INITIAL STUDY/MITIGATED NEGATIVE DECLARATION
PACIFIC GAS & ELECTRIC COMPANY
L-130 SACRAMENTO RIVER CROSSING PIPELINE REPLACEMENT PROJECT

April 2022

Lead Agency:
California State Lands Commission
100 Howe Avenue, Suite 100 South
Sacramento, California 95825

Applicant:
Pacific Gas & Electric Company
4040 West Lane, Building #9 (113C)
Stockton, California 95204

MISSION STATEMENT

The California State Lands Commission provides the people of California with effective stewardship of the lands, waterways, and resources entrusted to its care based on the principles of equity, sustainability, and resiliency, through preservation, restoration, enhancement, responsible economic development, and the promotion of public access.

CEQA DOCUMENT WEBSITE

www.slc.ca.gov/ceqa/

Geographic Location (Proposed River Crossing)

Latitude: 38°08’51.03” N
Longitude: 121°41’16.85” W
WGS84 Datum

Cover Photo: Western Sacramento River riverbank looking northeast
(Photo courtesy of Padre Associates, Inc.)

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LIST OF ABBREVIATIONS AND ACRONYMS

A	AB	Assembly Bill
	ABAG-MTC	Association of Bay Area Governments and Metropolitan Transportation Commission
	ACM	Asbestos Containing Material
	ACOE	U.S. Army Corps of Engineers
	AIHA	American Industrial Hygiene Association
	AR6	Sixth Assessment Report
B	BACT	Best Available Control Technology
	BAHCP	Bay Area Habitat Conservation Plan
	BALMD	Brannan-Andrus Levee Maintenance District
	BCECP	Basic Construction Emissions Control Practices
	BMP	Best Management Practices
	BSA	Biological Study Area
C	CAAQS	California Ambient Air Quality Standards
	CalEEMod	California Emissions Estimator Model
	CalEnviroScreen	California Communities Environmental Health Screening Tool
	CAL FIRE	California Department of Forestry and Fire Protection
	Cal/OSHA	California's Occupational Safety and Health Administration
	Caltrans	California Department of Transportation
	CAP	Climate Action Plan
	CARB	California Air Resources Board
	CBIA	California Building Industry Association
	CDC	California Department of Conservation
	CDFW	California Department of Fish and Wildlife
	CEQA	California Environmental Quality Act
	CESA	California Endangered Species Act
	CFR	Code of Federal Regulations
	CGOPR	California Governor's Office of Planning and Research
	CGS	California Geologic Society
	CH_4	Methane
	CHP	California Highway Patrol
	CIMIS	California Irrigation Management Information System
	cm	Centimeter
	CMP	Congestion Management Plan
	CNEL	Community noise equivalent level
	CNPS	California Native Plant Society
	CO	Carbon Monoxide
	CO_2	Carbon Dioxide
	CO_2e	Carbon Dioxide Equivalent
	CRC	California Resources Corporation

	CRHR	California Register of Historical Resources
	CRMTP	Cultural Resources Management and Treatment Plan
	CRPR	California Rare Plant Risk
	CSLC	California State Lands Commission
	CTCVGM	Construction Vibration Guidance Manual
	CVFPB	Central Valley Flood Protection Board
	CVFPP	Central Valley Flood Protection Plan
	CVRWQCB	Central Valley Regional Water Quality Control Board
D	dB	Decibel
	dBA	A-weighted Decibel
	DDT	Dichlorodiphenyltrichloroethane
	Delta	Sacramento-San Joaquin Delta
	DEPM	Division of Environmental Planning and Management
	DPS	Distinct Population Segment
	DTSC	Department of Toxic Substances Control
	DWR	Department of Water Resources
E	EIR	Environmental Impact Report
	EMFAC	Emission Factors
	ESA	Environmentally Sensitive Area
	ETS	Electrolysis Test Stations
F	FEMA	Federal Emergency Management Agency
	FESA	Federal Endangered Species Act
	FR	Federal Register
	Ft	Feet/Foot
G	GGS	Giant Gartersnake
	GHG	Greenhouse Gas
	GSA	Groundwater Sustainability Agencies
H	HCP	Habitat Conservation Plan
	HDD	Horizontal Directional Drilling
	H_2S	Hydrogen Sulfide
I	IEP	Interagency Ecological Program
	in	Inch/Inches
	IPaC	Information for Planning and Consultation
	IPCC	Intergovernmental Panel on Climate Change
	IRCP	Inadvertent Release Contingency Plan
	IS	Initial Study
K	kW	Kilowatt
L	L-130	Line 130
	L_{dn}	Day-Night Average Sound Level
	L_{eq}	Equivalent Sound Level
	LOS	Level of Service
	L_{max}	Maximum Sound Level
	LUST	Leaking Underground Storage Tank
M	MCE	McClean Energy
	MFPD	Montezuma Fire Protection District

	mg/m^3	Microgram per cubic meter
	mm	Millimeter
	MM	Mitigation Measure
	MND	Mitigated Negative Declaration
	MRHCP	Multi Region Habitat Conservation Plan
	$MTCO_2E/yr$	Metric Tons of CO_2 equivalent per year
	MTP/SCS	Metropolitan Transportation Plan/Sustainable Communities Strategy
N	N_2O	Nitrous Oxide
	NAAQS	National Ambient Air Quality Standards
	NAHC	Native American Heritage Commission
	NCIC	North Central Information Center
	NMFS	National Marine Fisheries Service
	NO	Nitric Oxide
	NO_2	Nitrogen Dioxide
	NO_x	Nitrogen Oxides
	NOI	Notice of Intent
	NPDES	National Pollutant Discharge Elimination System
	NRCS	Natural Resources Conservation Service
	NRHP	National Register of Historic Places
	NTSB	National Transportation Safety Board
	NWIC	Northwestern Information Center
O	O_3	Ozone
	O&M	Operations and Maintenance
	OEHHA	Office of Environmental Hazard Assessment
	OPR	Office and Planning and Research
P	PCB	Polychlorinated Biphenyls
	PG&E	Pacific Gas & Electric Company
	PM_{10}	Particulate Matter Less Than 10 Micrometers
	$PM_{2.5}$	Particulate Matter Less Than 2.5 Micrometers
	ppb	parts per billion
	ppm	parts per million
	PPV	Peak Particle Velocity
	PRC	Public Resources Code
	PWSP	Project Work and Safety Plan
Q	Qds	Holocene age dredge spoils
	Qhdm	Holocene bay mud deposit
	Qhl	Holocene age natural levee deposits
	Ql	Holocene age natural levee deposits
	Qmz	Pleistocene age Montezuma Formation
	Qpm	Holocene age bay mud deposits
R	ROG	Reactive Organic Gases
	RV	Recreational Vehicle
	RVARC	Rio Vista Army Reserve Center
	RWQCB	Regional Water Quality Control Board

S	SACOG	Sacramento Area Council of Governments
	SB	Senate Bill
	SBI	Swain Biological Incorporated
	sec	Second/seconds
	SFNA	Sacramento Federal Nonattainment Area
	SHPO	State Historic Preservation Officer
	SMAQMD	Sacramento Metropolitan Air Quality Management District
	SMUD	Sacramento Municipal Utility District
	SO_2	Sulfur dioxide
	SPFC	State Plan of Flood Control
	SR	State Route
	SRFCP	Sacramento River Flood Control Project
	SRP	Site Restoration Plan
	STA	Solano Transportation Authority
	SVAB	Sacramento Valley Air Basin
	SWPPP	Storm Water Pollution Prevention Plan
	SWRCB	State Water Resources Control Board
T	TAC	Toxic Air Contaminant
	TDS	Total Dissolved Solids
	TPH	Total Petroleum Hydrocarbons
U	µg/m3	Micrograms per Cubic Meter
	µPa	microPascals
	U.S.C.	U.S. Code
	USEPA	U.S. Environmental Protection Agency
	USFWS	U.S. Fish and Wildlife Service
	USGS	United States Geological Survey
V	VMT	Vehicles Miles Traveled
W	WPT	Western Pond Turtle
Y	YSAQMD	Yolo-Solano Air Quality Management District

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The California State Lands Commission (CSLC) is the lead agency under the California Environmental Quality Act (CEQA) (Pub. Resources Code, § 21000 et seq.) and has prepared this Initial Study (IS)/Mitigated Negative Declaration (MND) that analyzes and discloses the environmental effects associated with the proposed Pacific Gas & Electric Company (PG&E) Line 130 (L-130) Sacramento River Crossing Pipeline Replacement Project (Project). The Project would authorize PG&E (Applicant) to decommission and replace Project-related facilities located (in part) within CSLC Lease No. 5438.1-B. The Project area is located within portions of Solano and Sacramento Counties, California (Figure ES-1). The westernmost Project area is located at the south end of the city of Rio Vista and extends east across the Sacramento River into primarily agricultural lands on Brannan Island (Figure ES-2).

Pipeline replacement, decommissioning, and removal activities would result in a total temporary disturbance footprint of approximately 10.94 acres and a total excavation footprint of approximately 0.65 acre (0.14 acre of excavation associated with pipeline replacement activities and 0.51 acre of excavation associated with decommissioning activities).

CSLC has prepared this MND because it determined that, while the IS identifies potentially significant impacts related to the Project, mitigation measures (MMs) incorporated into the Project proposal and agreed to by the Applicant would avoid or mitigate those impacts to a point where no significant impacts occur.

PROPOSED PROJECT

The proposed Project would be conducted in two distinct phases (Figure ES-2). Phase 1 would replace the pipeline segment of L-130 that crosses the Sacramento River using Horizontal Directional Drilling (HDD) techniques just north of and parallel to the existing crossing alignment, and includes the following major components:

- Drilling a pilot hole for a 16-inch-diameter pipeline under the Sacramento River using HDD methods conducted from both sides of the crossing, intersecting at a midpoint approximately 80 to 90 feet below the riverbed.
- Pulling the 16-inch-diameter pipe string into the final bore from the East Work Area to the West Work Area landing.
- Tying in the new pipeline crossing to the existing terrestrial pipeline network via short sections of trench-installed pipe.

Phase 2 would begin by pigging and flushing (cleaning by pushing a solid plug or "pig" device and clean fluids through) the pipeline segments to be decommissioned to remove any potential contaminants. Specific pipeline segments that would be abandoned in place would then be filled with concrete slurry while other segments would be removed, as described below. For planning purposes, Phase 2 would be addressed in four segments that are numbered sequentially from western end of the decommissioned pipeline to the eastern end (Figure ES-3), and would have the following final dispositions:

- **Segment 1 - West Terrestrial Segment.** 446 feet of L-200A-3 pipeline filled with cement slurry and abandoned in place. 65 feet of L-130 pipeline removed. Concrete valve box removed.
- **Segment 2 – Submarine Pipeline Segment.** 2,470 feet of L-130 pipeline removed.
- **Segment 3 – East Levee Segment.** 71 feet of L-130 pipeline removed. 283 feet of L-195-1 pipeline removed. Concrete valve box removed. 53 feet of casing beneath State Route 160 removed.
- **Segment 4 – East Residential and Agricultural Segment.** 535 feet of L-195-1 pipeline filled with cement slurry and abandoned in place.

ENVIRONMENTAL IMPACTS AND PROPOSED MITIGATION MEASURES

The environmental issues checked below in Table ES-1 would be potentially affected by this Project; a checked box indicates that at least one impact would be a "potentially significant impact." The Applicant has agreed to Project revisions, including the implementation of MMs, that would reduce the potential impacts to "less than significant with mitigation," as detailed in Section 3.0, *Environmental Checklist and Analysis*, of this MND. Table ES-2 lists the proposed MMs designed to reduce or avoid potentially significant impacts. With implementation of the proposed MMs, all Project-related impacts would be reduced to less than significant levels.

Table ES-1. Environmental Issues and Potentially Significant Impacts

☒ Aesthetics	☐ Agriculture and Forestry Resources	☒ Air Quality
☒ Biological Resources	☒ Cultural Resources	☒ Cultural Resources – Tribal
☐ Energy	☒ Geology, Soils, and Paleontological Resources	☐ Greenhouse Gas Emissions
☒ Hazards and Hazardous Materials	☒ Hydrology and Water Quality	☐ Land Use and Planning
☐ Mineral Resources	☐ Noise	☐ Population and Housing
☐ Public Services	☒ Recreation	☒ Transportation
☒ Utilities and Service Systems	☐ Wildfire	☒ Mandatory Findings of Significance

Table ES-2. Summary of Proposed Project Mitigation Measures

Aesthetics
MM AES-1: Nighttime Illumination Shielding
Air Quality
MM AQ-1: Implement Basic Construction Emissions Control Practices and Best Management Practices.
Biological Resources
MM BIO-1: Environmental Training Program
MM BIO-2: Biological Monitoring
MM BIO-3: Turbidity Monitoring Plan
MM BIO-4: Swainson's Hawk Nesting Season Avoidance or Pre-Construction Surveys
MM BIO-5: Nesting Bird Season Pre-Construction Surveys.
MM BIO-6: Giant Gartersnake Work Window and Pre-Construction Surveys
MM BIO-7: Western Pond Turtle Pre-Construction Surveys
MM BIO-8: Botanical Pre-Construction Surveys
MM BIO-9: Site Restoration
MM HAZ-1: Project Work and Safety Plan
MM HAZ-2: Inadvertent Release Contingency Plan
MM HYDRO-1: Stormwater Pollution Prevention Plan
Cultural Resources
MM CUL-1/TCR-1: Cultural and Tribal Cultural Resources Awareness Training
MM CUL-2/TCR-2: Cultural and Tribal Cultural Resources Management and Treatment Plan (CRMTP)
MM CUL-3/TCR-3: Cultural and Tribal Cultural Resources Monitoring
MM CUL-4/TCR-5: Discovery of Previously Unknown Cultural or Tribal Cultural Resources
MM CUL-5/TCR-7: Unanticipated Discovery of Human Remains

Cultural Resources – Tribal
MM CUL-1/TCR-1: Cultural and Tribal Cultural Resources Awareness Training
MM CUL-2/TCR-2: Cultural and Tribal Cultural Resources Management and Treatment Plan (CRMTP)
MM CUL-3/TCR-3: Cultural and Tribal Cultural Resources Monitoring
MM TCR-4: Monitoring and Inspection of Grading and Excavation
MM CUL-4/TCR-5: Discovery of Previously Unknown Cultural or Tribal Cultural Resources
MM TCR-6: Treatment of Tribal Cultural Resources
MM CUL-5/TCR-7: Unanticipated Discovery of Human Remains
Geology, Soils, and Paleontological Resources
MM BIO-9: Site Restoration
MM HYDRO-1: Stormwater Pollution Prevention Plan
Hazards and Hazardous Materials
MM HAZ-1: Project Work and Safety Plan
MM HAZ-2: Inadvertent Release Contingency Plan
MM HAZ-3: Pre- and Post-Project Bathymetric and Surficial Features Multi-Beam Debris Survey
MM HAZ-4: Asbestos Handling Procedures
MM T-1: Traffic Control Plan
Hydrology and Water Quality
MM HYDRO-1: Stormwater Pollution Prevention Plan
MM HAZ-1: Project Work and Safety Plan
MM HAZ-2: Inadvertent Release Contingency Plan
MM HAZ-4: Asbestos Handling Procedure
MM BIO-3: Turbidity Monitoring Plan
MM BIO-9: Site Restoration
Recreation
MM REC-1: Riverine Safety Measures
MM REC-2: Advanced Notice to Mariners
Transportation
MM T-1: Traffic Control Plan
MM REC-1: Riverine Safety Measures
MM REC-2: Advanced Notice to Mariners
Utilities and Service Systems
MM HAZ-1: Project Work and Safety Plan
MM HAZ-4: Asbestos Handling Procedure

Figure ES-1. Project Vicinity Map

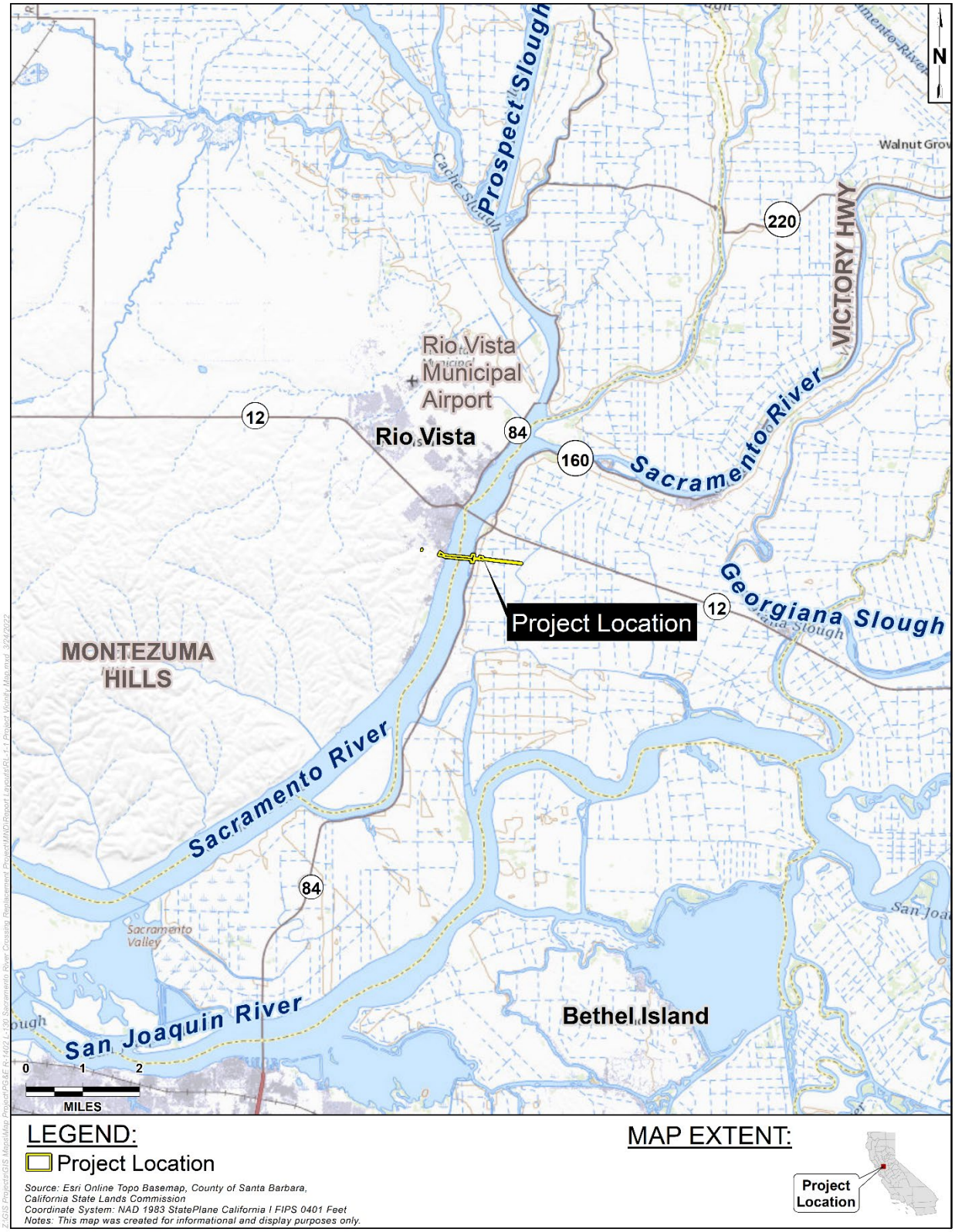


Figure ES-2. Project Overview Map

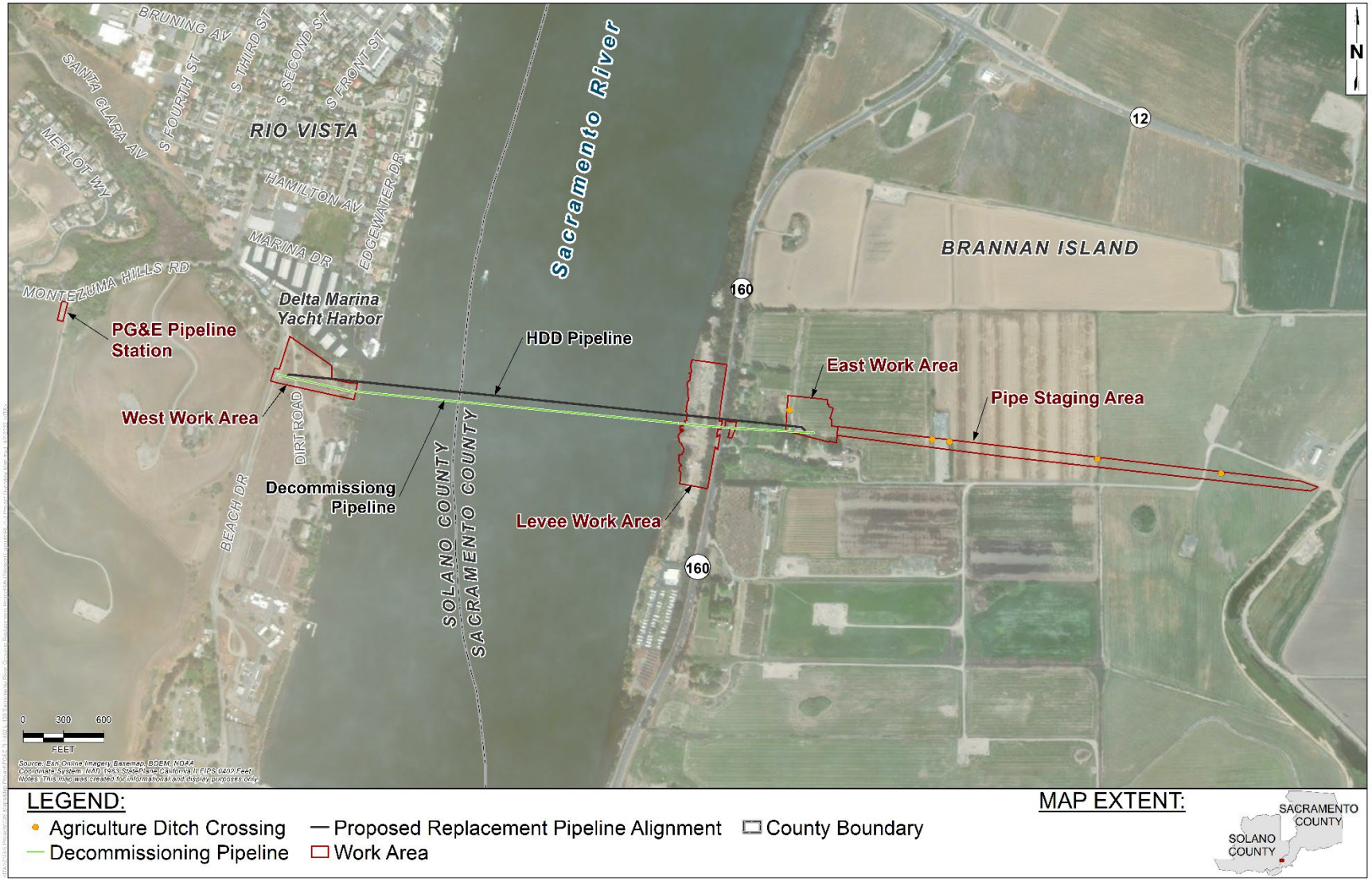
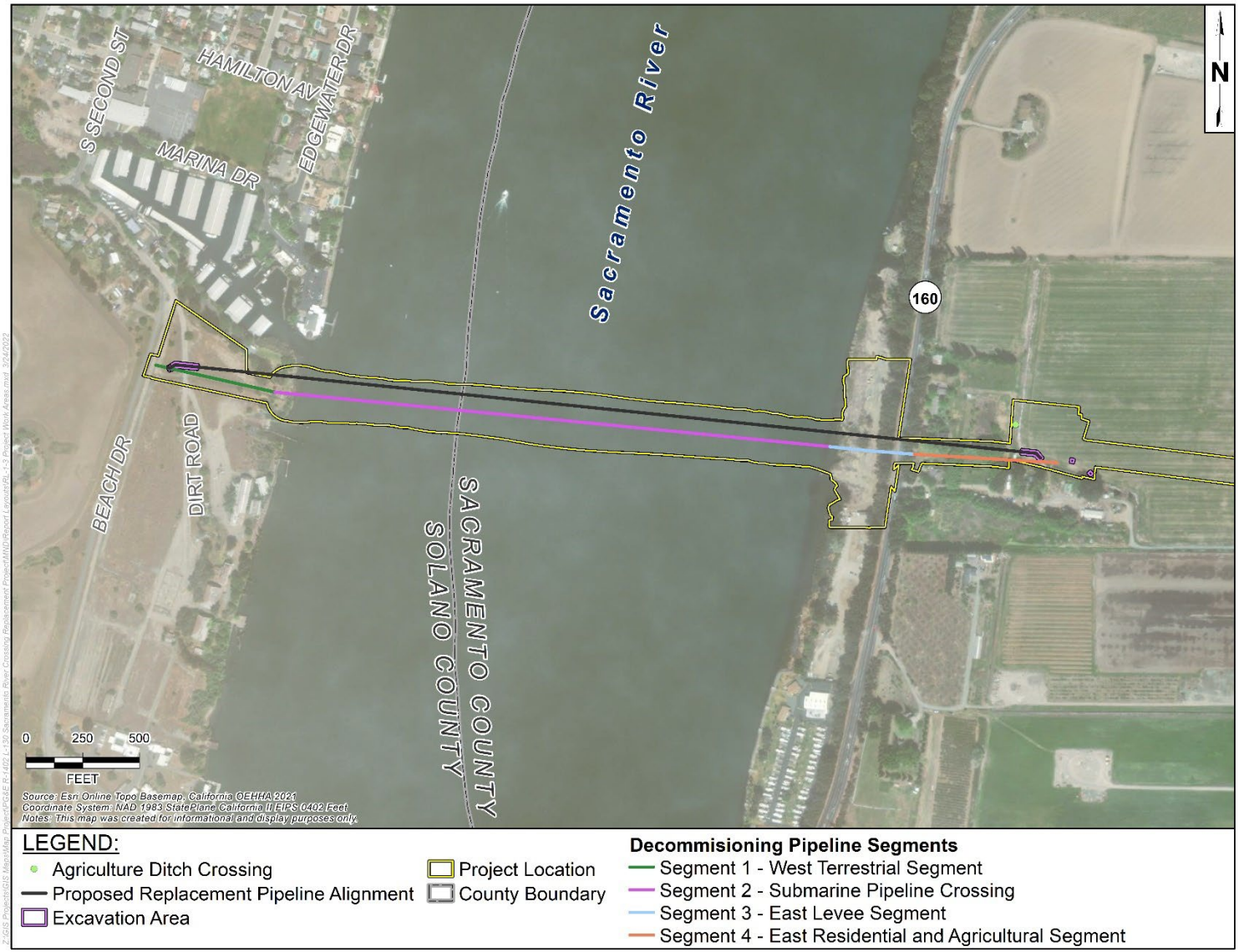


Figure ES-3. HDD Installation and Decommissioning Overview



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1.0 PROJECT AND AGENCY INFORMATION

1.1 PROJECT TITLE

PG&E L-130 Sacramento River Crossing Pipeline Replacement Project (Project).

1.2 LEAD AGENCY AND PROJECT SPONSOR

Lead Agency
California State Lands Commission
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Senior Land Planner
Sean.poirier@pge.com
(925) 786-2655

1.3 PROJECT LOCATION

The Project area is located within portions of Solano and Sacramento Counties, California. The Project area is bordered by the city of Rio Vista to the north, Montezuma Hills to the west, and agricultural lands within the Sacramento River Delta to the south and east. The westernmost Project area is located at the south end of the city of Rio Vista and extends east across the Sacramento River into primarily agricultural lands on Brannan Island (Figure 1-1). State Route (SR) 160 extends along the Sacramento River eastern levee and across the associated portions of the pipeline right-of-way. California Resource Corporation (CRC) owns an idled 10-inch-diameter pipeline that also crosses the Sacramento River at this location but is not part of the proposed Project. See Figure 1-2 for an overview of the Project area. The pipeline corridor is located within CSLC Lease No. 5438.1-B.

1.4 ORGANIZATION OF THE MITIGATED NEGATIVE DECLARATION

This Initial Study/Mitigated Negative Declaration (IS/MND) is intended to provide the California State Lands Commission (CSLC), as lead agency under the California

Environmental Quality Act (CEQA) (Pub. Resources Code, § 21000 et seq.), and other responsible agencies, with the information required to exercise their discretionary responsibilities with respect to the proposed Project. The document is organized as follows:

- **Section 1** provides the Project location and background, agency and Applicant information, Project objectives, anticipated agency approvals, and a summary of the public review and comment process.
- **Section 2** describes the proposed Project including its location, layout, equipment, facilities, operations, and schedule.
- **Section 3** presents the IS, including the environmental setting, identification and analysis of potential impacts, and discussion of various Project changes and other measures that, if incorporated into the Project, would mitigate or avoid those impacts such that no significant effect on the environment would occur. CSLC staff prepared this IS pursuant to State CEQA Guidelines section 15063.[1]
- **Section 4** discusses other CSLC considerations relevant to the Project, such as climate change, environmental justice, and the CSLC Significant Lands Inventory that are in addition to review required pursuant to CEQA.
- **Section 5** presents information on report preparation and references.
- **Appendices** include specifications, technical data, and other information supporting the analysis presented in this MND as well as the Mitigation Monitoring Program:
    - Appendix A: List of Major Federal and State Laws, Regulations, and Policies Potentially Applicable to the Project
    - Appendix B: Local Regulations and Policies Potentially Applicable to the Project
    - Appendix C: Project Plans
    - Appendix D: Air Quality and Greenhouse Gas Emission Calculations
    - Appendix E: Biological Technical Report
    - Appendix F: Noise Modeling Results and Vibration Calculations
    - Appendix G: Inadvertent Release Contingency Plan
    - Appendix H: Preliminary Site Restoration Plan
    - Appendix I: Mitigation Monitoring Program

[1] The State CEQA Guidelines are found in California Code of Regulations, title 14, section 15000 et seq.

Figure 1-1. Project Vicinity Map

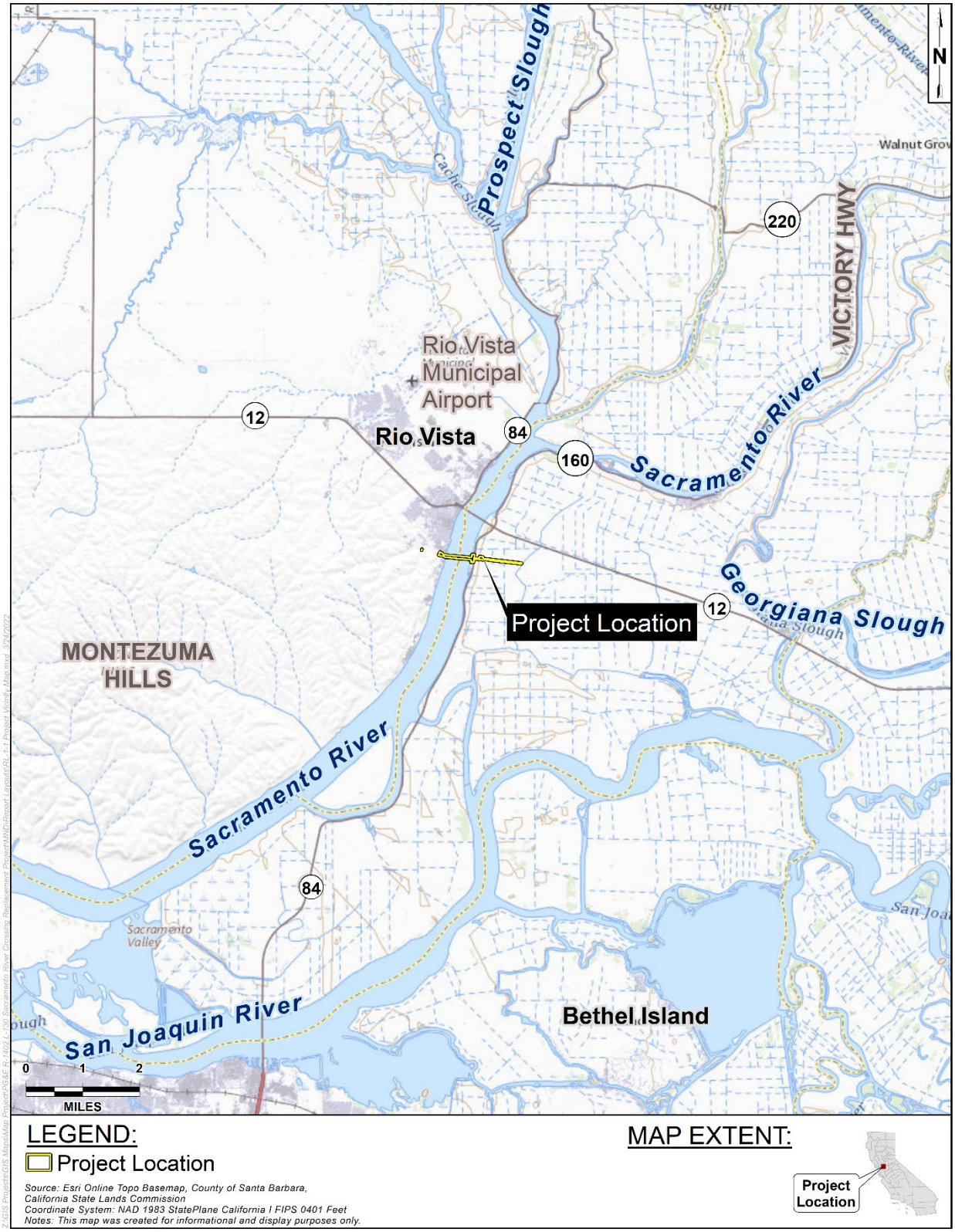
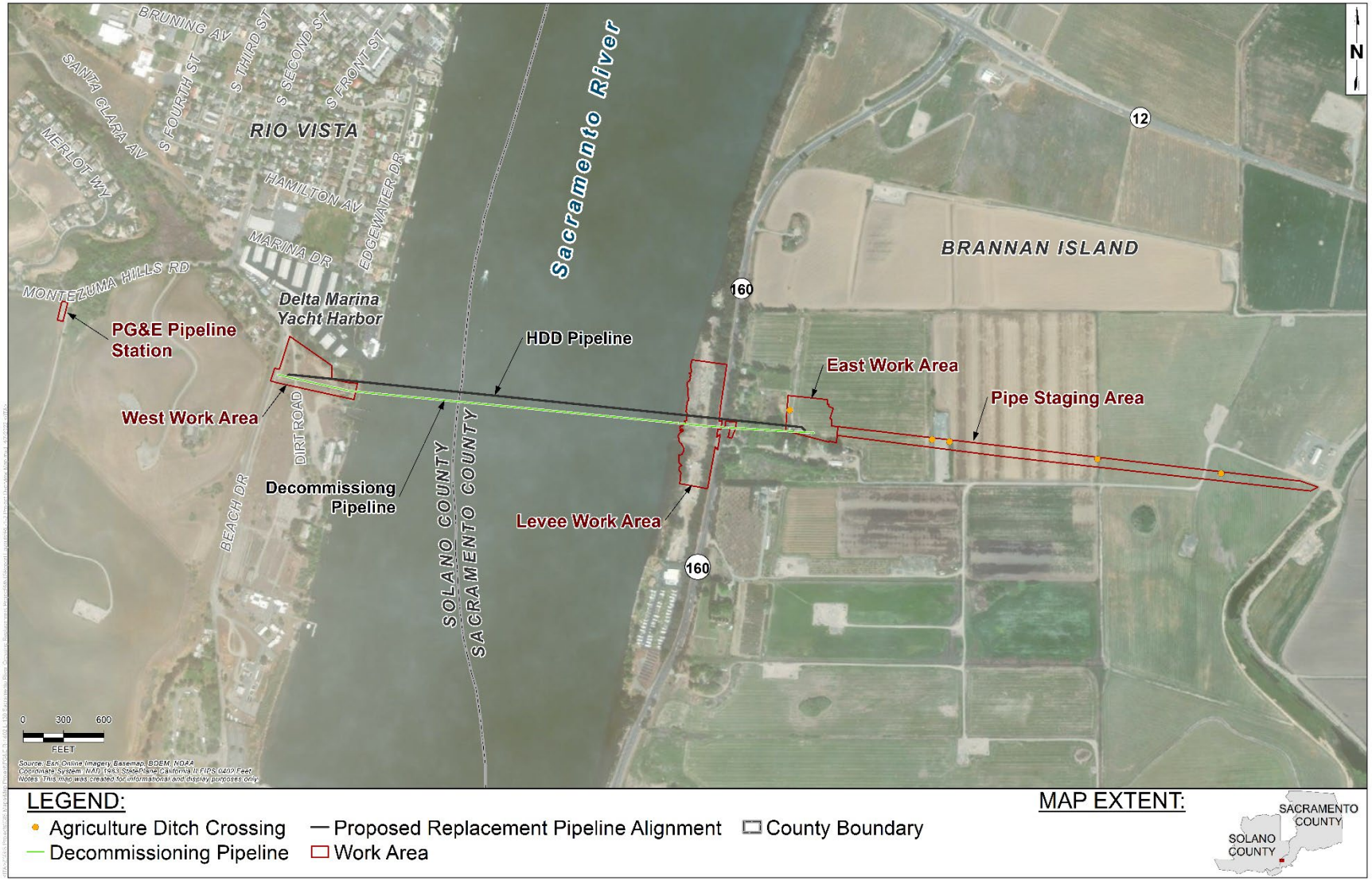


Figure 1-2. Project Overview Map



1.5 PROJECT BACKGROUND AND OBJECTIVES

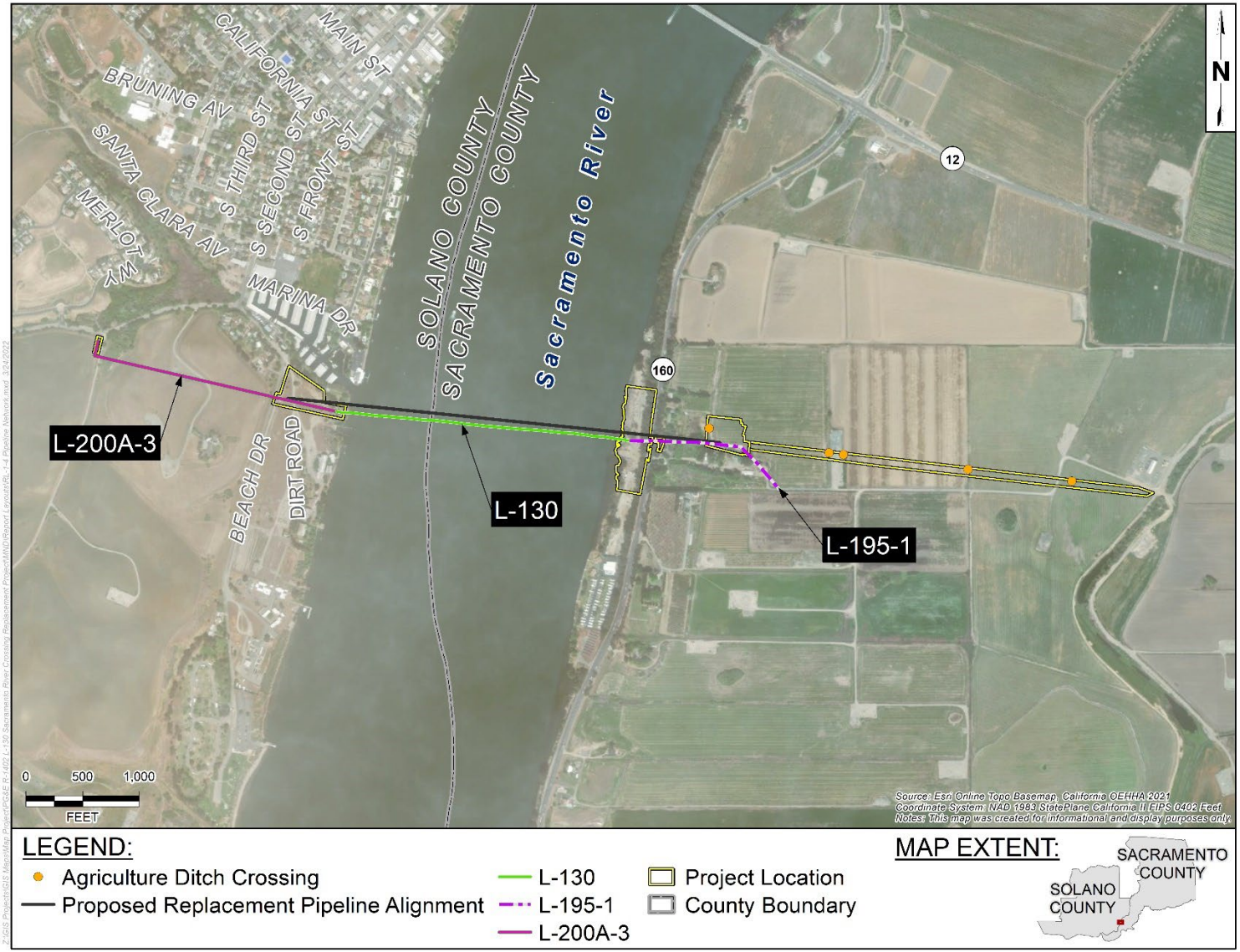
The Pacific Gas and Electric Company (PG&E or Applicant) installed the original L-130 pipeline crossing (also composed of L-195-1 and L-200A-3) in the Sacramento River in December 1944 to provide natural gas service (Figure 1-3). The National Transportation Safety Board (NTSB) issued a scheduled safety recommendation to PG&E requiring that the existing L-130 pipeline crossing be assessed by December 22, 2022, for safety, integrity, and the ability to be inspected using in-line inspection tools (also known as smart pigs). In response to this request, PG&E determined that an in-line (internal) inspection would be challenging due to the age and viable diameter of the pipeline. In addition, portions of the pipeline were found to have shallow depth of burial. PG&E therefore determined that the pipeline should be replaced prior to the NTSB's recommended assessment date of December 22, 2022, to comply with this request and maintain uninterrupted natural gas service to customers.

Horizontal directional drilling (HDD) was selected as the preferred installation method for the Sacramento River crossing pipeline replacement. HDD is a trenchless construction method that is used to install pipes underground without disturbing the ground surface. The drill is launched from one or both ends of a path and retrieved at the other end, and except for the entry and exit spaces above ground, the entire process takes place underground. The HDD installation method would eliminate potential temporary construction impacts associated with traditional underwater trenching methods, such as turbidity and disturbance to sensitive shoreline biological resources, and would ensure the new pipeline crossing maintains sufficient depth under the river bottom even with future changes to the river bottom elevation. The existing pipeline varies between a 10-, 12-, and 16-inch-diameter, therefore PG&E selected a 16-inch-diameter replacement pipeline to match the diameter of adjacent existing pipeline facilities and facilitate tie-in of the new pipeline to existing pipelines. This change would also facilitate future pipeline inspection and maintenance using an inspection tool (i.e., pipeline pig), which would be able to more easily navigate through the pipeline network.

1.6 PUBLIC REVIEW AND COMMENT

Pursuant to State CEQA Guidelines sections 15072 and 15073, a lead agency must issue a proposed MND for a minimum 30-day public review period. Agencies and the public will have the opportunity to review and comment on the document. Responses to written comments received by the CSLC during the 30-day public review period will be incorporated into the MND, if necessary, and provided in the CSLC's staff report. In accordance with State CEQA Guidelines section 15074, subdivision (b), the CSLC will review and consider the MND, together with any comments received during the public review process, prior to taking action on the MND and Project at a noticed public hearing.

Figure 1-3. Pipeline Network



1.7 APPROVALS AND REGULATORY REQUIREMENTS

1.7.1 California State Lands Commission

The State of California acquired sovereign ownership of all tidelands and submerged lands and beds of navigable lakes and waterways upon its admission to the United States in 1850. The State holds these lands for the benefit of all people of the State for statewide Public Trust purposes, which include but are not limited to waterborne commerce, navigation, fisheries, water-related recreation, habitat preservation, and open space.

On tidal waterways and navigable rivers, the State's sovereign fee ownership extends landward to the ordinary high-water mark, which is generally reflected by the mean high-tide line, except for areas of fill or artificial accretion. The Sacramento River is tidally influenced at the location of the proposed Project, and the State's sovereign fee ownership includes the bed of the River, extending landward to the mean high tide line. The CSLC's authority is set forth in division 6 of the Public Resources Code; CSLC's regulations are codified in California Code of Regulations, title 2, sections 1900 through 2970. The CSLC has authority to issue leases or permits for the use of sovereign lands held in the Public Trust, including all ungranted tidelands, submerged lands, and the beds of navigable lakes and waterways, and retains 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).

The CSLC must comply with CEQA when it undertakes an activity defined by CEQA as a "project" that must receive discretionary approval (i.e., the CSLC has the authority to approve or deny the requested lease, permit, or other approval) and that may cause either a direct physical change in the environment or a reasonably foreseeable indirect change in the environment. CEQA requires the CSLC to identify the significant environmental impacts of its actions and to avoid or mitigate those impacts, to the extent feasible.

The Applicant submitted an application to CSLC to amend the existing lease (Lease No. 5438.1-B) to replace the existing L-130 natural gas pipeline segment crossing under the Sacramento River and into Solano and Sacramento Counties.

1.7.2 Other Agencies

In addition to the CSLC, the Project is subject to the review and approval of other state, federal, and local entities with statutory or regulatory jurisdiction over various aspects of the Project (Table 1-1). All permits required for the Project would be obtained before starting any Project-related activities.

Table 1-1. Anticipated Agencies with Review/Approval over Project Activities

Permitting Agency	Anticipated Approvals/ Regulatory Requirements
State	
California State Lands Commission	Lease Amendment and CEQA Lead Agency
California Department of Fish and Wildlife	Lake and Streambed Alteration Agreement; Section 1600 of the California Fish and Game Code
California Office of Historic Preservation	National Historic Preservation Act; Section 106 Compliance
Central Valley Regional Water Quality Control Board	Section 401 Water Quality Certification (Clean Water Act); National Pollutant Discharge Elimination System permit
Central Valley Flood Protection Board	California Water Code Sections 8520-8723, California Code of Regulations, Title 23; Levee Encroachment Permit
California Department of Transportation	Encroachment Permit
Federal	
U.S. Army Corps of Engineers, Sacramento District	Section 404 Nationwide Permit (Clean Water Act) Section 10 Permit (Rivers and Harbors Act) 33 United States Code (U.S.C.) Section 408 Authorization (Rivers and Harbors Act)
U.S. Fish and Wildlife Service	Section 7 Consultation (federal Endangered Species Act (FESA))
National Marine Fisheries Service	Section 7 Consultation (FESA); Essential Fish Habitat Assessment
Local	
Brannan-Andrus Levee Maintenance District (Recreation District 2067 Brannan Island)	California Water Code Section 50000; Levee Encroachment Permit

2.0 PROJECT DESCRIPTION

Pacific Gas & Electric Company (PG&E or Applicant) is proposing to replace its existing Line 130 (L-130) Sacramento River pipeline crossing located south of the city of Rio Vista within Solano and Sacramento Counties. The Project objective is to install a new 16-inch-diameter pipeline underneath the Sacramento River using horizontal directional drilling (HDD) techniques, tie the new crossing into the existing pipeline network, and then decommission the existing Sacramento River crossing. The Project would be conducted in two distinct but sequential phases: 1) replacement pipeline installation and 2) decommissioning of the existing L-130 pipeline crossing (Figure 2-1).

2.1 PHASE 1 (REPLACEMENT PIPELINE INSTALLATION)

Phase 1 would consist of the following major components (Figure 2-2):

- Drilling a pilot hole for a 16-inch-diameter pipeline under the Sacramento River using HDD methods conducted from both sides of the crossing, intersecting at a midpoint approximately 80 to 90 feet below the riverbed.
- Pulling the 16-inch-diameter pipe string into the final bore from the East Work Area to the West Work Area landing.
- Tying in the new pipeline crossing to the existing terrestrial pipeline network via short sections of trench-installed pipe.

The following sections provide additional details regarding the HDD process and pipeline installation/tie-in.

2.1.1 HDD Work Areas

Three HDD Work Areas (West Work Area, East Work Area, and Pipe Staging Area) would be required during the replacement pipeline installation to provide space for a drill rig, drilling equipment storage, and materials (see Figure 2-2). No construction is proposed within the Sacramento River corridor during replacement pipeline installation activities. The HDD Work Areas would not be paved or surfaced with gravel. However, grading may be performed, and crane mats may be used beneath specific pieces of equipment, which would be removed to restore pre-Project conditions once Phase 1 is complete.

