



INITIAL STUDY/MITIGATED NEGATIVE DECLARATION
CHEVRON PRODUCTS COMPANY
POINT ORIENT WHARF REMOVAL PROJECT

September 2021



CEQA Lead Agency:
California State Lands Commission
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Applicant:
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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.

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www.slc.ca.gov/Info/CEQA.html

Geographic Location (Lease PRC 139.1):

Latitude: 37.955606

Longitude: -122.427753

Cover photo: Point Orient Wharf
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TABLE OF CONTENTS

EXECUTIVE SUMMARY	ES-1
1.0 PROJECT AND AGENCY INFORMATION	1-1
1.1 PROJECT TITLE.....	1-1
1.2 LEAD AGENCY AND PROJECT SPONSOR.....	1-1
1.3 PROJECT LOCATION.....	1-1
1.4 ORGANIZATION OF MITIGATED NEGATIVE DECLARATION.....	1-3
1.5 PROJECT BACKGROUND AND OBJECTIVES	1-4
1.6 PUBLIC REVIEW AND COMMENT	1-4
1.7 APPROVALS AND REGULATORY REQUIREMENTS.....	1-5
1.7.1 California State Lands Commission	1-5
1.7.2 Other Agencies	1-6
2.0 PROJECT DESCRIPTION.....	2-1
2.1 EXISTING WHARF STRUCTURE	2-1
2.2 DEMOLITION AND EELGRASS RESTORATION.....	2-5
2.2.1 Embankment Stabilization and Footing Removal	2-5
2.2.2 Wharf Demolition	2-5
2.2.3 Eelgrass Restoration.....	2-12
2.2.4 Eelgrass Restoration Area	2-12
2.2.5 Transplant Units.....	2-13
2.2.6 Donor Beds and Plant Collection	2-15
2.2.7 Eelgrass Planting	2-16
2.3 POST-RESTORATION MONITORING	2-16
2.4 SCHEDULE.....	2-18
3.0 ENVIRONMENTAL CHECKLIST AND ANALYSIS.....	3-1
3.1 AESTHETICS.....	3-3
3.1.1 Environmental Setting.....	3-3
3.1.2 Regulatory Setting	3-4
3.1.3 Impact Analysis.....	3-4
3.1.4 Mitigation Summary	3-6
3.2 AGRICULTURE AND FOREST RESOURCES.....	3-7
3.2.1 Environmental Setting.....	3-7
3.2.2 Regulatory Setting	3-8
3.2.3 Impact Analysis.....	3-8
3.2.4 Mitigation Summary	3-9
3.3 AIR QUALITY.....	3-10

3.3.1	Environmental Setting	3-10
3.3.2	Regulatory Setting	3-14
3.3.3	Impact Analysis.....	3-15
3.3.4	Mitigation Summary	3-21
3.4	BIOLOGICAL RESOURCES	3-22
3.4.1	Environmental Setting.....	3-23
3.4.2	Regulatory Setting	3-33
3.4.3	Impact Analysis.....	3-34
3.4.4	Mitigation Summary	3-46
3.5	CULTURAL RESOURCES	3-47
3.5.1	Environmental Setting.....	3-47
3.5.2	Regulatory Setting	3-59
3.5.3	Impact Analysis.....	3-59
3.5.4	Mitigation Summary	3-62
3.6	CULTURAL RESOURCES – TRIBAL	3-63
3.6.1	Environmental Setting.....	3-63
3.6.2	Regulatory Setting	3-67
3.6.3	Impact Analysis.....	3-67
3.6.4	Mitigation Summary	3-68
3.7	ENERGY	3-69
3.7.1	Environmental Setting.....	3-69
3.7.2	Regulatory Setting	3-69
3.7.3	Impact Analysis.....	3-70
3.7.4	Mitigation Summary	3-72
3.8	GEOLOGY, SOILS, AND PALEONTOLOGICAL RESOURCES	3-73
3.8.1	Environmental Setting.....	3-74
3.8.2	Regulatory Setting	3-74
3.8.3	Impact Analysis.....	3-74
3.8.4	Mitigation Summary	3-77
3.9	GREENHOUSE GAS EMISSIONS	3-78
3.9.1	Environmental Setting.....	3-79
3.9.2	Regulatory Setting	3-79
3.9.3	Impact Analysis.....	3-79
3.9.4	Mitigation Summary	3-82
3.10	HAZARDS AND HAZARDOUS MATERIALS	3-83
3.10.1	Environmental Setting.....	3-83
3.10.2	Regulatory Setting	3-85
3.10.3	Impact Analysis.....	3-85
3.10.4	Mitigation Summary	3-88
3.11	HYDROLOGY AND WATER QUALITY	3-89

3.11.1	Environmental Setting	3-89
3.11.2	Regulatory Setting	3-90
3.11.3	Impact Analysis.....	3-91
3.11.4	Mitigation Summary	3-94
3.12	LAND USE AND PLANNING.....	3-95
3.12.1	Environmental Setting	3-95
3.12.2	Regulatory Setting	3-95
3.12.3	Impact Analysis.....	3-95
3.12.4	Mitigation Summary	3-96
3.13	MINERAL RESOURCES	3-97
3.13.1	Environmental Setting	3-97
3.13.2	Regulatory Setting	3-97
3.13.3	Impact Analysis.....	3-97
3.13.4	Mitigation Summary	3-98
3.14	NOISE	3-99
3.14.1	Environmental Setting	3-99
3.14.2	Regulatory Setting	3-101
3.14.3	Impact Analysis.....	3-102
3.14.4	Mitigation Summary	3-105
3.15	POPULATION AND HOUSING.....	3-106
3.15.1	Environmental Setting	3-106
3.15.2	Regulatory Setting	3-106
3.15.3	Impact Analysis.....	3-106
3.15.4	Mitigation Summary	3-107
3.16	PUBLIC SERVICES.....	3-108
3.16.1	Environmental Setting	3-108
3.16.2	Regulatory Setting	3-109
3.16.3	Impact Analysis.....	3-109
3.16.4	Mitigation Summary	3-110
3.17	RECREATION.....	3-111
3.17.1	Environmental Setting	3-111
3.17.2	Regulatory Setting	3-111
3.17.3	Impact Analysis.....	3-111
3.17.4	Mitigation Summary	3-112
3.18	TRANSPORTATION.....	3-113
3.18.1	Environmental Setting	3-113
3.18.2	Regulatory Setting	3-114
3.18.3	Impact Analysis.....	3-114
3.18.4	Mitigation Summary	3-116
3.19	UTILITIES AND SERVICE SYSTEMS	3-117

3.19.1	Environmental Setting	3-117
3.19.2	Regulatory Setting	3-118
3.19.3	Impact Analysis.....	3-118
3.19.4	Mitigation Summary	3-120
3.20	WILDFIRE	3-121
3.20.1	Environmental Setting	3-121
3.20.2	Regulatory Setting	3-121
3.20.3	Impact Analysis.....	3-122
3.20.4	Mitigation Summary	3-123
3.21	MANDATORY FINDINGS OF SIGNIFICANCE.....	3-124
4.0	MITIGATION MONITORING PROGRAM	4-1
4.1	PURPOSE	4-1
4.2	ENFORCEMENT AND COMPLIANCE	4-1
4.3	MONITORING	4-1
4.4	MITIGATION MONITORING TABLE	4-2
5.0	OTHER STATE LANDS COMMISSION CONSIDERATIONS.....	5-1
5.1	COMMERCIAL AND RECREATIONAL FISHING	5-1
5.2	CLIMATE CHANGE AND SEA-LEVEL RISE.....	5-2
5.3	ENVIRONMENTAL JUSTICE	5-4
5.3.1	U.S. Census Bureau Statistics	5-4
5.3.2	Population and Economic Characteristics.....	5-4
5.3.3	California Office of Environmental Health Hazard Assessment CalEnviroScreen Results	5-6
5.3.4	Conclusion	5-7
5.4	SIGNIFICANT LANDS INVENTORY	5-8
6.0	MITIGATED NEGATIVE DECLARATION PREPARATION SOURCES AND REFERENCES.....	6-1
6.1	CSLC STAFF	6-1
6.2	SECTION AUTHORS AND/OR REVIEWERS	6-1
6.3	REFERENCES CITED	6-2

APPENDICES

- Appendix A Abridged List of Major Federal and State Laws, Regulations, and Policies Potentially Applicable to the Project
- Appendix B Equipment List and Air Emissions Calculation Methodologies

LIST OF TABLES

Table 1-1. Agencies with Review/Approval over Project Activities.....	1-6
Table 3.3-1. NAAQS, CAAQS, and SFBAAB Attainment Status	3-12
Table 3.3-2. Local Ambient Air Quality Summary	3-13
Table 3.3-3. Estimated Total and Average Daily Project Emissions	3-18
Table 3.4-1. Federally and State-Listed Wildlife Species that May Occur in the Project Area	3-27
Table 3.4-2. Injury and Behavioral Disruption Thresholds for Airborne and Underwater Noise	3-40
Table 3.7-1. Project Energy Requirements	3-70
Table 3.9-1. Project-Related GHG Emissions.....	3-80
Table 3.14-1. Construction Equipment and Calculated Noise Levels, dBA.....	3-101
Table 3.14-2. Construction Equipment, Maximum Allowable Noise Levels, dBA.....	3-102
Table 3.14-3. Assessment of Ambient and Project Noise	3-103
Table 4-1. Mitigation Monitoring Program	4-3
Table 5-1. 2019 U.S. Census Bureau Statistics	5-5

LIST OF FIGURES

Figure ES-1. Project Location	ES-2
Figure ES-2. Project Area	ES-3
Figure ES-3. Project Footprint and Eelgrass Reference Areas.....	ES-6
Figure 1-1. Project Location	1-2
Figure 2-1. Project Area	2-2
Figure 2-2. Overview of the Point Orient Wharf (the Causeway is on the left and the Main Wharf is on the right).....	2-3
Figure 2-3. The Causeway (Oriented East-West) of the Point Orient Wharf, Primarily Supported on Jacketed/Wrapped Wooden Piles.....	2-3
Figure 2-4. The Main Wharf (Oriented North-South), Primarily Supported on Jacketed/Wrapped Wooden Piles.....	2-4
Figure 2-5. Concrete and Steel Fendering Protecting the Main Wharf.....	2-4
Figure 2-6. Project Footprint and Marine Habitats.....	2-6
Figure 2-7. Embankment Stabilization and Footing Removal	2-7
Figure 2-8. Eelgrass Restoration Area	2-13
Figure 2-9. Bareroot Eelgrass Transplanting Unit.....	2-14
Figure 3.4-1. Marine Habitat Map	3-25
Figure 5.3-1. CalEnviroScreen Assessment	5-7

LIST OF ABBREVIATIONS AND ACRONYMS

	$\mu\text{g}/\text{m}^3$	micrograms per cubic meter
A	AAM	Annual Arithmetic Mean
	AB	Assembly Bill
	ABAG	Association of Bay Area Governments
B	BAAQMD	Bay Area Air Quality Management District
	BCDC	San Francisco Bay Conservation and Development Commission
C	CAAQS	California Ambient Air Quality Standards
	cal BP	calibrated years before present
	CAL FIRE	California State Department of Forestry and Fire Protection
	Caltrans	California Department of Transportation
	CAP	Climate Action Plan
	CARB	California Air Resources Board
	C&D	construction and demolition
	CDFG	California Department of Fish and Game (now CDFW)
	CDFW	California Department of Fish and Wildlife
	CEMP	California Eelgrass Mitigation Policy and Implementing Guidelines
	CEQA	California Environmental Quality Act
	Chevron	Chevron Products Company
	CNRA	California Natural Resources Agency
	CO _{2e}	carbon dioxide equivalents
	CRHR	California Register of Historical Resources
	cSEL	cumulative sound exposure level
	CSLC	California State Lands Commission
D	dB	decibels
	dBA	A-weighted decibels
	DEPM	Division of Environmental Planning and Management
	DOC	California Department of Conservation
	DOF	California Department of Finance
	DPM	diesel particulate matter
	DPS	distinct population segment
	DTSC	California Department of Toxic Substances Control
E	EBMUD	East Bay Municipal Utility District
	EFH	essential fish habitat
	ESU	evolutionarily significant unit
F	FHWA	Federal Highway Administration
	FHWG	Fisheries Hydroacoustic Working Group
	FMP	fisheries management plan
	FTA	Federal Transit Administration
G	GHG	greenhouse gas
	GWP	global warming potential
I	I-580	Interstate 580
	in/sec	inches per second

	IS	Initial Study
L	lbs/day	pounds per day
	L_{eq}	equivalent sound level
	L_{max}	maximum sound level
M	mg/m ³	milligrams per cubic meter
	MHHW	mean higher high water
	MLLW	mean lower low water
	MLMA	Marine Life Management Act
	MM	mitigation measure
	MMBtu	million British thermal units
	MMP	Mitigation Monitoring Program
	MMPA	Marine Mammal Protection Act
	MND	Mitigated Negative Declaration
	MT	metric ton
	MTC	Metropolitan Transportation Commission
N	NAAQS	National Ambient Air Quality Standards
	NAHC	Native American Heritage Commission
	NMFS	National Marine Fisheries Service
	NOAA	National Oceanic and Atmospheric Administration
	NO _x	nitrogen oxides
O	OEHHA	California Office of Environmental Health Hazard Assessment
	OPC	California Ocean Protection Council
P	PM	particulate matter
	PM _{2.5}	particulate matter equal to or less than 2.5 micrometers in diameter
	PM ₁₀	particulate matter equal to or less than 10 micrometers in diameter
	ppm	parts per million
	PPV	peak particle velocity
	PTS	permanent threshold shift
	PVC	polyvinyl chloride
R	RMS	root-mean-square
	ROG	reactive organic gases
S	SB	Senate Bill
	SFBAAB	San Francisco Bay Area Air Basin
	SFBRWQCB	San Francisco Bay Regional Water Quality Control Board
	SMAQMD	Sacramento Metropolitan Air Quality Management District
	SSC	California Species of Special Concern
	SWRCB	State Water Resources Control Board
T	TAC	toxic air contaminant
U	UCSB	University of California Santa Barbara
	USCG	U.S. Coast Guard
	USEPA	U.S. Environmental Protection Agency
	USGS	U.S. Geological Survey
V	VdB	vibration or velocity level in decibels

	VMT	vehicle miles traveled
W	WCCUSD	West Contra Costa County Unified School District

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EXECUTIVE SUMMARY

The California State Lands Commission (CSLC), as lead agency under the California Environmental Quality Act (CEQA) (Pub. Resources Code, § 21000 et seq.), has prepared this Mitigated Negative Declaration (MND) to analyze and disclose the environmental effects associated with the Point Orient Wharf Removal Project (Project). The Project would authorize Chevron Products Company (Chevron or Applicant) to remove the now decommissioned Point Orient Wharf (Wharf) in San Francisco Bay, in Contra Costa County (Figure ES-1). The Wharf is covered under existing General Lease – Industrial Use No. PRC 139.1, which the CSLC originally issued on March 4, 1947, to Standard Oil Company of California (now Chevron). The General Lease was amended on August 1, 2017, and expires on July 30, 2022.

The Wharf was constructed in 1904 and was used by Chevron and its predecessors for the transfer of refinery products to and from vessels until the mid-1980s, when it was decommissioned. In 2020, in response to safety and security concerns regarding instances of unauthorized access to the Wharf, Chevron removed the first 90 feet (from shore) of the Wharf's decking and piping and shoreside debris. No piles were removed at that time.

Chevron proposes to remove the decommissioned Wharf in its entirety because it is no longer used and is beginning to deteriorate. In addition, Chevron proposes to restore eelgrass (*Zostera marina*) to the subtidal habitat in areas that are suitable for eelgrass and are currently affected by the shading and scour imposed by the structure. Removing the Wharf would provide an increase in the extent of the eelgrass beds at the Wharf location, enhancing intertidal and subtidal habitat of San Francisco Bay. Removing the Wharf would also reduce the number of creosote-treated piles present in the waters of San Francisco Bay, which would have beneficial effect on water quality.

The CSLC concluded that a MND is the appropriate CEQA document for the Project because, although the Initial Study identified potentially significant impacts related to the Wharf removal, after analysis of all the impacts, CSLC staff believes that mitigation measures incorporated into the Project proposal and agreed to by Chevron avoid or mitigate those impacts to a point where no significant impacts would occur.

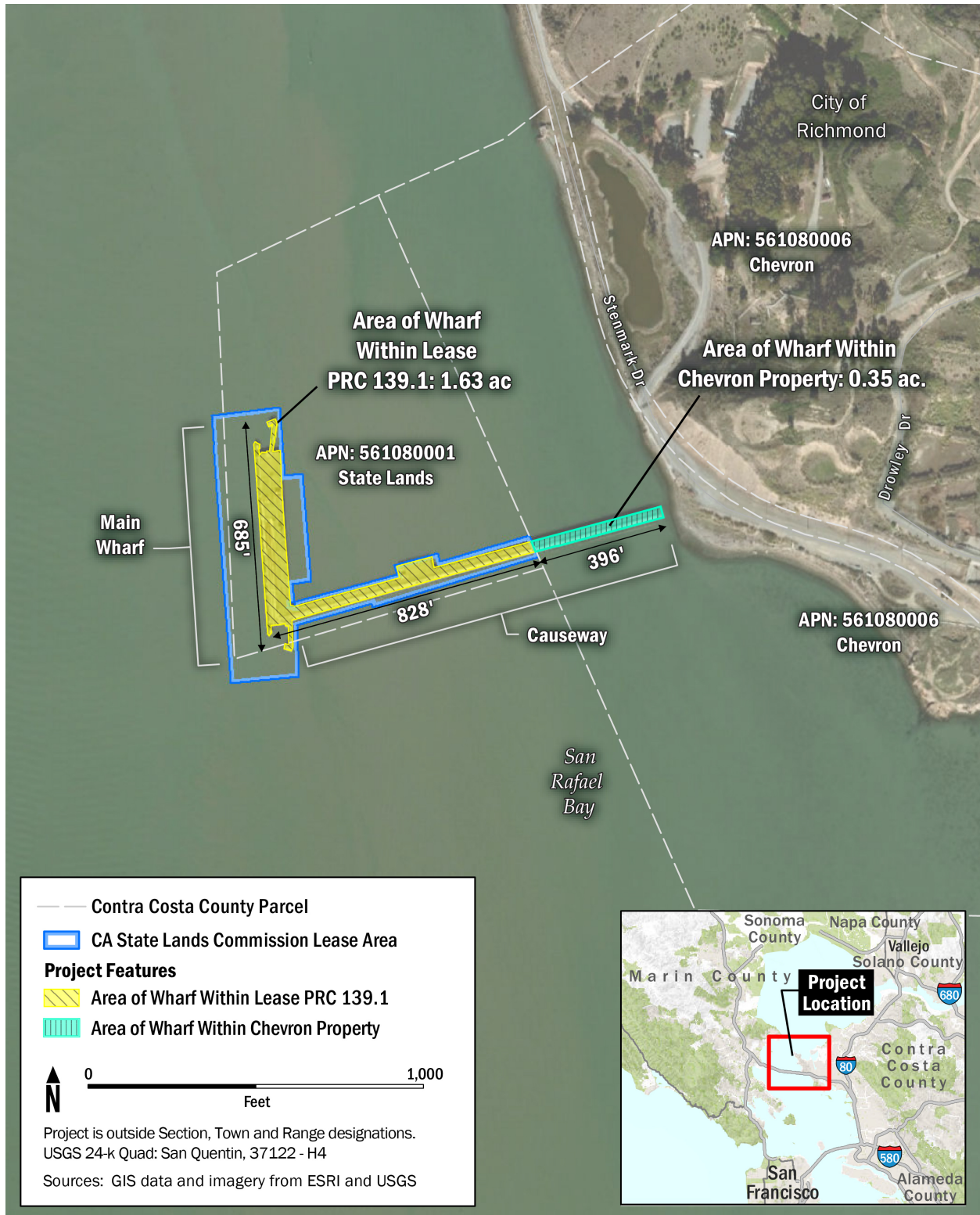
PROPOSED PROJECT

The Wharf is in San Francisco Bay in the San Rafael Bay subarea, approximately 1.55 miles north of the Richmond–San Rafael Bridge and south of Point San Pablo (Figure ES-1). The Wharf is a pile-supported structure with wooden decking that extends approximately 1,300 feet into San Francisco Bay, with a total length of about 2,000 feet. The first 485 feet of the structure (from shore) is on land owned by Chevron; the remaining portion is on State-owned land leased from the CSLC (Figure ES-2). The area of the Wharf, including the overwater structure, is approximately 2 acres.

Figure ES-1. Project Location



Figure ES-2. Project Area



The narrower portion of the Wharf that runs perpendicular to the shoreline is referred to as the Causeway; the wider portion parallel to and further from the shoreline is referred to as the Main Wharf. Approximately 17 steel pipelines, which were once used to transport petroleum products to and from vessels, run parallel to the wood decking along the southern side of the Causeway and on to the Main Wharf structure. The majority of the piles supporting the structure are creosote-treated wood piles, some of which are encased in concrete jackets or PVC wrappings.

Wharf Demolition

Demolition of the Wharf would occur over two seasons, each from June 1 to November 30 (Year 1 and Year 2, respectively) to match established in-Bay work windows for San Francisco Bay designed to reduce impacts to listed fish species.

In Year 1, the Causeway would be removed in its entirety. Demolition would begin by removing 1,600 feet of process piping that is supported along the southern edge of the Causeway. The pipes would be cut in sections and loaded onto a barge for transport to a permitted disposal or recycling facility. Following removal of the piping and other Causeway mounted structures, the wooden decking, stringers, and pile caps would be removed. Finally, the piles that supported the Causeway would be removed.

In Year 2, the Main Wharf would be removed in its entirety in a manner similar to that described for Year 1 demolition of the Causeway. First, the mooring dolphins and steel pipe bridges would be removed. The breasting dolphins and steel fendering would then be removed. Finally, the decking and piles of the Main Wharf structure would be removed.

Removal of the Wharf and its supporting structures would be completed using barge-mounted floating equipment and cranes. Work barges and material/debris barges would be positioned adjacent to the Wharf structure during demolition activities. Each work barge would have a crane or excavator onboard, along with small tooling and a work crew. A fleet of material barges would support the work barges and would be used to transport the demolition debris from the site. A flat-deck material barge would be positioned alongside each working barge to accept debris as it is removed. Once a material barge is fully loaded, it would be moved off site by tugboat and a new material barge placed alongside the working barge. Demolition would generate approximately 36 barge loads of debris to be removed from the site. An estimated 12 to 13 material barge trips loaded with demolition debris would occur in Year 1 of demolition. The remaining 23 to 24 barge trips would occur in Year 2 of demolition. Most demolition debris would be barged to a contractor facility on Pier 96 at the Port of San Francisco for drying, sorting, and hauling to appropriate permitted disposal or recycling locations.

The demolition contractor may use a variety of methods to remove the treated wood and steel piles that currently make up the mix of piles supporting the Wharf structure. If the piles have sufficient structural integrity (such as steel piles), the piling would be wrapped with chain or cable attached to a crane and pulled directly upward, removing the pile from the sediment. A vibratory pile-driving hammer may also be used to loosen the pile with vibration. In some cases, the piles may break when pulled. In these cases, the contractor would cut the pile using an underwater pneumatic chainsaw or cutting torch, approximately 2 feet below the mudline or as specified by the CSLC.

Eelgrass Restoration

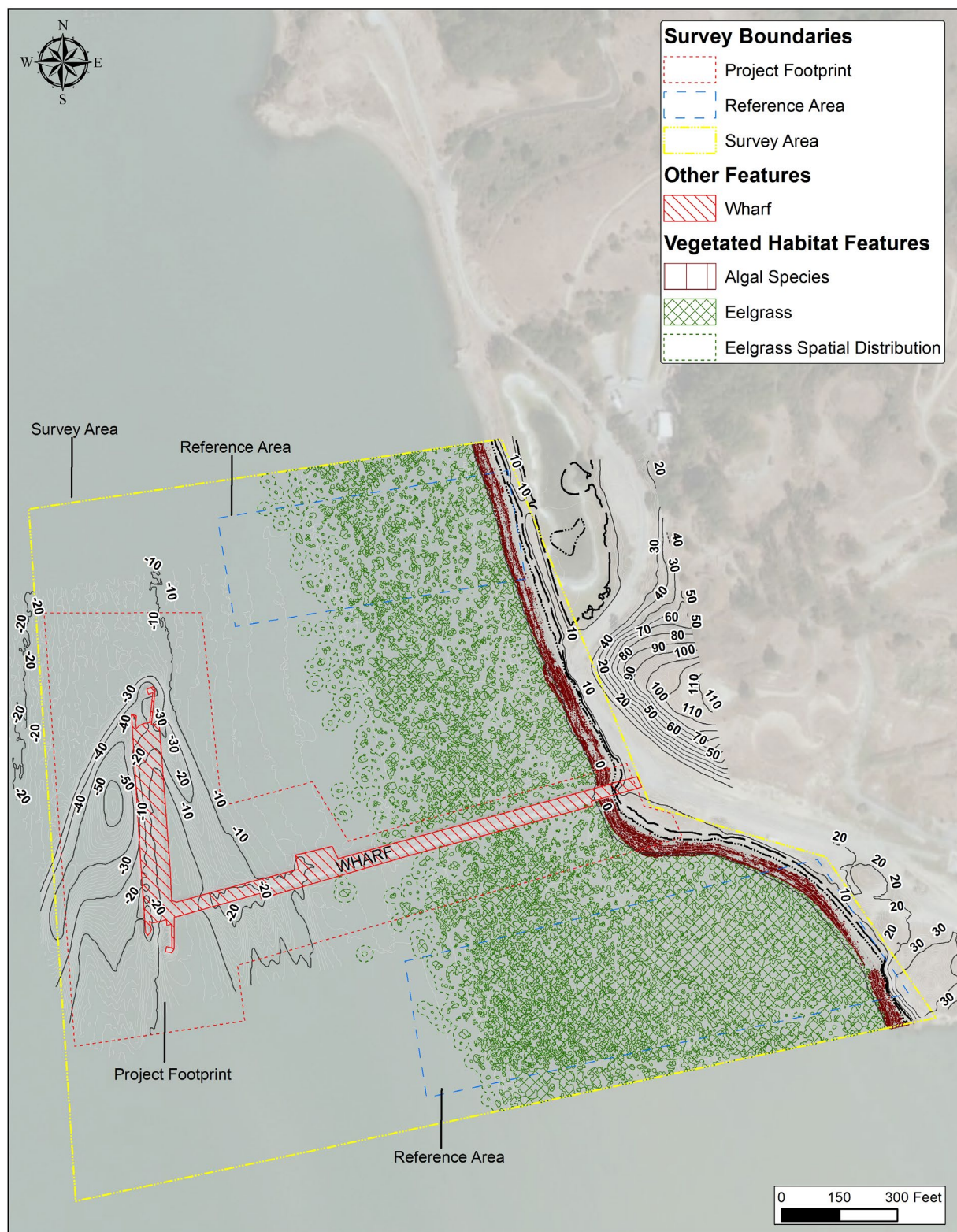
Areas of eelgrass that are impacted during the Wharf demolition activities would be restored. In addition, eelgrass would be restored to areas currently beneath and immediately adjacent to the existing Causeway that are currently not suitable for eelgrass due to shading. The eelgrass restoration would occur where water depths range from 5 feet below mean lower low water to the lower intertidal, mirroring the distribution of eelgrass in areas just north and south of the Causeway. Water depths at the location of the Main Wharf are too deep to support eelgrass, so no eelgrass restoration would occur at that location. The goal of restoration is to develop a net increase in eelgrass in the area by returning the area beneath the Causeway to productive eelgrass habitat.

Eelgrass planting within and along the footprint of the Causeway demolition would occur during Year 2, following removal of the Causeway and during the demolition of the Main Wharf. Eelgrass for the restoration would be harvested from native donor beds north and south of the Project area. The transplanted eelgrass would be monitored and compared with reference areas north and south of the existing Wharf (Figure ES-3). Monitoring of the restoration area would follow the methods outlined in the California Eelgrass Mitigation Policy and Implementing Guidelines (NOAA 2014). Eelgrass restoration would be conducted using hand-planting techniques, either while diving or wading, depending on water depth. It is anticipated that the planting area would total approximately 3 acres.

Restoration Monitoring

Post-restoration monitoring of eelgrass beds would be conducted to ensure that the restoration was successful and to identify and guide any adaptive management or maintenance that may be needed. Reference areas would be used to compare eelgrass growth in the Project footprint to similar nearby areas not affected by the Project.

Figure ES-3. Project Footprint and Eelgrass Reference Areas



ENVIRONMENTAL IMPACTS AND PROPOSED MITIGATION MEASURES

The following environmental topics would be potentially affected by this Project: Air Quality; Biology; Cultural and Tribal Cultural Resources; Geology, Soils, and Paleontological Resources; Hazards and Hazardous Materials; and Hydrology and Water Quality. Each of these topics have 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 avoid or reduce the impact to “Less than Significant with Mitigation,” as detailed in Section 3, *Environmental Checklist and Analysis*, of this MND. With implementation of proposed mitigation measures, all Project-related impacts would be avoided or reduced to a less than significant level. The proposed mitigation measures (MM) designed to reduce or avoid potentially significant impacts are as follows:

- MM AQ 1: Implement Basic Construction Emission Control Practices (Best Management Practices)
- MM BIO 1: Nesting Bird Surveys
- MM BIO 2: Environmental Awareness Training
- MM BIO 3: Mark Barge Operations Corridor
- MM BIO 4: Perform Pre- and Post-Demolition Surveys
- MM BIO 5: Debris Booms
- MM BIO 6: Vessel Operation
- MM HYD 1: Spill Prevention, Control, and Countermeasure Plan
- MM HYD 2: Treated Wood Pile Extraction
- MM HYD 3: Debris Management and Demolition Waste
- MM CUL 1/TCR 1: Cultural Resources Contractor Awareness Training
- MM CUL 2/TCR 2: Unanticipated Discoveries
- MM CUL 3/TCR 3: Treatment of Human Remains
- MM HYD 1: Spill Prevention, Control, and Countermeasure Plan
- MM HYD 2: Treated Wood Pile Extraction
- MM HYD 3: Debris Management and Demolition Waste
- MM HYD 4: Demobilization

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1.0 PROJECT AND AGENCY INFORMATION

1.1 PROJECT TITLE

Point Orient Wharf Removal Project (Project)

1.2 LEAD AGENCY AND PROJECT SPONSOR

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1.3 PROJECT LOCATION

The Point Orient Wharf (Wharf) is in San Francisco Bay (Bay) in the San Rafael Bay subarea, approximately 1.55 miles north of the Richmond–San Rafael Bridge and south of San Pablo point (Figure 1-1) at a latitude/longitude of 37.955606/–122.427753. The overall area of the Wharf is approximately 2 acres. Where the Wharf interfaces with the shoreline, the shoreline is primarily covered in local rock, likely from the cut slope east of the Wharf, and rock slope protection that protects the shore from wave action. East of the shoreline is Stenmark Drive, a nonoperational railway (abandoned tracks), and Chevron Richmond Refinery property east of Stenmark Drive.

Figure 1-1. Project Location



The Wharf extends approximately 1,300 feet into the Bay and is adjacent to soft-bottom eelgrass (*Zostera marina*) habitat in the shallow nearshore areas. The Bay at this location is home to several special-status species, including Longfin Smelt (*Spirinchus thaleichthys*), Central California Coast Steelhead (*Oncorhynchus mykiss irideus*), Sacramento River Winter-Run Chinook and Central Valley Spring-Run Chinook Salmon (*Oncorhynchus tshawytscha*), and Green Sturgeon (*Acipenser medirostris*).

1.4 ORGANIZATION OF MITIGATED NEGATIVE DECLARATION

This Initial Study (IS)/Mitigated Negative Declaration (MND) is intended to provide the CSLC, as lead agency under the California Environmental Quality Act (CEQA) (Pub. Resources Code, § 21000 et seq.), and other responsible and trustee 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 agency and applicant information; identifies the Project location, background, and objectives; summarizes the public review and comment process; and lists anticipated agency actions.
- **Section 2** describes the proposed Project including its layout, equipment, and facilities, and provides an overview of the Project's operations and schedule.
- **Section 3** provides 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, so that no significant impacts to the environment would occur. The IS was conducted by the CSLC pursuant to State CEQA Guidelines section 15063.¹
- **Section 4** presents the Mitigation Monitoring Program.
- **Section 5** discusses other CSLC considerations relevant to the Project, such as commercial and recreational fishing, climate change, environmental justice, and CSLC Significant Lands Inventory that are in addition to review required pursuant to CEQA.
- **Section 6** presents information on report preparation and references.
- **Appendices.** The appendices include specifications, technical data, and other information supporting the analysis presented in this MND.
 - Appendix A – Abridged List of Major Federal and State Laws, Regulations, and Policies Potentially Applicable to the Project
 - Appendix B – Equipment List; Air Emissions Calculation Methodologies

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

1.5 PROJECT BACKGROUND AND OBJECTIVES

The Project would authorize Chevron Products Company (Applicant or Chevron) to remove the decommissioned Wharf in San Francisco Bay, Contra Costa County. The Wharf is covered under existing General Lease – Industrial Use No. PRC 139.1, which the CSLC originally issued on March 4, 1947, to Standard Oil Company of California (now Chevron). The General Lease was amended on August 1, 2017, and on July 30, 2022.

The Wharf was constructed in 1904 and was used by Chevron and its predecessors for the transfer of refinery products to and from vessels until the mid-1980s, when it was decommissioned. In 2020, in response to safety and security concerns regarding instances of unauthorized access to the Wharf, Chevron removed the first 90 feet (from shore) of the Wharf's decking and piping and shoreside debris. Piles were not removed and no other in-water work was conducted at that time.

Chevron proposes to remove the decommissioned Wharf in its entirety because it is no longer used and is beginning to deteriorate. In addition, Chevron proposes to restore eelgrass to the subtidal habitat in areas that are suitable for eelgrass and are currently affected by the shading and scour imposed by the structure. Removing the Wharf would provide the opportunity to increase the extent of eelgrass beds to areas currently covered by the Causeway, enhancing intertidal and subtidal habitat of San Francisco Bay. Removing the Wharf would also reduce the number of creosote-treated piles present in the waters of San Francisco Bay, which would have a beneficial effect on water quality.

The objectives of the Project are as follows:

- Remove the unused and decommissioned Wharf and Causeway, which adversely affects localized productivity of macroalgae and eelgrass through shading and scouring effects.
- Increase the overall ecological health of portions of the Bay by removing approximately 910 creosote-treated wooden pilings. Among other toxicological effects to wildlife, exposure to creosote-treated piles has been shown to have detrimental effects on early life stages of Pacific Herring (*Clupea pallasii*).
- Provide habitat enhancement through eelgrass planting that would benefit essential fish habitat and sensitive marine species and support overall habitat complexity of the Bay.

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.

1.7 APPROVALS AND REGULATORY REQUIREMENTS

1.7.1 California State Lands Commission

All tidelands and submerged lands granted or ungranted, as well as navigable lakes and waterways, are subject to the protections of the common law Public Trust Doctrine. The State of California acquired sovereign ownership of all tidelands, 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, 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 or where the boundary has been fixed by agreement or a court. CSLC's authority is set forth in Division 6 of the Public Resources Code, and the agency is regulated by the California Code of Regulations, title 2, sections 1900–3016. 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). At the Project location, State jurisdiction runs waterward from 19th century tidelands patents. Chevron owns the tide and submerged lands between the State jurisdiction line and the ordinary high-water mark, subject to an easement in favor of the public for Public Trust purposes (see Figure 2-1 for specific boundaries).

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 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, if feasible.

1 Chevron has submitted an application to CSLC to amend its existing lease for the Wharf
2 in connection with the Project.

