	**Ranking = 1 (Preferred).** Alternative 1 is not located within the Suisun Marsh Priority Habitat Management Area and the Alternative 1 500 kV interconnection lines	**Ranking = 2.** Alternative 2 is not located within the Suisun Marsh Priority Habitat Management Area. And the Alternative 2 500 kV interconnection would be located entirely on

Resource Area	Proposed Project	Alternative 1: Collinsville Substation Site North of Talbert Lane	Alternative 2: Collinsville Substation East of Wind Energy Substations
	interconnection lines within a wind farm and conflicts with local policies in the Delta Plan due to location within the Suisun Marsh Priority Habitat Management Area.	would be located entirely on TSPs. Alternative 1 would have the least temporary and permanent impacts on vegetation communities of the substation site scenarios. Alternative 1 impacts on biological resources would be less than significant with mitigation.	TSPs. Alternative 1 would have the greatest amount of temporary and permanent impacts on vegetation communities of the substation site alternatives; however, the increase is marginal. Alternative 2 impacts on biological resources would be less than significant with mitigation.
Cultural Resources	**Ranking = 3.** The Proposed Project substation is located near the Hastings Adobe site and near areas that are sensitive for buried cultural resources. Proposed Project impacts on cultural resources are less than significant with mitigation.	**Ranking = 1 (Preferred).** Alternative 1 is located in the Montezuma Hills in an area with low sensitivity for buried cultural resources. Alternative 1 impacts on cultural resources for a single pull site in the Hastings Adobe site boundary would be less than significant with mitigation.	**Ranking = 2.** Alternative 2 would locate the substation and areas of grading further from the Delta and areas sensitive for cultural resources. Alternative 2 would involve greater ground disturbance than Alternative 1 and the Proposed Project; however, the majority of the earthwork (substation site) is located in an area that is less sensitive for cultural resources, but the overall extent of earthwork is marginally increased. Alternative 2 impacts from a pull site in the Hastings Adobe site boundary would be less than significant with mitigation.
Energy	**Ranking = 2.** The Proposed Project would have a significant unavoidable indirect impact due to risk of wind energy curtailment associated with increased avian mortality as a result of installing LSTs for the 500 kV interconnection lines within the wind farm.	**Ranking = 1 (Equally Preferred).** Alternative 1 would avoid use of LSTs within the wind farm. Impacts on energy would be less than significant.	**Ranking = 1 (Equally Preferred).** Alternative 2 would avoid use of LSTs within the wind farm. Impacts on energy would be less than significant.
Geology, Soils, and Paleontological Resources	**Ranking = 1 (Equally Preferred).** The Proposed Project would have a less than significant impact from topsoil loss and a less than significant impact with	**Ranking = 1 (Equally Preferred).** Alternative 1 would have equivalent impacts on paleontological resources to the Proposed Project and would have a similar level of	**Ranking = 2.** Alternative 2 would have greater potential for impacts on paleontological resources compared to the Proposed Project due to increased disturbance within geologic

Resource Area	Proposed Project	Alternative 1: Collinsville Substation Site North of Talbert Lane	Alternative 2: Collinsville Substation East of Wind Energy Substations
	mitigation on paleontological resources.	disturbance within areas of high sensitivity for paleontological resources. The impact would be less than significant with mitigation.	units that have high sensitivity for paleontological resources associated with the longer 230 kV overhead segment. The impact would be less than significant with mitigation.
Greenhouse Gases	**Ranking = 3.** The Proposed Project would have a significant unavoidable indirect impact due to risk of wind energy curtailment associated with increased avian mortality as a result of installing LSTs for the 500 kV interconnection lines within the wind farm.	**Ranking = 1 (Preferred).** Alternative 1 would avoid use of LSTs within the wind farm. The alternative would have lower GHG emissions than Alternative 2. Alternative 1 GHG impacts would be less than significant.	**Ranking = 2.** Alternative 2 would avoid use of LSTs within the wind farm. The alternative would have greater construction GHG emissions than Alternative 1. Alternative 2 GHG impacts would be less than significant.
Hazards, Hazardous Materials, and Public Safety	**Ranking = 2.** The Proposed Project substation site, 230 kV overhead segment, 500 kV interconnection lines, and 12 kV distribution line are located within or near (e.g. within 1 mile) a very high FHSZ. The impact would be less than significant with mitigation. All other hazard and hazardous materials impacts are less than significant.	**Ranking = 1 (Equally Preferred).** The Alternative 1 substation site, 500 kV interconnection line, and 12 kV distribution line would be located more than 1 mile from a very high FHSZ. Alternative 1 would not change the Proposed Project portion of the 230 kV overhead segment that is within a very high FHSZ. The wildfire impact would be less than significant with mitigation. All other hazard and hazardous materials impacts are less than significant.	**Ranking = 1 (Equally Preferred).** The Alternative 2 substation site, 500 kV interconnection line, and 12 kV distribution line would be more than 1 mile from a very high FHSZ. Alternative 2 would not change the Proposed Project portion of the 230 kV overhead segment that is within a very high FHSZ. The wildfire impact would be less than significant with mitigation. All other hazard and hazardous materials impacts are less than significant.
Hydrology and Water Quality	**Ranking = 1 (Preferred).** The Proposed Project would have less than significant impacts on hydrology and water quality and would not modify any drainages.	**Ranking = 2.** The Alternative 1 500 kV TSPs appear to be located within a drainage and could impact stream flow. The alternative also includes greater risk of sedimentation due to increased grading.	**Ranking = 3.** The Alternative 2 230 kV structures and access roads appear to be within drainages and could impact stream flow. The alternative includes greater risk of sedimentation than the Proposed Project due to increased grading and total ground disturbance from a longer 230 kV overhead segment.

Resource Area	Proposed Project	Alternative 1: Collinsville Substation Site North of Talbert Lane	Alternative 2: Collinsville Substation East of Wind Energy Substations
Land Use and Planning	**Ranking = 2.** The Proposed Project would have a significant unavoidable impact on land use and planning for installation of a substation within areas designated for habitat restoration in the Delta Plan.	**Ranking = 1 (Equally Preferred).** The alternative would avoid locating infrastructure within the Suisun Marsh Priority Habitat Management Area.	**Ranking = 1 (Equally Preferred).** The alternative would avoid locating infrastructure within the Suisun Marsh Priority Habitat Management Area.
Mineral Resources	No Impact	No Impact	No Impact
Noise	**Ranking = 2.** Construction activities at the Proposed Project substation site and associated staging yard would generate noise levels in excess of local general plan and noise ordinance standards. The impact is significant and unavoidable.	**Ranking = 1 (Equally Preferred).** The Alternative 1 substation site is set back from sensitive receptors. The noise impact from construction at the substation and associated staging yard would be less than significant with mitigation.	**Ranking = 1 (Equally Preferred).** The Alternative 2 substation site is set back from sensitive receptors. The noise impact from construction at the substation and associated staging yard would be less than significant with mitigation.
Population and Housing	No impact	No impact	No impact
Public Services	**No Preference.** The Proposed Project impact on public services would be less than significant.	**No Preference.** The Alternative 1 impact on public services would be less than significant.	**No Preference.** The Alternative 2 impact on public services would be less than significant.
Recreation	**No Preference.** The Proposed Project impact on recreation would be less than significant.	**No Preference**. The Alternative 1 impact on recreation would be less than significant.	**No Preference.** The Alternative 2 impact on recreation would be less than significant.
Transportation	**No Preference.** The Proposed Project would have a less than significant impact with mitigation on air traffic due to helicopter use and road safety due to potential for construction damage to roads.	**No Preference.** Alternative 1 would have a less than significant impact with mitigation on air traffic due to helicopter use and road safety due to potential for construction damage to roads.	**No Preference.** Alternative 2 would have a less than significant impact with mitigation on air traffic due to helicopter use and road safety due to potential for construction damage to roads.