Figure 2-1. HDD Installation and Decommissioning Overview

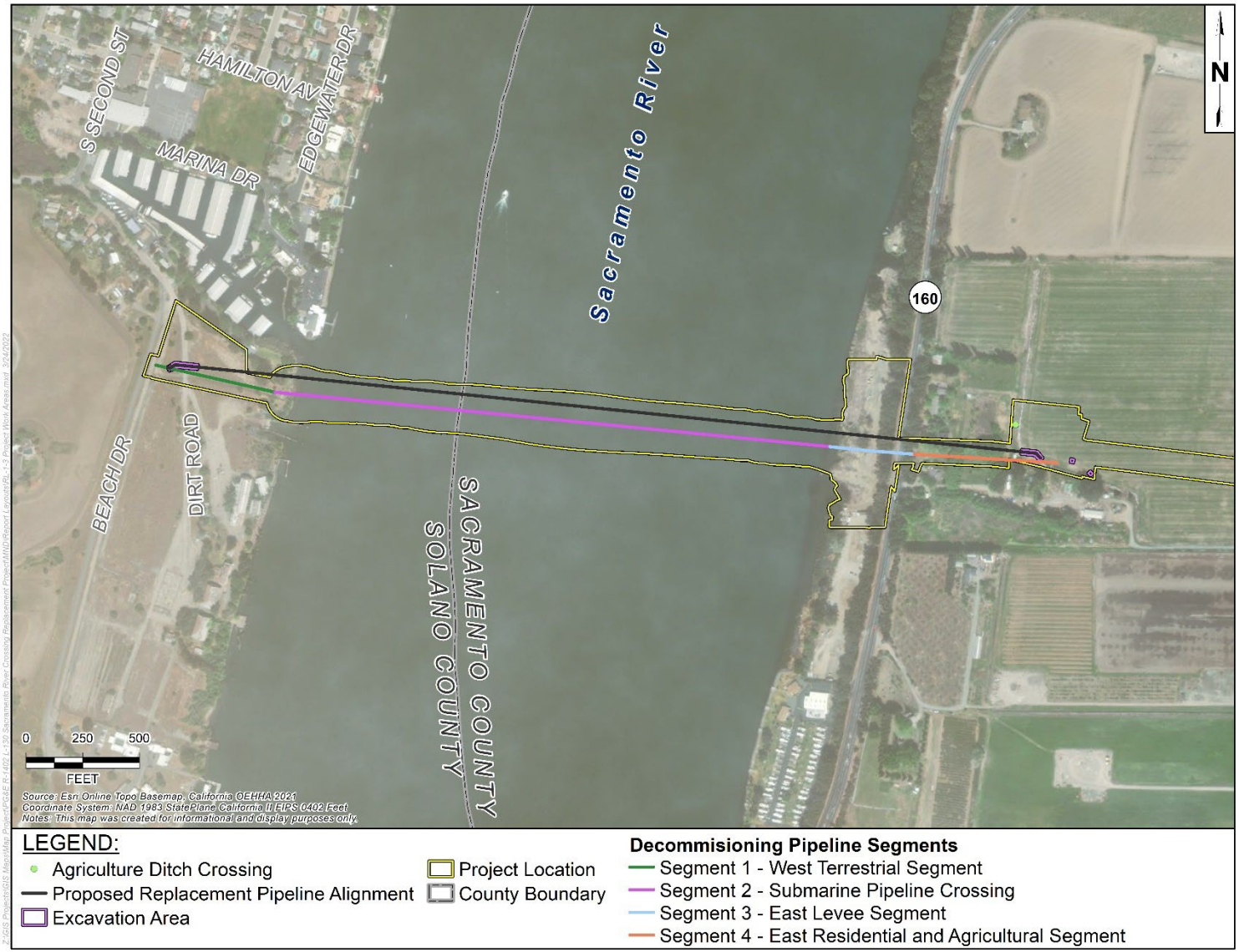
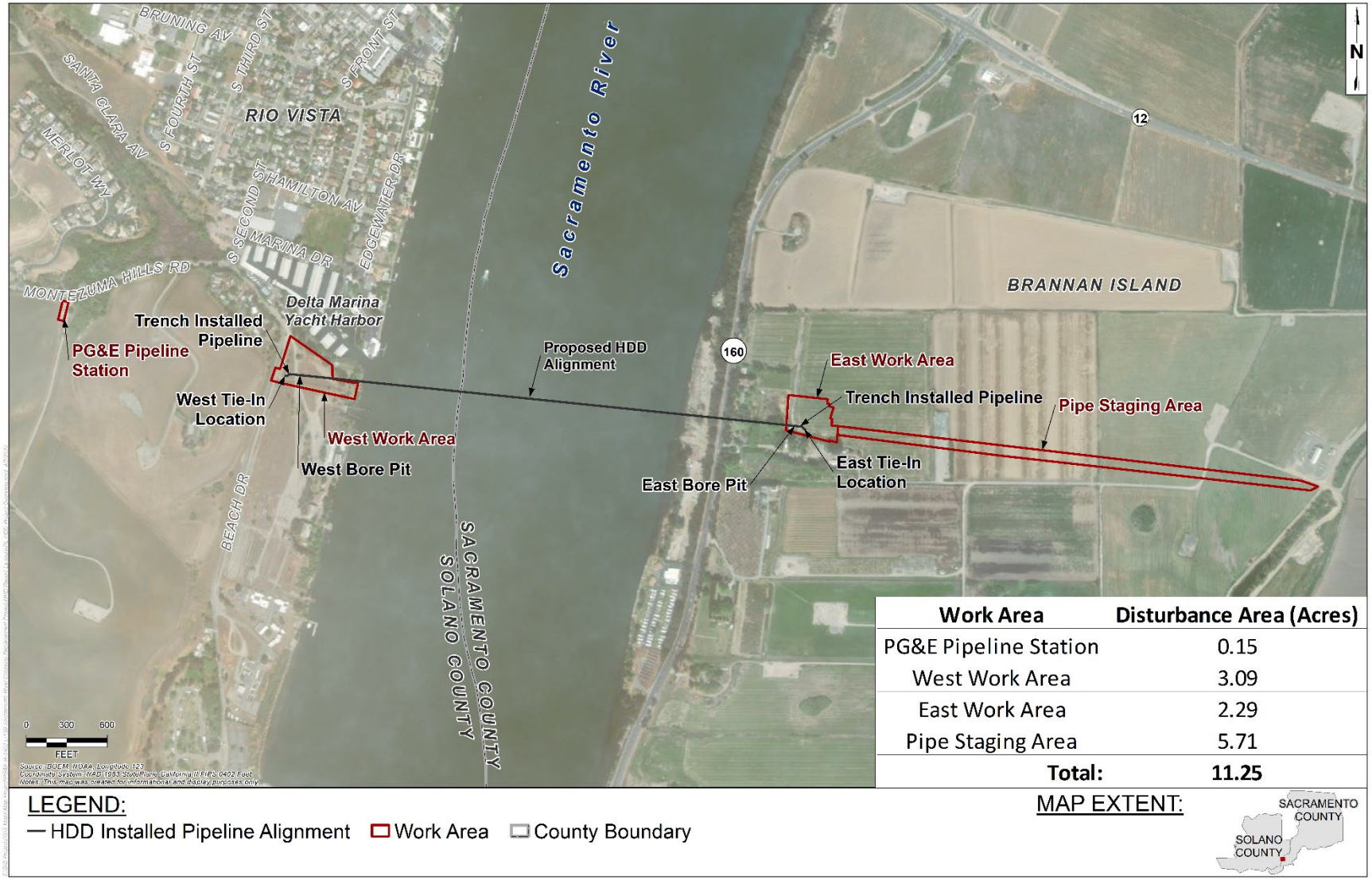


Figure 2-2. HDD Project Overview



Work Area	Disturbance Area (Acres)
PG&E Pipeline Station	0.15
West Work Area	3.09
East Work Area	2.29
Pipe Staging Area	5.71
Total:	**11.25**

LEGEND:
— HDD Installed Pipeline Alignment ▭ Work Area ▭ County Boundary

MAP EXTENT:

2.1.1.1 West Work Area

The West Work Area is undeveloped land located just south of the Delta Marina Yacht Harbor and immediately east of Beach Drive. It would be accessed from Beach Drive via an existing gate and dirt road located in the northern corner. The West Work Area would occupy approximately 2.41 acres and would support drilling operations, trenching and installing tie-in piping, as well as staging, receipt, and assembly for various equipment. A photograph of the West Work Area is shown below in Figure 2-3.

Figure 2-3. Photograph of the West Work Area

2.1.1.2 East Work Area

The East Work Area is in an agricultural field located east of State Route (SR) 160 and would be accessed using existing private driveways and dirt roads. The East Work Area is approximately 1.60 acres and would be used for HDD drilling operations, trenching and installing tie-in piping, and as an area for storing equipment and materials (see Section 2.1.2 for more details). A photograph of the East Work Area is shown in Figure 2-4.

Figure 2-4. Photograph of the East Work Area

2.1.1.3 Pipe Staging Area

The Pipe Staging Area would connect to the East Work Area and extend to the east across an agricultural field. The Pipe Staging Area is approximately 4.27 acres (about 50 feet wide by 3,600 feet long) and would be accessed using the same private driveways and dirt roads used to access the East Work Area. The Pipe Staging Area would be used to lay down individual pipeline segments end to end to be welded, coated, and tested prior to pullback into the HDD bore. Temporary crossings would be installed across agricultural ditches that occur within the Pipe Staging Area to allow for truck and equipment access along both sides of the fabricated pipe string (Figure 1-2). These temporary crossings may consist of steel trench plates or temporary culverts at the ditch crossing locations. Figure 2-5 shows an example photograph of a pipe staging area with a configuration similar to the proposed Project.

Figure 2-5. Photograph of Example Pipe Staging Area

2.1.2 HDD Methods

PG&E proposes to use HDD construction methods to minimize disturbance to the Sacramento River and adjacent levee banks. The following is a summary of key HDD-related activities required to install the proposed replacement pipeline:

- A bore pit (entry/exit pit) would be excavated at each end of the replacement pipeline alignment. A steel casing would be installed at the HDD entry point on either side of the Sacramento River to provide structural support for the initial drilling (see Sections 2.1.2.1 and 2.1.2.2 for more detail).
- Two directional drilling rigs located on each side of the Sacramento River crossing would create an intersecting pilot hole with a total length of 3,660 feet. One drill rig at the West Work Area would drill a pilot hole towards the east, while the other at the East Work Area would drill a pilot hole towards the west. The two pilot holes would meet approximately halfway (approximately 80 to 90 feet below the riverbed), where they would intersect and become a continuous pilot hole (see Figure 2-6a for a conceptual diagram and Section 2.1.2.3 for more detail).
- Once the pilot hole is completed, reaming operations would be performed to widen the bore to its final diameter (see Figure 2-6b for a conceptual diagram and Section 2.1.2.4 for more detail).
- The assembled pipe string would be tested for structural integrity at the welded joints. When reaming operations and testing are complete, the West Work Area drill rig would pull the welded replacement pipeline from the Pipe Staging Area

through the entry casing on the east side (see Figure 2-6c for a conceptual diagram and Sections 2.1.2.5 and 2.1.2.6 for more detail).

- Once the replacement pipeline is in place, the casing on the west side would be removed and cement slurry would be pumped into the annulus (ring-shaped space) between the borehole and the pipeline for 10 vertical feet from the ground surface. The casing on the east side would remain in place, and cement slurry would be pumped into the annulus between the pipeline and the casing for 10 vertical feet (see Section 2.1.2.7 for more detail).

Figure 2-6 shows a conceptual diagram of the basic HDD intercept bore process. Figure 2-7 shows a conceptual HDD worksite layout.

Phase 1 equipment requirements are estimated below in Table 2-1. Phase 1 materials pickups and deliveries are estimated separately in Table 2-2, and estimated workforce requirements are listed in Table 2-3.

2.1.2.1 Bore Pit Excavation and Site Preparation

An 811 Utility Location Survey would be conducted for all planned areas of excavation. Affected local utility companies would be notified through this process and utility locators would identify and mark the approximate location of buried lines with flags or paint. Marked utility locations would be avoided.

The HDD process would begin with excavating the two bore pits used to support initial drilling operations, including surface casing installation and drilling fluid recovery. A bore pit approximately 20 feet wide, 50 feet long, and 6 feet deep would be excavated at the West Work Area HDD entry point. A second bore pit approximately 8 feet wide, 20 feet long, and 6 feet deep would also be excavated at the East Work Area HDD entry point. Soils excavated from the pits would be stockpiled within the adjacent work areas to be used for backfilling and site restoration.

Due to site conditions, the drilling subcontractor may choose to elevate the East Work Area drilling rig above the Sacramento River's mean high-water elevation by importing fill and creating a temporary HDD platform (earthen mound) to the east of the bore pit. This HDD platform would be approximately 70 feet long and 20 feet wide at the top, and approximately 13 feet above the existing grade. With sloped sides, the base of this earthen mound is expected to be approximately 147 feet long and 70 feet wide. The HDD platform would be removed as part of site restoration at the conclusion of work (see Section 2.1.7).

Figure 2-6. HDD Conceptual Diagram

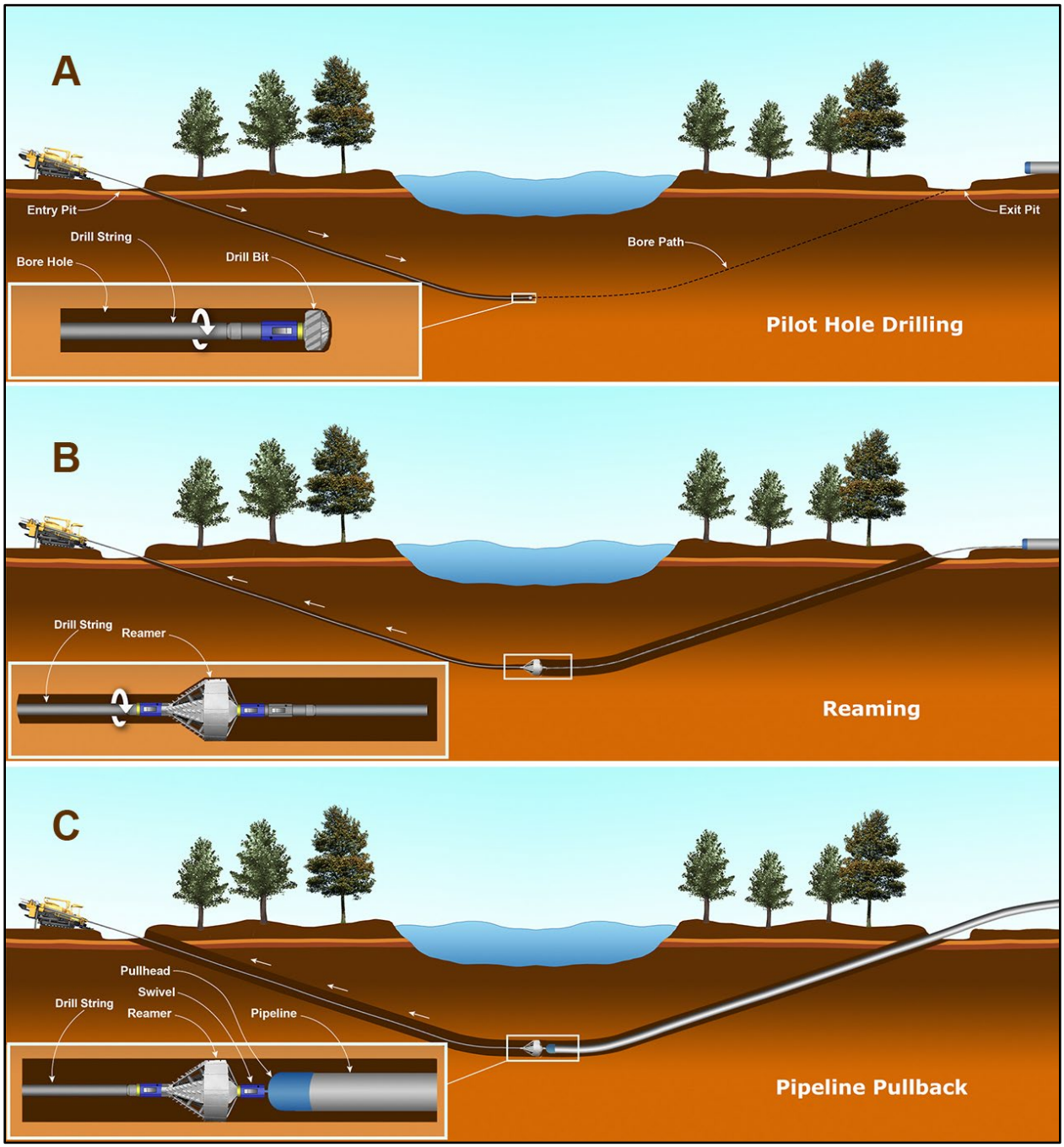


Figure 2-7. Conceptual HDD Worksite Layout: East and West Work Areas

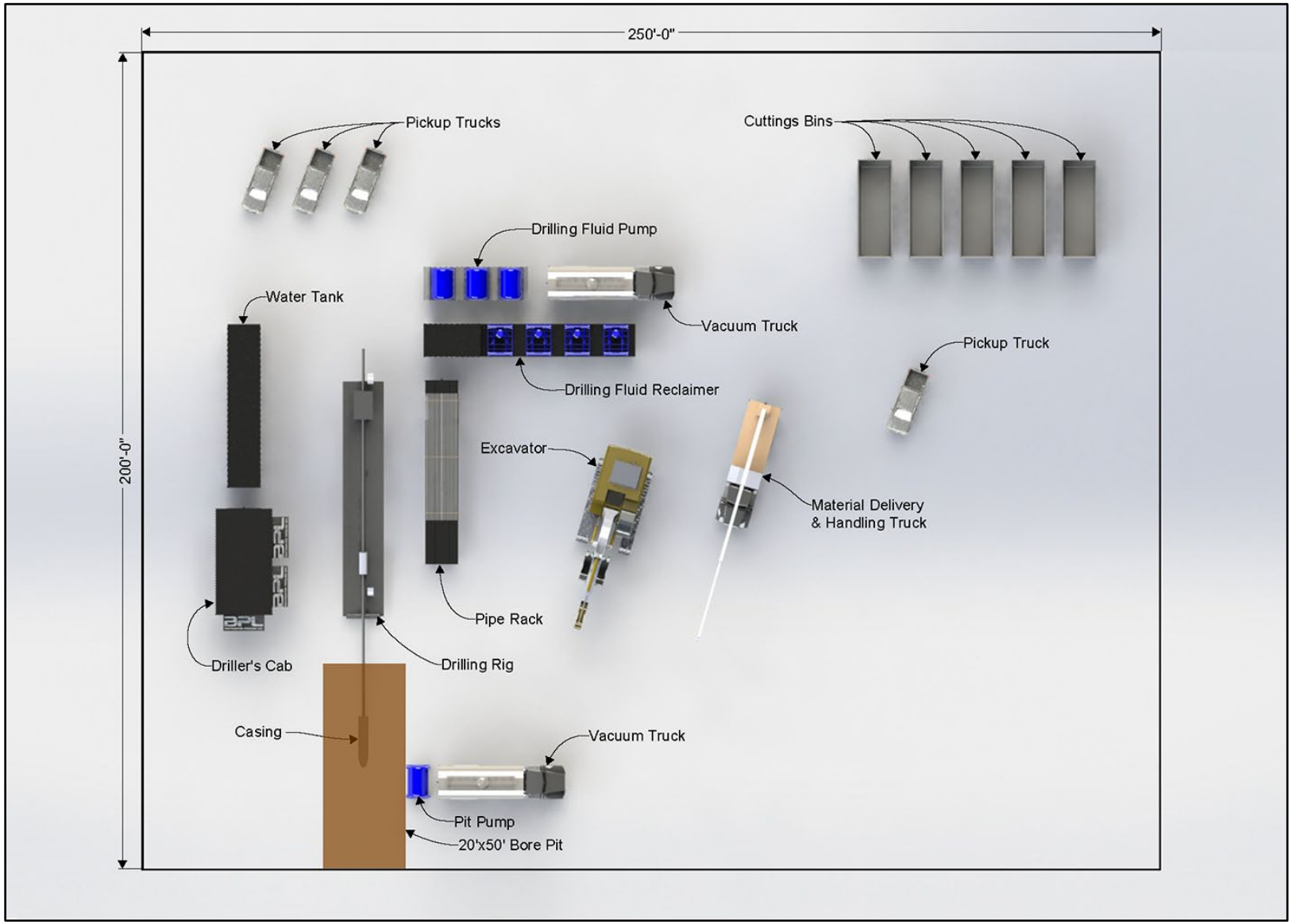


Table 2-1. Estimated Phase 1 Equipment Requirements

Equipment Type	Quantity	Horsepower	Operating Hours per Day	Days
Light-Duty Truck (Crew)	6	200	2	90
Light Plant	4	15	6	90
Generator (40 kW)	2	60	10	90
Air Compressor (185 cfm)	2	50	2	90
Air Compressor (1,000 cfm)	1	540	10	4
Water Pump	1	20	2	60
Concrete Pump	1	250	4	2
Welding Machine	1	20	8	18
Hydroexcavator	1	300	6	2
Excavator	2	310	8	10
Wheeled Loader	2	240	8	10
Dozer	1	310	8	5
Drilling Rig	2	700	10	60
Mud Pump	2	600	10	60
Side-Boom Pipelayer	4	260	10	2

Table 2-2. Phase 1 Pickup and Delivery Estimates

Item	Trips	One-Way Miles per Trip
Pipe Delivery	10	60
Heavy Equipment Mobilization / Demobilization	20	60
Water Deliveries / Disposal	10	40
Fill Import/Export	140	30
Solid Waste Disposal	10	40
Vacuum Trucks	10	40

Table 2-3. Estimated Phase 1 Workforce Requirements

Task	Quantity	Hours per Day	Days
Site support/Project Manager	3	12	90
Pipe/material procurement	6	10	6
Excavation	6	10	5
Pipe string welding	8	10	30
Pipeline installation	10	10	10
HDD operation	20	10	60
Pipe string pullback	22	12	2

Task	Quantity	Hours per Day	Days
Strength test and pigging	6	10	3
Backfill/site restoration	6	10	5

2.1.2.2 Casing Installation

Based on geologic surface and subsurface drill site conditions, the HDD contractor would install casings at each bore pit to substantially reduce the risk of drilling fluid releases (fluid escaping the drill hole). The casings would be installed at both HDD entry points using dynamic pipe ramming methods, in which a pneumatic (air-pressure driven) hammer strikes percussive blows on one end of the casing and drives it through the ground. Figure 2-8 shows an example photograph of a casing being installed with a pneumatic hammer, which was taken during a previous unrelated project.

Figure 2-8. Photograph of Casing Installation with a Pneumatic Hammer

At the West Work Area, approximately 150 feet of larger diameter casing would be installed pointing down at an angle 16 degrees below horizontal. A second, smaller diameter casing approximately 260 feet long would then be installed inside the first casing at the same angle, such that the two casings are telescoped. The casing diameters would be selected once the HDD subcontractor and their associated specific drilling equipment are known. However, as an initial estimate, the larger diameter casing could be approximately 36 inches in diameter, while the smaller diameter casing could be approximately 30 inches in diameter.

At the East Work Area, a single casing extending approximately 260 feet from the HDD entry pit would be installed pointing down at an angle 10 degrees below horizontal. This is also assumed to be a 36-inch-diameter casing. If the casing encounters more resistance than anticipated during installation, stopping short of its intended penetration, then a second, smaller diameter casing would be installed inside the first to telescope the combined casing to the specified penetration depth. The casing would then be extended to the top of the HDD platform by welding additional sections to the casing and placing imported fill beneath the casing for support.

2.1.2.3 Pilot Hole Drilling

At both HDD entry points the drill rigs would be positioned along the selected HDD alignment and the bottom hole assembly containing the drill head and steering probe would be drilled in through the casings. The actual path of the pilot hole would be monitored during drilling by using a tracking system to calculate the horizontal and vertical coordinates relative to the initial entry point on the surface. Above-ground guide wires may be placed in terrestrial areas along the bore alignment to assist with positioning and steering the drill heads.

Water and drilling fluid additives such as bentonite clay would be mixed together and added to the circulating drilling fluid as the drill string advances and increases the length and volume of the borehole, which must remain filled with drilling fluid to prevent collapse. Fresh water (typically water suitable for agricultural use or potable water, depending on availability) would be trucked from an off-site source and deposited in a portable water tank at each drill site. Drilling fluid must be constantly circulated in a loop during the drilling process. Starting at each drill head, the pressurized drilling fluid inside the drill pipeline would exit through nozzles in the drill head and sweep cuttings (solids such as gravel, sand, and silt dislodged by the drill head) away from the drill head. The cuttings-laden drilling fluid would then flow back through the borehole to the bore pit. A pit pump would then move the fluid from the bore pit to the reclaimer. The reclaimer separates the cuttings from the drilling fluid using screens and hydrocyclones, which are metal cones that use centripetal force (circular motion) to separate solids from the drilling fluid. Cuttings would be temporarily stored in cutting bins before being trucked offsite for disposal. Reclaimed drilling fluid would then be pumped back into the drill string to return to the drill head and start the cycle over again. Figure 2-9 shows an example photograph of an HDD drilling rig and bore pit, which was taken during a previous unrelated project.

Figure 2-9. Photograph of an Example Drilling Rig and Bore Pit

To minimize the potential for inadvertent drilling fluid releases, the pressure in the space between the drill string and the casing or pilot hole wall would be monitored and continuously recorded during drilling of the pilot hole using an electronic sensor package and compared to a calculated expected pressure.

When the two pilot holes are close to each other, one of the drill strings would be pulled back, and the other would continue forward until it intersects and enters the other pilot hole, forming one continuous bore under the river.

2.1.2.4 Reaming

After the pilot hole drilling is complete, reaming would then enlarge the bore to its final diameter. The estimated final bore diameter is approximately 24 inches. However, this is only an initial estimate, and the final bore diameter may change to accommodate the drilling equipment used by the HDD contractor while also ensuring sufficient free space for the replacement pipe string to move freely. Drilling fluid jets would be used for reaming and would use drilling fluid composed of non-toxic compounds, such as bentonite, to help ream the pilot holes. The pressurized drilling fluid would serve three purposes: to cool the cutting tools, support the reamed hole, and lubricate the trailing drill pipe. The drilling fluid returning to the bore entry pits would be pumped to the reclaimer and recirculated.

2.1.2.5 Pipe String Assembly and Testing

The 3,700-foot-long pipe string would be assembled from individual 40-foot-long steel pipes (delivered by flatbed truck) and laid out on rollers in the Pipe Staging Area. The pipes would arrive with a fusion-bonded epoxy pipeline coating and abrasion resistant coating. If needed, the rollers would be leveled by excavating into bare ground or by placement onto shims. The pipes would be welded together, and liquid epoxy coatings would be applied over the welded areas. Both the welds and coatings would be inspected as required by federal regulations and PG&E's standards. The welded pipe string would then be hydrostatically tested by filling the assembled pipeline with water, pressurizing the water, and monitoring for pressure changes. The purpose of this initial hydrostatic test is to identify any issues, when repairs are easier to perform, before pulling the replacement pipeline into the borehole. However, final hydrostatic testing would be conducted after pipeline replacement tie-in (see Section 2.1.3). Water used for initial hydrostatic testing would be stored on-site and re-used for the final test.

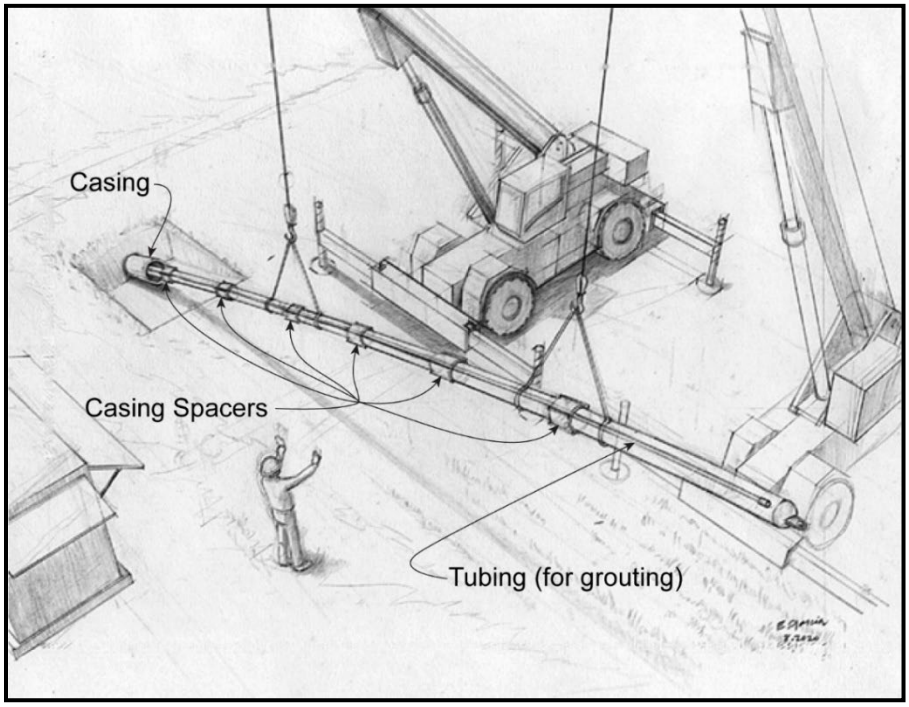
2.1.2.6 Pipeline Pullback

After reaming operations and initial pipeline hydrostatic testing are completed, the welded pipe string (pull section) would be pulled into the open East Work Area borehole using the drill rig located in the West Work Area. The pullback process is similar to the reaming phase except that a swivel would connect the pull section to the reamer. This reamer would then be used to pull the pipe string back through the borehole to the west side of the Sacramento River crossing. The pull section would be supported by positioned pipeline rollers along the pipe string as it is pulled into the borehole. Side boom pipelayers with cradles would also support the pipeline, and the lead side boom pipelayer would be used to align the pipeline pullback string to the borehole. Figure 2-10 shows an example photograph of side-booms supporting the pipeline during pullback.

The last approximately 275 feet of the pullback string would have non-conductive casing spacers (see Appendix C, *Project Plans*, for additional detail) and tubing installed before it is pulled into the borehole. These casing spacers serve as a corrosion prevention measure and would prevent contact between the casing and the pipeline. The tubing would be used to pump cement grout into the annulus between the outside of the pipeline and inside of the casing. Figure 2-11 shows an artist's conception of the last pullback section being guided into the borehole with casing spacers and tubing attached.

Figure 2-10. Photograph of Side-booms Supporting the Pipeline During Pullback

Figure 2-11. Artist's Conception of Final Pullback Section with Casing Spacers and Tubing



2.1.2.7 Annulus Grouting

West Work Area

Once the pipeline pullback is complete, operations in the West Work Area would first remove the telescoped casing assembly used for pipeline installation and then secure the pipeline within the bore. However, depending on the site conditions, the casing could be removed before the pipeline pullback. The telescoped casing assembly would be fully removed using the dynamic pipe rammer, but where the impact's force pulls on the casing rather than pushes. After the pipeline is in place and the casing assembly is removed, a tremie pipe (small diameter pipe or tube) would be inserted into the annulus between the bore and the pipeline, and a cement slurry plug would be pumped into the annulus for 10 vertical feet to secure the pipeline within the bore.

East Work Area

Once the pipeline pullback is complete, operations in the East Work Area would first remove the portion of the casing extending from above grade to the HDD platform. The below-ground casing within the East Work Area would remain in place. Cement slurry would be pumped into the annulus between the remaining casing and the pipeline for 10 vertical feet, via tremie pipes, to secure the pipeline.

2.1.3 Pipeline Tie-In

Trenches would be excavated to connect (tie-in) the completed HDD installed pipeline segment to the existing L-200A-3 pipeline at the western end and L-195-1 pipeline on the eastern end. The western tie-in would involve approximately 150 feet of open trench pipeline installation, and the eastern tie-in would involve approximately 90 feet of open trench pipeline installation. Pipeline tie-in would require a small temporary excavation to expose the existing pipeline and provide space for welding and installation. Excavations would be stabilized as required by Occupational Safety and Health Administration regulations, which may include sloping, trench shields, or the use of shoring. The pipe segments and fittings needed for the trenched pipeline installation as part of the tie-in would be lowered into the trenches, the segments would be welded together, and the connection would be coated to prevent corrosion.

The entire replacement pipeline segment installed between the two tie-in points, which includes both the HDD pipeline and trench installed segments, would then be filled with water and hydrotested in accordance with federal (49 Code of Federal Regulations 195), state, and PG&E standards. The hydrotest pressure would be at least 1.5 times the pipeline's Maximum Allowable Operating Pressure, and the test duration would be at least 8 hours. If the pressure within the pipeline section being tested falls below the minimum test pressure during the hydrotest, or if there are visible signs of leakage, the

test would be considered failed, and repairs would be made prior to performing another hydrotest. Once a successful hydrotest is complete, the water would be removed from the pipeline and disposed of at an approved location (see Section 2.1.8).

After the final hydrostatic test, the final pipe lengths would be cut and welded between the existing and new pipeline segments to complete the tie-in, and the final tie-in girth welds would be coated with a liquid epoxy coating. Once the new pipeline is tied into the pipeline network, odor fade conditioning would be conducted as a standard safety procedure. While the existing and new pipelines have the same 16-inch diameter for the east side tie-in, on the west side L-200A-3 is 12 inches in diameter and therefore would require a reducer to transition between the two differently-sized pipelines.

2.1.4 Existing L-130 Pipeline Deactivation Activities

Once the replacement pipeline has been secured within the bore alignment, the existing L-130 pipeline would be disconnected from the terrestrial pipeline system on both sides of the river crossing. First, natural gas would be purged from the existing pipeline by using nitrogen or other inert gas to displace the natural gas product inside the pipeline. Then the existing pipeline would be cut at the two tie-in locations, and short sections of the existing pipeline would be removed to provide space for the new pipeline to be connected. Finally, the existing L-130 pipeline would be capped on each end and left deactivated prior to decommissioning.

2.1.5 Pipeline Station Blowdown Stack Installation

To take advantage of the Project area pipeline network being out of service and purged of natural gas, a blowdown stack (vertical pipe) would be installed at the PG&E pipeline station located to the west of the West Work Area and tie-in location (Figure 2-1). All work would occur inside the existing PG&E pipeline station, which would be accessed using Montezuma Hills Road. The blowdown stack would be used to facilitate future operations and maintenance activities that require periodic purging of natural gas from the pipeline.

To install the blowdown stack, a short 3- to 4-foot-long pipeline section of L-200A-3 would be excavated and removed, and a new section with a branching tee would be installed. The branching tee would be connected to a valve and a short section of pipe which would extend vertically above the ground and terminate with a blind flange (a solid steel disk used to block off a pipeline or to create a stop).

2.1.6 Unused Pipeline Branch Tee Removal

In the agricultural field east of the East Work Area (Figures 1-3 and 2-1), the L-195-1 pipeline has a branch tee with a section of pipe branched from the main pipeline that

dead ends at a cap. While the Project area pipeline network is out of service and purged of natural gas, the pipeline would be excavated at the unused branch tee location and the branch tee would be removed and replaced with a straight horizontal section of pipeline approximately 4 feet in length. The pipeline would also be excavated approximately 100 feet away from the branch tee removal location and monitored for the presence of gas during the removal operation (known as a “sniff hole” location).

2.1.7 Pipeline Marker and Electrolysis Test Station Installation

Pipeline markers consisting of a fiberglass stake labeled to indicate the presence of a natural gas pipeline and to provide PG&E’s emergency contact information would be installed along the new pipeline alignment at regular intervals such that at least one marker is visible from anywhere along the pipeline alignment. See Appendix C, *Project Plans*, for additional detail.

In addition, two electrolysis test stations (ETSs), also known as cathodic protection test stations, would be installed to prevent corrosion (see Appendix C, *Project Plans*, for additional detail). One would be located near the west tie-in location, and the other would be located near the east bore pit. The east ETS would be located at the edge of the agricultural field, instead of at the pipeline’s location in the middle of the field and would have wires installed in a trench to connect it to both the casing and the pipeline. The west ETS would be installed above the pipeline alignment near the edge of Beach Drive and would only be connected to the pipeline, as the casing on the west side would be removed after the pipeline pullback is complete (see Section 2.1.2.7).

2.1.8 Site Restoration

The Project’s decommissioning (Phase 2) activities would begin as soon as the new pipeline and associated infrastructure are installed and connected to the existing pipeline network. The initial site restoration would be limited to the HDD work areas not used during Phase 2 (see Section 2.2 for details of Phase 2 activities). Final site restoration to pre-Project conditions would be performed once pipeline decommissioning activities are complete.

The HDD platform in the East Work Area would be removed and the site would be returned to original contours. The imported soils would be trucked from the site to a disposal facility or given to a third party if PG&E’s policies permit. All excavations associated with Phase 1 activities and other related work (blowdown stack installation and branch tee removal) would be backfilled with the native spoils that were stockpiled from the initial excavations as well as imported fill, where necessary. The excavations would be compacted to match the surrounding undisturbed areas (e.g., agricultural fields on the east and vacant lot on the west) and restore the contours to the pre-Project condition. All site restoration requirements defined in the pending temporary

construction easements would be adhered to. Materials, equipment, and debris would be removed.

2.1.9 Water and Waste Disposal Requirements

Approximately 130,000 gallons of freshwater would be required to produce the necessary drilling fluids for the HDD, and about 40,000 gallons would be required for hydrostatic pipeline testing. This water would be supplied and trucked from a local residential or agricultural well as authorized by the owner. Alternatively, water could be trucked to the site from an off-site source (likely within 20 miles of the Project site).

Residual drilling fluid and solids would be trucked to an appropriate waste disposal site. It is assumed residual drilling fluid and cuttings would be considered non-hazardous waste and would be trucked to a solid waste facility within 50 miles of the Project site.

The water collected from the hydrostatic testing operations would be stored in temporary tanks and tested to characterize the type and concentrations of any contaminants. The test results would be used to determine whether the water should be treated on-site, transported to an off-site wastewater treatment facility, or a combination thereof (on-site pre-treatment, then transportation). It is assumed hydrostatic test water would be trucked to a wastewater treatment facility within 20 miles of the Project site for disposal. If it is determined that on-site water can be treated and released on-site, authorization under a National Pollutant Discharge Elimination System (NPDES) permit would be obtained from the Central Valley Regional Water Quality Control Board (CVRWQCB) for discharge of treated hydrostatic test water. Discharge to land may be authorized under state-wide General Order WQO-2003-003, while discharge to surface waters may be authorized under General Order R5-2016-0076-01 (NPDES No. CAG995002). The treated water would be tested as required by permit conditions. If needed, hydrostatic test water would be stored on-site until permit authorization is obtained.

Sections of pipe removed at the tie-in locations would be loaded onto trucks and transported to an approved recycling or disposal facility.

2.2 PHASE 2 (PIPELINE DECOMMISSIONING)

2.2.1 Pipeline Segments Descriptions, Activities, and Final Dispositions

After the replacement pipeline is connected to the existing network, approximately 2,606 feet of L-130 would be removed, approximately 535 feet of L-195-1 would be abandoned in place, approximately 283 feet of L-195-1 would be removed, and approximately 446 feet of L-200A-3 would be abandoned in place. Phase 2 would begin by pigging and flushing (cleaning by pushing a solid plug or “pig” device and clean fluids

through) the pipeline segments to be decommissioned to remove any potential contaminants. Specific pipeline segments that would be abandoned in place would then be filled with concrete slurry while other segments would be removed, as described below. For planning purposes, Phase 2 would be addressed in four segments that correspond to both the proposed final dispositions and the methods required to achieve those dispositions (Figure 2-1). The segments are numbered sequentially from the western end of the decommissioned pipeline to the eastern end, and would have the following final dispositions (See Appendix C, *Project Plans*, for additional detail):

- **Segment 1 - West Terrestrial Segment.** 446 feet of L-200A-3 pipeline filled with cement slurry and abandoned in place. 65 feet of L-130 pipeline removed. Concrete valve box removed.
- **Segment 2 – Submarine Pipeline Segment.** 2,470 feet of L-130 pipeline removed.
- **Segment 3 – East Levee Segment.** 71 feet of L-130 pipeline removed. 283 feet of L-195-1 pipeline removed. Concrete valve box removed. 53 feet of casing beneath SR 160 removed.
- **Segment 4 – East Residential and Agricultural Segment.** 535 feet of L-195-1 pipeline filled with cement slurry and abandoned in place.

2.2.1.1 Segment 1 – West Terrestrial Segment

Segment 1 begins at the west tie-in location, just east of Beach Drive, and continues east approximately 530 feet through the vacant lot to the waterline on the west bank of the Sacramento River. The pipeline burial depth within Segment 1 ranges from 3 to 12 feet. A photograph of Segment 1 is shown below in Figure 2-12.

Figure 2-12. Photograph of the Segment 1 Pipeline Alignment through the Vacant Lot

There is a concrete valve box located within the West Work Area (Figure 2-13). The pipeline is 12-inches in diameter west of the concrete valve box. Two 10-inch-diameter pipelines extend to the east of the valve box, one of which is L-130 owned by PG&E and is connected to the 12-inch-diameter pipeline. The other 10-inch-diameter pipeline, which is currently idle and non-operational, is owned by California Resources Corporation (CRC) and would be left in place. All further discussion refers only to the PG&E owned pipelines to be decommissioned.

Approximately 465 feet of pipeline, from the western tie-in location to the concrete valve box, would be filled with cement slurry and abandoned in place. The remaining approximately 65 feet of this segment, from the concrete valve box to the waterline, would be removed with an excavation depth of 5 to 14 feet deep. Figure 2-13 shows the Segment 1 alignment as it approaches the Sacramento River waterline. The concrete valve box would also be removed in its entirety.

2.2.1.2 Segment 2 – Submarine Pipeline Crossing Segment

Segment 2 extends from the waterline on the west bank of the Sacramento River and continues east beneath the Sacramento River to the waterline on the east side levee's waterside slope. The pipeline burial depth within Segment 2 ranges from 0 to 17 feet. This submerged river pipeline crossing segment would be removed in its entirety. A photograph of Segment 2 is shown in Figure 2-14.

2.2.1.3 Segment 3 – East Levee Segment

Segment 3 begins at the Sacramento River's east levee waterside slope and continues east approximately 345 feet across the levee crown and down the landside slope, terminating ten feet east of the toe of the landside slope (Figure 2-15). This levee is maintained by the Brannan-Andrus Levee Maintenance District, with SR 160 (a two-lane state highway) located on the levee crown. Other industrial facilities located in the levee crown and under SR 160 include a manhole, gas valve, casings, casing vents, electrolysis test station, and pipeline markers. The pipeline burial depth within Segment 3 ranges from 5 to 15 feet. A photograph of Segment 3 is shown as Figure 2-16.

Figure 2-13. Decommissioning Project Overview (West)

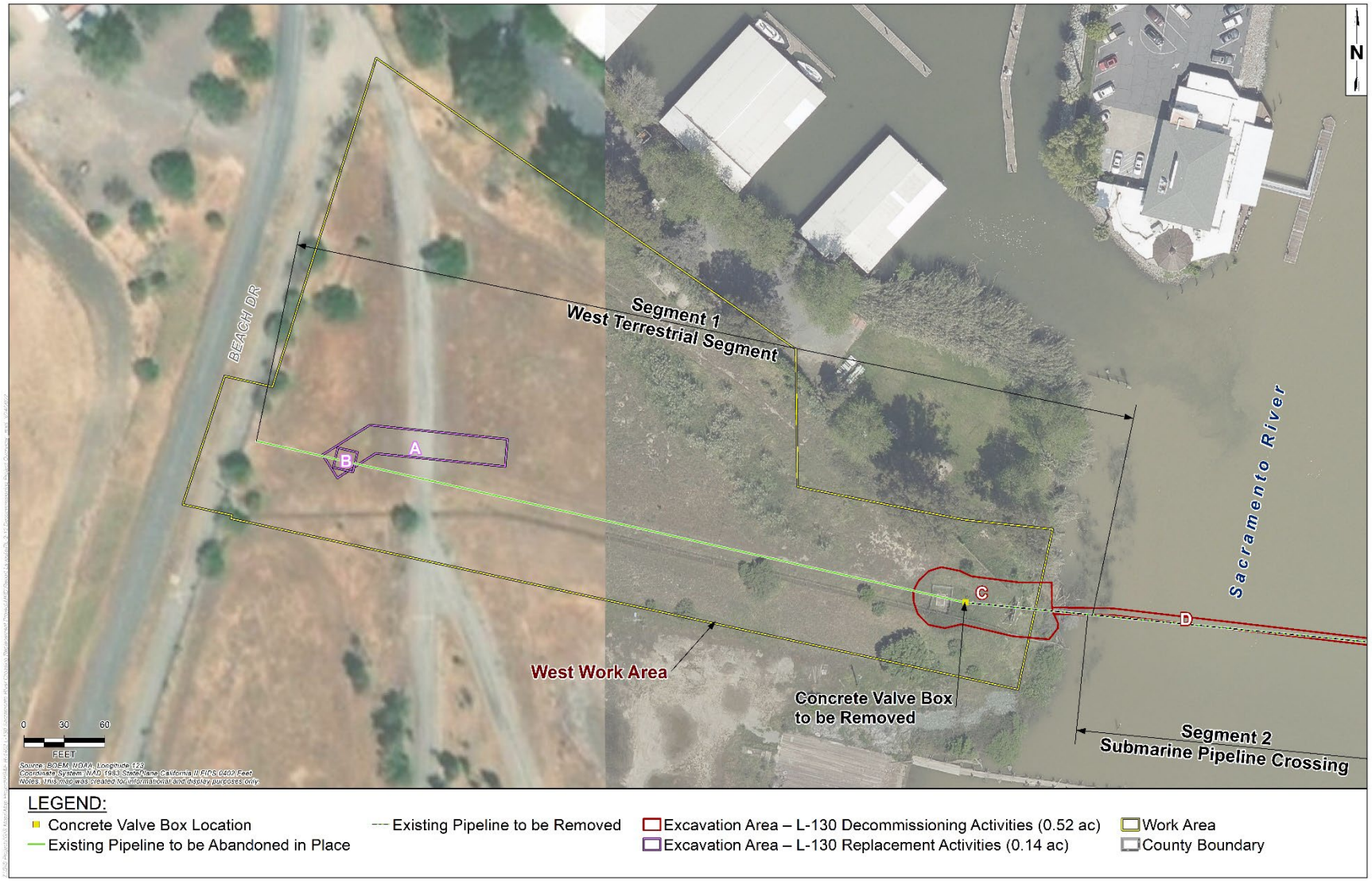


Figure 2-14. Photograph of the Segment 2 Pipeline Crossing the Sacramento River Taken of the West Bank

Figure 2-15. Decommissioning Project Overview (East)

Figure 2-16. Photograph of SR 160 Located Within Segment 3

There is a concrete valve box located where the CRC-owned pipeline terminates, and where the PG&E L-130 10-inch-diameter pipeline transitions to a 16-inch-diameter pipeline (Figure 2-17). This 16-inch-diameter PG&E pipeline then continues east through a 20-inch-diameter steel pipe casing that is approximately 53 feet long and passes beneath SR 160.

Figure 2-17. Photograph of the Concrete Valve Box Located Within the East Levee (Segment 3)

All the pipeline in Segment 3 would be removed with an excavation depth of 7 to 17 feet. The 20-inch-diameter casing and the concrete valve box would also be removed in their entirety. The CRC-owned pipeline would remain in place and soil would be backfilled around it.

2.2.1.4 Segment 4 – East Residential and Agricultural Segment

Segment 4 begins approximately 10 feet east of the toe of the landside slope and continues east for approximately 538 feet through rural residential yards and an agricultural field, terminating at the east tie-in location. The pipeline burial depth within Segment 4 ranges from 3 to 5 feet. A photograph of Segment 4 is shown as Figure 2-18. This segment would be filled with cement slurry and abandoned in place.

Figure 2-18. Photograph of Segment 4 through the East Residential and Agricultural Area

Tables 2-4, 2-5, and 2-6 list equipment, vehicle trip, and workforce requirements for Phase 2.

Table 2-4. Estimated Decommissioning Equipment Requirements

Equipment Type	Quantity	Horsepower	Operating Hours Per Day	Days
Light-Duty Truck (Crew)	6	200	2	90
Light Plant	4	15	6	60
Air Compressor (185 cfm)	2	50	2	90
Water Pump	1	20	2	30
Concrete Pump	1	250	4	2
Welding Machine	1	20	8	2
Hydroexcavator	1	300	6	2
Excavator	2	310	8	20
Wheeled Loader	2	240	8	20
Dozer	1	310	8	10
Survey Vessel	1	270	10	2
Derrick Barge Crane	1	330	12	30
Derrick Barge Generator	1	100	12	30
Support Tug Mains	1	500	2	30
Support Tug Generator	1	75	12	30
Crew Boat Mains	1	100	2	30
Crew Boat Generator	1	50	2	30
Diving Air Compressor	1	50	3	30
Toyo Pump Generator	1	400	4	30

Table 2-5. Decommissioning Pickup and Delivery Estimates

Item	Trips	One-Way Miles per Trip
Portable Tank Deliveries/Return	10	40
Heavy Equipment Mobilization / Demobilization	10	60
Water Deliveries / Disposal	10	40
Concrete Deliveries	6	40
Shoring Deliveries/Return	4	40
Solid Waste Disposal	20	40
Vacuum Trucks	10	40
Marine Spread Mobilization / Demobilization	10	50

Table 2-6. Estimated Decommissioning Workforce Requirements

Task	Quantity/ Workforce	Hours/ Day	Days
Site Support/Project Manager	3	12	90
Excavation	6	10	15
Backfill/Site Restoration	6	10	5
Terrestrial Decommissioning	4	10	60
Marine Decommissioning	12	12	30
Survey	2	10	2

2.2.2 Pre-Project Surveys and Notifications

A pre-Project bathymetric (water depth measurement) and surficial features debris survey of the entire underwater worksite would be performed prior to starting in-water decommissioning activities. This debris survey would serve as the baseline survey to be used in comparison to a post-construction debris survey (Section 2.2.5).