3 1.7.2 Other Agencies

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

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

Agency	Permit or Approval	Project Action Associated with Permit/Approval
Local		
City of Richmond	Demolition Permit	A permit is required for demolition of the Wharf.
State		
California State Lands Commission	Lease Amendment	Following removal of the Wharf, the Lease would be terminated.
Bay Conservation and Development Commission	Administrative Permit	Project activities could place temporary or permanent fill in Bay Conservation and Development Commission jurisdiction. The Project would also remove permanent fill from the Bay.
SF Bay Regional Water Quality Control Board	Clean Water Act Section 401 Water Quality Certification	The Project would place fill in waters of the state. The Project would also remove permanent fill from the Bay.
Federal		
U.S. Army Corps of Engineers	Clean Water Act Section 404 individual permit	Project activities could place temporary or permanent fill in waters of the United States. The Project would also remove permanent fill from the Bay.
National Marine Fisheries Service	Biological opinion under Section 7 of the Endangered Species Act	Demolition activities could affect aquatic listed anadromous fish species in the Project area.
U.S. Coast Guard	Notice to Mariners	A Local Notice to Mariners for in-Bay equipment and activities during demolition is required.

2.0 PROJECT DESCRIPTION

As discussed in Section 1.5, *Project Background and Objectives*, Chevron is proposing to remove the Wharf in San Francisco Bay and restore habitat at the Wharf location.

2.1 EXISTING WHARF STRUCTURE

The Wharf is a pile-supported structure with wooden decking that extends approximately 1,300 feet into San Francisco Bay, with a total length of about 2,000 feet (Figure 2-1). From shore, the first 485 feet of the structure is on land owned by Chevron; the remaining portion is on State-owned land leased from the California State Lands Commission. The narrower portion of the Wharf that runs perpendicular to the shoreline is referred to as the Causeway; the wider portion parallel to and further from the shoreline is referred to as the Main Wharf (Figure 2-1). Approximately 17 steel pipelines, which were once used to transport petroleum products to and from vessels, run parallel to the wood decking along the southern side of the Causeway and on to the Main Wharf structure. The majority of the piles supporting the structure are creosote-treated wood piles, some of which are encased in a concrete jacket or a polyvinyl chloride (PVC) wrapping. Some steel piles are also associated with the structure, providing support to the mooring dolphins and fendering. A concrete and steel fendering system is present on the western edge of the Main Wharf. In total, there are 910 creosote-treated piles supporting the structure, 289 of which are encased in a jacket/wrapping. There are also 90 steel piles (34 at 36-inch-diameter, 40 at 30-inch-diameter, and 16 at 24-inch-diameter) supporting the structure. Where the Causeway meets the shoreline, it is supported by a concrete footing directly underneath the end of the decking. Though the decking was removed in 2020, the concrete footing remains to be removed as part of this Project. Figures 2-2 through 2-6 show representative photographs of the Wharf and the surrounding areas.

Treated wood piles were historically used to support piers, wharfs, bridges, bulkheads, and navigational aids. Many of these wooden piles were infused with creosote, a substance used from the mid-1800s into the 1950s to preserve wooden marine structures from decay. Creosote is an oily product distilled from crude coal tar and contains a complex mixture of chemicals, many of which are toxic to fish and other marine organisms. Creosote-treated piles continued to be used in the Bay until 1993, when the California Department of Fish and Wildlife stopped approving the use of creosote in state waters (Werme et al. 2010).

While the Wharf was in use, a dredged channel and berthing area with a depth of approximately 33 feet below mean lower low water (MLLW) was maintained on the western side of the Main Wharf. Since the Wharf was decommissioned, portions of that channel and berthing area have been filling in with sediment. However, the Wharf itself causes scour as it interacts with strong tidal currents coming from the north, maintaining a deep scour pocket of approximately 50 feet below MLLW west of the Main Wharf and

Figure 2-1. Project Area

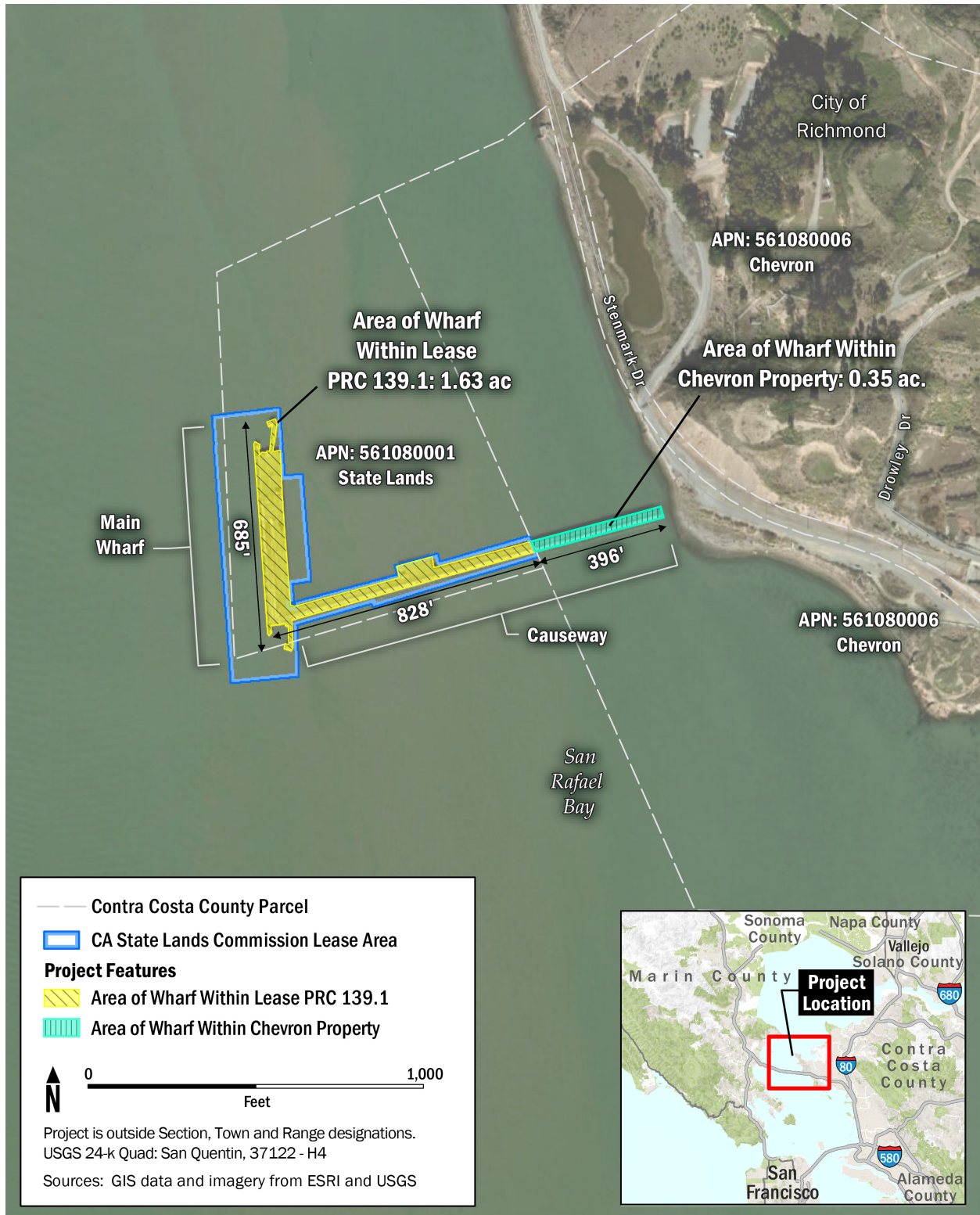


Figure 2-2. Overview of the Point Orient Wharf (the Causeway is on the left and the Main Wharf is on the right)



Figure 2-3. The Causeway (Oriented East-West) of the Point Orient Wharf, Primarily Supported on Jacketed/Wrapped Wooden Piles



Figure 2-4. The Main Wharf (Oriented North-South), Primarily Supported on Jacketed/Wrapped Wooden Piles



Figure 2-5. Concrete and Steel Fendering Protecting the Main Wharf



33 feet below MLLW southeast of the Main Wharf (Figure 2-6). Bathymetry along the Causeway ranges from the upper intertidal at the eastern end of the Causeway to a depth of approximately 16 feet below MLLW at its western end. Intertidal and subtidal areas, down to a depth of about 5 feet below MLLW adjacent to the eastern portion of the Causeway, are populated by eelgrass (*Zostera marina*) beds (Figure 2-6). The nearby intertidal shoreline is dominated by rocky rubble with thick stands of green and red macroalgae and some small cobble beach areas in the upper intertidal.

2.2 DEMOLITION AND EELGRASS RESTORATION

Chevron proposes to remove the Wharf in its entirety and conduct eelgrass habitat restoration activities in the areas that were underneath and adjacent to the eastern portion of the Causeway. There are three main components of the Project, as described in the following subsections: 1) Wharf demolition, 2) eelgrass restoration, and 3) post-restoration monitoring.

2.2.1 Embankment Stabilization and Footing Removal

As part of the Project, Chevron will be repairing an area of unstable embankment along Stenmark Drive, just north of the Causeway (Figure 2-7). Portions of the unstable embankment are below mean higher high water (MHHW); to create a stable repair, the toe of the embankment reinforcement will need to be trenched into the upper intertidal zone. Rock slope protection consisting of approximately 330 cubic yards of ½ ton rock and 50 cubic yards of 6-inch gravel bedding will be needed (a total fill volume of 380 cubic yards). The area that would be covered by this rock slope protection is approximately 80 feet long and 2,500 square feet in area.

The Causeway's concrete footing will also be removed (Figure 2-7). The specific depth of the footing is unknown. An area of approximately 150 square feet and a volume of 10 cubic yards would be excavated so that the concrete footing can be removed. Approximately 15 cubic yards of fill would be placed to fill the created void. All excavation and fill to remove the footing would occur above MHHW.

2.2.2 Wharf Demolition

The Wharf would be removed over 2 years; the Causeway out to the Main Wharf would be removed in Year 1, and the Main Wharf structure would be removed in Year 2. To reduce impacts to nearby eelgrass beds, all equipment associated with demolition would occur in the Project footprint (Figure 2-6). The demolition would be carried out by a crew of seven to ten workers.

Figure 2-6. Project Footprint and Marine Habitats

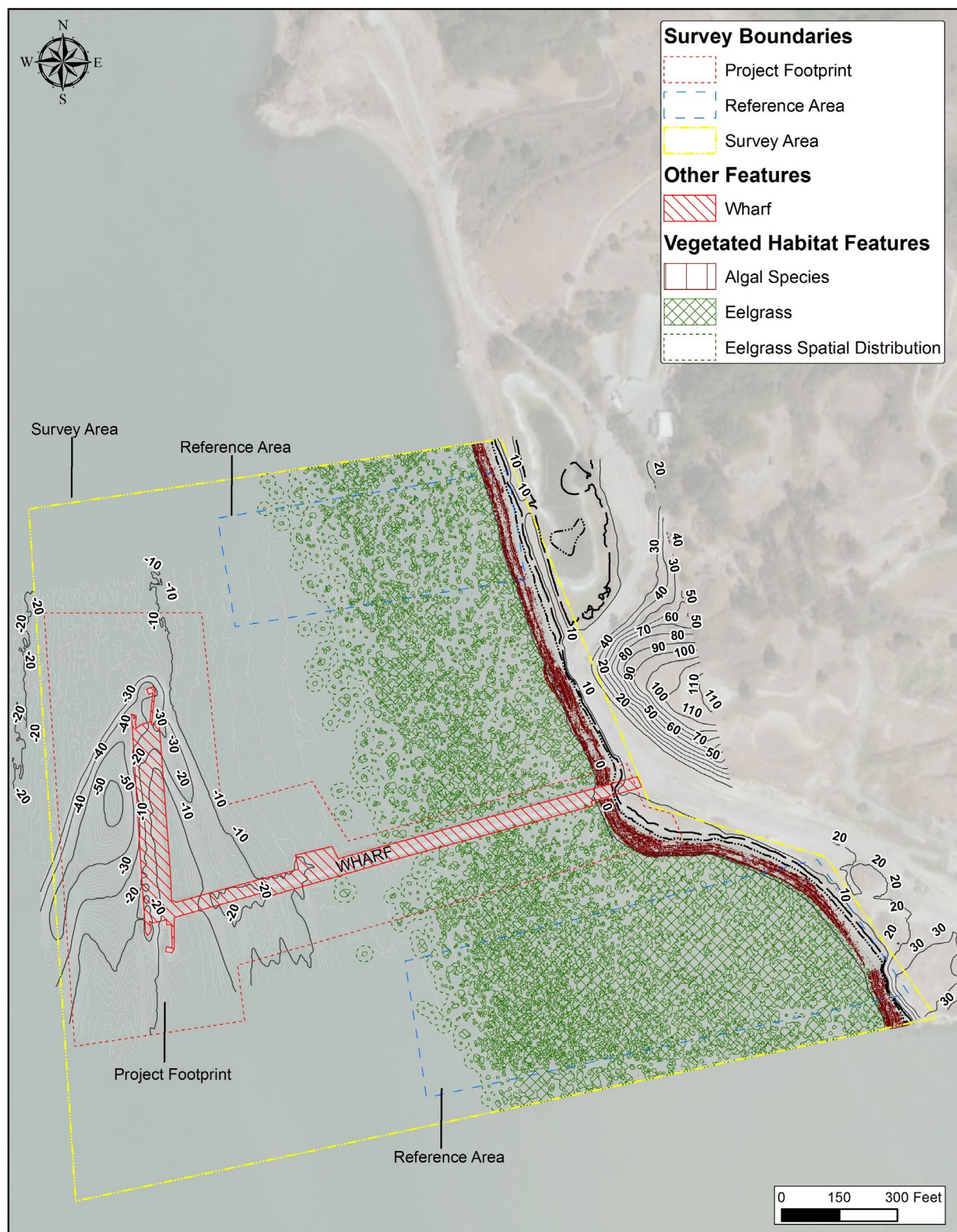
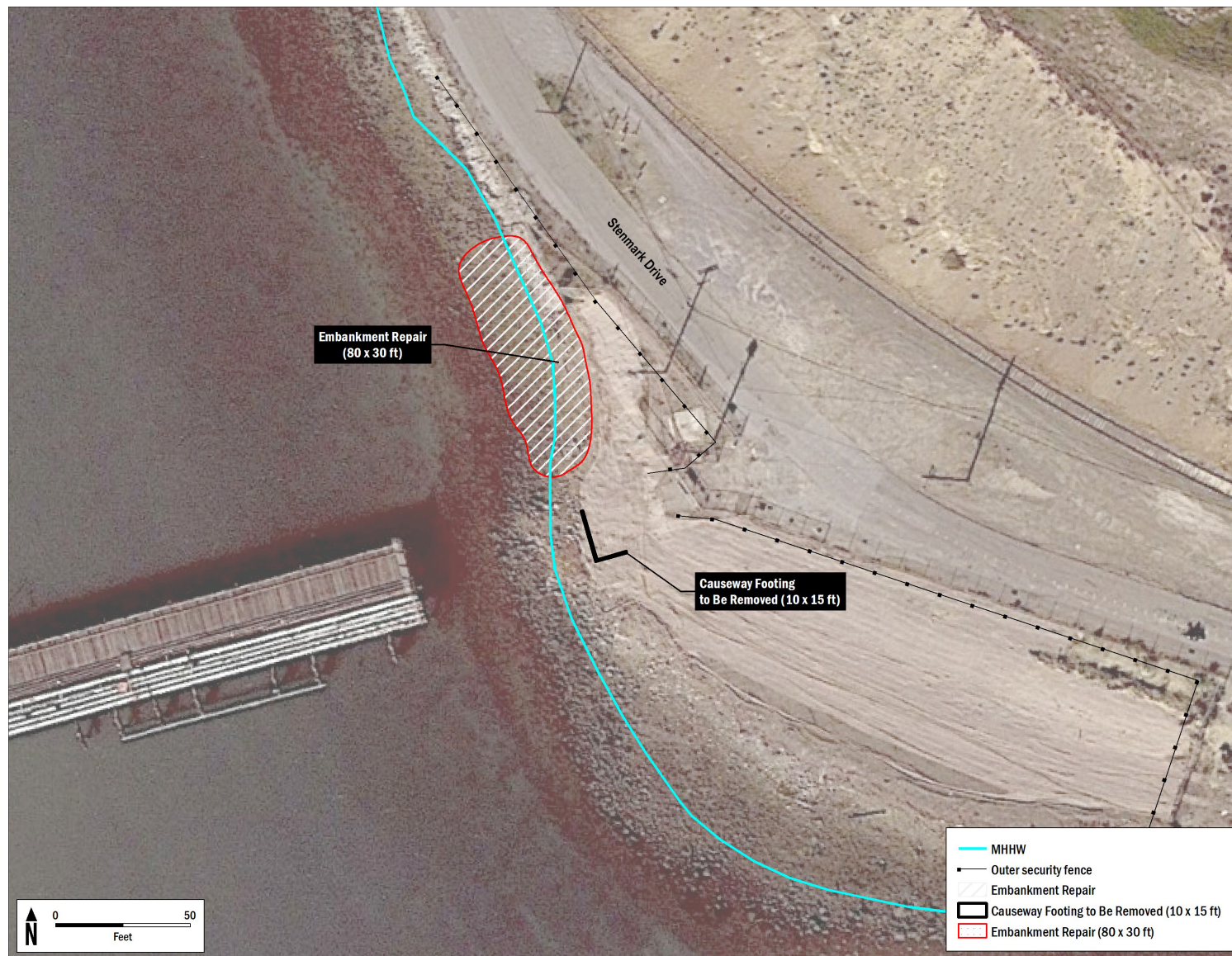


Figure 2-7. Embankment Stabilization and Footing Removal



2.2.2.1 Year 1 Demolition

During Year 1, the Causeway would be removed in its entirety. Demolition would begin by removing 1,600 feet of process piping that is supported along the southern edge of the Causeway. All of the various-sized process pipes were drained, cleaned, and left open to the air when the Wharf was decommissioned in the 1980s. The pipes would be cut in sections and loaded onto a barge for transport to a permitted disposal or recycling facility. During this phase, other infrastructure such as pipe supports, light poles, and other Causeway mounted structures would also be removed. Following removal of the piping and other Causeway mounted structures, the wooden decking, stringers, and pile caps would be removed. Finally, the piles that support the Causeway would be removed. Pile removal methods are described below. The material would be separated for recycling or disposal.

Removal of the Wharf and its supporting structures would be completed using barge-mounted floating equipment and cranes. The barges and tugs would come from the local equipment fleet that resides in San Francisco Bay. Work and material/debris barges (described below) would be positioned on the southern side of the Causeway during near-shore demolition. The barges vary in length from 98 to 200 feet and in width from 38 to 72 feet. The barges would have a draft ranging from approximately 4 to 6.5 feet. Work barges would be secured in place in shallow water along the Causeway with on-board spud poles. Anchors would be placed in deeper water farther offshore, with lines running parallel to the Causeway so that the barges can be pulled to deeper water as the tide falls (fleeting). Anchors or anchor lines would not be placed in eelgrass beds that are outside of the Project footprint. Barges may also be positioned with the assistance of small tugs.

Each work barge would have a crane or excavator aboard, along with small tooling and a work crew; each work barge would perform a demolition task (pipe removal, deck demolition, piling removal). A fleet of material barges would support the work barges and would be used to transport the demolition debris from the site. A flat-deck material barge would be positioned alongside each working barge to accept debris as it is removed from the Wharf structure. Once a material barge is fully loaded, it would be moved off site by tugboat and a new material barge placed alongside the working barge. The combination of the working and material barges, along with the demolition area, would be surrounded by a floating debris boom. During removal of the decking, metal trays would be positioned under demolition work to catch falling debris.

During demolition, temporary “Aids to Navigation” would be placed that would assist boaters in continuing to see the Main Wharf. Aids to navigation would consist of signs and lighting on vessels in conformance with U.S. Coast Guard navigation rules (USCG 2021). A “Notice to Mariners” would also be filed with the U.S. Coast Guard at the start of demolition. The Notice to Mariners would include phased drawings and notations

about temporary day and night navigational aids, anticipated to be reflective day shapes on the remaining structure and solar-powered flashing lights as night-time aids, that would be affixed to the Main Wharf. The Notice to Mariners would be in effect until Project completion and would be updated monthly.

2.2.2.2 Year 2 Demolition

During Year 2, the Main Wharf would be removed in its entirety in a manner similar to that described for Year 1 demolition of the Causeway. First, the mooring dolphins and steel pipe bridges would be removed. The concrete caps on the mooring dolphins would be cut off at the pile/cap interface and taken off site for demolition. The breasting dolphins and steel fendering would then be removed. Like the mooring dolphins, the concrete caps of the breasting dolphins would be cut off and demolished off site. Finally, the decking and piles of the Main Wharf structure would be removed using the same methods used for removal of the Causeway structure.

2.2.2.3 Pile Removal

The demolition contractor may use a variety of methods to remove the treated wood and steel piles that currently make up the mix of piles supporting the Wharf structure. The condition of the piles would dictate the methods that might be successfully implemented. The contractor would attempt to remove the piles entirely if possible; however, that may not be possible in all cases, particularly with the deteriorated wood piles. Methods for full pile removal would include:

Direct Pull. If the piles have sufficient structural integrity (such as for steel piles), the piling would be wrapped with chain or cable attached to a crane and pulled directly upward, removing the pile from the sediment.

Vibratory Extraction. A vibratory pile-driving hammer would be used to loosen the pile with vibration. The vibrations cause liquefaction of the sediments around the pile, allowing the pile to be pulled straight up and out. The contractor could use this method where the piles have sufficient structural integrity and there is adequate water depth for the contractor to attempt to remove the entirety of each pile.

In some cases, the treated wood piles may not have sufficient structural integrity to remove entirely and may break when pulled. In other cases, piles could be too firmly embedded in the sediment to be pulled. In these cases, the contractor would cut the pile using an underwater pneumatic chainsaw (or an underwater cutting torch system for steel piles that cannot be removed). Piles would be cut 2 feet under the mudline. Divers may be used to assist in cutting piles or to remove hardware below the water line. Piles that have concrete jackets or PVC wrapping would be removed with the jacket/wrapping in place.

The contractor would be prohibited from using a back-and-forth, rocking movement intended to snap the piling because this generally increases turbidity and leaves a pile stub extending into the water.

2.2.2.4 Equipment

Stabilization of the embankment along Stenmark Drive would include the use of the following equipment:

- Excavator
- Haul trucks

A variety of marine equipment would be used for the Wharf demolition. Marine equipment would include:

- Derrick barges with cranes
- Flexifloat barge
- Material barges
- Generators
- Air compressors
- Vibratory hammer
- Long-arm excavators
- Shears
- Debris boom
- Work skiffs and tugs

Initial equipment mobilization requires the staging of floating equipment and materials for the Causeway removal. All demolition equipment would be transported to and stored at the Project site on work barges.

2.2.2.5 Demolition Quantities and Materials Hauling

All demolition materials would be disposed offsite. The quantities of materials to be disposed are estimated as follows:

- Causeway abutment footing (concrete): approximately 20 tons
- Piles (treated wood): approximately 819 tons
- Piles (concrete): approximately 210 tons
- Concrete dolphin caps (24 each): approximately 863 tons
- Steel piping: approximately 862 tons
- Other steel (fendering, piles, etc.): approximately 971 tons
- Wood decking, including on-Wharf structures: approximately 1,474 tons

Removal of the Causeway and Main Wharf would generate approximately 36 barge loads of debris to be removed from the Project site. An estimated 12 to 13 material barge trips loaded with demolition debris would occur in Year 1 of demolition at a rate of about one barge trip every 2 weeks. The remaining 23 to 24 material barge trips would occur in Year 2 of demolition. Material barge trips would be less frequent during Year 1 demolition due to the smaller volume of material being removed. Because demolition in Year 2 includes all of the wooden piles, several large concrete dolphins, and a steel fender system, the frequency of barge traffic would be increased to an average of approximately one barge trip per week during the Year 2 work window.

Barges containing debris would be towed by tugs from the Project site to the Port of San Francisco Pier 96 (or another site identified by the demolition contractor) for sorting. At the sorting location, the material would be allowed to dry, sorted by type and disposal requirements (e.g., concrete, creosote-treated wood, and miscellaneous metal), placed onto trucks, and hauled off site for recycling or disposal at permitted landfills in accordance with federal, state, and local regulations.

Two of the steel product pipelines on the Wharf contain an asbestos insulation coating. To allow cutting the steel pipes without creating airborne asbestos particles, small sections of asbestos insulation would be removed on site by properly trained personnel. These pipes would be cut at the locations where the asbestos coating has been removed into approximately 15-foot sections and wrapped on site in double poly bags for transport. The cut-pipe sections would be transported by barge to the Chevron Richmond Refinery Long Wharf for asbestos abatement and processing at the Refinery before being hauled off site for disposal at permitted landfills in accordance with federal, state, and local regulations.

2.2.2.6 Power Sources and Water during Demolition

Power would be provided by generators on the work barges during Wharf demolition or on land during the shoreline work. Water used for demolition, including dust control, would be obtained from freshwater tanks on each work barge. If any water is needed during repair of the unstable embankment along Stenmark Drive, it will be provided by the contractor from offsite sources.

2.2.2.7 Staging and Stockpile Areas

During repair of the unstable embankment along Stenmark Drive and removal of the Causeway abutment footing, paved and gravel areas along the road and at the terminus of the Causeway would be used for access, worker parking, staging, and material stockpiling. No landside staging or crew parking would occur on site during the demolition of the Causeway and Main Wharf. Workers would park at an offsite location for all demolition work and would access floating work and material barges by crew boat transport each day. The crew boats would transport workers to the Project site either

1 from the marina at Point San Pablo or the Chevron Richmond Refinery Long Wharf. No
2 crew would remain at the Project site overnight or off shift.

3 Demolition debris would be placed on transport barges directly; when full, the barges
4 would transport the materials from the Project site. There would be no landside
5 stockpile in the Project area.

6 **2.2.3 Eelgrass Restoration**

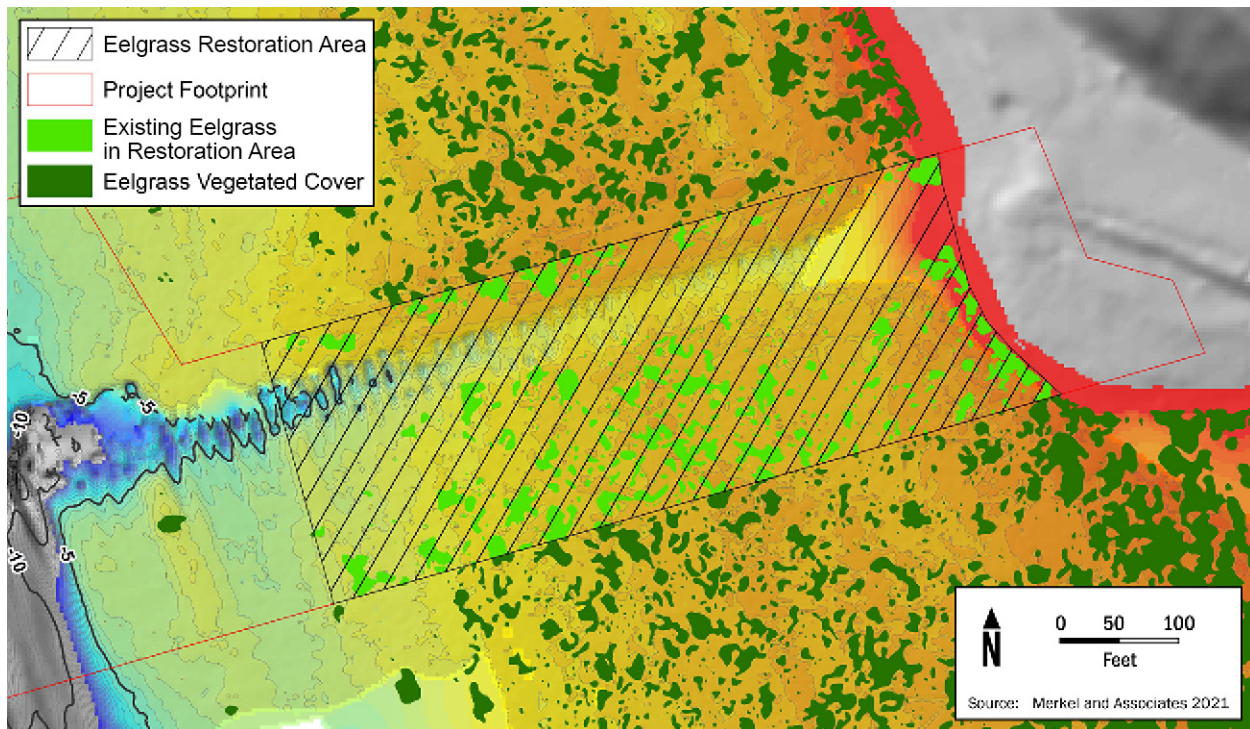
7 Any areas of eelgrass that are impacted during the Wharf demolition activities would be
8 restored by planting new eelgrass. In addition, eelgrass would be planted to restore
9 suitable areas currently beneath and immediately adjacent to the existing Causeway
10 that are currently not suitable for eelgrass due to shading and/or pile-induced scour
11 from the Causeway. Together, these areas comprise the Eelgrass Restoration Area, as
12 shown on Figure 2-8. Water depths at the location of the Main Wharf are too deep to
13 support eelgrass, so no eelgrass plantings would occur at that location. The goal of
14 restoration is to develop a net increase in eelgrass in the area by returning the area
15 beneath the Causeway to productive eelgrass habitat.

16 Eelgrass planting in and along the Eelgrass Restoration Area would occur during
17 Year 2, following removal of the Causeway during Year 1. Demolition of the Main Wharf
18 would occur at the same time as planting of the Eelgrass Restoration Area. Eelgrass
19 restoration planting would commence at the very beginning of the eelgrass high growth
20 season (April through October) and thus would provide a substantial growing period
21 prior to the natural winter period decline in beds.

22 The eelgrass transplants would be anchored using bare-root eelgrass transplant units.
23 Eelgrass for restoration would be harvested from the existing eelgrass beds north and
24 south of the Wharf, in the Project's eelgrass Survey Area but outside of the Project
25 Footprint and Reference Areas (Figure 2-6). The reference areas are eelgrass beds that
26 would be monitored and used to track natural dynamics in eelgrass beds during eelgrass
27 restoration monitoring. Monitoring of the Eelgrass Restoration Area would follow the
28 methods outlined in the California Eelgrass Mitigation Policy and Implementing
29 Guidelines (CEMP) (NOAA 2014). Eelgrass restoration would be conducted using hand
30 planting techniques, either while diving or wading, depending on water depth.

31 **2.2.4 Eelgrass Restoration Area**

32 The Eelgrass Restoration Area is situated along the Causeway where water depths
33 range from about 5 feet below MLLW to the lower intertidal, mirroring the distribution of
34 eelgrass in areas just north and south of the Causeway, and includes all areas where
35 eelgrass could be damaged by the demolition activities (Figure 2-8). It is anticipated that
36 the Eelgrass Restoration Area would total approximately 3 acres.

Figure 2-8. Eelgrass Restoration Area

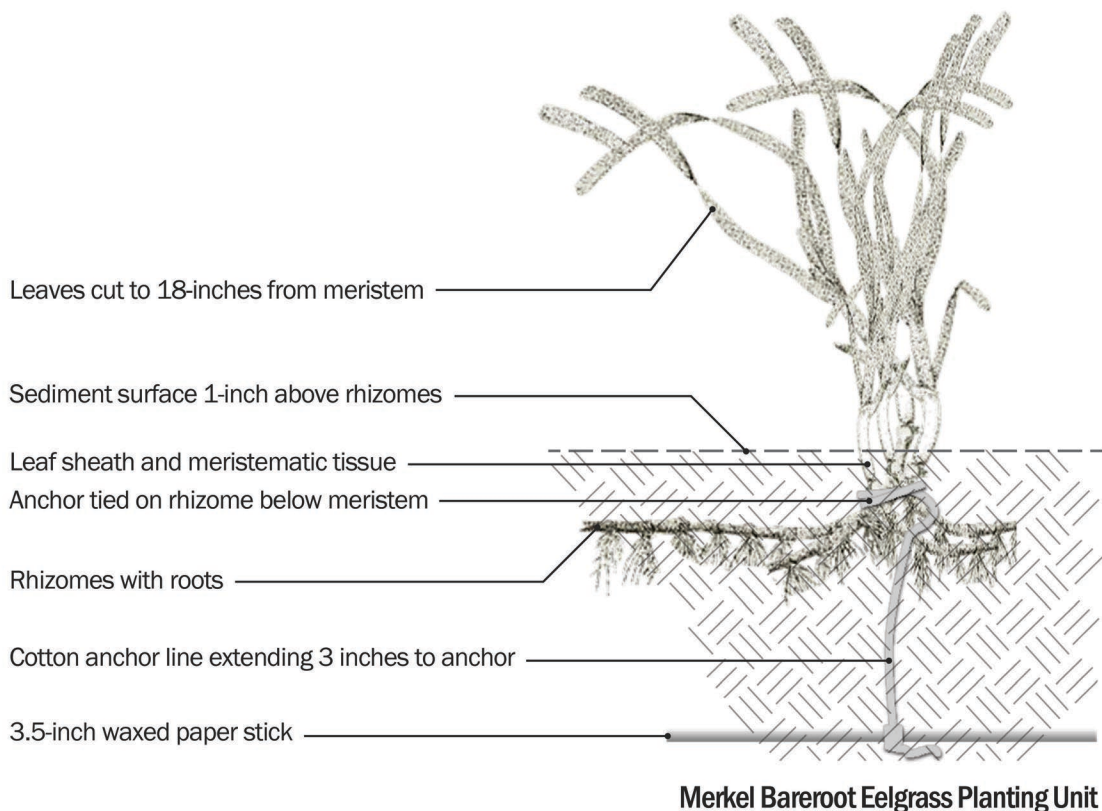
The Eelgrass Restoration Area is not proposed to be modified (e.g., importing sediment to fill the shallow scour trough) prior to planting, because it is presently soft-bottomed habitat suited to supporting eelgrass with the exception of the shading and scour resulting from the Wharf. In the Eelgrass Restoration Area, eelgrass establishment success would benefit from the removal of the Wharf deck shading and the gradual accretion of sediment into the area that has been affected by pile-induced scour. Although the presence of the scour trench may limit the initial anticipated yield, the effect would not be significant enough to preclude planting in this area.

2.2.5 Transplant Units

The proposed eelgrass restoration would use anchored bare-root planting units. Bare-root transplants are the preferred means of transplanting eelgrass in most situations, and anchored bare-root units are the principal planting units used in large-scale restoration projects today. The survival of such planting units has been shown to be quite high when properly prepared (Fonseca et al. 1982, Merkel 1990a). Similarly, bare-root units have shown an ability to rapidly expand and colonize bare substrate (Merkel 1990b). In addition to offering high unit survival and rapid expansion rates, bare-root units can be prepared with limited damage to the donor bed. Unlike plug extractions, bare-root units can be prepared using materials collected without substantial sediment disturbance.

1 Transplanted eelgrass would be anchored to the substrate using biodegradable and
2 pliable anchors such as those developed initially for transplants in southern California
3 and which have subsequently been used in at least 85 successful eelgrass restoration
4 projects throughout California, Oregon, Washington, and Alaska. The planting units
5 consists of turion bundles, held together below the meristematic tissue of the shoots by
6 a cotton twine collar that connects to a waxed paper stick; the stick is positioned parallel
7 to the sediment surface below the planting unit (Figure 2-9). These units have been
8 used successfully in San Francisco Bay for planting on Point San Pablo, along the San
9 Rafael shoreline, in Richardson Bay, along the Emeryville shoreline, and in Oakland
10 Harbor.

Figure 2-9. Bareroot Eelgrass Transplanting Unit



11 Each planting unit for the Project work would consist of eelgrass plants containing four
12 to six overwintering growth buds called turions (an average of five turions per unit).
13 Each planting unit would have an anchor (see below) attached to a turion bundle using
14 biodegradable twine. The number of turions per planting unit has been selected to
15 balance the amount of donor plant material required to prepare each unit with the
16 intrinsic mortality rate of individual turions so that each planting unit has a reasonably

high potential to survive the transplant. A total of 12,673 planting units are anticipated to be required for the Project. This would require approximately 63,365 turions to be harvested.