Resource Area	Proposed Project	Alternative 1: Collinsville Substation Site North of Talbert Lane	Alternative 2: Collinsville Substation East of Wind Energy Substations
Tribal Cultural Resources	**Ranking = 3.** The Proposed Project substation site and 230 kV transmission line are in areas near the Delta that are sensitive for buried tribal cultural resources.	**Ranking = 1 (Preferred).** Alternative 1 would locate the substation site and areas of grading further from the Delta and areas that are sensitive for buried tribal cultural resources.	**Ranking = 2.** Alternative 2 would locate the substation site and areas of grading further from the Delta and areas that are sensitive for buried tribal cultural resources. Alternative 2 would involve greater ground disturbance than Alternative 1 and thus greater potential to impact a buried tribal cultural resource.
Utilities and Service Systems	**Ranking = 2.** The Proposed Project impacts on utilities and service systems include potential impacts of 500 kV interconnection lines construction on SMUD buried electrical lines, and induced voltage on a parallel natural gas pipeline. The impacts are less than significant with mitigation.	**Ranking = 1 (Preferred).** Alternative 1 has the potential to impact SMUD buried electrical lines during construction. The alternative avoids impacts on the natural gas pipeline. The impact is less than significant with mitigation.	**Ranking = 2.** The alternative has the potential to impact the SMUD radar systems at the adjacent wind farm substations and to impact SMUD buried electrical cables. The alternative avoids impacts on the natural gas pipeline. The impact would be less than significant with mitigation.
Wildfire	**Ranking = 2.** The Proposed Project substation site, portions of the 500 kV interconnection lines, 12 kV distribution line, and all of the 230 kV overhead segment are located within or near (e.g. within 1 mile) a very high FHSZ.	**Ranking = 1 (Equally Preferred).** The Alternative 1 substation site, 500 kV interconnection line, and 12 kV distribution line would be located more than 1 mile from a very high FHSZ. Alternative 1 would not change the Proposed Project portion of the 230 kV overhead segment that is within a very high FHSZ.	**Ranking = 1 (Equally Preferred).** The Alternative 2 substation site, 500 kV interconnection line, and 12 kV distribution line would be located more than 1 mile from a very high FHSZ. Alternative 2 would not change the Proposed Project portion of the 230 kV overhead segment that is within a very high FHSZ.

6.4.2 Proposed Project vs. Alternative 3: 500 kV Interconnection Lines on Entirely TSPs

Overview

Alternative 3 was developed to address the Proposed Project impacts from installation of LSTs along the PG&E 500 kV interconnection lines which could encourage avian perching and nesting within a windfarm and increase avian mortality impacts. The area of analysis for the Proposed Project and Alternative 3 consists of the proposed structure locations identified for the 500 kV interconnection lines between the existing Vaca Dixon-Tesla 500 kV Transmission Line to the proposed Collinsville Substation. The area of analysis is shown on Figure 6.4-2.

Summary of Impacts

Table 6.4-3 compares the significant and unavoidable impacts of Alternative 3 with the Proposed Project for each environmental resource area within the area of analysis. The Proposed Project would have four significant and unavoidable impacts in the area of analysis. Alternative 3 would avoid three of the Proposed Project significant and unavoidable impacts but would not reduce construction air emissions and the significant and unavoidable air quality impacts would remain.

Table 6.4-4 compares the impacts of Alternative 3 with the Proposed Project for each environmental resource area within the area of analysis.

Table 6.4-3 Summary of Significant and Unavoidable Impacts Proposed Project and Alternative 3: Tubular Poles

Alternative	Significant and Unavoidable Impacts
Proposed Project	• Impact AQ-2: Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable or state ambient air quality standard. • Impact BIO-1D: Have substantial adverse effects, either directly or through habitat modifications, on any bird species identified as candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS. • Impact EN-2: Conflict with or obstruct a state or local plan for renewable energy or energy efficiency. • Impact GHG-2: Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.
Alternative 3	• Similar Significant and Unavoidable Impacts to the Proposed Project: Impact AQ-2 • Eliminates Significant and Unavoidable Impacts: Impact BIO-1D, Impact EN-2, Impact GHG-2 • No new significant and unavoidable impacts created.

Figure 6.4-2 500 kV Interconnection Lines on Entirely TSPs Alternative Area of Analysis