An 811 Utility Location Survey would have been conducted prior to Phase 1 excavations (see Section 2.1.2.1 for additional information). A separate 811 Utility Location Survey would be conducted prior to Phase 2 excavations.

2.2.3 Decommissioning Methods

Decommissioning methods for Phase 2 are discussed below. Access pits would be re-excavated (in areas previously used for HDD pipeline installation) or excavated in new areas to access Segments 1 through 4.

2.2.3.1 Pipeline Pigging and Flushing

Pipeline decommissioning would begin by pigging and flushing Segments 1 through 4 to remove contaminants. In preparation for this activity, the two capped pipeline segment ends in the West Work Area and East Work Area that were previously used to fill the existing pipeline with inert gas in Phase 1 would be re-opened to verify that no flammable gas exists inside the segment.

To facilitate pigging and flushing, the west end of Segment 1 would be excavated and a pig launcher installed, and the east end of Segment 4 would be excavated and a pig receiver installed. Temporary tanks, piping, pumps, compressors, and other water, chemical, and air handling equipment would be set up and connected in the West Work Area and East Work Area prior to operations. Spoils from all terrestrial excavations would be stockpiled within the adjacent work areas with at least two feet of separation between the toe of the spoils pile and the excavation, in accordance with California's Occupational Safety and Health Administration (Cal/OSHA) requirements. Stormwater

pollution prevention best management practices would be employed to prevent soils from being carried away by stormwater runoff. The spoils would be used for backfilling the excavations once the Project is completed.

The existing pipeline segments would then be pigged until the flush water is found to have a total petroleum hydrocarbon (TPH) content of less than 15 parts per million (ppm). The pigging would be performed with a three-pig train using a mixture of freshwater and surfactant pushed by a “pill” inserted between the first and second pigs. The pig train would be pushed through the pipeline with compressed air. The estimated volume of water per pig train run is approximately 5,000 gallons, and approximately 10,000 gallons of freshwater would be required for pigging and flushing. This water would be supplied and trucked from a local well if authorized by the owner. Alternatively, water could be trucked to the Project site from a source within 20 miles. Flush water generated by pigging and flushing operations would be fully contained within piping, valves, and temporary tanks. The water would be flushed through the pipeline at a pressure level that is far less than the pipeline’s maximum allowable operating pressure, creating minimal risk of a release into the environment.

Fresh water would be placed between the last two pigs of each pig train when they are launched, and after the pig train has been pushed through, this water would be sampled and sent to a state-certified testing laboratory to measure TPH. Additional pig runs would be conducted as needed until the flush water sample TPH test results are below 15 ppm. Wastewater would be stored in the temporary water storage facilities and then trucked to a wastewater treatment facility within 20 miles of the Project site for disposal. Figure 2-19 is a photograph of a pig receiver and associated equipment from a previous project.

Figure 2-19. Photograph of a Sample Pig Receiver and Associated Equipment

2.2.3.2 Cementing

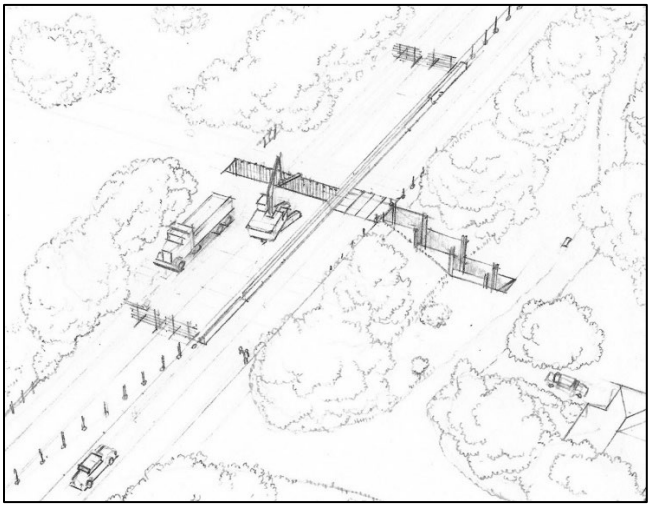
All pipeline sections that would be abandoned in place will be filled with a cement slurry. First, temporary flanges would be welded to the ends of a section to facilitate cement filling. Cement slurry would then be pumped using a trailer mounted concrete pump. This pump would push a pig to the end of the pipeline section to ensure that the entire section is filled with cement slurry. The pressure needed to push the pig and fill the pipeline with cement slurry is far less than the pipeline's maximum allowable operating pressure, and thus creates minimal risk of a cement slurry release. Once the cement slurry has sufficiently cured, the ends of the pipeline would be cut off, 0.5-inch-thick steel plates would be welded onto the ends of the pipeline section, and the pipeline section would be abandoned in place.

2.2.3.3 Terrestrial Pipeline and Casing Removal

Excavators, bulldozers, loaders, and trucks would be used for terrestrial pipeline removal, with activities including excavation (minimum slope of 1.5:1 in accordance with Cal/OSHA and Gold Shovel industry standards) to expose the pipe, cutting and extraction with the use of a hydraulic shear mounted on an excavator, and backfilling and compaction using excavation spoils. The excavation equipment would then load the removed and cut pipe sections onto trucks for disposal.

The portion of Segment 3 within the casing beneath SR 160 would require open trench excavation with hydraulically shored vertical walls. While the pipe would be pulled out of the casing and cut into sections with a hydraulic shear, the casing's large diameter may require an oxyfuel torch instead of a shear. The excavation and removal of the casing would occur in stages such that one lane of traffic may still pass during construction. Figure 2-20 is an artist's conception of the excavation beneath SR 160.

Figure 2-20. Artist's Conception of Excavation Beneath SR 160

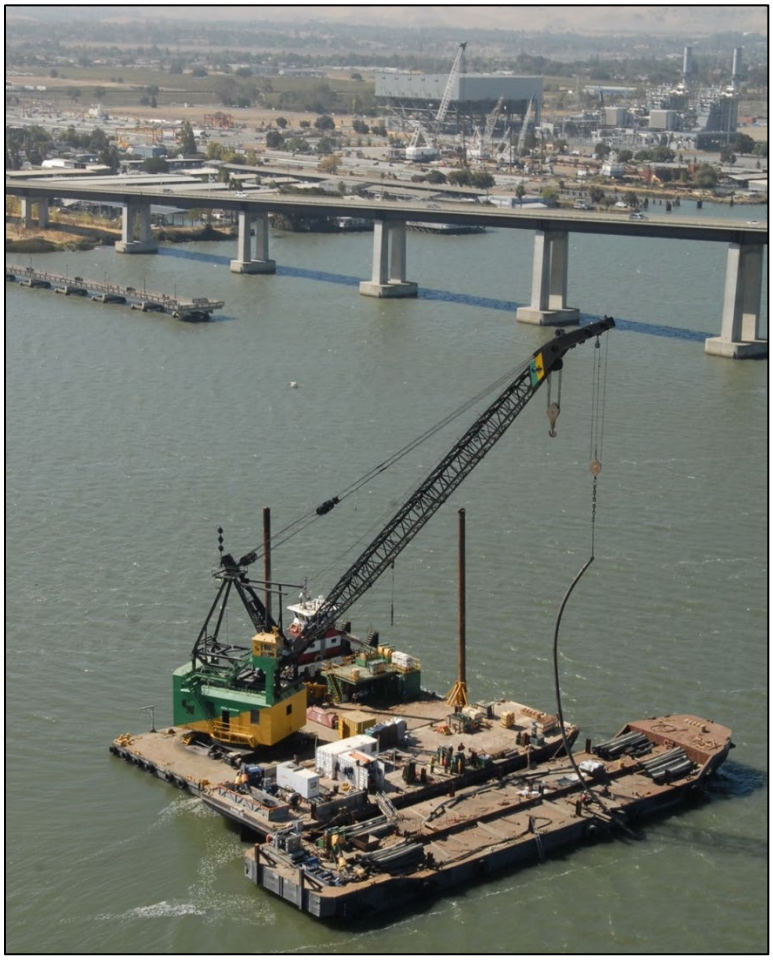


Concrete valve boxes would be demolished using an excavator-mounted hydraulic concrete breaker. The excavator would then remove the concrete debris from the pit with a bucket. The CRC owned pipeline would be left in place and reburied during backfilling operations (see Section 2.2.2.6).

2.2.3.4 Sacramento River Pipeline Removal

A derrick barge equipped with a crane, shallow air diving spread, underwater excavation equipment, and spuds (movable steel piles attached to the barge which are lowered into the riverbed for anchoring) would be mobilized to the worksite to support the submerged pipeline removal operations. A supporting tug, a materials barge, a crew transportation vessel, and support skiffs (shallow, flat-bottomed open boats) would also accompany the derrick barge. Figure 2-21 shows a derrick barge removing a pipeline for a pipeline decommissioning project in the Sacramento-San Joaquin River Delta.

Figure 2-21. Photograph of a Derrick Barge Removing a Pipeline During a Previous Pipeline Decommissioning Project



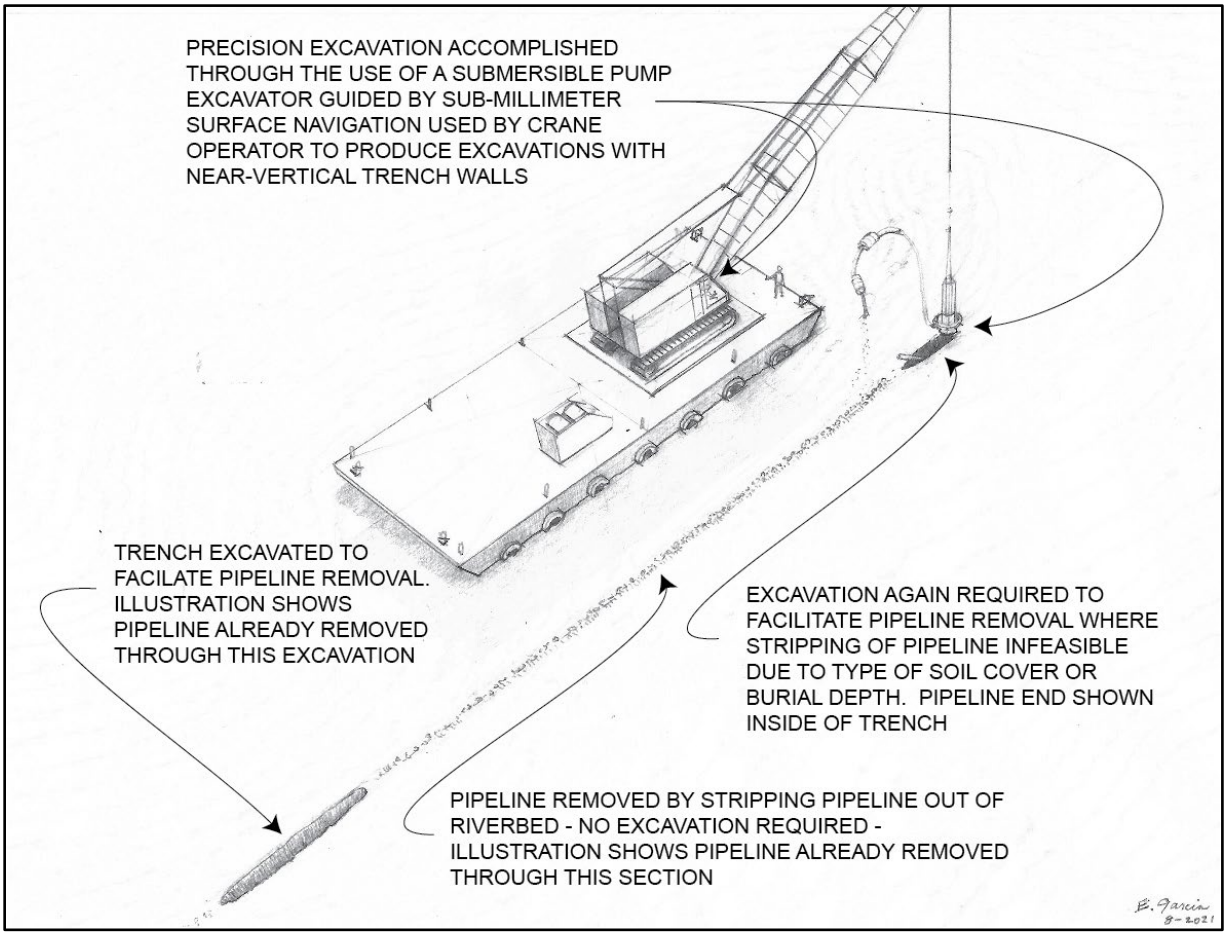
The derrick barge crane would remove the pipeline from the Sacramento River by connecting to one exposed end of the buried pipeline near the east or west riverbank and lifting it vertically out of the riverbed onto the materials barge deck to be cut into sections. In areas where the pipeline is buried more deeply, the force required to pull the pipeline up through the sediment also increases. When the force required to pull the pipeline exceeds the crane's capacity, a Toyo pump or similar submersible pump would be used to perform underwater excavation and remove sediment until the force required to pull the pipeline up is once again within the crane's capabilities. Divers may also use hand jetting (use of a hand-held water jet to remove sediment) for underwater excavation, if necessary. The Project Plans (Appendix C) correspond to the most conservative case (the largest area or longest alignment possible) for submarine pipeline removal that would include both lifting and removing sediment above the pipeline using a Toyo pump.

The Toyo pump would be deployed using the derrick barge crane, with the pump's inlet at the bottom. The Toyo pump would pull both sediment and water into the pump inlet, which mix together and form a slurry. Hoses connected to the Toyo pump outlet would transport the slurry a short distance away from the excavation where the slurry is released back into the water column and the sediment settles back to the bottom, also known as side-casting.

The barge would be equipped with state-of-the-art navigation equipment allowing the crane to position the Toyo pump precisely over the pipeline's center and slowly lower it down onto the pipe. The pump would remove sediment as it is lowered, forming a vertical hole approximately 5 feet in diameter. Once the Toyo pump inlet reaches the intended depth it would be pulled back up above the riverbed, moved along the pipeline alignment to the next location, and lowered again to repeat the process. This process would create a narrow trench with shear vertical walls. When finished, the Toyo pump would be retrieved to the barge deck and the barge crane would resume lifting the pipeline up to the barge and cutting it into sections. Figure 2-22 is an artist's rendition of a Toyo pump being used to perform underwater excavation.

The recovered pipe segments would be placed on a materials barge and cut into smaller segments for truck transport. When all other in-water Project activities are complete, the materials barge would be towed to port where the pipe sections would be offloaded and transported by truck to an approved recycling or disposal facility.

Figure 2-22. Artist's Conception of Toyo Pump Being Used to Perform Underwater Excavation



2.2.4 Site Restoration and Demobilization

Terrestrial excavations would be backfilled and compacted primarily with the native spoils that were stockpiled from initial excavations. Imported sand, clean clayey fill, or flowable fill (cement, sand, and water mix) would be used to supplement the native spoils in accordance with agency approvals. The West Work Area and East Work Area excavations would be compacted to match the surrounding undisturbed areas and contours would be restored to pre-Project conditions. Levee excavations would be backfilled in accordance with the levee encroachment permit requirements. SR 160 pavement and striping would be restored to pre-Project conditions in accordance with California Department of Transportation encroachment permit requirements.

Underwater excavations would be allowed to backfill through natural hydrogeomorphic processes promoted by precision underwater excavation techniques and the preferred method of pipeline removal where a crane lifts the pipeline through the sediment. This method allows the sediment to slough off the pipeline as the pipeline is lifted through the

water column and fall back into the narrow trench, promoting immediate and natural partial backfill with native river sediment. Because the underwater trench would not require diver entry, the excavations can be vertical and would be allowed to collapse into the underwater trench after the pipeline is removed, further promoting natural backfill of the underwater excavated areas.

All site restoration requirements defined in the pending temporary construction easements would be adhered to. All Phase 2 materials, equipment and debris would be removed from the Project site.

2.2.5 Post-Project Surveys and Reporting

After Phase 2 is complete, a post-Project bathymetric and debris survey of the underwater worksite would be performed. This survey would be compared to the pre-Project survey to verify that no debris related to the Project remains, and to verify if the final river bottom conditions are consistent with pre-Project conditions. Any anomalous objects that were not already found and identified in the pre-Project survey and that remain unidentified during the bathymetric and debris surveys would be positively identified using methods such as divers or a remotely operated vehicle. All Project-related debris would be recovered.

A final Project report would be compiled and submitted to the CSLC following Project completion, including daily Project Manager's reports, representative pictures/video, as-built drawings showing the post-Project disposition of the pipeline sections that were abandoned in place, surveys, and other relevant Project documentation.

2.3 ESTIMATED AREAS AND VOLUMES

Table 2-7 provides a summary of excavation footprints that would occur within the three work areas (East, West, and Pipe Staging) and existing PG&E pipeline station associated with the HDD Replacement Activities. See Project Plans (Appendix C) for additional detail.

Table 2-7. Excavation Footprints Associated with HDD Replacement Activities

Excavation ID	Excavation Description	Excavation Dimensions (ft)	Approximate Area (ft^2)	Excavation Volume (cubic yards)
Excavation A	HDD West Entry Bore Pit and West Side Tie-in Trench	20’ X 135’	2,695	275
Excavation G	HDD East Entry Bore Pit and East Side Tie-In Trench	20’ X 102’	2,052	210
Excavation J	Branch Tee Removal	15’ X 15’	225	14
Excavation K	Eastern Sniff Hole	15’ X 15’	225	14
Excavation L	Installation of Blow Down Stack (Within Existing PG&E Station)	23’ X 14’ and 14’ X 11’	470	30
		Total	**5,667**	**543**

Note: Excavation IDs and dimensions are based on 60% Design Plans prepared by Longitude 123, Inc. dated 9-10-21 (Longitude 123, Inc. 2021) (Appendix C).

Table 2-8 provides the excavation footprints associated with Phase 2. See Appendix C, *Project Plans*, for additional detail.

Table 2-8. Excavation Footprints for Phase 2

Excavation ID	Excavation Description	Excavation Dimensions (ft)	Approximate Area (ft^2)	Excavation Volume (cubic yards)
Excavation B	Bell hole (access for pigging and flushing)	15’ x 15’	225	14
Excavation C	Sacramento River West Bank Pipeline Removal	Irregular Shape	4,063	900
Excavation D	Sacramento River Crossing Pipeline Removal	5’ x 2,450’	12,240	3,500
Excavation E	Sacramento River East Bank (Levee) Pipeline Removal	Irregular Shape	5,240	592

Excavation ID	Excavation Description	Excavation Dimensions (ft)	Approximate Area (ft^2)	Excavation Volume (cubic yards)
Excavation F	Excavation for Removal of Pipeline and Casing Under SR 160	10‘ x 118’	1,189	378
Excavation H	Bell hole (access for pigging and flushing)	15’ x 15’	225	14
		Total	**23,182**	**5,398**

Note: Excavation IDs and dimensions are based on 60% Design Plans prepared by Longitude 123, Inc. dated 9-10-21 (Longitude 123, Inc. 2021) (Appendix C).

2.4 SCHEDULE

Mobilization for Phase 1 activities is currently planned for July 2022, with HDD drilling operations to be completed in September 2022. Phase 2 is planned to immediately follow the HDD replacement and would occur from September to October 2022 (in water) and be finished onshore in December 2022. The decommissioning schedule would avoid listed fish species peak migration and spawning periods and coincides with the timeframe during which aquatic conditions are least favorable for listed fish that could occur within the aquatic work area. All decommissioning activities within waterways would occur within the regulatory in-water work window that occurs from August 1 through October 31, 2022, to protect listed fish species. However, the Project’s in-water work window may be modified based on permit conditions issued by regulatory agencies.

Project work activities would generally be conducted Monday through Saturday (occasionally Sunday) for approximately 10 to 12 hours each day. Night work would be anticipated during HDD pipeline pullback and when removing the casing beneath SR 160. Longer shifts or additional shifts may occur, if necessary, to complete the Project within the defined seasonal constraints.

2.5 PRE-PROJECT PREPARATION ACTIVITIES AND APPROVALS

Once all permits and approvals have been received, a Project Work and Safety Plan (PWSP) would be submitted for CSLC approval prior to mobilization for Phase 1 activities. The PWSP would provide additional details related to the means and methods that would be employed to comply with lease/permit conditions and safety requirements and would apply to both Phase 1 and Phase 2 scopes of work.

PG&E would also provide notices to adjacent agricultural property owners within 1,000 feet of the East Work Area and Pipe Staging Area prior to Project implementation. This

would allow crop planting and other cultivation practices to be adjusted to accommodate pipeline replacement activities and minimize crop loss, farmland access, and irrigation interference. Project notices would include PG&E Project manager contact information, as well as specifics regarding Project schedule and proposed hours of operation.

PG&E would provide all adjacent residents with advanced written notification of proposed construction activities, scheduling, and hours of construction. Signage would also be posted at the Project site to notify the general public.

Once all regulatory permits are received, but prior to commencement of Project activities, all technical plans and surveys to perform the work safely and in compliance with all regulatory permits and permissions, California Occupational Safety and Health Administration safety regulations, and owner's safety requirements would be completed.

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3.0 ENVIRONMENTAL CHECKLIST AND ANALYSIS

This section contains the Initial Study (IS) that was completed for the proposed Pacific Gas & Electric Company (PG&E or Applicant) L-130 Sacramento River Crossing Pipeline Replacement Project (Project) in accordance with the requirements of the California Environmental Quality Act (CEQA). The IS identifies site-specific conditions and impacts, evaluates their potential significance, and discusses ways to avoid or lessen impacts that are potentially significant. The information, analysis, and conclusions included in the IS provide the basis for determining the appropriate document needed to comply with CEQA. For the Project, based on the analysis and information contained herein, California State Lands Commission (CSLC) staff has found that the IS shows that there is substantial evidence that the Project may have a significant effect on the environment, but revisions to the Project would avoid the effects or mitigate the effects to a point where clearly no significant effect on the environment would occur. As a result, the CSLC concluded that a Mitigated Negative Declaration (MND) is the appropriate CEQA document for the Project.

The evaluation of environmental impacts provided in this document is based in part on the impact questions contained in 2022 Appendix G of the State CEQA Guidelines; these questions, which are included in an impact assessment matrix for each environmental category (Aesthetics, Air Quality, Biological Resources, etc.), are "intended to encourage thoughtful assessment of impacts." Each question is followed by a check-marked box with column headings that are defined below.

- **Potentially Significant Impact.** This column is checked if there is substantial evidence that a Project-related environmental effect may be significant. If there are one or more "Potentially Significant Impacts," a Project Environmental Impact Report (EIR) would be prepared.
- **Less than Significant with Mitigation.** This column is checked when the Project may result in a significant environmental impact, but the incorporation of identified Project revisions or mitigation measures would reduce the identified effect(s) to a less than significant level.
- **Less than Significant Impact.** This column is checked when the Project would not result in any significant effects. The Project's impact is less than significant even without the incorporation of Project-specific mitigation measures.
- **No Impact.** This column is checked when the Project would not result in any impact in the category, or the category does not apply.

Where appropriate, Project impacts are evaluated per the two phases of the Project: Phase 1 (Replacement Pipeline Installation) and Phase 2 (Pipeline Decommissioning). Project phases may be discussed individually or combined based on the resource discussion.

The environmental factors checked below (Table 3-1) would be potentially affected by this Project. A checked box indicates that at least one impact would be a "Potentially Significant Impact" except that the Applicant has agreed to Project revisions, including the implementation of mitigation measures, that reduce the impact to "Less than Significant with Mitigation."

Table 3-1. Environmental Issues and Potentially Significant Impacts

☒ Aesthetics	☐ Agriculture and Forestry Resources	☒ Air Quality
☒ Biological Resources	☒ Cultural Resources	☒ Cultural Resources – Tribal
☐ Energy	☒ Geology, Soils, and Paleontological Resources	☐ Greenhouse Gas Emissions
☒ Hazards and Hazardous Materials	☒ Hydrology and Water Quality	☐ Land Use and Planning
☐ Mineral Resources	☐ Noise	☐ Population and Housing
☐ Public Services	☒ Recreation	☒ Transportation
☒ Utilities and Service Systems	☐ Wildfire	☒ Mandatory Findings of Significance

Detailed descriptions and analyses of impacts from Project activities and the basis for their significance determinations are provided for each environmental factor on the following pages, beginning with Section 3.1, Aesthetics. Relevant federal and state laws, regulations, and policies potentially applicable to the Project are listed in Appendix A - List of Major Federal and State Laws, Regulations, and Policies Potentially Applicable to the Project. Relevant regional and local laws, regulations, and policies potentially applicable to the Project are listed in Appendix B – List of Local Regulations and Policies Potentially Applicable to the Project.

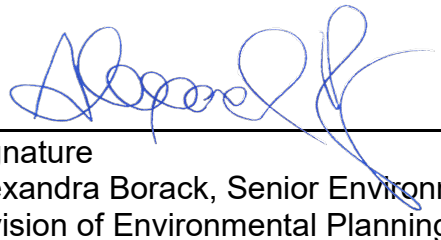
1 AGENCY DETERMINATION

2 Based on the environmental impact analysis provided by this Initial Study:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.



4-27-2022

Signature
Date

Alexandra Borack, Senior Environmental Scientist
Division of Environmental Planning and Management
California State Lands Commission

3.1 AESTHETICS

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

3.1.1 Environmental Setting

The Project area is bordered by the city of Rio Vista to the north, Montezuma Hills to the west, and agricultural lands within the Sacramento River Delta to the south and east. The Project site extends from the West Work Area located just south of the Delta Marina Yacht Harbor and immediately east of Beach Drive to the East Work Area located in an agricultural field located east of California State Route (SR) 160. SR 160 is a state-designated scenic highway that transects the East Work Area. Public views of the Project site are limited to motorists on public roadways (Beach Drive, Montezuma Hills Road, and SR 160) and boaters within the Delta Marina Yacht Harbor and the Sacramento River. Figures 2-14, 2-16, and 2-18 provide photos that show public views of the Project areas.

The closest residential development is located in the city of Rio Vista immediately north of the West Work Area. The nearest residence is located approximately 100 feet southeast of the proposed excavation area to remove the pipe casing under SR 160. In addition, there are a few rural residences located near the West Work Area and East Work Area.

3.1.2 Regulatory Setting

There are no federal laws, regulations, or policies pertaining to aesthetics that are relevant to the Project. State laws and regulations pertaining to aesthetics and relevant to the Project are identified in Appendix A. Local regulations including applicable County General Plan policies are identified in Appendix B.

3.1.3 Impact Analysis

a) Have a substantial adverse effect on a scenic vista?

b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

(a to b) No Impact

Phases 1 and 2

There are no scenic vistas in the Project area. In addition, there are no trees, rock outcroppings, historic buildings, or other scenic resources within SR 160 in the Project area. Project-related activities, equipment, and materials would not be visible when viewing a scenic vista, and there would be no damage to aesthetics from Project activities. Therefore, there would be no impact.

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

Less than Significant Impact

Phases 1 and 2

Project activities would temporarily introduce terrestrial and marine construction equipment to public viewsheds which would primarily affect passing boaters. However, Project-related changes in visual quality would be minor and temporary in nature (up to 6 months), and there are no above-ground permanent elements that would be visible following Project completion. In addition, vegetation disturbance would be very limited and would not include any tree trimming or removal. Therefore, the impact would be less than significant.

d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

Less than Significant with Mitigation

Phases 1 and 2

Project work activities would be conducted predominantly during daylight hours (from approximately 7:00 a.m. to 7:00 p.m.), and no significant sources of light or glare would be used during that time that would have the potential to affect views in the area. Limited nighttime operations may be required for HDD pipeline pullback, pipe and casing removal under SR 160, in-river pipeline removal, and barge assembly and disassembly. Therefore, nighttime work illumination could significantly impact the housing located within the vicinity of the West Work Area and East Work Area as well as the general public. **MM AES-1** would limit lighting intensity and direct all lighting downwards and onto the work area. With the implementation of this measure, the impact would be less than significant.

MM AES-1: Nighttime Illumination Shielding. Project lighting shall be as low in intensity as possible to meet Project needs and safety requirements, be focused on work areas, and equipped with shielding to minimize glare and spillover into adjacent areas.

3.1.4 Mitigation Summary

Implementation of the following mitigation measure would reduce the potential for Project-related impacts to aesthetic resources to less than significant.

- MM AES-1: Nighttime Illumination Shielding

3.2 AGRICULTURE AND FORESTRY RESOURCES

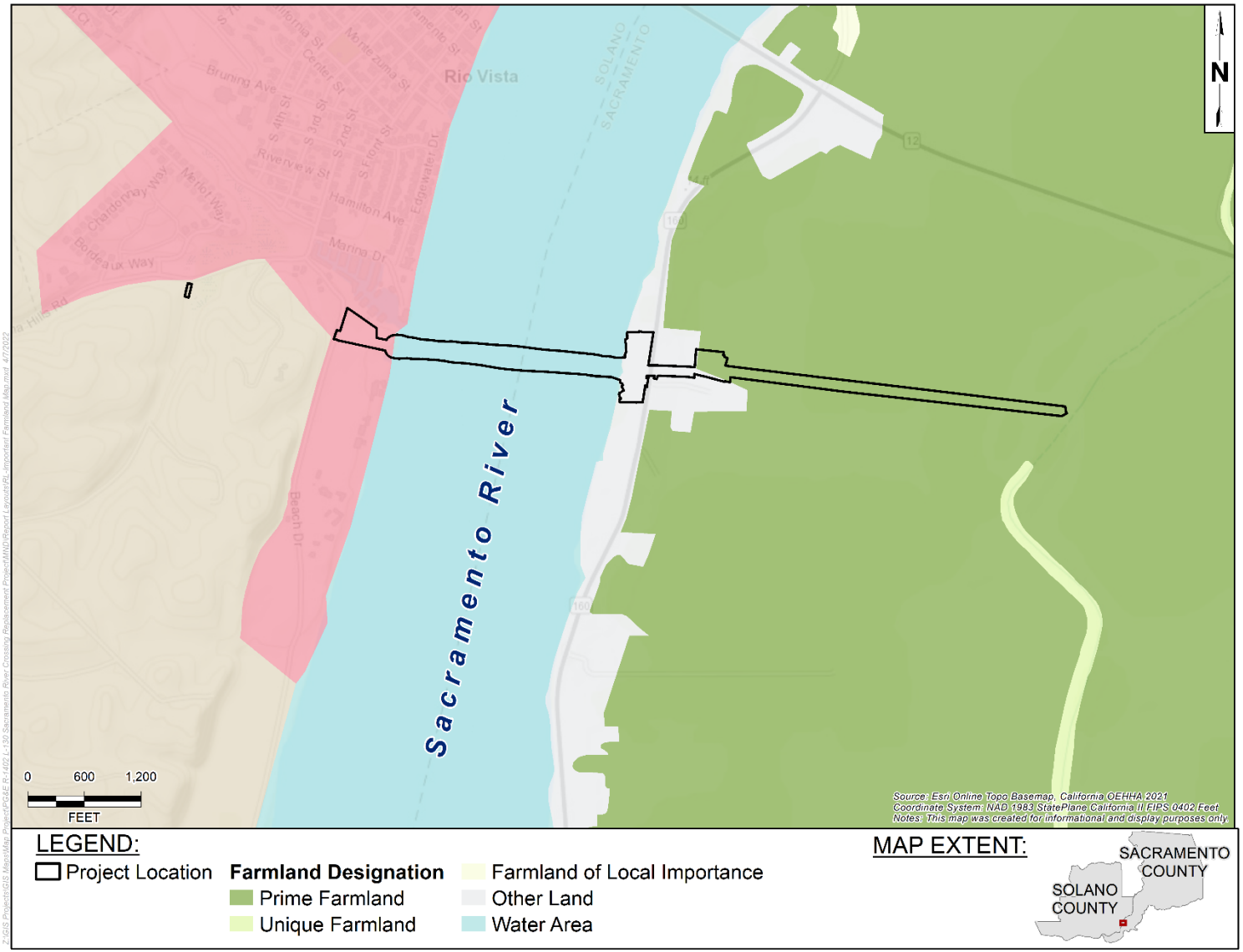
AGRICULTURE AND FORESTRY RESOURCES[2] - Would the project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation**	**Less Than Significant Impact**	**No Impact**
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Natural Resources Agency, to non-agricultural use?	☐	☐	☒	☐
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☒	☐
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Pub. Resources Code, § 12220, subd. (g)), timberland (as defined by Pub. Resources Code, § 4526), or timberland zoned Timberland Production (as defined by Gov. Code, § 51104, subd. (g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

3.2.1 Environmental Setting

The Project site is located within Solano and Sacramento Counties, in which agriculture is an important industry. In 2019, Sacramento County was ranked 24th in the state for total value of production, with grapes (wine), milk, nursery products, and poultry as the leading commodities. In 2019, Solano County was ranked 27th in the state for total value of production, with almonds, vegetables, tomatoes, and cattle/calves as the leading commodities (California Department of Food and Agriculture 2021). As shown in Figure 3.2-1, the proposed West Work Area is located within Urban and Built-up Land, the

[2] In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the State's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and the forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board (CARB).

Figure 3.2-1. Important Farmland Map



Levee Work Area is located within designated Other Lands, and the East Work Area and Pipe Staging Area are located within designated Prime Farmland (California Department of Conservation 2020). The Prime Farmland within the Project area is in active cultivation and grows alfalfa. The Project is zoned Exclusive Agricultural in Solano County and Agriculture and Delta Waterways in Sacramento County.

The East Work Area proposed for use by the Project for staging, HDD installation, and decommissioning of Segment 4 is currently within a Williamson Act contract (SACOG 2020). In addition, the PG&E Pipeline Station, located west of the Project's West Work Area, is currently within a separate Williamson Act contract (Solano County General Plan, Chapter 3 Agriculture 2008b).

3.2.2 Regulatory Setting

There are no federal laws, regulations, or policies pertaining to agricultural resources that are relevant to the Project. State laws and regulations pertaining to agricultural resources and relevant to the Project are identified in Appendix A. The State Williamson Act and Farmland Security Zone Act programs are administered locally, and Solano and Sacramento Counties are a party to and enforce the contracts on lands within their unincorporated areas.

Local regulations including applicable County General Plan policies are identified in Appendix B.

3.2.3 Impact Analysis

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

Less Than Significant Impact

Phases 1 and 2

Project activities on Prime Farmland are limited to staging and temporary soil disturbance during HDD pipeline installation and pipeline decommissioning activities. Following all Project activities, the new pipeline would be installed underground and the existing pipeline segments would be either removed entirely or abandoned in-place underground. New above-ground facilities would be limited to pipeline markers and electrolysis test stations, which would be located in areas that do not conflict with agricultural activities.

While pipeline replacement and decommissioning activities could require removing 10.79 acres of existing crops (if not fallowed) and would prevent fall and winter crop production for that acreage, no agricultural soil loss or farmland conversion would occur. In addition, the Pipe Staging Area may restrict access to cultivation on two parcels north of the Project area. The Applicant will provide advance notice to adjacent property owners as described in Section 2.5, *Pre-Project Preparation Activities and Approvals*, to enable crop planting and other cultivation practices to be adjusted to accommodate pipeline replacement activities and minimize crop loss, farmland access, and irrigation interference. Therefore, the impacts would be less than significant.

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

Less than Significant Impact

Phases 1 and 2

The East Work Area is located within an existing Sacramento County Williamson Act contract, and the PG&E Pipeline Station is within a Solano County Williamson Act contract. However, all Project activities involving ground disturbance would be short-term and would not result in any permanent above-ground impacts. The Project does not represent a change in land use and would not conflict with existing Agricultural zoning within Solano and Sacramento Counties or result in cancellation of any Williamson Act contract. Therefore, the impact would be less than significant.

c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Pub. Resources Code, § 12220, subd. (g)), timberland (as defined by Pub. Resources Code, § 4526), or timberland zoned Timberland Production (as defined by Gov. Code, § 51104, subd. (g))?

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

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

(c to e) No Impact

Phases 1 and 2

Forest land or timberland does not occur in the region and would not be rezoned, adversely affected, or converted to non-forest use. In addition, there would be no conversion of the Project area agricultural land to non-agricultural use. Therefore, there would be no impact.

3.2.4 Mitigation Summary

The Project would have no significant impact to agricultural resources; therefore, no mitigation is required.

3.3 AIR QUALITY

AIR QUALITY - Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation**	**Less Than Significant Impact**	**No Impact**
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is non-attainment under an applicable federal or state ambient air quality standard?	☐	☒	☐	☐
c) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☒	☐

3.3.1 Environmental Setting

The federal government has established ambient air quality standards to protect public health (primary standards) and welfare (secondary standards). The state of California has established separate, more stringent standards. Federal and state standards have been established for ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), suspended particulate matter (a mixture of extremely small particles and liquid droplets, e.g., dust), and lead. In addition, California has standards for ethylene, hydrogen sulfide, sulfates, and visibility-reducing particles.

The Project region periodically exceeds the federal 8-hour ozone standard and state 1-hour ozone standard (California Air Resources Board (CARB) 2021a). In addition, the Project area falls within the Sacramento Federal Nonattainment Area (SFNA) which is an ozone nonattainment area under the federal Clean Air Act. While Sacramento County is within the state ozone nonattainment area, Solano County is in state transitional nonattainment status. Sacramento and Solano Counties also have elevated ambient levels of very fine dust particles called $PM_{2.5}$ and PM_{10} (particulate matter 2.5 microns or 10 microns or less in diameter, respectively), and are in nonattainment for both federal and state $PM_{2.5}$ and PM_{10} standards. The counties are in attainment for all other federal and state standards.

3.3.1.1 Local Climate and Meteorology

The Project is located within the Sacramento Valley Air Basin (SVAB). The climate, meteorology, air quality, and air quality trends of the area have been described in detail in several planning and environmental documents and are best summarized in the

Sacramento County Climate Action Plan (CAP) (SMAQMD 2021) and Solano County CAP (YSAQMD 2007). The Project region can be described as having a warm summer Mediterranean climate according to the Köppen Climate Classification system, characterized by warm, dry summers and cooler mildly damp winters. In the summer, marine air or Delta breeze generally flows into the SVAB from the San Joaquin-Sacramento Delta. Air pollution can thus be transported into the Basin from the Bay Area and the San Joaquin Valley. When the wind blows from the north, air from the Sacramento metro area can be transported into the Project region.

3.3.1.2 Sensitive Receptors and Surrounding Area Land Use

Some land uses are considered more sensitive to air pollution than others due to population groups or activities involved. Sensitive population groups include children, the elderly, the acutely ill, and the chronically ill, especially those with cardio-respiratory diseases. Residential areas are also considered to be sensitive to air pollution because residents (including children and the elderly) tend to be at home for extended periods of time, resulting in sustained exposure to any pollutants present.

Residential land uses of the city of Rio Vista are located adjacent to the West Work Area, including residences along Beach Drive and Bordeaux Way. There are also several rural residences located near the East Work Area. The nearest residence is located approximately 100 feet southeast of the proposed excavation area to remove the pipe casing under SR 160 (see Figure 3.3-2).

3.3.1.3 Criteria Pollutants

Criteria air pollutants are those contaminants for which ambient air quality standards have been established for the protection of public health and welfare. Criteria pollutants include O_3, CO, oxides of nitrogen (NO_X), reactive organic gases (ROG), SO_2, PM_{10}, and $PM_{2.5}$.

Ozone. O_3 is formed in the atmosphere through complex photochemical reactions involving NO_X, ROG, and sunlight that occur over several hours. Since O_3 is not emitted directly into the atmosphere but is formed as a result of photochemical reactions, it is classified as a secondary or regional pollutant. These O_3-forming reactions take time, and therefore peak ozone levels are often found downwind of major source areas. O_3 is considered a respiratory irritant and prolonged exposure can reduce lung function, aggravate asthma, and increase susceptibility to respiratory infections. Children and those with existing respiratory diseases are at greatest risk from ozone exposure.

Figure 3.3-2. Closest Sensitive Receptors

Carbon Monoxide. CO is primarily formed through the incomplete combustion of organic fuels. Higher CO values are generally measured during winter when dispersion is limited by morning surface inversions. Seasonal and diurnal variations in meteorological conditions lead to lower values in summer and in the afternoon. CO is an odorless, colorless gas. CO affects red blood cells in the body by binding to hemoglobin and reducing the amount of oxygen that can be carried to the body's organs and tissues, which can cause health effects to those with cardiovascular disease and can affect mental alertness and vision.

Nitric Oxide and Nitrogen Dioxide. NO is a colorless gas formed during combustion processes which rapidly oxidizes to form NO_2, a brownish gas. The highest nitrogen dioxide values are generally measured in urbanized areas with heavy traffic. Exposure to NO_2 may increase the potential for respiratory infections in children and cause difficulty in breathing even among healthy persons and especially among asthmatics.

Sulfur Dioxide. SO_2 is a colorless, reactive gas that is produced from burning sulfur-containing fuels, such as coal and oil, as well as by other industrial processes. Generally, the highest concentrations of SO_2 are found near large industrial sources. SO_2 is a respiratory irritant that can cause narrowing of the airways, leading to wheezing and shortness of breath. Long-term exposure to SO_2 can cause respiratory illness and aggravate existing cardiovascular disease.

Particulate Matter. Ambient air quality standards have been set for PM_{10} and $PM_{2.5}$. Both consist of different types of particles suspended in the air, such as metal, soot, smoke, dust, and fine mineral particles. The particles' toxicity and chemical activity can vary, depending on the source. The primary source of PM_{10} emissions appears to be from the soil via road use, construction, agriculture, and natural windblown dust. Other sources include sea salt, combustion processes (such as those in gasoline or diesel vehicles), and wood burning. Primary sources of $PM_{2.5}$ emissions come from construction sites, wood stoves, fireplaces, and diesel truck exhaust. Particulate matter is a health concern because when inhaled it can cause permanent lung damage. While both sizes of particulates can be dangerous when inhaled, $PM_{2.5}$ tends to be more damaging because it remains in the lungs.

3.3.2 Regulatory Setting

Federal and state laws and regulations pertaining to air quality relevant to the Project are identified in Appendix A. Local regulations, including Sacramento Metropolitan Air Quality Management District (SMAQMD) and Yolo-Solano Air Quality Management District (YSAQMD) rules and regulations as well as applicable County General Plan policies are identified in Appendix B. Air pollution control within the Project area is administered on three governmental levels. The U.S. Environmental Protection Agency (USEPA) has jurisdiction under the Clean Air Act, CARB has jurisdiction under the

California Health and Safety Code and the California Clean Air Act, and the SMAQMD and YSAQMD share responsibility with CARB for ensuring that all state and federal ambient air quality standards are attained. The USEPA and CARB classify an area as attainment, unclassified, or non-attainment, depending on whether the monitored ambient air quality data show compliance, insufficient data to determine compliance, or non-compliance with national or California ambient air quality standards (NAAQS or CAAQS), respectively.

3.3.2.1 Air Quality Standards

The USEPA established NAAQS to protect public health (primary standards) and welfare (secondary standards). The CARB established the more stringent CAAQS, which also requires air basins to be designated as in "attainment" or "non-attainment" based on meeting the CAAQS. NAAQS and CAAQS have been established for O_3, CO, NO_2, SO_2, suspended particulate matter (e.g., dust), and lead. In addition, California has standards for hydrogen sulfide (H_2S), sulfates, and visibility-reducing particles. Table 3.3-2 lists applicable ambient air quality standards.

Table 3.3-2. Ambient Air Quality Standards (State and Federal)

Pollutant	Averaging Time	California Standard	Federal Standard
Ozone (O_3)	1-Hour	0.09 ppm	--
Ozone (O_3)	8-Hour	0.070 ppm	0.070 ppm
Carbon Monoxide (CO)	1-Hour	20 ppm	35 ppm
Carbon Monoxide (CO)	8-Hour	9.0 ppm	9 ppm
Nitrogen Dioxide (NO_2)	Annual Arithmetic Mean	0.030 ppm	0.053 ppm
Nitrogen Dioxide (NO_2)	1-Hour	0.18 ppm	100 ppb
Sulfur Dioxide (SO_2)	Annual Arithmetic Mean	--	0.030 ppm
Sulfur Dioxide (SO_2)	24-Hour	0.04 ppm	0.14 ppm
Sulfur Dioxide (SO_2)	3-Hour	--	0.5 ppm (secondary)
Sulfur Dioxide (SO_2)	1-Hour	0.25 ppm	75 ppb
Respirable Particulate Matter (PM_{10})	Annual Geometric Mean	20 µg/m^3	--
Respirable Particulate Matter (PM_{10})	24-Hour	50 µg/m^3	150 µg/m^3

Pollutant	Averaging Time	California Standard	Federal Standard
Fine Particulate Matter ($PM_{2.5}$)	Annual Geometric Mean	12 µg/m^3	12.0 µg/m^3
Fine Particulate Matter ($PM_{2.5}$)	24-Hour	--	35 µg/m^3
Hydrogen Sulfide (H_2S)	1-Hour	0.03 ppm	--
Vinyl Chloride	24 Hour	0.01 ppm	--
Sulfates	24 Hour	25 µg/m^3	--
Lead	30 Day Average	1.5 µg/m^3	--
Lead	Calendar Quarter	--	1.5 µg/m^3
Lead	Rolling 3-Month Average	--	0.15 µg/m^3
Visibility Reducing Particles	8-Hour	Extinction coefficient of 0.23 per kilometer - visibility of 10 miles or more due to particles when relative humidity is less than 70 percent.	--

Source: CARB 2020
ppb = parts per billion
ppm = parts per million
µg/m^3 = micrograms per cubic meter

3.3.2.2 Air Quality Regulation and Planning

The Project site is managed by SMAQMD and the YSAQMD. The districts have air quality plans and CEQA guidance documents that in general are focused on demographic forecasts and planned land use development, planned transportation system improvements or control measures, and development and planning of long-term stationary sources of air pollutant emissions. In 2017, the SMAQMD, in cooperation with YSAQMD and other air districts, finalized the *Sacramento Regional 2008 NAAQS 8-Hour Ozone Attainment and Reasonable Further Progress Plan* to demonstrate how the 2008 8-hour NAAQS of 75 ppb will be attained by 2024. This Plan indicates that since 1990, the SFNA shows a declining trend in exceedances of the 2008 8-hour ozone NAAQS and ozone design value concentrations. In addition, the ROG and NO_X emissions inventory forecasts through 2024 show significant declines in mobile source

emissions despite increasing population, vehicle activity, and economic development in the Sacramento region. Photochemical modeling results indicate that the combined reductions from existing local strategies as well as regional, state, and federal control measures are sufficient to demonstrate attainment by 2024.

3.3.2.3 Significance Thresholds

The SMAQMD's Guide to Air Quality Assessment in Sacramento County (SMAQMD 2020) includes adopted significance thresholds for short-term Project (construction) and long-term (operational) air pollutant emissions (Table 3.3-3). In addition, the $PM_{2.5}$ and PM_{10} thresholds in Table 3.3-3 only apply to projects that use all feasible Basic Construction Emissions Control Practices (BCECPs) and Best Management Practices (BMPs) for the Project. Projects that fail to apply these measures must meet a $PM_{2.5}$ and PM_{10} threshold of 0 pounds per day.

While SMAQMD identifies both construction and operational thresholds, the Project does not have operational impacts because replacement pipeline operation and maintenance activities would not be changed from existing conditions; therefore, operational thresholds of significance do not apply.

Table 3.3-3. SMAQMD Air Quality Thresholds of Significance

Pollutant/Precursor	Construction Emissions (Pounds/day)	Construction Emissions (Tons/year)
NO_x	85	--
ROG	--	--
PM_{10}	80	14.6
$PM_{2.5}$	82	15

The YSAQMD's CEQA thresholds of significance in the district's Handbook for Assessing and Mitigating Air Quality Impacts (YSAQMD 2007) for all Project-related air pollutant emissions are provided in Table 3.3-4.

Table 3.3-4. YSAQMD CEQA Thresholds of Significance

Pollutant/Precursor	Emissions
NO_x	10 tons/year
ROG	10 tons/year
PM_{10}	80 pounds/day

Pollutant/Precursor	Emissions
CO	Substantially contribute to CO concentrations that would exceed the CAAQS

According to the district's Handbook, a project would result in a significant impact to air quality if it would substantially contribute to CO concentrations that exceed the CAAQS (YSAQMD 2007). The district's handbook indicates that a project has the potential to exceed the CAAQS for CO if a project reduces the Level of Service (LOS) to an unacceptable LOS or substantially worsens an already existing peak-hour LOS on one or more streets or at one or more intersections in a project's vicinity.

3.3.3 Impact Analysis

a) Conflict with or obstruct implementation of the applicable air quality plan?