2.2.6 Donor Beds and Plant Collection

Donor eelgrass for the transplant would be harvested from the eelgrass beds in the Project survey area that fall outside of the reference areas and Project footprint (see Figure 2-6). The area where transplants would be harvested from totals 2.85 acres and is estimated to support approximately 757,470 eelgrass turions (overwintering growth buds), based on the measured average density of 65.6 turions per square meter (Merkel & Associates, Inc. 2021).

Factors that contributed to the selection of these donor eelgrass beds include:

1. Proximity to the planting area that favors both logistic convenience and selection of appropriate plant materials for the area
2. Suitability of donor bed size and eelgrass density to provide necessary transplant materials
3. Strong recovery potential for the donor bed (based on current eelgrass bed densities and health)
4. Safety and accessibility of the donor bed in the context of the overall eelgrass restoration program

Bare-root eelgrass plant material would be salvaged from the donor beds by “raking” rhizomes out of the surface sediment layers and loosely filling a mesh bag with salvaged material. In collecting eelgrass, care would be taken to work the rhizomes free as opposed to ripping the plants free of the sediment. This would preserve as much root material as possible. Salvaged materials would consist of no less than three healthy internodal segments with well-developed root initiates and vigorous shoots. More intact rhizome segments and roots are preferred for use in the planting-unit bundles. Salvaging is a mobile exercise, and harvesters would move systematically through an area and collect/groom no more than 10 percent of the plant material in a donor bed. The available harvest level in the donor bed is estimated at 75,747 turions. It is estimated that approximately 15,149 planting units, averaging five turions per planting unit, could be prepared from material harvested from the identified donor bed. This exceeds the anticipated harvest need.

Collected material would be held in mesh bags in the Bay, or in a flow-through seawater source until it is processed into planting units. No material would be stored for more than 48 hours from harvesting to planting unit preparation. Once planting units are

prepared, they would be stored in open water for no longer than 24 hours, for a maximum total of 72 hours of storage from harvest to planting, with storage generally being loose in flowing seawater or in mesh nets suspended in the Bay at the harvest or transplant sites.

2.2.7 Eelgrass Planting

Eelgrass planting would be guided by establishing temporary planting lines on the bottom that are set 10 feet apart by spooling weighted lines out from a surface vessel navigating consecutively spaced lines using global positioning system technology. Lines can generally be set with extreme accuracy of less than 1.6 feet horizontal error. Lines would be marked with uniquely identified buoys to allow for location, information management, and surface-based retrieval after lines are planted. Using planting lines, the restoration sites are to be planted on 3.3-foot centers. Each planting line would be used to plant an area 10 feet wide. The use of planting lines facilitates tracking work progress and completion of quality control reviews throughout the planting process.

The eelgrass would be planted by excavating a hole in the sediments with a small trowel or by hand. Each anchor would be planted parallel to the sediment surface; the root/rhizome bundle would be planted approximately 1 inch below the sediment surface, with the anchor placed approximately 4 inches below the sediment surface. During planting, spot checks of the plantings would be made to ensure proper planting depth and firmness of the anchoring system.

A planting unit spacing of about 3 feet on center would be used for the transplant areas. About 12,000 to 13,000 planting units would be used to achieve the maximum 3.13 acres planted under this Project.

2.3 POST-RESTORATION MONITORING

Upon completion of the eelgrass planting effort, a monitoring program would be initiated and continued for a 60-month (5-year) period, as outlined in the CEMP. The post-restoration monitoring of eelgrass beds in the Eelgrass Restoration Area would be conducted to ensure that the restoration was successful and to identify and guide any adaptive management or maintenance that may be needed. Spatial distribution, areal extent, percent vegetated cover, and turion density of the transplanted eelgrass and reference areas would be monitored and reported as outlined in the CEMP.

Reference areas would be used to compare eelgrass growth in the Eelgrass Restoration Area to similar nearby areas not affected by the Project. Eelgrass reference areas to the north and south of the Eelgrass Restoration Area (Figure 2-6) were established during Project planning and would be retained throughout Project implementation and monitoring of the eelgrass restoration Project. Monitoring of the

reference areas would be conducted coincident with the monitoring of the transplanted eelgrass. Changes in the reference areas over time would be considered to represent natural environmental variability when evaluating the performance of the transplant sites. The restoration success criteria would be in accordance with the CEMP, as described in the following paragraphs.

Month 0. Monitoring should confirm the full coverage and distribution of planting units over the initial restoration area.

Month 6. Persistence and growth of eelgrass in the initial restoration area should be confirmed, and there should be a survival of at least 50 percent of the initial planting units with well-distributed coverage over the initial restoration area. The timing of this monitoring event should be flexible to ensure that work is completed during the active growth period.

Month 12. The restoration site should achieve a minimum of 40 percent coverage of eelgrass and 20 percent density of reference site(s) over not less than 1.0 times the impact area. A noncompulsory goal is to establish 1.3 times the impact area.

Month 24. The restoration area should achieve a minimum of 85 percent coverage of eelgrass and 70 percent density of reference site(s) over not less than 1.0 times the impact area. A noncompulsory goal is to establish 1.3 times the impact area.

Month 36. The restoration area should achieve a minimum of 100 percent coverage of eelgrass and 85 percent density of reference site(s) over not less than 1.0 times the area of the impact area. A noncompulsory goal is to establish 1.3 times the impact area. Additional noncompulsory goals at this monitoring interval are the natural infill of the scour trough and expansion of the eelgrass to 1.5 times the area of impact.

Month 48. The restoration area should achieve a minimum of 100 percent coverage of eelgrass and 85 percent density of reference site(s) over not less than 1.0 times the impact area. Noncompulsory goals are to establish 1.3 to 1.5 times the impact area and to have achieved the complete natural infill of the scour trough.

Month 60. The restoration area should achieve a minimum of 100 percent coverage of eelgrass and 85 percent density of reference site(s) over not less than 1.0 times the impact area. Noncompulsory goals are to establish 1.3 to 1.5 times the impact area and to have achieved the complete natural infill of the scour trough.

Areas that do not meet the above success criteria may be revegetated and again monitored until the Month 60 goals are achieved. Should replanting of the areas at the Project site fail to meet the success criteria, reconstruction of portions of one or more transplant sites may be required to carry out this revegetation. Should the reference

1 areas fail or decline alongside the transplant areas, these goals may be adjusted to
2 account for natural bed declines.

3 **2.4 SCHEDULE**

4 All in-water Wharf demolition work (including the embankment stabilization and footing
5 removal) would take place during the work window of June 1 through November 30, a
6 time when sensitive life stages of fish species, including steelhead and salmon, are
7 unlikely to be present. There would be approximately 100 in-water workdays each
8 season. The Causeway portion of the Wharf would be removed in Year 1. Embankment
9 stabilization and footing removal would also occur in Year 1. The concrete and steel
10 mooring and berthing structures and the Main Wharf structure would be removed in
11 Year 2. Eelgrass restoration would occur during Year 2 of the Project, after the
12 Causeway section has been removed and simultaneous with removal of the Main Wharf
13 section.

14 The demolition work is planned for 2022 (Year 1) and 2023 (Year 2). Therefore, in-water
15 demolition activity would occur from June 1 to November 30, 2022, and resume in June
16 through November 2023. Eelgrass restoration would be completed during the 2023
17 work season.

18 Following completion of demolition and restoration, monitoring of the restored areas
19 would be conducted over a period of 60 months, in conformance with the CEMP.

3.0 ENVIRONMENTAL CHECKLIST AND ANALYSIS

This section contains the Initial Study (IS) that was completed for the proposed Point Orient Wharf Removal Project (Project) in accordance with the requirements of the California Environmental Quality Act (CEQA). The IS identifies site-specific conditions and potential Project-related environmental 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. Based on the analysis and information contained herein, California State Lands Commission (CSLC) staff have determined 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 or mitigate those effects to a point where clearly no significant effect on the environment would occur. As a result, CSLC staff have concluded that a Mitigated Negative Declaration (MND) is the appropriate CEQA document for the Project.

The evaluation of potential environmental impacts provided in this IS is based in part on the impact questions contained in Appendix G of the State CEQA Guidelines; these questions, which are included in an impact assessment matrix for each environmental category (Aesthetics, Agriculture/Forest Resources, 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 impact may be significant. If there are one or more “Potentially Significant Impacts,” a Project Environmental Impact Report 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 avoid or reduce the identified impact(s) to a less than significant level.
- **Less than Significant Impact.** This column is checked when the Project would not result in any significant environmental impacts. The Project’s environmental 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 environmental impact in the category, or when the category does not apply.

The following environmental topics would be potentially affected by this Project: Air Quality; Biology; Cultural and Tribal Cultural Resources; Geology, Soils, and Paleontological Resources; Hazards and Hazardous Materials; and Hydrology and

1 Water Quality. Each of these topics has at least one impact in that category that would be
2 a “Potentially Significant Impact,” except that the Applicant has agreed to Project
3 revisions, including implementation of mitigation measures, to avoid or reduce the
4 impacts to “Less than Significant with Mitigation.”

5 Detailed descriptions and analyses of environmental impacts from Project activities and
6 the basis for their significance determinations are provided for each environmental
7 factor on the following pages, beginning with Section 3.1, Aesthetics. Relevant laws,
8 regulations, and policies potentially applicable to the Project are listed in the Regulatory
9 Setting for each environmental factor analyzed in this IS.

10 **AGENCY DETERMINATION**

11 Based on the environmental impact analysis provided by this IS:

- 12 ☐ I find that the proposed Project COULD NOT have a significant effect on the
13 environment, and a NEGATIVE DECLARATION will be prepared.
- 14 ☒ I find that although the proposed Project could have a significant effect on the
15 environment, there will not be a significant effect in this case because revisions in
16 the Project have been made by or agreed to by the Project proponent. A
17 MITIGATED NEGATIVE DECLARATION will be prepared.
- 18 ☐ I find that the proposed Project MAY have a significant effect on the environment,
19 and an ENVIRONMENTAL IMPACT REPORT is required.



Signature

Date

Sarah Mongano, Senior Environmental Scientist
California State Lands Commission

1 3.1 AESTHETICS

AESTHETICS – Except as provided in Public Resources Code Section 21099, 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 non-urbanized 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?	☐	☐	☐	☒

2 3.1.1 Environmental Setting

3 3.1.1.1 Project Area Visual Character

4 The Wharf is in San Francisco Bay (San Rafael Bay subarea), approximately 1.55 miles
 5 north of the Richmond–San Rafael Bridge, near Stenmark Drive (see Figure 1-1) in the
 6 City of Richmond. Primary vehicle access to the Project area is provided by Stenmark
 7 Drive.

8 The Project is in an undeveloped area, with elevations ranging from about 0 to 100 feet
 9 in the immediate vicinity of the Project site. Where the Wharf interfaces with the
 10 shoreline, the shoreline is primarily covered in local rock and rock slope protection that
 11 protects the shore from wave action. Landside of the shoreline to the east of the Wharf
 12 is Stenmark Drive, a nonoperational railway (abandoned tracks), and Chevron
 13 Richmond Refinery property east of Stenmark Drive. In the limited upland areas that are
 14 not paved or graveled, natural vegetation communities are primarily ruderal, comprising
 15 nonnative grasses and forbs, and barren areas. In the properties that border Stenmark
 16 Drive to the east, vegetation communities are primarily ruderal and nonnative grassland.
 17 The visual character of the Project area is that of undeveloped areas with views of San
 18 Francisco Bay and the Richmond–San Rafael Bridge to the east.

1 3.1.1.2 Scenic Vistas

2 Scenic vistas are areas of natural beauty with features such as topography,
3 watercourses, rock outcrops, and natural vegetation that contribute to the landscape's
4 visual quality. The City of Richmond General Plan considers San Francisco Bay a
5 prominent scenic area in Richmond (City of Richmond 2012). Due to the location and
6 topography of the Project site, there is an unobstructed panoramic view of San
7 Francisco Bay looking east to west from the Project site. The Wharf is visible in the
8 foreground for travelers along Stenmark Drive and does not currently block significant
9 Bay views.

10 3.1.1.3 Scenic Highways

11 There are no state-designated scenic highways or routes in the Project vicinity. A
12 portion of Interstate 580 (I-580), approximately 9 miles southeast of the Project site, is
13 the closest state scenic highway (Caltrans 2021).

14 3.1.1.4 Light and Glare

15 The Wharf is a decommissioned wharf with no existing sources of light and glare. The
16 site is surrounded by existing sources of light and glare from roadways, such as
17 vehicular headlights.

18 **3.1.2 Regulatory Setting**

19 Federal and state laws and regulations pertaining to aesthetics and relevant to the
20 Project are identified in Appendix A. At the local level, the City of Richmond General
21 Plan, Conservation and Natural Resources Element, has policies related to conserving
22 open space and protecting surrounding hills and viewsheds (City of Richmond 2012).

23 **3.1.3 Impact Analysis**

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

25 **Less than Significant Impact.** The Project involves removing the Wharf in its entirety
26 and restoring the intertidal and subtidal habitat in areas under the Causeway that are
27 suitable for eelgrass and are currently affected by the shading and scour imposed by
28 the structure. During demolition, public views of San Francisco Bay could be temporarily
29 affected along Stenmark Drive due to the presence of workers and marine equipment.
30 However, the Project site itself is not accessible to the public, and there are minimal
31 views of the Project site from publicly accessible locations nearby. The Project would
32 not introduce any new structures that could affect existing scenic vistas, and all marine
33 equipment would be removed following demolition and eelgrass restoration. There
34 would be no permanently obstructed views, and San Francisco Bay would remain a

1 prominent scenic area because there would be increased visibility from the shoreline
2 and Stenmark Drive following removal of the Wharf. Therefore, the Project would not
3 have a substantial adverse effect on a scenic vista. There would be a less than
4 significant impact.

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

7 **No Impact.** As described above, a portion of I-580, a state-designated scenic highway,
8 is approximately 9 miles southeast of the Project site. The Project is not within a state-
9 designated scenic highway, therefore it would not substantially damage scenic
10 resources in a state-designated scenic highway. There would be no impact.

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

16 **Less than Significant Impact.** The Project site is in a currently nonurbanized area of
17 the City of Richmond, primarily in San Francisco Bay. As discussed above, the Project
18 site itself is not accessible to the public, and there are minimal views of the Project site
19 from publicly accessible locations nearby. The Project site could be visible to the public
20 from a vehicle pullout area on Stenmark Drive approximately 700 feet to the east and
21 from boats in San Francisco Bay traveling nearby.

22 The existing visual environmental of the Project area would be temporarily altered
23 because demolition and eelgrass restoration activities would be visible to nearby
24 travelers and other publicly accessible locations nearby. However, visual changes
25 would be temporary and would extend only for the duration of the work activities. After
26 demolition and eelgrass restoration is complete, the Project would result in greater
27 visibility of San Francisco Bay from the shoreline. The Project would not substantially
28 degrade the existing visual character of the Project site or quality of public views, but
29 would enhance views of San Francisco Bay. Therefore, there would be a less than
30 significant impact.

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

33 **No Impact.** The Project would not introduce new sources of substantial light or glare in
34 the Project area. Demolition and eelgrass restoration activities would take place during
35 the daytime hours, and nighttime work would not be required. Any potential glare
36 emitted from work equipment during the day would not adversely affect day or nighttime
37 views. Therefore, there would be no impact.

1 **3.1.4 Mitigation Summary**

- 2 The Project would have no significant impacts to aesthetics; therefore, no mitigation is
3 required.

1 3.2 AGRICULTURE AND FOREST RESOURCES

AGRICULTURE AND FOREST RESOURCES. 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 Dept. 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 forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board – 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 Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

2 3.2.1 Environmental Setting

- 3 The Wharf is in San Francisco Bay (San Rafael Bay sub-area), approximately
 4 1.55 miles of the Richmond–San Rafael Bridge, near Stenmark Drive in the City of

Richmond. Demolition would occur entirely offshore in San Francisco Bay, and shoreline repair would occur landside of the Wharf. Sorting of demolition debris would occur at the existing Pier 96 facility in the City of San Francisco. According to the California Department of Conservation (DOC) Important Farmland Map, land adjacent to the Project site is not designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (DOC 2016). Land adjacent to the Project site is designated “Urban and Built-Up Land” and “Other Land.” The DOC does not consider “Urban and Built-Up Land” and “Other Land” to be Important Farmland.

Under the California Land Conservation Act of 1965, also known as the Williamson Act, local governments can enter into contracts with private property owners to protect land (in agricultural preserves) for agricultural and open space purposes. No parcels adjacent to the Project site are under Williamson Act contracts because they are in an urbanized area (DOC 2016).

3.2.2 Regulatory Setting

Federal and state laws and regulations pertaining to agriculture and forest resources and relevant to the Project are identified in Appendix A. At the local level, there are no goals, policies, and/or regulations applicable to this resource area for the Project due to its location and the nature of the activity.

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 Resources Agency, to non-agricultural use?

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

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

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

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

No Impact. In response to all of the above, the majority of the Project site would be situated offshore. The DOC categorizes land adjacent to the Project site and the surrounding areas as “Urban and Built-up Land” and “Other Land”; therefore, these

1 areas are not Prime Farmland, Unique Farmland, or Farmland of Statewide Importance
2 (Farmland), and are not subject to any Williamson Act contracts (DOC 2016). The lands
3 adjacent to the Project site and surrounding area are not zoned for agricultural uses,
4 and are not zoned for forestland, timberland, or Timberland Production Zone.

5 The landside portion of the Project area is currently zoned OS – Open Space. The
6 Project would not convert any farmland to nonagricultural use; convert any forest land to
7 nonforest use; or conflict with existing agricultural or timberland zoning. There would be
8 no impact.

9 **3.2.4 Mitigation Summary**

10 The Project would have no impacts to agriculture and forest resources; therefore, no
11 mitigation is required.

1 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 nonattainment 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?	☐	☐	☒	☐

2 3.3.1 Environmental Setting

3 3.3.1.1 Topography, Meteorology, and Climate

4 The Project is in the San Francisco Bay Area Air Basin (SFBAAB), which comprise
5 many complex terrain types, including coastal mountain ranges, inland valleys, and
6 bays, that distort normal wind flow patterns. The SFBAAB is generally bordered on the
7 west by the Pacific Ocean, on the north by the Coast Ranges, and on the east and
8 south by the Diablo Range. Meteorological conditions in the SFBAAB are warm and
9 mainly dry in summer and mild and moderately wet in winter. Marine air has a
10 moderating effect on the climate throughout much of the year. Wind speeds are
11 generally low throughout the region, and winds typically blow from northwest to
12 southwest. However, strong afternoon gusts are common in the northern portion of
13 Contra Costa County around the Carquinez Strait. Annual rainfall averages between
14 18 and 23 inches across the county.

15 3.3.1.2 Local Air Quality Conditions

16 Individual air pollutants at certain concentrations may adversely affect human or animal
17 health, reduce visibility, damage property, and reduce the productivity or vigor of crops
18 and natural vegetation. Six air pollutants have been identified by the U.S. Environmental
19 Protection Agency (USEPA) and the California Air Resources Board (CARB) as being of
20 concern both on a nationwide and statewide level: ozone; carbon monoxide; nitrogen

dioxide; sulfur dioxide; lead; and particulate matter (PM), which is subdivided into two classes based on particle size: PM equal to or less than 10 micrometers in diameter (PM₁₀) and PM equal to or less than 2.5 micrometers in diameter (PM_{2.5}). Because the air quality standards for these air pollutants are regulated using human health and environmentally based criteria, they are commonly referred to as “criteria air pollutants.”

The determination of whether a region’s air quality is healthful or unhealthful is made by comparing contaminant levels in ambient air samples to California Ambient Air Quality Standards (CAAQS) and National Ambient Air Quality Standards (NAAQS). Ambient air concentrations are monitored throughout the SFBAAB to designate an area’s attainment status with respect to the CAAQS and NAAQS for criteria air pollutants. The purpose of these designations is to identify areas with air quality problems, thereby initiating planning efforts for improvement. The three basic designation categories are “nonattainment,” “attainment,” and “unclassified” (the latter is used for areas that cannot be classified on the basis of available information as meeting or not meeting the standards). Table 3.3-1 lists recent attainment designations with respect to the SFBAAB. With respect to the CAAQS, the SFBAAB is designated as a nonattainment area for ozone, PM₁₀, and PM_{2.5}; and as an attainment or unclassified area for all other pollutants. With respect to the NAAQS, the SFBAAB is designated as a nonattainment area for ozone and PM_{2.5}, and as an attainment or unclassified area for all other pollutants (BAAQMD 2017a).

The Bay Area Air Quality Management District (BAAQMD) is the regional air quality agency for the SFBAAB. BAAQMD maintains multiple air quality monitoring stations that continually measure the ambient concentrations of major air pollutants throughout the Bay Area. The closest monitoring station to the Project site is the San Pablo-Rumrill Blvd station, about 3.7 miles east. Table 3.3-2 presents a summary of the ambient air quality data recorded at this station for the past 3 years. As shown, concentrations of ozone, PM₁₀, and PM_{2.5} exceeded the NAAQS or CAAQS in 2017 through 2019.

In addition to criteria air pollutants, USEPA and CARB regulate hazardous air pollutants, also known as toxic air contaminants (TACs). TACs collectively refer to a diverse group of air pollutants that are capable of causing chronic (i.e., long-duration) and acute (i.e., severe but short-term) adverse effects on human health, including carcinogenic effects. TACs can be separated into carcinogens and noncarcinogens based on the nature of the effects associated with exposure to the pollutant. For regulatory purposes, carcinogens are assumed to have no safe threshold below which health impacts would not occur. Any exposure to a carcinogen poses some risk of contracting cancer. Noncarcinogens differ in that there is generally assumed to be a safe level of exposure below which no negative health impact is believed to occur. These levels are determined on a pollutant-by-pollutant basis.

Table 3.3-1. NAAQS, CAAQS, and SFBAAB Attainment Status

Pollutant	Averaging Time	California Standards – Concentration	California Standards – Status	National Standards – Concentration	National Standards – Status
Ozone	1 Hour	0.09 ppm (180 µg/m ³)	Nonattainment	—	—
Ozone	8 Hour	0.070 ppm (137 µg/m ³)	Nonattainment	0.070 ppm	Nonattainment
Particulate Matter (PM ₁₀)	24 Hour	50 µg/m ³	Nonattainment	150 µg/m ³	Unclassified
Particulate Matter (PM ₁₀)	AAM	20 µg/m ³	Nonattainment	—	—
Particulate Matter – Fine (PM _{2.5})	24 Hour	—	—	35 µg/m ³	Nonattainment
Particulate Matter – Fine (PM _{2.5})	AAM	12 µg/m ³	Nonattainment	12 µg/m ³	Attainment/ Unclassified
Carbon monoxide	8 Hour	9.0 ppm (10 mg/m ³)	Attainment	9 ppm (10 mg/m ³)	Attainment
Carbon monoxide	1 Hour	20 ppm (23 mg/m ³)	Attainment	35 ppm (40 mg/m ³)	Attainment
Nitrogen dioxide	AAM	0.030 ppm (57 µg/m ³)	—	0.053 ppm (100 µg/m ³)	Attainment
Nitrogen dioxide	1 Hour	0.18 ppm (339 µg/m ³)	Attainment	0.100 ppm	Unclassified
Sulfur dioxide	24 Hour	0.04 ppm (105 µg/m ³)	Attainment	0.14 ppm (365 µg/m ³)	Attainment
Sulfur dioxide	1 Hour	0.25 ppm (655 µg/m ³)	Attainment	0.075 ppm (196 µg/m ³)	Attainment
Sulfur dioxide	AAM	—	—	0.030 ppm (80 µg/m ³)	Attainment
Lead	30-Day Average	1.5 µg/m ³	Attainment	—	—
Lead	Calendar Quarter	—	—	1.5 µg/m ³	Attainment
Lead	Rolling 3-Month Average	—	—	0.15 µg/m ³	Attainment

Source: BAAQMD 2017a.

Acronyms: AAM = Annual Arithmetic Mean; CAAQS = California Ambient Air Quality Standards; µg/m³ = micrograms per cubic meter; mg/m³ = milligrams per cubic meter; NAAQS = National Ambient Air Quality Standards; PM_{2.5} = particulate matter equal to or less than 2.5 micrometers in diameter; PM₁₀ = particulate matter equal to or less than 10 micrometers in diameter; ppm = parts per million; SFBAAB = San Francisco Bay Area Air Basin

Table 3.3-2. Local Ambient Air Quality Summary

Pollutant	Applicable Standard/Description	2017	2018	2019
Ozone – 1-Hour	Maximum Concentration (ppm)	0.104	0.061	0.103
Ozone – 1-Hour	Days > CAAQS (0.09 ppm)	3	0	1
Ozone – 8-Hour	Maximum Concentration (ppm)	0.081	0.053	0.079
Ozone – 8-Hour	Days > NAAQS (0.070 ppm)	2	0	2
Ozone – 8-Hour	Days > CAAQS (0.070 ppm)	2	0	2
Particulate Matter (PM ₁₀) – 24-Hour	Maximum Concentration (µg/m ³)	98.0	201.0	36.0
Particulate Matter (PM ₁₀) – 24-Hour	Estimated Days > CAAQS (50 µg/m ³)	25.8	13.1	0.0
Particulate Matter (PM ₁₀) – 24-Hour	Estimated Days > NAAQS (150 µg/m ³)	0.00	*	0.0
Particulate Matter (PM ₁₀) – Annual	State Annual Average (20 µg/m ³)	20.4	21.5	16.6
Particulate Matter (PM _{2.5}) – 24-Hour	Maximum 24-hour concentration (µg/m ³)	71.2	195.4	35.9
Particulate Matter (PM _{2.5}) – Annual	Annual average concentration (µg/m ³)	10.8	12.8	*
Particulate Matter (PM _{2.5}) – 24-Hour	Measured Days > NAAQS (35 µg/m ³)	9	14	1
Carbon monoxide – 1-Hour ¹	Maximum Concentration (ppm)	2.3	2.0	1.7
Carbon monoxide – 1-Hour ¹	Days > CAAQS (20 ppm)	0	0	0
Carbon monoxide – 1-Hour ¹	Days > NAAQS (35 ppm)	0	0	0
Carbon monoxide – 8-Hour ¹	Maximum Concentration (ppm)	1.5	1.9	0.9
Carbon monoxide – 8-Hour ¹	Days > CAAQS (9.0 ppm)	0	0	0
Nitrogen dioxide – 1-hour	Maximum Concentration (ppm)	0.047	0.060	0.042
Nitrogen dioxide – 1-hour	Days > CAAQS (0.18 ppm)	0	0	0
Nitrogen dioxide – annual	Arithmetic Average (0.053 ppm)	0.008	0.007	0.007

Source: CARB 2021a and USEPA 2021.

Acronyms: CAAQS = California Ambient Air Quality Standards; µg/m³ = micrograms per cubic meter; NAAQS = National Ambient Air Quality Standards; PM_{2.5} = particulate matter equal to or less than 2.5 micrometers in diameter; PM₁₀ = particulate matter equal to or less than 10 micrometers in diameter; ppm = parts per million; * = sufficient data not available to determine the value.

Notes:

¹ Carbon monoxide monitored data are from USEPA AirData Website for Contra Costa County: www.epa.gov/airdata/ad_rep_mon.html.

* Ambient data for sulfur dioxide and airborne lead are not included in this table because the SFBAAB is currently in attainment with CAAQS and NAAQS for these pollutants.

3.3.1.3 Sensitive Receptors

Some receptors are considered more susceptible to potential health impacts from poor air quality than others. The reasons for greater than average sensitivity include preexisting health problems, proximity to emissions source, or duration of exposure to air pollutants. BAAQMD identifies a sensitive receptor as “facilities or land uses that include members of the population that are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. Examples include schools, hospitals, and residential areas” (BAAQMD 2017b). There are no sensitive receptors within a 1,000-foot radius from the Project site (the zone of influence defined by BAAQMD for risk and hazards for new sources and receptors).

3.3.2 Regulatory Setting

Federal and state laws and regulations pertaining to air quality and relevant to the Project are identified in Appendix A. At the regional level, BAAQMD is the local agency responsible for preparing, adopting, and implementing mobile, stationary, and area emission control measures and standards.

BAAQMD rules and regulations relevant to the Project include but are not limited to:

- Regulation 6 (Particulate Matter)
- Regulation 7 (Odorous Substances)
- Regulation 11, Rule 2 (Asbestos Demolition, Renovation and Manufacturing)

In addition, under the California Clean Air Act, BAAQMD is required to develop an air quality attainment plan for nonattainment criteria pollutants in the air district. The 2017 Bay Area Clean Air Plan: Spare the Air and Cool the Climate was adopted on April 19, 2017, and provides a regional strategy to protect public health and protect the climate. To fulfill state ozone planning requirements, the 2017 control strategy includes all feasible measures to reduce emissions of ozone precursors—reactive organic gases (ROG) and nitrogen oxides (NOx)—and reduce transport of ozone and its precursors to neighboring air basins. In addition, the 2017 Clean Air Plan builds on and enhances BAAQMD’s efforts to reduce emissions of fine PM and TACs (BAAQMD 2017c).

At the local level, the City of Richmond General Plan, Conservation, Natural Resources and Open Space, has policies and actions related to improving and maintaining air quality to protect human and environmental health (City of Richmond 2012).

3.3.3 Impact Analysis

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

Less than Significant Impact. Air quality plans describe air pollution control strategies to be implemented by a city, county, or regional air district. The primary purpose of an air quality plan is to bring an area that does not attain NAAQS and CAAQS into compliance with those standards pursuant to the requirements of the Clean Air Act and California Clean Air Act. As discussed previously, the most recent air quality plan is the BAAQMD 2017 Clean Air Plan. The 2017 Clean Air Plan identifies potential control measures and strategies, including rules and regulations that could be implemented to reduce air pollutant emissions from industrial facilities, commercial processes, on- and off-road motor vehicles, and other sources. BAAQMD implements these strategies through rules and regulations, grant and incentive programs, public education and outreach, and partnerships with other agencies and stakeholders.

A project is determined to be consistent with the 2017 Clean Air Plan if it supports the goals of the Clean Air Plan, includes applicable control measures from the Clean Air Plan, and would not disrupt or hinder implementation of any control measures from the Clean Air Plan (BAAQMD 2017c). Consistency with the Clean Air Plan also is determined through evaluation of project-related air quality impacts and demonstration that project-related emissions would not increase the frequency or severity of existing violations or contribute to a new violation of the NAAQS or CAAQS. The BAAQMD CEQA Air Quality Guidelines include thresholds of significance that are applied to evaluate regional impacts of project-specific emissions of air pollutants and their impact on BAAQMD's ability to reach attainment (BAAQMD 2017b). Emissions that are above these thresholds have not been accommodated in the air quality plans and would not be consistent with the air quality plans.

Demolition and eelgrass restoration activities associated with the Project would involve the temporary use of off-road equipment (e.g., barge-mounted crane, excavator, generator sets, or air compressors), marine equipment (e.g., barge, work boat, or crew boat), haul trucks, and worker commute trips. As discussed in Section 3.3(b) below, construction-related emissions from the Project would not exceed the thresholds of significance recommended by BAAQMD. In addition, consistent with Stationary Source Control Measures SS36 (PM from Trackout) and SS38 (Fugitive Dust) of the 2017 Clean Air Plan, and as noted in Mitigation Measure (MM) AQ-1, the Project would implement BAAQMD's Basic Construction Mitigation Measures, which would reduce fugitive dust emissions during demolition. After Wharf demolition and eelgrass restoration activities, post-restoration monitoring activities would be conducted to ensure that the eelgrass restoration was successful. These activities would involve minor and periodic visual inspections and activities over a 5-year period. It is not anticipated that these activities would be a substantial source of emissions or include

any activities that would conflict with the 2017 Clean Air Plan. Therefore, the Project would not conflict with or obstruct implementation of the applicable air quality plan, and this impact would be less than significant.

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

Less than Significant with Mitigation. By its very nature, air pollution is largely a cumulative impact. The nonattainment status of regional pollutants is a result of past and present development in the SFBAAB, and this regional impact is cumulative rather than being attributable to any one source. A project's emissions may be individually limited, but cumulatively considerable when taken in combination with past, present, and future development projects.

Construction emissions are short term or temporary but have the potential to result in a significant impact on air quality. Demolition and eelgrass restoration activities associated with the Project would generate temporary emissions of precursors to ozone (ROG and NO_x), carbon monoxide, PM₁₀, and PM_{2.5}. ROG, NO_x, and carbon monoxide emissions are associated primarily with mobile equipment exhaust, including off-road construction equipment, marine equipment, and on-road motor vehicles. Fugitive particulate matter dust emissions are associated primarily with site preparation and travel on unpaved roads and vary as a function of parameters such as soil silt content, soil moisture, wind speed, acreage of disturbance area, and miles traveled by construction vehicles.

Demolition and eelgrass restoration activities are anticipated to occur in 2022 and 2023 between June and November of each year. As described in Section 2.0, the Causeway out to the Main Wharf would be removed in Year 1, and the Main Wharf structure would be removed in Year 2. Restoration activities are anticipated to occur in 2023. Emissions associated with demolition and restoration activities were modeled using the emission factors from CARB's OFFROAD 2017 and EMFAC 2017 inventory models. OFFROAD 2017 is CARB's emissions inventory database for off-road diesel engines, used to quantify the amount of pollutants from thousands of engines in equipment used in industrial applications, agriculture, construction, mining, oil drilling, power generation, and many other industries. EMFAC 2017 is CARB's emissions inventory database for on-road vehicles. The EMFAC 2017 factors, as applicable to vehicle categories, were adjusted off-model to account for the impacts of the Safer Affordable Fuel-Efficient Vehicles Rule adopted by the USEPA and the National Highway Traffic Safety Administration.

Construction emissions from the operation of diesel-fueled off-road equipment were estimated by multiplying construction equipment use information by the equipment-

specific emissions factors, based on tier and horsepower provided in OFFROAD. Equipment use was provided by the Project engineers and includes a range of barge-mounted floating equipment and work boats, crew boats, and tugboats. Marine equipment emissions were estimated using CARB's Emissions Estimation Methodology for Commercial Harbor Craft Operating in California (CARB 2012). This methodology considers emissions from a variety of vessels, depending on the vessel type, and the age and horsepower of the propulsion and auxiliary engines. Additional details on equipment types, counts, and estimated use per day are available in Appendix B.

Emissions from onsite and offsite on-road motor vehicles were estimated using vehicle trips, vehicle miles traveled, and EMFAC 2017 mobile source emission factors. The emission factors represent the fleet-wide average emission factors in Contra Costa County. On-road motor vehicle use was based on construction crew size and estimated number of haul truck trips provided by the Project engineers. The construction crew size is anticipated to range from approximately 7 to 10 workers per day. Because no crew parking would occur onsite during the demolition activities, the analysis assumed that workers would park at an offsite location and arrive to the Project site by crew boat transport each day. The analysis also assumed that approximately 5,219 tons of treated wood waste, steel, and concrete debris would be loaded onto a barge for transport and offloaded onto trucks to landfills and recycling facilities. Additional details are available in Appendix B.

BAAQMD published the May 2017 CEQA Air Quality Guidelines, which provide lead agencies with assistance in evaluating air quality impacts of projects and plans proposed in the SFBAAB (BAAQMD 2017b). The guidelines provide recommended procedures for evaluating potential air impacts during the environmental review process, consistent with CEQA requirements, and include recommended thresholds of significance, mitigation measures, and background air quality information. BAAQMD has stated that the CEQA Guidelines are for informational purposes only and should be followed by local governments at their own discretion (BAAQMD 2017b). The BAAQMD CEQA Guidelines may inform environmental review for development projects in the Bay Area, but do not commit local governments or BAAQMD to any specific course of regulatory action. The thresholds for criteria pollutants were developed through a quantitative examination of the efficacy of fugitive dust mitigation measures and a quantitative examination of statewide nonattainment emissions and are used for the analysis of project-generated emissions.

Table 3.3-3 shows the estimated total and average daily emissions associated with Project demolition and eelgrass restoration activities.