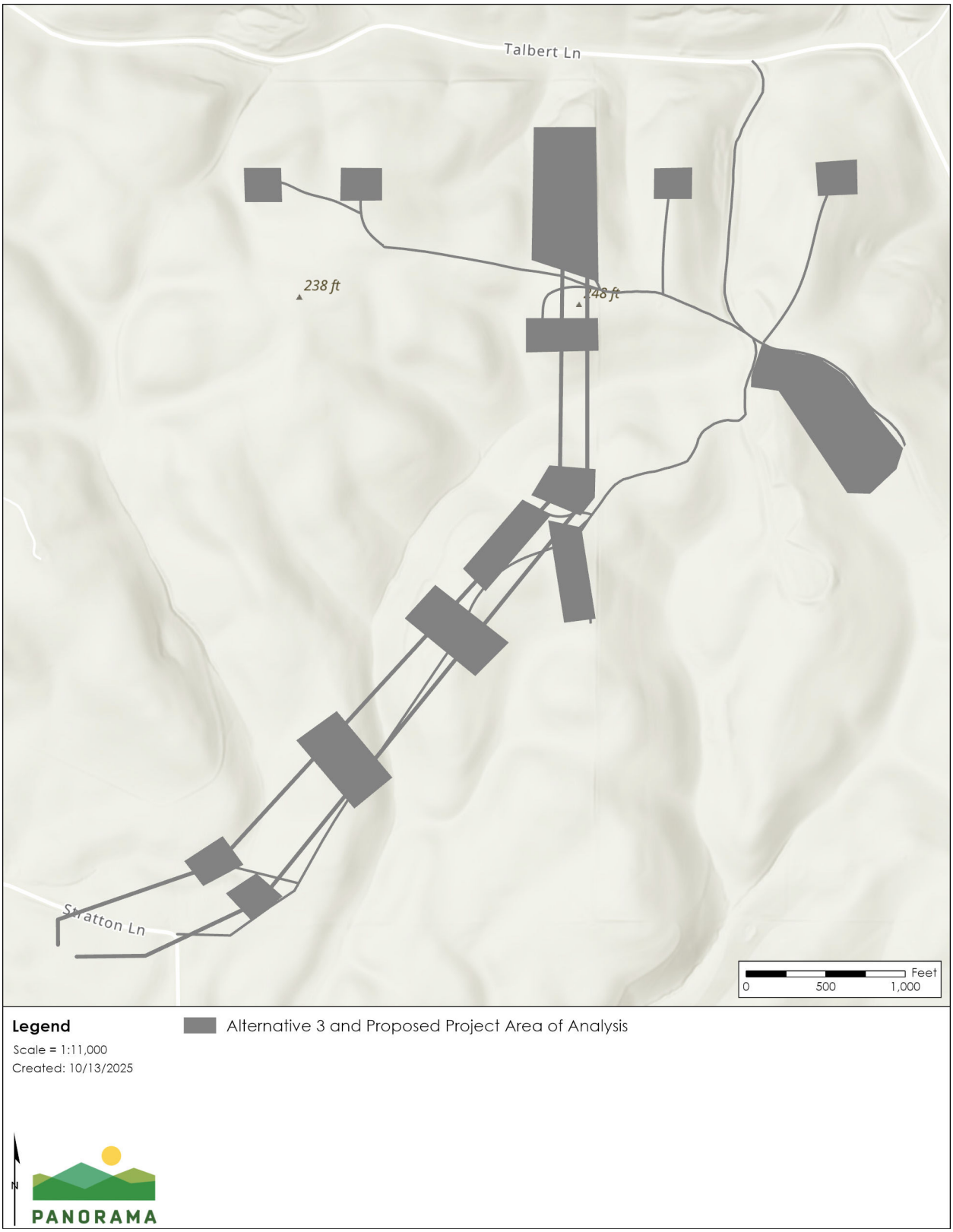


Table 6.4-4 Comparison of the Proposed Project to Alternative 3

Resource Area	Proposed Project	Alternative 3: 500 kV Interconnection Lines on Entirely TSPs
Aesthetics	**No Preference.** The Proposed Project visual impact would be less than significant.	**No Preference.** The Alternative 3 impact visual impact would be less than significant.
Agriculture and Forestry Resources	**No Preference.** The Proposed Project impact on agriculture would be less than significant.	**No Preference.** The Alternative 3 impact on agriculture would be less than significant.
Air Quality	**No Preference.** The 500 kV interconnection lines construction would contribute to the Proposed Project significant and unavoidable impact on air quality.	**No Preference.** Alternative 3 would contribute to the Proposed Project significant and unavoidable impact on air quality equivalent to the Proposed Project.
Biological Resources	**Ranking = 2.** The Proposed Project would have a significant and unavoidable impact on special-status birds from introduction of LSTs and associated indirect impacts from raptor and avian perching and mortality from the adjacent wind farm.	**Ranking = 1 (Preferred).** Alternative 3 avoids introduction of LSTs and would avoid the significant and unavoidable indirect impact from special-status bird mortality within the adjacent wind farm. Impacts on biological resources would be less than significant with mitigation.
Cultural Resources	**No Preference.** The Proposed Project impact on buried cultural resources would be less than significant with mitigation.	**No Preference.** The Alternative 3 impact on buried cultural resources would be less than significant with mitigation.
Energy	**Ranking = 2.** The Proposed Project would have a significant unavoidable indirect impact due to the risk of wind energy curtailment associated with increased avian mortality within the wind farm as a result of the Proposed Project 500 kV LSTs.	**Ranking = 1 (Preferred).** Alternative 3 would avoid the use of LSTs and the impacts on energy would be less than significant.
Geology, Soils, and Paleontological Resources	**Ranking = 1 (Preferred).** The Proposed Project impact on paleontological resources would be less than significant with mitigation.	**Ranking = 2.** Alternative 3 would require more structures to replace the LSTs with TSPs. The additional foundation construction would increase soil disturbance and the potential for damage or destruction of paleontological resources. The impact would be less than significant with mitigation.
Greenhouse Gases	**Ranking = 2.** The Proposed Project would have a significant unavoidable indirect impact due to risk of wind energy curtailment associated with increased avian mortality within the wind farm as a result of the Proposed Project 500 kV LSTs.	**Ranking = 1 (Preferred).** The alternative would avoid use of LSTs within the wind farm. The impact on greenhouse gases would be less than significant.

Resource Area	Proposed Project	Alternative 3: 500 kV Interconnection Lines on Entirely TSPs
Hazards, Hazardous Materials, and Public Safety	**No Preference.** The Proposed Project would have a less than significant impact with mitigation on wildfire hazards. All other hazards and hazardous materials impacts would be less than significant.	**No Preference.** Alternative 3 would have a less than significant impact with mitigation on wildfire hazards. All other hazards and hazardous materials impacts would be less than significant.
Hydrology and Water Quality	**Ranking = 1 (Preferred).** The Proposed Project impacts on hydrology and water quality are less than significant.	**Ranking = 2.** Alternative 3 impacts on hydrology and water quality would be less than significant. The Alternative involves increased ground disturbance due to the increased number of structures required. The increased disturbance would have greater potential for impact on water quality.
Land Use and Planning	No Impact	No Impact
Mineral Resources	No Impact	No Impact
Noise	**No Preference.** The Proposed Project 500 kV interconnection transmission line construction noise would be less than significant with mitigation limiting the hours of helicopter use.	**No Preference.** The Alternative 3 construction noise would be less than significant with mitigation limiting the hours of helicopter use.
Population and Housing	No Impact	No Impact
Public Services	**No Preference.** The Proposed Project impact on public services would be less than significant.	**No Preference.** Alternative 3 impact on public services would be less than significant.
Recreation	**No Preference.** The Proposed Project impact on recreation would be less than significant.	**No Preference**. The Alternative 3 impact on recreation would be less than significant.
Transportation	**No Preference.** The Proposed Project would have a less than significant impact with mitigation on air traffic due to helicopter use.	**No Preference.** Alternative 3 would have a less than significant impact with mitigation on air traffic due to helicopter use.
Tribal Cultural Resources	**No Preference.** The Proposed Project impacts on potential for disturbance of buried tribal cultural resources would be less than significant with mitigation.	**No Preference.** The Alternative 3 impacts on potential for disturbance of buried tribal cultural resources would be less than significant with mitigation.

Resource Area	Proposed Project	Alternative 3: 500 kV Interconnection Lines on Entirely TSPs
Utilities and Service Systems	**No Preference.** The Proposed Project impacts on utilities and service systems include potential impacts of 500 kV interconnection lines construction on SMUD buried electrical lines, and induced voltage on a parallel natural gas pipeline. The impacts are less than significant with mitigation.	**No Preference.** Alternative 3 impacts on utilities and service systems include potential impacts of 500 kV interconnection lines construction on SMUD buried electrical lines, and induced voltage on a parallel natural gas pipeline. The impacts are less than significant with mitigation.
Wildfire	**No Preference.** The Proposed Project impact on wildfire from the 500 kV interconnection lines near a very high FHSZ are less than significant with mitigation.	**No Preference.** The Alternative 3 impact on wildfire from the 500 kV interconnection lines near a very high FHSZ are less than significant with mitigation.

Conclusion

Within the area of analysis, Alternative 3 would be environmentally superior to the Proposed Project due to avoidance of significant and unavoidable impacts on special-status birds, greenhouse gases, and energy due to the avoidance of installation of LSTs. Within the area of analysis, Alternative 3 would result in equivalent air emissions and contribution to the significant and unavoidable air quality impact. Alternative 3 would have greater impacts on hydrology and water quality and geology during construction due to the increased ground disturbance associated with installation of a greater number of TSPs compared to the Proposed Project LSTs within the area of analysis. The Alternative 3 impacts on hydrology and water quality and geology, soils, and paleontology would be temporary (during construction) and less than significant or less than significant with mitigation and Alternative 3 would not create any new significant and unavoidable impacts. As a result, Alternative 3 is environmentally superior to the Proposed Project within the area of analysis.

While Alternative 3 is environmentally superior to the Proposed Project when comparing just the 500 kV interconnection lines assuming the same Collinsville Substation location, Alternative 1 would be environmentally to Alternative 3. The Alternative 1 500 kV interconnection lines is much shorter than the Alternative 3 500 kV interconnection lines and similarly avoids the significant and unavoidable impacts from installation of LSTs that would be avoided by Alternative 3.

6.4.3 Proposed Project vs. 230 kV Overhead Segment Alternatives

Overview

The EIR evaluates two alternatives to the Proposed Project 230 kV overhead segment between the Collinsville Substation and the submarine segment within the Delta. The alternatives were developed to address the Proposed Project significant and unavoidable impacts on cultural and tribal cultural resources and location within a wind turbine hazard throw zone. The area of analysis for the Proposed Project, Alternative 4, and Alternative 6a/6b include the 230 kV overhead segment from the Collinsville Substation to the submarine segment offshore where the alternatives and Proposed Project would reconnect. Figure 6.4-3 shows the 230 kV route alternatives area of analysis.

Summary of Impacts

Table 6.4-5 compares the significant and unavoidable impacts of the Proposed Project with Alternative 4 and Alternatives 6a/6b. The Proposed Project would result in five significant and unavoidable impacts within the area of analysis including impacts on cultural and tribal cultural resource due to the very high geoarchaeological sensitivity of the undeveloped northern Delta shoreline within areas of excavation, and the 230 kV overhead segment construction contribution to the cumulative air quality impact. Alternative 4 and 6a/6b would not avoid any of the Proposed Project significant and unavoidable impacts and Alternative 6a/6b would increase potential impacts on cultural and tribal cultural resources due to the increased area of excavation and disturbance within areas of very high geoarchaeological sensitivity.

Table 6.4-6 compares the impacts of the Proposed Project with Alternative 4 and Alternative 6a/6b for each environmental resource area within the area of analysis.