No Impact

Phases 1 and 2

The Project is a natural gas pipeline replacement and decommissioning project and would not extend service into new areas, provide increased capacity into underserved areas, or result in any increased long-term pipeline operations and maintenance (O&M). A review of the YSAQMD and SMAQMD plans indicates that they focus primarily on projects that would increase emissions within the air districts' jurisdiction on a long-term basis. While the Phase 1 and 2 activities would cause daily emissions, they would not induce population growth nor affect population-based emissions inventory projections in SMAQMD's and YSAQMD's respective CAPs, or otherwise result in long-term air pollutant emissions. Therefore, there would be no impact.

b) Result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is non-attainment under an applicable federal or state ambient air quality standard?

Less than Significant Impact with Mitigation

Phases 1 and 2

Air pollutant emissions would be generated from internal combustion engines used during construction activities and soil disturbance. These emissions include NO_x and ROG because both are considered ozone precursors, potentially resulting in atmospheric ozone formation for which the SFNA is in non-attainment. Conventional construction equipment such as dozers, excavators, drill rigs, generators, loaders, and

trucks, as well as marine vessels and on-road motor vehicles for transporting materials and personnel, would all release exhaust. Fugitive dust emissions would also be generated from soil disturbing activities.

Project criteria pollutant emissions for the Project's construction equipment, marine engines, and on-road vehicles were estimated using the most recent emission factors and load factors from the California Emissions Estimator Model® (CalEEMod) User's Guide, CARB's 2017 Emission Factors (EMFAC) model, and the USEPA Ports Emissions Inventory Guidance: Methodologies for Estimating Port-Related and Goods Movement Mobile Source Emissions. The Project's maximum daily criteria pollutant emission estimates for Phases 1 and 2 are included in Tables 3.3-5 and 3.3-6, respectively. Table 3.3-7 provides the peak day and annual emission totals and compares them to YSAQMD and SMAQMD CEQA thresholds. The two Districts share the same PM_{10} daily thresholds and do not have any conflict or crossover for the other criteria pollutants. Appendix D provides a copy of the Air Quality Spreadsheets supporting this analysis.

Table 3.3-5. Estimated Air Pollutant Emissions for Phase 1 (pounds/day)

Work Task	NO_x	ROG	PM_{10}	$PM_{2.5}$
Site Mobilization	6.20	0.83	0.24	0.24
Fabricate 16" Pull Back Strings	8.87	0.81	0.36	0.36
Perform HDD Replacement/Tie-In/Commissioning	52.50	5.69	1.57	1.56

Table 3.3-6. Estimated Air Pollutant Emissions for Phase 2 (pounds/day)

Work Task	NO_x	ROG	PM_{10}	$PM_{2.5}$
Conduct Pre-Project Riverbed Debris Survey	10.85	0.29	0.19	0.18
Mobilization to Site	9.77	0.26	0.17	0.17
Pig & Flush Crossing	4.15	0.49	0.17	0.17
Onshore Decommissioning	17.62	2.45	0.71	0.71
In-Water Decommissioning	33.91	0.98	0.70	0.69

Work Task	NO_x	ROG	PM_{10}	$PM_{2.5}$
Site Restoration	8.42	0.44	0.19	0.18

Table 3.3-7. Total Estimated Air Pollutant Emissions for the Project

Parameter	NO_x	ROG	PM_{10}	$PM_{2.5}$
Peak Day pounds/day	52.05	5.69	1.57	1.56
SMAQMD or YSAQMD Daily Threshold pounds/day	**85**	**N/A**	**80**	**82**
Total (tons/year)	2.07	0.20	0.06	0.06
SMAQMD or YSAQMD Annual Threshold (tons/year)	**10**	**10**	**14.6**	**15**
Exceed SMAQMD or YSAQMD Thresholds?	No	No	No	No

Emissions resulting from Project equipment and vessels would temporarily increase local pollutant concentrations. The primary criteria pollutants regulated by the SMAQMD and YSAQMD are ozone precursors NO_X and ROG as well as $PM_{2.5}$ and PM_{10}, as discussed in the Regulatory Setting, above. **MM AQ-1** would ensure the Project meets SMAQMD $PM_{2.5}$ and PM_{10} threshold criteria by utilizing all feasible BCECPs and BMPs. With the implementation of this mitigation measure, all estimated Project criteria pollutant emissions would be below the SMAQMD and YSAQMD significance thresholds and therefore the impact would be less than significant.

MM AQ-1: Implement Basic Construction Emissions Control Practices and Best Management Practices. The following BCECPs and BMPs shall be implemented during Project construction:

- Control of fugitive dust as required by District Rule 403 and enforced by District staff.
- Water all exposed surfaces two times daily. Exposed surfaces include, but are not limited to soil piles, graded areas, unpaved parking areas, staging areas, and access roads.
- Cover or maintain at least two feet of free board space on haul trucks transporting soil, sand, or other loose material on the site. Any haul trucks that would be traveling along freeways or major roadways should be covered.
- Use wet power vacuum street sweepers to remove any visible track out mud or dirt onto adjacent public roads at least once a day.
- Limit vehicle speeds on unpaved roads to 15 miles per hour.

- All roadways, driveways, sidewalks, parking lots to be paved should be completed as soon as possible. In addition, building pads should be laid as soon as possible after grading unless seeding or soil binders are used.
- Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to 5 minutes. Provide clear signage that posts this requirement for workers at the entrances to the project site.
- Provide current certificate(s) of compliance for CARB's In-Use Off-Road Diesel-Fueled Fleets Regulation.

The YSAQMD does not have a numerical significance threshold for CO emissions, and instead evaluates a project's potential to exceed the CAAQS for CO by evaluating a Project's potential to reduce the LOS to an unacceptable level or to substantially worsen an already existing peak-hour LOS on one or more streets or at one or more intersections in a project's vicinity.

Access to the Project site is primarily from SR 12, a rural highway which serves as the primary arterial roadway within the city of Rio Vista and as a connector to SR 160 for the portion of the Project site in Sacramento County. According to the 2008 Solano County General Plan Final Environmental Impact Report (EIR), SR 12 at the Rio Vista Bridge had a congestion rating of LOS F as of 2007, which the EIR determined meant the bridge segment already experienced more than 16,300 averaged daily trips (EDAW/AECOM 2008). Additional transportation projects forecast through 2030 would increase the congestion for SR 12 at the Rio Vista Bridge to a total of 32,000 daily trips. In addition, the City of Rio Vista's 2001 General Plan estimated 14,000 daily trips at the time for SR 12 along the section within the city. The LOS for SR 12 at the Main Street/Hillside Terrace intersection, the closest segment to the eastern Project site, was calculated at LOS C (City of Rio Vista 2002). Section 3.18, *Transportation*, discusses the 2021 Congestion Management Process (CMP) for Solano County and designates the segment of SR 12 that lies north of the West Work Area and east of the Rio Vista Bridge as LOS D (Solano Transportation Authority (STA) 2021). The analysis in Section 3.18 determines that the Project would generate a maximum of 54 daily one-way vehicle trips during peak-day activities. These Project-related trips would not substantially worsen the 16,300 to 32,000 daily trips already occurring at LOS F at the SR 12 Rio Vista Bridge. The Project-related trips would neither reduce the city-identified LOS at the SR 12 and Main Street/Hillside Terrace intersection to an unacceptable level of LOS D nor substantially worsen the STA-designated LOS D segment of SR 12 that traverses north of the eastern Project site. Therefore, the impact would be less than significant.

c) Expose sensitive receptors to substantial pollutant concentrations?

Less than Significant Impact

Phases 1 and 2

Residential receptors are located to the south and southeast within 200 feet of the Levee Work Area and East Work Area (see Figure 3.3-2). Several additional residential receptors are located to the north of the PG&E Pipeline Station and others are located to the south and southeast within 500 feet of the West Work Area. Project-related air pollutant emissions near these residences would be temporary and reduced by SMAQMD and YSAQMD rules and regulations that would reduce dust emissions by wetting disturbed areas twice a day and monitoring fugitive dust emissions. Therefore, the impact would be less than significant.

In addition, the Project area's prevailing southwest winds would disperse pollutants away from the sensitive receptors because they are not located downwind of Project pollutant sources. Therefore, the impacts would be less than significant.

d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Less than Significant Impact

Phases 1 and 2

Project-related odors would be limited to diesel exhaust and possibly reduced sulfur compounds in exposed saturated soil and sediments, would be controlled by SMAQMD and YSAQMD regulations, and would dissipate quickly in open air. Persons potentially exposed to these odors would be limited to residences, local farm workers, and gas field workers located near Project activities. Due to the temporary nature of Project activities and small size of the affected population, the impact would be less than significant.

3.3.4 Mitigation Summary

Implementation of the following mitigation measure would reduce the potential for Project-related impacts to air quality to less than significant.

- MM AQ-1: Implement Basic Construction Emissions Control Practices and Best Management Practices

3.4 BIOLOGICAL RESOURCES

BIOLOGICAL RESOURCES – Would the project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation**	**Less Than Significant Impact**	**No Impact**
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife, U.S. Fish and Wildlife Service, State Lands Commission, or California Coastal Commission?	☐	☒	☐	☐
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☒	☐	☐
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☒	☐	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance (including essential fish habitat)?	☐	☒	☐	☐
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan?	☐	☐	☐	☒

The following discussion contains information from the Biological Technical Report prepared for the Project by Padre Associates, Inc. (2021a), which is included as Appendix E.

3.4.1 Environmental Setting

This section describes the ecological setting and biological resources in the terrestrial and aquatic Project areas. The Project area spans the Sacramento River from the western terrestrial landing, located at the south end of the city of Rio Vista, to the eastern portion of the Project area located within residential and agricultural lands on

Brannan Island (see Figures 2-1 and 2-2). The biological study area (BSA) includes all temporary impact areas, staging areas, access routes, and the surrounding areas.

Biological field surveys were conducted on October 21 and 22, 2020, to perform site characterization, provide a preliminary aquatic resources delineation, and determine the likelihood of occurrence for special-status species or sensitive habitats on the site. Detection methods included direct observation with binoculars; examination and identification of tracks, scats, previous years nests, burrows/diggings, and carcasses/skeletal remains; and identification of vocalizations (calls and songs). In addition, a herpetological assessment of the Project area was conducted on April 7 and November 13, 2020, to identify special-status reptile and amphibian species or suitable habitat (Swaim Biological Inc. (SBI) 2020). Finally, focused botanical resource surveys were conducted on June 13 and 16, July 24, and August 26, 2020 (Nomad Ecology 2020). The timing of these surveys corresponded to the blooming window for special-status plants that have the potential to occur in the Project area.

3.4.1.1 Habitat Descriptions and Vegetation

Five vegetation communities were identified within the BSA during field surveys: agriculture, central coast riparian scrub, coastal and valley freshwater marsh, non-native grassland, and ruderal. These vegetation communities were determined based on species composition, the *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland 1986), and the Botanical Resources Survey Report (Nomad Ecology 2020) vegetation community mapping. However, the vegetation community descriptions were modified as needed to accurately describe the existing habitat observed on-site. Additional detail regarding communities and plant species lists is provided in Appendix E.

<u>Agriculture</u>

This cover type is not a natural community and consists of land currently used in crop cultivation that is routinely disturbed by agricultural practices. The most common crop present during the field surveys was alfalfa. This cover type is limited to portions of the Project area east of SR 160.

<u>Central Coast Riparian Scrub</u>

This plant community is described as a streamside thicket with a variable canopy cover of woody vegetation, typically dominated by a willow species (*Salix* sp.). It can occur at the mouths and along the banks of most perennial and some intermittent waterways of the South Coast Mountain Range. Within the Project area, this community was present on the west bank of the Sacramento River in the West Work Area and in one of the larger agricultural ditches in the Pipe Staging Area. Species that are characteristic of

this plant community within the Project site include Himalayan blackberry (*Rubus armeniacus*), edible fig (*Ficus carica*), scarlet sesban (*Sesbania punicea*), white alder (*Alnus rhombifolia*), Oregon ash (*Fraxinus latifolia*), California button willow (*Cephalanthus occidentalis*), and arroyo willow (*Salix lasiolepis*).

Coastal and Valley Freshwater Marsh and Aquatic Vegetation

This plant community is characterized by a dominance of perennial, emergent, herbaceous vegetation. It can be found in areas with pooled freshwater, typically with little flow, and typically permanently flooded. Species characteristic of this plant community within the Project site include cattail (*Typha* sp.), duckweed (*Lemna minuta*), water smartweed (*Persicaria amphibia*), and tall cyperus (*Cyperus eragrostis*). Within the Project area, this vegetation community was found in a narrow band of emergent hydrophytic (water-loving) vegetation growing along the Sacramento River's west bank in the West Work Area, and along the perimeter of some agricultural ditches within the Pipe Staging Area. In addition, a dense to sparse stand of hardstem bullrush (*Schoenoplectus acutus* var. *occidentalis*) was found along the riverbank in the West Work Area, where pioneer floating species like floating water primrose (*Ludwigia peploides*) and water hyacinth (*Eichhornia crassipes*) will occasionally float by or be lodged on a piece of vegetation.

Non-Native Grassland

This plant community occurs in previously disturbed areas and is dominated by non-native annual grasses and herbaceous species, which complete their entire life cycle in one year. Within the Project area, non-native grassland was located on the upland portions of the west bank of the Sacramento River and within the vacant lot adjacent to Beach Road in the West Work Area. Dominant grasses observed included slender wild oat (*Avena barbata*), wild oat (*Avena fatua*), and ripgut brome (*Bromus diandrus*). Common herbaceous flowering plants, other than grasses, within the Project area include telegraph weed (*Heterotheca grandiflora*), yellow star-thistle (*Centaurea solstitialis*), and western ragweed (*Ambrosia psilostachya*). Other species found in the western portion of the Project area include blue gum (*Eucalyptus globulus*), Gooding's black willow (*Salix goodingii*), almond (*Prunus dulcis*), and giant reed (*Arundo donax*).

Ruderal

This community is not described in the *Preliminary Descriptions of the Terrestrial Natural Communities of California* because it is not a natural community and is typically associated with human disturbance. In the Project area, ruderal vegetation was present at various locations including patches of high disturbance on the west side of the Sacramento River and in a large area on the east bank of the Sacramento River. The species composition and cover density of this community varied within the Project area.

The most prominent patch of ruderal cover, present on the east side of the Sacramento River, was in an open dirt parking lot that supported very dense stands of giant reed. A stand of blue gum and red gum (*Eucalyptus camaldulensis*) were present in this community, which although non-native, can provide canopy habitat.

3.4.1.2 Waters and Wetlands

During field survey efforts conducted in October 2020, Padre identified several wetland types and other waters present that are subject to federal and state jurisdiction. Wetland types were determined by their abiotic and biotic factors and the *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin 1979). A description of the wetland types and of the other waters present in the Project area can be found in Appendix E. There are 13.12 acres of stream features within the 33.72-acre Project area. In addition to federally jurisdictional waters of the U.S. and wetlands, several excavated ditches were mapped as aquatic resources, but determined to be non-jurisdictional under federal and state jurisdiction because they are irrigation ditches excavated on dry land and operated and maintained for the purposes of crop land irrigation (Padre 2021b).

Tidal Riverine Waters (Waters of the U.S./State)

Riverine waters are defined as aquatic resource features that are confined within a channel and lack a dominance of trees, shrubs, persistent emergent herbs, mosses, or lichens. Riverine waters are not considered wetlands due to the lack of hydrophytic vegetation. Tidal riverine waters are characterized by a fluctuating water velocity caused by the ebb and flow of the tide, and typically have a muddy streambed with patches of sand. Within the study area, 12.88 acres of tidal riverine waters occur in the Sacramento River.

Tidal Emergent Wetland (Waters of the U.S./State)

Emergent wetlands have a dominance of erect, rooted, herbaceous hydrophytes, typically perennial species, that are present for much of the growing season in most years. Within the study area, emergent wetlands occur below the high tide line on the west side of the Sacramento River and are considered persistent because the herbaceous species present are visible above the soil or water surface year-round. Dominant species include hardstem bullrush and cattail. A total of 0.24 acre of emergent wetlands occurs and is considered in-channel wetlands because it occurs below the high tide line.

3.4.1.3 Wildlife

Wildlife observed within the Project area was characteristic of the region and of the riverine and agricultural habitats that occur on-site. A comprehensive list of wildlife species observed during the surveys is included in Appendix E.

The open agricultural landscape found in the eastern Project area provides forage and cover for passerine birds and small mammals, such as white-crowned sparrow (*Zonotrichia leucophrys*), California ground squirrel (*Spermophilus beecheyi*), and California vole (*Microtus californicus*). These species, in turn, provide a portion of the prey base that attracts raptors such as red-tailed hawk (*Buteo jamaicensis*), northern harrier (*Circus hudsonius*), and Swainson's hawk (*Buteo swainsoni)* as well as mammalian predators like coyote (*Canis latrans*). Agricultural production can increase insect populations that are prey for Swainson's hawk and egrets (*Ardea* sp*).*

The Sacramento River, which bisects the Project area, provides habitat for a wide variety of aquatic and terrestrial species. A range of fish species utilize the Sacramento River at the Project area including striped bass (*Morone saxatalis*), American shad (*Alisa sapidissima*), Southern Distinct Population Segment (DPS) Green sturgeon (*Acipenser medirostris*), salmonid species (*Oncorhynchus* sp.), and Delta smelt (*Hypomesus transpacificus*). Terrestrial species that are closely tied to the water and prey upon fish species include belted kingfisher (*Megaceryle alcyon*), Caspian tern (*Hydroprogne caspia*), double-crested cormorant (*Phalacrocorax auritus*), and North American river otter (*Lontra canadensis*).

The Project area contains a wide array of potential bird nesting habitat. Large eucalyptus (*Eucalyptus* sp.) trees occur along the west bank of the Sacramento River and in linear rows along the perimeter of some of the agricultural fields and could provide nesting habitat for red-tailed hawk, Swainson's hawk, or other raptors. There are also several agricultural ditches that cross the east side of the Project area that support vegetation providing nesting habitat for marsh wrens (*Cistothorus palustris*), song sparrows (*Melospozia melodia*), red-winged blackbird (*Agelaius phoeniceus*), and tricolored blackbird (*Agelaius tricolor*).

3.4.1.4 Special-Status Species

Special-status species include those species that are state- or federally-listed as endangered or threatened, species proposed for such listing, candidate species, and state or local species of concern. For the purposes of this analysis, special-status species are those species that could be found in the Project area that meet any of the following criteria:

- Listed as endangered, threatened, or a candidate species under the federal Endangered Species Act (FESA) (50 Code of Federal Regulations [CFR] 17.11

[listed animals], 50 CFR 17.12 [listed plants], and various notices in the Federal Register [FR])

- Species that are candidates for possible future listing as threatened or endangered under FESA (FR, November 16, 2020)
- Species that are listed or proposed for listing by the state of California as threatened or endangered under CESA (CESA) (Cal. Code Regs, tit.14, § 670.5)
- Animals listed as California Species of Special Concern on CDFW's Special Animals List (CDFW 2022a)
- Plants listed as rare under the California Native Plant Protection Act (Fish & G. Code 1900 et seq.)
- Plants with a California Rare Plant Rank (CRPR) of 1A, 1B, 2A, and 2B (CDFW 2022b) and that the scientific community considers threatened or endangered in California
- Plants designated as CRPR 3 and 4 with a locally significant population that meets the criteria under State CEQA Guidelines, section 15380, subdivision (d)
- Considered rare, threatened, or endangered under CEQA Guidelines 15380(d) as the species' survival and reproduction in the wild are in immediate jeopardy, present in such small numbers throughout all or a significant portion of its range that it may become endangered, or likely to become endangered within the foreseeable future throughout all or a significant portion of its range

Based on the literature review and species lists obtained from the U.S. Fish and Wildlife Service (USFWS) (IpaC Trust Resource Report) (San Francisco Bay-Delta Office Consultation code: 08FBDT00-2020-SLI-0240; Sacramento Office Consultation code: 08ESMF00-2020-SLI-2747) and from the National Marine Fisheries Service (NMFS) (NMFS 2020a) for the Rio Vista quadrangle, 42 special-status species have been reported within a five-mile radius surrounding the Project area. The determinations for the potential to occur in the Project area are based on the species' range and habitat requirements, the habitats present within the Project area, and observed vegetation and wildlife present during field visits. In addition, species typically associated with other regional habitat types may use the highly disturbed, riparian corridor along the Sacramento River as a movement corridor, though riparian habitat is discontinuous in the Project area. In total, six federally threatened or endangered species, five state threatened or endangered species, and 13 other special-status or rare species have the potential to occur in the Project area. A complete detailed list of special-status species known to occur in the Project region, preferred habitat, and potential habitat occurrence in the Project area is included in Table 4-2 of Appendix E.

Special-Status Plants

During the focused botanical surveys (Nomad Ecology 2020), botanists identified Mason's lilaeopsis (*Lilaeopsis masonii*), a state-listed rare species and a California Native Plant Society (CNPS) List 1B.1 species, and Suisun marsh aster (*Symphyotrichum lentum*), a CNPS List 1B.2 species, within the Project area on the west side of the Sacramento River. In October 2020, botanists with Padre confirmed the location of the Mason's lilaeopsis and Suisun marsh aster on the west bank of the Sacramento River and mapped one additional occurrence of Suisun Marsh aster further north on the west bank of the Sacramento River (Figures 3.4-1 and 3.4-2). Mason's lilaeopsis and Suisun marsh aster are discussed in Table 3.4-1.

Based upon vegetation communities observed in the Project area, the following special-status plant species also have the potential to be found: Bolander's water-hemlock *(Cicuta maculata var. bolanderi),* Woolly rose-mallow *(Hibiscus lasiocarpos var. occidentalis),* Delta tule pea (*Lathyrus jepsonii* var. *jepsonii*), and Delta mudwort (*Limosella australis*). These four special-status species were not identified within the project study area during botanical surveys and were determined to be absent.

Special-Status Wildlife

The Project area is located outside of the known geographic range and lacks suitable habitat for some of the special-status wildlife species identified during desktop reviews. Therefore, these special-status species have no potential to occur in the Project area and are not discussed further in this section. The special-status wildlife species that could potentially occur or that were observed during the field surveys are discussed in more detail below. Potential to occur was evaluated by comparing the species' habitat preferences to the existing habitats, elevation, and soils of the Project area, and by examining the nearest documented occurrence. Species with general habitat requirements found within the Project area as well as nearby documented occurrences (generally less than 5 miles, but dependent on the species dispersal range) could potentially occur. In total, six federally listed species, five state listed species, and 11 other special-status or rare species occur or have the potential to occur in the Project area. Based upon habitats and vegetation communities observed in the Project area and the criteria described above, the following special-status wildlife species have the potential to be found in the Project area: Southern DPS Green sturgeon (*Acipenser medirostris*), White sturgeon (*Acipenser transmontanus*), Central Valley DPS steelhead (*Oncorhynchus mykiss irideus*), Chinook salmon (*Oncorhynchus tshawyscha*) (the Central Valley spring- and fall-run, and Sacramento River winter-run Evolutionarily Significant Units (ESUs)), Pacific lamprey (*Entosphenus tridentatus*), Delta Smelt (*Hypomesus transpacificus*), River lamprey (*Lampetra ayresi*), Sacramento splittail (*Pogonichthys macrolepidotus*), Longfin smelt (Spirinchus thaleichthys),

Figure 3.4-1. HDD Replacement Impacts Map

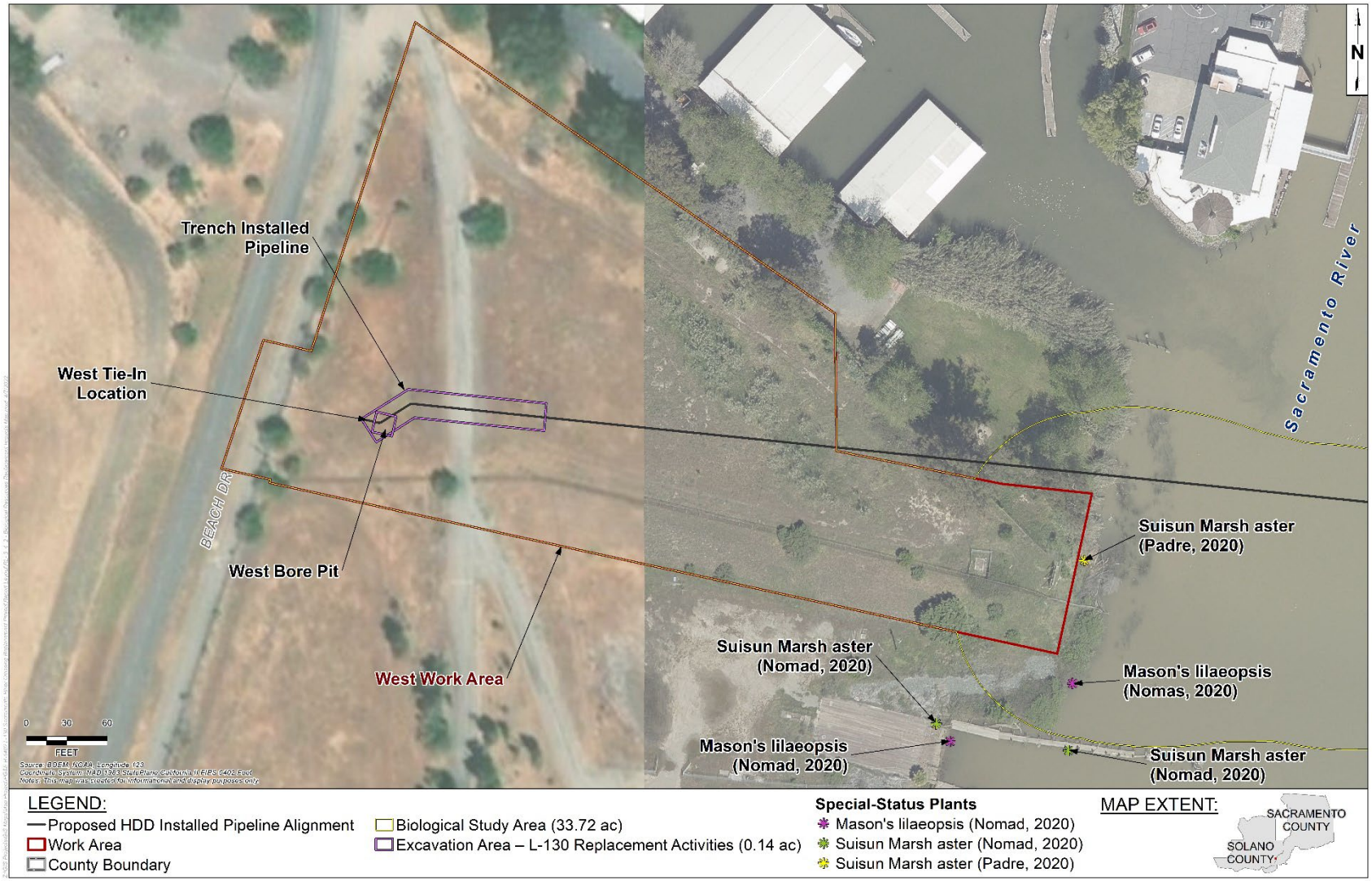
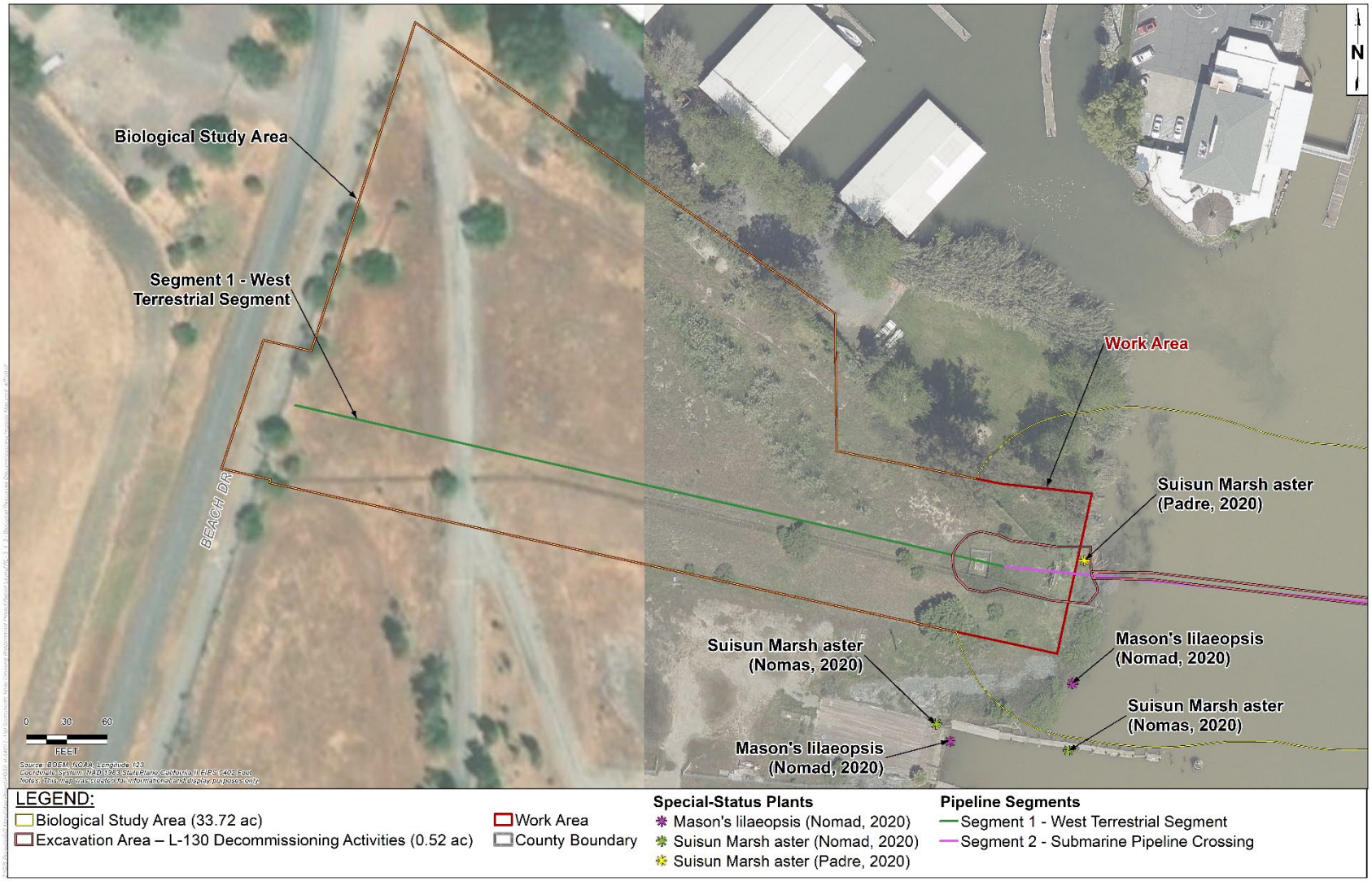


Figure 3.4-2. Decommissioning Impacts Map



Western pond turtle (*Emys marmorata*), Giant gartersnake (*Thamnophis gigas*), Swainson's Hawk (*Buteo swainsoni*), Northern Harrier (*Circus hudsonius*), White-tailed kite (*Elanus leucurus*), American Peregrine Falcon (*Falco peregrinus*), Song Sparrow ("Modesto" population) (*Melospiza melodia*), and Western red bat (*Lasiurus blossevillii*). Special-status wildlife species with a potential to occur in the Project area are discussed in Table 3.4-1.

3.4.1.5 Wildlife Corridors

Wildlife migration corridors are generally defined as connections between fragmented habitat patches that allow for physical and genetic exchange between otherwise isolated wildlife populations. Migration corridors may be local, such as those between foraging and nesting or denning areas, or they may be regional in extent. Migration corridors are not unidirectional access routes; however, reference is usually made to source and receiver areas in discussions of wildlife movement networks. "Habitat linkages" are migration corridors that contain contiguous strips of native vegetation between source and receiver areas. Habitat linkages provide cover and forage sufficient for temporary inhabitation by a variety of ground-dwelling animal species. Wildlife migration corridors are essential to the regional fitness of an area as they provide avenues of genetic exchange and allow animals to access alternative territories when natural and man-made changes intrude into existing environments.

Waterways, particularly areas with contiguous riparian vegetation, offer migration corridors for mammals, reptiles, and birds. However, the riparian corridor along the Sacramento River is discontinuous at the Project area, and mammals and reptiles likely use the upland agricultural and range lands as well as riparian cover as a travel corridor, regardless of the season. The east side of the Project area is on Brannan Island, which limits migration corridor movement for terrestrial wildlife. Birds such as warblers, hummingbirds, etc. migrate to higher elevations in the spring and lower elevations in the fall and the riparian habitat within the Project area offers shelter, forage, and water for migrating species traversing to the Sierra Nevada to nest. Resident species may also make local migrations for foraging or nesting habitat along the river. Additionally, the Sacramento River provides seasonal migration habitat for anadromous and other native fish species moving upstream and downstream and provides connections for resident fish species to other aquatic habitats within the watershed.

Table 3.4-1. Potential Occurrence of Special-Status Plant and Wildlife Species in the Project Area

Common Name *Scientific Name*	Status[1]	Probability of Occurrence
Plants		
Mason's lilaeopsis *Lilaeopsis masonii*	1B.1	**Present.** A single population of approximately 400 individuals found during June 2020 surveys within the Project area on the west bank of the Sacramento River. This species occurs within the Project area but outside the Project impact footprint.
Suisun Marsh aster *Symphyotrichum lentum*	1B.2	**Present.** A population of approximately five individual plants was found in June 2020. This species blooms May through November. This population occurs within the Project area but outside the Project impact footprint. An additional occurrence of Suisun Marsh aster on the west bank further north has one individual plant that occurs within the Project impact footprint.
Wildlife		
Green sturgeon - Southern DPS *Acipenser medirostris*	FT, CSC	**High.** Likely to occur at the Project area seasonally and have a high potential to migrate through the Project site between March and June. Spawns in cool sections of the upper Sacramento River and post-spawning adults move back down the river and re-enter the ocean in the fall. After hatching, larvae and juveniles migrate downstream toward the Sacramento-San Joaquin Delta and estuary where they spend a few years maturing before moving out to the ocean. Habitat in the Project area is not suitable for spawning.
Central Valley DPS steelhead *Oncorhynchus mykiss irideus*	FT	**High.** Likely to occur at the Project area during migration, between September and March. Habitat in the vicinity of the Project area provides a migration corridor. Juveniles may be present in the fall and winter when the water temperatures are cooler. Habitat in the Project area is not suitable for spawning.

Common Name ***Scientific Name***	**Status**[1]	**Probability of Occurrence**
Central Valley fall-run ESU Chinook salmon *Oncorhynchus tshawytscha*	CSC	**High.** Likely to occur in the Project area between June and September, during migration to and from spawning habitat upstream in the Sacramento River. Habitat in the Project area is not suitable for spawning.
Central Valley spring-run ESU Chinook salmon *Oncorhynchus tshawytscha*	FT, ST	**High.** Likely to occur at the Project area seasonally during migration between March through July, peaking in May and June. Habitat in the Project area is not suitable for spawning.
Sacramento River winter-run ESU Chinook salmon *Oncorhynchus tshawytscha*	FE, SE	**High.** Likely to occur at the Project area seasonally during migration between December through July. Juvenile downstream emergence period is between July and October, concluding with an estuarine emigration to the ocean period between November and May. Habitat in the Project area is not suitable for spawning.
River lamprey *Lampetra ayresii*	CSC	**Moderate.** Known to occur in lower Sacramento, San Joaquin Rivers, and the Russian River. River lamprey has a moderate potential to occur in the Project area during the migratory period from October to April. Habitat in the Project area is not suitable for spawning.
Pacific lamprey *Entosphenus tridentata*	CSC	**Moderate.** Known to occur in the San Francisco Bay-Delta, including the Sacramento River, and could occur at the Project area during upstream migration from fall to early spring. Habitat in the Project area is not suitable for spawning.
White Sturgeon *Acipenser transmontanus*	CSC	**High.** Reported from the Sacramento River with a high potential to occur in the Project area during migration between December through January. Habitat in Project area is not suitable for spawning.
Sacramento splittail *Pogonichthys macrolepidotus*	CSC	**High.** Known to occur in the Sacramento River. Likely to occur at the Project area during migration between January and February, with juveniles migrating downstream starting in May. Habitat in the Project area is not suitable for spawning.

Common Name ***Scientific Name***	**Status**[1]	**Probability of Occurrence**
Longfin smelt *Spirinchus thaleichthys*	FCS, ST	**High.** Known to occur in the Sacramento River. Likely to occur in the Project area during the seasonal migration period between November and April. Habitat in the Project area is not suitable for spawning.
Delta smelt *Hypomesus transpacificus*	FT, SE	**High.** Known to occur in the Project area during migration upstream between November and December, and downstream migration February through August. The nearest spawning grounds are located approximately three miles downstream and upstream from the Project area. Once the larvae have hatched, the river flow provides transport from the upstream spawning areas to rearing habitat within the Delta. Habitat in the Project area is not suitable for spawning.
Western pond turtle *Emys marmorata*	CSC	**High.** Likely to occur in Project area. Suitable basking and foraging habitat are present within Segment 2 near the West Work Area. In addition, the Sacramento River and Tomato Slough potentially support populations and are immediately adjacent to Segment 3 and the Pipe Staging Area, respectively. Habitat in the Project area is suitable for nesting.
Giant gartersnake *Thamnophis gigas*	FT, ST	**Moderate to Low.** PG&E MRHCP modeled habitat for the species is present along the Sacramento River in the East Levee Segment. There is a low to moderate potential for individuals to disperse near the Project area, with low potential to occur within the West Work Area and East Levee Segment and moderate potential in the Pipe Staging Area closest to Tomato Slough and irrigation ditches.
Swainson's hawk *Buteo swainsoni*	ST, BCC	**High.** Likely to occur in Project area. The riparian habitat along the Sacramento River and Tomato Slough near the Project area offers suitable nesting trees for Swainson's hawks, and the adjacent agricultural land provides optimal foraging habitat.
White-tailed kite *Elanus leucurus*	FP	**High.** Known to occur in vicinity of Project area. Suitable foraging habitat is present throughout the terrestrial portions of the Project area. Trees and agricultural lands adjacent to the Project area provide suitable nesting and foraging habitat.

Common Name ***Scientific Name***	**Status**[1]	**Probability of Occurrence**
Northern harrier *Circus hudsonius*	CSC	**Moderate.** Likely to occur in the Project area. Was observed foraging within open farmlands adjacent to the Project area during the field surveys. Habitat on site is poor for ground nesting but suitable for foraging.
American Peregrine Falcon *Falco peregrinus*	BCC, FP	**High.** Known to occur within a mile of the Project area, with a nesting site documented in 2015 on a drawbridge over the Sacramento River. No suitable nesting habitat occurs on site, but suitable bridge nesting locations occur within 0.5 mile.
Song Sparrow ("Modesto" population) *Melospiza melodia*	CSC	**High.** Known to occur within two miles of the Project area. Trees along the agricultural lands and along the adjacent Tomato Slough provide suitable nesting and foraging habitat.
Western red bat *Lasiurus blossevillii*	CSC	**Moderate.** Species may occur during spring and fall migration periods. Eucalyptus groves in the Project area contain marginal roosting habitat. Sacramento River and wetland areas provide potential foraging habitat for the species.

[1] Status:
FE = Federal Endangered
FC = Federal Candidate
SE = California State Endangered
ST = California State Threatened
FP = CDFW Fully Protected
CSC = California Species of Special Concern
BCC = USFWS Bird of Conservation Concern
CRPR 1B.1 = Threatened in California and elsewhere, seriously threatened in California
CRPR 1B.2 = Threatened in California and elsewhere, moderately threatened in California
CRPR 2B = Plants rare, threatened, or endangered in California but more common elsewhere

3.4.2 Regulatory Setting

Federal and state laws and regulations pertaining to biological resources and relevant to the Project are identified in Appendix A. Local policies or regulations applicable to the Project with respect to biological resources are identified in Appendix B.

3.4.2.1 PG&E Habitat Conservation Plans

PG&E has USFWS-approved Habitat Conservation Plans (HCPs) that provide a comprehensive framework to conserve and protect federally listed species in support of a federal incidental take permit for the covered species for PG&E (O&M) activities in the San Joaquin Valley Region, Bay Area Region, and Multiple Regions (Sacramento Valley and Foothills, North Coast, and Central Coast) (Jones & Stokes 2007; ICF 2017; ICF 2020). The Project is located within two HCP areas: Project activities in Solano County would be covered in the Bay Area Habitat Conservation Plan (BAHCP), and Project activities in Sacramento County would be covered in the Multi-Region Habitat Conservation Plan (MRHCP). Both the BAHCP and MRHCP are model-based HCPs that incorporate the use of modeled habitat developed in collaboration with the USFWS for covered species. Modeled habitat is then used as a tool to automatically screen the impact area, determine covered species occupancy, and apply take coverage of the appropriate HCP.

The BAHCP does not show modeled habitat for any identified, federally listed species within the Project area. The MRHCP shows modeled habitat for one species, the Giant gartersnake, and all relevant MRHCP field protocols and avoidance and minimization measures will be implemented as part of the Project. A list of field protocols can be found in the PG&E MRHCP and in Table 7-1 of Appendix E (ICF 2020).

3.4.3 Impact Analysis

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

Less than Significant with Mitigation

Heavy equipment operation and associated noise, riverbed disturbance, dust from ground disturbance including grading and excavation, and an increase in human presence have the potential to disrupt special-status wildlife species and their habitat.

3.4.3.1 Impacts to Habitat

Phase 1

The Project area is in designated critical habitat for the Central Valley spring-run ESU Chinook salmon, Sacramento River winter-run ESU Chinook salmon, Central Valley DPS steelhead, Green sturgeon, and Delta smelt (NMFS 2005; USFWS 1994).

Inadvertent Releases. Although Phase 1 equipment would be located in the upland areas, the pilot hole drilling and reaming have the potential for drilling fluids (predominantly bentonite clay) to migrate from the drill hole to surrounding fractured rock and sediments and be discharged to the surface water along the HDD alignment in the Sacramento River. This inadvertent release could impact water quality and aquatic vegetation through increased turbidity. **MM HAZ-2** (Section 3.10, *Hazards and Hazardous Materials*) requires an Inadvertent Release Contingency Plan that monitors and records the drilling fluid volumes, pressures, and flow rates as well as including equipment that will be on site to contain and clean up a drilling fluid spill. The Inadvertent Release Contingency Plan also includes the procedure to follow if a release occurs, including halting drilling operations, documenting the drilling fluid release, notifying stakeholders, and containing the spill. With the implementation of this measure, the impact would be less than significant.

Phase 2

Phase 2 activities would not permanently impact designated critical habitat, but the Segments 1, 2, and 3 decommissioning could temporarily increase turbidity in the aquatic environment in the Sacramento River immediately surrounding the pipeline removal locations. In addition, an oil or diesel spill from upland construction equipment during Segment 1 or 3 decommissioning as well as from barges during Segment 2 decommissioning could result in temporary habitat degradation.

Turbidity. Increases in turbidity may adversely affect habitat, and the water column could receive temporarily suspended sediments (including contaminated sediment) or organic matter. Large-scale increases of organic matter within a water column, usually associated with fine sediments such as silts and clays, may increase dissolved nutrient concentrations and result in increased algal blooms or decreased dissolved oxygen. However, the turbidity caused by pipeline removal and barge operations is expected to be minor, relatively short term, and generally localized to the immediate area. Following work in an area or at the end of the day, sediments would settle and disperse, and background levels would be restored within hours of disturbance. Therefore, the impact is less than significant.

Oil spills. An accidental oil or diesel spill from upland construction equipment during Segment 1 or 3 decommissioning as well as from barges during Segment 2 decommissioning could result in the injury or mortality of protected fish species and/or the temporary degradation of their habitat. The Project vessels would have a limited amount of petroleum-fueled equipment on board, which greatly reduces both the likelihood that a release would occur and the severity of any release. In addition, large equipment operating in the adjacent upland areas would be checked daily for leaks prior to entering the work area and would be parked (when not in use) in designated equipment staging locations away from the river. Regardless, the release of petroleum into the riverine environment is considered a potentially significant impact. **MM HAZ-1** would require implementation of a Hazardous Spill Response and Contingency Plan to ensure hazardous materials are managed and stored properly to reduce the oil spill potential, and to establish a protocol for notification and clean-up to reduce the impact if a spill occurs. With the implementation of this measure, the impact would be less than significant.

3.4.3.2 Impacts to Fish

Phase 1

Central Valley fall-run ESU Chinook salmon and Central Valley DPS steelhead may use the Project area as a migration corridor through the Project area during HDD pipeline replacement and thus could be adversely impacted.

Inadvertent Releases. The impacts to special-status fish species would be similar to Phase 1 habitat impacts discussed in Section 3.4.3.1. **MM HAZ-2** would ensure a less than significant impact to Central Valley DPS steelhead and Central Valley fall-run ESU Chinook salmon.

Phase 2

The in-water work associated with the Segment 2 decommissioning as well as the excavations for Segments 1 and 3 in the adjacent upland areas could impact special-status fish species in the Project area. Disturbance would occur during excavations to remove the pipeline and vaults within the levee as well as from potential increased turbidity during Segment 2 decommissioning. In addition, the construction equipment adjacent to and the vessels in the Sacramento River could release oil or diesel which could adversely affect special-status fish species.

Central Valley DPS steelhead; Central Valley ESU fall-run Chinook salmon; Pacific lamprey; River lamprey; and Delta smelt could all potentially occur in the Project area during Phase 2 activities. The Project area does not support suitable spawning habitat for any of the species and therefore the Project activities would not impact spawning

populations of special-status fish. Special-status fish species may use the Project area as a migration corridor and could thus be adversely impacted, but the Project's August 1 to October 31 in-water work window avoids both disturbance during peak fish migration and overall species impacts that would contribute to diminished spawning success. In addition, the Sacramento River's water temperature in the Project area is often too high to support salmonids during the late summer months, with water temperatures regularly exceeding 70° Fahrenheit. High water temperatures result in reduced dissolved oxygen levels, which can impact growth and development of all life stages of salmonids. The typical salmonid behavioral response when temperatures become too high is to move upstream to locations where conditions are more favorable. Finally, the in-water work activities would occur at a single discrete location within the large waterway and thus further reduce any potential impact to individual fish present outside the peak migration timeframes.

Water Quality. The project may result in temporary turbidity increases in the Sacramento River immediately adjacent to the Segment 2 decommissioning. Increased turbidity can result in decreased dissolved oxygen levels, increased temperatures, and decreased local pH conditions that adversely impact the special-status species present. However, the Segment 2 pipeline removal would only temporarily resuspend the sediments. The turbidity caused by pipeline removal and barge operations is expected to be minor, relatively short term (less than 90 days), and generally localized to the immediate area. Following work in an area or at the end of the day, sediments would settle and disperse, and background levels would be restored within hours of disturbance. While the turbidity increase is expected to remain within the normal range for the highly variable Delta turbidity levels, **MM BIO-1** through **MM BIO-3** would require environmental training for all Project personnel regarding the listed species, have biological monitors present during all in-water work to monitor turbidity levels, and require corrective measures, if thresholds are exceeded, to address the effects of increased turbidity to surrounding areas. With the implementation of these measures, the impacts would be less than significant.

MM BIO-1: Environmental Training Program. An environmental training program shall be developed and presented by a qualified biologist, approved by CSLC staff. All contractors and employees involved with the Project shall be required to attend the training program. At a minimum, the program shall cover special-status species that could occur on the site, their distribution, identification characteristics, sensitivity to human activities, legal protection, penalties for violation of state and federal laws, reporting requirements, and required Project avoidance, minimization, and mitigation measures.

MM BIO-2: Biological Monitoring. A qualified biological monitor, approved by CSLC staff, shall survey the onshore work area for sensitive species or other wildlife that may be present no more than 24 hours prior to the

commencement of Project activities. In addition, the biological monitor shall monitor Project activities within surface water and sensitive habitats, and other activities that have the potential to impact special-status species on a daily basis once Project activity begins. If at any time during Project activities any special-status wildlife species are observed within the Project area, work around the animal's immediate area shall be stopped or work shall be redirected to an area within the Project area that would not impact these species until the animal is relocated by a qualified biologist. Listed species would be allowed to leave of their own volition, unless coordination with USFWS and/or CDFW provide authorization for relocation by a qualified biologist with appropriate handling permits. Work would resume once the animal is clear of the work area. In the unlikely event a special-status species is injured or killed by Project-related activities, the biological monitor would stop work and notify CSLC and consult with the appropriate agencies to resolve the impact prior to re-starting work in the area.

MM BIO-3: Turbidity Monitoring Plan. The Applicant shall implement a Turbidity Monitoring Plan during all in-water work to ensure that turbidity levels upstream and downstream of the Project area are compliant with regulatory requirements. A qualified environmental monitor, approved by CSLC staff, shall be present during in-water work to regularly monitor turbidity levels upstream and downstream of in-water work activities. If the results of the turbidity monitoring plan detect a Project-related increase in turbidity that exceeds the allowable thresholds for increased turbidity, as defined by regulatory permits, corrective measures will be implemented. Corrective measures may include the use of a turbidity curtain or other sediment control devices, alteration to the timing and duration of in-water work and excavation, or minor modifications in methodology that result in reducing the in-water excavation.