Table 3.3-3. Estimated Total and Average Daily Project Emissions

Source/Description	ROG	NO _x	PM ₁₀ (Exhaust)	PM _{2.5} (Exhaust)
Year 1 Total Project Emissions (tons)	0.20	1.86	0.07	0.07
Year 1 Average Daily Emissions (lbs/day)¹	4.01	37.20	1.37	1.35
Year 2 Total Project Emissions (tons)	0.23	2.23	0.08	0.08
Year 2 Average Daily Emissions (lbs/day)¹	4.51	44.70	1.55	1.53
Threshold of Significance (lbs/day) ²	54	54	82	54
Exceeds Threshold?	No	No	No	No

Notes: ROG = reactive organic gases; NO_x = nitrogen oxides; PM₁₀ = particulate matter equal to or less than 10 micrometers in diameter; PM_{2.5} = particulate matter equal to or less than 2.5 micrometers in diameter; lbs/day = pounds per day

¹ Average daily emissions estimated assuming 100 workdays in each year.

² BAAQMD 2017b

BAAQMD does not have quantitative mass emissions thresholds for fugitive PM₁₀ and PM_{2.5} dust. Instead, BAAQMD recommends that all projects, regardless of the level of average daily emissions, implement applicable best management practices, including those listed as Basic Construction Measures in the BAAQMD CEQA Guidelines (BAAQMD 2017b).

Because the majority of the Project demolition and eelgrass restoration activities will occur offshore, resulting in a high moisture content in the debris, the potential for fugitive dust emissions is low. However, to comply with the BAAQMD threshold for fugitive dust and the Basic Construction Measures listed in the BAAQMD CEQA Guidelines, the following mitigation measure is needed.

- **MM AQ-1: Implement Basic Construction Emission Control Practices (Best Management Practices).** The demolition contractor shall comply with the following BAAQMD best management practices, as applicable, for reducing construction emissions of uncontrolled fugitive dust (PM₁₀ and PM_{2.5}):

(A) All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.

(B) All haul trucks transporting soil, sand, or other loose material offsite shall be covered.

(C) All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.

(D) All vehicle speeds on unpaved roads shall be limited to 15 miles per hour.

(E) Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations). Clear signage shall be provided for Project workers at all access points.

(F) The contractor bid documentation and contract specifications shall state that all construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation. Chevron will report results to CSLC staff.

(G) A publicly visible sign shall be posted with the telephone number and person to contact at Chevron regarding dust complaints. Chevron shall inform CSLC staff, and respond and take corrective action within 48 hours. The BAAQMD's phone number shall also be visible to ensure compliance with applicable regulations.

As shown in Table 3.3-3, Project-related emissions of ROG, NO_x, PM₁₀ exhaust, and PM_{2.5} exhaust would not exceed the applicable mass emission thresholds of significance recommended by BAAQMD. In addition, with implementation of MM AQ-1, the Project would be consistent with BAAQMD guidance and would not result in the generation of significant fugitive dust emissions. As a result, with implementation of MM AQ-1, the Project would not result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is in nonattainment under an applicable federal or state ambient air quality standard.

The objective of the Project is to remove the unused and decommissioned pile-supported Wharf structure, which adversely affects localized productivity of macroalgae and eelgrass. After Wharf demolition and eelgrass restoration activities, post-restoration monitoring activities would be conducted to ensure that the restoration was successful. These activities would involve minor and periodic visual inspections and activities over a 5-year period. Therefore, operational activities would not be a substantial source of operational emissions of criteria pollutants and would not result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is in nonattainment under an applicable federal or state ambient air quality standard.

Thus, the impact of a cumulatively considerable net increase of any criteria pollutant for which the project region is in nonattainment under an applicable federal or state ambient air quality standard due to Project activities would be less than significant with mitigation.

c) Expose sensitive receptors to substantial pollutant concentrations?

Less than Significant Impact. There are no sensitive receptors within a 1,000-foot radius from the Project site (the zone of influence defined by BAAQMD for risk and hazards for new sources and receptors). The East Brother Light Station, a Victorian-era lighthouse that also serves as a bed-and-breakfast inn, is approximately 2,700 feet to the north.

3.3.3.1 Criteria Air Pollutants

As shown in Table 3.3-3, Project-related activities would result in emissions of criteria air pollutants, but at levels that would not exceed the BAAQMD regional thresholds of significance. The regional thresholds of significance were designed to identify those projects that would result in significant levels of air pollution and to assist the region in attaining the applicable state and federal ambient air quality standards. The ambient air quality standards were established using health-based criteria to protect the public with a margin of safety from adverse health impacts due to exposure to air pollution. Therefore, the criteria air pollutant emissions associated with the Project would not expose sensitive receptors to substantial criteria pollutant concentrations. After demolition and eelgrass restoration activities, post-restoration activities would include periodic and minor activities to ensure that restoration was successful. The post-restoration monitoring activities are not anticipated to be a substantial source of emissions.

3.3.3.2 Toxic Air Contaminants

The greatest potential for TAC emissions would be related to diesel particulate matter emissions associated with heavy-duty construction and marine equipment operations. The Office of Environmental Health Hazard Assessment (OEHHA) developed a Guidance Manual for Preparation of Health Risk Assessments (OEHHA 2015). According to OEHHA methodology, health impacts from carcinogenic TACs are usually described in terms of individual cancer risk, which is based on a 30-year lifetime exposure to TACs. Demolition activities are anticipated to occur over 2 years, with only 6 months of work in each year. BAAQMD recommends that sensitive receptors within a 1,000-foot radius of the Project site be assessed for potentially significant impacts (BAAQMD 2017b). As described previously, there are no sensitive receptors within a 1,000-foot radius. There is a bed-and-breakfast inn at a substantial buffer distance from the Project site (approximately 2,700 feet north of the Project site). Concentrations of diesel particulate matter emissions are typically reduced by 70 percent at a distance of approximately 500 feet from freeways, which are continuous emission sources (CARB 2005). Furthermore, potential guests at the bed-and-breakfast inn would consist of temporary visitors who would not be exposed to emissions for an extended period. Therefore, considering the substantial buffer distance to any receptors, intermittent emissions

1 source, and limited duration exposure period, demolition activities would not expose
2 sensitive receptors to substantial pollutant concentrations.

3 After Wharf demolition and eelgrass restoration activities, post-restoration monitoring
4 activities would be conducted to ensure that the restoration was successful. These
5 activities would involve minor and periodic visual inspections and activities over a 5-year
6 period that would not generate a substantial source of TAC emissions or expose
7 sensitive receptors to substantial pollutant concentrations.

8 Therefore, the impact of Project-related exposure of sensitive receptors to substantial
9 pollutant concentrations would be less than significant.

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

12 **Less than Significant Impact.** The occurrence and severity of odor impacts depend on
13 numerous factors, including the nature, frequency, and intensity of the source; wind
14 speed and direction; and the presence of sensitive receptors. Offensive odors rarely
15 cause any physical harm, but they still can be very unpleasant, leading to considerable
16 distress and often generating citizen complaints to local governments and regulatory
17 agencies. Projects with the potential to frequently expose individuals to objectionable
18 odors are deemed to have a significant impact. Typical facilities that generate odors
19 include wastewater treatment facilities, sanitary landfills, composting facilities,
20 petroleum refineries, chemical manufacturing plants, and food processing facilities
21 (BAAQMD 2017b).

22 Activities associated with the Project could result in short-term odor emissions from diesel
23 exhaust associated with construction equipment and removal of the creosote-treated
24 piles. However, Project demolition and eelgrass restoration activities would be temporary
25 and far away from any receptors. Following demolition and restoration activities, the
26 Project would not result in any long-term source of odors. Therefore, the Project would
27 not result in other emissions (such as those leading to odors) adversely affecting a
28 substantial number of people. This impact would be less than significant.

29 **3.3.4 Mitigation Summary**

30 Implementation of the following mitigation measure would reduce the potential for
31 Project-related impacts to air quality to a less than significant level:

- 32 • MM AQ-1: Implement Basic Construction Emission Control Practices (Best
33 Management Practices)

1 **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 or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☒	☐	☐
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☒	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

2 The biological resources section describes the existing biological setting of the Project
3 area and evaluates whether the Project would result in adverse effects on biological
4 resources.

3.4.1 Environmental Setting

This environmental setting section describes the existing habitats in the Project area and the special-status species² with potential to occur in the Project site. This Project involves the demolition of a pier and overwater work; therefore, this section focuses primarily on federally listed fish species that fall under the jurisdiction of the National Marine Fisheries Service (NMFS) under Section 7 of the Federal Endangered Species Act, and for essential fish habitat (EFH)³ under the Magnuson-Stevens Fishery Conservation and Management Act. The NMFS Biological Assessment included a discussion of the Project, environmental setting, and life history of the federally listed species that may be affected by the Project; and an evaluation of the potential effects (direct, indirect, and cumulative) on the listed species, critical habitat, and EFH. In addition to those species assessed in the NMFS Biological Assessment, Longfin Smelt, a species protected under the California Endangered Species Act; and Pacific Herring, a species protected under the Marine Life Management Act (MLMA), are also discussed in subsequent sections of this IS.

The Wharf is in San Francisco Bay (San Rafael Bay subarea), approximately 1.5 miles north of the Richmond–San Rafael Bridge in Contra Costa County. The overall area of the Wharf, including the overwater structure, encompasses approximately 2.16 acres. The Wharf is in open water (Bay) habitat that is used by anadromous fish as a migratory corridor between their upstream spawning grounds and the Pacific Ocean. In San Francisco Bay, many benthic invertebrates (bottom-dwelling organisms) live in the sediment and soft-bottom habitats. Some benthic invertebrates also live on hard substrates, such as the existing Wharf structure.

San Francisco Bay is the largest estuary on the west coast, providing habitat to more than 1,000 endemic, threatened, and endangered species, and is a critical stopover for birds and waterfowl along the Pacific Flyway (BCDC 2021). In 2012, the Bay was designated as a “Wetland of International Importance” due to the diversity and environmental benefits it provides (BCDC 2021).

3.4.1.1 Terrestrial Habitat Features

The limited terrestrial upland areas onshore from the Wharf consist of rock riprap at the shoreline’s edge, which transitions to a narrow ruderal strip; this is followed by Stenmark Drive, which is graveled and paved. In the properties that border Stenmark Drive to the east, vegetation communities are primarily ruderal and nonnative grassland,

² Special-status species are federal and state listed as endangered, threatened, or candidate species, California Department of Fish and Wildlife (CDFW) State Species of Concern (SSC), CDFW fully protected species (FP), Bald and Golden Eagle Protection Act, and California Rare Plant Ranking 1 and 2 species.

³ EFHs are geographically designated areas that contain habitat fish species use to feed, breed, spawn, and grow. The EFHs that occur in the Project site were designated under the Pacific groundfish, coastal pelagic, and Pacific Salmon Fisheries Management Plans.

1 with sporadic shrubs, such as coyote brush (*Baccharis pilularis*); and tree species,
2 including *Eucalyptus*, pine (*Pinus* spp.), and oaks (*Quercus* spp.).

3 3.4.1.2 Open Water

4 Open water (Bay) is the primary environmental habitat feature that comprises the
5 Project area and would experience the highest amount of access and activity during
6 demolition of the Wharf. San Francisco Bay is California's largest estuary, where salt
7 water from the Pacific Ocean and freshwater from the Sacramento–San Joaquin River
8 Delta and tributaries mix. This open water feature provides habitat for anadromous fish,
9 resident and migratory birds, marine mammals, and invertebrates.

10 3.4.1.3 Vegetated Marine Habitat Features

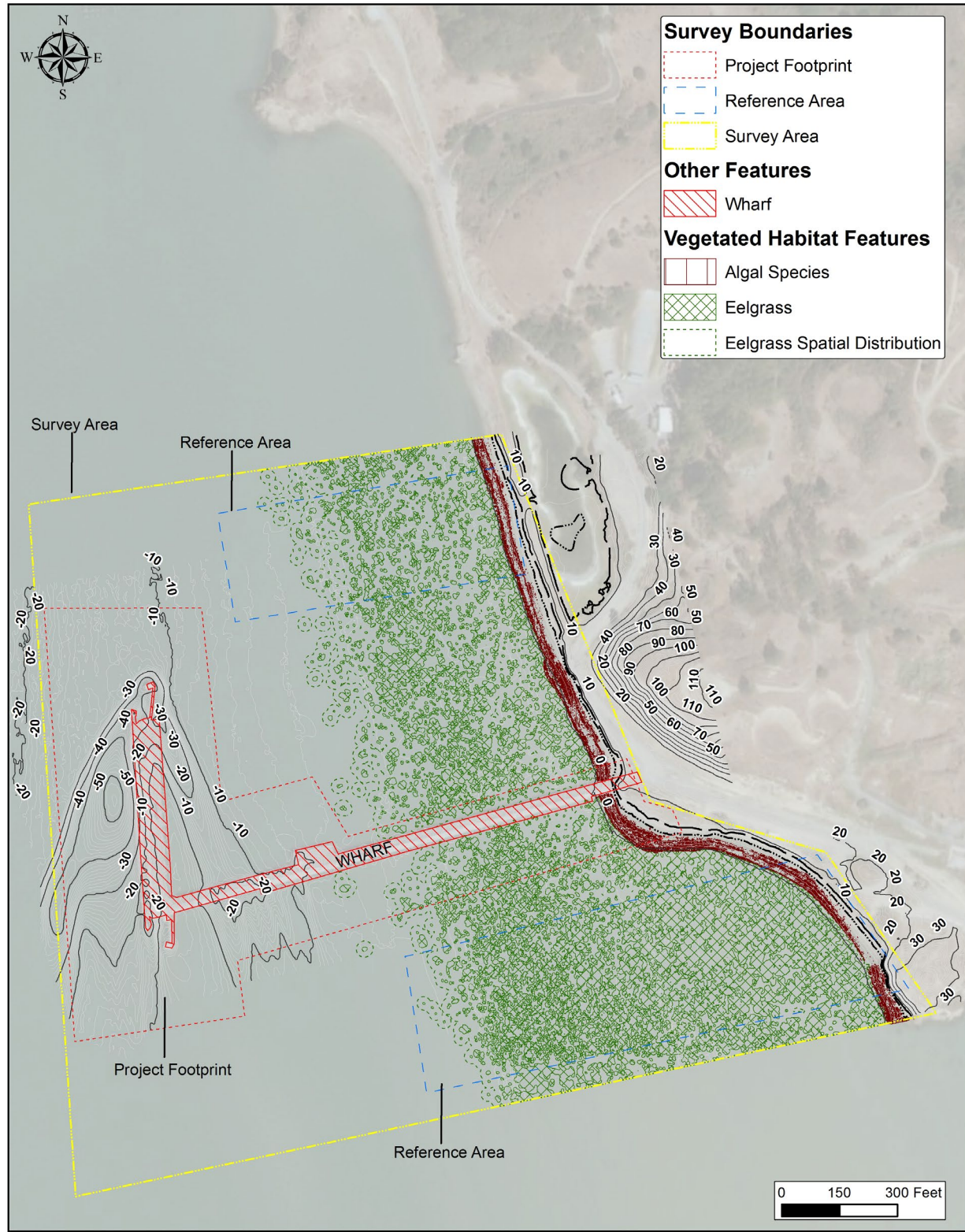
11 The Project area supports a variety of vegetated marine habitats that range from upper
12 intertidal to subtidal areas. The intertidal habitat consists of mixed boulder/cobble/rubble
13 shoreline and cobble beaches consisting of substrate that is at least somewhat
14 unconsolidated and subject to movement and scour by shifting stone and sediment.
15 These areas generally do not support well-developed algal or invertebrate communities,
16 but rather are dominated by opportunistic communities of principally green algae along
17 the upper algal bands, and red algae lower on the shoreline. The subtidal habitat is
18 represented by brown macroalgae (introduced *Sargassum muticum*) and eelgrass that
19 ranges in density and occurs to a depth of approximately 5 feet below mean lower low
20 water (MLLW) (Merkel & Associates, Inc. 2020) (Figure 3.4-1).

21 3.4.1.4 Sensitive Natural Communities

22 *Eelgrass*

23 Eelgrass is a native seagrass species and marine vascular plant that occurs in shallow
24 marine bays and estuaries in the Northern Hemisphere. The species' range extends
25 from southern Baja California, Mexico, to southeastern Alaska along the west coast of
26 North America, as well as from North Carolina to Labrador on the east coast, and along
27 European and East Asian coastlines. In San Francisco Bay, eelgrass beds occur on soft
28 bottom substrates in shallow areas (typically less than 5 feet below MLLW). Eelgrass
29 beds are extremely dynamic, expanding and contracting seasonally and annually
30 depending on the quality of the site. They serve as an indicator species for the overall

Figure 3.4-1. Marine Habitat Map



1 health of an estuary and provide many ecological benefits within the estuarine system.
2 Eelgrass, and notably all seagrass species, clarify the water through sediment trapping
3 and habitat stabilization. Eelgrass also provides nutrient transformation and increases
4 the oxygenation of seawater. Eelgrass is considered a primary producer in estuarine
5 food webs and is directly grazed upon by invertebrates, fish, and birds. Eelgrass beds
6 act as critical nursery habitat for many commercially and recreationally important fish
7 and shellfish species, including residents of the Bay and estuary, nearly all anadromous
8 fish found along the Pacific coast, and oceanic species that enter the estuary to breed
9 and/or spawn. In addition to providing important habitat for fish, eelgrass beds also
10 support both resident and migratory birds.

11 Vegetated shallows that support eelgrass beds are considered “special aquatic sites”
12 under the 404(b)(1) guidelines of the Clean Water Act (40 Code of Federal Regulations
13 Section 230.43). Pursuant to the Magnuson-Stevens Fishery Conservation and
14 Management Act, eelgrass is designated as a Habitat Area of Particular Concern by
15 NMFS (NOAA 2020). Eelgrass surveys, included in the marine environmental baseline
16 surveys by Merkel & Associates, Inc. (2020), took place in August 2020 and indicated
17 that eelgrass beds occur to the north and south of the Wharf. Two reference areas were
18 established both north and south of the Wharf to assess the natural variation of eelgrass
19 habitat conditions in accordance with the California Eelgrass Mitigation Policy and
20 Implementing Guidelines (CEMP) (NOAA 2014) (Figure 3.4-1).

21 3.4.1.5 Special-Status Species

22 Based on reviews of the California Natural Diversity Database, an official species list
23 from NMFS, a U.S. Fish and Wildlife Service Information Planning and Conservation
24 official species list, and other available public documents, it was determined that several
25 special-status species have the potential to occur in the Project vicinity (Table 3.4-1).
26 The determinations for the potential to occur in the Project area are based on the range
27 of the species, the habitat requirements of the species, habitats present in the Project
28 area, and a number of eelgrass and marine environmental baseline condition site visits
29 conducted to gather information about the vegetation and wildlife present.

30 The Project area lacks suitable habitat for many of the special-status species that were
31 identified, based on background research, as having the potential to occur in the Project
32 area. For these reasons, these special-status species have no potential to occur in the
33 Project area and are not discussed further in this section. For many other species, the
34 Project area contains marginal habitat, has very poor-quality habitat, or is on the edge
35 of the species’ known geographic range; for these reasons, these species have low
36 potential to occur in the Project area and are not discussed in more detail in this section.
37 The special-status species that have moderate or high potential to occur, or are present
38 in the Project area, are discussed further below in this analysis.

Table 3.4-1. Federally and State-Listed Wildlife Species that May Occur in the Project Area

Common Name	Scientific Name	Federal/State Listing Status	Habitat Present	Potential to Occur
California red-legged frog	<i>Rana draytonii</i>	FT/--	None	Not expected. Suitable habitat is not present in the vicinity of the Project area. Nearest occurrence is approximately 2.3 miles across San Francisco Bay (in Marin County) from the Project area.
California black rail	<i>Laterallus jamaicensis coturniculus</i>	--/ST, FP	None	Not expected. Suitable habitat is not found in the vicinity of the Project area. Nearest occurrence is in the tidal marsh of Wildcat Creek, approximately 2.1 miles from the Project area.
California Ridgway's rail	<i>Rallus obsoletus obsoletus</i>	FE/SE, FP	None	Not expected. Suitable habitat is not found in the vicinity of the Project area. Nearest occurrence is from Chevron Marsh at the mouth of Wildcat Creek, approximately 2.5 miles from the Project area.
Eulachon	<i>Thaleichthys pacificus</i>	FT/SSC	None	Low. May be present infrequently or in low numbers in the Bay near the Project area. Last spotted in 2003 approximately 0.7 mile from the Project area.
Longfin Smelt	<i>Spirinchus thaleichthys</i>	CT/ST, SSC	Present	Moderate. This species is documented to occur in the waters adjacent to the Project area. There are two documented occurrences within 1.2 miles of the Project area.
Chinook Salmon, Central Valley Spring-Run ESU	<i>Oncorhynchus tshawytscha</i>	FT/CT	Present	Moderate. Limited foraging habitat for this species in the Project area. No streams supporting spawning runs are present in or in the vicinity of the Project area. There is a moderate potential for occurrence during migration between the Sacramento River watershed and the Pacific Ocean.
Chinook Salmon, Sacramento River Winter-Run ESU	<i>Oncorhynchus tshawytscha</i>	FE/SE	Present	Moderate. Limited foraging habitat for this species in the Project area. No streams supporting spawning runs are present in or in the vicinity of the Project area. There is a moderate potential for occurrence during migration between the Sacramento River watershed and the Pacific Ocean.
North American Green Sturgeon, Southern DPS	<i>Acipenser medirostris</i>	FT/SSC	Present	Moderate. This species migrates from the Pacific Ocean to spawning habitat in the Sacramento River watershed but may forage in or near the Project area.

Common Name	Scientific Name	Federal/ State Listing Status	Habitat Present	Potential to Occur
Steelhead, Central California Coast DPS	<i>Oncorhynchus mykiss irideus</i>	FT	Present	Moderate. Limited foraging or spawning habitat for this species is present in the immediate vicinity of the Project area. The Petaluma River, Sonoma Creek, and the Napa River north of the Project area are the nearest watersheds to support substantial runs of steelhead.
Steelhead, Central Valley DPS	<i>Oncorhynchus mykiss</i>	FT	Present	Moderate. Limited foraging habitat for this species in the Project area. No streams supporting spawning runs are present in or in the vicinity of the Project area. There is a moderate potential for occurrence during migration between the Sacramento River watershed and the Pacific Ocean.
Pacific Herring	<i>Clupea pallasii</i>	-- /MLMA	Present	Moderate. Suitable spawning and rearing habitat exist surrounding Project area. Consequently, species may be present year-round.
Western bumble bee	<i>Bombus occidentalis</i>	--/CE	None	Low. The nearest occurrence is 0.4 mile from the Project area at Point Molate in Richmond, California. The host plant coyote brush and other nonnative species are found onshore in the Project area.
Salt-marsh harvest mouse	<i>Reithrodontomys raviventris</i>	FE/SE, FP	None	Not expected. Suitable habitat is not found in the vicinity of the Project area. The nearest occurrence is approximately 3.9 miles from the Project area in Giant Marsh and Breuner Marsh (Point Pinole Regional Park) recorded in 2001.

Notes:

DPS = distinct population segment; ESU = evolutionarily significant unit

STATUS CODES:

FEDERAL: (U.S. Fish and Wildlife Service and the National Marine Fisheries Service)

FE = Listed as Endangered (in danger of extinction) by the federal government

FT = Listed as Threatened (likely to become Endangered in the foreseeable future) by the federal government

CE = Candidate to become an Endangered species

CT = Candidate to become a Threatened species

STATE: (California Department of Fish and Wildlife)

SE = Listed as Endangered by the State of California

ST = Listed as Threatened by the State of California

CE = Candidate to become an Endangered species

CT = Candidate to become a Threatened species

FP = Fully Protected

SSC = California Species of Special Concern

MLMA = Marine Life Management Act

Several special-status fish species listed under the Federal Endangered Species Act or the California Endangered Species Act, or that have other protection under federal and state law (Fully Protected, California Species of Special Concern, and MLMA) have the potential to occur in the waters in and immediately adjacent to the Project area. These species are outlined and described in greater detail below.

- Steelhead (*Oncorhynchus mykiss*), consisting of the following distinct population segments (DPSs):
 - Central California Coast (federally listed as threatened)
 - Central Valley (federally listed as threatened)
- Chinook Salmon (*O. tshawytscha*), consisting of the following evolutionarily significant units (ESUs):
 - Sacramento River Winter-Run (federally and state-listed as endangered)
 - Central Valley Spring-Run (federally and state-listed as threatened)
- Green Sturgeon (*Acipenser medirostris*) Southern DPS, federally listed as threatened
- Longfin Smelt (*Spirinchus thaleichthys*), federal candidate and state listed as threatened
- Pacific Herring (*Clupea pallasii*), not state or federal listed, but protected under the MLMA

Steelhead

Steelhead are anadromous fish. They are born in freshwater and migrate to the ocean to mature before returning back to freshwater to spawn. A review of literature and the CalFish database, a California cooperative fish and habitat data program, have verified that Central California Coast DPS steelhead are known to spawn in several drainages of northern San Francisco Bay, including the Napa River, Sonoma Creek, and Petaluma Creek. The Central Valley DPS of steelhead spawns in portions of the Sacramento–San Joaquin watershed. There are no waterways within several miles of the Project footprint that have potential to support steelhead runs. Throughout their range, individuals typically remain at sea for one to four growing seasons before returning to freshwater to spawn (Burgner et al. 1992). The spawning season for steelhead extends from late December through April of the following year, although they will often move up coastal streams in the fall and then hold in deep pools until the spawning period. Adult steelhead abundance in San Francisco Bay increases from late fall through February. Juvenile steelhead migrate as smolts to the ocean from January through May, with peak outmigration occurring in March and April (Fukushima and Lesh 1998). During the remainder of the year, this species is not expected to be present in the Project Area.

For all of the reasons mentioned above, both steelhead DPSs have the potential to seasonally be present in the Project area, albeit at low densities due to the limited time steelhead are projected to spend in the lower estuary.

Chinook Salmon

Similar to steelhead, Chinook salmon are also anadromous fish. Adult Chinook salmon spend up to 5 years in the ocean before returning to their natal stream to spawn. The Sacramento River Winter-Run Chinook Salmon are likely to occur throughout the Delta and San Francisco Bay during periods of migration (CalFish 2018). A study conducted by the NMFS Tiburon Laboratory found that residency time of juvenile Sacramento River Winter-Run Chinook Salmon in the San Francisco Bay Estuary was about 40 days, with little growth occurring at that time (Myers et al. 1998). This would indicate that juvenile Sacramento River Winter-Run Chinook Salmon do not spend much time foraging in the Bay before moving to the ocean. Migrating adults typically follow the deeper channels in the estuary during upstream migration, which occurs in January and February (CDFG 2004). Juvenile out-migration of Sacramento River Winter-Run Chinook Salmon primarily occurs in April and May (Jahn 2011).

Sacramento River Winter-Run Chinook Salmon are assumed to be seasonally present in the Project area at low densities during the upstream and downstream migration period, due to limited time spent in the lower estuary.

The Central Valley Spring-Run Chinook Salmon are likely to occur throughout the Delta and the northern portion of San Francisco Bay during periods of migration (CalFish 2018). Adult Central Valley Spring-Run Chinook Salmon migrate through San Francisco Bay between March and September, primarily in May and June (Moyle 2002, Yoshiyama et al. 1998). Juvenile out-migration of Sacramento River Winter-Run Chinook Salmon primarily occurs in April and May (Jahn 2011). Their typical migration routes between the ocean and the Sacramento River are similar to those of Sacramento River Winter-Run Chinook Salmon.

Central Valley Spring-Run Chinook Salmon are assumed to be seasonally present in the Project area at low densities during the upstream and downstream migration period for reasons similar to those mentioned above.

Green Sturgeon

Green Sturgeon are also an anadromous fish species. Juveniles rear in freshwater for as long as 2 years before migrating to the ocean. Green Sturgeon are thought to spawn every 3 to 5 years in deep pools with turbulent water velocities; they prefer cobble substrates but can use substrates ranging from clean sand to bedrock. Once Green Sturgeon emigrate from freshwater, they disperse widely and are considered the most

broadly distributed and wide-ranging species of the sturgeon family. Juvenile Green Sturgeon occur throughout the Sacramento River Delta and San Francisco Bay (CalFish 2018). Adults are found throughout the San Francisco Bay and Delta during periods of migration; juveniles are present in the southern San Francisco Bay year-round, mostly south of the Dumbarton Bridge. The California Department of Fish and Wildlife (CDFW) estimates that one-fifth of the sturgeon landed in the estuary are Green Sturgeon and the rest are white sturgeon (Moyle 2002).

Green Sturgeon have the potential to be present throughout the Project area year-round.

Longfin Smelt

Longfin Smelt are native to the San Francisco Estuary, Delta, Suisun Marsh, and San Francisco Bay (CDFW 2018a). Longfin Smelt primarily spawn between February and April in areas with low salinity; however, spawning can occur between early November and late June (Moyle 2002, CDFW 2018a). There are no current data on specific spawning locations in San Francisco Bay; however, recently published reports indicate that spawning probably occurs near the mixing zones between fresh and brackish water in the Delta (Rosenfield and Baxter 2007). Adults occur seasonally throughout San Francisco Bay but are concentrated in Suisun, San Pablo, and North San Francisco Bays. During winter months, when fish are moving upstream to spawn, high outflows may push many individuals back into San Francisco Bay, whereas drought years may find them concentrating in Suisun Bay. The population found in San Francisco Bay represents the largest known Longfin Smelt population in California (Rosenfield and Baxter 2007).

Longfin Smelt have the potential to be present throughout the year in the Project area.

Pacific Herring

Pacific Herring are classified as a CDFW managed species, protected in San Francisco Bay under the MLMA. This law is supported in the form of Fisheries Management Plans (FMPs) for the sustainable management of California's historic fisheries. CDFW, in partnership with the fishing industry and conservation groups, updated the Pacific Herring FMP in 2019 to formalize a strategy for the future management of the fishery (CDFW 2019).

Pacific Herring stocks are large enough in four areas in the state to warrant a fishery. These areas include San Francisco Bay (more than 90 percent of the landings in the state), Tomales Bay, Humboldt Bay, and Crescent City (CDFW 2019). Herring are predominantly targeted for their roe (eggs from a gravid female), which is prized in Japan as a delicacy and also used as bait by recreational anglers. Herring are small

1 schooling fish that enter San Francisco Bay to spawn and are known to attach their egg
2 masses to eelgrass, seaweed, and other hard substrates such as pier pilings. Spawning
3 usually takes place between October and March, with a peak between December and
4 February. After hatching, juvenile herring typically congregate in San Francisco Bay
5 during the summer and move into deeper waters in the fall.

6 It is documented from a 2017-18 San Francisco Bay Pacific Herring spawning study
7 (CDFW 2018b) that this species has spawned along the Point Molate/Point Orient
8 shoreline in existing eelgrass bed habitats and thus has the potential to be seasonally
9 present in the Project area.

10 3.4.1.6 Designated Critical Habitat and Essential Fish Habitat

11 The Project is in designated critical habitat for Steelhead, Chinook salmon, and Green
12 Sturgeon. The Project is also in an area designated as EFH under the Magnuson-
13 Stevens Fishery Conservation and Management Act.

14 3.4.1.7 Marine Mammals

15 The marine mammals with potential to occur in the Project area include the Pacific
16 harbor seal (*Phoca vitulina*) and California sea lion (*Zalophus californianus*). Neither of
17 these species is federally or state listed as threatened or endangered; however, all
18 marine mammals are protected under the Marine Mammal Protection Act (MMPA) of
19 1972.

20 *Pacific Harbor Seal*

21 Harbor seals are nonmigratory and can be found along shorelines and in estuaries
22 throughout North America. Pacific harbor seals are year-round residents and numerous
23 in San Francisco Bay, where they engage in limited seasonal movements associated
24 with foraging and breeding activities. Harbor seals haul out in groups ranging in size
25 from a few individuals to several hundred seals. Habitats used as haul-out sites include
26 tidal rocks, bay flats, sandbars, and sandy beaches. Haul-out sites are relatively
27 consistent from year to year and are important habitats for harbor seals in San
28 Francisco Bay. Haul-out sites that support some of the largest concentrations of seals
29 include Corte Madera Marsh and Castro Rocks in the Central Bay, Mowry Slough south
30 of Dumbarton Bridge, and Yerba Buena Island. Castro Rocks is the closest haul-out site
31 to the Project. Breeding occurs from March to June, pupping occurs in April and May,
32 and molting occurs in June and July. These activities correspond to the greatest number
33 of harbor seals counted at major haul-out sites in San Francisco Bay.

California Sea Lion

California sea lions breed in the Channel Islands in southern California, and south to central Mexico. Breeding season occurs from late June to early August; pups are typically born from May through June; and 3 to 4 weeks after giving birth, females mate again. After the breeding season, males migrate up the Pacific Coast and enter San Francisco Bay. In San Francisco Bay, sea lions are known to haul out at Pier 39 in the Fisherman's Wharf area of the San Francisco Marina. No other repeatedly used haul-out site for California sea lions, other than Pier 39, has been observed in San Francisco Bay. California sea lions forage on a wide range of fish species; particularly schooling species such as Pacific Herring and northern anchovy.

3.4.1.8 Migratory Birds

Migratory birds (and their eggs and nests) are protected under the Migratory Bird Treaty Act. Common migratory birds occurring in the Project vicinity include the common loon (*Gavis immer*), American white pelican (*Pelecanus erythrorhynchos*), California brown pelican (*Pelecanus occidentalis californicus*), double-breasted cormorant (*Phalacrocorax auritis*), Aleutian Canada goose (*Branta canadensis kucoparcia*), Barrow's golden eye (*Bucephala islandica*), California gull (*Larus californicus*), osprey (*Pandion haliaetus*), and elegant tern (*Sterna elegans*). The Wharf may provide suitable nesting habitat for migratory birds.

3.4.1.9 Special-Status Plants

Because the Project and all associated demolition activities would occur in San Francisco Bay, terrestrial resources are not anticipated to be impacted, and no suitable habitat for special-status plants is present in the Project vicinity.

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.

At the local level, the Contra Costa County General Plan has policies related to biological resources, discouraging development on and preserving important wildlife habitats (Contra Costa County 2005). The Richmond General Plan 2030 includes the following policies of relevance to this Project (City of Richmond 2012):

- **Policy CN1.1.** Natural habitat is essential to ensuring biodiversity and protecting sensitive biological resources. Protect these areas and work with the California Department of Fish and Game, the San Francisco Bay Regional Water Quality Control Board, the East Bay Regional Park District, and other regional agencies

to identify areas for special protection and establish appropriate protection measures.

- **Policy CN2.1.** Preserve open space areas along the shoreline, creeks, and in the hills to protect natural habitat and maintain the integrity of hillsides, creeks and wetlands. Protect existing open space, agricultural lands, and parks.
- **Policy CN2.2.** Minimize the impacts of development on the shoreline with special attention to intensity, density, and proximity to the water. Conserve, protect, and enhance natural and cultural resources along the Richmond shoreline. Promote a balance of uses along the shoreline that supports multiple community needs such as economic development, recreation, historic preservation, and natural resource protection.

3.4.3 Impact Analysis

CEQA requires that projects analyze the potential impacts to special-status plant and animal species, as well as on sensitive habitats, wildlife corridors, and waters of the United States. Impacts on wildlife species that are not considered special-status under CEQA are generally not considered significant unless impacts are associated with the species' migration routes or movements, or the species are considered locally important.

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 Game or U.S. Fish and Wildlife Service?

Less than Significant with Mitigation. Demolition activities associated with the Project have the potential to directly affect individuals of the following special-status species and their habitat:

- Steelhead, Central California Coast DPS (federally listed as threatened)
- Steelhead, Central Valley DPS (federally listed as threatened)
- Chinook Salmon, Sacramento River Winter-Run Chinook ESU (federally and state-listed as endangered)
- Chinook Salmon, Central Valley Spring-Run (federally and state-listed as threatened)
- Green Sturgeon Southern DPS (federally listed as threatened)
- Longfin Smelt (state listed as threatened)
- Pacific Herring, protected under the MLMA

Each Project activity and associated potential impacts are discussed below. Following completion of the Wharf demolition, eelgrass restoration would take place as a mitigation component.

3.4.3.1 Impacts to Habitat

Demolition activities have the potential to impact critical habitat, EFH, and eelgrass beds in the Project area.