Figure 6.4-3 230 kV Overhead Alternatives Area of Analysis

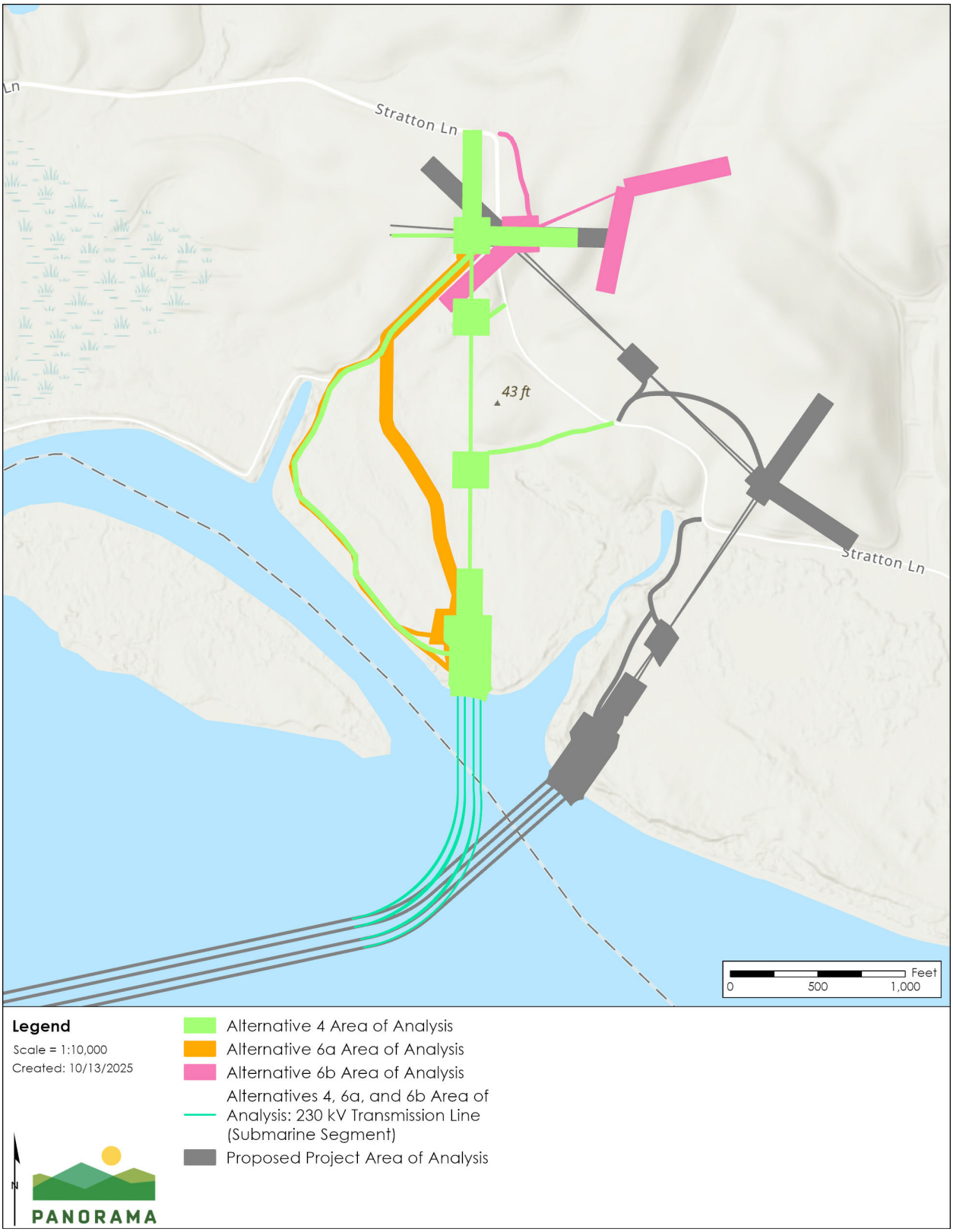


Table 6.4-5 Summary of Significant and Unavoidable Impacts for the Proposed Project, Alternative 4: 230 kV Overhead Segment Route, and Alternative 6a/6b 230 kV Underground Segment

Alternative	Significant and Unavoidable Impacts
Proposed Project	• Impact AQ-2: Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable or state ambient air quality standard. • Impact CUL-1: Cause a substantial adverse change in the significance of an archaeological resource as defined in CEQA Guidelines Section 15064.5. • Impact CUL-2: Cause a substantial adverse change in the significance of a historical resource pursuant to CEQA Guidelines Section 15064.5. • Impact CUL-3: Disturb any human remains, including those interred outside of dedicated cemeteries. • Impact TCR-1: 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.
Alternative 4: 230 kV Overhead Segment Alternative Route	• Similar Significant and Unavoidable Impacts to the Proposed Project: Impact CUL-1, Impact CUL-2, Impact CUL-3, Impact TCR-1 • No significand and unavoidable impacts are avoided. • New significant and unavoidable impacts created: Impact BIO-5 Impact NOI-1
Alternative 6a/6b: Underground Portions of the 230 kV Transmission Line within Suisun Marsh Protection Plan Management Areas	• Similar Significant and Unavoidable Impacts to the Proposed Project: Impact CUL-1, Impact CUL-2, Impact CUL-3, Impact TCR-1 • No significand and unavoidable impacts are avoided • New significant and unavoidable impacts created: Impact BIO-5 Impact NOI-1

Table 6.4-6 Comparison of the Proposed Project to Alternative 4 and 6a/6b

Resource Area	Proposed Project	Alternative 4	Alternative 6a/6b
Aesthetics	**Ranking = 2.** The proposed 230 kV overhead segment and riser structures alone would result in a less than significant impact on visual quality and lighting.	**Ranking = 2.** The Alternative 4 230 kV overhead segment and riser structures would result in a less than significant impact on visual quality and lighting.	**Ranking = 1 (Preferred).** Alternative 6a/6b would be primarily below ground and would reduce impacts on visual quality after construction is complete. The impact would be less than significant.
Agriculture and Forestry	**No Preference.**. The Proposed Project impacts on agriculture would be less than significant.	**No Preference.** The Alternative 4 impacts on agriculture would be less than significant.	**No Preference.** Alternative 6a/6b impacts on agriculture would be less than significant.
Air Quality	**No Preference.** The Proposed Project 230 kV overhead segment construction would contribute to the significant and unavoidable air quality impact.	**No Preference.** Alternative 4 would involve similar construction intensity to the Proposed Project and would contribute equally to the significant and unavoidable air quality impact.	**No Preference.** Alternative 6a/6b would involve the use of ground-based equipment instead of helicopters, but the overall construction emissions would be similar to the Proposed Project and would contribute equally to the significant and unavoidable air quality impact.
Biological Resources	**Ranking = 1 (Preferred).** The Proposed Project impacts on biological resources are less than significant with mitigation.	**Ranking = 2.** Alternative 4 would involve greater impacts on wetlands and sensitive natural communities than the Proposed Project and would involve greater impacts on habitat for salt marsh harvest mouse. Alternative 4 would also introduce a new transmission ROW into Suisun Marsh. The impact from the transmission ROW in the Suisun Marsh would be significant and unavoidable.	**Ranking = 3.** Alternative 6a/6b would involve greater impacts on habitat and sensitive natural communities than the Proposed Project and Alternative 4 and greater impacts on salt marsh harvest habitat due to trenching for construction of the underground duct bank and vaults. Alternative 6a/6b would also introduce a new transmission ROW into Suisun Marsh. The impact from the transmission ROW in the Suisun Marsh would be significant and unavoidable.
Cultural Resources	**Ranking = 1 (Preferred).** The Proposed Project would have a significant and unavoidable impact on cultural resources due to the potential for a village to occur along the 230 kV overhead segment near	**Ranking = 2.** Alternative 4 would have a significant and unavoidable impact on cultural resources due to the potential for a village to occur along the Alternative 4 230 kV overhead segment near the Delta and the extent of excavation required on the shoreline.	**Ranking = 3.** Alternative 6a/6b involves trenching to construct a duct bank and vaults for the underground 230 kV line. The trenching has greater potential to disturb buried cultural resources including a potential village.