Oil spills. The impacts to special-status species would be the same as Phase 2 habitat impacts analyzed in Section 3.4.3.1. **MM HAZ-1** would ensure a less than significant impact to any special-status species present in the Sacramento River.

3.4.3.3 Impacts to Birds

Phases 1 and 2

The Project's terrestrial impacts would occur in the annual grassland and ruderal habitat in the West Work Area, the agricultural fields and irrigation ditches in the East Work Area, and the riparian and marsh habitat found along the Sacramento River. While the Project activities would not remove any trees that provide suitable nesting habitat,

construction activities, vegetation removal, and increased noise and human presence could still result in potential impacts to nesting or foraging special-status bird species.

Nesting impacts. Swainson's hawk is a State-listed species with known nesting occurrences within 0.5-mile of the Project area (on Brennan Island near the agricultural fields) and is therefore likely to have potentially disrupted breeding activities in or near the Project's work areas. Any Project activities that take place outside the Swainson's hawk nesting season, which occurs from September 15 to March 1, would avoid potential impacts. For any construction occurring during the nesting season, **MM BIO-4** would require Project activity postponement or, if infeasible, active monitoring to protect active Swainson's hawk nests and nestlings. With the implementation of this measure, the impacts would be less than significant.

MM BIO-4: Swainson's Hawk Nesting Season Avoidance or Pre-Construction Surveys. For Project activities within Swainson's hawk nesting season (March 1 to September 15), a qualified biologist, approved by CSLC staff, shall conduct pre-construction Swainson's hawk surveys no more than 72 hours prior to any construction disturbance. If active Swainson's hawk nests are identified near the Project area, then based on nest protection buffers outlined in PG&E's Nesting Bird Management Plan the following shall be required:

- Postpone Project activities within 0.25-mile of the nest until after the young have fledged and are no longer dependent on the nest tree; and
- If it is not possible to postpone Project activities, construction may only proceed with both CDFW approval and nest monitoring by a qualified raptor biologist. If the monitoring biologist observes signs of distress, then they shall have the authority to stop construction work. If the nest is abandoned due to project-related disturbance but the nestlings are still alive, the Applicant is required to fund the nestlings' recovery, rearing in captivity, and subsequent controlled release.

White-tailed kite, northern harrier, American Peregrine falcon, and Modesto song sparrow could all have potential nests in proximity to construction areas. Construction activities including vegetation removal, HDD drilling and dynamic pipe ramming noises, and ground-clearing during Phases 1 and 2 could impact these bird species as well as others protected under the Migratory Bird Treaty Act. Vegetation within the Project area could provide nesting habitat, and Project activities could potentially impact nesting birds. The Project proponent is prohibited from causing the take, possession, or destruction of these birds, their nests, or eggs. Disturbance that causes nest abandonment or loss of reproductive effort could also be considered a "take". While some Phase 1 and Phase 2 activities would occur outside the nesting season, which

occurs between March 1 and August 1 and would thus avoid the potential impact, **MM BIO-5** would require pre-construction surveys to identify active nests and provide buffers if any are present. With the implementation of this measure, the impact would be less than significant.

MM BIO-5: Nesting Bird Season Pre-Construction Surveys. If Project-related vegetation removal and ground-clearing activities are scheduled between March 1 and August 1, then pre-construction surveys shall be conducted within one week prior to the start of construction in potential nesting habitat within 350 feet of the Project area to identify nest sites. If an active raptor or passerine bird nest is identified, an appropriate species-specific nest protection buffer shall be recommended based on PG&E's Nesting Bird Management Plan and site-specific conditions. A pre-construction nesting survey report shall be prepared and submitted to CDFW and CSLC within one week of pre-construction surveys, that outlines the surveys conducted, nest locations identified, and recommended nest protection buffers. Construction activities shall be prohibited within the established buffer zones until the young have fledged.

Foraging. All five special-status bird species identified in Section 3.4.1.4 have potential foraging habitat within the Project area. Construction activities including vegetation removal, HDD drilling and dynamic pipe ramming noises, and other ground-clearing in the West Work Area, the East Work Area, and the Pipe Staging Area would impact foraging habitat and behavior. However, these terrestrial impacts would be temporary and short-term, localized, only affect a small proportion of available foraging habitat in the area, and would not result in a permanent loss of habitat. Therefore, the impacts would be less than significant.

3.4.3.4 Impacts to Reptiles

<u>Phases 1 and 2</u>

Giant gartersnake (GGS) and western pond turtle (WPT) could be impacted by construction activities, vegetation removal, and increased human presence near the Sacramento River, Tomato Slough, and the unnamed irrigation ditches in the East Work Area. The east bank of the Sacramento River is modeled GGS habitat in the MRHCP, and although GGS cannot be ruled out in this area, the Sacramento River is relatively deep in this section, the overall habitat quality is marginal, and occurrence is unlikely (SBI 2020). GGS has a moderate potential to occur in the Pipe Staging Area near Tomato Slough and irrigation ditches. WPT has a high potential to occur on the Sacramento River, in the West Work Area, and adjacent to Tomato Slough near the Pipe Staging Area.

Wildlife Interactions. Potentially significant impacts to GGS and WPT from Project activities, if individuals are present, include injury or mortality due to vehicle, equipment, or foot traffic, damaged or abandoned WPT nests or otherwise-impacted nesting activity, and temporary displacement. **MM BIO-1** would ensure Project personnel and crews take caution to avoid wildlife that may occur in the work areas. **MM BIO-2** would require biological pre-activity surveys and monitoring to ensure the Project work areas are and remain clear of any special-status animal species prior to the start of work, and would require the Applicant to halt Project activities if wildlife enters the work area. **MM BIO-6** is consistent with the PG&E MRHCP and would ensure Project activities or worksite preparation occur within the GGS active season when snakes are not overwintering in terrestrial habitat and are active and able to avoid disturbance, provide exclusion fencing to prevent GGS entry, and relocate any affected individuals to habitat outside the Project area. **MM BIO-7** would provide separate pre-construction surveys for WPT and their nests, exclusion barriers, monitoring, and relocation for any WPT found in the Project area. With the implementation of these measures, the impact would be less than significant.

Habitat Disturbance. The Project activities would temporarily disturb foraging and basking habitat for GGS and WPT and could impact potential GGS burrows and WPT nesting habitat. Construction activities including vegetation removal, other ground-clearing, and excavations in the West Work Area, the East Work Area, and the Pipe Staging Area would impact GGS and WPT foraging and basking habitat. However, these terrestrial impacts would be temporary and short-term, localized, only affect a small proportion of habitat in the vicinity, and would not result in a permanent loss of habitat. Temporary impacts to GGS habitat would be further minimized by avoiding burrows and other refuge habitat where possible, consistent with the PG&E MRHCP. Therefore, the impacts would be less than significant.

MM BIO-6: Giant Gartersnake Work Window and Pre-Construction Surveys. Project activities shall be conducted during the GGS active season (May 1 to October 1) to the extent practicable. A qualified biologist, approved by CSLC, shall conduct a survey and identify where exclusion fencing is needed within the Project area. If needed, a solid exclusion fence shall be installed around the perimeter of work sites and shall be inspected weekly.

If work will be conducted during the inactive period (October 2 to April 30), then the Applicant shall conduct preparation work during the snake's active period to make construction areas ready for work during the inactive season. Preparation work can include, at a minimum, adding baserock to access roads and work sites, grading access roads and work sites, and installing work zone exclusion fencing. If GGS are encountered during construction activities, snakes shall be allowed to move away from construction activities, or if relocation is required, a permitted biologist with USFWS and CDFW

approval shall follow USFWS handling protocols and move snakes to the nearest appropriate habitat out of harm's way.

MM BIO-7: Western Pond Turtle Pre-Construction Surveys. A qualified biologist, approved by CSLC, shall conduct pre-construction surveys for WPT and their nests 48 hours prior to ground disturbance to ensure that individuals are not present in the work area. Prior to ground disturbance activities, a barrier, such as wildlife exclusion fencing, shall be placed around the excavation area to prevent WPT from moving into work areas. A qualified biological monitor shall be present to monitor project activities during all in-water work and initial ground disturbance that has the potential to impact special-status species. Should WPT be found within the work areas, a qualified biologist in consultation with CDFW shall relocate the species outside of work area barriers. If WPT nests are identified, an appropriate nest protection buffer shall be recommended for CDFW approval based on site specific conditions. Construction activities shall be prohibited within the established buffer zone until the hatchlings emerge.

3.4.3.5 Impacts to Western Red Bat

The Project area contains marginal habitat for roosting bat species in the form of eucalyptus tree cover and leaf litter. It is rare to see maternal roosts of western red bat in eucalyptus trees, but one was observed at the Grizzly Island Wildlife Refuge approximately 15 miles west of the Project area (Pierson et al. 2006). Construction noise from vegetation removal, HDD drilling and dynamic pipe ramming noises, and ground-clearing during Phases 1 and 2 that occur adjacent to the eucalyptus grove could impact a maternal roosting colony, if present. Although the work may be conducted during the maternal roosting season (May through August), it is scheduled to occur primarily during daylight hours when roosting bats are less sensitive to noise impacts. Two components of the Project requiring night work (e.g., HDD pullback in Phase 1 and casing removal from SR 160 in Phase 2) are activities that would occur later in the Phase 1 and 2 construction seasons toward the end of the maternal roosting season (August) and are short duration activities (HDD pullback estimated to take approximately two days and the casing removal is estimated to take approximately 20 days). Modeled peak hour noise levels for HDD pullback (68.4 A-weighted Decibel (dBA)) and casing removal from SR 160 (70.4 dBA) are within the range of what would be expected from 24-hour per day auto and truck traffic on SR 160 (70-90 dBA). A roosting colony within the eucalyptus groves near SR 160 would thus already be habituated to human disturbance as well as 24-hour noise levels equivalent to those expected from HDD pullback and casing removal activities. Finally, the Project would not temporarily or permanently remove or destroy any potential roosting habitat. Therefore, the impacts would be less than significant.

3.4.3.6 Impacts to Special-Status Plant Species

There are known occurrences of Mason's lilaeopsis and Suisun marsh aster on the west bank of the Sacramento River. Other special-status species, such as Delta tule pea, Bolander's water hemlock, and woolly rose-mallow also have the potential to occur in Delta wetlands.

Phase 1

There are no known occurrences or potential occurrences of special-status plant species within Phase 1 work areas. Therefore, there would be no impact.

Phase 2

Segment 1 pipeline removal would impact Suisun marsh aster, a California Rare Plant Rank (CRPR) 1B.2 plant with one individual that was found in 2020 within the required excavation footprint for Segment 1 pipeline removal (Figure 3-4.2). All special-status plant species found or potentially occurring within this area are CRPR species, but there are no state or federally listed, threatened, or endangered plant species likely to occur in the Project area. Regardless, impacts to any special-status plant species ranked CRPR 1B or 2B are considered potentially significant impacts. If the Suisun marsh aster, Mason's lilaeopsis, or other special-status plant species are within construction or disturbance footprints then they could be adversely impacted. **MM BIO-8** would require pre-construction surveys to find current special-status plant species populations and avoid if feasible, and **MM BIO-9** would, as part of the Site Restoration Plan (SRP), transplant individuals or restore the disturbed habitat. The preliminary SRP is included as Appendix H. With the implementation of these measures, the impacts would be less than significant.

MM BIO-8: Botanical Pre-Construction Surveys. 30 days prior to the start of construction, a qualified botanist shall survey the Project impact area on the west bank of the Sacramento River to document the current status and size of the Suisun marsh aster population for the purposes of documenting baseline conditions prior to the start of construction. If a special-status plant population is found, it shall be flagged for avoidance, if feasible. If temporary impacts cannot be avoided, impacts to special-status plant populations shall be addressed through the Site Restoration Plan that provides for plant salvage and transplantation or seed collection and replanting, as appropriate, and establishes performance criteria and monitoring to ensure restoration to pre-project conditions.

MM BIO-9: Site Restoration. The preliminary SRP shall be finalized and implemented to address special-status plant species impacts as well as

habitat restoration and revegetation, including emergent wetland habitat restoration. The SRP shall prescribe native plants for use in revegetation of the disturbance areas. The Final Site Restoration Plan shall be submitted to the CSLC for approval 30 days prior to the start of construction.

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service, State Lands Commission, or California Coastal Commission?

Less than Significant with Mitigation

3.4.3.7 Impacts to Sensitive Communities

Phase 1

Proposed ground disturbance and vegetation removal associated with Phase 1 activities would be limited to agricultural and ruderal areas (refer to Figure 5A through 5F of Appendix E). Riparian or other sensitive natural communities would not be directly affected during the HDD Replacement Phase. Therefore, there would be no impact.

Phase 2

Phase 2 activities would impact 0.10 acre of central coast riparian scrub on the west bank of the Sacramento River. The central coast riparian scrub within the Project area is not a sensitive natural community but is considered riparian habitat. The Final SRP in **MM BIO-9** would require that riparian impact areas on the bank of the Sacramento River be restored to pre-existing condition. With the implementation of this measure, the impact would be less than significant.

c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

Less than Significant with Mitigation

3.4.3.8 Impacts to Waters and Wetlands

Phase 1

Proposed ground disturbance and vegetation removal associated with Phase 1 activities would be limited to agricultural and ruderal areas (refer to Figure 5A through 5F of Appendix E). State or federally protected wetlands would not be directly affected; therefore, there would be no impact.

Phase 2

Excavation and equipment access required for Phase 2 activities would result in temporary impacts to aquatic resources (waters of the U.S. and wetlands) regulated by the U.S. Army Corps of Engineers (ACOE) under Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act. The Project would also result in temporary impacts to aquatic resources regulated by the Central Valley Regional Water Quality Control Board (CVRWQCB) under Section 401 of the Clean Water Act and the California Water Board's Statewide Wetland Definition and Procedures as well as CDFW under Section 1600 of the California Fish and Game Code. Up to 0.30 acre of temporary impact to federally jurisdictional waters and wetlands, that are also waters of the State and CDFW stream features, would occur from Phase 2 equipment and excavations. However, the Project must comply with all permit conditions obtained from the ACOE, CVRWQCB, and CDFW to address aquatic resource impacts. In addition, **MM HYDRO-1** (Section 3.11, *Hydrology and Water Quality*) would further reduce erosion, turbidity, and sedimentation to waters and wetlands by ensuring that water quality is protected with standard BMPs. Finally, the SRP in **MM BIO-9** would require that wetland impact areas on the Sacramento River shoreline be restored to pre-existing condition. With the implementation of these measures, the impacts would be less than significant.

d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

Less than Significant with Mitigation

3.4.3.9 Impacts to Wildlife Movement

Phase 1

Riparian or riverine habitats would not be affected by Phase 1 activities; however, general Project construction activities may result in short-term temporary impacts to wildlife movement. Heavy equipment and staging areas would be limited to the upland areas of the Project footprint, which would allow wildlife to avoid work activities by transiting around the Project area in adjacent habitat corridors. In addition, most work would be conducted during the day, avoiding the night when most mammal movement occurs. Nighttime work would occur during HDD pipeline pullback activities and casing removal from SR 160. Nighttime work associated with HDD pullback is estimated to take approximately two days. Nighttime work to remove the casing from SR 160 would not affect movement of nocturnal species movement because of the routine disturbance associated with the highway. While construction activities could result in short-term impacts to WPT and GGS movement corridors, specifically near Tomato Slough, **MM**

BIO-6 and **MM BIO-7** would allow any encountered individuals to continue their movement out of a construction area or be relocated to the nearest appropriate habitat. With the implementation of this measure, the impact would be less than significant.

Phase 2

As discussed in Section 3.4.3.4, *Impacts to Reptiles*, GGS may occur within the modeled GGS habitat along the eastern bank of the Sacramento River. WPT has a high likelihood of occurrence along both Sacramento riverbanks. Segments 2 and 3 activities, including ground disturbance, could therefore temporarily interfere with the GGS and WPT movement corridors and impact potential daily or seasonal migrations, but would not result in permanent impacts or habitat loss. **MM BIO-6** is consistent with the PG&E MRHCP and would provide exclusion fencing to prevent GGS entry as well as relocate any affected individuals to portions of the movement corridor that are outside the Project area. **MM BIO-7** would provide exclusion fencing to prevent WPT entry and would relocate any WPT to their movement corridor outside the Project area. With the implementation of these measures, the impact would be less than significant.

Segment 2 decommissioning would include in-water work activities that would increase localized turbidity and could impede fish movement within the Sacramento River (see Section 3.4.3.2, *Impacts to Fish*, for more information on turbidity impacts). However, the in-water work activities would occur during the agency-approved aquatic work window (August 1 to October 31) when anadromous and resident migratory fish are unlikely to be present. In addition, Segment 2 decommissioning would be short-term and only occupy approximately 200 feet of the 2,350-foot pipeline removal crossing at any one time, such that fish would have free passage during Project activities. **MM BIO-1** through **MM BIO-3** would further reduce the potential impact by requiring environmental training for all Project personnel regarding the listed species, having biological monitors present during all in-water work to monitor turbidity levels, and requiring corrective measures, if thresholds are exceeded, to address the effects of increased turbidity to surrounding areas. With the implementation of these measures, the impacts would be less than significant.

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

Less than Significant with Mitigation

3.4.3.10 Conflicts with Policies or Ordinances

Phases 1 and 2

Sacramento County General Plan Policies CO-58, CO-59, CO-63, and CO-75, and Solano County General Plan Policies RS.P-1, RS.P-2, RS.P-3, RS.P-5 seek to protect wetlands, riparian vegetation, oak woodlands, wildlife corridors, special-status species habitat, and other natural habitats. As discussed under questions a) through d), above, the Project has the potential to adversely impact terrestrial and aquatic sensitive habitats that would potentially impact sensitive terrestrial and aquatic wildlife. **MM BIO-1** through **MM BIO-9** would provide Project planning, surveys, monitoring, and restoration to avoid or minimize Project impacts to wildlife and native habitats, which would also meet the intent of the relevant local government goals, objective, and policy. With the implementation of these measures, the impact would be less than significant.

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan (including essential fish habitat)?

No Impact

Phases 1 and 2

PG&E has two USFWS-approved HCPs, discussed in Section 3.4.2.1, that provide a comprehensive framework to conserve and protect listed species for PG&E O&M activities in the Bay Area Region and Multiple Regions (Sacramento Valley and Foothills, North Coast, and Central Coast). GGS is the only potentially occurring covered special-status species that may be affected by the Project, and **MM BIO-6** is consistent with all relevant MRHCP field protocols and avoidance and minimization measures that will be implemented as part of the Project. In addition, MRHCP standard field protocols would be implemented where physically possible and when not in conflict with other regulatory obligations or safety considerations. Therefore, there would be no impact.

3.4.4 Mitigation Summary

Implementation of the following mitigation measures would reduce the potential for Project-related impacts to biological resources to less than significant.

- MM BIO-1: Environmental Training Program
- MM BIO-2: Biological Monitoring
- MM BIO-3: Turbidity Monitoring Plan
- MM BIO-4: Swainson Hawk Nesting Season Avoidance or Pre-Construction Surveys
- MM BIO-5: Nesting Bird Season Avoidance or Pre-Construction Surveys
- MM BIO-6: Giant Gartersnake Work Window and Pre-Construction Surveys
- MM BIO-7: Western Pond Turtle Pre-Construction Surveys
- MM BIO-8: Botanical Pre-Construction Surveys
- MM BIO-9: Site Restoration
- MM HAZ-1: Project Work and Safety Plan
- MM HAZ-2: Inadvertent Release Contingency Plan
- MM HYDRO-1: Stormwater Pollution Prevention Plan

3.5 CULTURAL RESOURCES

CULTURAL RESOURCES- Would the project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation**	**Less Than Significant Impact**	**No Impact**
a) Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?	☐	☐	☒	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	☐	☒	☐	☐
c) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☒	☐	☐

3.5.1 Environmental Setting

The following discussion is a summary from the Phase I Archaeological Study prepared for the Project by Padre Associates, Inc. (2021c).

3.5.1.1 Precontact Context

Archaeologists working in the Delta region of California's Central Valley have generally recognized four major precontact periods of cultural adaptation within the last 10,000 years: Paleo-Indian, Windmiller Pattern, Berkeley Pattern, the Meganos Tradition (an amalgamation of the Windmiller and Berkeley patterns), and the Augustine Pattern.

Paleo-Indian Period (~10,000 to ~4,500 years before present). Due to the rapid accumulation of alluvial (stream-deposited) sediments that occurred during the late Holocene epoch, there exists very little archaeological data regarding early human occupation of the Delta region of the Central Valley during the "Paleo-Indian" period (Ragir 1972). While humans likely inhabited the region as early as 10,000 years ago, and possibly earlier, physical evidence of these early occupations would likely be deeply buried. However, traces of human activity during this period have been identified in and around the Central Valley. Archaeological remains from the Paleo-Indian period have been grouped into what is called the Farmington Complex, which is characterized by core tools and large, reworked percussion flakes (large chunks removed from a stone using blunt force). Populations during this time were likely small and mobile, and the subsistence strategy employed by these early peoples is generally thought to be centered around the exploitation of large game.

Windmiller Pattern - Early Period (~4,500 to ~2,500 years before present). The human settlement strategy of the Windmiller Pattern in the Central Valley was predominantly riverine, with most sites found on the valley floor along rivers or marshes. Other Windmiller Pattern sites have been identified atop small knolls above prehistoric floodplains (Martin and Self 2002). The archaeological record contains examples of

numerous projectile point forms and ground stone artifacts, which are associated with processing wild seeds and acorns (Ascent Environmental 2018). Mortuary practices of the Windmiller Pattern typically involved burial mounds. Specific items found in association with Windmiller Pattern burials include large, stemmed-type projectile points, fishing weights and bone hooks, stone pipes, charmstones, quartz crystal, red ocher pigment, and shell beads.

Berkeley Pattern - Middle Period (~2,500 to ~1,500 years ago). Berkeley Pattern sites display a trend towards a more specialized economy that procured seeds for dietary purposes. The distribution of Berkeley Pattern sites displays a more diverse environmental range, although riverine settings are still common. Deeply stratified midden deposits with milling and ground stone artifacts are common to Berkeley Pattern sites, indicating prolonged occupations spanning multiple generations. Berkeley Pattern sites contain projectile points predominantly made from obsidian and are non-stemmed in form, becoming progressively smaller and lighter over time and culminating in the introduction of the bow-and-arrow during the late precontact period. There is a general reduction of mortuary goods with burials; however, red ocher pigment is still found spread over burials (Fredrickson 1973; Moratto 1984). If mortuary goods are present, they are often utilitarian in nature and include few ornamental or ritual objects.

Meganos Tradition (~1,500 to ~1,000 years ago). A cultural tradition resembling an amalgamation of Windmiller Pattern and Berkeley Pattern traits was established between the tidal marsh people of the south San Francisco Bay and those to the north. Bennyhoff (Hughes 1994) calls this tradition *Meganos*, the Spanish word for “sand mound,” due to the abundance of sand mound burials found in area sites. Other cultural traits associated with the Meganos Tradition include marine snail saucer and saddle beads, and increased occurrences of otter bone in habitation and resource processing sites (Milliken et al. 2007). The Meganos Tradition is indicative of a semi-sedentary settlement arrangement, marked by increased seasonal movement of villages (Garlignhouse et al. 2017). During the upper Middle Period, the Meganos Tradition extended into the Fremont Plain of the southeast Bay and mixed with the populations in the Santa Clara Valley.

Augustine Pattern (~1,500 to ~150 years ago). The Augustine Pattern is characterized by a shift in the general subsistence pattern, specifically the introduction of the bow-and-arrow for hunting and acorns becoming the dominant food resource. This Pattern is typified by increased population size, expanded trade and exchange networks, and great elaboration of ceremonial and social organization, which includes the development of social stratification. Other traits associated with the Augustine Pattern are increased sedentary villages and a monetary economy that exchanged beads as currency (City of Davis 2000). Mortuary practices continued to use flexed positioning with variable orientation, but burials included less red ocher. The number of

cremations also significantly increased and were widespread at this time (Moratto 1984).

3.5.1.2 Regional Historical Context

The modern history of Northern California, which includes Sacramento County and Solano County, is grouped into three distinct periods: Spanish, Mexican, and American. Due to its distance from San Francisco Bay, the Project site was largely isolated from the Spanish and Mexican periods of California history. The following section briefly references major events from these periods.

Spanish Period (A.D. 1775 to 1822). The earliest overland exploration of the region was the Fages-Crespi Expedition in 1772. In 1775, Captain Manuel Ayala's expedition explored the San Francisco Bay and later ventured up the Sacramento and San Joaquin rivers in search of suitable sites to establish missions. In 1776, Mission San Francisco de Asís (Mission Dolores) in San Francisco was established as the region's first mission. It was followed 3 months later by Mission Santa Clara de Asís and in 1797 with the Mission San Jose de Guadalupe (Martin and Self 2002). The missions functioned as procurement and dispersal hubs for local economic resources, and as military outposts and proxies of secular governance. The establishment of the mission system decimated local villages, and dramatically transformed the lives of Native peoples from throughout California. Untold numbers of Native people were killed outright or enslaved – brought into the missions as "neophytes" for both labor and forced conversion into the Catholic faith. Disease epidemics also ravaged the people housed in the missions, further fracturing communities and culture.

Mexican Period (A.D. 1822 to 1850). In 1821, Mexico declared independence from Spain; a year later, California became a Mexican Territory. After the missions were secularized in 1834, lands were gradually transferred to private ownership via a system of land grants (Hoover et al. 2002). The portion of the Project site west of the Sacramento River is located in the Rancho Los Ulpinos Land Grant, which included 17,726 acres patented to John Bidwell by Governor Manuel Micheltorena in 1844 (Hoffman 1862). Following the Bear Flag Revolt in 1846, California gained its independence from Mexico and the United States gained control of the territory. While the Treaty of Hidalgo promised all property belonging to the Californios would be respected, the Land Act of 1851 required all land grant owners to prove their title and ownerships rights. Bidwell filed a claim and patented the Rancho Los Ulpinos Land Grant in 1866.

American Period (A.D. 1850 to Present). The discovery of gold in the Sierra Nevada mountains in 1849 prompted a population surge throughout northern California. The increased demand for supplies and provisions also increased the volume and market value of livestock, timber, and agricultural products.

Meanwhile, Rancho Los Ulpinos was subdivided into twenty parcels and sold in 1855. In 1857, Colonel N. H. Davis purchased a parcel and founded the town of Rio Vista that included a wharf for daily steamships traveling up to Sacramento. In the fall of 1861, the town of Rio Vista flooded, and a new site was established on higher ground in 1862 which included Rio Vista's first public school and Catholic and Congregational churches (DeGeorgey 2015).

The United States Reserve Center was first established in 1911 as the U.S. Engineers Storehouse, Rio Vista. The U.S. Army Corps of Engineers acquired the complex on July 21, 1911, to support the Corps in dredging, clearing, and surveying the Sacramento River. The complex was reassigned to the U.S. Army Transportation Corps in 1952 to store and maintain Army harbor craft, and at its peak in 1963 was reported to have 300 civilian employees and 350 vessels. The complex was transferred to the U.S. Army Reserve in 1980 and renamed the Rio Vista United States Army Reserve Center to be used to train engineering and transportation units. In 1992 the facility was closed, and all equipment removed (JRP 1997). The city of Rio Vista purchased the property from the federal government in 2003. In 2010, the city council approved a redevelopment plan to rehabilitate and revitalize the area. Currently, the California Department of Water Resources (DWR) and USFWS plan to construct the Delta Research Station within the undeveloped portions of the property (Elliott 2015).

3.5.1.3 Cultural Resources Surveys

A Padre staff archaeologist conducted an intensive pedestrian survey of the Project site on October 21, 2020. Ground visibility varied from fair to excellent with dense patches of grass and vegetation and asphalt pavement accounting for the less visible areas. No new cultural resources were observed during the survey. Padre also reviewed buried site potential analyses previously prepared by URS in 2015 to assess the likelihood for subsurface archaeological materials within the Project site. Based on the analyses completed in 2015, the Project site's close proximity to the river channel, low elevation, and absence of soil development suggests little potential for buried archaeological resources.

Architectural historians completed a "built environment" field survey on January 25, 2022, to document the Sacramento River East Levee and its character defining features. The area surveyed was limited to the immediate area of the Project excavation areas and included both sides of the levee (Ambacher 2022). The architectural historians recommended Segment B of the Sacramento River East Levee (P-34-002143) as eligible for listing on the National Register of Historic Places (NRHP) / California Register of Historic Resources under Criterion A/1 for its association with the Sacramento River Flood Control Project (SRFCP) within the context of flood control. In addition to being significant, the levee segment retains integrity of location, design, setting, materials, workmanship, feeling, and association (Ambacher 2022).

3.5.1.4 Records Search Results

On September 9, 2020, Padre requested an archaeological records search from the Central California Information Center at California State University, Stanislaus, and the Northwest Information Center at Sonoma State University. Padre received the results on September 11 and September 30, 2020, respectively. The records search included a review of all recorded historic-era and prehistoric archaeological sites within a 0.50-mile radius of the Project site, as well as a review of known cultural resource surveys and technical reports. The State Historic Property Data Files, National Register of Historic Places, National Register of Determined Eligible Properties, California Points of Historic Interest, and the California Office of Historic Preservation Archaeological Determinations of Eligibility also were analyzed. Padre also completed a review of PG&E's Cultural Resources Database on October 12, 2020.

The records search identified three previously recorded resources within or immediately adjacent to the Project site and 13 within the 0.5-mile buffer. No precontact resources were identified. Table 3.5-1 lists and describes all previously recorded cultural resources.

Table 3.5-1. Summary of Previously Recorded Cultural Resources within the Project Disturbance Areas and Buffer

Primary Site Number	Description	Location
P-34-002111	Historic planted row of eucalyptus trees	Outside Project disturbance area
P-34-002143	Section B of the Sacramento River East Levee	Within Project disturbance area
P-34-004445	Historic submerged vessel	Outside Project disturbance area
P-34-004446	Historic submerged vessel	Outside Project disturbance area
P-34-004447	Historic submerged section of wreckage or debris	Outside Project disturbance area
P-34-004448	Historic submerged vessel	Outside Project disturbance area
P-34-004450	Historic submerged wreck	Outside Project disturbance area
P-34-005225	Sacramento River Tribal Cultural Landscape	Within Project disturbance area
P-48-000916	Historic railway pier	Outside Project disturbance area

Primary Site Number	Description	Location
P-48-000917	Historic submerged vessel	Outside Project disturbance area
P-48-000918	Historic submerged vessel	Outside Project disturbance area
P-48-000938	Historic submerged wreck	Outside Project disturbance area
P-48-000948	Historic submerged wreck	Outside Project disturbance area
P-48-000951	Historic submerged wreckage	Outside Project disturbance area
P-48-000953	Historic submerged wreckage	Outside Project disturbance area
-	Former Rio Vista Army Reserve Center	Adjacent to Project disturbance area

Note: No Trinomial Site Numbers assigned
Sources: PG&E 2020; NWIC 2020; NCIC 2020

3.5.2 Regulatory Setting

Federal and state laws and regulations pertaining to cultural resources and relevant to the Project are identified in Appendix A. Local policies applicable to the Project with respect to cultural resources are identified in Appendix B.

3.5.3 Impact Analysis

a) Cause a substantial adverse change in the significance of a historical resource pursuant to § 15064.5?

Less than Significant

Phases 1 and 2

All Project work and staging areas are located entirely within the Sacramento River Tribal Cultural Landscape (P-34-005225) and would impact approximately 28,842 square feet (with 12,250 square feet located underwater) of the resource. The Sacramento River Tribal Cultural Landscape has been delineated as a 55-mile-long corridor of the Lower Sacramento River, from the confluence with the Mokelumne River at Collinsville north to the confluence with the Feather River at Verona. The Sacramento River Tribal Cultural Landscape has been recommended eligible for listing on the NRHP; thus, it qualifies as a historical resource under CEQA.

The Phase 1 East Work Area is located approximately 452 feet east of Segment B of the Sacramento River East Levee (P-34-002143) and would not impact the resource. Phase 2 (decommissioning activities) would be restricted to the existing pipeline corridor but would impact approximately 6,420 square feet of the resource. This historic-aged resource is an earthen levee that was initially constructed by many private interests during the late nineteenth century, likely by adding soils and river dredgings to the existing natural levees along the river. In 1937 and 1953, major construction projects brought the levee up to USACE standards. Other improvement work including placing rock slope protection, clearing, bank sloping, and repairs has been ongoing since the 1970s (Nolte et al. 2017). The built environment field survey recommends Segment B of the Sacramento River East Levee (P-34-002143) as eligible for listing on the NRHP / California Register of Historic Resources; thus, it qualifies as a historical resource under CEQA.

Phase 1 activities would install a new pipeline using HDD techniques underneath both these resources at a depth of approximately 120 feet below the current ground surface. Once Phase 1 activities are complete, Phase 2 activities would excavate and either abandon in place or remove pipeline segments within the existing pipeline corridor. However, the topography of these resources within the Project site has already been previously impacted by ground disturbance related to the existing pipeline, a regulator station, road construction, levee construction and maintenance, and agriculture. All Phase 1 materials, except for the pipeline markers, would be buried, and all Phase 2 materials would be removed or remain underground. In addition, at the end of each Phase the Project disturbance areas would be backfilled and restored to pre-Project contours and conditions. Therefore, the Project will not cause destruction or damage to these resources, nor change their function or design. No change in setting will occur, as both resources will be returned to their pre-Project status. Finally, the Project will not result in the sale or neglect of a historic property. Therefore, the impacts would be less than significant.

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?

Less than Significant with Mitigation

<u>Phases 1 and 2</u>

The proposed Project is adjacent to the former Rio Vista Army Reserve Center, which has not been found eligible for the NRHP. Regardless, the Project would not impact this resource, and would not alter the recorded character-defining attributes such as location, design, setting, materials, workmanship, feeling, or association. No other archeological resources were identified in proximity to the Project site.

To understand the potential for subsurface archaeological materials within the Project site, Padre also reviewed a buried site potential analysis previously prepared by URS in 2015 in support of the Delta Research Station Project (Elliot 2015). Based on the analyses completed in 2015, the close proximity of the Project site to the river channel, the low elevation, and the absence of soil development suggests a low sensitivity for buried archaeological resources (Elliott 2015). However, archaeological resources may still be discovered during Project activities. **MM-CUL-1/TCR-1** through **MM CUL-4/TCR-5** would ensure that in the event of an accidental discovery, further disturbance would halt until the resource had been appropriately assessed and treated, if necessary. With the implementation of these measures, the impacts would be less than significant.

MM CUL-1/TCR-1: Cultural and Tribal Cultural Resources Awareness Training. Prior to Project implementation, a consultant and construction-worker cultural and tribal cultural resources awareness training program for all personnel involved in project implementation shall be developed in coordination with the PG&E Cultural Resource Specialist (CRS), the qualified on-site archaeologists and consulting Native American tribes (Wilton Rancheria, Yocha Dehe Wintun Nation, and Confederated Villages of Lisjan). The training will be conducted by the project archaeologist and Tribal Representative(s) and must be provided to all Project employees, contractors, subcontractors, and other workers prior to their involvement in any ground-disturbing activities, with subsequent training sessions to accommodate new personnel becoming involved in the Project. Evidence of compliance with this mitigation measure shall be documented within pre-Project compliance documentation materials prior to Phase 1 and Phase 2 mobilizations.

The purpose of the training will be to educate on-site construction personnel as to the sensitivity of archaeological and tribal cultural resources in the project area, including understanding the difference between non-Native archaeological resources (cultural resources) and resources that are Native American in nature (tribal cultural resources). The training will also cover the requirements of the plan identified in MM CUL-2/TCR-2, including the possibility of exposing cultural or tribal cultural resources, guidance on recognizing such resources, and direction on procedures if a potential resource is encountered. the Applicant will instruct all Project personnel that touching, collecting, or removing cultural materials from the property is strictly prohibited. The program will also underscore the requirement for confidentiality and culturally appropriate treatment of any find of significance to Native Americans, consistent with Native American tribal values and customs.

The training shall include, at a minimum:

- A brief overview of the cultural sensitivity of the Project site and surrounding area;
- What resources could potentially be identified during ground disturbance;
- The protocols that apply in the event unanticipated cultural or tribal cultural resources are identified, including who to contact and appropriate avoidance measures until the find(s) can be properly evaluated;
- Consequences in the event of noncompliance; and,
- Safety procedures when working with monitors.

MM CUL-2/TCR-2: Cultural and Tribal Cultural Resources Management and Treatment Plan (CRMTP). Prior to implementation of Phase 1 and Phase 2 activities, the Applicant shall develop a comprehensive Cultural Resources Management and Treatment Plan (CRMTP) for review and concurrence by CSLC staff and the consulting tribe(s). No tribal cultural resources shall be collected, relocated, or otherwise impacted until the approved CRMTP is in place. The purpose of the CRMTP is to describe the procedures and requirements for protection and treatment of both non-Native American archaeological or historic resources and tribal cultural resources that may be discovered during project implementation. The CRMTP shall be provided to the CSLC and representatives from the consulting tribes (Wilton Rancheria, Yocha Dehe Wintun Nation, and Confederated Villages of Lisjan) for review and concurrence at least 45 days before the start of construction. The Applicant shall fully carry out, implement, and comply with the CRMTP throughout all phases of construction.

The CRMTP shall include at a minimum:

- A description of the roles and responsibilities of cultural resources personnel, including the PG&E Cultural Resource Specialist (CRS), the qualified on-site archaeologists, and Tribal Representatives (who may also be monitors), and the reporting relationships with Project construction management, including lines of communication and notification procedures;
- Description of how the monitoring shall occur and the frequency of monitoring, consistent with the recommendations submitted by the consulting tribes during consultation on the Project (pursuant to Public Resources Code Sections 21080.3.2 and 21082.3) and reflected in the criteria listed in these mitigation measures;
- Description of what resources may be inadvertently encountered;

- Description of procedures for halting work on the site, establishment of buffer zones around potential finds, and notification procedures;
- Description of the respective authorities of the PG&E CRS, on-site archaeologist, and Tribal Representative(s) to evaluate and determine significance of discoveries, and authority to determine appropriate treatment, depending on whether the discovery is Native American in nature;
- Provisions for treatment of tribal cultural resources consistent with MM TCR-6 (Treatment of Tribal Cultural Resources) and the recommended treatment protocols submitted by the consulting tribes during consultation on the Project (pursuant to Public Resources Code Sections 21080.3.2 and 21082.3);
- Provisions for the culturally appropriate handling of tribal cultural resources, if avoidance is infeasible, including procedures for temporary custody, processing materials for reburial, minimizing handling of cultural materials, and development of a reburial plan and agreement for returning materials to a suitable location in the Project area where they would not be subject to future disturbance;
- Procedures for the appropriate treatment of human remains, pursuant to California Health and Safety Code section 7050.5 and California Public Resources Code section 5097.98, which include procedures for determination of a most likely descendant by the Native American Heritage Commission;
- A description of monitoring reporting procedures including the requirement that reports resulting from the Project be filed with the Northwest Information Center (NWIC) and the North Central Information Center (NCIC) and copies provided to CSLC, ACOE, and the consulting tribes (Wilton Rancheria, Yocha Dehe Wintun Nation, Confederated Villages of Lisjan), consistent with their geographic affiliation, within one year of Project completion.

MM CUL-3/TCR-3: Cultural and Tribal Cultural Resources Monitoring. In addition to providing the training required by MM CUL-1/TCR-1, the PG&E CRS, and/or their on-site archaeologist, shall provide monitoring during implementation of Phase 1 and Phase 2 activities, as may be specified in the CRMTP required by MM CUL- 2/TCR-2. The Applicant shall also retain a Wilton Rancheria Tribal Representative, if one is available, who will monitor all Project construction areas. Native American representatives from the other two consulting tribes (Yocha Dehe Wintun Nation and Confederated Villages of Lisjan) will also be invited to monitor ground disturbing activities in the West Work Area and for Segments 1 and 2 decommissioning (Solano

County). Activities to be monitored include, but are not limited to, the Phase 1 HDD bore pits excavated for the East and West Work Areas as well as terrestrial trenching for both Phase 1 and Phase 2. The Tribal Representative(s) shall each have the authority to temporarily halt or redirect construction in the event that potentially significant cultural resources or tribal cultural resources are discovered during Project related activities. The work stoppage or redirection shall occur to an extent sufficient to ensure that the resource is protected from further impacts. Detailed monitoring procedures, including criteria for increasing or decreasing monitoring and the location and scope of monitoring activities agreed to by both PG&E CRS/ designated on-site archaeologist and tribal monitor(s), will be outlined in the CRMTP identified in MM CUL-2/TCR-2. The Applicant shall provide a minimum two-week notice to the on-site archaeologist and designated representatives from the consulting tribes prior to all activities requiring monitoring and shall provide safe and reasonable access to the Project site. The monitors, if available, shall work in collaboration with the inspectors, Project managers, and other consultants hired/employed by the Applicant or the Applicant's Contractor.

MM CUL-4/TCR-5: Discovery of Previously Unknown Cultural or Tribal Cultural Resources. If any potential tribal cultural resources, archaeological resources, other cultural resources, or articulated or disarticulated human remains are discovered by the Tribal Monitor(s), / designated on-site archaeologist, or other Project personnel during construction activities, all work shall cease within 100 feet of the find, or an agreed upon distance based on the project area and nature of the find. Work stoppage shall remain in place until the Tribal Monitor, PG&E CRS and the designated on-site archaeologist have jointly determined the nature of the discovery, and the significance of the discovery has been determined by either the archaeologist/cultural resources specialist (for cultural resources) or the Tribal Monitor (for tribal cultural resources), as detailed in the CRMTP identified in MM CUL-2/TCR-2. Tribal cultural resources shall not be photographed nor be subjected to any studies beyond such inspection as may be necessary to determine the nature and significance of the discovery. If the discovery is confirmed as potentially significant or a tribal cultural resource, an Environmentally Sensitive Area (ESA) will be established using fencing or other suitable material to protect the discovery during subsequent investigation. No ground-disturbing activities will be permitted within the ESA until the area has been cleared for construction. The exact location of the resources within the ESA must be kept confidential and measures shall be taken to secure the area from site disturbance and potential vandalism.

Impacts to previously unknown significant cultural and tribal cultural resources shall be avoided through preservation in place if feasible. If the on-site

archaeologist or Tribal Monitor, as appropriate, determines that damaging effects on the cultural or tribal cultural resource can be avoided in place, then work in the area may resume provided the area of the discovery remains clearly marked for no disturbance. Title to all archaeological sites, historic or cultural resources, and tribal cultural resources on or in the tide and submerged lands of California is vested in the State and under CSLC jurisdiction. The final disposition of archaeological, historical, and tribal cultural resources recovered on State lands under CSLC jurisdiction must be approved by the CSLC.

c) Disturb any human remains, including those interred outside of dedicated cemeteries?

Less than Significant with Mitigation

Phases 1 and 2

The Project is not expected to disturb human remains. Though unlikely, unmarked burials could be unearthed during subsurface construction activities and consequently the Project could disturb human remains, including those interred outside formal cemeteries. **MM CUL-5/TCR-7** would ensure that, in the event of accidental discovery, further disturbance would halt until the human remains had been appropriately assessed and treatment, if necessary, approved. With the implementation of this measure, the impact would be less than significant.

MM CUL-5/TCR-7: Unanticipated Discovery of Human Remains. If human remains or associated grave goods (e.g., non-human funerary objects, artifacts, animals, ash or other remnants of burning ceremonies) are encountered, all ground disturbing activities shall halt within 100 feet of the discovery or other agreed upon distance based on the project area and nature of the find; the remains will be treated with respect and dignity and in keeping with all applicable laws including California Health and Safety Code section 7050.5 and California Public Resources Code section 5097.98. If representatives are not already on site when a discovery is made, the Project Archaeologist or their designated on-site cultural resources specialist, Tribal Representative(s), the Applicant, and CSLC shall be notified immediately. The archaeologist shall contact the County Coroner within 24 hours. If human remains are determined by the County Coroner to be of Native American origin, the County Coroner shall notify the Native American Heritage Commission within 24 hours of this determination, and the Native American Heritage Commission shall identify a Most Likely Descendent. No work is to proceed in the discovery area until consultation is complete and procedures to avoid or recover the remains have been implemented. Unless otherwise

required by law, the site of any reburial of Native American human remains shall not be disclosed and will not be governed by public disclosure requirements of the California Public Records Act, Cal. Govt. Code § 6250 et seq. The reburial agreement described in the CRMTP identified in MM CUL-2/TCR-2 shall include specific details about temporary custody of remains, reburial location, confidentiality, and recordation in the California Historic Resources Inventory System.

3.5.4 Mitigation Summary

Implementation of the following mitigation measures would reduce the potential for Project-related impacts to cultural resources to less than significant.

- MM CUL-1/TCR-1: Cultural and Tribal Cultural Resources Awareness Training
- MM CUL-2/TCR-2: Cultural and Tribal Cultural Resources Management and Treatment Plan (CRMTP)
- MM CUL-3/TCR-3: Cultural and Tribal Cultural Resources Monitoring
- MM CUL-4/TCR-5: Discovery of Previously Unknown Cultural or Tribal Cultural Resources
- MM CUL-5/TCR-7: Unanticipated Discovery of Human Remains

3.6 CULTURAL RESOURCES – TRIBAL

CULTURAL RESOURCES – TRIBAL	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:	☐	☒	☐	☐
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 section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☒	☐	☐

3.6.1 Environmental Setting

3.6.1.1 Ethnographic Context

The Project site is located within territory traditionally associated with the Eastern Miwok (Kroeber 1925). The area from present Walnut Creek in Contra Costa County and the Delta, along the lower Mokelumne and Cosumnes Rivers and along the Sacramento River from present Rio Vista to Freeport, the foothill and mountain areas of the upper Mokelumne River and Calaveras River watersheds, the upper Stanislaus River and Tuolumne River watersheds, and the upper Merced River and Chowchilla River watersheds, respectively has been home to the many cultures and bands of the Eastern Miwok people for thousands of years (Levy 1978; Shipley 1978). These bands and communities, including the Bay, Plains, Northern Sierra, Central Sierra, and Southern Sierra Miwok were diverse and thriving throughout time until the Spanish invasion and establishment of the mission system. No one Miwok tribal organization encompassed all the peoples speaking Miwokan languages, nor was there a single tribal organization that encompassed an entire division. Both sides of the Sacramento River, from approximately 5 miles south of its confluence with the American River, downstream to Rio Vista, were occupied by the Plains Miwok (Bennyhoff 1977). Today, Native people

of Miwok descent continue to inhabit their ancestral homeland and revitalize their culture, protecting and caring for the land and fighting for access to practice their culture in a highly altered and developed landscape.

Prior to western colonization, the Miwok territory encompassed a wide range of environments, some rich enough to support permanent villages, others less abundant and necessitating a more mobile way of life. Tribelets were the predominant political unit among the Miwok. Each tribelet occupied and maintained distinct boundaries that were generally recognized and respected by neighboring tribelets (Bennyhoff 1977). Within each tribelet there were lineages and settlements between 20 and 300 persons with the larger villages along the rivers and San Francisco Bay (Garlignhouse et al. 2017). Within the Rio Vista area, two such tribelets have been documented. *Anizumne*, a tribelet of approximately 250 individuals, was likely located approximately 1 mile north of the present-day city of Rio Vista. The second tribelet, *Ompin*, was located south of Rio Vista, and contained a smaller population than *Anizumne*.

Aside from tobacco, the Eastern Miwok did not cultivate plants or, aside from the dog, domesticate animals (Levy 1978). Subsistence was primarily focused on gathering wild plant foods such as acorn (*Quercus* spp.), buckeye (*Aesculus californica*), hazelnut (*Corylus cornuta* var. *californica*), nuts from the digger pine (*Pinus sabiniana*), and bulbs from various types of *Brodiaea*, all of which would be supplemented by meat from large mammals such as mule deer (*Odocoileus hemionus*), tule elk (*Cervus nannodes*), and pronghorn antelope (*Antilocarpa americana*). Other important food sources, particularly for the Plains Miwok, included freshwater fish such as lampreys and sturgeon and game birds such as quail and various species of waterfowl. Salmon was preeminent among the Eastern Miwok, with trout holding a similar preeminence for those living in the mountains. Fishing was accomplished through a variety of techniques that included cast netting, drag nets towed behind tule rafts, stationary nets placed across narrow waterways and, for larger species such as salmon, harpooning and spearing. The Bay Miwok, in particular, used milkweed (*Asclepias* spp.), California fremontia (*Fremontodendron californicum*), and Indian hemp (*Apocynum cannabinum*) in net-making for fishing activities (Levy 1978). Freshwater clams, mussel, and land snail were also gathered from riverine environments (Levy 1978).

The Miwok primarily used the bow and arrow for both large game hunting and warfare. Bows were generally sinew-backed, and large-game hunting arrows would often feature a detachable foreshaft that would remain in the prey even if the main shaft were broken or removed (Aginsky 1943). Miwok inhabiting lower elevations would select wood from ash (*Fraxinus latifolia*), oak (*Quercus* spp.*),* willow (*Salix* spp.), pepperwood, maple, and hazel to construct their arrow shafts (Aginsky 1943; Levy 1978).