Critical Habitat

The Project area is in designated critical habitat for the Winter-Run Chinook Salmon, Central Valley steelhead, Central California Coast Steelhead, and Green Sturgeon. Temporary impacts to critical habitat are expected to occur in the form of impairments to water quality and elevated levels of underwater noise during intermittent vibratory pile removal, if required. These impacts are described above and may result in the temporary exclusion of these species from designated critical habitat during demolition activities.

However, implementation of MMs HYD-1, HYD-2, and HYD-3 would avoid significant impacts and reduce the level of impact on critical habitat to less than significant levels. Over the long term, Project implementation would improve water quality conditions through the removal of harmful contaminants and degraded structures, in addition to the restoration of eelgrass that is planned following completion of Causeway demolition activities. Overall, the Project would have a beneficial effect on critical habitat for these species.

Essential Fish Habitat

The study area falls within EFH, as defined in the Magnuson-Stevens Fishery Conservation and Management Act, for multiple species of commercially important fish managed under three federal FMPs:

- **Pacific Groundfish FMP.** The Pacific Groundfish FMP is designed to protect habitat for more than 90 species of fish, including rockfish, flatfish, roundfish, some sharks and skates, and other species that associate with the underwater substrate.
- **Coastal Pelagic FMP.** The Coastal Pelagic FMP is designed to protect habitat for a variety of fish species that are associated with open coastal waters. Fish managed under this plan include planktivores and their predators. Pacific Herring, and ecosystem component species in the FMP, have the potential to be in the Project area.

- **Pacific Coast Salmon FMP.** The Pacific Salmon FMP is designed to protect habitat for commercially important salmonid species. Sacramento Chinook salmon is the only species that may be seasonally present in the Project area, although historically Coho salmon were common in San Francisco Bay.

Impacts to EFH would be similar to those described above under Critical Habitat. These impacts include the temporary impairment of water quality and increases in underwater noise during intermittent vibratory pile removal. However, similar to effects on critical habitat, with the implementation of the mitigation measures described above and planned eelgrass restoration following demolition activities, the overall effects of Project implementation on EFH are expected to be less than significant and ultimately beneficial.

Rocky Shoreline and Intertidal

The onshore repair of the unstable embankment along Stenmark Drive, consisting of rocky intertidal habitat with a few dominant algal communities, begins at the road shoulder and extends below mean higher high water (MHHW). This repair is approximately 80 feet long and 2,500 square feet in area. Excavation would remove the algae associated with the rock that is removed and replaced with new rock slope protection. The species found here, mostly red and green algae, are opportunistic and will colonize the newly placed rock quickly. The impact of the shoreline repair would be less than significant.

Existing Eelgrass Beds and Eelgrass Bed Restoration

Eelgrass is considered “Essential Fish Habitat” under the 1976 Magnuson-Stevens Fisheries Conservation and Management Act because it provides important refuge for juvenile fish, such as salmonids, Green Sturgeon, and Pacific Herring. Due to the important function eelgrass has in estuarine ecosystems, eelgrass is protected by regulations in the United States. In California specifically, NMFS recommends no net loss of eelgrass habitat function. All Project impacts to eelgrass beds would be temporary, and the Project includes an eelgrass restoration component during post-demolition activities. Impacts to eelgrass and restoration activities are detailed under significance criterion b), Sensitive Natural Communities, below.

Eelgrass beds (as well as pilings) are often used as spawning substrate by Pacific Herring. Disturbance of eelgrass and habitat in the vicinity of the demolition could affect herring spawning should they attempt to spawn in the area during active demolition activities. However, the spawning period of Pacific Herring would likely occur outside of the period that the project is scheduled to occur (June 1 through November 30), because the earliest Pacific Herring have been observed spawning in the northeast part of the Bay is December 1 (CDFW 2019). In addition, the Project would result in the

removal of creosote-treated piles and an increase in eelgrass that could be used as spawning substrate. Eelgrass is a more suitable substrate than creosote-treated piles because creosote piles have been shown to have a number of deleterious effects on herring eggs and embryos (Duncan 2014).

3.4.3.2 Impacts to Fish

Underwater Noise from Pile Extraction

Underwater noise and acoustic pressure resulting from vibratory pile extraction could affect fish by causing behavioral avoidance of the area surrounding the Wharf and/or temporary changes in hearing thresholds by the special-status fish species listed above. Unlike impact driving, vibratory pile driving and extraction does not typically produce underwater noise and acoustic pressure of sufficient intensity to cause acute injury to fish.

The Project may use a vibratory pile driver to remove the piles that supported the Causeway and Main Wharf and to remove steel piles that support the mooring dolphins. Vibratory pile drivers work by vibrating the pile and surrounding substrate (Bay sediments) immediately below and around the pile, causing a small zone of liquefaction around the pile. This allows the pile to be pulled upward from the sediment. Only a brief period (a few minutes at most) of vibration would be needed for each pile extraction. Underwater noise produced during vibratory driving is lower in intensity but is considered a continuous noise in comparison to the pulse-type noise produced during impact pile driving. Peak noise levels from vibratory driving are typically 10 to 20 decibels (dB) lower than impact driving for a particular pile type (Caltrans 2020a).

On June 12, 2008, the Fisheries Hydroacoustic Working Group—whose members include NMFS’s Southwest and Northwest Divisions; the California, Washington, and Oregon Departments of Transportation; CDFW; and the Federal Highway Administration—issued an agreement for establishment of interim threshold criteria to determine the effects of high-intensity noise on fish. The agreed-on threshold criteria for impulsive noise to have an injury effect on fish have been set at 206 dB peak, 187 dB cumulative sound exposure level (cSEL) for fish more than 2 grams; and 183 dB for fish less than 2 grams (FHWG 2008). However, these impulsive noise injury thresholds are not applicable to the use of vibratory hammers, which may be used in connection with the Project. Vibratory hammers typically do not produce underwater noise of sufficient intensity to cause injury to fish (Caltrans 2020a). To assess the behavioral effects of vibratory pile-driving hammer noise and acoustic pressure on Endangered Species Act-listed fish, NMFS often uses a 150 dB root-mean-square (RMS) threshold.

After conducting a review of underwater noise measurements taken during other pile-driving activities provided in the California Department of Transportation’s (Caltrans’)

1 *Technical Guidance for the Assessment of Hydroacoustic Effects of Pile Driving on Fish*
2 (Caltrans 2020a), it was determined that underwater noise generated during vibratory
3 pile extraction would likely exceed the 150 dB RMS threshold for behavioral effects
4 described above, but the underwater noise would not cause injury to fish. Behavioral
5 effects that fish may experience due to the brief periods of vibratory hammer operation
6 could include startle responses, the temporary cessation of feeding, or relocation away
7 from the pile-extraction activities. As mentioned in the Project Description, work would
8 be conducted during the established San Francisco Bay work windows. This would act
9 to limit the impacts to fish by limiting the work to times when most special-status fish
10 species are unlikely to be present. The potential impacts of underwater noise on
11 special-status fish is expected to be limited to brief periods of behavioral effects and to
12 be limited to areas close to the vibratory pile extraction. This would be a less than
13 significant impact.

14 *Water Quality*

15 The Project may result in impacts to and degradation of water quality due to accidental
16 spills or increased turbidity resulting from planned demolition activities.

17 In the event that an accidental spill or demolition debris enters the Bay in the Project
18 area, it could result in the injury or mortality of protected fish species and/or the
19 temporary degradation of their habitat. Because all planned work and access to the
20 Project area is projected to take place over the water, the contractors for Chevron will
21 prepare a Hazardous Material Spill Prevention, Control, and Countermeasure Plan as
22 part of MM HYD-1 (see Section 3.11, *Hydrology and Water Quality*). This plan would
23 minimize the potential for, and the effects of, spills of hazardous, toxic, and/or petroleum
24 substances. Chevron and CSLC staff would review and approve the plan before
25 demolition work begins.

26 The demolition activities planned for the Project that may potentially impact water quality
27 include the removal of creosote-treated wood pilings via vibratory extraction. Creosote is
28 a complex mixture of chemicals that was used for many years to preserve marine
29 structures from decay and is highly toxic to fish and other marine organisms (Werme et al.
30 2010). Polycyclic aromatic hydrocarbons are major constituents of creosote and can also
31 be found in gasoline, oil, and other compounds. Creosote-treated piles slowly release
32 these toxins into the surrounding water and substrates as they weather, presenting a
33 long-term environmental hazard. Removal of the creosote-treated pilings would, in the
34 long term, be beneficial to the biological resources of San Francisco Bay.

35 During removal of the piles, small amounts of residual creosote oil may be released to
36 the water column. The piles would be removed using vibratory extraction, which the
37 Washington Department of Natural Resources (2017) describes as the least impactful
38 method to remove creosote-treated pilings because it tends to result in less sediment

from around the base of the pile being resuspended in the water column, potentially releasing residual creosote compounds. Water quality MMs HYD-1, HYD-2, and HYD-3 (see Section 3.11, *Hydrology and Water Quality*) would be implemented to contain and control small releases of creosote or other hazardous materials to the water and manage debris and demolition waste during pile removal. This will reduce impacts to biological resources from water quality effects to less than significant levels.

Lastly, the Project may result in temporary increases in turbidity in the open water habitat immediately adjacent to the Wharf. Increased turbidity can result in decreased dissolved oxygen levels, increased temperatures, and decreased local pH conditions. Typically, removal of piles causes only temporary resuspension of sediments. Turbidity caused by pile removal and barge operations is expected to be minor, relatively short-term, and generally localized to the immediate area of demolition. 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.

Implementation of MMs HYD-1, HYD-2, and HYD-3 would reduce impacts to fish in the Project area to temporary behavioral effects, and impacts would be considered less than significant.

Although removal of creosote pilings may temporarily release some organic substances during demolition, removal of degraded or old pilings would ultimately improve localized water and sediment quality over the long term. Removal would also enable active planting and natural spread of existing eelgrass beds, enhancing the general habitat and providing further natural substrate for herring spawning. Therefore, removal of the Wharf and associated creosote-treated piles is expected to have a beneficial effect on water quality and fish habitat in San Francisco Bay.

3.4.3.3 Invasive Species

All barges and tugs used for the project would be from the local San Francisco Bay fleet. The project would therefore not have the potential to introduce nonnative species from areas outside the Bay.

3.4.3.4 Impacts to Marine Mammals

As described above, marine mammals occurring in the Bay, though not considered special-status species (e.g., threatened or endangered), are protected under the MMPA, and harassment to these mammals due to underwater noise requires authorization from NMFS. The most abundant marine mammals in the Project area are Pacific harbor seals, which haul-out on Castro Rocks south of the Project area and may forage in the Project area; and, to a lesser extent, California sea lions which may forage in the Project area. Harbor porpoise may also be infrequently present in the Project area.

1 Underwater Noise from Pile Extraction

2 In 2018, NMFS revised the technical guidance for assessing effects of anthropogenic
 3 sound on marine mammals and established thresholds regarding the exposure of marine
 4 mammals to high-intensity noise that may be considered a take under the MMPA (NMFS
 5 2018). The 2018 guidance includes cumulative noise thresholds for slight injury to an
 6 animal's hearing or permanent threshold shift (Level A Harassment). The underwater
 7 sound pressure threshold for Level A Harassment is a dual-metric criterion for impulse
 8 noise (e.g., impact pile-driving), including both a peak pressure and cSEL threshold,
 9 which is specific to the species hearing group (high-frequency cetaceans [i.e., harbor
 10 porpoise], mid-frequency cetaceans [i.e., bottlenose dolphin], low-frequency cetacean
 11 [i.e., gray whale], phocids [i.e., Pacific harbor seal and northern elephant seal], and
 12 otariids [i.e., California sea lion and northern fur seal]). For continuous noise (e.g.,
 13 vibratory pile extraction or driving), the permanent threshold shift threshold is based on
 14 cSEL for each species hearing group. Behavioral harassment (Level B; noninjurious) is
 15 considered to have occurred when marine mammals are exposed to noise levels of
 16 160 dB RMS or greater for impulse noise (e.g., impact pile driving) and 120 dB RMS for
 17 continuous noise (e.g., vibratory pile extraction and driving). NMFS also has thresholds
 18 for behavioral harassment of marine mammals from airborne noise which can, for
 19 example, affect harbor seals hauled-out on nearby rocks. Table 3.4-2 provides a
 20 summary of all the noise thresholds applicable for marine mammals.

Table 3.4-2. Injury and Behavioral Disruption Thresholds for Airborne and Underwater Noise

Hearing Group and Species Considered	Airborne Noise Level B RMS Threshold ¹	Underwater Noise Level A cSEL Threshold	Underwater Noise Level B RMS Threshold
Phocids (Pacific harbor seals, northern elephant seals)	90 dB (unweighted)	201 dB	120 dB
Otariids (California sea lions, northern fur seals)	100 dB (unweighted)	219 dB	120 dB
Low-frequency cetaceans (gray whales)	N/A	199 dB	120 dB
Mid-frequency cetaceans (bottlenose dolphins)	N/A	198 dB	120 dB
High-frequency cetaceans (harbor porpoises)	N/A	173 dB	120 dB

Notes:

¹ The airborne disturbance guideline applies to hauled-out pinnipeds.

cSEL = cumulative sound exposure level; dB = decibel; N/A = Not applicable, no thresholds exist; RMS = root mean square

Underwater peak and RMS are referenced to 1 microPascal; cSEL is referenced to 1 microPascal²-sec; and Airborne RMS is referenced to 20 microPascal.

To determine whether the thresholds presented in Table 3.4-2 may be exceeded during vibratory pile extraction, underwater noise measurements from other pile-driving projects provided in Caltrans' *Technical Guidance for the Assessment of Hydroacoustic Effects of Pile Driving on Fish* (Caltrans 2020a) were reviewed. It was determined that vibratory pile extraction would likely exceed the Level B RMS threshold over a portion of San Francisco Bay. The Level A cSEL thresholds may also be exceeded, but only very near to the pile extraction activity. Marine mammals exposed to noise above these thresholds may experience masking of other environmental noises; they may exhibit changes in their behavior in response to the noise, such as moving away from the pile extraction, startle responses, and changes to underwater vocalizations. Such noise masking and behavioral effects would be temporary and localized, and would be less than significant in nature. As required by the MMPA, Chevron would obtain a marine mammal incidental harassment authorization from NMFS. All conditions in that permit would be followed.

Implementation of work windows (as mentioned in the Project Description) would reduce potential impacts to marine mammals by avoiding more sensitive times such as the pupping season; impacts would be considered less than significant.

Airborne Noise During Pile Extraction

Pile extraction generates airborne noise that could potentially result in behavioral disturbance to pinnipeds (e.g., sea lions and harbor seals) which are hauled-out or at the water's surface. Unlike underwater noise levels, there are no defined airborne noise level thresholds set by the regulatory agencies. Instead, documented airborne noise levels at which pinnipeds exhibit haul-out behavioral disturbance are used to determine potential disturbance from airborne noise. Similar to the underwater noise assessment, information from other projects was used to determine the extent over which airborne noise levels may result in harassment of marine mammals (Laughlin 2011). Vibratory extraction and pile driving (for all pile types) have been shown to result in harassment (Level B) at about 35 feet for California sea lions and about 110 feet for Pacific harbor seals.

Although airborne pile-driving noise levels are above the NMFS guidelines within a short distance from the Project, the levels would not extend to the Castro Rocks haul-out site. Castro Rocks haul out is subject to high levels of background noise from the Richmond Bridge, ongoing vessel activity at the Richmond Refinery Long Wharf, ferry traffic, and other general boat traffic. As a result, pile-driving noise is not expected to incite a reaction from hauled-out harbor seals at Castro Rocks. Therefore, airborne noise during operation of the vibratory hammer will be a less than significant impact.

3.4.3.5 Impacts to Migratory Birds

Migratory birds (including seagulls) protected under the federal Migratory Bird Treaty Act and under the California Fish and Game Code could construct nests on or near the Wharf. If nesting birds are present on or in the vicinity of the Project area, increased noise and human presence associated with demolition activities could result in potential impacts. If demolition occurs during the nesting season (April 1 through August 31), Chevron would implement MM BIO-1.

- **MM BIO-1: Nesting Bird Surveys.** Chevron shall conduct pre-activity surveys for nesting birds if work is to take place during the nesting season (April 1 through August 31). A qualified wildlife biologist shall conduct a pre-activity nest survey no more than 3 to 5 days prior to initiation of activities to search for active migratory bird or raptor nests. If active nests are encountered, Chevron will contact CDFW to determine the best course of action for the situation encountered. Measures may include nest-start removal or relocation, species-specific avoidance buffers to prevent abandonment of the nest until the young have fledged, and/or measures such as incubation of eggs that will be implemented by a qualified biologist in consultation with state and/or federal resources.

Implementation of MM BIO-1 would reduce impacts to migratory birds to a less than significant level by working in conjunction with CDFW to determine the best course of action to reduce disturbance to any nesting birds in the vicinity of the Project area.

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 Game or US Fish and Wildlife Service?

Less than Significant with Mitigation. Demolition activities associated with the Project have the potential to impact eelgrass, which is listed as a sensitive natural community.

3.4.3.6 Impacts to Eelgrass

Merkel & Associates, Inc., mapped and characterized the baseline eelgrass habitat conditions in the Project vicinity to aid in the impact analysis and post-demolition restoration planning (Merkel & Associates, Inc. 2020). The Project footprint has been defined as an envelope around the Wharf, extending 150 feet to the south and 30 feet to the north of the causeway and 150 feet around the head of the Wharf and associated mooring dolphins. Concurrently, two reference areas were established to the north and south of the Project footprint (see Figure 3.4-1). The reference areas would be used to assess natural variation in eelgrass habitat conditions in accordance with the CEMP (NOAA 2014).

1 There is the potential for both direct and indirect effects to eelgrass that could result
2 from planned in-water work activities. Demolition activities have the potential to cause
3 mortality to eelgrass through vessel use in the area to the south of the Wharf. Direct
4 contact with the substrate by the work barges may physically damage eelgrass plants in
5 the work area. It is estimated that work barges will impact up to 2.47 acres of eelgrass
6 habitat immediately south of the Wharf. Eelgrass impacts are anticipated to include
7 damage from plant crushing, leaf sinking, and light limitation due to damage to leaf
8 lacunae (air vacuoles) and coating of the leaves with mud. Increased turbidity from
9 bottom disturbance can also impact photosynthesis and stunt growth, decrease
10 dissolved oxygen levels, increase temperatures, and decrease local pH conditions;
11 however, these effects would be temporary. Shading and lowered light levels are
12 limiting factors to eelgrass growth and survival, reducing photosynthetic capabilities and
13 light penetration (Werme et al. 2010). Shading would occur temporarily when the barges
14 are working over the eelgrass beds. As described above, removal of piles and barge
15 operations are expected to cause only temporary resuspension of sediments. Turbidity
16 is expected to be minor, relatively short-term, and generally localized to the immediate
17 area of demolition.

18 Although it is anticipated that some impacts to eelgrass would occur in association with
19 the demolition and removal of the decommissioned Wharf structure, impacts associated
20 with this work may be reasonably minimized to less than significant impacts by
21 incorporation of stringent controls during demolition. The following mitigation measures
22 would be implemented:

- 23 • **MM BIO-2: Environmental Awareness Training.** Conduct environmental
24 training for work crews with specific information on reducing eelgrass damage by
25 following barge corridors, minimizing vessel movements in very shallow water or
26 low tides, reducing propeller thrust, and positioning tugs and tender boats
27 carefully to avoid scouring the bottom during vessel movements.
- 28 • **MM BIO-3: Mark Barge Operations Corridor.** Mark the barge work corridor
29 along the Wharf with upright posts or large floats on self-centering anchors to
30 reduce potential encroachment on the existing eelgrass beds to the minimum
31 needed.
- 32 • **MM BIO-4: Perform Pre- and Post-Demolition Surveys.** Conduct eelgrass
33 surveys in accordance with the CEMP to document any impacts during
34 demolition activities (see Section 2.3 for details). Complete two annual surveys
35 following Wharf removal to evaluate how the removal of the Wharf influences
36 scour and deposition in the removal area and how this may influence eelgrass
37 restoration.
- 38 • **MM BIO-5: Debris Booms.** Set surface debris booms tied to the Wharf pilings or
39 anchored with limited anchor points along the Project footprint boundary to catch

all floating debris from decking removal. In the shallow Causeway area supporting eelgrass, an alternative for debris capture would be use of a small shallow-draft skiff and trained crew to skim up floatable debris on a consistent basis during demolition. Silt curtains will not be placed around the Wharf during demolition because, in the shallow Causeway, curtains could drag on the bottom and damage eelgrass; or could accelerate water under the curtains during changing tides, resulting in potential scour impacts.

- **MM BIO-6: Vessel Operation.** Conduct vessel operation and movements at slack high tides or during neap tide exchanges to reduce the need for excessive thrust to maneuver the barges.

Given the scale and nature of the work to be conducted, it is expected that at least some impacts to eelgrass are likely to occur, and that damage to eelgrass caused by the Wharf demolition would result in requirements for eelgrass habitat restoration. Restoration of any eelgrass south of the Wharf that may be damaged by the barges is part of the Project Description. Restoration would be completed through eelgrass planting in any areas where damage has been caused by the Project.

It is well understood that docks, wharfs, and other above-water structures negatively impact the persistence and health of eelgrass in bays and estuaries (Werme et al. 2010). Therefore, in addition to restoration of any damage caused by the Wharf demolition, the eelgrass restoration effort would include the previously shaded area beneath the removed Wharf at depths that are suitable to eelgrass growth (see Figure 2-8, Section 2.2.4, Eelgrass Restoration Area). Preliminary estimates indicate that eelgrass coverage could be increased to about 1.5 times the existing area in the Project footprint (from about 0.44 acre to about 0.66 acre of coverage). An eelgrass restoration plan has been prepared to support this restoration effort and the required CDFW authorizations for translocation of aquatic plants. Therefore, the removal of the Wharf would have a net benefit to surrounding San Francisco Bay eelgrass habitat in addition to a beneficial effect on water quality by removing a potential creosote pollutant source.

During the restoration effort, all agency guidelines would be followed with respect to eelgrass transplantation. Eelgrass removed from adjacent beds for transplantation would result in very minor thinning of the donor beds and would not impact the health of the existing beds. Donor beds would be accessed by small vessels anchored outside of existing eelgrass beds to avoid eelgrass bed damage. Eelgrass would be harvested and replanted by divers deployed from the vessels. Thus, the restoration effort itself would not significantly affect the adjacent beds.

With the implementation of MMs BIO-2 through BIO-6, Project impacts to sensitive natural communities would be less than significant.

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

4 **Less than Significant with Mitigation.** No wetlands, as defined by Section 404 of the
5 Clean Water Act, would be impacted by the Project. The Bay, however, is regulated as
6 other waters of the United States under Section 404. As described above, the Project
7 would affect up to approximately 4 acres of Bay waters and would require a permit under
8 Section 404 for impacts to other waters of the United States, as well as navigable waters
9 under Section 10 of the Rivers and Harbors Act. Impacts to San Francisco Bay (Waters of
10 the U.S.) would be mitigated through the implementation of MMs HYD-1 and HYD-2, as
11 described under significance criteria a) and b). These measures would require the
12 development and implementation of a hazardous material spill prevention, control, and
13 countermeasure plan, which would minimize the potential for, and the effects of, spills of
14 hazardous, toxic, and/or petroleum substances. Chevron and CSLC staff would review
15 and approve the plan before demolition work begins. In addition, debris would be
16 managed using floating booms (MM BIO-5), and turbidity would be monitored and
17 controlled. With the implementation of MMs HYD-1, HYD-2, and HYD-3, Project impacts
18 to San Francisco Bay would be reduced to a less than significant level with mitigation.

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

22 **Less than Significant Impact.** The Project would generate underwater noise and
23 disturbance during Wharf demolition and pile extraction activities. This may cause fish
24 and marine mammals to temporarily avoid the immediate vicinity of the Wharf while this
25 activity is occurring. This activity would not block migration of fish to spawning grounds
26 or harbor seals to the haul-out site at Castro Rocks, because the affected area is small
27 relative to the surrounding area of the Bay. During demolition activities, both fish and
28 marine mammals would be able to avoid the area in the abundance of Bay habitat
29 surrounding the Project area. The temporary effect on the movement of fish and marine
30 mammals during demolition and pile extraction would be less than significant.

31 The Project does not include any physical barriers that would prevent the physical
32 movement of fish or wildlife. The Project's in-water work would be temporary,
33 intermittent, and limited to the specific area of Wharf demolition only; it would not
34 interfere substantially with the movement of species around the piles.

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

37 **No Impact.** The Project is consistent with the City of Richmond's General Plan 2030
38 overall goal to preserve and restore natural habitat and protect biological diversity. The

Project would comply with the General Plan 2030 Policy CN 1.1 (Habitat and Biological Protection and Restoration) because it incorporates a comprehensive eelgrass restoration plan to mitigate for any impacts to eelgrass habitat. The Project would not impact creeks, wetlands, the Richmond shoreline, or other natural areas. As a result, the Project would be consistent with Policies CN 2.1 (Open Space and Conservation Areas) and CN 2.2 (Richmond Shoreline) (City of Richmond 2012). Tree ordinances, via the City of Richmond Municipal Tree Policy, are not applicable in the case of this Project because no trees, or terrestrial resources, would be impacted during Wharf demolition activities.

The Contra Costa County General Plan includes conservation and goals that are specific to areas designated as Significant Ecological Resource Areas and harbors (Contra Costa County 2005). Because the Project does not occur in any of these areas, it is also consistent with the Contra Costa County General Plan.

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?

No Impact. The Project would not conflict with a Habitat Conservation Plan or Natural Communities Conservation Plan because the Project area is not included in a Habitat Conservation Plan or Natural Communities Conservation Plan.

3.4.4 Mitigation Summary

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

- MM BIO-1: Nesting Bird Surveys
- MM BIO-2: Environmental Awareness Training
- MM BIO-3: Mark Barge Operations Corridor
- MM BIO-4: Perform Pre- and Post-Demolition Surveys
- MM BIO-5: Debris Booms
- MM BIO-6: Vessel Operation
- MM HYD-1: Spill Prevention, Control, and Countermeasure Plan
- MM HYD-2: Treated Wood Pile Extraction
- MM HYD-2: Debris Management and Demolition Waste

1 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 § 15064.5?	☐	☐	☐	☒
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?	☐	☒	☐	☐
c) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☒	☐	☐

2 3.5.1 Environmental Setting

3 The Project site is off the western shore of the Point San Pablo Peninsula, near its
4 northern terminus. The peninsula juts northwest into San Francisco Bay, creating the
5 San Pablo Strait. Geologically, the peninsula is composed of shale and sandstone of
6 the Mesozoic Novato Quarry terrane of the Franciscan complex; soils are the shallow
7 Millsholm series, which form in situ from the bedrock (Blake et al. 2000, National
8 Cooperative Soil Series 2003). Onshore, vegetation consists of coastal prairie species,
9 including grasses, coast buckwheat, native coast live oak, coyote brush, toyon, and
10 coffeeberry (Santiago 2006). Offshore in the vicinity of the Project site, the water is
11 relatively shallow, fostering the growth of eelgrass, which provides habitat for
12 Dungeness crab, young salmon, striped bass, steelhead trout, and starry flounder
13 (Santiago 2006). The bedrock offshore in the Project site is overlain by unconsolidated
14 marine sediments (Bay Mud), which was deposited following the inundation of this
15 portion of San Francisco Bay within the last 4,000 years (Meyer 2014). In general, older
16 landforms that were inundated by the Bay have at least 6.5 to 10 feet of Holocene-age
17 alluvial deposits near the Bay margins (Meyer and Rosenthal 2007). Onshore, the depth
18 to bedrock is shallow, approximately 16 to 20 inches (National Cooperative Soil Series
19 2003).

20 3.5.1.1 Cultural Setting

21 *Precontact Context*

22 The following context is adapted from the Regional Research Context section of the
23 *Draft Caltrans District 4 Research Design and Treatment Plan for Native American*
24 *Archaeological Resources in the San Francisco Bay-Delta Region* (Byrd et al. 2016).

1 This previously developed context provides broad background for the cultural processes
2 and trends that shaped the archaeological record of the Bay-Delta area.

3 The earliest evidence for human occupation in California, during the Terminal
4 Pleistocene (13,500 to 11,700 calibrated years before present [cal BP]), is very sparse,
5 consisting primarily of isolated fluted points, and therefore is poorly understood. This
6 period is generally considered to be represented by multiple contemporaneous
7 migrations into the New World, including nomadic hunters and gatherers who exploited
8 large game using fluted points, and more coastal-oriented peoples. Throughout
9 California, the Terminal Pleistocene occupation is infrequently encountered; no fluted
10 points or archaeological deposits dating to this time period have been documented in
11 the San Francisco Bay Area. The absence of these archaeological sites can be partially
12 attributed to the small mobile populations leaving only a marginal footprint on the
13 landscape, in conjunction with the subsequent rise of sea levels and coastal erosion
14 burying what limited sites were deposited during this time (Byrd et al. 2016). During this
15 period, modern-day San Francisco Bay would have been a large valley available for
16 human occupation.

17 Early Holocene (11,700 to 8,200 cal BP) occupation of the San Francisco Bay region is
18 characterized by the use of handstones and millingslabs, stemmed points, crescents,
19 and steep-edged formed flaked tools that served a semi-mobile hunter-gatherer
20 population who exploited a wide range of plants and animals from marine, lacustrine,
21 and terrestrial environments (Byrd et al. 2016). Charred remains of acorn nutshell from
22 CA-CCO-696 at Los Vaqueros, in the Diablo Range, provide direct evidence for use of
23 these nut crop during the Holocene (Rosenthal and Meyer 2009). Obsidian from eastern
24 Sierra quarries make up a large portion of the nonlocal flaked stone tools and debris
25 found in early Holocene sites in central California (e.g., CA-CCO-696).

26 Middle Holocene (8,200 to 4,200 cal BP) archaeological deposits are represented with
27 more than 60 known sites in the San Francisco Bay-Delta Area (Byrd et al. 2016).
28 Artifact assemblages are varied and characterized by groundstone (handstones and
29 millingslabs, as well as mortars and pestles); side-notched dart points; cobble-based
30 implements; and shell beads and ornaments (Byrd et al. 2016). Use of the mortar and
31 pestle has been documented at sites dating as early as 6,000 cal BP in lowland areas at
32 various places in central California (Rosenthal and Meyer 2009). In the lowland valleys
33 of the northern Diablo Range, mortars and pestles replaced handstones and
34 millingslabs sometime between about 7,000 and 6,000 cal BP. Mortars and pestles
35 became common milling tools in the northern Diablo Range and the southern Delta. Use
36 of the mortar and pestle was likely part of an increased technological investment
37 associated with a shift to greater residential stability around well-watered riparian
38 ecosystems (e.g., CA-CCO-548). By the end of the Middle Holocene, the majority of the
39 Project area would have been inundated by rising seas, although the marshes

1 surrounding San Francisco Bay would have subsequently been used extensively by
2 people living on shore (Byrd et al. 2016).

3 Evidence for late Holocene (4,200 to 180 cal BP) occupation in central California is
4 extensive; there are more than 240 known archaeological sites that date to this time
5 period in the Bay-Delta Area (Milliken et al. 2009, Rosenthal and Meyer 2009). In
6 California, the late Holocene includes three primary chronological divisions: the Early,
7 Middle, and Late periods. The Early Period is the least well understood, primarily due to
8 a lack of data. Middle Period sites are more abundant and widely recorded in central
9 California. The Late Period is similarly well represented, with a number of excavated
10 sites and well-dated assemblages (Rosenthal and Meyer 2009). During this period, the
11 Project site would have been primarily offshore.

12 Residentially stable communities emerged through the Delta region no later than
13 4,000 cal BP. Evidence for these communities include large, mounded settlements and
14 smaller satellite villages found on levee ridges and other elevated landforms along
15 major rivers and tributary streams, particularly the Sacramento River (Rosenthal and
16 Meyer 2009). Mortars and pestles became more common in central California sites but
17 were not exclusive; fishing gear (e.g., hooks and net weights) and hunting equipment
18 (e.g., projectile points and atlatl spurs) were also common in Early and Middle late
19 Holocene settlements. The Middle Period is characterized by Fredrickson's (1974)
20 Berkeley Pattern; this Pattern is recognized throughout the northern Diablo Range and
21 in the major valleys and large drainage systems of the southern North Coast Ranges
22 (Rosenthal and Meyer 2009).

23 The Late Period of the late Holocene is the best-documented era. Current data suggest
24 that the Bay-Delta Area populations increased in size, sedentary villages flourished, and
25 ritual activity increased (Byrd et al. 2016). Artifact assemblages include "clam disk
26 beads, distinctive Haliotis [abalone] pendants, flanged steatite pipes, chevron-etched
27 bone whistles and tubes, elaborately finished stone 'flowerpot' mortars, and needle-
28 sharp coiled basketry awls" (Milliken et al. 2009). The bow and arrow appear in the
29 region around 700 cal BP, with a distinctive arrow style dubbed the "Stockton Serrated."
30 This arrow was almost exclusively manufactured from Napa Valley and Annadel
31 obsidian during this time period, and the style development suggests that "ethnic
32 continuity was present across the Bay region from Middle/Late Transition through Late 1
33 Period" (Byrd et al. 2016). Although the Project site was primarily offshore during the
34 Late Holocene, marshes on the edges of the Bay would have been used by people
35 living on land.

36 *Historic Context*

37 The first recorded Spanish expedition in the vicinity of the project site took place in
38 1772, although it is possible that the area was explored as early as 1769 (Milliken

1995). Two expeditions in the 1770s—Fages (1772) and DeAnza (1776)—encountered large Huchiun Ohlone villages along Wildcat Creek, approximately 2 miles east of the Project site in modern-day Richmond. By the turn of the century, nearly all the Huchiun were forcefully removed from the vicinity to Mission Dolores (Milliken 1995). Mission Dolores expanded its lands to subsidize its growing populations and established a ranch in the East Bay in 1817. Please see Section 3.6, *Cultural Resources – Tribal*, for an ethnographic history.

When the missions were secularized, the former ranch lands of the Mission were granted to Francisco Castro, who established Rancho San Pablo in 1830. Castro became a baron of the flourishing cattle and hide and tallow trade of the nineteenth century (Hoover et al. 2002). When Don Castro died in 1831, he left his heirs a total of 19,394 acres that included all of what later became the cities of Richmond and San Pablo. After California became a U.S. territory in 1846, squatters settled on Castro's large land. Due to lengthy legal proceedings, the family's holdings dwindled to only a fraction of its original size by the time the case was settled in 1894, and the former rancho was divided between 148 owners (El Cerrito Historical Society 2007, Page & Turnbull, Inc. 2009).

In 1901, the Pacific Coast Oil Company/Standard Oil purchased 500 acres on Point Richmond to construct the Richmond Refinery. Completed in 1902, the refinery was supplied with a pipeline from newly discovered oil fields at Kern River and Coalinga, and the first cargo of crude oil for processing was delivered to the Richmond wharf in June 1902 (Chevron 2021, Richmond Chevron 2021). Standard Oil decided on Richmond as their major base for west coast and Asian markets, and the use of marine transport was a significant factor in the refinery's rapid growth. By 1904, Richmond Refinery was enlarged and was producing 73,000 barrels of kerosene. Two years later, the refinery was processing 4.5 million barrels of crude oil into 1 million barrels of kerosene (called Petrolite) for export, which became the refinery's primary product at the time (White 1962).

As kerosene production at the Richmond Refinery was increasing in 1904, the existing wharf facilities in Richmond were unable to handle the extra traffic. In the fall of 1905, the Pacific Oil Company purchased a 30-acre tract of land 2 miles north of the Richmond Refinery and named this area "Point Orient" (White 1962). By the end of the year, construction was underway on a new wharf, two brick buildings for can and box factories, and a corrugated metal building for filling and casing cans. Tanker ships began using the new wharf at Point Orient in June of 1906; the cannery factory was completed in August, with the first shipment of cased kerosene departing for China on September 5, 1906. The Point Orient facility canned kerosene for the Japanese, Philippines, India, and China markets, and produced cased oil for the domestic market for the Standard Oil of New York division of the company. Due to materials and quality problems with canning and box making, the Point Orient facility ceased making its own

wood cases for shipment and stopped filling cans, both of which were transferred to the nearby Richmond Refinery. From 1908, kerosene was shipped in bulk to foreign markets from the Wharf. The factory continued to make cans for the domestic market, but much of the activity for which the facility was designed ceased (White 1962).