Resource Area	Proposed Project	Alternative 4	Alternative 6a/6b
	the Delta and the extent of excavation required on the shoreline.	Alternative 4 may also involve access road construction through a portion of the Hastings Adobe site and access through areas containing CRHR assumed eligible resources. The impacts on the Hastings Adobe site and other resources would be less than significant with mitigation.	
Energy	**No Preference.** The Proposed Project 230 kV overhead segment impact on energy would be less than significant.	**No Preference.** The Alternative 4 impacts on energy would be less than significant.	**No Preference.** The Alternative 6a/6b impacts on energy would be less than significant.
Geology, Soils, and Paleontological Resources	**Ranking = 2.** The Proposed Project 230 kV line would be located primarily in Montezuma Formation and would have the potential to encounter paleontological resources during foundation construction. The impact would be less than significant with mitigation.	**Ranking = 1 (Preferred).** Alternative 4 would have the least construction in the Motezuma Formation and the least potential to encounter paleontological resources. The impact would be less than significant with mitigation.	**Ranking = 3.** Alternative 6a/6b would require the most soil disturbance due to construction of the underground line and would have the greatest potential to encounter paleontological resources. The impact would be less than significant with mitigation.
Greenhouse Gases	**No Preference.** The Proposed Project impact on greenhouse gases would be less than significant.	**No Preference.** Alternative 4 impact on greenhouse gases would be similar to the Proposed Project and less than significant.	**No Preference.** Alternative 6a/6b impact on greenhouse gases would be similar to the Proposed Project and less than significant.
Hazards, Hazardous Materials, and Public Safety	**Ranking = 2.** The Proposed Project would install the 230 kV overhead segment in a very high FHSZ. The impact would be less than significant with mitigation.	**Ranking = 2.** Alternative 4 would install the 230 kV overhead segment in a very high FHSZ. The impact would be less than significant with mitigation.	**Ranking = 1 (Preferred).** The underground 230 kV transmission line would reduce wildfire risk during operation by removing overhead facilities and potential wildfire ignition locations. The impact would be less than significant.
Hydrology and Water Quality	**Ranking = 1 (Equally Preferred).** The Proposed Project 230 kV overhead segment would have a less than	**Ranking = 1 (Equally Preferred).** The Alternative 4 230 kV overhead segment would	**Ranking = 2.** Alternative 6a/6b would involve increased trenching and potential for sedimentation and water quality impacts including vault construction and potential

Resource Area	Proposed Project	Alternative 4	Alternative 6a/6b
	significant impact on hydrology and water quality.	have a less than significant impact on hydrology and water quality.	turbidity in the Delta. The impact would be less than significant.
Land Use and Planning	**Ranking = 1 (Preferred).** The Proposed Project 230 kV overhead segment would have a less than significant impact on land use and planning. The Proposed Project 230 kV overhead segment is not located within the Suisun Marsh Priority Habitat Management Area.	**Ranking = 2.** Alternative 4 would have a less than significant impact on land use and planning but would construct a new transmission ROW in the Suisun Marsh Priority Habitat Management Area.	**Ranking = 2.** Alternative 6a/6b would have a less than significant impact on land use and planning but would construct a new transmission ROW in the Suisun Marsh Priority Habitat Management Area.
Mineral Resources	No Impact	No Impact	No Impact
Noise	**Ranking = 1 (Preferred).** The Proposed Project 230 kV overhead segment construction noise would be less than significant due to the distance to the nearest receptors.	**Ranking = 2.** Alternative 4 construction noise would be significant and unavoidable at the nearest receptors. The alternative is located closer to receptors than the Proposed Project.	**Ranking = 2.** Alternative 6a/6b construction noise would be significant and unavoidable at the nearest receptors. The alternative is located closer to receptors than the Proposed Project.
Population and Housing	No Impact	No Impact	No Impact
Public Services	**No Preference.** The Proposed Project impact on public services would be less than significant.	**No Preference.** The Alternative 4 impact on public services would be less than significant.	**No Preference.** The Alternative 6a/6b impact on public services would be less than significant.
Recreation	**No Preference.** The Proposed Project impact on recreation would be less than significant.	**No Preference**. The Alternative 4 impact on recreation would be less than significant.	**No Preference.** The Alternative 6a/6b impact on recreation would be less than significant.
Transportation	**Ranking = 2.** The Proposed Project would have a less than significant impact with mitigation on air traffic due to helicopter use.	**Ranking = 2.** Alternative 4 would have a less than significant impact with mitigation on air traffic due to helicopter use.	**Ranking =1 (Preferred).** Alternative 6a/6b would have a less than significant impact on transportation and would not require helicopter use.

Resource Area	Proposed Project	Alternative 4	Alternative 6a/6b
Tribal Cultural Resources	**Ranking = 1 (Equally Preferred).** The Proposed Project would have a significant and unavoidable impact on cultural resources due to the potential for a village to occur along the 230 kV overhead segment near the Delta and the extent of excavation required on the shoreline.	**Ranking = 1 (Equally Preferred)**. Alternative 4 would result in a significant and unavoidable impact on tribal cultural resources due to the potential for a village to occur along the 230 kV segment near the Delta. The impact would be similar to the Proposed Project due to similar ground disturbance and sensitivity.	**Ranking = 2.** Alternative 6a/6b would require trenching for installation of the underground duct bank and vaults and would have greater ground disturbance in areas of very high sensitivity for tribal cultural resources. The impact would significant and unavoidable and greater than the Proposed Project or Alternative 4 due to the extent of ground disturbance.
Utilities and Service Systems	**No Preference.** The Proposed Project impact on utilities and service systems would be less than significant.	**No Preference**. The Alternative 4 impact on recreation would be less than significant.	**No Preference.** The Alternative 6a/6b impact on recreation would be less than significant.
Wildfire	**Ranking = 2.** The Proposed Project 230 kV overhead segment impact within a very high FHSZ would be less than significant with mitigation.	**Ranking = 2.** The impact from the Alternative 4 230 kV overhead segment in very high FHSZ would be equivalent to the Proposed Project and less than significant with mitigation.	**Ranking = 1 (Preferred).** The Alternative 6a/6b underground transmission line would be buried in the very high FHSZ and would have a reduced operational risk on wildfire.

Conclusion

Within the area of analysis, the Proposed Project is environmentally superior to Alternative 4 and Alternative 6a/6b. While Alternative 4 and 6a/6b were considered to reduce the significant and unavoidable Proposed Project impacts on cultural and tribal cultural resources along the shoreline, Alternative 4 and Alternative 6a/6b would result in greater impacts on cultural and tribal cultural resources due to the similar very high sensitivity for buried cultural resources and presence of CRHR eligible resources within the area of construction for Alternative 4 as well as increased ground disturbance for underground transmission line construction for Alternative 6a/6b. The impact would remain significant and unavoidable. Alternative 4 and 6/6b are also located in an areas that contains more sensitive biological resources and would result in greater impacts on wetlands and sensitive natural communities. Alternative 4 and 6a/6b would also result in new significant and unavoidable noise impacts during construction because the 230 kV transmission line and associated construction would be located closer to receptors and construction noise levels would exceed local noise standards. As a result, the Proposed Project is environmentally superior to Alternative 4 and Alternative 6a/6b within the area of analysis.

6.4.4 Proposed Project vs. Alternative 5: 230 kV Submarine Segment Alternative Route

Overview

The EIR evaluates a routing alternative for a segment of the 230 kV submarine segment route to reduce the total area where the submarine cables would be within a sand and gravel mining lease. The area of analysis for the Proposed Project and Alternative 5 includes the portion of the submarine segment approaching the city of Pittsburg that would be relocated by Alternative 5. The area of analysis for Alternative 5 is shown on Figure 6.4-4.

Summary of Impacts

Table 6.4-7 compares the significant and unavoidable impacts of the Proposed Project with Alternative 5. The Proposed Project would result in three significant and unavoidable impacts on mineral resources due to the submarine cable location within existing sand and gravel mining leases where the Proposed Project would preclude future sand and gravel mining operations. The Proposed Project submarine segment construction would also contribute to the significant and unavoidable impact on air quality. Alternative 5 would reduce the area of impact on sand and gravel mining operations, but the impact would remain significant and unavoidable for both Impact MIN-1 and Impact MIN-2.