Miwok basketry could be either twined or coiled, with the twined variety consisting of seed beaters, burden baskets, cradles, and netted rackets used in a lacrosse-like,

women-only ball game called *a'mta*, *ama'tup,* or *sakumship* (Barrett and Gifford 1933). The coiled technique was often employed for crafting winnowing trays (a flat, woven tray used for separating grain from chaff), parching baskets, and various types of truncated conical baskets (Levy 1978). Other Miwok textiles included tule mats, which were used extensively by the Plains Miwok.

The Eastern Miwok made several distinct types of dwellings. The Bay Miwok utilized a thatched structure, which used poles to form an inner, conical frame, over which was arranged thatching of brush, grass, or tule (Levy 1978). Other Miwok structures included assembly houses which were 40 to 50 feet in diameter, semisubterranean, and used for social and ritual community gatherings; a smaller circular structure composed of brush that would be used for mourning ceremonies held during the summer months; and conical sweathouses, which ranged from 6 to 15 feet in diameter and were built over a pit that was 2 to 3 feet deep (Levy 1978).

3.6.1.2 Tribal Coordination

Pursuant to Executive Orders B-10-11 and N-15-19 affirming that state policy requires and expects coordination with tribal governments in public decision making (Appendix A), the CSLC follows its 2016 Tribal Consultation Policy, which provides guidance and consistency for staff in its interactions with California Native American Tribes (CSLC 2016). The Tribal Consultation Policy, which was developed in collaboration with tribes, other state agencies and departments, and the Governor's Tribal Advisor, recognizes that tribes have a connection to areas that may be affected by CSLC actions and "that these Tribes and their members have unique and valuable knowledge and practices for conserving and using these resources sustainably" (CSLC 2016).

Additionally, under Assembly Bill (AB) 52 (Gatto, Chapter 532, Statutes of 2014), lead agencies must avoid damaging effects on tribal cultural resources, when feasible, whether consultation occurred or is required. When considering whether a resource is a tribal cultural resource and determining the significance of potential impacts, the CSLC may consider, among other evidence, elder testimony, oral history, tribal archival information, testimony of an archaeologist or other expert certified by the tribe, official declarations or resolutions adopted by the tribe, formal statements by the tribe's historic preservation officer, or other historical notes and anthropological records (OPR 2017).

The CSLC contacted the Native American Heritage Commission (NAHC), which maintains two databases to assist cultural resources specialists in identifying cultural resources of concern to California Native Americans (Sacred Lands File and Native American Contacts). CSLC staff contacted the NAHC to obtain information about known cultural and Tribal cultural resources and request a list of Native American Tribal representatives who may have geographic or cultural affiliation in the Proposed Project area. The NAHC responded on July 7, 2021, stating that the Sacred Lands File

database did not include any previously identified sacred sites in the Proposed Project area. The NAHC also forwarded a list of 21 tribal contacts for 13 Native American tribes, which the CSLC used for outreach and coordination. Two Tribes on the NAHC list have geographic or cultural affiliation in Sacramento and/or Solano Counties and had submitted a written request to the CSLC for notification of CEQA projects pursuant to AB 52 (see generally, Pub. Resources Code, § 21080.3.1).

In October 2021, the CSLC sent project notification letters and an invitation to consult under AB 52 to the United Auburn Indian Community of the Auburn Rancheria and the Wilton Rancheria. The CSLC also notified the 11 other tribes on the NAHC contact list to ensure those tribes would have an opportunity to provide meaningful input on the potential for Tribal cultural resources to be found in the Proposed Project area and recommend steps to be taken to ensure adverse impacts to Tribal cultural resources are avoided. The outreach letters sent in October 2021 included chairpersons and representatives of the following:

- Buena Vista Rancheria of Me-Wuk Indians
- Chicken Ranch Rancheria of Me-Wuk Indians
- Cortina Rancheria - Kletsel Dehe Band of Wintun Indians
- Guidiville Indian Rancheria
- Ione Band of Miwok Indians
- Nashville Enterprise Miwok-Maidu-Nishinam Tribe
- North Valley Yokuts Tribe
- Tsi Akim Maidu
- Tule River Indian Tribe
- Yocha Dehe Wintun Nation
- The Confederated Villages of Lisjan

The CSLC received a response to the outreach letters from the Yocha Dehe Wintun Nation and the Confederated Villages of Lisjan. Both tribes requested consultation. The CSLC also received two responses to the AB 52 notification letter: the United Auburn Indian Community of the Auburn Rancheria did not request consultation but provided recommended mitigation measures, and the Wilton Rancheria requested consultation under AB 52. This document refers to the three tribes who requested consultation as the “consulting tribes.” The CSLC provided project and cultural resources survey information to all three tribes in response to these letters and held consultation meetings with each consulting tribe from December 2021 through February 2022. In addition, on March 7, 2022, CSLC staff accompanied the Wilton Rancheria Cultural Resources Director and Tribal Historic Preservation Officer on a site visit to inspect the Project area

and discuss project details with PG&E staff. The consulting tribes provided several recommended mitigation measures in writing, during consultation meetings, and during the site visit. The CSLC is ensuring, pursuant to Public Resources Code section 21080.3.2 and 21082.3, that the Cultural Resources Management and Treatment Plan (**MM CUL-2/TCR-2**, below) contains provisions and protocols consistent with these recommendations. The consulting tribes additionally provided information related to the types of Tribal cultural resources that may be present in the Project area, which are briefly described below.

3.6.2 Regulatory Setting

Federal and state laws and regulations pertaining to tribal cultural resources and relevant to the Project are identified in Appendix A. Local cultural resources policies are identified in Appendix B.

3.6.3 Impact Analysis

a) Would the project cause a substantial adverse change in the significance of a Tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

> ***(i) Listed or eligible for listing in the California Register of Historical Resources (CRHR), 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 section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.***

Less than Significant with Mitigation

<u>Phases 1 and 2</u>

All Project work and staging areas are located entirely within the Sacramento River Tribal Cultural Landscape (P-34-005225) and would impact approximately 28,842 square feet (with 12,250 square feet located underwater) of the resource. The Sacramento River Tribal Cultural Landscape has been delineated as a 55-mile-long corridor of the Lower Sacramento River, from the confluence with the Mokelumne River at Collinsville north to the confluence with the Feather River at Verona. The Sacramento

River Tribal Cultural Landscape has been recommended eligible for listing on the NRHP; thus, it qualifies as a historical resource under CEQA.

Phase 1 activities would install a new pipeline using HDD techniques underneath the Sacramento River Tribal Cultural Landscape (P-34-005225) at a depth of approximately 120 feet below the current ground surface. Once Phase 1 activities are complete, Phase 2 activities would excavate and either abandon in place or remove pipeline segments within the existing pipeline corridor. However, the topography of the Sacramento River Tribal Cultural Landscape (P-34-005225) within the Project site has already been previously impacted by ground disturbance related to the existing pipeline, a regulator station, road construction, levee construction and maintenance, and agriculture. All Phase 1 materials, except for the pipeline markers, would be buried, and all Phase 2 materials would be removed or kept underground. In addition, at the end of each Phase the Project disturbance areas would be backfilled and restored to pre-Project contours and conditions. Therefore, the Project would not cause destruction or damage to the Sacramento River Tribal Cultural Landscape (P-34-005225), nor change its function or design. No change in setting would occur, as the resource would be returned to its pre-Project status. Therefore, these impacts would be less than significant.

However, proposed pipeline replacement and decommissioning activities could impact previously unrecorded tribal cultural resources. Potential discoveries during Project construction could consist of historical or archaeological resources that are Native American in nature or could consist of tribal cultural resources associated with Native American history, culture, and habitation of the area. A tribal cultural resource may or may not also be considered an archaeological or historical resource. There is not complete overlap – a tribal cultural resource that is evaluated and determined "not significant" by an archaeologist could be determined significant by a consulting tribe. **MM-CUL-1/TCR-1** through **MM-CUL-4/TCR-5** would ensure that in the event of accidental discovery, further disturbance would halt until the resource had been appropriately assessed and treatment, if necessary, approved. In addition, **MM TCR-4** requires specific monitoring protocols to address potential tribal cultural resource impacts from grading and excavations. **MM TCR-6** ensures that any discovered tribal cultural resources follow specific treatment protocols as set forth in the CRMTP in **MM CUL-2/TCR-2**.

MM TCR-4: Monitoring and Inspection of Grading and Excavation. To ensure previously unknown subsurface tribal cultural resources are avoided, identified, and protected, the following procedures shall be followed:

- Any grading performed within the Pipe Staging Area (on Brannan Island) shall not exceed the 18-inch approximate depth of prior disturbance from agricultural discing and grading activities;

- In lieu of separate subsurface geoarchaeological testing for presence of tribal cultural resources, excavation related to establishing the HDD bore pits or tie-ins shall proceed in a manner that allows for periodic inspection of the pits, trenches, and spoils by the Tribal Representative(s). Specific procedures for this excavation monitoring shall be detailed in the CRMTP required in MM CUL-2/TCR-2 and shall, at a minimum, describe the depth of each "layer" that will be excavated between inspections, and procedures to ensure safety of the Tribal Representative(s) inspecting the pits, trenches, and spoils area.

MM TCR-6: Treatment of Tribal Cultural Resources. If it is determined that avoidance of an unanticipated discovery of a tribal cultural resource is infeasible, the resource will be treated in a culturally appropriate manner pursuant to the treatment protocols developed for the CRMTP identified in MM CUL-2/TCR-2. Such treatment may include, subject to landowner cooperation, temporary recovery and subsequent reburial of materials pursuant to an excavation and reburial plan developed by the Wilton Rancheria (and other consulting tribes, as appropriate) in coordination with the Project Archaeologist and CSLC. Removal of tribal cultural resources shall be conducted by or in the presence of the Tribal Representative(s), unless otherwise directed by the tribe(s). Removed materials shall be temporarily curated on site, in a secure, climate-controlled location, or with a custodian agreed to by the Tribal Representative(s), until such time as the materials can be reburied as close to the original location as possible. If reburial within or near the original location is not feasible, reburial shall occur in accordance with the reburial agreement described in the CRMTP identified in MM CUL-2/TCR-2, which will include, at a minimum, measures and provisions to protect the reburial area from any future impacts (vis a vis Project plans, conservation/preservation or cultural easements, etc.) and provisions for cultural access.

After completion of the Project a monitoring report that details the implementation of the CRMTP will be prepared and submitted to CSLC, consulting Tribes, and PG&E. The methods, results, and findings of all monitoring and treatment activities will be presented in this report that will include background information on the project, document methods, actions implemented, results, and will summarize daily monitoring reports. In addition to addressing any Project effects to previously unknown cultural or Tribal cultural resources, the monitoring report will include a discussion on the broader historical impacts of industrial as well as western settlement to P-34-005225 within 0.50 miles of the pipeline replacement. The qualified consultant preparing this monitoring report shall seek input from the consulting tribes to ensure tribal perspectives are incorporated into the discussion.

In addition, if human remains of Native American origin are discovered in Project areas, **MM CUL-5/TCR-7** would ensure proper coordination with the most likely descendent(s). With the implementation of these measures, impacts would be reduced to less than significant.

3.6.4 Mitigation Summary

Implementation of the following mitigation measures would reduce the potential for Project-related impacts to tribal cultural resources to less than significant.

- MM CUL-1/TCR-1: Cultural and Tribal Cultural Resources Awareness Training
- MM CUL-2/TCR-2: Cultural and Tribal Cultural Resources Management and Treatment Plan (CRMTP)
- MM CUL-3/TCR-3: Cultural and Tribal Cultural Resources Monitoring
- MM TCR-4: Monitoring and Inspection of Grading and Excavation
- MM CUL-4/TCR-5: Discovery of Previously Unknown Cultural or Tribal Cultural Resources
- MM TCR-6: Treatment of Tribal Cultural Resources
- MM CUL-5/TCR-7: Unanticipated Discovery of Human Remains

3.7 ENERGY

ENERGY - Would the project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation**	**Less Than Significant Impact**	**No Impact**
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☐	☒	☐
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☐	☒

3.7.1 Environmental Setting

3.7.1.1 Solano County

Fossil fuels, primarily in the form of gasoline and natural gas, currently produce most of the energy used in Solano County. No fossil fuel power plants are in Solano County, but there are three natural gas power plants nearby that provide a portion of the county's electricity. In April 2020, McClean Energy (MCE) became the primary electricity provider for unincorporated Solano County (MCE 2021), which includes the Project area. Electricity and natural gas are the primary forms of energy used for commercial, industrial, and residential purposes while petroleum fuels are the primary energy source for most modes of transportation. All of Solano County's petroleum is imported (Solano County 2008c)

3.7.1.2 Sacramento County

The Sacramento Municipal Utility District (SMUD) generates, transmits, and distributes electric power to a 900-square mile service area that includes Sacramento County and a small portion of Placer County (County of Sacramento 2010). There are 36 power plants in Sacramento County with the nearest one located in Galt, approximately 20 miles northeast of the Project site (County Office 2022). PG&E provides the natural gas service to Sacramento County.

3.7.2 Regulatory Setting

There are no federal laws, regulations, or policies pertaining to energy that are relevant to the Project. State laws and regulations pertaining to energy and relevant to the Project are identified in Appendix A. Local regulations including applicable County General Plan policies are identified in Appendix B.

3.7.3 Impact Analysis

a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

Less than Significant Impact

Phases 1 and 2

The proposed Project involves the use of heavy equipment, motor vehicles, and vessels, all powered by non-renewable petroleum-based fuel sources. As such, Project activities would result in temporary consumption of energy resources (e.g., gasoline and diesel fuel). However, as identified in Appendix B, both Sacramento and Solano Counties require that Project equipment be updated and tuned in accordance with manufacturers specifications to minimize emissions and maximize energy efficiency. In addition, Appendix B lists local requirements that restrict equipment idling and other practices that would unnecessarily consume fuel. Finally, Project activities would not draw energy from the local power grid.

Once installed, the new pipeline would have improved configuration and inspection capabilities, which would benefit the pipeline's future maintenance needs and likely reduce maintenance-related use of energy resources (gasoline and diesel fuel). Therefore, the impacts would be less than significant.

b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

No Impact

Phases 1 and 2

The Project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. There are no local plans relating to renewable energy in Sacramento or Solano Counties; however, the Project would be consistent with the Energy Element of the Sacramento County General Plan and the Resources Chapter of the Solano County General Plan. Therefore, there would be no impact.

3.7.4 Mitigation Summary

The Project would have no significant impacts to energy; therefore, no mitigation is required.

3.8 GEOLOGY, SOILS, AND PALEONTOLOGICAL RESOURCES

GEOLOGY, SOILS, AND PALEONTOLOGICAL RESOURCES - Would the project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation**	**Less Than Significant Impact**	**No Impact**
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☒	☐
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv) Landslides?	☐	☐	☐	☒
b) Result in substantial soil erosion or the loss of topsoil?	☐	☒	☐	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the Project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	☐	☐	☒	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	☐	☐	☒	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☐	☒

3.8.1 Environmental Setting

3.8.1.1 Regional and Site Geomorphology and Geology

The Project site is located within the central portion of the Great Valley geomorphic province in Central California. The Great Valley geomorphic province is characterized by a long alluvial plain that extends approximately 400 miles through Central California. The Great Valley can be further divided into the northern Sacramento Valley and the southern San Joaquin Valley. The valleys were created as a result of the uplift of the

two mountain ranges that flank them, the Coast Ranges to the west, and the Sierra Nevada mountain range to the east. The deepest and oldest of the sediments that fill the valleys are marine sediments deposited before the uplift of the Coast Ranges. A mix of marine and continental deposits formed over these older units as seas advanced and retreated in the Sacramento and San Joaquin Valleys. The upper and youngest sediments in the basin are continental deposits consisting of alluvial fan deposits and flood-basin, lake, and marsh deposits.

The Project site is located in the California Delta, formed at the confluence of the Sacramento and San Joaquin Rivers. Prior to construction of modern flood control features (e.g., dams, levees), the Sacramento River and its major tributaries were confined mostly by natural levees, which are low ridges of sandy and silty sediment deposited during flood-stage conditions. When the river and its tributaries flooded their natural levees, higher-energy sediment was deposited in the adjacent areas along the river channel while fine-grained sediments were deposited in lower-energy environments (e.g., topographically lower flood basins, abandoned river channels) farther from the river channel, resulting in highly variable deposits. Many artificial levees have been constructed to prevent low-lying agricultural land from flooding. The main geomorphic process in these agricultural lands is decomposition of organic deposits and consequential land subsidence. Fluvial (river-based) erosion and deposition are the main geomorphic processes on and adjacent to levees.

According to the USGS *Geologic Map of the Sacramento-San Joaquin Delta, California, 1:24,000 (*Atwater 1982*)*, the Sacramento River Channel and riverbanks in the Project area are mapped as historic Holocene age dredge spoils (Qds) which consist of sand, silt, clay, and peat likely deposited in the first half of the 20th century. The East Levee Segment is mapped as Holocene age natural levee deposits (Ql), and the East Work Area and Pipe Staging Area are mapped as Holocene age bay mud deposits (Qpm). It is expected that the Pleistocene age Montezuma Formation (Qmz) underlies the younger historical and Holocene age deposits.

The geotechnical investigation included eight soil borings that were sampled along the proposed HDD drill hole alignment (Kleinfelder 2020). Four of the soil borings were completed on land (two east of the river channel and two west of the river channel) and four of the soil borings were completed within the Sacramento River. The borings contained soil units that were highly variable in soil type and depth (Kleinfelder 2020). Based on information gathered from these Project-area borings, geologic conditions are generally consistent with the mapped surficial geology.

3.8.1.2 Soils

Based on a review and analysis of the Natural Resources Conservation Service (NRCS) Web Soil Survey for the Project area (NRCS 2021), the soil types within Project site

include Tujunga fine sand (map unit symbol Tu), Xeropsamments, 1 to 15 percent slopes (map unit symbol 244), Scribner clay loam, partially drained, 0 to 2 percent slopes (map unit symbol 222), Sailboat silt loam, partially drained, 0 to 2 percent slopes (map unit symbol 206), and Columbia silt loam, drained, 2 to 5 percent slopes (map unit symbol 123). Of the soils identified at the Project site, Scribner clay loam and Sailboat silt loam are listed as moderately expansive soils.

3.8.1.3 Seismicity, Faulting, and Liquefaction

An active fault is a fault that has experienced seismic activity during historic time (approximately within the last 200 years) or exhibits evidence of surface displacement during the Holocene (within the last 11,700 years). The Project site is located east and adjacent to the San Francisco Bay Area which is a relatively high seismically active region. The closest active faults to the Project location are the Clayton Fault (Holocene displacement) located approximately 19 miles to the southwest, the Concord Fault (historic displacement) located approximately 22 miles to the southwest, and Greenville Fault (historic displacement) located approximately 23 miles to the west of the Project site. The greater San Francisco Bay Area has active faults that lie approximately 36 to 56 miles southwest of the Project site. The Project site is not in an Alquist-Priolo Earthquake Fault Zone and no known active faults traverse the site (California Department of Conservation, California Geologic Survey 2021). However, based on published data and current understanding of the geologic framework and tectonic setting, the primary source of seismic shaking at the Project site would likely be the Hayward-Rodgers Fault System located 36 miles to the southwest.

Liquefaction takes place when loosely packed, water-logged sediments at or near the ground surface lose their strength in response to strong ground shaking. Liquefaction occurring beneath buildings and other structures can cause major damage during earthquakes (Atwater 1982). Poorly drained fine-grained soils such as sandy, silty, and gravelly soils are the most susceptible to liquefaction. The California Geologic Survey (CGS) has designated certain areas within California as potential liquefaction hazard zones. These are areas considered at risk based upon mapped surficial deposits and the presence of a relatively shallow water table. While the Project site is currently not mapped as a liquefaction hazard zone, the Project's subsurface investigations identified liquefiable soil on both sides of the Sacramento River. The estimated magnitude of liquefaction settlement during an earthquake ranged from 4.5 to 6 inches on the west side of the Sacramento River and 4.5 to 12 inches on the east side (Kleinfelder 2020), and a similar amount of settlement would be expected as a result of future seismic events.

3.8.1.4 Subsidence

Subsidence is the gradual settling or sudden sinking of the land surface from changes that take place underground, primarily from groundwater or oil pumping. However, groundwater extraction-induced subsidence is not currently considered the primary driver of subsidence within the Project area. In the present-day, land subsidence in the Delta is primarily caused by microbial oxidation of organic or peat deposits (Deverel 2016).

According to DWR's TRE ALTAMIRA InSAR Subsidence Data, remote sensing of ground elevation displacement estimates that subsidence at the Project site ranged from -0.035 feet to -0.130 feet between January 2015 and October 2020 (DWR 2022). In addition, Sacramento County has mapped Scribner clay loam and Sailboat silt loam at the Project site. Scribner clay loam is listed as having an initial subsidence of 2 to 5 inches and a total potential subsidence of greater than 24 inches. Both soil types are listed as moderately expansive soils which may also contribute to subsidence at the Project site. The geotechnical soil boring located at the eastern end of SR 160 encountered organic clay/peat deposits extending to a depth of 23 feet below ground surface. Based on the peat deposit's thickness, subsidence in the East Work Area and the Segment 4 decommissioning area could exceed 5 to 10 feet over the next 50 to 100 years (Kleinfelder 2020).

3.8.2 Regulatory Setting

Federal and state laws and regulations pertaining to geology, soils, and paleontological resources and relevant to the Project are identified in Appendix A. Local policies or regulations applicable to the Project with respect to geologic hazards are identified in Appendix B.

3.8.3 Impact Analysis

a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:

(i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.

(ii) Strong seismic ground shaking?

(iii) Seismic-related ground failure, including liquefaction?

(iv) Landslides?

Less than Significant Impact

Phases 1 and 2

The Project site is not located within any Alquist-Priolo fault zones (California Department of Conservation, California Geologic Survey 2021) and the nearest known fault (Clayton Fault) is approximately 19 miles away. However, the Project area may be subject to liquefaction during a seismic event. Independent analytical assessment supports the conclusion that the new HDD pipeline has minimal risk of damage from liquefaction (Kleinfelder 2020, Honegger 2021). This is further substantiated by a third-party independent review by Thomas & Beers in a letter dated July 21, 2021, which states that "…the techniques and methodology used [by Honegger 2021 to evaluate the data presented in Kleinfelder 2020] to evaluate the risk associated with seismic and/or long term subsidence of the Line 130 HDD crossing replacement are reasonable and based on sound engineering principles. As such, the conclusion that there is minimal risk of damage to the new HDD crossing associated with these conditions going forward is acceptable from an engineering perspective."

In accordance with CEQA, this analysis addresses the potential impacts of the Project on the environment; it does not address the potential impact that the environment could inflict on the Project. As stated by the California Supreme Court, "agencies subject to CEQA generally are not required to analyze the impact of existing environmental conditions on a project's future users or residents. But when a proposed project risks exacerbating those environmental hazards or conditions that already exist, an agency must analyze the potential impact of such hazards on future residents or users." (California Building Industry Association v. Bay Area Air Quality Management District (2015) 62 Cal.4th 369, 386 (*CBIA*)).

The Project would replace the existing aged L-130 pipeline segment with a new pipeline segment, thereby reducing the overall system vulnerability to seismic hazards, including liquefaction. While Phase 1 includes horizontal drilling and dynamic pipe ramming, these activities would not be sufficiently strong to trigger an earthquake, liquefaction, or landslides. The replacement pipeline installed in Phase 1 would be subject to potential geologic impacts from seismic shaking or liquefaction; however, the pipeline would be designed to ensure it could accommodate these forces without suffering damage. Both Phase 1 and 2 would include backfilling excavations with native earth material, such that the soil properties (including shear strength and grain size) would not be substantially changed.

The Project area and vicinity are level, and do not have the potential to slide or experience sliding from adjacent areas. While there are minor slopes associated with the channel banks and temporary HDD platform, these are not expected to be at risk of

substantial movement during Project activities. Therefore, the Project would not result in landslides.

Project activities would not exacerbate existing geological conditions or the potential for seismic ground shaking. The Project would not result in any long-term impacts to the area due to loss of slope stability, erosion, or landslides. This analysis therefore does not evaluate existing environmental risks that could affect the Project because the Project would not exacerbate them, consistent with the Court's ruling in *CBIA*. Therefore, the impacts would be less than significant.

b) Result in substantial soil erosion or the loss of topsoil?

Less than Significant with Mitigation

Phases 1 and 2

Topsoil would be temporarily removed during excavation of bore pits, pits used for flushing and cementing the pipeline segments to be abandoned in place, pits used for pipeline tie-in, and trenched areas for pipeline removal. However, this topsoil would be replaced as part of backfilling and would not be lost due to Project activities. Phase 1 activities would not construct any steep slopes or remove substantial amounts of vegetation that could increase soil erosion during rain events.

While Phase 2 activities would remove pipeline segments buried within the riverbanks, the areas would then be backfilled, compacted, and returned to pre-Project contours which would prevent possible topsoil loss as well as increased soil erosion during storm runoff events. In addition, at the end of Phase 2 activities all soils disturbance areas would be stabilized in accordance with the Project's Preliminary Site Restoration Plan (Appendix H) in **MM BIO-9**. Finally, **MM HYDRO-1** (Section 3.11, *Hydrology and Water Quality*) requires a Stormwater Pollution Prevention Plan (SWPPP) that would include erosion and sediment control best management practices and housekeeping measures during Phase 1 and 2 activities. These best management practices include source control measures such as wetting dry and dusty surfaces to prevent fugitive dust emissions, preserving existing vegetation, effective soil cover (e.g., geotextiles, straw mulch, hydroseeding) for inactive areas, and finished slopes to prevent sediments from being dislodged by wind, rain, or flowing water. With the implementation of these mitigation measures, the impact would be less than significant.

c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the Project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?

Less than Significant Impact

Phases 1 and 2

See the discussion above related to subsidence and liquefaction. The Project area experiences naturally occurring subsidence due to the compression of peat materials, specifically at the east side of the Project site on Brannan Island, which could impact an underground natural gas pipeline. However, an independent analytical assessment by D.G. Honegger Consulting (Honegger 2021) supported the conclusion that the new HDD pipeline crossing would have minimal risk of suffering damage as a result of this long-term subsidence and could safely operate if subjected to as much as 20 feet of subsidence.

Phase 1 and 2 excavations on both the west and east sides of the Sacramento River would be backfilled with same native earth material as was removed and would therefore not result in any changes to geologic units or soils. According to the Project Execution Plan, a combination of clean import fill and native surficial soils would be used to backfill the East Work Area and compacted to match the existing grade in the agricultural field. Project activities would result in a short-term ground disturbance of up to 15 feet in depth but would not result in any permanent changes to the Project site's topographic features. Therefore, the impacts would be less than significant

d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?

Less than Significant Impact

Phases 1 and 2

Subsoil investigations have identified expansive soils along the HDD borehole path. However, the replacement pipeline would be designed to safely withstand expansive soil-related movement, such that the Project would not increase the risk of potential pipeline failure or leakage. See discussion in c), above. Therefore, the impact would be less than significant.

e) 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

Phases 1 and 2

The Project would not involve the use of septic tanks or on-site sewage disposal. Portable restrooms would be provided on-site for workers and would be regularly serviced to remove sewage which would be disposed at a nearby municipal wastewater treatment facility. Therefore, there would be no impact.

f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

No Impact

Phases 1 and 2

All Project excavations would occur within active channel deposits or basin deposits of the Sacramento River (Holocene age or younger). Geologic formations that may contain fossils are assumed to underlie the active channel deposits and basin deposits of the Sacramento River and would not be affected. Therefore, there would be no impact.

3.8.4 Mitigation Summary

Implementation of the following mitigation measure would reduce the potential for Project-related impacts to geology, soils, and paleontological resources to less than significant.

- MM BIO-9: Site Restoration
- MM HYDRO-1: Stormwater Pollution Prevention Plan (SWPPP)

3.9 GREENHOUSE GAS EMISSIONS

GREENHOUSE GAS EMISSIONS – Would the project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation**	**Less Than Significant Impact**	**No Impact**
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☐	☒

3.9.1 Environmental Setting

Greenhouse Gases (GHGs), defined as any gas that absorbs infrared radiation in the atmosphere, include, but are not limited to, water vapor, carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), and fluorocarbons. These GHGs trap and build up heat in the atmosphere near the earth's surface, commonly known as the Greenhouse Effect. The atmosphere and the oceans are reaching their capacity to absorb CO_2 and other GHGs, leading to significant global climate change. Unlike criteria pollutants and toxic air contaminants, which are pollutants of regional and local concern, GHGs and climate change are a local, regional, and global issue. There is widespread international scientific consensus that human-caused increases in GHGs have and will continue to contribute to climate change.

In addition, the Intergovernmental Panel on Climate Change (IPCC), in the section of its Sixth Assessment Report (AR6) by Working Group I, "Climate Change 2021: The Physical Science Basis," (IPCC 2021; released August 7, 2021) Human Influence on the Climate System (Chapter 3), stated in part:

> *The evidence for human influence on recent climate change strengthened from the IPCC Second Assessment Report to the IPCC Fifth Assessment Report and is now even stronger in this assessment. The IPCC Second Assessment Report (1995) concluded 'the balance of evidence suggests that there is a discernible human influence on global climate'. In subsequent assessments the evidence for human influence on the climate system was found to have progressively strengthened. AR5 concluded that human influence on the climate system is clear, evident from increasing greenhouse gas concentrations in the atmosphere, positive radiative forcing, observed warming, and physical understanding of the climate system.*
>
> *It is unequivocal that human influence has warmed the global climate system since pre-industrial times. Combining the evidence from across the climate system increases the level of confidence in the attribution of observed climate*

> *change to human influence and reduces the uncertainties associated with assessments based on single variables. Large-scale indicators of climate change in the atmosphere, ocean, cryosphere and at the land surface show clear responses to human influence consistent with those expected based on model simulations and physical understanding.*

AR6 indicated that, due to climate change, average temperatures in North America are very likely to increase and will continue to do so in future decades. Extreme temperatures in all regions of North America are projected to increase in intensity, frequency and duration, and cold spells are projected to decrease. The report indicates a medium confidence of a precipitation decrease in the western and southwestern portions of North America (IPCC 2021).

Climate change is having and will continue to have widespread impacts on California's environment, water supply, energy consumption, public health, and economy. Many impacts already occur, including increased fires, floods, severe storms, and heat waves (California Governor's Office of Planning and Research [CGOPR] 2018). Documented effects of climate change in California include increased average, maximum, and minimum temperatures; decreased spring runoff to the Sacramento River; shrinking glaciers in the Sierra Nevada; sea level rise at the Golden Gate Bridge and in San Francisco Bay; warmer temperatures in Lake Tahoe, Mono Lake, and other major lakes; and plant and animal species found at changed elevations (CGOPR 2018).

According to the IPCC, the concentration of CO_2, the primary GHG, has increased from approximately 280 parts per million (ppm) in pre-industrial times (Fifth Assessment Report) to well over 410 ppm in 2021 (AR6). CO_2 concentrations as of 2019 are increasing about 1.9 ppm/year; present CO_2 concentrations are higher than any time in at least the last 2 million years. CO_2 is used as a reference gas for climate change. To account for different GHG global warming potentials for other gases, emissions are often quantified and reported as CO_2 equivalents (CO_2e). For example, if the CO_2 global warming potential is set at a reference value of 1, CH_4 has a warming potential of 27.9 (i.e., 1 ton of methane has the same warming potential as 27.9 tons of CO_2 [IPCC 2021]), while nitrous oxide has a warming potential of 273.

To meet both the statewide 2030 GHG reduction target that requires California to reduce its total statewide GHG emissions to 40 percent below 1990 levels (Health & Safety. Code, § 38550) and the 2050 goal of 80 percent below 1990 levels (Executive Order S-3-05), projects must contribute to slowing the increase in GHG emissions and should contribute to reducing the state's GHG output. In order to reach California's GHG reduction targets, per capita emissions would need to be reduced by approximately five percent each year from 2022 to 2030, with continued reductions through 2050.

3.9.2 Regulatory Setting

Federal and state laws and regulations pertaining to greenhouse gas emissions and relevant to the Project are identified in Appendix A. Local regulations including applicable County General Plan policies are identified in Appendix B. Various entities address this issue area at the state and regional levels. In efforts to reduce and mitigate climate change impacts, State and local governments are implementing policies and initiatives aimed at reducing GHG emissions. California, one of the largest state contributors to the national GHG emission inventory, has adopted significant reduction targets and strategies. The State Legislature passed Senate Bill (SB) 32 (Pavley; Chapter 249, Statutes of 2016), which codifies a 2030 GHG emissions reduction target of 40 percent below 1990 levels. With SB 32, the Legislature passed companion legislation AB 197 (Eduardo Garcia; Chapter 250, Statutes of 2016), which provides additional direction for developing CARB's Scoping Plan for Climate Change. The 2017 Scoping Plan focuses on strategies to achieve the 2030 target set by Executive Order B-30-15 and codified by SB 32, and a 2022 Climate Change Scoping Plan is in progress.

3.9.2.1 SMAQMD Thresholds of Significance

The SMAQMD has adopted thresholds of significance for GHG emissions for construction and operational phases of projects. Construction projects have a GHG emissions threshold of 1,100 metric tons of CO_2 equivalent per year ($MTCO_2E/yr$). Operational projects must demonstrate consistency with the CARB 2017 Climate Scoping Plan by implementing Best Management Practices (BMPs) or off-site mitigations. All operational projects must implement the following BMPs:

- **BMP 1** – All projects shall be designed and constructed without natural gas infrastructure.
- **BMP 2** – Projects shall meet the current CalGreen Tier 2 standards, except all electric vehicle capable spaces shall instead be electric vehicle ready.

3.9.2.2 YSAQMD Thresholds of Significance

The YSAQMD has not adopted thresholds of significance for GHG emissions. For the purposes of this analysis, Project GHG emissions will be compared to the SMAQMD thresholds to determine significance.

3.9.3 Impact Analysis

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Less than Significant Impact

Phases 1 and 2

GHG emissions for heavy construction equipment and marine vessels proposed to be utilized during each phase of Project construction activities were estimated using established emission factors from the California Air Resources Board's (CARB) California Emissions Estimator Model (CalEEMod) User's Guide, Appendix D, Default Data Tables and the USEPA Ports Emissions Inventory Guidance: Methodologies for Estimating Port-Related and Goods Movement Mobile Source Emissions. Emissions associated with worker travel to and from the Project site and haul-truck traffic were estimated using emission factors from the CARB's 2017 EMission FACtor model (CARB 2017). A tabulation of assumptions, references, and calculations for the Project GHG emission estimates in U.S. tons are provided in Appendix D. Tables 3.9-1 and 3.9-2 list the estimated total Project GHG emissions calculated for each phase of Project activities using the current Project schedule and equipment mix provided in the Project Execution Plan (Longitude 123, Inc. 2021). The Project does not have an operational phase since pipeline operation and maintenance activities would not change from current levels. Therefore, the Project was not evaluated as an operational project under SMAQMD thresholds of significance and only construction related GHG emissions were estimated. Total Project emissions were estimated to be 1,045 $MTCO_2E$, which is below the SMAQMD GHG significance threshold of 1,100 $MTCO_2E$ per year; therefore, the impact would be less than significant.

Table 3.9-1. Estimated Greenhouse Gas Emissions (Metric Tons) – Phase 1

Work Task	CO_2	CH_4	N_2O	$MTCO_2E$
Site Mobilization and Fabricate 16" Pull Back Strings	44.73	0.007	0.0001	45.2
HDD Replacement/Tie-in/Commissioning	743.48	0.094	0.0137	749.9
Total	**788.21**	**0.101**	**0.0138**	**795.1**

Note: Appendix D provides CO2, CH4, and N2O GHG calculations in US Tons. 1 US ton = 0.907185 metric tons.

Table 3.9-2. Estimated Greenhouse Gas Emissions (Metric Tons) – Phase 2

Work Task	CO_2	CH_4	N_2O	$MTCO_2E$
Pre-project Survey / Mobilization	21.72	0.00009	0.002	22.21
Pig & Flush Pipe Crossing	8.6	0.0006	0.0004	8.73
Onshore Decommissioning	79.32	0.0153	0.0025	80.45
In-water Decommissioning	112.8	0.0164	0.002	113.80
Site Restoration	23.88	0.0056	0.0007	24.24
Total	**246.32**	**0.038**	**0.0076**	**249.43**

Note: Appendix D provides CO_2, CH_4, and N_2O GHG calculations in US Tons. 1 US ton = 0.907185 metric tons.

b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

No Impact

Phases 1 and 2

The proposed Project would generate only temporary GHG construction emissions and would not conflict with the Solano County or Sacramento County climate action plans, GHG policies or measures. Therefore, there would be no impact.

3.9.4 Mitigation Summary

The Project would have no significant impacts to greenhouse gas emissions; therefore, no mitigation is required.

3.10 HAZARDS AND HAZARDOUS MATERIALS

HAZARDS AND HAZARDOUS MATERIALS – Would the project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation**	**Less Than Significant Impact**	**No Impact**
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☒	☐	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☒	☐	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☒	☐	☐
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise or people residing or working in the project area?	☐	☐	☐	☒
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☒	☐	☐
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?	☐	☐	☒	☐

3.10.1 Environmental Setting

The Project site spans the Sacramento River and is located in both Solano County and Sacramento County. The West Work Area is directly south of the Delta Marina Yacht Harbor, in the city of Rio Vista. Scattered residences are located to the north and northwest of the West Work Area. In addition, several rural residences are located within 500 feet of the East Work Area. SR 160 is located within the East Work Area, and SR 12 and SR 84 are approximately 0.5 and 3 miles, respectively, to the north of the Project area. The nearest private airport (Walnut Grove Airport) is located approximately 9 miles to the northeast of the East Work Area. The nearest public airport (Rio Vista Municipal Airport) is located approximately 3 miles to the north of the West Work Area and PG&E Pipeline Station. The nearest school is Riverview Middle School located

approximately 750 feet north of the West Work Area. Rio Vista High School is located approximately 2,000 feet north-northwest of the West Work Area.

The State Water Resources Control Board (SWRCB) GeoTracker database identifies one cleanup site within proximity to the Project site. This case opened in 1992 and involved the clean-up of a Leaking Underground Storage Tank (LUST) site at the Delta Marina Yacht Harbor that threatened a nearby aquifer used for drinking water. No clean-up actions were reported, and the site was formally closed in 2012.

The Department of Toxic Substances Control (DTSC) EnviroStor database (commonly referred to as the "Cortese List" Gov Code, §65962.5)) identified one site, Rio Vista Army Reserve Center (RVARC), located 0.5 mile south from the West Work Area (DTSC 2022). The RVARC was used by the Army primarily for Army Reserve unit amphibious assault training, ship maintenance, and cargo loading/unloading. The EnviroStor records include several LUST sites, metals contamination in the soil at several sites and in the Marine Railway, and dioxin contamination in the vicinity of the incinerator. The US Army removed about 4,550 cubic yards of contaminated soil in October 2000. The site was closed and certified as of June 30, 2003.

3.10.2 Regulatory Setting

Federal and state laws and regulations pertaining to hazards and hazardous materials and relevant to the Project are identified in Appendix A. Local policies applicable to the Project with respect to hazards and hazardous materials are identified in Appendix B.

3.10.3 Impact Analysis

a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Less than Significant with Mitigation

<u>Phases 1 and 2</u>

The Project would involve routine storage, transport, use, and disposal of small quantities of hazardous materials during Phases 1 and 2. These materials may include gasoline, diesel, hydraulic fluids, lubricants, coolants, and solvents all of which are regulated by federal, state, and local laws and regulations. Improper storage and handling of these materials during Project activities could be considered a potentially significant impact to the environment and nearby residences. **MM HAZ-1** would ensure the correct storage and handling through a Project Work and Safety Plan (PWSP). The PWSP would require separate storage for incompatible hazardous materials, secondary containment for hazardous materials storage, trained personnel for hazardous materials

handling, on-site spill clean-up kits, and equipment refueling stations to be in specific sites with appropriate spill containment. With the implementation of this measure, the impact would be less than significant.

MM HAZ-1: Project Work and Safety Plan. A Project Work and Safety Plan (PWSP) shall be submitted to CSLC staff and all other pertinent agencies for review and approval at least 30 days prior to the implementation of each Project Phase. The PWSP shall include the following information (at a minimum):

- Contact information
- Hazardous Spill Response and Contingency Plan
- Emergency Action Plan
- Summary of the Project Execution Plan
- Project Management Plan
- Site Safety Plan, including measures for proper handling of hazardous materials including, but not limited to soils containing residual pesticides
- Permit Condition Compliance Matrix

b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

Less than Significant with Mitigation

Phase 1

The HDD procedures have been developed using site-specific geotechnical data to ensure that the drilling can be successfully completed while also minimizing the risk of inadvertent drilling fluid loss (frac-outs) into the river or upland areas. Although the HDD activities would be closely monitored, the potential still exists for drilling fluids (predominantly bentonite clay) to migrate from the drill hole to surrounding fractured rock and sediments and be discharged to the land or surface water along the HDD alignment. Aquatic release and the associated biological impacts are analyzed in Section 3.4, *Biological Resources*. Terrestrial impacts could affect agricultural soils, damage surface structures and smother terrestrial vegetation. This release of unanticipated hazardous materials into the environment is considered a potentially significant impact. **MM HAZ-1** would include a Hazardous Spill Response and Contingency Plan and Site Safety Plan to address the accidental release of any hazardous materials. In addition, the Project includes an Inadvertent Release Contingency Plan (ICRP) (**MM HAZ-2**) that monitors and records the drilling fluid

volumes, pressures, and flow rates, and requires that equipment be on site to contain and clean up a drilling fluid spill. The ICRP also includes procedures to follow if a release occurs, including halting drilling operations, documenting the drilling fluid release, notifying stakeholders, and containing the spill. The draft IRCP is included as Appendix G. With the implementation of these measures, the impacts would be less than significant.

MM HAZ-2: Inadvertent Release Contingency Plan. The draft Inadvertent Release Contingency Plan shall be finalized and implemented to detect and address any inadvertent drilling fluid migration outside of the HDD drill hole, including potential drilling fluid migration into the Sacramento River. At least 30 days prior to Phase 1 implementation, the Applicant shall submit a Final Inadvertent Release Contingency Plan to CSLC for review and approval.

Phase 2

As noted in a), **MM HAZ-1** would require a Hazardous Spill Response and Contingency Plan and Site Safety Plan to address the accidental release of hazardous materials including fuel spills from Phase 2 equipment. In addition, Phase 2 activities would include pigging and flushing the existing pipelines to remove residual hydrocarbons, which would be captured in temporary tanks. Flush water could contain hydrocarbons, and therefore would be tested to identify contamination levels and then screened to determine if the water would go to an appropriate disposal facility or be discharged at the Project site, as discussed in Section 3.11, *Hydrology and Water Quality*. The Segment 2 decommissioning would remove the L-130 pipeline from the riverbed and could dislodge existing debris, impact existing utilities in or above the riverbed, or leave behind debris that would all constitute a potential release of hazardous materials. **MM HAZ-3** would require a pre-Project Geophysical Debris Survey of the riverbed to identify pre-Project bottom contours as well as any debris or exposed utilities in order to avoid those areas during decommissioning. **MM HAZ-3** also includes a post-Project survey to ensure no Project-related debris is left at the site.

Finally, the existing pipeline may have an asbestos coating which would be disturbed during pipeline removal activities. Airborne asbestos and asbestos fibers in the vicinity of nearby residences is considered a potentially significant impact to human health. **MM HAZ-4** would ensure that the existing pipeline is tested prior to cutting and removal, and if necessary, handled and removed from the Project site by certified professionals according to air district and worker safety regulations.

With implementation of these measures, the impacts would be less than significant.

MM HAZ-3: Pre- and Post-Project Bathymetric and Surficial Features Multi-Beam Debris Survey. Pre- and post-Project Bathymetric and Surficial Features Multi-Beam Debris Surveys of the riverbed shall be conducted using a vessel equipped with a multi-beam sonar system. The pre-Project survey, used in conjunction with previously collected data, shall serve to fully identify pre-Project bottom contours, debris, and any exposed utilities, and a copy of the survey shall be submitted to CSLC staff for review 30 days prior to Project implementation. A post-Project Bathymetric and Surficial Features Multi-Beam debris survey shall also be performed, and the results compared to the initial baseline survey. Any anomalous objects that were not already found and identified in the pre-Project survey and that remain unidentified during the bathymetric and debris surveys would be positively identified using methods such as divers or ROV. All Project-related debris would be recovered. A Project close-out report with drawings shall be submitted to the CSLC within 60 days of work completion.

MM HAZ-4: Asbestos Handling Procedures. Construction personnel shall be informed of the potential presence of asbestos-containing material (ACM) at the Project site prior to their assignment. After exposing the existing pipeline for removal, and prior to the start of cutting and tie-in activities, a certified asbestos inspector/consultant shall test whether the coating consists of ACM greater than 1 percent by weight. If testing reveals the coating contains ACM less than 1 percent by weight, the pipeline segment shall be treated as normal construction waste and no additional measures are required. If testing reveals the coating contains ACM equal to or greater than 1 percent by weight, the materials shall be controlled by a certified asbestos abatement contractor in accordance with the regulations and notification requirements of SMAQMD Rule 902 or YSAQMD Rule 4.3, and in accordance with applicable worker safety regulations. All ACM removed from the pipeline segment(s) shall be labeled, transported, and disposed of at a verified and approved ACM disposal facility.

c) 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 with Mitigation

<u>Phases 1 and 2</u>

The West Work Area is located approximately 0.14 mile from an existing school, and the Project would involve the routine storage, transport, use, and disposal of small quantities of hazardous materials during Phases 1 and 2. These materials may include gasoline, diesel, hydraulic fluids, lubricants, coolants, and solvents all of which are

regulated by federal, state, and local laws and regulations. Improper storage and handling of these materials during Project activities, including during transport, could be considered a potentially significant impact to the nearby school. However, none of the construction equipment and none of the hauling trucks would transport hazardous materials adjacent to or near the existing school. In addition, **MM HAZ-1** would ensure the correct storage and handling of these materials while being transported to and from the West Work Area, and **MM HAZ-4** ensures that any asbestos is handled and removed from the Project site by certified professionals according to air district and worker safety regulations. With the implementation of these measures**,** the impacts would be less than significant.

d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?

(d to e) No Impact

Phases 1 and 2

The Geotracker and EnviroStor databases each identified one hazardous materials site, which were formally closed in 2012 and certified and closed in 2003, respectively. The Project site is not located within an airport land use plan, within 2 miles of an airport, or within a private airstrip. Therefore, there would be no impact.

f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Less than Significant with Mitigation

Phase 1

The Project site is located adjacent to SR 160, but Phase 1 activities would not affect this roadway or impair implementation of or physically interfere with any adopted emergency response or evacuation plan. Therefore, there would be no impact.

Phase 2

SR 160 is not part of an emergency response plan or emergency evacuation plan. Regardless, Phase 2 would remove the casing beneath SR 160 and would require open

trench excavation with hydraulically shored vertical walls, but the excavation and removal would occur in stages and one lane of traffic would always remain open during construction. **MM T-1** (Traffic Control Plan) would further ensure that roadway ingress/egress are maintained in both directions to facilitate emergency response or evacuations by requiring sign placement indicating the temporary lane closure and rerouting as well as flaggers present in both directions to safely direct vehicles during an emergency. With the implementation of this measure, the impact would be less than significant.

g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?

Less than Significant Impact

Phases 1 and 2

The Project site is served by two fire protection districts, with both the Delta Fire Protection District and the Montezuma Fire Protection District located to the west of the Sacramento River. If a fire occurred at the Project site east of the river, fire response vehicles could easily access the area by using the Rio Vista Bridge. The Project site includes the Sacramento River floodplain with adjacent irrigated agricultural fields within the Sacramento River Delta, which have relatively high soil moisture and are not considered a fire hazard by the California Department of Forestry and Fire Protection (CAL FIRE). However, the Project involves potential ignition sources such as mobile and stationary equipment, vehicles, welders, and grinders. Standard safety features would be utilized such as spark arrestor mufflers and grinder shields. In addition, potentially flammable vegetation would be removed as part of Phase 1 and 2 work site preparation. Therefore, the impact would be less than significant.

3.10.4 Mitigation Summary

Implementation of the following mitigation measures would reduce the potential for Project-related impacts related to hazardous materials to less than significant.