As electric lighting became more widely available, the demand for kerosene dropped. With the arrival of the automobile on the west coast in 1905 and the introduction of the Model T Ford in 1908, gasoline sales began to grow (Corbett 2011). Between 1906 and 1910, gasoline sales doubled, and lubricants were an emerging and fast-growing market (Chevron 2021). To meet demands, the Richmond Refinery shifted from kerosene production for foreign markets to gasoline and lubes for the domestic market (White 1962).

The Wharf continued in use for marine bulk transport to domestic and foreign markets. Sometime between 1905 and 1939, the Wharf was reconfigured from T-shape to F-shape, the loading sheds on the Wharf were removed, and half of the main Wharf was removed (Cox 1986, UCSB 1939). Between 1939 and 1946, the brick can-and-box factory buildings were removed on the shore side of the Point Orient facility; between 1946 and 1959, the smaller Wharf addition was removed (UCSB 1946, UCSB 1959). The Wharf appeared little changed until the 1970s and into the 1980s, when extensive maintenance, repairs, and upgrades were undertaken (Standard Oil Company of California 1961, Standard Oil Company of California 1971, Chevron U.S.A. Inc. Richmond Refinery 1984, Chevron Richmond 1988).

The Wharf has undergone maintenance, repairs, and upgrades since its original construction in 1906 to its decommissioning in the mid-1980s (Standard Oil Company of California 1961, Standard Oil Company of California 1971, Chevron U.S.A. Inc. Richmond Refinery 1984, Chevron Richmond 1988). Based on review of drawings provided by Chevron, various changes have occurred, including replacement decking on the Causeway and Main Wharf, addition of concrete jackets and polyvinyl chloride (PVC) wrapping to piles for strengthening, replacement of wood piles with steel, and replacement of wood piles with creosote piles. A large portion of the Wharf was damaged in 1971 by a ship collision, and decking and piles were replaced. Concrete dolphins were added in 1984. In 2020, the first 90 feet of the Causeway decking and piping were removed after fire damage.

3.5.1.2 Existing Conditions

Northwest Information Center

A records search was conducted at the Northwest Information Center of the California Historical Resources Information System at Sonoma State University (Northwest Information Center File No. 20-1724). The records search reviewed the Project area

and a 0.5-mile radius on the *San Quentin, Calif.* topographic quadrangle to: (1) determine whether known cultural resources have been recorded in the vicinity of the Project; (2) assess the likelihood of unrecorded cultural resources based on historical references; and (3) develop a context for identification and preliminary evaluation of cultural resources. The Built Environment Resources Directory, the National Register of Historic Places, the California Register of Historical Resources (CRHR), the California Historical Landmarks, and California Points of Historical Interest were also reviewed. Historic-period topographic maps and aerial photographs were also reviewed.

Studies

The records search revealed that one study was previously conducted in the Project site (Table 3.5-1). This study, *Report on a Marine Archaeological Survey of the Proposed Southampton Shoal Ship Channel Extension Terminal and Dredge Area*, included a geophysical survey of the offshore area adjacent to the Causeway (Sullivan and Allan 1996). No potential resources were identified in or adjacent to the Project site as a result of this study. Eleven additional studies were conducted within a 0.5-mile radius (Table 3.5-1).

Table 3.5-1 Studies Conducted in or within 0.5 mile of the Project Site

Study #	Author	Title	Date	In/ Within 0.5 Mile	Results
S-1925	Peter M. Banks	An Archaeological Reconnaissance of the Point San Pablo Project Area, Richmond, Contra Costa County, California	1980	0.5 mile	Positive outside Project site
S-2146	Deborah A. Rippey and Adrian Praetzelis	An Archaeological Survey of an Approximately 10 Acre Parcel Located at the Naval Fuel Supply Depot, Pt. Molate, Contra Costa County, California	1980	0.5 mile	Positive outside Project site
S-2357	James Roscoe	An Archaeological Survey of an Approximately 1-Acre Parcel Located at the Naval Fuel Supply Depot, Pt. Molate, Contra Costa County, California	1980	0.5 mile	Negative
S-6880	David Chavez	Cultural Resources Assessment for Replacement of Water Distribution System, Point Molate, Richmond, California	1981	0.5 mile	Positive outside Project site

Study #	Author	Title	Date	In/ Within 0.5 Mile	Results
S-7186	David Chavez and John Holson	Cultural/Archaeological Resources Investigation at the Naval Supply Center Fuel Department, Point Molate, Contra Costa County, California (Contract No. N62474-85-M-1179)	1985	0.5 mile	Positive outside Project site
S-8736	Robert I. Orlins	A Cultural Resource Assessment of the Chevron USA, Inc., Richmond Refinery Deep Water Outfall Project, Contra Costa County, California	1986	0.5 mile	Positive outside Project site
S-12270	Beth Padon et al.	Technical Appendix, Cultural Resources Assessment, Chevron Modernization Project	1990	0.5 mile	Positive outside Project site
S-18902	Steve Sullivan and James Allan	Report on a Marine Archaeological Survey of the Proposed Southampton Shoal Ship Channel Extension Terminal and Dredge Area	1996	In	Positive outside Project site
S-19550	Steve Conklin and Deborah McLean	Cultural Resources Assessment, Proposed Change to Wickland LLC, Richmond Marine-Link Pipeline Alignment	1997	0.5 mile	Negative
S-22310	Randy Wiberg et al.	Cultural Resources Evaluation and Impact Mitigation Program for the Western Drive Pipeline Replacement Project Near Point Molate, Contra Costa, California	1999	0.5 mile	Positive outside Project site
S-40390	Mike Taggart and Damon Haydu	Cultural Resources Study, Point Molate Tribal Destination Resort and Casino Project	2009	0.5 mile	Positive outside Project site
S-52104	David Chavez	Archaeological Monitoring for Oil Spill Prevention Project – Point Molate Fuel Depot (Project P-075), Summary Report of Archaeological Finds at the intersection of Line A and Line B	1987	0.5 mile	Negative*

Notes

* Midden soils were identified, but they may have been imported as fill.

1 Resources

- 2 No resources have been previously recorded in the Project site. Thirty-two resources
3 have been identified within 0.5 mile of the Project site, six of which are archaeological or
4 have archaeological components. These resources are:

- 1 • P-07-000159 (Nelson No. 280) is a shell mound that was originally recorded by
2 Nels C. Nelson in 1907. This mound is on a 50-foot-tall rounded cliff
3 approximately 0.4 mile north of the Project site and near Point San Pablo. No
4 artifacts were recorded except shell.
- 5 • P-07-000160 (Nelson No. 281) is also a shell mound originally recorded by
6 Nelson. This mound is in a hollow on a hillside approximately 850 feet southeast
7 of the Project site and contains shell midden and ground stone artifacts.
- 8 • P-07-000452 is a shell mound site that is approximately 0.45 mile north of the
9 Project site on a hill overlooking San Pablo Bay. Shell midden, sea-mammal
10 bone, fire-cracked rock, and chert debitage were identified in the site.
- 11 • P-07-000454 is the Wine Haven Historic District, which consists of the structural
12 remains of the Wine Haven winery, including the main winery building, steam-
13 generating plant, railroad, winery workers' housing, and associated refuse
14 deposits. This district is 1,800 feet south-southeast of the Project site on Point
15 Molate and includes both built environment and archaeological components. The
16 site record notes that an extensive midden is within the boundary and mentions
17 but does not document the remains of a Chinese fishing village.
- 18 Twenty-five of the other resources that have been previously recorded within
19 0.5 mile of the Project site are buildings and structures associated with Wine
20 Haven: P-07-003066, P-07-003074, P-07-004552, P-07-004553, P-07-004554,
21 P-07-004555, P-07-004556, P-07-004557, P-07-004558, P-07-004559,
22 P-07-004560, P-07-004561, P-07-004562, P-07-004563, P-07-004565,
23 P-07-004568, P-07-004569, P-07-004570, P-07-004571, P-07-004581,
24 P-07-004587, P-07-004588, P-07-004589, P-07-004592, and P-07-004593.
- 25 • P-07-000455 is a shell mound site on a hillside approximately 0.45 mile south-
26 southeast of the Project site on Point Molate. Shell midden, flaked stone artifacts,
27 ground stone, baked clay nodules, and faunal remains were identified in the site.
- 28 • P-07-000506 is a submerged pile of ballast rock that was identified during a
29 sidescan sonar and magnetometer survey 0.4 mile west-southwest of the Project
30 site. This resource may be associated with the 1869 wreck of the schooner
31 *Ringleader*.
- 32 • P-07-1745 is the National Register of Historic Places-listed East Brother Light
33 Station (National Register #71000138). Two buildings and five structures
34 contribute to this 7-acre historic district on East Brother Island in San Pablo Bay,
35 which is approximately 0.5 mile north of the Project site.

Shipwrecks Databases

A search of the CSLC's Shipwreck Database identified one shipwreck in the vicinity of the Project site. This locality is identified as an "unknown" shipwreck near Whiting Rock, which is approximately 0.75 mile offshore. This shipwreck location has not been verified.

The National Oceanic and Atmospheric Administration Office of the Coast Survey's Wrecks and Obstructions database (NOAA 2021a) was searched on March 17, 2021. The nearest shipwrecks are 0.75 mile west of the Project area, farther into the Bay and near the Contra Costa-Marin County line. Both shipwrecks (Records 50736 and 53165) are submerged. No additional information on the age or nature of these wrecks is available.

California Native American Heritage Commission

A search of the California Native American Heritage Commission's (NAHC) Sacred Lands files and a list of local Native Americans who might have knowledge of cultural resources in the vicinity of the Project area were requested on March 3, 2021. The NAHC responded on March 17, 2021, that the NAHC records did not identify sacred lands in or near the Project area, and provided a list of seven contacts who might have additional information about the Project location. Additional outreach pursuant to Assembly Bill (AB) 52 and the Commission's Tribal Consultation Policy was conducted by staff (see Section 3.6, *Cultural Resources – Tribal*).

3.5.1.3 Findings

Built Environment Resources

One historic-period built environment resource was identified in the Project site: Point Orient Wharf, which is proposed for removal by the Project.

As described in Section 3.5.1.1: Historic Context, the Wharf was originally constructed in 1906 and has been modified several times since its construction.

California Register of Historical Resources Criteria

Under CRHR Criterion 1, the Wharf does not appear to be significant in the context of the oil industry in Richmond, California, or the United States. Although the structure has supported offshore and onshore operations of the local oil industry since 1906, there is no evidence that the Wharf can be directly linked with important events or trends in the oil industry. It was built as a secondary wharf to the existing wharf facility at Point Richmond and was developed during a relatively short period when the Richmond Refinery was processing kerosene for foreign and domestic markets, largely as a

1 lighting source. The Wharf was developed fairly late in the context of kerosene refining
2 in the United States, and much of the kerosene processing ceased at the Richmond
3 Refinery by 1910, as electric lighting became more widely available and the refinery
4 focused on gasoline and machinery lubricants for the growing domestic automobile
5 industry. The Wharf continued to support routine maritime transport activities of the
6 Richmond Refinery, and its use is not directly associated with or illustrative of any major
7 events or achievements.

8 Under CRHR Criterion 2, the Wharf does not appear to be significant for its association
9 with the lives of persons important to history. Eligibility under this criterion must be
10 associated with an important person's productive life and must be the property that is
11 most closely associated with that person. The Wharf has been used by countless
12 individuals over the years in support of onshore and offshore oil operations and does
13 not have a direct association or clearly illustrate any achievements by significant
14 individuals associated with Standard Oil Company of California, the Pacific Coast Oil
15 Company, or the larger oil and gas industry.

16 Under CRHR Criterion 3, the Wharf does not appear to be significant for possessing
17 distinctive characteristics of a type, period, or method of construction, nor does it
18 represent the work of a master. Built in 1906, the Wharf appears to have been a
19 standardized design for a transport pier to support the expansion of kerosene
20 operations at the Richmond Refinery and does not appear to demonstrate innovations
21 in wharf engineering or construction. Ongoing repairs, maintenance, alterations, and
22 replacements have diminished the original 1906 appearance of the Wharf, and it no
23 longer possesses distinctive characteristics of an early twentieth century wood wharf,
24 nor does it possess high artistic value because of its lack of importance in the context of
25 wharf engineering and construction. This is discussed in further detail below as part of
26 the integrity analysis.

27 Under CRHR Criterion 4, the Wharf does not appear to be significant for yielding, or to
28 have the potential to yield, information important to history. Historic period structures
29 can occasionally be recognized for the important information they yield, or might yield,
30 regarding historic construction materials or technologies, thus making them significant
31 under this criterion. Early twentieth century wharf construction in California can be
32 studied through various written sources and documented construction types, so the
33 structure itself does not appear to be the principal source of important information in this
34 regard.

35 Integrity Analysis

36 In addition to meeting one of the CRHR criteria, a property must also retain a significant
37 amount of its historic integrity to be considered eligible for listing in the CRHR. Historical

1 integrity comprises seven aspects: location, design, setting, materials, workmanship,
2 feeling, and association.

3 Location is the place where the historical resource was constructed or the place where
4 the historic event occurred. The Wharf retains integrity of location because it remains in
5 its original location along the Richmond waterfront.

6 Design is the combination of elements that create the form, plan, space, structure, and
7 style of a property. The Wharf has undergone major alterations over the years from the
8 original T-shaped plan to an F-shaped plan with the removal of one-half of the Main
9 Wharf, removal of the original loading sheds on the Main Wharf, the addition and
10 subsequent removal of a smaller wharf, as well as the removal of the can and box
11 factory buildings that the Wharf was originally designed to support. Many of the piers
12 have been replaced and concrete jackets or PVC wrapping applied, and a 90-foot
13 section of the Causeway was removed after fire damage. Therefore, the Wharf has
14 diminished integrity of its original 1906 design.

15 Setting is the physical environment of a historical resource. Because the removal of the
16 can and box factory buildings has changed the overall setting of the Wharf, the facility
17 as a whole has diminished integrity of setting of its initial development period of 1906.

18 Materials are the physical elements that were combined or deposited during a particular
19 period of time and in a particular pattern of configuration to form a historic property. The
20 replacement of piers and concrete jackets and PVC wrapping applied to the exterior of
21 the pier substructures has diminished the original materials of the pier. In addition,
22 buildings on the Main Wharf have also been removed; therefore, the structure has
23 diminished integrity of materials to the original 1906 appearance.

24 Workmanship is the physical evidence of the crafts of a particular culture or people
25 during any given period in history or prehistory. The workmanship of the Wharf has
26 been negatively impacted by the jackets/wrapping applied to the exterior of the pier
27 substructures and removal of half of the Main Wharf; moreover, the level of
28 workmanship is low on this seemingly standardized designed and built wharf structure.

29 Feeling is a property's expression of the aesthetic or historic sense of a particular period
30 of time. The property's aspect of feeling is also diminished by the changes to the
31 structure, which altered details of the original physical features, as discussed under
32 integrity of design, setting, workmanship, and materials. Because such changes alter
33 the structure's ability to express the aesthetic or historic sense of its potential period of
34 significance (1906), the integrity of feeling has been diminished.

1 Association is the direct link between the extant property and its historical use. The
2 property was still used as a transport pier into the 1980s for the oil industry in
3 Richmond; however, no significant events or persons are associated with the Wharf.

4 California Register of Historical Resources Evaluation Conclusion

5 In summary, in addition to lacking significance under CRHR criteria, the Wharf has
6 diminished integrity of design, setting, materials, workmanship, feeling, and association
7 to its potential period of significance (1906). The Wharf is not eligible for listing in the
8 CRHR because it does not possess historical significance under the CRHR criteria, and
9 it is therefore not a historical resource for the purposes of CEQA.

10 *Archaeological Resources*

11 No previously recorded archaeological resources were identified in the Project site
12 during the records search and other background research. The records search identified
13 four shell mound sites within 0.5 mile of the Project site; however, unlike the Project
14 site, each of these sites is on a hillside or cliff and not directly on the Bay. The Project
15 site is primarily offshore and, although there is the potential for submerged
16 archaeological resources to be present beneath the Bay Mud, Project impacts would be
17 shallow and are not anticipated to extend beneath the Bay Mud. The Bay Mud itself is
18 unlikely to contain intact archaeological resources because it formed in a depositional
19 environment that was constantly wet (either submerged or tidal) and not conducive to
20 site formation. The interface of the Bay Mud with the underlying landform would be
21 sensitive for submerged archaeological resources (i.e., those created prior to the
22 inundation of the Bay), but offshore work is anticipated to occur entirely in the Bay Mud.

23 The deepest impacts during offshore work would occur during the removal of the
24 existing piers, but no new ground disturbance would occur as a result of this work. The
25 piers will be pulled out, and the contractor will be prohibited from rocking the piers to
26 remove them, which would minimize ground disturbance. The other proposed offshore
27 ground-disturbing work would be the temporary grounding of the barges for the removal
28 of the Wharf. Because the load on these flat-bottomed barges would be evenly
29 distributed, little sediment displacement is anticipated (Merkel & Associates Inc. 2020).

30 The small amount of onshore work would be associated with repairing an unstable
31 embankment along Stenmark Drive north of the Causeway and removing a concrete
32 footing associated with the Causeway. The dimensions of the footing are unknown
33 because as-builts are not available, but the standard depth of similar footings is
34 8 inches. The shoreline in this area has previously been hardened with local rock and
35 rock slope protection and is previously disturbed from the construction of the footing and
36 the addition of the shoring. In addition to these disturbances, the depth to bedrock in the
37 soil series in this location is shallow (less than 2 feet). Any archaeological resources

that may have been present would have been impacted during prior ground-disturbing work in this area. Because of the shallow nature of the soil, impacts to buried archaeological resources are not anticipated.

3.5.2 Regulatory Setting

Appendix A contains the federal, state, and local laws and regulations pertaining to cultural resources relevant to the Project.

3.5.3 Impact Analysis

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

No Impact. The Project would not result in a substantial adverse change in the significance of a historical resource as defined in Section 15064.5 because the cultural resources investigation for the Project did not identify any historical resources in the Project area that meet the criteria of significance under CEQA. Therefore, there is no impact, and no mitigation is required.

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

Less than Significant with Mitigation. The Project would not cause a substantial adverse change in the significance of a unique archaeological resource as defined in section 15064.5 because no known archaeological resources were identified in the Project area. However, there is still a possibility that previously unknown archaeological resources exist in the Project area. These resources could include: (1) *in situ* precontact resources that predate the Holocene flooding of San Francisco Bay and are situated on relict, submerged landforms mantled with unconsolidated marine sediments (Bay Mud); (2) artifacts redeposited after the flooding of the Bay and situated on the floor of the Bay or in unconsolidated recent sediments; or (3) *in situ* resources at or below MHHW at the location of the embankment repair.

Although there is the potential for archaeological resources to be present, the potential for encountering intact resources is low because of the nature of Project work and prior disturbances in the Project site. The offshore work is anticipated to occur entirely in Bay Mud, which was deposited in an environment that is not conducive to archaeological site formation. The basal layers of Bay Mud at the interface with the underlying pre-Bay landform are archaeologically sensitive, but it is not expected that this landform will be encountered during the Project. The offshore work to remove piles would not disturb more sediment than was disturbed during their installation and would not expose underlying sediments or any archaeological resources that may be buried. Even if the piles extend into the pre-Bay landform, no sediments from this landform would be

1 exposed. Similarly, the temporary staging of the barges, including driving spuds into the
2 mud, would not expose underlying sediments or substantially disturb surface sediments.

3 The onshore work will consist of trenching at the toe of the embankment below MHHW
4 to harden the rock slope protection and removing the Causeway footing above MHHW.
5 Onshore, soils are shallow to bedrock, and the Project site has been heavily disturbed
6 by prior construction. Archaeological sites in the vicinity are on hillsides and cliffs, not
7 directly on the Bay. Buried archaeological resources are not anticipated, although
8 isolated or redeposited artifacts may be encountered.

9 If previously unknown archaeological resources (terrestrial or submerged) are
10 encountered during implementation of the Project, they could be adversely affected.
11 Implementing MM CUL-1/TCR-1 and MM CUL-2/TCR-2 would reduce potential impacts
12 to previously unknown archaeological resources to a less than significant level. The
13 CUL/TCR mitigation measures apply to both cultural resources and Tribal cultural
14 resources.

- 15 • **MM CUL-1/TCR-1: Cultural Resources Contractor Awareness Training.** Prior
16 to beginning construction, the Applicant shall retain a qualified archaeologist to
17 prepare a Cultural Resources Contractor Awareness Training, subject to CSLC
18 approval. Local Native American representatives with an interest in the Project
19 should also be invited to provide training to construction personnel. The training
20 shall be given to all construction personnel prior to working on the Project, and
21 the training shall include, but not be limited to, the following:

- 22 ○ Guidance on identification of potential cultural resources that may be
23 encountered, including Tribal cultural resources
- 24 ○ The probability of exposing cultural resources
- 25 ○ Clear direction on procedures if a find is encountered

- 26 • **MM CUL-2/TCR-2: Unanticipated Discoveries.** If construction personnel
27 unearth Tribal cultural resources, or precontact or historic-period archaeological
28 resources during Project implementation, all Project activities within 100 feet will
29 halt until a professional archaeologist who meets the Secretary of the Interior's
30 Professional Qualifications Standards in archaeology is retained and determines
31 the significance of the discovery. Precontact archaeological materials/Tribal
32 cultural resources might include obsidian and chert flaked-stone tools (e.g.,
33 projectile points, knives, or scrapers) or toolmaking debris; culturally darkened
34 soil (midden) containing heat-affected rocks, artifacts, or shellfish remains; stone
35 milling equipment (e.g., mortars, pestles, hand stones, or milling slabs); and/or
36 battered stone tools, such as hammerstones. Historic period materials may
37 include shipwreck debris. The qualified archaeologist will determine impacts,
38 significance, and mitigation in consultation with local Native American

representatives. If the resource is a Tribal Cultural Resource, substantial adverse changes to this resource shall be avoided or minimized following the measures identified in Public Resources Code section 21084.3, subdivision (b), if feasible, unless other equally or more effective measures are mutually agreed on by CSLC, the archaeologist, and the interested local Native American representative(s).

A treatment plan, if needed to address a find, shall be developed cooperatively by the archaeologist and, for Tribal cultural resources, the interested local Native American representative(s). The plan will be submitted to the appropriate tribal representatives and CSLC staff for review, input, and concurrence prior to its implementation.

Protection in place of Tribal cultural resources shall be prioritized, if feasible; if the archaeologist or Tribal representative determines that damaging effects on the cultural Tribal cultural resource can be avoided in place, then work in the area may resume provided the area of the find is clearly marked for no disturbance. If avoidance in place of tribal cultural resources is infeasible, the treatment plan shall include measures that place priority on Tribal self-determination over collection and curation, including the option to repatriate (rebury) materials nearby at a location of their choosing, and to transfer possession/ownership to the culturally affiliated Tribe.

Title to all archaeological sites, historical 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 formal cemeteries?

Less than Significant with Mitigation. No human remains are known to be in or near the Project area. However, the possibility still exists that unmarked burials may be unearthed during subsurface construction activities (for example, during shoreline excavation). Consequently, there is the potential for the Project to disturb human remains during construction, including those outside of formal cemeteries. This impact is considered potentially significant but would be reduced to a less than significant level by implementing MM CUL-3/TCR-3.

- **MM CUL-3/TCR-3: Treatment of Human Remains.** If human remains are encountered, all provisions of California Health and Safety Code section 7050.5 and California Public Resources Code section 5097.98 shall be followed. Work

1 shall stop within 100 feet of the discovery, and both an archaeologist and CSLC
2 staff must be contacted within 24 hours. The archaeologist shall consult with the
3 County Coroner. If human remains are of Native American origin, the County
4 Coroner shall notify the NAHC within 24 hours of this determination, and a Most
5 Likely Descendent shall be identified. No work is to proceed in the discovery area
6 until consultation is complete and procedures to avoid or recover the remains
7 have been implemented.

8 **3.5.4 Mitigation Summary**

9 Implementation of the following mitigation measures would reduce the potential for
10 Project-related impacts to cultural resources to a less than significant level; the CUL/
11 TCR mitigation measures apply to both cultural resources and Tribal cultural resources:

- 12 • MM CUL-1/TCR-1: Cultural Resources Contractor Awareness Training
- 13 • MM CUL-2/TCR-2: Unanticipated Discoveries
- 14 • MM CUL-3/TCR-3: Treatment of Human Remains

1 3.6 CULTURAL RESOURCES – TRIBAL

CULTURAL RESOURCES – TRIBAL – 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:	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
a) 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	☐	☒	☐	☐
b) 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.	☐	☒	☐	☐

2 3.6.1 Environmental Setting

3 3.6.1.1 Ethnographic Context

4 The San Francisco Bay peninsula, south to Monterey Bay and Big Sur, and east into
5 present-day Alameda, Contra Costa, Solano, Napa, and San Joaquin counties, has
6 been home to the many cultures and bands of the Ohlone people for thousands of
7 years. These bands and communities were diverse and thriving throughout time until
8 Spanish invasion in the late 1700s. Today, Ohlone people continue to inhabit their
9 ancestral homeland and revitalize their culture, protecting and caring for the land and
10 fighting for access to practice their culture in a highly altered and developed landscape.
11 Ethnographic literature (Kroeber 1925, Levy 1978, Milliken 1995) indicates that the
12 Project area was the territory of Ohlone speakers of Chochenyo, one of at least eight
13 related dialects (Akins and Bauer 2021). Today's Ohlone people are descendants of
14 speakers of six related languages that existed in the San Francisco Bay Area, the Delta,
15 and western central California. Besides San Francisco Bay Costanoan, other languages

1 in the Costanoan language family include Karkin, Awaswas, Mutsun, Rumsen, and
2 Chalon (Milliken et al. 2009). These language groups are often treated as distinct and
3 cohesive language units; however, Milliken indicates that this can create a “misleading
4 and overly simplistic view” of the cultural variation that existed in the aboriginal San
5 Francisco Bay Area (Milliken 1995). Adding to the complexity, some Costanoan-
6 speaking tribes in the San Francisco Bay Area networked with Coast Miwok, Bay
7 Miwok, and Delta Yokuts in the surrounding area, sharing and exchanging socially,
8 culturally, and through intermarriage. Enslavement at the missions intensified the mixing
9 of various Costanoan language members, resulting in several “new” social and cultural
10 identities (e.g., Chocheños, Juaneños, Doloreños) (Milliken et al. 2009).

11 The Project site was likely inhabited by the Huchiun (xučyun) Tribe of the Ohlone who
12 lived along the East Bay shore, from Temescal Creek opposite the Golden Gate north at
13 least to the lower San Pablo and Wildcat Creek drainages in present day Richmond
14 (Milliken 1995). The lower reaches of these creeks were likely the most densely
15 populated due to the food resources the tidal marshes provided. The Tribes who
16 comprised the Ohlone language group—such as the Huchiun—had socio-cultural
17 concepts unique to their territory and a dialect that reflected this. Some Tribes likely had
18 more similarities with neighboring Tribes of a different linguistic group, based on a
19 shared geographic and ecological environment, than with other Tribes within their own
20 language family. Notwithstanding the many languages and their differences, the various
21 local communities and bands shared similarities in their political organization, hunting
22 and gathering ways, and “world views,” and social interaction and intermarriage was not
23 uncommon (Milliken et al. 2009).

24 The basic Ohlone social unit was the family household, which was extended patrilineally
25 (Harrington 1942). A household was made up of about 15 individuals. Households
26 grouped together to form villages, which in turn combined to form “tribelets,” “an
27 aggregate of villages in the largest of which lived the tribelet chief” (Heizer and Elsasser
28 1980). Tribelets exchanged trade goods such as obsidian, shell beads, and baskets;
29 participated in ceremonial and religious activities together; intermarried; and could have
30 extensive reciprocal obligations to one another involving resource collection. “The
31 Ohlones,” writes Malcolm Margolin, “were not forty independent, isolated tribelets
32 jealously guarding their frontiers. Rather, each tribelet was involved in a network of
33 feasting, trading, and gift-giving” (Margolin 2003).

34 For the Ohlone, like many other native Californians, the acorn was a dietary staple and
35 is attributed to high population densities and complex social and economic
36 organizations in Central California (Bartelink 2006, Baumhoff 1963). Acorns were
37 knocked from trees with poles, leached to remove bitter tannins, and eaten as mush or
38 bread. The Ohlone used a range of other plant resources as food, medicine, soap,
39 tools, and building materials, including buckeye, California laurel, elderberries,
40 strawberries, manzanita berries, goose berries, toyon berries, wild grapes, wild onion,

1 cattail, soap root, wild carrots, clover, and an herb called chuchupate. Animals eaten by
2 the Ohlone and their neighbors included large fauna such as black-tailed deer,
3 Roosevelt elk, antelope, and marine mammals; smaller mammals such as dog, skunk,
4 raccoon, rabbit, and squirrel; birds, including geese and ducks; and fish such as
5 salmon, sturgeon, and mollusks. Frogs, toads, owls, eagles, and ravens were not eaten
6 (Levy 1978).

7 Besides providing sustenance, the Bay Area's flora and fauna provided the Ohlone with
8 raw materials. For example, the Ohlone built dome-shaped shelters thatched with ferns,
9 tule, grass, and reeds. The thatch was tied to the structure's frame with willow withes.
10 The Ohlone also built small sweathouses, accommodating six to eight persons, which
11 were dug into creek banks and roofed with brush; and circular dance areas, which were
12 enclosed by fences woven from brush or laurel branches (Levy 1978). Plants,
13 particularly sedge, were also woven into baskets. Basket making was generally done by
14 women, who crafted cooking and storage containers, fish traps, and trays for leaching
15 acorns. Tightly woven baskets, decorated with feathers or shells, were valued exchange
16 items (Margolin 2003).

17 Animal bones, teeth, beaks, and claws were made into awls, pins, knives, and scrapers.
18 Pelts and feathers became clothing and bedding, and sinews were used for cordage
19 and bow strings. Feathers, bone, and shells were crafted into ornaments (Heizer and
20 Elsasser 1980).

21 By the late eighteenth century, Spanish settlers moved into northern California,
22 established the mission system, decimated local villages, and dramatically transformed
23 Ohlone culture. Many Ohlone were baptized by the Franciscan missionaries and were
24 enslaved on mission farms. The missions were essentially plantations, "built by slave
25 labor and sustained through brutal physical violence and extractive land practices"
26 (Sogorea Te' Land Trust 2021). Epidemics ravaged the people housed in the missions
27 as populations were moved and enlarged during "mass migrations," including in 1795
28 (Milliken et al. 2009). Throughout the mission period, the Ohlone people staged acts of
29 resistance and escape in response to the brutality of the missions. For example,
30 following the successful escape of a group of Saclans (Bay Miwok) from Mission
31 Dolores in 1795, many Huchiuns were emboldened to also flee the mission for their
32 East Bay villages. Afterward, mission baptisms of Tribal people came to a complete halt
33 (Milliken et al. 2009). Following the secularization of the missions in 1834, many of the
34 surviving Ohlone worked as manual laborers on ranchos (Levy 1978). Following the
35 Gold Rush and California's admission to the United States in 1850, Ohlone people
36 continued to reinforce their connections to important sites and resist outside efforts to
37 erase their history (Akins and Bauer 2021). Today, Ohlone people remain in their
38 traditional territory, which includes Contra Costa County, continuing to engage in
39 traditional cultural practices and advocate for protection of and access to important sites
40 and resources in their ancestral homeland.

3.6.1.2 Tribal Coordination

AB 52 (Stats. 2014, ch. 532), which became effective on July 1, 2015, made several changes to CEQA regarding Tribal Cultural Resources and consultation with California Native American Tribes who have previously requested to be notified of projects in the geographic area traditionally and culturally affiliated with that Tribe. These provisions ensure that Tribes have the opportunity to provide meaningful input on a project's potential effects on Tribal Cultural Resources and possible measures to avoid or minimize any significant effects.

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, 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), including when the CSLC acts as a lead agency under CEQA. 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 AB 52, lead agencies must avoid damaging effects on tribal cultural resources, when feasible, whether consultation occurred or is required. The CSLC contacted the NAHC, which maintains two databases to assist specialists in identifying cultural resources of concern to California Native Americans (Sacred Lands File and Native American Contacts). A request was sent to the NAHC for a Sacred Lands File search of the Project area and a list of Native American representatives who may be able to provide information about resources of concern in or adjacent to the Project area.

On March 17, 2021, the NAHC provided a letter and a list of eight individual tribal contacts from the following seven tribes.

- Mission San Juan Bautista
- Guidiville Indian Rancheria
- Indian Canyon Mutsun Band of Costanoan
- Muwekma Ohlone Indian Tribe of the SF Bay Area
- Ohlone Indian Tribe
- The Confederated Villages of Lisjan
- Rumšen Am:a Tur:ataj Ohlone

The NAHC's reply also stated that no records were identified in the Sacred Lands File record search for the Project area.

On July 7, 2021, CSLC staff provided CEQA notice of the Project to all tribes on the NAHC list. No responses or comments have been received to date. Nonetheless, in keeping with the requirements of AB 52, MMs CUL-1/TCR-1, CUL-2/TCR-2, and CUL-3/TCR-3 were developed to ensure that damaging effects to tribal cultural resources are avoided during project implementation.

3.6.2 Regulatory Setting

Federal and state laws and regulations pertaining to this resource area and relevant to the Project are identified in Appendix A. There are no local goals, policies, and/or regulations applicable to this resource area for the Project.

3.6.3 Impact Analysis

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:

a) 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, subdivision (k), or

b) 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. In a letter dated March 17, 2021, the NAHC stated that the Sacred Lands File search for the Project site was negative. As discussed in the Cultural Resources section (Section 3.5), the Project has the potential to disturb previously unknown archaeological resources, including resources of importance to the Ohlone. There is also the potential that the Project could disturb human remains. Consequently, MMs CUL-1/TCR-1, CUL-2/TCR-2, and CUL-3/TCR-3 would be required. With implementation of MMs CUL-1/TCR-1, CUL-2/TCR-2, and CUL-3/TCR-3, the Project would have a less than significant impact on Tribal cultural resources.

1 **3.6.4 Mitigation Summary**

2 Implementation of the following mitigation measures would reduce the potential for
3 Project-related impacts to cultural resources to a less than significant level; the CUL/
4 TCR mitigation measures apply to both cultural resources and Tribal cultural resources:

- 5 • MM CUL-1/TCR-1: Cultural Resources Contractor Awareness Training
6 • MM CUL-2/TCR-2: Unanticipated Discoveries
7 • MM CUL-3/TCR-3: Treatment 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

The Wharf is not currently served by an electrical delivery service or natural gas provider.

3.7.2 Regulatory Setting

Federal and state laws and regulations pertaining to this resource area and relevant to the Project are identified in Appendix A. Generally, these plans, policies, regulations, and laws do not directly apply to the Project, but are presented to provide context to the regulatory setting.

At the local level, the City of Richmond General Plan, Conservation, Natural Resources and Open Space, has policies and actions related to conserving energy resources (City of Richmond 2012). The General Plan includes policies to promote the efficient use of energy and conservation in the design, construction, maintenance, and operation of public and private facilities, infrastructure, and equipment. In addition, the General Plan includes a policy to promote waste reduction and recycling to minimize materials that are processed in landfill. Consistent with this policy, the City of Richmond Climate Action Plan (CAP) has a Zero Waste objective, which includes a strategy to increase diversion of construction and demolition (C&D) waste.

There are no specific regulations or policies that relate to construction energy consumption or efficiency other than construction waste recycling policies and regulations related to California's Climate Change Scoping Plan and City of Richmond General Plan and CAP that may indirectly reduce energy consumption related to the Project's fuel or materials use. Compliance and conformance with these policies is discussed in Section 3.9, *Greenhouse Gas Emissions*.