Figure 6.4-4 Alternative 5 Submarine Segment Route Area of Analysis

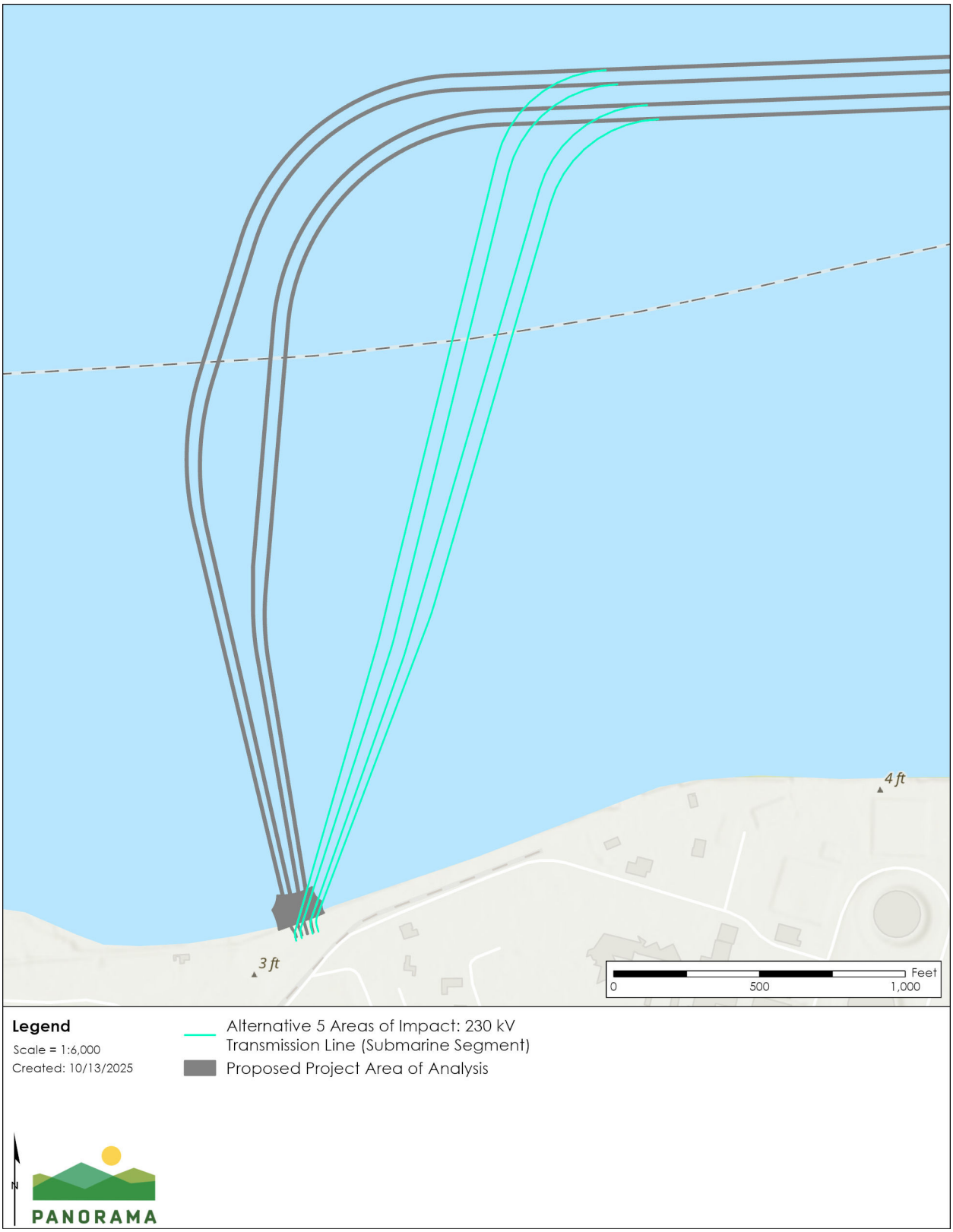


Table 6.4-7 Summary of Significant and Unavoidable Impacts for the Proposed Project and Alternative 5: 230 kV Submarine Segment Alternative Route

Alternative	Significant and Unavoidable Impacts
Proposed Project	• Impact AQ-2: Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable or state ambient air quality standard. • Impact MIN-1: Result in the loss of availability of a known mineral resource that would be of value to the region and the residence of the state. • Impact MIN-2: 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.
Alternative 5	• Similar Significant and Unavoidable Impacts to the Proposed Project: Impact AQ-2, Impact-MIN-1, Impact MIN-2 • No significand and unavoidable impacts are avoided. • No new significant and unavoidable impacts created.

Table 6.4-8 compares Alternative 5 with the Proposed Project for each environmental resource area within the overall area of analysis.

Table 6.4-8 Comparison of the Proposed Project to Alternative 5

Resource Area	Proposed Project	Alternative 5
Aesthetics	No Impact	No Impact
Agriculture and Forestry Resources	No Impact	No Impact
Air Quality	**Ranking = 1 (Preferred).** The Proposed Project submarine segment construction would contribute to the significant and unavoidable air quality impact.	**Ranking = 2.** Site preparation for Alternative 5 would result in increased air emissions in Year 1 (year prior to submarine cable installation) and Alternative 5 would not reduce any air emissions associated with the submarine cable installation in Year 2. The impact would remain significant and unavoidable.
Biological Resources	**Ranking = 1 (Preferred).** The Proposed Project would result in less than significant impact with mitigation from submarine cable installation.	**Ranking = 2.** Alternative 5 would result in greater impacts on marine mammals, fish, and benthic habitat from site preparation activities. Because activities would be conducted over two seasons and would change the channel bottom configuration, the impact may be considered permanent and the impacts would be greater than the Proposed Project.
Cultural Resources	**No Preference.** Impacts on cultural resources would be less than significant.	**No Preference.** Impacts on cultural resources would be less than significant.
Energy	**No Preference.** Impacts on energy would be less than significant.	**No Preference.** Impacts on energy would be less than significant.

Resource Area	Proposed Project	Alternative 5
Geology, Soils, and Paleontological Resources	No Impact	No Impact
Greenhouse Gases	**Ranking = 1 (Preferred).** The Proposed Project would have a less than significant impact on greenhouse gases.	**Ranking = 2.** Alternative 5 would result in greater greenhouse gas emissions than the Proposed Project due to site preparation activities required prior to cable installation. The impact would be less than significant.
Hazards, Hazardous Materials, and Public Safety	**No Preference.** The Proposed Project impact on hazards, hazardous materials and public safety would be less than significant.	**No Preference.** The Alternative 5 impact on hazards, hazardous materials, and public safety would be less than significant.
Hydrology and Water Quality	**Ranking = 1 (Preferred).** The Proposed Project impacts on hydrology and water quality would be less than significant.	**Ranking = 2.** The Alternative 5 impacts on hydrology and water quality would be greater than the Proposed Project due to turbidity associated with site preparation activities. The impact would be less than significant.
Land Use and Planning	No Impact	No Impact
Mineral Resources	**Ranking = 2.** The Proposed Project would impact approximately 44 acres (and up to 52 acres) of the sand and gravel mining lease and the impact would be significant and unavoidable.	**Preferred.** The alternative would impact approximately 38 acres of the sand and gravel mining lease and the impact on sand and gravel mining would be significant and unavoidable.
Noise	**No Preference.** The Proposed Project impact on noise would be less than significant.	**No Preference.** The Alternative 5 impact on noise would be less than significant.
Population and Housing	No Impact	No Impact
Public Services	No Impact	No Impact
Recreation	**No Preference.** The Proposed Project impact on marine recreation would be less than significant.	**No Preference.** The Alternative 5 impact on marine recreation would be less than significant.
Transportation	**No Preference.** The Proposed Project impact on marine vessel transportation would be less than significant.	**No Preference.** The Alternative 5 impact on marine vessel transportation would be less than significant.

Resource Area	Proposed Project	Alternative 5
Tribal Cultural Resources	No Impact	No Impact
Utilities and Service Systems	No Impact	No Impact
Wildfire	No Impact	No Impact

Conclusion

Within the area of analysis, the Proposed Project would be environmentally superior to Alternative 5. While Alternative 5 would reduce the impact on mineral resources, Alternative 5 would only reduce the impact by approximately 6 acres and impacts on mining operations would still extend to 38 acres and the impact would remain significant and unavoidable. Because Alternative 5 would require site preparation (dredging) activities prior to cable installation, Alternative 5 would have greater impacts than the Proposed Project on biological resources, air quality, greenhouse gas emissions, and water quality. The additional impacts on benthic habitat associated with Alternative 5 outweigh the benefits from reduction in the significant impacts on mining operations. As a result, the Proposed Project is environmentally superior to Alternative 5 within the area of analysis.