- MM HAZ-1: Project Work and Safety Plan
- MM HAZ-2: Inadvertent Release Contingency Plan
- MM HAZ-3: Pre- and Post-Project Bathymetric and Surficial Features Multi-Beam Debris Survey
- MM HAZ-4: Asbestos Handling Procedure
- MM T-1: Traffic Control Plan

3.11 HYDROLOGY AND WATER QUALITY

HYDROLOGY AND WATER QUALITY - Would the project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation**	**Less Than Significant Impact**	**No Impact**
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?	☐	☒	☐	☐
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☒	☐
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner that would:				
i) Result in substantial erosion or siltation on or off site;	☐	☒	☐	☐
ii) Substantially increase the rate or amount of surface runoff in a manner that would result in flooding on or off site;	☐	☐	☐	☒
iii) Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☐	☐	☐	☒
iv) Impede or redirect flood flows?	☐	☐	☐	☒
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☐	☒
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☐	☒

3.11.1 Environmental Setting

3.11.1.1 Surface Water Characteristics

The Project site is located in the southernmost region of the Sacramento River, about 15 miles upstream of the Delta. The Sacramento River is part of the Sacramento Valley Subregion watershed which totals approximately 5,500 square miles. Shasta Dam, which has a storage capacity of 4.5 million acre-feet, was built in 1944 and currently serves as the largest reservoir in the Central Valley. It works in conjunction with Trinity Reservoir and diverts water through the Lewiston and Whiskeytown Reservoirs before reaching the Sacramento River. Since construction of the Shasta Dam, the Sacramento River's flow rate is largely regulated and is typically lower in the winter months for

flooding mitigation while higher in the summer months to accommodate irrigation needs (Sacramento River Watershed Program 2021).

The Sacramento River also has flood control from the Brannan-Andrus LMD-RD 0556 levee system (ACOE 2022). The Brannan-Andrus levee is located on the east riverbank in the Project site. The levee is a federal flood control project and is federally regulated according to ACOE criteria. While the Central Valley Flood Protection Board (CVFPB) is the non-federal sponsor and is responsible for issuing encroachment permits for work involving the federal levee and Sacramento River, the Brannan-Andrus Levee Maintenance District (BALMD) is the Local Maintaining Agency and is responsible for the levee's operation and maintenance. BALMD endorsed the Project on May 13, 2021, as part of the CVFPB encroachment permit application.

3.11.1.2 Surface Water Quality

The CVRWQCB has jurisdiction over the entire Sacramento River and San Joaquin River basins. The CVRWQCB has developed the Water Quality Control Plan (Basin Plan) for the Sacramento River Basin and San Joaquin River Basin to protect the region's surface and groundwaters (State Water Resources Control Board [SWRCB] 2018). The Basin Plan designates beneficial uses of waters within the region, sets narrative and numerical water quality objectives to protect beneficial uses, and describes implementation programs intended to meet the Basin Plan objectives.

Surface water in the Project area (the Sacramento River) is considered impaired under Section 303(d) of the Clean Water Act due to elevated levels of mercury, Dichlorodiphenyltrichloroethane [DDT], chlordane, dieldrin, and polychlorinated biphenyls (PCBs) (SWRCB 2018). The surface water in the Project area is considered impaired because data indicates that the adopted water quality objectives are continually exceeded or that beneficial uses are not being protected.

3.11.1.3 Flood Hazard

The Project site is included within Flood Insurance Rate Maps 06095C0539E in Solano County and 06067C0545H in Sacramento County. As shown on the respective Flood Insurance Rate Maps, the Project site is entirely within the 1 percent annual chance flood hazard area (Zone AE) (Federal Emergency Management Agency [FEMA] 2021).

The region surrounding the Project area includes multiple state and locally owned and operated flood management facilities through the State Plan of Flood Control (SPFC). These facilities protect the residing public and their property from flooding events by controlling stormwater runoff (California Natural Resources Agency 2014). Flood facilities near the site include both federal and non-federal levees within the BALMD,

east of the Sacramento River, and the Mellin levee and lower portion of the Yolo Bypass located north of Rio Vista (California Natural Resources Agency 2014).

3.11.1.4 Groundwater Environment and Management

The Project site is located within the Solano Groundwater Sub-basin, which is part of the larger Sacramento Valley Groundwater Basin. The closest well (well number 3400374-001) is a municipal well located 0.1 miles south of the East Work Area along the Levee Segment (SWRCB 2021a). Flood basin deposits range from 0 to 150 feet and consist predominantly of clays and silts along the eastern portion of the Sub-basin and peaty mud in the Delta. Due to its low permeability, water from the flood basin is not readily supplied to groundwater wells in the Project area.

In general, the Solano Sub-basin groundwater is of good quality and safe for agricultural and urban uses. Total dissolved solids (TDS) range between 250 and 500 ppm along the east and northwest margins of the Sub-basin and can exceed 500 ppm within the central and southern margins. These TDS levels coincide with hard to very hard water, measured by the presence and concentration of calcium carbonate. Between 1970 and 2000, approximately one-half of the well water samples taken within the Sub-basin fell between 200 to 400 ppm, but rarely over 400 ppm (SWRCB 2021b).

The 2014 Sustainable Groundwater Management Act requires the formation of groundwater sustainability agencies (GSAs) in high- and medium-priority groundwater basins and Sub-basins. The California Department of Water Resources prioritized the Solano Sub-basin as a medium priority for management and development of a groundwater sustainability plan, and received the required groundwater sustainability plan on January 31, 2022. The groundwater sustainability plan must manage the basin in a sustainable manner for at least 20 years. West of the Sacramento River, the Project site is located within the boundaries of the Solano Sub-basin GSA. East of the Sacramento River, the Project site is located within the boundaries of the Sacramento County GSA.

3.11.1.5 Potentially Affected Groundwater Basins

Project water demands would be met by fresh water (typically water suitable for agricultural use or potable water, depending on availability) trucked from an off-site source. The source of this water has not yet been determined but would likely be obtained from a municipal supply or directly from an agricultural water district. Project water demands would most likely be met by groundwater from the Solano Sub-basin. Other basins potentially affected by Project water demands could include San Joaquin Valley-East Contra Costa (medium priority), Suisun-Fairfield Valley (low priority) or San Joaquin Valley-Eastern San Joaquin (high priority).

3.11.2 Regulatory Setting

Federal and state laws and regulations pertaining to hydrology and water quality and relevant to the Project are identified in Appendix A. Relevant regional and local permits and plans are discussed below. Other local General Plan policies related to hydrology and water quality that are applicable to the Project are identified in Appendix B.

3.11.2.1 National Pollutant Discharge Elimination System General Permits

Pursuant to the Porter-Cologne Act, the State Water Resources Control Board issues National Pollutant Discharge Elimination System (NPDES) permits for discharges to land or surface waters. The limitations placed on the discharge are designed to ensure compliance with water quality objectives in the Basin Plan. Construction activities that disturb one or more acres of land surface are regulated under the General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (Order No. 2012-0006-DWQ). This general permit also covers construction activities associated with Linear Underground/Overhead Utility Projects such as underground pipeline installation, trenching, excavation, boring and drilling, and stockpile/borrow locations. To obtain coverage under the Construction General Permit, the legally responsible person must file a Notice of Intent (NOI), SWPPP, risk assessment, site map(s), and drawings.

Statewide General Waste Discharge Requirements for Discharges to Land with a Low Threat to Water Quality (Water Quality Order 2003-003-DWQ) addresses discharges that have a low potential to threaten water quality. Project-related discharges that may be covered include pipeline flush water, hydrostatic test water, and construction dewatering (exposed groundwater within excavations). In accordance with this state-wide General Permit, all dischargers must comply with all applicable provisions in the Project area's Basin Plan, including any prohibitions and water quality objectives for surface water and groundwater. Discharges must be made to land owned or controlled by the discharger unless the discharger has a written lease or agreement with the landowner. An NOI must be filed with the applicable regional board (in this case the CVRWQCB) prior to any wastewater discharge. Compliance with permit terms, including any monitoring and filing a notice of termination upon completion of the activity, are also required.

Waste Discharge Requirements for Limited Threat Discharges to Surface Water (Order No. R5-2016-0076-01) also addresses discharges that have a low potential to threaten water quality. Project-related discharges to surface water may include pipeline flush water, hydrostatic test water, and construction dewatering. In accordance with this General Permit, the discharged water must meet screening levels established in the Permit for nitrate, residual chlorine, metals, pesticides, and other contaminants. The discharge cannot substantially affect receiving water quality including dissolved oxygen,

pH, and temperature. An NOI must be filed with the CVRWQCB prior to any wastewater discharge. Compliance with permit terms, including a self-monitoring program with quarterly monitoring reports, and filing a notice of termination upon completion of the activity are also required.

3.11.2.2 Central Valley Flood Protection Plan

The Project site is located within the planning area of the Central Valley Flood Protection Plan (CVFPP) which was adopted in 2012 and updated in 2017. The CVFPP serves as the guiding document for managing flood risk along the Sacramento and San Joaquin River systems, including a system-wide investment approach for sustainable, integrated flood management in areas currently protected by facilities of the State Plan of Flood Control. Regional flood management plans were also developed to specifically address more local issues. The Project site is located within the Lower Sacramento / Delta North Region of the CVFPP.

3.11.3 Impact Analysis

a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?

Less than Significant with Mitigation

Phase 1

In the absence of proper controls, ground disturbance associated with setting up work areas, excavations, and pipeline tie-in activities could result in erosion and sedimentation. In addition, as discussed in Section 3.10, *Hazards and Hazardous Materials*, potentially significant water quality impacts could also result from spills of diesel fuel, gasoline, coolant, hydraulic oil, and lubricants. **MM HAZ-1** would address potential spills through the PWSP, which includes a Hazardous Spill Response and Contingency Plan. **MM HYDRO-1** requires a SWPPP, consistent with the Statewide Construction General Permit (Order No. 2012-0006-DWQ), that would avoid significant impacts associated with runoff and sedimentation.

Water quality impacts could also result from potential asbestos within the external pipeline coating that would be exposed during tie-in activities. If asbestos is present, **MM HAZ-4** would ensure that hazardous materials are removed from the Project site, by certified professionals, while minimizing exposure to the environment. With the implementation of these measures, the impacts would be less than significant.

The HDD boring below the levee and river bottom has been designed to avoid potential breaches in drilling operations that could release drilling fluids and increase turbidity and

degrade surface water quality. While the HDD drilling design includes a drilling operation on either side of the river and approximately 260 feet of conductor casing on the east and west side to provide added stability around soft sediment layers (Bennett Trenchless Engineers 2021), an inadvertent release could still occur. **MM HAZ-2** would monitor and record the drilling fluid volumes, pressures, and flow rates as well as include on-site equipment to contain and clean up a spill. In addition, **MM HAZ-2** includes the procedures to follow if a release occurs, including halting drilling operations, documenting the drilling fluid release, notifying stakeholders, and containing the spill. With the implementation of this measure, the impact would be less than significant.

The replacement pipeline would be hydrostatically tested before and after pullback installation using freshwater from local wells or other sources. Discharge of hydrostatic test water and/or flush water would also be conducted under the authorization of a General Permit and would meet the required water quality limits. Therefore, this impact would be less than significant.

MM HYDRO-1: Stormwater Pollution Prevention Plan. The Applicant or their contractor shall develop and implement a Stormwater Pollution Prevention Plan (SWPPP) consistent with the Statewide NPDES Construction General Permit (Order No. 2012-0006-DWQ). At a minimum, the SWPPP shall include measures for:

- Maintaining adequate soil moisture to prevent excessive fugitive dust emissions, preservation of existing vegetation, and effective soil cover (e.g., geotextiles, straw mulch, hydroseeding) for inactive areas and finished slopes to prevent sediments from being dislodged by wind, rain, or flowing water.
- Installing fiber rolls and sediment basins to capture and remove particles that have already been dislodged.
- Standard best management practices, such as the use of silt fencing and straw wattle, within the disturbance footprints at each terrestrial excavation location.
- Establishing good housekeeping measures such as construction vehicle storage and maintenance, handling procedures for hazardous materials, and waste management BMPs including procedural and structural measures to prevent the release of wastes and materials used at the site.
- The SWPPP shall also detail spill prevention and control measures to identify the proper storage and handling techniques of fuels and lubricants, and the procedures to follow in the event of a spill. The SWPPP

shall be provided to CSLC staff a minimum of 30 days prior to Project implementation.

Phase 2

The impacts from erosion, sedimentation, and hazardous fluid spills during Phase 2 activities would be similar to the Phase 1 impacts, discussed above. After Phase 2 activities are complete, erosion and sedimentation impacts would be further reduced by restoring the shoreline and levee disturbance areas to pre-project contours and condition. All levee disturbance areas would be restored consistent with CVFPB and Local Maintaining Agency requirements and encroachment permits issued for the Project. **MM HAZ-1, MM HAZ-4,** and **MM HYDRO-1**, as discussed in Phase 1, would address potential impacts from spills, erosion and sedimentation, and asbestos. With the implementation of these measures, the impacts would be less than significant.

The Segment 2 decommissioning may require underwater excavation to expose pipeline segments that are buried up to approximately 15 feet. As the river bottom is disturbed, the concentration of both local contaminants and sediment may increase within the water column. These turbidity increases could mobilize pollutant and sediment particles, which then would migrate with river flows and tidal action and are considered a potentially significant impact. **MM BIO-3** requires a Turbidity Monitoring Plan that would monitor the upstream and downstream turbidity levels and, if a threshold exceedance occurs downstream of the Project area, halt in-water work and provide corrective measures to reestablish compliance. Corrective measures may include a turbidity curtain or other sediment control devices, altering the timing and duration of in-water work and excavation activities, or minor modifications in construction methodology that reduce in-water excavation. If turbidity levels exceed the allowable thresholds, monitoring would occur at a higher frequency at the downstream sampling location until the turbidity levels return to the baseline condition, at which point in-water work would resume with corrective measures in place. With the implementation of this measure, the impact would be less than significant.

b) 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 Impact

Phases 1 and 2

Water used for hydrostatic testing, HDD fluids, and pipe flushing would likely be provided from groundwater resources within the Solano Sub-basin. Phase 1 would require approximately 170,000 gallons of water and Phase 2 pigging and flushing would

require approximately 10,000 gallons of water, totaling approximately 0.55 acre-feet. The proposed total Project water demand represents less than 0.0001 percent of the Solano Sub-basins' annual water usage (agricultural and urban). Such water use would not hinder sustainable groundwater management for any groundwater basin. Therefore, the impact would be less than significant.

c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner that would:

i) Result in substantial erosion or siltation on or off site;

Less than Significant with Mitigation

Phases 1 and 2

The Project would not alter the drainage pattern of the Sacramento River or any other drainage. However, stormwater run-off from Project work areas may result in short-term erosion and siltation, which could be exacerbated by vegetation removal from Project site preparation activities. **MM HYDRO-1** would avoid significant impacts associated with runoff and sedimentation through adherence to regulatory permit conditions as well as by preserving vegetation in inactive areas and on finished slopes. **MM BIO-9** requires a final SRP that would further reduce erosion and siltation impacts by stabilizing all soils disturbance areas and restoring vegetated sites that were disturbed by Project activities. The preliminary SRP is included as Appendix H. With the implementation of these measures, the impacts would be less than significant.

Segment 2 and 3 decommissioning from the Sacramento River and levee would not alter the river's course. In addition, all shoreline and levee disturbance areas would be restored to pre-Project contours and conditions that would be consistent with regulatory agency requirements and issued permits. The existing pipeline creates a potential long-term hazard that could occur if the pipeline became exposed in the riverbed. This type of exposure has the potential to create "debris traps" along those exposed areas that could accelerate riverbed or bank erosion. The proposed pipeline removal would instead eliminate the hazard. Therefore, the impacts would be less than significant.

ii) Substantially increase the rate or amount of surface runoff in a manner that would result in flooding on or off site;

iii) Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or

(ii and iii) No Impact

Phases 1 and 2

The Project does not involve any new impervious surfaces or drainage features that could alter the rate or amount of storm runoff. All Project components would be buried (except pipeline markers) and would not contribute any pollutants to storm runoff in the Project area. Therefore, there would be no impact.

iv) Impede or redirect flood flows?

No Impact

Phase 1

Although the Project site is located within a flood hazard area, all Project components would be buried (except pipeline markers) and would not impede or redirect flood flows. Therefore, there would be no impact.

Phase 2

The proposed Project would not significantly impact the levee within the Project area during Phase 2 activities. Segment 3 decommissioning involves levee excavation, and the temporary construction disturbance could increase potential flood risk. However, the proposed Project would completely remove the pipeline and casing from the levee to eliminate potential seepage points along the pipeline alignment that may occur from natural corrosion and pipeline degradation. Full removal of the pipeline and casing is also a requirement of California Code of Regulations Title 23 section 124(a). The Project design further minimizes flood risk by excavating within the levee section in small segments that would occur sequentially across the levee and that would not occur during flood season (November 1 to July 15) without prior approval from the CVFPB. Therefore, there would be no impact.

d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?

No Impact

Phases 1 and 2

Although the Project site is located within a flood hazard area, all Project components would be buried (except pipeline markers) and would not release pollutants during flooding events. The Project site is not located within a Tsunami Inundation Hazard Zone or subject to seiches. Therefore, there would be no impact.

e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

No Impact

Phases 1 and 2

The Project would discharge hydrostatic testing water and/or pipeline flush water to the Sacramento River, which could exceed the water quality objectives of the Basin Plan. However, this water would be tested and either treated or disposed of off-site to ensure it complies with general permit waste discharge requirements (see Section 3.11.2.1 for more information on general permits). Therefore, there would be no impact.

The Project site is located within the Solano Groundwater Sub-basin. Although the Project water demand would likely be supplied by the Solano Sub-basin, some of the water demand may be supplied from the San Joaquin Valley-Eastern San Joaquin Sub-basin, which is the only nearby basin with a groundwater sustainability plan under review. Due to the relatively small and temporary nature of this water demand, the Project would not conflict or obstruct groundwater management in the area. Therefore, there would be no impact.

3.11.4 Mitigation Summary

Implementation of the following mitigation measures would reduce the potential for Project-related impacts to hydrology and water quality to less than significant.

- MM HAZ-1: Project Work and Safety Plan
- MM HAZ-2: Inadvertent Release Contingency Plan
- MM HAZ-4: Asbestos Handling Procedure
- MM BIO-3: Turbidity Monitoring Plan
- MM BIO-9: Site Restoration
- MM HYDRO-1: Stormwater Pollution Prevention Plan

3.12 LAND USE AND PLANNING

LAND USE AND PLANNING – Would the project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation**	**Less Than Significant Impact**	**No Impact**
a) Physically divide an established community?	☐	☐	☐	☒
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒

3.12.1 Environmental Setting

The Project site is located in both Solano and Sacramento Counties. The land use designation within the Project site for Solano County is Agriculture and within Sacramento County it is Agricultural Cropland. In addition, the Project site within Sacramento County is located within the Primary Zone of the Sacramento-San Joaquin Delta as outlined in the Delta Protection Act of 1992.

3.12.2 Regulatory Setting

There are no state or federal laws, regulations, or policies pertaining to land use and planning that are relevant to the Project. Since the Project does not involve a change in land use; local goals, policies, and regulations are not applicable.

3.12.3 Impact Analysis

a) Physically divide an established community?

b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

(a to b) No Impact

Phases 1 and 2

The Project site is located in an agricultural area with the nearest community (Rio Vista), immediately north of the West Work Area. The Project does not involve any new structures or roadways and would not divide any community. Therefore, there would be no impact.

The Applicant would require new permanent pipeline easements for the HDD pipeline because the new alignment is outside the existing pipeline's easement. However, the above-ground uses would not change, there would be no change in land use, and no

conflict with land use policies or existing agricultural activities. Therefore, there would be no impact.

3.12.4 Mitigation Summary

The Project would have no impact to land use and planning; therefore, no mitigation is required.

3.13 MINERAL RESOURCES

MINERAL RESOURCES – Would the project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation**	**Less Than Significant Impact**	**No Impact**
a) 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?	☐	☐	☐	☒
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

3.13.1 Environmental Setting

3.13.1.1 Mineral Resources

The Project site is located in both Solano and Sacramento Counties. Mineral resources mined or produced within Solano County include mercury, sand and gravel, clay, stone products, calcium, and sulfur (Solano County 2008c). The nearest mineral resource zone is located approximately 10 miles west of the Project site, north of the Suisun Marsh. This area is categorized as MRZ-3, indicating the area contains mineral deposits but the deposit's significance cannot be evaluated from available data (Solano County General Plan Figure RS-4 2008a). Solano County is not included in the California Department of Conservation Mineral Land Classification Study Area (CDC Mineral 2021).

Mineral resources in Sacramento County include natural gas, petroleum, sand, gravel, clay, gold, silver, peat, topsoil, and lignite. The principal mineral resources in production are aggregate (sand and gravel) and natural gas. The closest significant mineral deposit area is located within the city of Rancho Cordova, approximately 35 miles northeast of the Project site (Segments 3 and 4). The Levee Work Area, East Work Area, and Pipe Staging Area have all been mapped as MRZ-1, indicating that no significant mineral deposits are present (CDC Division of Mines and Geology 1999).

3.13.1.2 Mines

According to the California Department of Conservation, Division of Mine Reclamation (CDC Mines 2021), there are two mines in Solano County that are near the Project area. The closest active mine is located 1 mile to the southwest of the West Work Area (Mine ID# 91-48-0009 – ASTA Sand Pit). The other mine is located 2.5 miles to the northwest of the West Work Area (Mine ID# 91-48-0010 – Rio Vista Sand Pit). Both mines are an active quarry for fill dirt.

3.13.1.3 Oil or Gas Wells

According to the California Department of Conservation, Geologic Energy Management Division's on-line Well Finder, the Project site is located within the Rio Vista Gas Field which is one of California's largest producing areas (County of Sacramento 2017a). There are two idle wells near the Project site, one located 400 feet north and one located 1,500 feet south of the Pipe Staging Area.

3.13.2 Regulatory Setting

There are no federal laws, regulations, or policies pertaining to mineral resources that are relevant to the Project. State laws and regulations pertaining to mineral resources and relevant to the Project site are identified in Appendix A. There are no identified local goals, objectives, or policies pertaining to mineral resources.

3.13.3 Impact Analysis

a) 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?

b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?

(a to b) No Impact

Phases 1 and 2

There are no mineral resource recovery sites or known mineral resources in or near the Project area, and Project activities would not hinder access to nearby mineral resource extractions. The HDD pipeline would not result in the loss of any known mineral resource in the area, and grouting both the HDD casing and the abandoned pipeline segments would consume a negligible quantity of aggregate that would not result in the loss of any known mineral resources or recovery sites in the area. Therefore, there would be no impact.

3.13.4 Mitigation Summary

The Project would have no impact to mineral resources; therefore, no mitigation is required.

3.14 NOISE

NOISE – Would the project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation**	**Less Than Significant Impact**	**No Impact**
a) 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?	☐	☐	☒	☐
b) Generate excessive ground-borne vibration or ground-borne noise levels?	☐	☐	☒	☐
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

3.14.1 Environmental Setting

The Project site is located within Solano and Sacramento Counties in vacant or agricultural settings. Existing ambient noise levels in the Project vicinity are largely dictated by natural gas field extraction equipment; farming vehicles associated with maintenance as well as planting, cultivation, harvesting, packing and crop transportation; and motor vehicle traffic on gas field, farm, and local roads. Periodic recreational marine traffic noise on the Sacramento River is also present.

Noise impacts on biological resources are analyzed in Section 3.4, *Biological Resources*. The nearest noise-sensitive, residential (human) receptors are:

- City of Rio Vista: residence on Beach Drive approximately 200 feet northwest of the West Work Area
- Solano County: rural residence located approximately 550 feet southwest of the West Work Area
- Sacramento County: rural residence located approximately 350 feet west of the East Work Area and approximately 250 feet east of the Levee Work Area. Another rural residence is located approximately 100 feet southeast of the proposed excavation area for removal of the pipe casing under SR 160 (see Figure 2-15)

3.14.1.1 Basis of Environmental Acoustics and Vibration

Sound, Noise, and Acoustics

Sound is the mechanical energy from a vibrating object that is transmitted by pressure waves through a liquid or gaseous medium (e.g., air). Noise is defined as unwanted sound (i.e., loud, unexpected, or annoying). Acoustics is the physics of sound. A sound source generates pressure waves, the amplitude of which determines the source's perceived loudness. Sound pressure level is described in terms of decibel (dB), with near-total silence for human hearing corresponding to 0 dB. When two sources at the same location each produce the same pressure waves, the resulting sound level at a given distance from that location is approximately 3 dB higher than the sound level produced by only one source. For example, if one automobile produces a 70 dB sound pressure level when it passes an observer, two cars passing simultaneously do not produce 140 dB; rather, they combine to produce 73 dB.

The perception of loudness can be approximated by filtering frequencies using the standardized A-weighting network. The "A-weighted" noise level de-emphasizes low and very high frequencies of sound in a manner similar to the human ear's de-emphasis of these frequencies (see Table 3.14-1) (OSHA 2013; AIHA 2003). There is a strong correlation between A-weighted sound levels (expressed as dBA) and community response to noise. All noise levels reported in this section are in terms of A-weighting.

Table 3.14-1. Common Sound Levels/Sources and Subjective Human Responses

Sound Level (dBA)	Typical Outdoor Noise Source	Typical Indoor Noise Sources	Typical Human Response/Effects
140	Carrier Jet takeoff (50 feet)	--	--Threshold for Pain--
130	Siren (100 feet) Live Rock Band	--	---Hearing Damage---
120	Jet takeoff (200 feet) Auto horn (3 feet)	--	--
110	Chain Saw Snow Mobile	--	---Deafening---
100	Lawn Mower (3 feet) Motorcycle (50 feet)	--	--
90	Heavy Duty Truck (50 feet)	Food Blender (3 feet)	---Very Loud---
80	Busy Urban Street, Daytime	Garbage Disposal (3 feet)	
70	Automobile (50 feet)	Vacuum Cleaner (9 feet)	---Loud---
60	Small plane at ¾ mi	Conversation (3 feet)	
50	Quiet Residential Daytime	Dishwasher Rinse (10 feet)	---Moderate---
40	Quiet Residential Nighttime	Quiet Home Indoors	---Quiet---
30	Slight Rustling of Leaves	Soft Whisper (15 feet)	---Very Quiet---

Sound Level (dBA)	Typical Outdoor Noise Source	Typical Indoor Noise Sources	Typical Human Response/Effects
20	--	Broadcasting Studio	
10	--	Breathing	--Barely Audible--
0	--	--	--Threshold of Hearing--

Source: AIHA 2003, and OSHA 2013

In typical noisy environments, noise-level changes of 1 to 2 dB are generally not perceptible by the healthy human ear. However, people can begin to detect 3 dB increases in noise levels, with a 5 dB increase generally perceived as distinctly noticeable, and a 10 dB increase generally perceived as doubling the loudness. Four sound level descriptors are commonly used in environmental noise analysis:

- Equivalent sound level (L_{eq}): The average sound level that contains the same acoustical energy as the time-varying sound that actually occurs during that period
- Maximum sound level (L_{max}): The highest instantaneous sound level measured during a specified period
- Day-night average level (L_{dn}): The energy average of A-weighted sound levels occurring over a 24-hour period, with a 10 dB penalty applied to A-weighted sound levels occurring during nighttime hours (10:00 p.m. to 7:00 a.m.)
- Community noise equivalent level (CNEL): The energy-average of the A-weighted sound levels occurring over a 24-hour period, with a 10 dB penalty applied to A-weighted sound levels occurring during the nighttime hours (10:00 p.m. to 7:00 a.m.) plus a 5 dB penalty applied to the A-weighted sound levels occurring during evening hours (7:00 p.m. to 10:00 p.m.), usually within one dB of the L_{dn}

Sound from a localized source (i.e., point source) propagates uniformly outward in a spherical pattern, and the sound level decreases at a rate of 6 dB each time the distance doubles from a point or stationary source. Roadways, highways, and moving trains (to some extent) consist of several localized noise sources on a defined path; these are treated as “line” sources, which approximate the effect of several point sources. Sound levels decrease at a rate of 3 dB for each time the distance doubles from a line source. Therefore, noise from a line source decreases less with distance than noise from a point source. To limit population exposure to physically or psychologically significant noise levels, the state and various local cities and counties in the state have established guidelines and ordinances to control noise as discussed in Appendices A and B.

Ground-borne Vibration

In contrast to airborne noise, ground-borne vibration is not a common environmental problem. Vibration from sources such as buses and trucks are not usually perceptible, even in locations close to major roads. Some common sources of ground-borne vibration are trains, buses on rough roads, and construction activities such as blasting, pile-driving, and operating heavy earth-moving equipment.

Ground-borne vibration can cause detectable building floor movement, window rattling, items shaking on shelves or walls, and rumbling sounds. In extreme cases, the vibration can cause damage to buildings. Building damage is not a factor for most projects, with the occasional exception of blasting and pile-driving during construction. Human annoyance from vibration can often occur and can happen when the vibration exceeds the threshold of perception by only a small margin. A vibration level that causes annoyance would be well below the damage threshold for normal buildings.

Vibration is an oscillatory motion which can be described in terms of displacement, velocity, or acceleration. Displacement is the easiest descriptor to understand. For a vibrating floor, the displacement is simply the distance that a point on the floor moves away from its static position. The velocity represents the instantaneous speed of the floor movement, and acceleration is the rate of change of the speed. The peak particle velocity (PPV) is defined as the maximum instantaneous positive or negative peak of the vibration signal. PPV is often used in monitoring of blasting vibration since it is related to the stresses that buildings undergo.

3.14.2 Regulatory Setting

Federal and state laws and regulations pertaining to noise and relevant to the Project are identified in Appendix A. Local noise policies and standards are identified in Appendix B.

3.14.3 Impact Analysis

a) 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?

Less than Significant Impact

Phases 1 and 2

The Federal Highway Administration's Roadway Construction Noise Model was used to estimate peak hour noise (L_{eq}) from HDD and decommissioning operations at the nearest residences in Solano County and Sacramento County. Phase 1 activities would

have a large amount of equipment in use, a relatively long work period (60 workdays), and proximity to residences. The modeled peak hour noise level during Phase 1, which would occur primarily from HDD equipment use, is 60.0 dBA L_{eq} at the nearest Solano County residence. The nearest Sacramento County residence would experience a peak hour noise level during Phase 1 of 68.4 dBA L_{eq} from HDD equipment use, and 70.4 dBA L_{eq} during Phase 2 from the pipe casing removal. Appendix F provides a copy of the model output data supporting this analysis.

The modeled noise levels for the nearest Sacramento County residence exceed the County's non-transportation related noise standard of 55 dBA. However, temporary construction projects are exempt from this noise standard under Sacramento County Code Title 6 Health and Sanitation Section 6.68.090(e) (see Appendix B). Solano County has no applicable noise standards for construction-related noise. Due to the temporary nature of the impact, lack of applicable Solano County noise standards, and conformance with Sacramento County standards, the impacts would be less than significant.

Phase 1 and 2 activities would entail night work, however, as indicated above, Solano County has no applicable noise standards for construction-related noise during the day or at night. Sacramento County has a construction exemption but not for construction noise generated between 7:00 p.m. or 8:00 p.m. and 6:00 a.m. or 7:00 a.m., depending on the day of the week (see Appendix B for details).

HDD pipeline pullback would occur during Phase 1 (see Section 2.1.2.6). The pullback operation must be completed as a continuous, uninterrupted process to prevent the borehole from collapsing. As such, this process would entail night work and is estimated to take approximately two days with peak hour noise levels of 68.4 dBA L_{eq} at the nearest Sacramento County residence. During Phase 2 activities, the pipe casing under SR 160 would be removed and could also entail night work to minimize the SR 160 lane closure period. This activity would take approximately 20 days and would generate peak hour noise levels of 70.4 dBA L_{eq} at the nearest Sacramento County residence. Both HDD pipeline pullback and casing removal would be otherwise excluded from Sacramento County's construction project exemption. However, the nighttime work would be an "unavoidable condition" under Section 6.68.090(e) where "the nature of the project necessitates that work in process be continued until a specific phase is completed." In addition, the Applicant is providing rent compensation for all the property owners near the construction site in the East Work Area, at specific ratios based on proximity to the construction site, for all construction-related inconveniences to the tenants living on-site. Finally, adjacent residents would be given advanced written notification of proposed construction activities, scheduling, and hours of construction. Signage would also be posted at the Project site to notify the general public. Therefore, the impact would be less than significant.

No new long-term noise sources would be created. Therefore, there would be no permanent noise impacts.

b) Generate excessive ground-borne vibration or ground-borne noise levels?

Less than Significant Impact

Phases 1 and 2

The 2013 California Department of Transportation (Caltrans) Transportation and Construction Vibration Guidance Manual (2013) (CTCVGM), Table 19, indicates older residential structures (typical of the residences near the Project area) could be damaged by continuous or frequent intermittent vibration (typical of construction equipment) that exceeds a PPV of 0.3 in/sec. Table 20 of the CTCVGM indicates that humans can distinctly perceive and become annoyed by a continuous or frequent intermittent vibration (typical of construction equipment) exceeding a PPV of 0.04 in/sec. Project-related vibration was estimated for Phase 1 using methodology provided by the CTCVGM, and was based on how proposed Project equipment would affect the nearest structure and inhabitants 200 feet away (Caltrans 2013). This analysis indicates the Project would generate a PPV of 0.00596 at the nearest structure, which is much less than the PPV needed to cause damage to nearby residences or result in human annoyance. Appendix F provides a copy of the model input and output data supporting this analysis. Therefore, the impact would be less than significant.

Project-related vibration was also estimated for Phase 2, based on how proposed Project equipment would affect the nearest structure and inhabitants 100 feet away (Caltrans 2013). This analysis indicates the Project would generate a PPV of 0.01468 at the nearest structure, which is less than the PPV needed to cause damage to nearby residences or result in human annoyance. Therefore, the impact would be less than significant.

c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

No Impact

Phases 1 and 2

The nearest private airport (Walnut Grove Airport) is located approximately 9 miles to the northeast of the East Work Area. The nearest public airport (Rio Vista Municipal Airport) is located approximately 3 miles to the north of the West Work Area and PG&E

Pipeline Station. The Project site is not located within the vicinity of a public airport or private airstrip land use plan. Also, the Project would not involve any aircraft uses, affect any airport or airstrip operations, or expose people on- or off-site to excessive aircraft noise levels. Therefore, there would be no impact.

3.14.4 Mitigation Summary

The Project would have no significant impacts from noise; therefore, no mitigation is required.

3.15 POPULATION AND HOUSING

POPULATION AND HOUSING – Would the project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation**	**Less Than Significant Impact**	**No Impact**
a) 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)?	☐	☐	☐	☒
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

3.15.1 Environmental Setting

According to the U.S. Census, Solano County had a population of 441,829 and Sacramento County had a population of 1,524,553 in 2019. (U.S. Census Bureau 2021a, 2021b). In addition, the city of Rio Vista had a population of 10,005 in 2020 (U.S. Census Bureau 2022).

3.15.2 Regulatory Setting

No federal, state, or local laws relevant to population and housing are applicable to the Project. Since the Project is a pipeline replacement project, there are no relevant local goals, objectives, or policies applicable to Project activities.

3.15.3 Impact Analysis

a) 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)?

b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

(a and b) No Impact

Phases 1 and 2

The Project consists of decommissioning a natural gas pipeline and installing a new natural gas pipeline in an agricultural area that would not extend natural gas service into new areas. Persons working on the Project may slightly increase the demand for temporary (rental) housing or hotel amenities; however, the small number of persons employed during the Project would not create a significant demand for housing or

displace substantial numbers of available housing. The Project would not increase production of or generate the need for additional housing, generate new permanent jobs in the region, affect population growth, or displace existing housing or owners/tenants. Therefore, there would be no impact.

3.15.4 Mitigation Summary

The Project would have no impact to population and housing; therefore, no mitigation is required.

3.16 PUBLIC SERVICES

PUBLIC SERVICES – Would the project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation**	**Less Than Significant Impact**	**No Impact**
a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
Fire protection?	☐	☐	☐	☒
Police protection?	☐	☐	☐	☒
Schools?	☐	☐	☐	☒
Parks?	☐	☐	☐	☒
Other public facilities?	☐	☐	☐	☒

3.16.1 Environmental Setting

The Project site is located in unincorporated Solano County and Sacramento County, within an agricultural area with minimal community services. The nearest incorporated city is Rio Vista, located adjacent to the northern Project area in Solano County.

Fire Protection. The Project site is not inhabited and has a low fire risk due to generally high soil moisture content associated with irrigated cropland and the adjacent Sacramento River. In unincorporated Solano County, the Project site is within Montezuma Fire Protection District's (MFPD) jurisdiction. The MFPD has two stations and covers 200 square miles of mostly farmland and pastureland (Montezuma Fire District 2022). Fire service within the Project area in Sacramento County is served by the Delta Fire District (County of Sacramento 2018, 2010). Station 55 – Rio Vista Fire Department is the closest station to the Project site, located approximately 0.75 miles northwest. Station 55 is staffed daily by three personnel (a captain, engineer, and firefighter paramedic) and maintains two type 1 engines, one type 2 engine, one brush unit, one light rescue unit, one water tender, and a 95-foot aerial platform (The City of Rio Vista 2022).

Police Protection. The majority of law enforcement services in Solano County are administered by the Solano County Office of the Sheriff (Solano County 2008d). The Sacramento County Sheriff's Department provides specialized law enforcement services to Sacramento County and local police protection to the unincorporated areas

of the County including the Project site (County of Sacramento 2018). The California Highway Patrol (CHP) also provides police protection for the Project site.

Schools. The nearest school to the Project area is Riverview Middle School located at 525 South 2nd Street in Rio Vista, approximately 750 feet north of the West Work Area.

Parks. The nearest parks to the Project site are Bruning Park located approximately 0.5 mile north of the West Work Area in the city of Rio Vista, Sandy Beach County Park located along the Sacramento River approximately 0.4 mile to the south of the West Work Area, and the Duck Island RV Park and Fishing Resort located approximately 1,000 feet south of the East Work Area. Brannan Island State Recreational Area is also located 1.6 miles south of the East Work Area. Impacts to parks are discussed in Section 3.17, *Recreation*.

3.16.2 Regulatory Setting

Federal and state laws and regulations pertaining to public service and relevant to the Project are identified in Appendix A. Local policies pertaining to public services and applicable to the Project are identified in Appendix B.

3.16.3 Impact Analysis

a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

- **Fire protection?**
- **Police protection?**
- **Schools?**
- **Parks?**
- **Other public facilities?**

No Impact

<u>Phases 1 and 2</u>

The Project involves short-term pipeline installation and decommissioning and does not involve the construction of any residences, buildings, or other land uses requiring public services. The Project would not generate a need for any new government facilities or public services during or after proposed activities are completed. Once the Project is

complete, the Project site along the Sacramento River would be returned to pre-Project conditions. Therefore, there would be no impact.

3.16.4 Mitigation Summary

The Project would have no impact to public services; therefore, no mitigation is required.

3.17 RECREATION

RECREATION	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) 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?	☐	☐	☐	☒
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒
Would the project interfere with existing use of in-river recreational boating opportunities?[3]	☐	☒	☐	☐

3.17.1 Environmental Setting

The Delta Marina Yacht Harbor is located immediately north of the West Work Area, and includes a public boat launch, 250 boat berths, 800 feet of guest docks, and 13 Recreational Vehicle (RV) spaces. As noted in Section 3.16, *Public Services*, the nearest parks to the Project site are Bruning Park in the city of Rio Vista, Sandy Beach County Park in unincorporated Solano County, and the Duck Island RV Park and Fishing Resort in Sacramento County. Bruning Park is a neighborhood park that features a swimming pool, basketball court, large grassy recreation area, children's playground, barbecues, drinking fountains, picnic tables, benches, and restrooms. Sandy Beach County Park provides picnicking, camping, RV camping, boating, beach, water sports, and fishing opportunities. Duck Island RV Park and Fishing resort is an adult-only facility that offers RV hook up sites, lighted fishing docks, large grassy areas with picnic tables, and a clubhouse with a kitchen and meeting room. Brannan Island State Recreational Area is also located 1.6 miles south along the Sacramento River in Sacramento County and provides boat launching, camping, swimming, nature interpretation, and wind surfing.

Navigable waterways in the Delta-Suisun area are publicly accessible and currently constitute most of the recreational opportunities within the Delta. Boating use totals more than 6.4 million visitor days annually, composed of 2.13 million annual boat trips in the larger Delta-Suisun area (County of Sacramento 2017b). Most of the recreational facilities within the Delta are provided through private marinas. Private facilities also provide launching facilities, RV and tent camping, picnicking, restaurants, and bait and

[3] The CSLC has chosen to analyze this impact in addition to the impact analyses set forth in CEQA Guidelines Appendix G. Though use of the Appendix G checklist meets the requirements for an initial study, "public agencies are free to devise their own format." (State CEQA Guidelines § 15063, subd. (f).)

tackle shops. Waterskiing and riding personal watercraft are popular water-oriented activities (County of Sacramento 2017b).

Brannan Island State Recreational Area is located 1.6 miles south of the East Work Area along the Sacramento River in Sacramento County. Brannan Island State Recreation Area provides boat launching, camping, swimming, nature interpretation, and wind surfing. Duck Island RV Park and Fishing Resort is also located approximately 1,000 feet south of the East Work Area along the shoreline of the Sacramento River. Hunting also occurs mainly on private lands, although some hunting is allowed on state- and federally-owned lands and waterways.

3.17.2 Regulatory Setting

There are no federal or state laws, regulations, or policies pertaining to recreation that are relevant to the Project. Local policies with respect to recreation are identified in Appendix B.

3.17.3 Impact Analysis

a) 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?

b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

(a to b) No Impact

Phases 1 and 2

The Project would not result in population growth in the area or otherwise result in the increased use of existing recreational facilities. The Project does not include any recreational facilities and would not require the construction or expansion of recreational facilities or restrict use of existing recreational facilities. Therefore, there would be no impact.

Would the project interfere with existing use of in-river recreational boating opportunities?

Less than Significant with Mitigation

Phases 1 and 2

Phase 1 activities would be located on upland areas and would not affect nearby terrestrial or in-river recreational opportunities; therefore, no impact would result during Phase 1.

Phase 2 activities would occur from September to October 2022 for in-river work and then finish with onshore decommissioning from October through December 2022. The derrick barge, materials barge, and vessels required for pipeline removal within the Sacramento River would temporarily restrict recreational activities within the Project area and raise safety concerns for recreational boaters. Access would be limited around the barge with safety controls around the barge spread, specifically while divers are in the water. However, such restricted access would be short-term, would not preclude recreational boats from moving upstream and downstream during Project activities, and would not limit access to other surrounding recreational areas. In addition, **MM REC-1** and **MM REC-2** would ensure that in-water Project activities are coordinated with local marinas and the U.S. Coast Guard to provide adequate notice to vessels about the planned construction timeframe and need for caution around the work area within a specific buffer. With the implementation of these measures, the impact would be less than significant.

MM REC-1: Riverine Safety Measures. Prior to in-water activity, the Applicant or its designated contractor shall post information at all local marinas and launch facilities concerning Project work locations, times, and other details of activities that may pose hazards to recreational boaters. At all times while Project activities are taking place in the Sacramento River, warning signs and buoys shall be installed upstream and downstream of the work site to provide notice to the public that Project activities are taking place and to exercise caution.

MM REC-2: Advanced Notice to Mariners. All in-water activity shall be described in a Local Notice to Mariners to be submitted to the U.S. Coast Guard at least 15 days prior to Phase 2 activities. The Notice shall include:

- Type of operation (i.e., dredging, diving operations, construction).
- Location of operation, including latitude and longitude and geographical position, if applicable.

- Duration of operation, including start and completion dates (if these dates change, the U.S. Coast Guard needs to be notified).
- Vessels involved in the operation.
- VHF-FM radio frequencies monitored by vessels on the scene.
- Point of contact and 24-hour phone number.
- Chart Number for the area of operation.

3.17.4 Mitigation Summary

Implementation of the following mitigation measures would reduce the potential for Project-related impacts to recreation to less than significant.

- MM REC-1: Riverine Safety Measures
- MM REC-2: Advanced Notice to Mariners

3.18 TRANSPORTATION

TRANSPORTATION – Would the project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation**	**Less Than Significant Impact**	**No Impact**
a) Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?	☐	☐	☒	☐
b) Conflict or be inconsistent with State CEQA Guidelines section 15064.3, subdivision (b)?	☐	☐	☒	☐
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☒	☐	☐
d) Result in inadequate emergency access?	☐	☒	☐	☐

3.18.1 Environmental Setting

3.18.1.1 Site Access and Regional Context

Access to the Project site within Solano County is primarily from SR 12, a rural highway which serves as the primary arterial roadway within the city of Rio Vista. The West Work Area is located just south of the Delta Marina Yacht Harbor and immediately east of Beach Drive. It would be accessed from Beach Drive via an existing gate and dirt road located in the northern corner of the area. There are no designated bikeways in Solano County that are located within or near the Project area (STA 2012). Access to the Project site within Sacramento County is from SR 12 and SR 160. Both roadways are rural highways connecting Delta communities. The East Work Area and Pipe Staging Area are in agricultural fields, east of SR 160 and will be accessed using existing private driveways and dirt roads.

The Association of Bay Area Governments and Metropolitan Transportation Commission (ABAG-MTC) adopted the Plan Bay Area 2050 in October 2021 (ABAG-MTC 2021). The 30-year plan provides strategies to improve housing, the economy, transportation, and the environment in the nine-county Bay Area (including Solano County) by 2050. Plan Bay Area 2050 details the progress toward the region's long-range transportation and land use goals. Plan Bay Area 2050 describes specific housing improvement strategies, details ways to shift job locations, and strategizes how to maintain and optimize the existing transportation system.

As noted within the Sacramento County General Plan, Delta Protection Element (2017b), transportation systems traversing around and through the Delta include several railroads and freeways, state highways, and county roads. The three major state highways in the Delta (SR 4, 12, and 160) are typically two lanes, portions of which are

built on top of levees. SR 160 extends along the Sacramento River eastern levee within the East Work Area. Originally meant for lower traffic volumes at moderate speeds, the state highways are now heavily used for regional trucking, recreational access, and commuting. No regional rail traffic passes through the Project area. The Amtrak San Joaquin route from Bakersfield to Sacramento/Oakland as well as the Sierra Northern Railway use tracks in the region for inter-regional freight and passenger services.

The Port of Sacramento lies north of the Project area, upstream of the Project site and on the Sacramento River. Oceangoing vessels associated with this port frequent the Project area as they transit to and from the Pacific Ocean. The port is likely to expand in the future, which would increase the ship and barge traffic through the Project area (County of Sacramento 2017b). The Sacramento Deep Water Ship channel that traverses the Delta was constructed in 1933.

3.18.1.2 Congestion Management

The Sacramento Area Council of Governments (SACOG) adopted their 2020 Metropolitan Transportation Plan (MTP)/Sustainable Communities Strategy in November 2019 that addresses transportation and land use issues in Sacramento, El Dorado, Placer, Sutter, Yolo and Yuba Counties. As part of the MTP, these counties participate in the CMP that was last updated in 2020 (SACOG 2020b). This CMP provides a region-wide transportation strategy that also provides reliable and timely information on the current performance of the Sacramento area transportation system to inform SACOG's regional transportation process. Likewise, the CMP provides quantified system performance measures and other valuable information on plausible strategies to mitigate congestion that are directly applicable when developing a future regional transportation project list. Sacramento County does not establish or regulate any LOS standard as part of or separate from the CMP. Project-related vehicles would not use any of the roadway segments affected by CMP measures or strategies.

The STA manages the CMP for Solano County (STA 2021). Last updated in 2021, this CMP monitors congestion using the LOS E standard and is consistent with regional transportation goals and objectives, federal and state air quality plans, and travel demand modeling database and methodologies. LOS is a ranking used for traffic flow. LOS ranges from A to F, with A indicating very good free-flowing traffic operations and F indicating stop-and-go conditions. While the CMP will transition to a vehicle miles traveled (VMT) methodology to evaluate congestion within the next few update cycles, at present, the segment of SR 12 that lies north of the West Work Area and east of the Rio Vista Bridge is designated as LOS D (STA 2021).

3.18.1.3 Local Roadway Conditions

Based on annual traffic counts conducted by Caltrans, the 2019 peak hour traffic volume on SR 12 west of SR 160 was 2,300, with an average annual daily volume of 19,200. East of SR 160, the 2019 peak hour traffic volume on SR 12 was 1,900, with an average annual daily volume of 17,200. The 2019 peak hour traffic volume on SR 160 south of SR 12 was 3,000, with an average annual daily volume of 20,000. North of SR 12, the 2019 peak hour traffic volume on SR 160 was 1,600, with an average annual daily volume of 7,600.

The average annual daily truck volume on SR 160 at the intersection of SR 12, just north of the Segment 3 landfall area was noted as 1,400 trucks, or 9 percent, of the 15,000 daily traffic volume (County of Sacramento 2010).

3.18.2 Regulatory Setting

Federal and state laws and regulations pertaining to transportation and relevant to the Project are identified in Appendix A. Local goals, policies, or regulations applicable to this area with respect to transportation are identified in Appendix B.

3.18.3 Impact Analysis

a) Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?

Less than Significant Impact

<u>Phases 1 and 2</u>

The Project does not involve any new or modified land uses that would generate long-term vehicle trips or other features that may affect the local or regional circulation system. Phase 1 and 2 vehicle trips would not use any of the Sacramento County roadway segments affected by CMP measures or strategies. Solano County established LOS E as the standard to help regulate traffic congestion on public roads and as discussed in Section 3.3, *Air Quality*, Phase 1 and 2 vehicle trips would not worsen an existing LOS designation or substantially contribute to an unacceptable LOS. Therefore, the impact would be less than significant.

b) Conflict or be inconsistent with State CEQA Guidelines section 15064.3, subdivision (b)?