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. Energy efficiency is a possible indicator of environmental impacts. The actual adverse physical environmental effects of energy use and the efficiency of energy use are detailed throughout this IS in the environmental-topic-specific sections. For example, the use of energy for electricity consumption leads to greenhouse gas emissions, the impacts of which are addressed in Section 3.9, *Greenhouse Gas Emissions*. There is no physical environmental effect associated with energy use that is not addressed in the environmental-topic-specific sections of this IS/MND.

Project demolition and eelgrass restoration activities would increase energy consumption for the duration of construction in the form of fossil fuel consumption (e.g., gasoline and diesel fuel). Transportation energy use during the Project would come from the transport and use of construction equipment (off-road and marine engines), haul trucks (on-road), and worker passenger vehicles (on-road). Project-related transportation energy use depends on the off-road equipment engine and hours of use, type and number of on-road trips, vehicle miles traveled, and fuel efficiency of vehicles and engines. The majority of the construction equipment used during demolition activities would be gas- or diesel-powered off-road and marine equipment. The use of fuel by on-road and off-road vehicles would be temporary and would fluctuate by specific demolition activity. During restoration activities, the majority of equipment is anticipated to include hand tools and gas-powered crew boats. Fuel consumption associated with the demolition and restoration activities would cease upon completion of the Project.

Table 3.7-1 shows the energy consumption as a result of the fuel used during Project demolition and restoration activities. The annual energy consumption was estimated using the carbon dioxide emissions calculations for the proposed activities and application of the U.S. Energy Information Administration's carbon dioxide emissions coefficients (EIA 2016) to estimate fuel consumption for the Project activities. Additional modeling assumptions and more details are provided in Section 3.3, *Air Quality*, and Appendix B.

As shown in Table 3.7-1, Project fuel consumption would require a total of approximately 6,337 million British thermal units (MMBtu) (sum of the diesel [5,240 MMBtu] and gasoline [1,096 MMBtu] energy consumption). Although the Project would result in increased indirect energy consumption for the temporary duration of the work, the amount of transportation fuel required for the Project is not considered an inefficient or wasteful use of energy because Project-related demolition and eelgrass restoration would address the objectives of the Project to increase the overall ecological health of portions of San Francisco Bay.

Table 3.7-1. Project Energy Requirements

Year	Fuel	Energy Requirement (gallons)	Energy Consumption (MMBtu)
Year 1	Diesel	17,273	2,385
Year 1	Gasoline	4,105	513
Year 2	Diesel	20,673	2,855
Year 2	Gasoline	4,666	583
Total	Diesel/Gasoline	37,946/8,771	5,240/1,096

Notes: MMBtu = million British thermal units

In addition, based on the anticipated phasing, the anticipated equipment and Project work staff, the temporary nature of the Project activities, and the Project type, the Project would not include unusual characteristics that would necessitate the use of construction equipment that is less energy-efficient than the equipment used at comparable construction sites.

Furthermore, the demolition contractors would be required, in accordance with MM AQ-1 and the CARB Airborne Toxic Control Measure for Diesel-Fueled Commercial Motor Vehicle Idling, to minimize the idling time of construction equipment by shutting equipment off when it is not in use or reducing the idling time to 5 minutes. MM AQ-1 would also require demolition contractors to maintain and properly tune all construction equipment in accordance with the manufacturer's specifications. These required practices would limit wasteful and unnecessary energy consumption.

After Wharf demolition and eelgrass restoration activities, post-restoration monitoring activities would be conducted to ensure that the restoration was successful. These activities would involve minor and periodic visual inspections and activities over several years. It is not anticipated that these activities would be a substantial source of energy consumption. Therefore, implementation of the Project would not be inefficient, wasteful, or unnecessary. This impact would be less than significant.

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

Less than Significant Impact. The Project area does not use land that was otherwise slated for renewable energy production and does not otherwise conflict with any state or local renewable energy plans. Therefore, implementation of the Project would not obstruct any state or local plans for renewable energy. In addition, fuel use would be consistent with current construction and manufacturing practices and energy standards that promote strategic planning to reduce consumption of fossil fuels and enhance energy efficiency. In addition, the Project would obtain a Demolition Permit from the City

of Richmond. Therefore, waste generated by the Project demolition activities would also comply with the City of Richmond’s local plans—such as Element 8, Energy and Climate Change, of the Richmond General Plan 2030—and would not conflict with the City of Richmond CAP policies to increase waste diversion. Therefore, the Project would not obstruct any state or local plans for renewable energy and/or energy efficiency. This impact would be less than significant.

3.7.4 Mitigation Summary

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

1 **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 waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐

3.8.1 Environmental Setting

3.8.1.1 Regional Geologic Setting

The majority of the Project area lies within San Francisco Bay, with Wharf structures extending into the Bay floor. The landside portions of the Project area are underlain by Franciscan Complex, a Mesozoic Era formation, consisting of sandstone, shale, and conglomerate (USGS 1991).

3.8.1.2 Seismic Hazards

The San Francisco Bay Area is a seismically active area. Seismic hazards can cause damage to structures and risk the health and safety of citizens. Seismic hazards vary widely, and the level of hazard depends on both geologic conditions and the extent and type of land use. Significant earthquakes occurring in the San Francisco Bay Area are generally associated with crustal movement along well-defined, active fault zones of the San Andreas Fault system. There are several active faults in the Project vicinity, the closest being the Hayward Fault Zone, about 5 miles east of the Project site (DOC 2021). Strong to very strong ground shaking could occur at the Project site as a result of a large earthquake on any one of the nearby faults.

According to the City of Richmond General Plan and California Department of Conservation, the Project Area is not in a landslide or liquefaction hazard zone, and there are no unstable geologic units or soils that potentially could result in lateral spreading, liquefaction, or collapse (City of Richmond 2012, DOC 2021).

3.8.2 Regulatory Setting

Federal and state laws and regulations pertaining to geology and soils and relevant to the Project are identified in Appendix A. At the local level, the City of Richmond General Plan, Public Safety and Noise Element, has policies related to minimizing risks from seismically induced and other known geologic hazards (City of Richmond 2012).

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?

Less than Significant Impact. The Project site is not in an Alquist-Priolo Earthquake Fault Zone, and no known faults cross the Project site (DOC 2021). However, the Project site is in a seismically active region. The Northern Hayward Section (Hayward Fault Zone) is the nearest earthquake fault to the Project site, approximately 5 miles to the east. The Project would not exacerbate the potential for seismic shaking; the intensity of the earthquake ground motion at the site would depend on the characteristics of the generating fault, distance to the earthquake epicenter, magnitude, and duration of the earthquake, and specific site geologic conditions.

Additionally, the Project would only involve demolition of the Wharf, removing a small footing and repairing an upland embankment, and would not involve the construction of any structures that would be subject to rupture of a known earthquake fault or strong seismic ground shaking. There would be a less than significant impact.

iii. Seismic-related ground failure, including liquefaction?

iv. Landslides?

Less than Significant Impact. The Project area is not in a landslide or liquefaction hazard zone (DOC 2021). Additionally, the majority of the Project would occur in San Francisco Bay on local coastal sediment on the Bay floor. Because the Project would only involve demolition of the Wharf, removing a small footing and repairing an upland embankment, and would not involve the construction of any structures, there would be a less than significant impact related to onsite landslide hazards, liquefaction, or seismic-related ground failure.

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

Less than Significant Impact. Demolition of the Wharf would disturb the local coastal sediment on the Bay floor. However, this disturbance would be localized and temporary. Scour of the sediments at the base of pile structures tend to occur when water velocities increase as water moves around the piles. Removal of the piles as part of the Project would result in less scour of the sediments. The Project would not include any on-land excavation or grading that would disturb topsoil. The embankment repair would take place primarily in the high intertidal zone and the embankment would be armored with rock riprap to protect the shore from erosion. Removal of the Causeway footing would involve excavating the concrete structure and placing rock riprap to protect the excavated area from erosion. Therefore, the Project would not result in substantial soil erosion or the loss of topsoil. There would be a less than significant impact.

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

4 **No Impact.** As discussed above, the Project area is not in an earthquake hazard zone
5 for landslides or liquefaction (DOC 2021). The majority of the Project site is in San
6 Francisco Bay on sediment on the Bay floor. Although a vibratory pile driver may be
7 used to unseat piles when pulling them out of the Bay floor, the Project area would not
8 be situated on a geologic unit or soil, including steep slopes, that could result in on- or
9 offsite landslide, lateral spreading, subsidence, liquefaction, or collapse. Additionally,
10 the Project would only involve the demolition of the Wharf and the footing removal and
11 embankment repair, and would not involve the construction of any structures. There
12 would be no impact.

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

15 **No Impact.** The Project would involve removing the Wharf in its entirety and restoring
16 eelgrass to the subtidal habitat in areas under the Causeway that are suitable for eelgrass
17 and are affected by the shading and scour imposed by the structure. As discussed above,
18 the majority of the Project would take place in San Francisco Bay on sediment on the Bay
19 floor, which has a low potential for expansion. Additionally, the Project would only involve
20 the demolition of the Wharf and the footing removal and embankment repair, and would
21 not involve construction of any structures that could create direct or indirect risks to life or
22 property. There would be no impact.

23 ***e) Have soils incapable of adequately supporting the use of septic tanks or***
24 ***alternative waste water disposal systems where sewers are not available for the***
25 ***disposal of waste water?***

26 **No Impact.** The Project would not include the use of septic tanks or alternative
27 wastewater disposal systems. There would be no impact.

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

30 **Less than Significant with Mitigation.** There are no known unique paleontological
31 resources or unique geologic features at the Project site. During demolition of the
32 Wharf, all potentially ground-disturbing activities would take place in the upper layers of
33 the San Francisco Bay floor, and there would be no dredging or excavation of Bay
34 sediments. This area of the Bay floor has been recently formed and is anticipated to
35 have low paleontological sensitivity. However, it is possible for previously unknown
36 paleontological resources to exist in the Project area. Implementation of MM CUL-2/

1 TCR-2 would mitigate potentially significant impacts to paleontological resources to a
2 less than significant level.

3 **3.8.4 Mitigation Summary**

4 Implementation of the following mitigation measure would reduce the potential for
5 Project-related impacts to paleontological resources to a less than significant level:

- 6
 - MM CUL-2/TCR-2: Unanticipated Discoveries

1 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?	☐	☐	☒	☐

2 3.9.1 Environmental Setting

3 Greenhouse gas (GHG) emissions play a critical role in determining the earth's surface
 4 temperature. A portion of the solar radiation that enters the earth's atmosphere is
 5 absorbed by the earth's surface, and a smaller portion of this radiation is reflected back
 6 toward space. Infrared radiation (i.e., thermal heat) is absorbed by GHGs; as a result,
 7 infrared radiation released from the earth that otherwise would have escaped back into
 8 space is instead "trapped," resulting in a warming of the atmosphere. This phenomenon,
 9 known as the "greenhouse effect," is responsible for maintaining a habitable climate on
 10 Earth.

11 GHGs are present in the atmosphere naturally, are released by natural sources, and are
 12 formed from secondary reactions taking place in the atmosphere. The following are
 13 GHGs that are widely seen as the principal contributors to human-induced global
 14 climate change: carbon dioxide, methane, nitrous oxide, hydrofluorocarbons,
 15 perfluorocarbons, and sulfur hexafluoride.

16 Global warming potential (GWP) is a concept developed to evaluate the ability of each
 17 GHG to trap heat in the atmosphere in comparison to carbon dioxide. The GWP of a
 18 GHG is based on several factors, including the relative effectiveness of a gas to absorb
 19 infrared radiation and the length of time (i.e., lifetime) that the gas remains in the
 20 atmosphere (atmospheric lifetime). The GWP of each gas is measured relative to
 21 carbon dioxide, the most abundant GHG. GHGs with lower emissions rates than carbon
 22 dioxide may still contribute to climate change because they are more effective than
 23 carbon dioxide at absorbing outgoing infrared radiation (i.e., high GWP). The concept of
 24 carbon dioxide equivalents (CO_{2e}) is used to account for the different GWP potentials of
 25 GHGs to absorb infrared radiation.

3.9.2 Regulatory Setting

Federal and state laws and regulations pertaining to GHG emissions and relevant to the Project are identified in Appendix A. As discussed in Section 3.3, *Air Quality*, the Project is in the SFBAAB under the jurisdiction of the BAAQMD. At the regional level, BAAQMD adopted the *2017 Bay Area Clean Air Plan: Spare the Air and Cool the Climate* in April 2017. The 2017 Clean Air Plan lays the groundwork for a long-term effort to reduce Bay Area GHG emissions 40 percent below 1990 levels by 2030 and 80 percent below 1990 levels by 2050. In addition, BAAQMD established a climate protection program to reduce pollutants that contribute to global climate change and affect air quality in the SFBAAB. The program includes GHG-reduction measures that promote energy efficiency, reduce vehicle miles traveled, and develop alternative energy sources (BAAQMD 2017c).

In October 2016, the City of Richmond adopted the CAP. The CAP is a roadmap for how the City of Richmond will reduce GHG emissions and prepare for the impacts of climate change on public health, infrastructure, ecosystems, and public spaces in the community. The CAP also supports the community's goals and policies identified in the City of Richmond's General Plan, Energy and Climate Change Element (City of Richmond 2012). The CAP includes four goals that are supported by eight objectives: Energy-Efficient Buildings and Facilities; Increase Use and Generation of Renewable Energy; Sustainable Transportation and Land Use; Zero Waste; Water Conservation; Green Infrastructure, Urban Forestry, and Local Agriculture; Green Business and Industry; and Resiliency to Climate Change (City of Richmond 2016).

3.9.3 Impact Analysis

BAAQMD published the May 2017 CEQA Air Quality Guidelines, which provide lead agencies with assistance in evaluating the air quality and GHG impacts of projects and plans proposed in the SFBAAB (BAAQMD 2017c).

The Project's GHG emissions are primarily related to demolition and eelgrass restoration activities; however, BAAQMD has not adopted thresholds for evaluating GHG emissions from Project activities. Nevertheless, BAAQMD recommends that the lead agency quantify and disclose GHG emissions that would occur during Wharf demolition and eelgrass restoration and make a determination on the significance of these Project-generated GHG emission impacts in relation to meeting AB 32 (Health & Saf. Code, Div. 25.5, §§ 38500-38599) GHG reduction goals. AB 32, signed into law by Governor Arnold Schwarzenegger in 2006, established regulatory, reporting, and market mechanisms to achieve quantifiable reductions in GHG emissions and established a cap on statewide GHG emissions. It required that statewide GHG emissions be reduced to 1990 levels by 2020. AB 32 also identifies CARB as the state agency responsible for the design and implementation of emissions limits, regulations,

1 and other measures to meet the target. In 2016, California's GHG emissions dropped
2 below the AB 32 limit and have remained below the 2020 GHG limit since that time. In
3 2019, the most recent inventory prepared by CARB, statewide emissions were 418.2
4 million metric tons of CO₂e (CARB 2021b). For stationary-source projects, the BAAQMD
5 threshold is 10,000 metric tons (MT) of CO₂e per year. Stationary-source projects
6 include land uses that would accommodate processes and equipment that emit GHG
7 emissions and would require a BAAQMD permit to operate (BAAQMD 2017b).
8 BAAQMD has also adopted a 1,100 MT of CO₂e annual threshold for the operational
9 phase of projects. However, the Project would not involve any ongoing operational
10 activities.

11 Furthermore, the 10,000 MT CO₂e threshold was developed based on permit
12 applications submitted to BAAQMD in 2005, 2006, and 2007. The threshold was
13 intended to ensure at least 95 percent of new GHG emissions would be reviewed and
14 assessed for mitigation, thereby contributing to AB 32's GHG emissions reduction
15 goals. However, the Project would begin in 2022; thus, Project-related GHG emissions
16 should also be analyzed in the statewide framework of Senate Bill (SB) 32 (Pavley; an
17 act to add Section 38566 to the California Health and Safety Code Division 25.5).
18 SB 32, which established a 2030 GHG emissions reduction target of 40 percent below
19 1990 levels, was signed by Governor Brown in 2016. BAAQMD has not adopted a
20 threshold of significance consistent with SB 32 goals. To provide this additional
21 information to put the Project-generated GHG emissions in the appropriate statewide
22 context, this analysis presumes that a 40 percent reduction in BAAQMD's existing
23 stationary-source threshold (resulting in 6,000 MT of CO₂e) is necessary to achieve the
24 state's 2030 GHG reduction goal (which is a 40 percent reduction below 1990 GHG
25 emissions levels).

26 This analysis also reviewed guidelines used by other public agencies. For example, the
27 Sacramento Metropolitan Air Quality Management District (SMAQMD) has identified an
28 annual threshold of 1,100 MT of CO₂e for the construction phase of all project types.
29 SMAQMD recognizes that, although there is no known level of emissions that
30 determines whether a single project will substantially impact overall GHG emission
31 levels in the atmosphere, a threshold must be set to trigger a review and assessment of
32 the need to mitigate project GHG emissions (SMAQMD 2021). The threshold set by
33 SMAQMD was developed to allow lead agencies to assess the consistency of proposed
34 projects with AB 32 and SB 32 reduction goals. Therefore, for conservative purposes,
35 this analysis uses the 1,100 MT CO₂e threshold developed by SMAQMD for the
36 construction phase of projects.

37 It is not the intent of this document to encourage the adoption of these thresholds as
38 mass emissions limits for this or other projects, but rather to provide this additional
39 information to put the Project-generated GHG emissions in the appropriate statewide
40 context.

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

Less than Significant Impact. Heavy-duty off-road and marine equipment (e.g., crew boats, work boats, and tugboats), materials transport, and worker commutes during demolition and restoration activities associated with the Project would result in exhaust-related GHG emissions. Construction-related GHG emissions were estimated using the methodology discussed in Section 3.3, *Air Quality*. Table 3.9-1 shows the total GHG emissions associated with the Project.

Table 3.9-1. Project-Related GHG Emissions

Year	GHG Emissions (MT CO ₂ e)
Year 1	206
Year 2	246
Total Project Emissions	452

Notes: GHG = greenhouse gas; MT = metric tons; CO₂e = carbon dioxide equivalents

As shown in Table 3.9-1, the total GHG emissions resulting from demolition and restoration activities would be approximately 452 MT of CO₂e. Therefore, the construction-related emissions associated with the Project would not exceed BAAQMD's adopted significance threshold of 10,000 MT of CO₂e per year for stationary-source projects, the adjusted SB 32 threshold of 6,000 MT of CO₂e per year, or the SMAQMD threshold of 1,100 MT of CO₂e for the construction phase of projects. After Wharf demolition and eelgrass restoration activities, post-restoration monitoring activities would be conducted to ensure that the restoration was successful. These activities would involve minor and periodic visual inspections and activities over several years. It is not anticipated that these activities would be a substantial source of emissions. Therefore, the Project would not generate GHG emissions, either directly or indirectly, that would result in a cumulatively considerable contribution to a significant impact on the environment. This impact would be less than significant.

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

Less than Significant Impact. As detailed in Appendix A, in response to AB 32 and SB 32, CARB has approved a series of Climate Change Scoping Plans and Scoping Plan updates. Although the Scoping Plan updates do include measures that would indirectly address GHG emissions associated with construction and operational activities, including the phasing in of cleaner technology for diesel engine fleets (including construction equipment) and Low Carbon Fuel Standard, successful implementation of these measures predominantly depends on the development of laws and policies at the state level. As such, the Scoping Plans and Scoping Plan updates do not constitute a regulation to adopt or implement a regional or local plan for reduction or

mitigation of GHG emissions at the project level. Thus, it is assumed that any requirements or policies formulated under the mandates of AB 32 and SB 32 that would be applicable to the Project, either directly or indirectly, would be implemented consistent with statewide policies and laws.

As described above, the City of Richmond CAP includes eight objectives supported by strategies and actions to support the goals of the CAP. The CAP's Zero Waste objective includes a strategy to increase diversion of C&D waste. The City of Richmond implements actions related to diversion of C&D debris through RecycleMore, the regional recycling agency, which is tasked with ensuring that Richmond and its neighboring cities achieve the solid-waste diversion goals established by the state. RecycleMore has several programs aimed at helping residents, businesses, and institutions achieve zero waste by promoting waste diversion programs, including C&D diversion and proper disposal of hazardous waste.

As shown in Section 2.6 of the Project Description, prior to the start of demolition activities, the contractor would obtain a Demolition Permit from the City of Richmond. The permit conditions would ensure that the Project would not conflict with the CAP's goal to increase diversion of C&D waste and ensure proper disposal of hazardous waste. In addition, as shown in Table 3.9-1, the Project would not generate GHG emissions that would have a significant impact on the environment. Therefore, the Project would not conflict with the AB 32 and SB 32 Scoping Plans, the City of Richmond CAP, or any other relevant plans, policies, or regulations for the purpose of reducing GHG emissions. This impact would be less than significant.

3.9.4 Mitigation Summary

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

1 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 two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	☐	☒
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	☐	☐	☐	☒

2 3.10.1 Environmental Setting

3 The Project area is in San Francisco Bay, between Point San Pablo to the north and
4 Point Molate to the south. The area surrounding the Wharf is largely undeveloped.
5 Undeveloped refinery property lies to the east. Industrial buildings and abandoned
6 houses associated with Point Molate lie approximately 0.65 mile to the southeast.

1 Searches of the State Water Resources Control Board GeoTracker database showed
2 two environmental remediation sites within 0.5 mile of the Wharf (SWRCB 2021). These
3 two sites are near Terminal 4, north of the Wharf.

4 The sites at the Port of Richmond, Terminal 4, consist of two historic leaseholds
5 adjacent to one another: the Vopak North America Inc. (Vopak) leasehold and the
6 United Molasses Company leasehold. The Vopak leasehold consisted of approximately
7 9.5 acres of land used for a bulk oil storage facility; it included a large quantity of
8 aboveground tanks, related structures, and underground storage tanks. The United
9 Molasses Company leasehold consisted of approximately 6 acres of land hydraulically
10 downgradient and southwest of the Vopak leasehold used for bulk storage, handling,
11 and distribution of agricultural products in aboveground storage tanks, underground
12 storage tanks, and related structures.

13 Vopak and its predecessors began operation in 1917 and stored products including but
14 not limited to lubricating oils, gasoline, diesel fuel, neutral oil 100 and 500, Grade 4 oil,
15 distillate oil, No. 5 fuel oil, No. 6 fuel oil, jet fuel, polybutane, toluene, xylene, linear
16 alkylbenzenes, alcohols, animal and vegetable oils, liquid fertilizers, and phosphoric
17 acids. United Molasses Company and its predecessors began operating in 1936 and
18 were engaged in aboveground bulk storage, handling, and distribution of commercial
19 agricultural products. Products included coconut oil, lignin liquor, linseed oil, cane
20 molasses, blackstrap molasses, beet molasses, and tallow.

21 Both sites are listed as “open” and are in verification monitoring, meaning that
22 remediation phases are essentially complete, and a monitoring/sampling program is
23 occurring to confirm successful completion of cleanup at the sites. For sites under the
24 verification monitoring classification, no active remediation is considered necessary, and
25 no additional active remediation is anticipated.

26 Several other sites occur between 0.5. and 1 mile south of the Wharf. These sites are
27 associated with former Naval operations at Point Molate. Many of the cases are closed
28 and cleanup is complete, and several are still under active remediation.

29 A search of the Department of Toxic Substances Control EnviroStor database showed
30 no active cleanup sites (e.g., remediation or underground tanks) within a 1-mile radius
31 (DTSC 2021).

32 The Wharf formerly handled petroleum products; however, as described, the Wharf was
33 decommissioned in the 1980s, and petroleum products have not been handled at the
34 Wharf since that time.

35 The Wharf is constructed primarily of wood and is supported by creosote-treated timber
36 piles. Creosote is an oily product derived from the distillation of tar from wood or coal. It

has historically been used as a wood preservative, commonly to preserve timber piles used to support aquatic structures, including piers and wharves, and in terrestrial environments to preserve railroad ties and timber utility poles. Creosote contains polycyclic aromatic hydrocarbons that are toxic to some organisms and can persist in the environment. In San Francisco Bay, creosote-treated piles are known to cause harmful effects, including mortality in Pacific Herring eggs which are laid directly on piles. Most of the piles supporting the Wharf are creosote-treated timber. The Project would remove these piles from the Bay and thus remove a source of this hazardous material, which would be beneficial to water quality and habitats in the vicinity.

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. At the local level, the Contra Costa County and City of Richmond General Plans, Safety Elements, have policies related to hazards associated with the use, transport, treatment, and disposal of hazardous substances, requiring strict regulation of the handling and storage of hazardous materials (Contra Costa County 2005, City of Richmond 2012).

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 Impact. The Project would involve the routine transport, storage, use, and disposal of small quantities of hazardous materials. Products used during the demolition such as gasoline, diesel, lubricants, and solvents are categorized as hazardous materials and are highly regulated by federal, state, and local laws and regulations. The storage and handling of these materials during the Project would be managed in accordance with applicable laws and regulations, which would include storing incompatible hazardous materials separately, using secondary containment for hazardous materials storage, and requiring the contractor to use trained personnel for hazardous materials handling. Demolition debris would be placed on a transport barge and transported to an offsite location (for example, to Pier 96 in San Francisco) to be processed and sorted before being transported by truck to a permitted facility for recycling or disposal.

Transportation of any hazardous materials must follow U.S. Department of Transportation regulations. Materials must be managed in accordance with the Hazardous Material Programs Division of the Contra Costa Health Services Department regulations, and disposed of in accordance with the Resource Conservation and Recovery Act as well as the California Code of Regulations at facilities that are permitted to accept the waste. Because of adherence to the regulations, routine

transport, storage, use, or disposal of hazardous materials during Project activities would not create substantial hazards to the public or the environment, and potential impacts would be less than significant.

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. All demolition debris, including the creosote-treated piles removed from the Bay, would be transported off site on barges to a land-based facility where the material would be sorted for recycling or disposal at permitted landfills in accordance with federal, state, and local regulations. Creosote-treated wood would be disposed of at a Class II landfill (permitted to accept “designated” and nonhazardous wastes); clean demolition debris would be recycled or disposed of at a Class III landfill (permitted to accept nonhazardous wastes).

Demolition of structures on the Wharf may also disturb hazardous building materials such as asbestos or lead-based paint. Existing regulations require that demolition activities that could disturb or remove hazardous materials must be inspected and/or tested for the presence of hazardous materials. Preliminary sampling of the steel product piping on the Wharf was conducted in July 2020. Some of the piping was found to be coated with lead-based paint. Several samples of the pipe insulation were also sampled. Three homogenous areas of material were sampled, yielding nine bulk samples that were tested for asbestos. Two of the samples were positive for friable asbestos.

Therefore, removal of the piping during demolition would include limited onsite lead and asbestos abatement. Small areas of lead-based paint or asbestos insulation would be removed on site to allow the pipes to be cut in 15-foot sections. The asbestos would be removed by a properly licensed Class C-22 Asbestos Abatement Contractor and monitoring would be performed by a California Certified Asbestos Consultant. The insulated pipe sections would be wrapped in double poly bags and sealed. Pipe sections would be transported by barge to the Chevron Richmond Refinery Long Wharf. Along with other similar wastes handles at the refinery, the pipe sections would undergo abatement, processing, and recycling or disposal at appropriate facilities. The friable asbestos waste would be properly labeled and packaged and transported by a registered hazardous waste transporter. Workers handling hazardous materials are required to adhere to federal and state Occupational Safety and Health Administration health and safety requirements.

The lead-containing paint would be stabilized prior to removal of the Wharf components. Pipes containing lead-based paint would be recycled by a licensed recycler, and the presence of the lead-containing paint would be communicated to the haulers and

recycler. Work impacting lead-containing paint would be performed by workers and supervisors who have received proper lead awareness training in accordance with the California Lead in Construction Code.

Because accidental spills could occur during demolition of the Wharf, MM HYD-1 (see Section 3.11, *Hydrology and Water Quality*) would be implemented. This measure requires preparation and implementation of a plan that includes the protocols for providing notification to appropriate agencies, and for performing spill containment and clean-up. The plan will incorporate measures such as requiring that spill cleanup materials be available on the work barges. Because compliance with existing regulations and programs is mandatory, removal of materials such as lead-based paint and asbestos are not expected to create a potentially significant hazard to the public or the environment. Accidental spills would be mitigated under MM HYD-1, and the impact would be less than significant with mitigation.

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

No Impact. There are no existing or proposed schools within 0.25 mile of the Project location. Therefore, no impact would occur.

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?

No Impact. The Project site is not at a location listed on the Cortese List (Gov. Code, § 65962.5). The nearest site on the Cortese list is Terminal 4, approximately 0.5 mile north of Point Orient. Therefore, no impact would occur.

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

No Impact. There are no airports within 2 miles of the Project site. Therefore, no impact would occur.

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

No Impact. The Project would not interfere with any adopted emergency response plans or emergency evacuation plans. All demolition work would occur from barges on the water and would not affect local roadways in the Project vicinity. Workers would arrive at the Project site via work skiffs. Roadways in San Francisco would be used to

1 transport wastes and recovered materials from the Pier 96 sorting area to landfills and
2 recycling centers. The Project would generate approximately 128 truck trips or about
3 three trips per week during the two June through November work seasons. Local roads
4 would also be used by the seven to ten workers to arrive at marinas in Richmond or San
5 Pablo Point for boat transport to the site. The shoreline repair would occur over about
6 8 days, with about four workers and five trucks per day accessing the site via Stenmark
7 Drive. The amounts of traffic generated would be very small in comparison to regular
8 daily traffic amounts and would not impair the implementation of emergency response
9 or evacuation plans. There would be no permanent modifications to road alignments,
10 and the amount of Project-related traffic would not interfere with an emergency
11 response plan. Therefore, no impact would occur.

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

14 **No Impact.** According to the California State Department of Forestry and Fire
15 Protection (CAL FIRE), the Project area is not in a State Responsibility Area or a Very
16 High Fire Hazard Severity Zone, and it is more than 1.5 miles from the nearest such
17 area or zone (CAL FIRE 2020). However, the City of Richmond identifies the hills
18 adjacent the Project area as Very High Fire Hazard Severity Zone (City of Richmond
19 2019). On-shore work consists only of repairing an embankment and removing a small
20 concrete footing for the Causeway. These activities would take place in the shoreline
21 environment, which consists of bare, disturbed soils and the rocky intertidal shoreline.
22 The Project would not indirectly or directly exacerbate wildfire risks. Therefore, there
23 would be no impact.

24 **3.10.4 Mitigation Summary**

25 Implementation of the following mitigation measure would reduce the potential for
26 Project-related impacts from hazards and hazardous materials to a less than significant
27 level:

- 28 • MM HYD-1: Spill Prevention, Control, and Countermeasure Plan

1 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 which 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 which would result in flooding on- or off-site;	☐	☐	☐	☒
iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☐	☐	☐	☒
iv) impede or redirect flood flows?	☐	☐	☐	☒
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☐	☒
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☐	☒

2 3.11.1 Environmental Setting

3 San Francisco Bay is the largest estuary on the West Coast of the contiguous United
4 States, covering 450 square miles. The majority of San Francisco Bay is roughly parallel
5 to and about 5 miles inland from the coastline, in a north-south orientation. San Pablo
6 Bay is a large area north of the Richmond–San Rafael Bridge. From San Pablo Bay,

San Francisco Bay extends eastward through the Carquinez Strait, past Suisun Bay, to the Delta of the Sacramento and San Joaquin Rivers. The Project area is in the San Rafael Bay subsection of San Francisco Bay.

Water quality of San Francisco Bay is affected by factors, including the geographic configuration of the Bay, tidal exchange with the ocean, freshwater inflows, industrial and municipal wastewater discharges, dredging and dredge material disposal, runoff from highly urbanized areas adjacent to the Bay, agricultural land drainage from much of nearby central California, marine vessel discharges, historical mining discharges, leaks and spills, and atmospheric depositions (CSLC 2006). The temperature and salinity of San Francisco Bay vary spatially and temporally based on the relative contributions of fresh and salt water. Off the Richmond shore, water temperatures typically range from about 50 to 68 degrees Fahrenheit (Cloern and Schraga 2016, NOAA 2021b) and salinities typically range from about 6 to 31 parts per thousand (Cloern and Schraga 2016).

The San Francisco Bay Basin Plan (SFBRWQCB 2019) designates beneficial uses from waterbodies covered by the plan. Designated beneficial uses for waters in and around the Project area include industrial service and process supply, commercial and sport fishing, shellfish harvesting, estuarine habitat, fish migration, preservation of rare and endangered species, fish spawning, wildlife habitat, contact and noncontact water recreation, and navigation.

Central San Francisco Bay is on the California 303(d) list of impaired waterbodies for a variety of pollutants, including chlordane, dichlorodiphenyltrichloroethane (DDT), dieldrin, dioxin compounds, furan compounds, mercury, polychlorinated biphenyls, selenium, invasive species, and trash (SWRCB 2020).

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. The Project area is within the jurisdiction of the San Francisco Bay Regional Water Quality Control Board, which implements the Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) (SFBRWQCB 2019). The Basin Plan designates beneficial uses (described above) for specific surface water and groundwater resources, establishes water quality objectives to protect those uses, and sets forth policies to guide the implementation of programs to attain the objectives.

At the local level, the Richmond General Plan 2030 contains policies related to water quality, but none would apply directly to the Project because the Project does not involve development. The Contra Costa County General Plan, Conservation Element, has a general policy to preserve and enhance the quality of surface and groundwater

resources (Contra Costa County 2005). The Project would generally enhance water quality by removing creosote-treated piles from San Francisco Bay.

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. The Project requires in-water and over-water work with heavy equipment. This has the potential to create excess turbidity or release chemicals or other foreign materials into the Bay if spills occur or waste materials or debris were to fall into the water. Materials used or generated during demolition might include fuels and hydraulics fluids for equipment; demolition debris such as the wood decking; and asphalt, cement, or metals when cutting through or removing the Wharf materials. In addition, pulling existing piles from the Bay could create turbidity if Bay Mud adhering to the piles is washed back into the Bay.

Release of demolition debris, including liquids or solid waste materials, into the Bay could degrade water quality and would be considered a significant impact. Incorporation of the following mitigation measures (MMs HYD-1, HYD-2, HYD-3, and HYD-4) into the Project to reduce or eliminate materials from entering the Bay, including Bay Mud adhering to the removed piles, would result in less than significant impacts to water quality.

- **MM HYD-1: Spill Prevention, Control, and Countermeasure Plan.** A hazardous material spill prevention, control, and countermeasure plan will be developed and implemented at the Project site. The purpose of this plan will be to reduce the potential for, and the potential impacts associated with, spills of hazardous, toxic, and/or petroleum substances. The plan will provide the protocols for providing notification to appropriate agencies (such as CSLC, resource agencies, and the California Governor's Office of Emergency Services, as required) and protocols for spill containment and clean-up. Chevron and CSLC staff will review and approve the plan before demolition work begins. The plan will contain practices such as:
 - Equipment shall be inspected daily by the operator for leaks or spills. If leaks or spills are encountered, the source of the leak shall be identified, equipment leaks shall be repaired promptly, leaked material shall be cleaned up, and all spilled and cleaning materials shall be collected and properly disposed.
 - All fuel, waste, oils, and solvents shall be stored away from the Project site. Fueling of marine-based equipment shall be conducted in accordance with Best Management Practices described in the plan. Any spills shall be

- 1 contained and properly cleaned up. Chevron will be notified by the contractor
2 of all spills, regardless of size. Chevron will notify CSLC staff.
- 3 ○ Containment booms and sorbent materials will be available during all work
4 activities and will be deployed immediately in the event of a spill to limit its
5 spread. Containment booms with absorbent materials will also be deployed
6 during removal of creosote-treated piles to contain any residual creosote oil
7 sheen incidentally released during pile removal.
- 8 • **MM HYD-2: Treated Wood Pile Extraction.** The following practices shall be
9 implemented during pile removal to protect water quality:
- 10 ○ Debris barges for treated wood pile removal will be equipped with
11 containment basins to prevent wastes (sediment, liquid, or debris) from falling
12 back into the water.
- 13 ○ Vibratory extraction will be employed first unless the pile is too decayed or
14 short for the vibratory hammer to grip.
- 15 ○ If a pile needs to be cut, no hydraulic jetting devices shall be used to move
16 sediment away from piles. Excavation of sediment in subtidal areas to expose
17 broken piles shall be accomplished by divers using hand tools.
- 18 ○ During pile extraction, piles will be lifted slowly from the water and placed
19 directly into the containment basin on the debris barge. Piles will not be
20 washed, shaken, or otherwise held to be allowed to drain over Bay waters or
21 to remove sediment prior to placement on the debris barge.
- 22 ○ The deck of the debris barge will not be washed in a manner that would allow
23 wastewater to enter the Bay.
- 24 ○ Sediment accumulated from the pile removal operations will be assumed to
25 contain creosote and will be captured, tested, and disposed off site in an
26 appropriate landfill.
- 27 • **MM HYD-3: Debris Management and Demolition Waste.** The following
28 practices shall be followed for the handling of demolition wastes from the Project:
- 29 ○ During demolition activities, the contractor will install floating debris booms (in
30 accordance with MM BIO-5) to capture floating surface debris to contain
31 releases if they occur.
- 32 ○ When cutting materials above water, any debris generated will be contained
33 and prevented from entering the Bay by using platforms or other devices
34 below the work area to catch debris before it enters the Bay.
- 35 ○ If any solid materials or wastes are inadvertently released to the Bay, the
36 contractor will use all available resources to contain and remove the material.