6.5 No Project Alternative vs. Proposed Project

The No Project Alternative would not involve construction of the Proposed Project and would not achieve any of the project objectives. The No Project Alternative would avoid nearly all of the Proposed Project significant and unavoidable impacts but would result in significant and unavoidable impacts from conflicts with state policy and plans for integration of renewable energy because the No Project Alternative would impair the ability to deliver renewable energy into the San Francisco Bay Area. The No Project Alternative impacts on energy and greenhouse gases would be significant and unavoidable.

Table 6.5-1 Summary of Significant and Unavoidable Impacts for the Proposed Project and No Project Alternative

Alternative	Significant and Unavoidable Impacts
Proposed Project	• Impact AQ-2: Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable or state ambient air quality standard. • Impact BIO-1D: Have substantial adverse effects, either directly or through habitat modifications, on any bird species identified as candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS. • Impact EN-2: Conflict with or obstruct a state or local plan for renewable energy or energy efficiency. • Impact GHG-2: Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases. • Impact LU-2: 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. • Impact MIN-1: Result in the loss of availability of a known mineral resource that would be of value to the region and the residence of the state. • Impact MIN-2: 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. • Impact NOI-1: Result in the 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. • Impact CUL-1: Cause a substantial adverse change in the significance of an archaeological resource as defined in CEQA Guidelines Section 15064.5. • Impact CUL-2: Cause a substantial adverse change in the significance of a historical resource pursuant to CEQA Guidelines Section 15064.5. • Impact CUL-3: Disturb any human remains, including those interred outside of dedicated cemeteries. • Impact TCR-1: 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.
No Project Alternative	• Similar Significant and Unavoidable Impacts to the Proposed Project: Impact EN-2, Impact GHG-2 • Significand and unavoidable impacts avoided: Impact AQ-2, Impact BIO-1D, Impact LU-2, Impact MIN-1, Impact MIN-2, Impact NOI-1, Impact CUL-1, Impact CUL-2, Impact CUL-3 • No new significant and unavoidable impacts created.

Conclusion

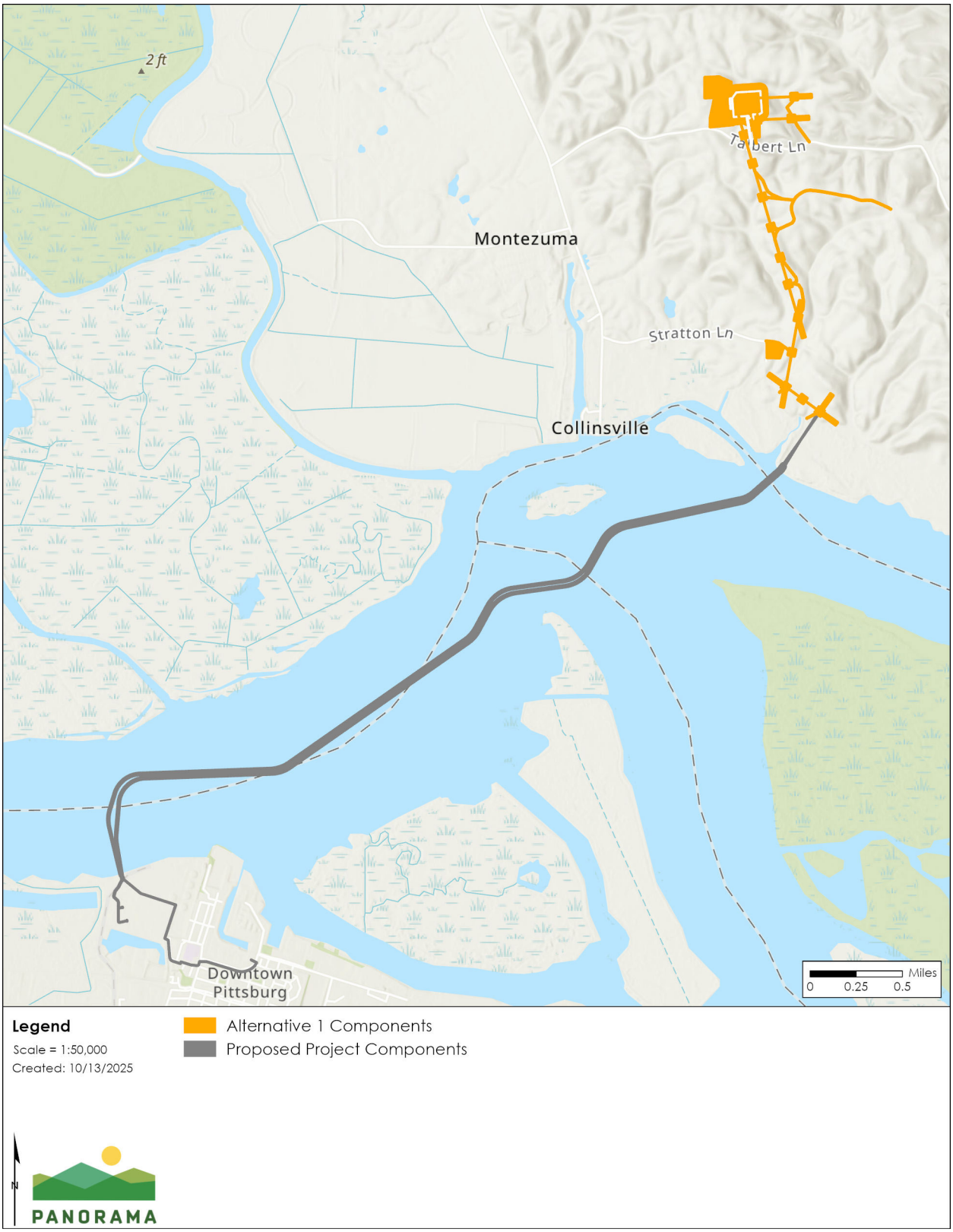
The No Project Alternative would be environmentally superior to the Proposed Project as it would avoid nearly all of the Proposed Project significant and unavoidable impacts. However, the No Project Alternative would not achieve any of the Proposed Project objectives and would impair the State's ability to meet its goals for renewable energy integration and greenhouse gas reduction.

6.6 Environmentally Superior Alternative

The environmentally superior alternative is the No Project Alternative because it would result in the fewest overall significant and unavoidable impacts. In accordance with CEQA Guidelines Section 15126.6(e)(2) where the environmentally superior alternative is the No Project Alternative an environmentally superior alternative needs to be identified among the other alternatives.

The environmentally superior alternative that meets the basic project objectives is Alternative 1 + Proposed Project in remaining areas as shown on Figure 6.6-1. As discussed in Section 6.4.1, Alternative 1 is environmentally to the Proposed Project in the comparable area of analysis and would avoid significant and unavoidable impacts on biological resources (Impact BIO-1D), energy (Impact EN-2), and greenhouse gases (Impact GHG-2) due to installation of much shorter 500 kV interconnection lines on TSPs only. Alternative 1 would also avoid significant and unavoidable impacts on land use due to relocation of the substation and associated infrastructure outside of the Suisun Marsh Priority Habitat Management Area, and Alternative 1 would avoid significant and unavoidable impacts on noise (Impact NOI-1) due to relocation of the substation and associated construction noise away from sensitive receptors. While Alternative 3 is environmentally superior to the Proposed Project within the comparable area of analysis, Alternative 1 would relocate and modify the 500 kV interconnection transmission lines and the Alternative 1 500 kV interconnection transmission lines would be substantially shorter and would be environmentally superior to Alternative 3 (refer to Section 6.4.2). The Proposed Project is environmentally superior to Alternatives 4, 6a/6b, and 5 within the comparable areas of analysis for each segment (refer to Section 6.4.3 and 6.4.4). Alternative 1 + Proposed Project in remaining areas would result in seven significant and unavoidable impacts including impacts on air quality (Impact AQ-2), cultural resources (Impact CUL-1, CUL-2, and CUL-3), mineral resources (Impact MIN-1 and MIN-2), and tribal cultural resources (Impact TCR-1).

Figure 6.6-1 Alternative 1 + Proposed Project in Remaining Areas



7 List of Preparers

7.1 Lead Agency

This section lists the individuals who either prepared or participated in the preparation of this EIR. The CPUC is serving as the CEQA lead agency for the preparation of this Draft EIR.