Less than Significant Impact

Phases 1 and 2

CEQA Guidelines section 15064.3(b) indicates that VMT is the most appropriate measure for transportation impacts. In December 2018, the Office of Planning and Research (OPR) provided an updated Technical Advisory to help evaluate transportation impacts under CEQA. In particular, the Technical Advisory provides that a project generating or attracting fewer than 110 one-way trips per day generally may be assumed to cause a less than significant transportation impact (OPR 2020). During Project activities, no more than 15 personnel would be traveling daily to the Project area from nearby residences, hotels, or rental properties at any given time. In addition, temporary increased traffic would result from the Project equipment's initial transport to the staging areas as well as from trucks leaving the Project site with materials for recycling or disposal. The peak trips that would occur in any one day is 54, below the number identified in the Technical Advisory's guidance and the Sacramento County Transportation Analysis Guidelines. Therefore, the impact would be less than significant.

c) 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

Phases 1 and 2

Phase 1 activities would not involve any roadway modifications or incompatible uses that would increase traffic hazards. Therefore, there would be no impact.

Phase 2, Segment 3 decommissioning activities would include temporary staging and work areas within SR 160 for approximately 3 weeks but do not include permanent features that would increase roadway hazards due to design or incompatible uses. However, the Segment 2 pipeline decommissioning would include a derrick barge, materials barge, and vessels required for pipeline removal in the Sacramento River which would temporarily restrict marine traffic within the Project area, create potential traffic hazards, and thus raise vessel safety concerns. **MM REC-1** and **MM REC-2** would ensure that in-water Project activities are coordinated with local marinas and the U.S. Coast Guard to provide adequate notice to vessels about the planned construction timeframe and need for caution around the work area within a specific buffer. With the implementation of these measures, the impact would be less than significant.

d) Result in inadequate emergency access?

Less than Significant with Mitigation

Phases 1 and 2

Both SR 12 and SR 160 provide emergency access for local communities. Phase 1 activities would not result in any road closures or cause traffic congestion that could affect emergency access. Therefore, there would be no impact.

Phase 2 would remove the casing beneath SR 160 and would require open trench excavation with hydraulically shored vertical walls. However, the excavation and removal would occur in stages and one lane of traffic would always remain open during construction. **MM T-1** would further ensure that roadway ingress/egress are maintained in both directions to facilitate emergency access by requiring sign placement indicating the temporary lane closure and rerouting as well as flaggers present in both directions to safely direct vehicles and help to reduce traffic and circulation impacts. With the implementation of this measure, the impact would be less than significant.

MM T-1: Traffic Control Plan. Prior to commencement of Project activities, a Traffic Control Plan shall be submitted to the CSLC and Caltrans for review and approval. It shall include measures such as appropriate signage, traffic cones, and flaggers to reduce potential hazards to motorists and workers during the Project.

3.18.4 Mitigation Summary

Implementation of the following mitigation measure would reduce the potential for Project-related impacts to transportation to less than significant.

- MM T-1: Traffic Control Plan
- MM REC-1: Riverine Safety Measures
- MM REC-2: Advanced Notice to Mariners

3.19 UTILITIES AND SERVICE SYSTEMS

UTILITIES AND SERVICE SYSTEMS – Would the project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation**	**Less Than Significant Impact**	**No Impact**
a) 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 construction or relocation of which could cause significant environmental effects?	☐	☐	☐	☒
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?	☐	☐	☒	☐
c) Result in a determination by the wastewater treatment provider which serves or may serve the Project that it has adequate capacity to serve the Project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	☒	☐
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☒	☐	☐

3.19.1 Environmental Setting

The Project does not include permanent components that would require or alter existing utilities or service systems. Non-hazardous solid waste in the Project area is currently disposed of at Suisun City's Potrero Hills Landfill, either directly or through the Devlin Road Transfer Station in American Canyon. This landfill is permitted for disposal of industrial and construction/demolition waste and has 13,872,000 cubic yards of remaining capacity as of April 2022. The closest hazardous waste disposal site to the Project site is the World Oil Environmental Services site in Dixon, California, which is permitted to receive oily water (such as contaminated pipeline flush water). Hazardous materials are typically taken to the Clean Harbors Buttonwillow facility. Clean Harbors is permitted to accept approximately 10,500 tons/day and is estimated to reach capacity in 2040.

3.19.2 Regulatory Setting

Federal and state laws and regulations pertaining to utilities and service systems and relevant to the Project are identified in Appendix A. Local goals, policies, or regulations

applicable to this area with respect to utilities and service systems are identified in Appendix B.

3.19.3 Impact Analysis

a) 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 construction or relocation of which could cause significant environmental effects?

No Impact

Phases 1 and 2

The Project does not include activities or permanent components that require new or expanded water, wastewater treatment, stormwater drainage, electrical power, or telecommunications facilities. Project activities would not require the relocation or construction of any other natural gas facilities. According to preliminary investigations of the terrestrial work areas, no interaction with existing utilities would occur that would require relocation. Project activities would use limited water for work crew needs and dust control, as necessary, that would not require new or expanded water supplies or facilities. Therefore, there would be no impact.

b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?

Less than Significant Impact

Phases 1 and 2

The Project would require water for dust control and pipeline flushing. As discussed in Section 3.11, *Hydrology and Water Quality*, this water demand would be temporary and supplied by a local residential or agricultural well. Alternatively, water would be trucked to the site from an off-site source (likely within 20 miles of the Project site). No long-term water demand would be created, the Project would not generate reasonably foreseeable future development, and no new or expanded water infrastructure or entitlements would be needed. Therefore, the impact would be less than significant.

c) Result in a determination by the wastewater treatment provider which serves or may serve the Project that it has adequate capacity to serve the Project's projected demand in addition to the provider's existing commitments?

No Impact

Phases 1 and 2

As discussed in Section 3.11, *Hydrology and Water Quality*, wastewater generated by pipeline flushing would be treated as needed and disposed on-site. Alternatively, wastewater would be disposed off-site at a permitted facility. Portable restrooms would be provided on-site for workers and resulting domestic wastewater/sewage would be disposed of at a municipal wastewater treatment plant located within 20 miles of the Project site. The Project would not generate wastewater following completion of Phase 1 and 2 activities and would not affect the capacity of any wastewater treatment providers. Therefore, there would be no impact.

d) Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?

Less than Significant Impact

Phases 1 and 2

The Project would generate solid waste including removed pipeline sections, miscellaneous debris, and materials packaging. The existing pipeline segments removed from the Project site would be tested prior to disposal. All material that is confirmed as non-hazardous waste would be transported to Suisun City's Potrero Hills Landfill in Suisun City, and any hazardous waste would be transported to the Clean Harbors facility in Buttonwillow. Both facilities have adequate remaining capacity to accept the waste from Project activities. When feasible, recovered materials would be recycled. Therefore, the impact would be less than significant.

e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

Less than Significant with Mitigation

Phases 1 and 2

Solid waste would be disposed of in accordance with local, state, and federal laws and regulations as required by the Project plans and specifications. Removed pipe and any associated debris would be recycled to the extent feasible. Non-hazardous waste would

be disposed of at a nearby landfill. For detail regarding the potentially hazardous wastes associated with Project decommissioning activities, see Section 3.10, *Hazards and Hazardous Materials*. Hazardous waste, if improperly disposed of, is considered a potentially significant impact. Should any hazardous waste be discovered or generated, **MM HAZ-1** and **MM HAZ-4** ensure that the hazardous waste would be disposed of through a permitted hazardous waste treatment, storage, or disposal facility. With the implementation of these measures, the impact would be less than significant.

3.19.4 Mitigation Summary

Implementation of the following mitigation measures would reduce the potential for Project-related impacts to utilities and service systems to less than significant.

- MM HAZ-1: Project Work and Safety Plan
- MM HAZ-4: Asbestos Handling Procedure

3.20 WILDFIRE

WILDFIRE - If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation**	**Less Than Significant Impact**	**No Impact**
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks of, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	☐	☒
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines, or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts on the environment?	☐	☐	☐	☒
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☐	☒

3.20.1 Environmental Setting

The Project site is not located in or near a state responsibility area or in lands classified by CAL FIRE as very high fire hazard severity zones. The adjacent irrigated agricultural fields are not considered a fire hazard. The Project site is served by two fire districts, the MFPD for the area in Solano County and the Delta Fire District for the area in Sacramento County.

3.20.2 Regulatory Setting

There are no federal laws, regulations, or policies pertaining to wildfire that are relevant to the Project. State laws and regulations pertaining to wildfire and relevant to the Project are identified in Appendix A. There are no additional regulations at the local level.

3.20.3 Impact Analysis

a) Substantially impair an adopted emergency response plan or emergency evacuation plan?

b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks of, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines, or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts on the environment?

d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

(a to d) No Impact

Phases 1 and 2

The Project is not located in or near a fire hazard severity zone or a state responsibility area. For discussions on emergency response plans, emergency evacuations, and fire risk see Sections 3.10, *Hazards and Hazardous Materials*, and 3.18, *Transportation*. Therefore, there would be no impact.

3.20.4 Mitigation Summary

The Project would have no impacts related to wildfire; therefore, no mitigation is required.

3.21 MANDATORY FINDINGS OF SIGNIFICANCE

The lead agency shall find that a project may have a significant effect on the environment and thereby requires an EIR to be prepared for the project where there is substantial evidence, in light of the whole record, that any of the following conditions may occur. Where, prior to commencement of the environmental analysis, a project proponent agrees to MMs or Project modifications that would avoid any significant effect on the environment or would mitigate the significant environmental effect, a lead agency need not prepare an EIR solely because without mitigation the environmental effects would have been significant (per State CEQA Guidelines, § 15065).

MANDATORY FINDINGS OF SIGNIFICANCE –	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)	☐	☐	☒	☐
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☒	☐	☐

3.21.1 Impact Analysis

a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?

Less than Significant with Mitigation. As analyzed in Biological Resources (Section 3.4), the Project would not significantly adversely affect fish or wildlife habitat, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, or reduce the number or restrict the range of an endangered, rare, or threatened species. Mitigation measures **MM BIO-1** through **MM BIO-9**, **MM HAZ-1, MM HAZ-2,** and **MM HYDRO-1** would ensure that the minor, temporary, and localized impacts on special-status species and their habitats would be less than significant.

The Project's potential effects on historic and archaeological resources are described in Cultural Resources (Section 3.5) and Cultural Resources – Tribal (Section 3.6). Based on cultural resources records of the area, cultural resources are unlikely to be adversely affected. Implementation of mitigation measures **MM CUL-1/TCR-1** through **MM CUL-3/TCR-3**, **MM TCR-4**, **MM CUL-4/TCR-5**, **MM TCR-6**, and **MM CUL-5/TCR-7** would reduce the potential for Project-related impacts on previously undiscovered cultural and tribal cultural resources to a less than significant level.

b) Does the project have impacts that would be individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)

Less than Significant Impact. As provided in this MND, the Project has the potential to significantly impact the following environmental disciplines: Aesthetics (Section 3.1), Air Quality (Section 3.3), Biological Resources (Section 3.4); Cultural Resources (Section 3.5); Cultural Resources – Tribal (Section 3.6); Geology, Soils, and Paleontological Resources (Section 3.8); Hazards and Hazardous Materials (Section 3.10), Hydrology and Water Quality (Section 3.11), Recreation (Section 3.17), Transportation (Section 3.18), and Utilities and Service Systems (Section 3.19). However, measures have been identified that would reduce these impacts to less than significant with mitigation.

Upon a query of Solano County and Sacramento County, no projects were identified that would result in a cumulative impact to the environment. Therefore, no cumulative impact would result.

c) Does the project have environmental effects that would cause substantial adverse effects on human beings, either directly or indirectly?

Less than Significant with Mitigation. The Project's potential to impact human beings is addressed in Sections 3.1 through 3.20 of this document, including impacts that may affect resources used or enjoyed by the public, residents, and others in the Project area (such as aesthetics, public services, and recreation); those that are protective of public

safety and well-being (such as air quality, geology and soils, GHG emissions, hydrology and water quality, and noise); and those that address community character and essential infrastructure (such as land use and planning, population and housing, transportation, and utilities). None of these analyses identified a potential adverse effect that could not be avoided or minimized through the mitigation measures described or compliance with standard regulatory requirements. As such, with mitigation in place, Project impacts would be less than significant.

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4.0 OTHER STATE LANDS COMMISSION CONSIDERATIONS

In addition to the environmental review required pursuant to the California Environmental Quality Act (CEQA), a public agency may consider other information and policies in its decision-making process. This section presents information relevant to the California State Lands Commission's (CSLC's) consideration of the Project. The considerations addressed below are:

- Climate change
- Recreational fishing
- Environmental justice
- Significant Lands Inventory

Other considerations may be addressed in the staff report presented at the time of the CSLC's consideration of the Project.

4.1 CLIMATE CHANGE

The Project site is sufficiently distant from the ocean that any effects of sea level rise would be attenuated by over 50 miles of intervening bays and Delta channels. However, as stated in *Safeguarding California Plan: 2018 Update* (California Natural Resources Agency 2018), climate change is projected to increase the frequency and severity of natural disasters related to flooding, drought, and storms. The Project site includes submerged land and delta waterways that may be vulnerable to these weather events. However, Phase 2 (decommissioning) activities would remove portions of the existing pipeline from below the bed and banks of the Sacramento River, and upland portions would be either removed or abandoned in place. The removed riverbed pipeline segment would therefore not contribute to any future climate-driven river processes such as scour and erosion, and the abandoned terrestrial segments would remain buried and would not be affected by flooding and storms. The projected climate change is also not expected to have future impacts on the new pipeline since it would be installed as much as 90 feet beneath the Sacramento River.

4.2 RECREATIONAL FISHING

The Sacramento River supports recreational fishing in the Project area, with fishing boats launched at Delta Marina Yacht Harbor north and adjacent to the Segment 1 decommissioning area, Cliffhouse Fishing Access located approximately 1.5 miles north of the Segment 3 decommissioning area, and other locations north and south of the Project site. As discussed in Section 3.14, *Biological Resources*, in-water work would be conducted between August 1 and October 31 when migratory fish such as salmonids are unlikely to be present. At any one time, it is estimated that in-water pipeline removal

activities would affect up to 200 feet of the subject waterway crossing which is approximately 2,350 feet wide. Therefore, fishermen would have free passage around the work area during Project activities, as analyzed in Section 3.18, *Recreation*. In addition, **MM REC-1** and **MM REC-2** have been included to address in-water construction safety concerns.

4.3 ENVIRONMENTAL JUSTICE

"Environmental justice" is defined by California law as "the fair treatment of people of all races, cultures, and incomes, and national origins, with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies" (Gov. Code, § 65040.12, subd. (e)). This definition is consistent with the Public Trust Doctrine principle that the management of trust lands is for the benefit of all people. The CSLC adopted an Environmental Justice Policy in December 2018 (Item 75, December 2018) to ensure that environmental justice is an essential consideration in the CSLC's processes, decisions, and programs.[4] Through its policy, the CSLC reaffirms its commitment to an informed and open process in which all people are treated equitably and with dignity, and in which its decisions are tempered by environmental justice considerations. Among other goals, the policy commits the CSLC to, "Strive to minimize additional burdens on and increase benefits to marginalized and disadvantaged communities resulting from a proposed project or lease."[5]

Letters to various organizations within Sacramento and Solano Counties informing them of, and seeking input on, the Project were sent out on August 23, 2021. On August 31, 2021, 350 Sacramento, a local grassroots organization, responded and requested notification when the draft Mitigated Negative Declaration (MND) was circulated for public comment. To date, no other responses have been received by CSLC staff.

4.3.1 U.S. Census Bureau Statistics

Tables 5-1a through 5-1c present income, employment, and race data of the regional and local study area in the Project vicinity, based on the most recently available information from U.S. Census 2019 American Community Survey 5-Year Estimates.[6] There was a U.S. Census conducted in 2020; however, the results were not available at the time this document was prepared. The Project corridor is located within Solano and Sacramento Counties, but specifically falls within Census Tract No. 2535 in Solano

[4] See https://www.slc.ca.gov/wp-content/uploads/2018/11/EJPolicy.pdf

[5] Id.

[6] U.S. Census 2018 American Community Survey estimates come from a sample population but are more current than the most recent full census of 2010. Because they are based on a sample of population, a certain level of variability is associated with the estimates. Supporting documentation on American Community Survey data accuracy and statistical testing can be found on the American Community Survey website in the Data and Documentation section available here: census.gov/programs-surveys/acs.

County and 98 in Sacramento County, which includes the larger regional vicinity surrounding the Project corridor.

4.3.2 Population and Economic Characteristics

4.3.2.1 Demographics

As indicated in Table 4-1a, regionally the population in Solano and Sacramento Counties is comprised of an approximately 52.6 to 57.3 percent white and 47.4 to 42.7 percent non-white population. Demographics within the Census Tracts including and adjacent to the Project corridor are also predominantly white, ranging from 75.7 percent (Tract 2535) to 85.0 percent (Tract 98). The percentage of Hispanic or Latino persons within Solano and Sacramento Counties ranges from 23.2 to 26.5 percent, whereas the State of California is 39.4 percent.

Table 4-1a. Environmental Justice Statistics (Race)

Parameter	California	Solano County	Sacramento County	Census Tract 2535	Census Tract 98
White	59.4%	52.6%	57.3%	75.7%	85.0%
Black or African American	5.8%	13.9%	9.8%	6.7%	0.6%
American Indian and Alaska Native	0.8%	0.6%	0.7%	0.2%	1.6%
Asian	14.8%	15.4%	15.7%	5.8%	2.2%
Native Hawaiian	0.4%	0.9%	1.1%	0.8%	0.5%
Some Other Race	13.7%	9.1%	7.9%	8.9%	4.6%
Hispanic or Latino (of Any Race)	39.4%	26.5%	23.2%	20.9%	19.2%

Source: U.S. Census Bureau American Fact Finder accessed January 2021 (DP05 – ACS Demographic and Housing Estimates and DP03 – Selected Economic Characteristics); 2019 ACS 5-Year Estimates.

4.3.2.2 Socioeconomics

As shown in Table 4-1b, from a regional standpoint, Solano County has a slightly higher-than-average median household income level ($81,472) compared to the State of California ($80,440), but Sacramento County is significantly lower ($67,151). However, both Census Tract 2535 (Solano County) and Census Tract 98 (Sacramento County) are both lower than the State median at $32,387 and $26,141 respectively. With respect to populations (all families) living below the established poverty level, Solano County and Census Tract 253 contain approximately 9.5 and 12.9 percent, which is lower and higher than the State of California average of 11.8 percent.

Sacramento County and Census Tract 98 contain approximately 14.7 and 20.1 percent, which is higher than the State of California average.

Table 4-1b. Environmental Justice Statistics (Income and Population)

Parameter	California	Solano County	Sacramento County	Census Tract 2535	Census Tract 98
Total population	39,512,223	441,829	1,524,553	10,676	1,514
Median household income	$80,440	$81,472	$67,151	$32,387	$26,141
Percent (%) below the poverty level (all families)[1]	11.8%	9.5%	14.7%	12.9%	20.1%

Notes:

[1] Poverty threshold as defined in the ACS is not a singular threshold but varies by family size. Census data provides the total number of persons for whom the poverty status is determined and the number of people below the threshold. The percentage is derived from these data.

Source: U.S. Census Bureau American Fact Finder accessed January 2021 (DP05 – ACS Demographic and Housing Estimates and DP03 – Selected Economic Characteristics); 2019 ACS 5-Year Estimates.

As shown in Table 4-1c, Solano County and Sacramento County residents are primarily employed in educational, retail, and professional trades. Residents in Census Tract 2535 in Solano County (including the west side of the Project vicinity) are predominantly employed in the educational, public administration, and retail trades while residents in Census Tract 98 in Sacramento County (including the east side of the Project vicinity) are primarily employed in the arts, entertainment and recreation, and with educational, and other services.

Table 4-1c. Environmental Justice Statistics (Employment Industry – Percentage of Total Population)

Parameter	California	Solano County	Sacramento County	Census Tract 2535	Census Tract 98
Agriculture, forestry, fishing and hunting, mining	2.1%	1.1%	0.7%	2.9%	8.2%
Construction	6.8%	9.0%	7.5%	9.3%	6.9%
Manufacturing	8.7%	8.2%	5.2%	12.0%	4.0%
Wholesale trade	2.7%	1.9%	3.1%	0.4%	1.8%
Retail trade	10.2%	12.5%	11.5%	12.2%	8.2%
Transportation and warehousing, and utilities	5.7%	6.3%	5.9%	3.7%	6.1%
Information	2.8%	1.7%	1.5%	6.5%	8.5%
Finance and insurance, and real estate and rental and leasing	5.8%	5.8%	6.9%		
Professional, scientific, and management, and administrative and waste management services	14.2%	10.0%	12.0%	10.6%	7.6%
Educational services and health care and social assistance	21.2%	23.6%	21.6%	14.8%	12.0%
Arts, entertainment, and recreation, and accommodation and food services	10.3%	8.2%	9.8%	10.8%	23.0%
Other services, except public administration	5.0%	4.5%	4.6%	3.7%	9.6%
Public administration	4.5%	7.1%	9.7%	12.4%	1.4%

Source: U.S. Census Bureau American Fact Finder accessed January 2021 (DP05 – ACS Demographic and Housing Estimates and DP03 – Selected Economic Characteristics); 2019 ACS 5-Year Estimates.

4.3.3 California Office Of Environmental Health Hazard Assessment (OEHHA) CalEnviroScreen Results

According to the California Office of Environmental Health Hazard Assessment (OEHHA 2022) California Communities Environmental Health Screening Tool (CalEnviroScreen) 4.0 data, the Project's vicinity in Solano County has a score in the 70th to 80th percentile. This means that only 20 to 30 percent of all census tracts in California have greater population vulnerability or environmental burdens (Figure 4-1). This score is primarily attributed to groundwater threats, hazardous waste, impaired water, and solid waste. These factors, when combined with public health concerns such as asthma and cardiovascular disease, reported by OEHHA in the Project vicinity, could result in increased vulnerability to environmental impacts.

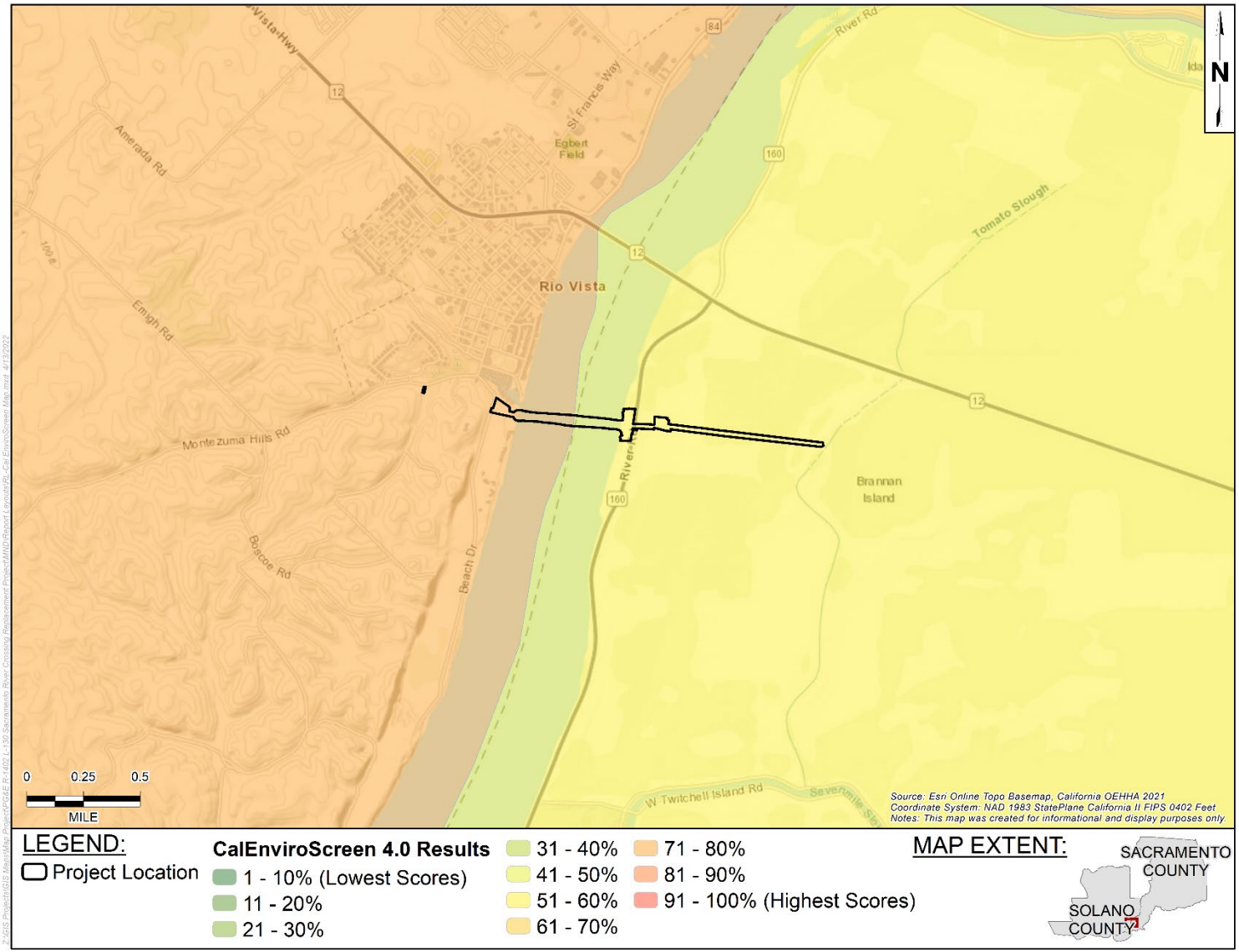
The Project's vicinity in Sacramento County has a score in the 50th to 60th percentile, meaning that 40 to 50 percent of all census tracts in California have greater population vulnerability or environmental burdens. However, this area also reported a high score for groundwater threats, impaired water, pesticides, and drinking water factors. These factors, when combined with socioeconomic community components such as poverty and unemployment reported by OEHHA in the Project vicinity, could result in increased vulnerability to environmental impacts.

4.3.4 Conclusion

Project activities would require short-term construction during the pipeline installation and decommissioning. As noted above, a majority of the Project corridor is located within an area that has been identified as having vulnerable populations and a high existing environmental burden. Additionally, the Project corridor is located within an area that has recorded lower median family income and a higher percentage of persons below the established poverty level than the State as a whole. Specifically, the Project vicinity is impacted by impaired ground, surface, and drinking water as well as pesticides, hazardous waste, and solid waste. As such, any Project activities that would have the potential to contribute to this burden would be considered significant.

As indicated in Section 3.0, *Environmental Checklist and Analysis*, the proposed Project would have the potential for short-term construction-related impacts to aesthetics; biological resources; cultural resources; cultural resources-tribal; geology, soils, and paleontological resources; hazards and hazardous materials; hydrology and water quality; recreation; transportation; and utilities and service systems that have the potential to contribute to existing circumstances affecting environmental justice communities. However, following incorporation of identified mitigation measures, the

Figure 4-1. CalEnviroScreen Results



proposed Project is not anticipated to create new burdens or add to existing pollution burdens felt by a vulnerable community and there are no anticipated factors that would put any of the nearby populations at risk from this Project. No long-term or permanent impacts would result from the proposed Project. The Project objective is to eliminate the risk of further pipeline exposure or interference with waterway navigation. Completion of the Project would result in a beneficial impact to public safety, recreation, and aesthetics by removing pipeline segments across the Project corridor that could become exposed over time.

4.4 SIGNIFICANT LANDS INVENTORY

The Project involves lands identified as possessing significant environmental values within CSLC's Significant Lands Inventory, pursuant to Public Resources Code section 6370 et seq. The Project site is in the Significant Lands Inventory as parcel numbers 34-097-000 (Sacramento River, Sacramento County) and 48-097-000 (Sacramento River, Solano County). The subject lands are classified as use category Class B, which authorizes limited use. Environmental values identified for these lands are mostly biological, including endangered species habitat, migratory path for anadromous fish spawning on tributary streams, riparian habitat for wildlife support, but also scenic/aesthetic and recreational.

Based on CSLC staff's review of the Significant Lands Inventory and the CEQA analysis provided in this MND, the Project, as proposed, would not significantly affect those lands and is consistent with the use classification.

5.0 MND PREPARATION SOURCES AND REFERENCES

This Mitigated Negative Declaration (MND) was prepared by the staff of the California State Lands Commission (CSLC) Division of Environmental Planning and Management (DEPM), with the assistance of Padre Associates, Inc. The analysis in the MND is based on information identified, acquired, reviewed, and synthesized based on DEPM guidance and recommendations.

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5.3 REFERENCES CITED

Aginsky, B. W. 1943. Anthropological Records 8:4. Culture Element Distributions: XXIV, Central Sierra. Anthropological Records, Volume 8, Number 4. Editors: A.L. Kroeber, E.W. Gifford, R.H. Lowrie, and R.L. Olson. University of California Press. Berkeley, California.

Ambacher, P. 2022. Cultural Resources Evaluation, Gas Transmission Linear Project Support (Project #D31321CY). Prepared by Jacobs. Prepared for PG&E.

American Industrial Hygiene Association (AIHA). 2003. The Noise Manual.

Ascent Environmental. 2018. UC Davis Draft 2018 Long Range Development Plan, Draft Environmental Impact Report. Volume 1, Programmatic Evaluation of 2018 LRDP. University of California, Davis.

Association of Bay Area Governments and Metropolitan Transportation Commission (ABAG-MTC). 2021. Plan Bay Area 2050: Executive Summary.

Atwater, B. 1982. Geologic Map of the Sacramento-San Joaquin Delta, United States Geological Survey, Miscellaneous Field Studies Map MF-1401.

Barrett, S. A., and Gifford, E. W. 1933. Miwok Material Culture, in Bulletin of the Public Museum of the City of Milwaukee. Milwaukee: Board of Trustees of the Public Museum of the City of Milwaukee.

Bennett Trenchless Engineers. 2021. Drilling Program Plan Pacific Gas and Electric R-1402, L-130 Replacement HDD Crossing of the Sacramento River. Report dated December 7, 2021.

Bennyhoff, J. A. 1977. The Ethnography of the Plains Miwok. Center for Archaeological Research at Davis Publications 5. University of California Davis.

California Air Resources Board (CARB). 2017. EMFAC 2017, User's Guide.

_____.2017. California's 2017 Climate Change Scoping Plan.

_____.2020. State and National Ambient Air Quality Standards, accessed September 2020 at: https://ww2.arb.ca.gov/sites/default/files/2020-07/aaqs2.pdf.

_____.2021a. Maps of State and Federal Area Designations. Accessed May 2021 at https://ww2.arb.ca.gov/resources/documents/maps-state-and-federal-area-designations.

_____.2021b. Bethel Island Road station #07442. Accessed May 2021 at: https://ww3.arb.ca.gov/qaweb/iframe_site.php?s_arb_code=07442.

California Department of Conservation (CDC), Division of Mines and Geology. 1999. Mineral Land Classification: Portland Cement Concrete-Grade Aggregate and Kaolin Clay Resources in Sacramento County, California. DMG Open File Report 99-09.

_____. 2021. CGS Information Warehouse: Mineral Land Classification website. https://maps.conservation.ca.gov/cgs/informationwarehouse/index.html.

_____. 2021. Division of Mine Reclamation. Mines online map. https://maps.conservation.ca.gov/mol/index.html.

_____. 2020. Farmland Mapping and Monitoring Program online map. https://maps.conservation.ca.gov/DLRP/CIFF/.

_____. 2021. California Department of Conservation Mineral Land Classification online California Department of Fish and Wildlife (CDFW). map. https://maps.conservation.ca.gov/mineralresources/#webmaps.

California Department of Fish and Wildlife (CDFW). 2022a. Special Animals List. https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=109406&inline.

_____.2022b. State and Federally Listed Endangered, Threatened, and Rare Plants of California. https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=109390&inline.

California Department of Food and Agriculture. 2021. California Agricultural Statistics Review 2019-2020.

California Department of Water Resources (DWR). 2022. Sustainable Groundwater Management Act Data Viewer. Accessed April 2022 at: https://sgma.water.ca.gov/webgis/?appid=SGMADataViewer#landsub

California Department of Transportation (Caltrans). 2013. Transportation and Construction Vibration Guidance Manual.

California Governor's Office of Planning and Research (CGOPR). 2018. California's Fourth Climate Change Assessment, Statewide Summary Report. Accessed July 2021 at: https://www.riovistacity.com/files/Army%20Base%20Redevelopment%20Plan%20052010/Army%20Base%20Redevelopment%20Plan%20052010.pdf.

_____. 2000. Baylands Ecosystem Species and Community Profiles: Life Histories and Environmental Requirements of Key Plants, Fish and Wildlife. Prepared by the San Francisco Bay Area Wetlands Ecosystem Goals Project. P.R. Olofson, editor. San Francisco Bay Regional Water Quality Control Board, Oakland, Calif.

_____.2021. Rio Vista Municipal Code, Title 17 Zoning, Chapter 17 Noise Control, 17.52.030 Construction Equipment Noise. Accessed July 2021 at: http://qcode.us/codes/riovista/?view=desktop&topic=17.

California Natural Resources Agency. 2014. Lower Sacramento River/Delta North Regional Flood Management Plan.

_____. 2018. Safeguarding California Plan: 2018 Update. January 2018.

California State Lands Commission (CSLC). 2016. Tribal Consultation Policy Document. www.slc.ca.gov/tribal-consultation.

California Water Boards, State Water Resources Control Board and Regional Water Quality Control Boards. 2019. State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State. Adopted April 2019.

California Water Boards, State Water Resources Control Board. 2020. Implementation Guidance for the Sate Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State. April 2020.

Central California Information Center. 2020. Previously Recorded Cultural Resources Records Search Results.

City of Davis. 2000. Draft Program Environmental Impact Report for the City of Davis General Plan Update and Project EIR for Establishment of a New Junior High School.

City of Rio Vista. 2002. Rio Vista General Plan 2001 – Chapter 8. Circulation and Mobility. July 18, 2007.

County of Sacramento. 2010. County of Sacramento Final Environmental Impact Report, Sacramento County General Plan Update. April 2010. https://planning.saccounty.net/PlansandProjectsIn-Progress/Documents/General%20Plan%20FEIR%20%282030%29/General%20Plan%20Update%202030%20FEIR%20Vol%20I.pdf.

_____. 2017a. County of Sacramento General Plan, Conservation Element. https://planning.saccounty.net/LandUseRegulationDocuments/Documents/General-Plan/Conservation%20Element%20-%20Amended%2009-26-17.pdf.

_____. 2017b. County of Sacramento General Plan, Delta Protection Element. https://planning.saccounty.net/LandUseRegulationDocuments/Documents/General-Plan/Delta%20Protection%20Element%20Amended%20-%2009-26-17.pdf.

_____.2018. County of Sacramento General Plan, Safety Element.

County of Solano. 2011. Climate Action Plan. Accessed July 2021 at: https://www.solanocounty.com/civicax/filebank/blobdload.aspx?BlobID=10080.

County Office. 2022. Power Plants in Sacramento County, California. Accessed February 2022 at: https://www.countyoffice.org/ca-sacramento-county-power-plant/.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of Wetlands and Deepwater Habitats of the United States. U.S. Department of the Interior, Fish and Wildlife Service, Office of Biological Services, FWS-OBS-79/31. Washington, D.C.

DeGeorgey, M.A. 2015, Archaeological Survey Report for Hamilton Brothers Producer, Solano County, California. Prepared for United States Department of Agriculture, California State Office, Davis, California by Alta Archaeological Consulting. S-048768.

Department of Toxic Substances Control (DTSC). 2022. Envirostor Hazardous Waste and Substances Site List, Accessed March 2022.

Deverel, Steven & Ingrum, Timothy & Leighton, David. (2016). Present-day oxidative subsidence of organic soils and mitigation in the Sacramento-San Joaquin Delta, California, USA. Hydrogeology Journal. 24. 10.1007/s10040-016-1391-1.

EDAW|AECOM. 2008. Final Environmental Impact Report. Solano County 2008 Draft General Plan. July 21, 2008.

Elliott, B. 2015. *Archaeological Inventory Report: Delta Research Station Project, Solano and San Joaquin Counties, California.* Prepared by URS Corporation, Sacramento, California. Prepared for Horizon Water and Environment, LLC. S-047932

Environmental Data Resources Inc. 2021. The EDR Aerial Photo Decade Package, PG&E Rio Vista, Isleton, CA. Shelton, CT.

Federal Emergency Management Agency (FEMA). 2021. FEMA Flood Map Service Center. Accessed November 2021 at: https://msc.fema.gov/portal/search.

Fredrickson, D. A. 1973. Early Cultures of the North Coast Ranges, California. Ph.D. Dissertation, University of California Davis.

Garlignhouse, T., Ross, D., and Knight, D. 2017. Environmental Impacts: Cultural Resources Section, in Final Report: Initial Study/Mitigated Negative Declaration Bacon Island Levee Rehabilitation Project State Clearinghouse No. 20170120062. Prepared by Stillwater Sciences for Reclamation District No. 2028 (Bacon Island), Stockton, California.

Hoffman, O. 1862. Reports of Land Cases Determined in the United States District Court for the Northern District of California, Numa Hubert, San Francisco.

Holland, R.F. 1986. Preliminary Descriptions of the Terrestrial Natural Communities of California. California Department of Fish and Game, Nongame Heritage Program. Sacramento, CA.

Honegger, D.G. 2021. Technical Memorandum: Analytical Assessment of Potential Ground Displacements on the Proposed PG&E Line 130 HDD Sacramento River Crossing, Rio Vista, California.

Hoover, M. B., Rensch, H. E., Rensch, E. G., and Abeloe, W. N. 2002. Historic Spots in California. 5th edition, revised by D. E. Kyle. Stanford University Press, Stanford, California.

Hughes, R. E. 1994. Toward a New Taxonomic Framework for Central California Archaeology. Essays by James A. Bennyhoff and David A. Fredrickson. Berkeley: Contributions of the University of California Archaeological Research Facility, 15.

Hydrology Earth System Sciences Discussion. 2007. Update Work Köppen-Geiger Climate Classification Map.

ICF. 2017. Pacific Gas and Electric Company Bay Area Operations & Maintenance Habitat Conservation Plan. Final. September. (ICF 03442.03.) Sacramento, CA. Prepared for Pacific Gas and Electric Company, San Francisco, CA, September 2017.

_____.2020. Multiple Region Operations & Maintenance Habitat Conservation Plan Sacramento Valley and Foothills, North Coast, Central Coast. Prepared for Pacific Gas and Electric Company, May 2020.

Interagency Ecological Program (IEP). 2020. IEP Survey Data Portal. Website available at: https://iep.ca.gov/Data/IEP-Survey-Data.

Intergovernmental Panel on Climate Change (IPCC). 2021. Sixth Assessment Report.

Jones & Stokes. 2007. Pacific Gas & Electric Company San Joaquin Valley Operations and Maintenance Habitat Conservation Plan (includes updated Chapter 4 and Tables 5-3, 5- 4, and 5-5). December 2007. (J&S 02-067.) Sacramento, CA.

JRP Historical Consulting Services 1997. Evaluation of National Register Eligibility, Rio Vista Army Reserve Center Rio Vista, Solano County, California. Prepared by JRP Historical Consulting Services, Davis, California. S-029351.

Kleinfelder. 2020. Geotechnical Investigation Report Proposed PG&E Gas Pipeline L-130 Replacement Sacramento River Crossing Rio Vista, California.

Kroeber, A. L., 1925. Handbook of the Indians of California. Bulletin 78 of the Bureau of American Ethnology of the Smithsonian Institution, Government Printing Office, Washington. Republished in 1976 by Dover Publications, Inc., New York.

Land Subsistence in California. 2018. Decomposition of Organic Soils in the Sacramento-San-Joaquin Delta. U.S.G.S.

Levy, R. 1978. Eastern Miwok. In Handbook of North American Indians, Volume 8, California, Robert F. Heizer, Ed. Smithsonian Institution, Washington.

Longitude 123, Inc. 2021. Project Execution Plan Pacific Gas & Electric Company R-1402 L-130 Sacramento River Crossing Replacement. Report dated April 5, 2021.

Martin, L. and Self, W. 2002. Cultural Resources Assessment Report SFPP, L.P. Proposed Concord to Sacramento Pipeline Project. Prepared for SFP, L.P., Operating Partnership for Kinder Morgan Energy Partners, L.P. Prepared by William Self Associates, Inc., Orinda, California. Report on file at CHRIS Northwest Information Center, Rohnert Park, California.

McClean Energy (MCE). 2021. mcecleanenergy.org.

Milliken, R., Fitzgerald, R. T., Hyklema, M. G., Groza, R., Origer, T., Bieling, D. G., Leventhal, A., Wiberg, R. S., Gottsfield, A., Gillette, D., Bellifemine, V., Strother, E., Cartier, R., and Fredrickson, D. A. 2007. Punctuated Culture Change in the San Francisco Bay Area, in California Prehistory, Colonization, Culture, and Complexity. Editors: Terry L. Jones and Kathryn A. Klar. Altamira Press, a Division of Rowman & Littlefield Publishers, Inc., New York.

Montezuma Fire Protection District. 2022. Accessed April 2022 at: http://www.montezumafiredistrict.com/?msclkid=e4d02141b1e011ec8203c7a6d26ae032.

Moratto, M. J. 1984. California Archaeology. Academic Press, Orlando.

National Marine Fisheries Service (NMFS). 2005. Endangered and threatened wildlife and plants: designation of critical habitat for designation of critical habitat for seven Evolutionarily Significant Units of Pacific salmon and steelhead in California, Final rule. Federal Register 70(170):52488-52627.

_____. 2020a. Official Species List for PG&E Line 130 Sacramento River Crossing Pipeline Replacement Project. Official List email response dated August 28, 2020.

_____.2020b. Essential Fish Habitat Mapper. Website: http://www.habitat.noaa.gov/protection/efh/habitatmapper.html. Accessed December 2020.

National Oceanic and Atmospheric Administration (NOAA).2020. Web Soil Survey for Solano and Sacramento Counties California.

Natural Resources Conservation Service (NRCS). 2021. Web Soil Survey. U.S. Department of Agriculture. http://websoilsurvey.nrcs.usda.gov/app/.

Nolte, M., Wait, J., Mitchell, M., and Pierce, W. 2017. Archaeological Site Record: P-34-002143. Prepared by the California Department of Water Resources, Sacramento.

Nomad Ecology. 2020. Draft Botanical Resources Survey Report Line-130 River Crossing Pipeline Relocation Project, Solano and Sacramento Counties, California. Prepare for Pacific Gas and Electric Company. August 2020.

North Central Information Center (NCIC). 2020. Previously Recorded Cultural Resources Records Search Results.

Northwest Information Center (NWIC). 2020. Previously Recorded Cultural Resources Records Search Results.

Occupational Safety and Health Administration (OSHA). 2013. OSHA Technical Manual, Section III, Chapter 5. Accessed July 2021 at: https://www.osha.gov/otm/section-3-health-hazards/chapter-5#introduction.

Office of Environmental Health Hazard Assessment (OEHHA). 2022. CalEnviroScreen. Accessed April 2022 at: https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-40.

Office of Planning and Research (OPR). 2020. General Plan Guidelines. https://www.opr.ca.gov/docs/20200706-GPG_Chapter_4_EJ.pdf.

Pacific Gas and Electric Company (PG&E). 2020. Confidential Cultural Resources Database.

Padre Associates, Inc. 2021a. Biological Technical Report. September 2021.

_____. 2021b. Preliminary Federal Aquatic Resources Delineation and State Aquatic Resources Delineation Report. March 2020.

_____. 2021c. Phase I Archaeological Study. September 2021.

Pierson, E. D., Rainey, W. E., and Corben, C. 2006. Distribution and Status of Western Red Bats (*Lasiurus blossevillii*) in California. The Resources Agency Department of Fish and Game; Habitat Conservation Planning Branch.

Ragir, S. R. 1972. The Early Horizon in Central California Prehistory. Contributions of the University of California Archaeological Research Facility 15. Berkeley, California.

Sacramento Area Council of Governments (SACOG). 2020a. Open Data Portal Williamson Act Parcels. https://data.sacog.org/datasets/199810930ef9465a9a1ae0315e5a7535_0/explore?location=38.146349%2C-121.690223%2C14.16

_____. 2020b. Congestion Management Process Update. December 2020. Accessed April 2022 at: https://www.sacog.org/sites/main/files/file-attachments/cmp_2020_finalreport.pdf?1614294767

Sacramento County. 2011. Climate Action Plan, Strategy and Framework Document. Access July 2021 at: https://planning.saccounty.net/PlansandProjectsIn-Progress/Documents/Climate%20Action%20Plan/CAP%20Strategy%20and%20Framework%20Document.PDF.

Sacramento County. 2021, Climate Action Plan 2021. Accessed November 2021 at: https://planning.saccounty.net/PlansandProjectsIn-Progress/Documents/Climate%20Action%20Plan/Final%20Draft%20CAP%20and%20Appendices%20Sept%202021.pdf.

Sacramento County. 2021. SACOG Open Data Portal Williamson Act Parcels. https://data.sacog.org/datasets/199810930ef9465a9a1ae0315e5a7535_0/explore?location=38.146349%2C-121.690223%2C14.16.

Sacramento Metropolitan Air Quality Management District (SMAQMD). 2020. Guide to Air Quality Assessment in Sacramento County. Accessed July 2021 at: http://www.airquality.org/LandUseTransportation/Documents/CH2ThresholdsTable4-2020.pdf

_____.2021. Rules & Regulations. Accessed July 2021 at: http://www.airquality.org/Businesses/Rules-Regulations

Sacramento River Watershed Program. 2021. Accessed December 2021 at: https://sacriver.org/

Shipley, W. F. 1978. Native Languages of California. Handbook of North American Indians, Volume 8. Edited by R. F. Heizer, 80-90 pp. Washington, D.C.: Smithsonian Institution.

Solano County. 2008a. Solano County General Plan. https://www.solanocounty.com/depts/rm/planning/general_plan.asp.

_____.2008b. Solano County General Plan, Chapter 3 Agriculture. https://www.solanocounty.com/civicax/filebank/blobdload.aspx?BlobID=6493.

_____.2008c. Solano County General Plan, Chapter 4 Resources. https://www.solanocounty.com/civicax/filebank/blobdload.aspx?BlobID=6494.

_____. 2008d. Solano County General Plan, Chapter 5 Public Health and Safety. https://www.solanocounty.com/civicax/filebank/blobdload.aspx?BlobID=21582.

Solano Transportation Authority (STA). 2021. Solano County Congestion Management Program.

_____. 2012. Solano County Countywide Bicycle Transportation Plan. Adopted December 14, 2011. Document date 2012. https://sta.ca.gov/wp-content/uploads/2019/01/Solano_BikeTransPlan_Final-12-14-11.pdf.

_____. 2020. Solano County Comprehensive Transportation Plan. 2040. June 26, 2020.

State Water Resources Control Board (SWRCB). 2018. 2018 California Integrated Report (Clean Water Act Section 303(d) List and 305 (b) Report). Accessed November 2021 at: https://www.waterboards.ca.gov/ water_issues/ programs/water_quality_assessment/2018_integrated_report.html.

_____. 2021a. Groundwater Ambient Monitoring and Assessment Program. Accessed November 2021 at: https://www.waterboards.ca.gov/gama/.

_____. 2021b. Drinking Water Programs. Accessed November 2021 at: https://www.waterboards.ca.gov/drinking_water/programs/.

_____. 2003. Sacramento Valley Groundwater Basin Solano Subbasin.

Swaim Biological Incorporated (SBI). 2020. Draft Herpetological Assessment for PG&E's Sacramento River Pipeline Replacement Project: R-1402 – Rio Vista, Ca. Prepared for Pacific Gas and Electric. May 2020.

The City of Rio Vista, California. 2022. Fire Department FAQs. Accessed April 2022 at: https://www.riovistacity.com/fire-dept-frequently-asked-questions/.

Thomas & Beers. 2021. Analytical Evaluation of PG&E Line 130 HDD Pipeline Crossing.

U.S. Army Corps of Engineers (ACOE). 2022. National Levee Database. Accessed January 2022 at: https://levees.sec.usace.army.mil/ - /

U.S. Census Bureau. 2021a. American Fact Finder. https://data.census.gov/cedsci/profile?g=0500000US06095.

_____.2021b. https://data.census.gov/cedsci/profile?g=0500000US06067.

_____. 2022. https://data.census.gov/cedsci/all?q=rio%20vista%20population.

U.S. Fish and Wildlife Service. 1994. Endangered and Threatened Wildlife and Plants; Critical Habitat Determination for the Delta Smelt, Final Rule. Federal Register 59 (242): 65256-65279.

Yolo-Solano Air Quality Management District. 2007. Handbook for Assessing and Mitigating Air Quality Impacts. Accessed July 2021 at: http://www.ysaqmd.org/wp-content/uploads/Planning/CEQAHandbook2007.pdf

_____.2010. Rules and Regulations. Accessed July 2021 at: https://www.ysaqmd.org/rules-compliance/current-rules-rulemaking/current-rules/

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