California Public Utilities Commission

Connie Chen, Project Manager at the CPUC, directed the preparation of this document.

7.2 Consultant Team

This Draft EIR was prepared by Panorama Environmental, Inc., under the direction of the CPUC. Table 7.2-1 identifies staff that contributed to this document.

Table 7.2-1 Consultant Team

Contributor	Title	Role/Resource Section
Susanne Heim	Principal	Project Management, Quality Control, Mandatory Findings of Significance, Alternatives, Tribal Cultural Resources
Aaron Lui	Senior Manager	Project Management, Quality Control, Introduction, Project Description, Alternatives
Kate Thompson	Environmental Planner	Project Management, Quality Control, Project Description, Aesthetics, Land Use, Mineral Resources, Public Services, Recreation
Sara Sloan	Environmental Planner	Energy, Population and Housing
Peter Mye	Senior Project Manager	Transportation
Garrett Peterson	Environmental Scientist	Public Services, Utilities and Service Systems
Rachel Durben	Senior Planner/Biologist	Hydrology and Water Quality; Biological Resources (Marine Wildlife)
Teresa Campbell	Senior Biologist	Biological Resources (Terrestrial)
Drew Taylor	Geographic Information Systems (GIS) Specialist/Cartographer	GIS, Graphics
Lacar Musgrove	Technical Editor/Environmental Planner	Air Quality, Greenhouse Gas Emissions, Noise

Contributor	Title	Role/Resource Section
Teresa Campbell	Biologist	Biological Resources
Brandon Carroll	Environmental Planner	Alternatives; Agriculture and Forestry; Geology, Soil, and Paleontological Resources; Hazards, Hazardous Materials, and Public Safety; Wildfire
Erin Root	Environmental Planner/Archaeologist	Cultural Resources
Dmitrius Rodriguez	Environmental Analyst	Executive Summary
Jared Livingston	Environmental Analyst	Mitigation, Monitoring, and Reporting Program

Table 7.2-2 identifies other consultants that contributed to the preparation of this document.

Table 7.2-2 Subcontractor Authors

Contributor	Firm	Resource Section
Elizabeth A. Bagwell, Ph.D., RPA Rick Ralls Lucien David Osas Amber Fankhauser	Piñon Heritage Solutions, Sacramento, California	Cultural Resources and Tribal Cultural Resources
Kyle Verblaauw	Sequoia Ecological Consulting, Inc., Walnut Creek, California	Biological Resources (Terrestrial)
Christine Boudreau	Boudreau Associates, Oakland, California	Biological Resources (Marine Wildlife)
Yilin Tian, Ph.D.	Baseline Environmental Consulting, Oakland, California	Air Quality, Greenhouse Gas Emissions, Noise
Nicole H Gordon, Esq. Cheron J. McAleece	Meyers Nave	QA/QC Outside Legal Counsel

7.3 Agencies and Organizations Consulted

Federal agencies, state agencies, local agencies, and tribes were consulted during the preparation of the EIR. The agencies and individuals that were consulted by the CPUC during the preparation of this document are identified below.

7.3.1 Federal Agencies and Organizations

Table 7.3-1 identifies federal agencies and organizations that were consulted during the preparation of this document.

Table 7.3-1 Federal Agencies and Organizations

Federal Agency or Organization	Persons Consulted
United States Army Corps of Engineers (USACE)	Jessica Vargas, Project Manager Emma Shipley, Project Manager L.K. Sirkim, Team Lead Leison Bernstein, Staff Sarah West, Staff
National Oceanic and Atmospheric Administration, National Marine Fisheries Service (NOAA Fisheries) – West Coast Region	Kristin Begun, Biologist
United States Fish and Wildlife Service (USFWS)	Kim Squires, Section 7 Division Chief

7.3.2 State Agencies and Organizations

Table 7.3-2 identifies state agencies and organizations that were consulted during the preparation of this document.

Table 7.3-2 State Agencies and Organizations Consulted

State Agency or Organization	Persons Consulted
California Department of Fish and Wildlife (CDFW), Bay Delta Region	Andrea Boertien, Environmental Scientist
CPUC	Connie Chen, CPUC Project Manager Michelle Wilson, Program and Project Supervisor
California State Lands Commission (CSLC)	Christopher Huitt, Senior Environmental Scientist Ricky Lee, Mineral Resources Joseph Fabel, Attorney Jason Ramos, Senior Environmental Scientist Nicole Dobroski, Chief, Division of Environmental Science, Planning, and Management Joanne Holt, Staff Alexandra Borack, Staff Joo-Chai Wong, Staff Shahed Meshkati, Staff Vanessa Perez, Staff Peter Regan, Staff Ninette Lee, Staff Walter Scott, Staff Too Chaillong, Staff
State Water Resources Control Board	Alexander Lopez, Staff

7.3.3 Local Agencies and Organizations

Table 7.2-3 identifies local agencies and organizations that were consulted during the preparation of this document.

Table 7.3-3 Local Agencies and Organizations Consulted

Local Agency or Organization	Persons Consulted
RWQCB, San Francisco Bay (Region 2)	Kathryn Hart, Environmental Engineer
San Francisco Bay Conservation and Development Commission (BCDC)	Rowan Yelton, Bay Resources Analyst
Delta Stewardship Council	Eva E. Bush, Environmental Program Manager, Planning & Performance Division Pat Kelly, Staff
Sacramento Municipal Utility District	Blake Heinlein, Project Development Manager Ryan Donovan, Renewable Generation Assets Manager Ammon Rice, Staff Leroy Tipette, Staff Rob Ferrera, Staff
Solano County	Erik Hagstrom, Associate Planner Narcisa Untal, Senior Planner Allan Calder, Planning Manager

7.3.4 Tribes

The CPUC sent the NOP to 22 Native American tribes identified by the Native American Heritage Commission (NAHC) as having cultural affiliation with the Project area. In addition, the CPUC conducted separate outreach with Native American tribes before and during the scoping period in compliance with Assembly Bill (AB) 52. Two additional tribes were notified about the project during the scoping period and were not sent separate NOP postcards, including Costanoan Rumsen Carmel Tribe and Wuksachi Indian Tribe/Eshom Valley Band. Native Americans that engaged in AB 52 consultation are listed in Table 7.3-4 below:

Table 7.3-4 Consulting Native Americans

Local Agency or Organization	Persons Consulted
Lisjan Nation	Lucy Gills, Lisjan Nation Cultural Resource Manager Cheyenne Zepeda, Lisjan NationCultural Resource Manager Déjà Gould, Lisjan Nation Tribal Historic Preservation Officer
Yocha Dehe Wintun Nation	Eric Hernandez, Site Protection Manager, Yocha Dehe Wintun Nation Socorro Reyes-Gutierres, Site Protection Supervisor, Yocha Dehe Wintun Nation

The following tribes were notified about the project and preparation of this Draft EIR:

- Amah Mutsun Tribal Band
- Amah Mutsun Tribal Band of Mission San Juan Bautista
- Buena Vista Rancheria of Me-Wuk Indians
- Cachil Dehe Band of Wintun Indians of the Colusa Indian Community
- Calaveras Band of Mi-Wuk Indians
- Chicken Ranch Rancheria of Me-Wuk Indians
- Confederated Villages of Lisjan Nation
- Cortina Rancheria - Kletsel Dehe Band of Wintun Indians
- Grindstone Rancheria of Wintun-Wailaki
- Guidiville Rancheria of California
- Indian Canyon Mutsun Band of Costanoan
- Ione Band of Miwok Indians
- Jackson Rancheria Band of Miwuk Indians
- Muwekma Ohlone Tribe of the SF Bay Area
- Nashville Enterprise Miwok-Maidu-Nishinam Tribe
- Northern Valley Yokut / Ohlone Tribe
- Pakan'yani Maidu of Strawberry Valley Rancheria
- The Ohlone Indian Tribe
- Tule River Indian Tribe
- United Auburn Indian Community of the Auburn Rancheria
- Wilton Rancheria
- Yocha Dehe Wintun Nation
- Costanoan Rumsen Carmel Tribe
- Wuksachi Indian Tribe/Eshom Valley Band