- Demolition waste will be collected and transported to an authorized upland disposal or recycling site by a properly licensed transporter (in accordance with Cal. Code Regs., tit. 22, div. 4.5).

- **MM HYD-4: Demobilization.** Upon Project completion, Chevron shall safely demobilize all equipment and materials from the Project site(s) and (in accordance with Cal. Code Regs., tit. 22, div. 4.5):

- All debris will be unloaded from barges and placed into trucks for proper disposal.
- All wastes, demolition debris, sediment, rubbish, trash, etc., will be removed from the site and the waste handling facility and transported to an authorized disposal or recycling site.
- Shoreline fill will be sufficiently stabilized to eliminate erosion.

b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

No Impact. The demolition would occur entirely in San Francisco Bay, with sorting of demolition debris at the existing Pier 96 facility and shallow excavations at the shoreline for the erosion repair and concrete footing removal. The Project would not result in changes to existing groundwater supplies or to groundwater recharge systems and would not impede any sustainable groundwater management of the basin. There would be no impact.

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

i. Result in substantial erosion or siltation on- or off-site;

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

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

iv. Impede or redirect flood flows?

Less than Significant Impact (i); No Impact (ii to iv). The shoreline repair and footing removal would involve excavations on shore in the upper intertidal area and placement of rock slope protection to guard against future erosion. Standard best management practices for erosion control such as placement of wattles would be employed during

the work, and no substantial erosion would occur. The impact on erosion or siltation would be a less than significant.

Aside from the small shoreline repair, most of the Project occurs in San Francisco Bay, with sorting of demolition debris at the existing Pier 96 facility. There are no streams or rivers at the Project location. Removal of the Wharf would not create any new impervious surfaces and would not cause a change to existing drainage patterns that would result in flooding. The Project would not impede or redirect surface flows. The Project would not cause an increase to runoff that would result in increased erosion. Therefore, the Project would not result in any changes to the drainage patterns in the Project area, and no impact would occur.

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

No Impact. The demolition occurs in San Francisco Bay, with sorting of demolition debris at the existing Pier 96 facility and therefore not in a flood zone. According to the Contra Costa County Tsunami Inundation Map (California Emergency Management Agency 2009), the Project site is in a tsunami area. However, because the Project would remove the Wharf structure, there would be no risk of release of pollutants due to a flood, tsunami, or seiche after removal of the Wharf. There would be no impact.

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

No Impact. The Project would implement practices and measures to avoid the introduction of pollutants to the waters of San Francisco Bay. Removal of creosote-treated piles from the Bay would remove a potential long-term source of pollutants. The Project would therefore not obstruct implementation of the Basin Plan. The Project would not affect groundwater and therefore would not affect any groundwater management plans.

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 a less than significant level:

- MM HYD-1: Spill Prevention, Control, and Countermeasure Plan
- MM HYD-2: Treated Wood Pile Extraction
- MM HYD-3: Debris Management and Demolition Waste
- MM HYD-4: Demobilization

1 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?	☐	☐	☐	☒

2 3.12.1 Environmental Setting

3 The Wharf is in San Francisco Bay (San Rafael Bay subarea), approximately 1.55 miles
4 north of the Richmond–San Rafael Bridge, near Stenmark Drive in the City of
5 Richmond. The majority of project activities would not take place on landside. The
6 demolition would occur entirely offshore in San Francisco Bay, shoreline repair would
7 occur landside of the Wharf, and sorting of demolition debris would occur at the existing
8 Pier 96 facility in the City of San Francisco. Pier 96 is currently designated M-2 for
9 Heavy Industrial (City and County of San Francisco 2021). According to the City of
10 Richmond General Plan (2012), land adjacent to the Project site is designated Open
11 Space. This area also has an Open Space zoning designation. The Open Space
12 designation provides for natural preservation areas, as well as private lands used for
13 recreational purposes or deed-restricted for open space preservation, and utilities (City
14 of Richmond 2012).

15 3.12.2 Regulatory Setting

16 Federal and state laws and regulations pertaining to land use and planning and relevant
17 to the Project are identified in Appendix A. At the local level, there are no goals,
18 policies, and/or regulations applicable to this resource area for the Project due to its
19 location and the nature of the activity.

20 3.12.3 Impact Analysis

21 a) Physically divide an established community?

22 **No Impact.** The Project involves removing the Wharf in its entirety and restoring
23 eelgrass to the subtidal habitat in areas under the Causeway that are suitable for
24 eelgrass and are currently affected by the shading and scour imposed by the structure.
25 The Project would not include any linear or physical features that would create a barrier,

1 divide, or separate adjacent uses; or impede movement or circulation on existing public
2 roads, streets, or paths. Therefore, the Project would not divide an established
3 community. There would be no impact.

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

7 **No Impact.** Land adjacent to the Project site is designated Open Space according to
8 the City of Richmond General Plan (2012) and Zoning Ordinance. The Project would not
9 change land uses in the Project area or conflict with existing or future designated land
10 uses. In addition, the Project would comply with applicable regulations and would not
11 conflict with any applicable land use plan, policy, or regulation of an agency with
12 jurisdiction over the Project. Therefore, the Project would not cause an environmental
13 impact because of a conflict with any land use plan, policy, or regulation adopted for the
14 purpose of avoiding or mitigating an environmental effect. There would be no impact.

15 **3.12.4 Mitigation Summary**

16 The Project would have no impacts related to land use and planning; therefore, no
17 mitigation is required.

1 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?	☐	☐	☐	☒

2 3.13.1 Environmental Setting

3 The City of Richmond's General Plan (2012) does not designate any areas of significant
 4 mineral resources in or near the Project site. Additionally, according to the
 5 U.S. Geological Survey Mineral Resources On-Line Spatial Data, the Project site is not
 6 near or on a known mineral resource (USGS 2021).

7 3.13.2 Regulatory Setting

8 Federal and state laws and regulations pertaining to mineral resources and relevant to
 9 the Project are identified in Appendix A. At the local level, there are no goals, policies,
 10 and/or regulations applicable to this resource area for the Project due to its location and
 11 the nature of the activity.

12 3.13.3 Impact Analysis

13 ***a) Result in the loss of availability of a known mineral resource that would be of***
 14 ***value to the region and the residents of the state?***

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

17 **No Impact.** The Project site is not in an area known to contain significant mineral
 18 resources or an area designated as a locally important mineral resource recovery site.
 19 Therefore, the Project would not result in the loss of availability of a known mineral
 20 resource of value to the region or state; nor would it result in the loss of availability of a
 21 locally important mineral resource recovery site delineated on a local general plan,
 22 specific plan, or other land use plan. There would be no impact.

1 **3.13.4 Mitigation Summary**

- 2 The Project would have no impacts to mineral resources; therefore, no mitigation is
3 required.

1 3.14 NOISE

NOISE – Would the Project Result in:	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
b) Generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

2 3.14.1 Environmental Setting

3 This section evaluates the potential effects of noise and vibration associated with
 4 demolition of the Wharf. It summarizes the applicable noise regulations and describes
 5 ambient noise conditions near the Project site. The environmental effects evaluation
 6 analyzes the noise impacts associated with the Project.

7 3.14.1.1 Sound, Noise, and Acoustics

8 Sound is the mechanical energy of a vibrating object transmitted by pressure waves
 9 through a liquid or gaseous medium (e.g., water or air). Noise is defined as an
 10 unwanted sound (i.e., loud, unexpected, or annoying). Acoustics is the physics of
 11 sound.

12 The amplitude of pressure waves generated by a sound source determines the
 13 perceived loudness of that source. A logarithmic scale is used to describe sound
 14 pressure level in terms of decibels (dB). The threshold of human hearing (near-total
 15 silence) is approximately 0 dB. A doubling of sound energy corresponds to an increase
 16 of 3 dB. In other words, when two sources at a given location are each producing sound
 17 of the same loudness, the resulting sound level at a given distance from that location is
 18 approximately 3 dB higher than the sound level produced by only one of the sources.
 19 For example, if one automobile produces a sound pressure level of 70 dB when it
 20 passes an observer, two cars passing simultaneously do not produce 140 dB; rather,

they combine to produce 73 dB. 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. An increase of 5 dB is generally perceived as distinctly noticeable, and a 10 dB increase is generally perceived as a doubling of loudness.

The typical human ear is not equally sensitive to all frequencies of the audible sound spectrum. As a consequence, when assessing potential noise impacts, sound is measured using an electronic filter that de-emphasizes the frequencies below 1,000 hertz and above 5,000 hertz, in a manner corresponding to the human ear's decreased sensitivity to low and extremely high frequencies in comparison to the frequency mid-range. This method of frequency weighting is referred to as A-weighting and is expressed in units of A-weighted decibels (dBA). All noise levels are reported in this section in terms of A-weighting. There is a strong correlation between A-weighted sound levels and community response to noise. For an analysis of sound and vibration effects on wildlife, see Section 3.4, *Biological Resources*.

The following are the sound level descriptors commonly used in environmental noise analysis:

- **Equivalent sound level (L_{eq}).** L_{eq} is an average of the sound energy occurring over a specified time period. The 1-hour, A-weighted L_{eq} is the energy average of A-weighted sound levels occurring during a 1-hour period.
- **Maximum sound level (L_{max}).** L_{max} is the highest instantaneous sound level measured during a specified period.

Sound from a localized source (i.e., point source) propagates uniformly outward in a spherical pattern, and the sound level attenuates (decreases) at a rate of 6 dB for each doubling of distance from a point/stationary source. Roadways and highways and, to some extent, moving trains 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 attenuate at a rate of 3 dB for each doubling of distance from a line source. Therefore, noise from a line source attenuates less with distance than noise from a point source.

3.14.1.2 Groundborne Vibration

Groundborne vibration is energy transmitted in waves through the ground. Vibration attenuates at a rate of approximately 50 percent for each doubling of distance from the source. This approach considers only the attenuation with distance from the source and tends to provide for a conservative assessment of vibration level at the receiver.

Vibration is an oscillatory motion that can be described in terms of displacement, velocity, or acceleration. Vibration typically is described by its peak and root-mean-square (RMS) amplitudes. The RMS value can be considered an average value over a given time interval. The peak vibration velocity is the same as the “peak particle velocity” (PPV), generally presented in units of inches per second (in/sec). PPV is the maximum instantaneous positive or negative peak of the vibration signal and is generally used to assess the potential for damage to buildings and structures. The RMS amplitude typically is used to assess human annoyance to vibration, and the abbreviation “VdB” is used in this document for vibration decibels to reduce the potential for confusion with sound decibels.

3.14.1.3 Existing Noise Environment

The Project site is in an area consisting mostly of unoccupied structures, the nearest of which is approximately 2,000 feet to the southeast along Stenmark Drive. The nearest occupied structures, associated with a rifle range, are approximately 900 feet to the northeast along Stenmark Drive. The existing noise environment in the Project area is primarily influenced by surface-transportation noise emanating from vehicular traffic on distant roadways on land and vehicular traffic on the Richmond–San Rafael Bridge. Intermittent noise from in-water activities (e.g., commercial and recreational vessels) and wind and waves also influence the existing noise environment.

There are no residential land uses in the project vicinity. The nearest residential area is in Richmond Point, more than 2 miles southeast of the Project site. The nearest noise-sensitive uses to the Project site that could be adversely affected by Project noise are the East Brother Light Station, a Victorian-era lighthouse that also serves as a bed-and-breakfast inn, approximately 2,700 feet to the north.

3.14.2 Regulatory Setting

Federal and state laws and regulations pertaining to noise and relevant to the Project are identified in Appendix A. At the local level, the City of Richmond Municipal Code contains performance standards to prevent unnecessary, excessive, and offensive noise levels in the city (City of Richmond 2021a). Section 9.52.110 of the City of Richmond Municipal Code provides maximum allowable noise levels (summarized later in Table 3.14-2) from mobile and stationary construction equipment at adjacent residential, commercial, and industrial uses for the daytime hours of 7:00 a.m. to 7:00 p.m. on weekdays and 9:00 a.m. to 8:00 p.m. on weekends and legal holidays. All Project activities would be limited to these daytime hours. These local regulations are considered, as discussed below.

3.14.3 Impact Analysis

a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Less than Significant Impact. Project-related noise levels would fluctuate depending on the type, number, and duration of use for the various pieces of equipment. The effects of construction noise largely depend on the type of activities occurring on any given day, noise levels generated by those activities, distances to noise-sensitive receptors, and the existing ambient noise environment in the receptor's vicinity. Noise-generating activities during demolition would involve operating off-road construction equipment such as cranes, excavators, vibratory pile-driving hammers (for pile extraction), generators, and tugboats at the Project site. Construction equipment and materials would be transported to and from the Project site in water by barge. Demolition would occur during the daytime, and no nighttime activities are anticipated for the Project.

Table 3.14-1 depicts the maximum (L_{max}) and average (L_{eq}) noise levels generated by various types of construction equipment at 50 feet from the equipment. Construction equipment can be either mobile or stationary. Mobile equipment (e.g., pile-driving hammers, cranes, or excavators) typically moves around a site performing tasks in a recurring manner. Stationary equipment (e.g., air compressors or generators) operates in a given location for an extended period of time to perform continuous or periodic operations. In the case of the Project, all equipment would be on barges, would remain relatively stationary, and would only move as the barge moves.

Table 3.14-1. Construction Equipment and Calculated Noise Levels, dBA

Anticipated Equipment that May Be Used by the Contractor	Noise Level at 50 Feet from Equipment– L_{max} , dBA	Noise Level at 50 Feet from Equipment– L_{eq} , dBA
Compressor (air)	80	76
Excavator	85	81
Crane	85	77
Generator	82	79
Tugboat	94	87
Vibratory Driver for Pile Extraction	95	88
Combined Noise Level (all equipment)	95	90

Notes: dBA = A-weighted decibels; L_{eq} = Equivalent Noise; L_{max} = maximum sound level

Noise levels are for equipment that is fitted with operational noise control devices, properly maintained in accordance with manufacturer's specifications.

Source: FHWA 2006, data compiled by AECOM in 2021.

As indicated in Table 3.14-1, Project-related demolition activities would generate average noise levels ranging from 76 to 88 dB L_{eq} at a distance of 50 feet from the equipment. Accounting for the use factor of individual pieces of equipment, continuous and combined noise levels generated by the simultaneous operation of the loudest pieces of equipment would result in noise levels of 90 dB L_{eq} and 95 L_{max} at 50 feet from the equipment. The East Brother Light Station, a lighthouse that also serves as a bed-and-breakfast inn, is approximately 2,700 feet to the north and is the nearest noise-sensitive land use to the project area. The Project-related demolition activities would result in a noise level of 55 dBA L_{eq} at 2,700 feet, well below the most restrictive noise standards specified in Section 9.52.110 of the Richmond Municipal Code (Table 3.14-2). Zoning at the East Brother Light Station is Commercial.

Table 3.14-2. Maximum Allowable Noise Levels, dBA, L_{eq}

Equipment Type	Time Period	SFR-1, SFR-2, SFR-3 Zoning Districts (Single-Family Residential)	MR-1, MR-2, MR-3 Zoning Districts (Multifamily Residential)	Commercial and Industrial Zoning Districts
Mobile Construction Equipment	Weekdays, 7:00 a.m. to 7:00 p.m.	75 dBA	80 dBA	85 dBA
Mobile Construction Equipment	Weekends, including legal holidays 9:00 a.m. to 8:00 p.m.	60 dBA	65 dBA	70 dBA
Stationary Construction Equipment	Weekdays, 7:00 a.m. to 7:00 p.m.	60 dBA	65 dBA	70 dBA
Stationary Construction Equipment	Weekends, including legal holidays 9:00 a.m. to 8:00 p.m.	55 dBA	60 dBA	65 dBA

Notes: dBA = A-weighted decibels.

Source: Richmond Municipal Code, Chapter 9.52 – Community Noise Ordinance, data compiled by AECOM in 2021.

The project construction noise, when added to existing ambient noise, is not expected to increase ambient noise at the East Brother Light Station to levels above standards established in the noise ordinance. As shown in Table 3.14-2, the established daytime standards for stationary construction equipment are 60 dBA to 70 dBA for various zoning definitions. The project construction noise is projected to be 55 dBA, L_{eq} at East Brother Light Station, which is approximately at 2,700 feet north of the project area. No specific daytime ambient noise measurements were available at the East Brother Light Station; however, as an approximation, various combinations of ambient noise levels and the expected project noise levels were compared (Table 3.14-3). As shown in Table 3.14-3, when two noise levels are combined, they are not strictly additive, but

- 1 result in only small increases in the total noise level results, as they are added
2 logarithmically.

Table 3.14-3. Assessment of Ambient and Project Noise

When Two Decibel Values Differ by:	Add This Amount to the Higher Value:	Example: Adding Project Construction Noise Level of 55 dBA to Ambient Levels (Ambient + Project)
0 or 1 dB	3 dB	55 + 55 = 58 dB
2 or 3 dB	2 dB	57 + 55 = 59 dB
4 to 9 dB	1 dB	59 + 55 = 60 dB
10 dB or more	0 dB	65 + 55 = 65 dB

Notes: dB = decibels.

Source: Caltrans 2013, data compiled by AECOM in 2021.

- 3 Table 3.14-3 shows that no combination of ambient noise levels, ranging from 55 dBA
4 to 65 dBA, would result in combined ambient and project noise that would exceed the
5 thresholds for commercial zoning at the East Brother Light Station and in most cases
6 would not exceed even the more stringent residential thresholds.

- 7 Based on the nature of Project activities, associated projected noise levels, and
8 distances to noise-sensitive receptors, this impact would be less than significant.

9 ***b) Generation of excessive groundborne vibration or groundborne noise levels?***

10 **Less than Significant Impact.** Demolition activities have the potential to result in
11 varying degrees of temporary groundborne vibration, depending on the specific
12 construction equipment used and operations involved. Vibration generated by
13 construction equipment spreads through the ground and diminishes in magnitude with
14 increases in distance. Equipment operated on the construction barge and materials
15 transported to the Project site by barge would not produce groundborne vibrations.
16 Because the Wharf demolition would occur over the water, the vibration created by pile
17 removal would primarily affect the Bay. According to the Federal Transit Administration
18 (FTA), vibration levels associated with vibratory pile-driving hammers (for extraction in
19 this case) is 0.537 in/sec PPV and 103 VdB (referenced to 1 microinch per second and
20 based on the RMS velocity amplitude) at 50 feet (FTA 2018).

21 Using FTA's recommended procedure for applying a propagation adjustment to these
22 reference levels, the predicted worst-case vibration levels from Project construction
23 activities are approximately 0.001 in/sec PPV and 51 VdB at the East Brother Light
24 Station. Project-related vibration at the closest existing structure, the rifle range
25 approximately 900 feet to the northeast along Stenmark Drive, would be approximately
26 0.0004 in/sec PPV and 65 VdB. These vibration levels would not exceed Caltrans's

recommended standard of 0.2 in/sec PPV (Caltrans 2020b) with respect to the prevention of structural damage for normal buildings or the FTA's maximum-acceptable vibration standard of 80 VdB (FTA 2018) with respect to human annoyance for residential uses. Therefore, this impact would be less than significant. The potential impacts of pile removal on wildlife in the Bay are discussed in Section 3.4, *Biological Resources*.

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. The Project site is not within 2 miles of a public airport or a private airstrip, and the Project would not involve any aircraft uses. Because the Project would not affect any airport operations and would not expose people on or off site to excessive aircraft noise levels, no impact would occur.

3.14.4 Mitigation Summary

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

1 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?	☐	☐	☐	☒

2 3.15.1 Environmental Setting

3 The California Department of Finance estimates that the City of Richmond's total
 4 population increased from 103,701 in 2010 to 111,217 in 2020, representing a
 5 7.2 percent increase over the 10-year period. During that same time period, Contra
 6 Costa County's total population increased from 1,049,025 to 1,153,561, representing a
 7 9.9 percent increase over the 10-year period (DOF 2020). In 2020, approximately
 8 15 percent (174,257 persons) resided in the unincorporated areas of Contra Costa
 9 County, and 85 percent (979,304 persons) resided in the incorporated cities.

10 3.15.2 Regulatory Setting

11 No federal, state, or local laws relevant to this resource area are applicable to the
 12 Project.

13 3.15.3 Impact Analysis

14 ***a) Induce substantial unplanned population growth in an area, either directly (for***
 15 ***example, by proposing new homes and businesses) or indirectly (for example,***
 16 ***through extension of roads or other infrastructure)?***

17 **No Impact.** The Project would not include the construction of dwellings or an increase
 18 in the resident population of the surrounding area. Project-related demolition activities
 19 would occur over an approximately 6-month window between June 1 and November 30
 20 each year for 2 years, and would employ a maximum of 10 workers at peak demolition.
 21 Worker numbers would vary during different demolition and restoration stages. Although
 22 the precise location of the workers is not fully known at this time, based on the work

1 force composition, it is likely that workers would come from the local labor pool and not
2 relocate from other areas.

3 The Project would not induce substantial population growth, directly (i.e., construction of
4 new homes or businesses) or indirectly (i.e., through extension of roads or other
5 infrastructure). Therefore, there would be no impact.

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

8 **No Impact.** Because the Project would not displace people or remove existing housing,
9 it would not necessitate the construction of replacement housing elsewhere. There
10 would be no impact.

11 **3.15.4 Mitigation Summary**

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

1 **3.16 PUBLIC SERVICES**

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

2 **3.16.1 Environmental Setting**

3 3.16.1.1 Fire Protection

4 The City of Richmond Fire Department provides fire protection and rescue services to
 5 the City of Richmond, including the Project site. There are 82 emergency operations
 6 personnel who have been sworn in, including 30 firefighters, 25 fire engineers, 24 fire
 7 captains, and three battalion chiefs (City of Richmond 2020). In 2017, the City of
 8 Richmond Fire Department responded to more than 12,890 incidents (City of Richmond
 9 2021b). The closest fire station to the Project site is Station 61, at 140 W. Richmond
 10 Avenue in Richmond, approximately 4.3 miles to the southeast.

11 3.16.1.2 Police Protection

12 The City of Richmond Police Department provides police protection services to the
 13 Project area and serves approximately 102,000 residents in the City of Richmond. The
 14 nearest police station is at 1701 Regatta Boulevard in Richmond, approximately
 15 6.3 miles southeast of the Project site. The City of Richmond Police Department has
 16 permanently staffed police patrol areas (beats) in three different districts (Northern,

Central, and Southern). The Project area is within Beat 1 (Southern District) and is staffed by five officers and one sergeant (City of Richmond 2021c).

The City of Richmond Police Department includes the Marine Unit, which is staffed by six police officers. The Marine Unit is served by three marine vessels to patrol the City of Richmond's shoreline and San Francisco Bay.

3.16.1.3 Schools

The City of Richmond is served by the West Contra Costa County Unified School District (WCCUSD). WCCUSD operates more than 50 schools with more than 30,000 students and 3,000 employees. The Project area is in the WCCUSD. Washington Elementary School is the closest school to the Project site, approximately 4.1 miles to the southeast.

3.16.1.4 Parks

Impacts to parks are discussed in Section 3.17, *Recreation*.

3.16.2 Regulatory Setting

Federal and state laws and regulations pertaining to public services and relevant to the Project are identified in Appendix A. At the local level, there are no goals, policies, and/or regulations applicable to this resource area for the Project due to its location and the nature of the activity.

3.16.3 Impact Analysis

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

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

No Impact. The Project would not involve construction of new housing or other land uses that could increase the local population and demand for governmental facilities

1 and services, such as fire protection, police protection, schools, or parks. The proposed
2 Wharf demolition and eelgrass restoration, including the small number of short-term
3 workers, would not generate significant demand for public services, which would be
4 accommodated by the existing local service providers. The temporary presence of
5 workers would not result in the need for new or physically altered fire or police facilities.
6 After demolition and eelgrass restoration is completed, there would be no need for
7 additional permanent services in the Project area, and no increased demand on public
8 services would occur. Additionally, removal of the Wharf would eliminate a structure that
9 could generate future demand for public services (e.g., due to fire or vandalism).
10 Therefore, the Project would not increase demand for public services or require
11 construction of new or altered facilities that could result in a significant environmental
12 impact. There would be no impact.

3.16.4 Mitigation Summary

14 The Project would have no impacts to public services; therefore, no mitigation is
15 required.

1 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?	☐	☐	☐	☒

2 3.17.1 Environmental Setting

3 The City of Richmond has a variety of parks and recreational open spaces that include
 4 public landscapes and natural open spaces (City of Richmond 2010). Point Molate
 5 Beach Park is the closest park and open space area, approximately 1 mile south of the
 6 Project site. In addition, a portion of the San Francisco Bay Trail is planned from the
 7 Richmond–San Rafael Bridge to the Point San Pablo Harbor, adjacent to the Wharf. As
 8 of August 2021, the shoreline trail along this segment adjacent to the Project site has
 9 not been completed (ABAG and MTC 2021).

10 3.17.2 Regulatory Setting

11 Federal and state laws and regulations pertaining to public services and relevant to the
 12 Project are identified in Appendix A. At the local level, there are no goals, policies,
 13 and/or regulations applicable to this resource area for the Project due to its location and
 14 the nature of the activity.

15 3.17.3 Impact Analysis

16 ***a) Would the project increase the use of existing neighborhood and regional parks***
 17 ***or other recreational facilities such that substantial physical deterioration of the***
 18 ***facility would occur or be accelerated?***

19 **No Impact.** The Project would not involve construction of new housing or other land
 20 uses that could increase the local population and demand for the use of existing
 21 neighborhood and regional parks or other recreational facilities. There would be no
 22 impact.

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

4 **No Impact.** The Project would not include recreational facilities or involve construction
5 or expansion of recreational facilities that would generate an adverse physical effect on
6 the environment. There would be no impact.

7 **3.17.4 Mitigation Summary**

8 The Project would have no impacts to recreation; therefore, no mitigation is required.

1 **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) Would the project conflict or be inconsistent with 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?	☐	☐	☒	☐

2 **3.18.1 Environmental Setting**

3 Regional access to the Project site is provided by I-580 via Stenmark Drive. Beyond the
4 Project site, Stenmark Drive provides access only to the San Pablo Marina, Terminal 4
5 recreation area at Point San Pablo, and the HALO recreation shooting range, resulting
6 in minimal vehicle traffic along this segment of the roadway. During repair of the
7 unstable embankment along Stenmark Drive, paved and gravel areas along the road
8 and at the terminus of the Causeway would be used for worker parking, staging, and
9 material stockpiling. However, there would be no landside staging or crew parking on
10 site during the demolition of the Causeway and Main Wharf. Demolition crews would
11 access the Project site by crew boat transport each day, and transport barges would be
12 used to remove and transport any materials on site. Work crews would park at either the
13 Marina Bay Yacht Harbor or Point San Pablo Harbor, both in the City of Richmond, to
14 be transported by crew boat to and from the Project site each day. Local access to the
15 Marina Bay Yacht Harbor is provided by Marina Bay Parkway via I-580. Local access to
16 the Point San Pablo Harbor is provided by Stenmark Drive via I-580. Pier 96 in the City
17 of San Francisco, across San Francisco Bay to the west, is anticipated to be the offsite
18 location where materials would be transported to and from the Project site. Regional
19 access to Pier 96 is provided by Interstate 280, and local access is provided by
20 Jennings Street.

21 There are no existing facilities for bicyclists and pedestrians on Stenmark Drive near the
22 Project Area. However, a portion of the San Francisco Bay Trail is planned from the
23 Richmond–San Rafael Bridge to the Point San Pablo Harbor, adjacent to the Wharf. As

of August 2021, the shoreline trail along this segment adjacent to the Project site has not been completed (ABAG and MTC 2021). There are no public transportation services in the Project area.

3.18.2 Regulatory Setting

Federal and state laws and regulations pertaining to transportation and traffic and relevant to the Project are identified in Appendix A. There are no local laws and regulations pertinent to the Project.

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?

No Impact. The Project would not introduce any new land uses or activities in the Project area that would generate long-term increases in traffic volume. The Project would not affect existing transportation facilities for motorists, pedestrians, or bicyclists, nor would it propose uses that would affect a nearby transit system. The number of vehicles off site in the cities of Richmond and San Francisco would increase during the work periods as needed to transport crews and demolition debris; however, this would be temporary and intermittent. An estimated 12 to 13 material barge trips loaded with demolition debris would occur in Year 1. The remaining 23 to 24 barge trips would occur in Year 2. The movement of larger vessels and barges in San Francisco Bay is overseen by the United States Coast Guard Sector San Francisco through vessel traffic control. Therefore, impacts to vessel transit are not anticipated.

Each work period of approximately 6 months is expected to result in 64 truck trips to transport materials to a permitted facility for recycling or disposal. The temporary addition of trips during the work periods would be unlikely to cause substantial effects on local roadways and Interstate 280, based on the location of Pier 96. Additionally, a maximum of 10 workers at a time would access the Project site and be on site during demolition and eelgrass restoration activities. During the embankment stabilization on shore, about eight workers would access the site from Stenmark drive over an 8-day period.

Therefore, the temporary, intermittent, and relatively small amount of traffic volume from Project-related crew commutes and debris transport would not conflict with adopted program plans, ordinances, or policies addressing the circulation system. There would be no impact.

b) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?

Less than Significant Impact. Section 15064.3(b)(3) of the CEQA Guidelines allows a qualitative analysis of potential impacts related to vehicle miles traveled (VMT). The

1 Project would not include the construction of dwellings or result in an increase in the
2 residential population of the surrounding area. Any VMT attributable to Project activities,
3 such as construction-worker commutes and haul-truck traffic in the cities of Richmond
4 and San Francisco would be temporary and would not permanently increase VMT.
5 Therefore, the Project is not anticipated to generate additional vehicle trips that would
6 result in substantial increases in VMT. The impact would be less than significant.

7 ***c) Substantially increase hazards due to a geometric design feature (e.g., sharp***
8 ***curves or dangerous intersections) or incompatible uses (e.g., farm***
9 ***equipment)?***

10 **Less than Significant Impact.** The Project would not change the existing design features
11 of Stenmark Drive in the Project vicinity or Jennings Street in the City of San Francisco.
12 During embankment stabilization activities, heavy trucks, such as haul trucks or flatbed
13 trailers, would access the Project site via Stenmark Drive. This work would be isolated to
14 the shoreline and turnout area in front of the Wharf, away from the roadway, and is not
15 anticipated to disrupt vehicle traffic on Stenmark Drive. During demolition and eelgrass
16 restoration activities, heavy equipment and materials would be brought to the Project site
17 via transport barges from Pier 96 in the City of San Francisco. Slow-moving trucks
18 entering and exiting the Project vicinity or Pier 96 facility could pose a hazard to other
19 vehicles traveling on the area roadways. However, transport activities would be temporary
20 and intermittent, and a clear line of sight is available in both directions on Stenmark Drive
21 and Jennings Street, so the Project would not substantially increase hazards due to a
22 design feature or incompatible use. The impact would be less than significant.

23 ***d) Result in inadequate emergency access?***

24 **Less than Significant Impact.** The majority of the Project-related demolition and
25 restoration activities would occur in San Francisco Bay and would not occur landside in
26 the City of Richmond. Demolition would occur entirely offshore in San Francisco Bay,
27 shoreline repair would occur landside of the Wharf, and sorting of demolition debris would
28 occur at the existing Pier 96 facility in the City of San Francisco. As discussed above,
29 crews would access the site via vehicle access on Stenmark Drive for the shoreline repair
30 and via crew boats from marinas in the City of Richmond for the demolition work. The
31 Project would not require street closures in either the City of San Francisco or the City of
32 Richmond during the work periods. Slow-moving trucks entering and exiting the Project
33 site from Stenmark Drive and the Pier 96 facility from Jennings Street could slightly delay
34 the movement of emergency vehicles. However, the trucks would typically pull to the side
35 of the road when emergency vehicles use their sirens. Increased vehicles on Stenmark
36 Drive, Interstate 280, and Jennings Street during demolition and eelgrass restoration
37 activities would not increase overall traffic volumes and congestion substantially, and
38 therefore would not interfere substantially with emergency vehicle response. The impact
39 would be less than significant.

1 3.18.4 Mitigation Summary

- 2 The Project would have no significant impacts related to transportation; therefore, no
3 mitigation is required.

1 **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 or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	☐	☒
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	☐	☐	☒	☐
c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	☒	☐
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☐	☒

2 **3.19.1 Environmental Setting**

3 3.19.1.1 Water, Wastewater, Stormwater Drainage, Electricity, and Natural Gas

4 The Wharf is not currently served by public water, public wastewater services, a public
5 stormwater system, an electrical delivery service, or a natural gas provider.

6 3.19.1.2 Solid Waste

7 Project-related solid waste, including creosote-treated wood pilings, would be disposed
8 of at a Class II landfill facility that accepts “designated” and nonhazardous waste; all
9 other Project-related waste that could not be reused or recycled would be disposed of at
10 a Class III landfill facility that accepts nonhazardous waste. The majority of the Project-
11 related waste would be taken to Pier 96 in San Francisco for processing and sorting,
12 including determination of the appropriate landfill based on the type of waste. Solid

waste materials with asbestos would be transported by boat to the Chevron Richmond Refinery Long Wharf in the City of Richmond for abatement and processing with other refinery asbestos waste, before hauling to an appropriate landfill for disposal.

Solid waste would likely be transferred to either Keller Canyon Landfill in Pittsburg, the nearest Class II landfill, or Ox Mountain Sanitary Landfill in Half Moon Bay, the nearest Class III landfill. The Keller Canyon Landfill has a permitted maximum daily disposal capacity of 3,500 tons per day, a total maximum permitted capacity of 75.0 million cubic yards, and a remaining permitted capacity of approximately 63.4 million cubic yards. The Keller Canyon Landfill has an estimated closure date of December 31, 2030 (CalRecycle 2021a). The Ox Mountain Landfill has a permitted maximum daily disposal capacity of 3,598 tons per day, a total maximum permitted capacity of 60.5 million cubic yards, and a remaining permitted capacity of approximately 22.2 million cubic yards. The Ox Mountain Sanitary Landfill has an estimated closure date of January 1, 2034 (CalRecycle 2021b).

The Wharf does not currently generate garbage or other waste requiring regular waste disposal services.

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. There are no local laws or regulations relevant to utilities and service systems applicable to the Project.

3.19.3 Impact Analysis

a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?

No Impact. The Project would not include the construction of any structures or dwellings or cause an increase in permanent population of the surrounding area. The Project would involve removing the Wharf in its entirety and restoring eelgrass to the subtidal habitat in areas under the Causeway that are suitable for eelgrass and are currently affected by the shading and scour imposed by the structure. Therefore, the Project would not require connections to, or the construction of, new or expanded water, wastewater treatment, storm drainage, electric, natural gas, or telecommunications facilities. During demolition, water used for activities such as dust control would be obtained from freshwater tanks on each work barge that would be filled at the contractor's facility at Pier 1 in Alameda, and power would be provided by generators on the work barges. 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. As discussed above in criterion a), minimal water would be needed for Project-related activities such as dust control during demolition of the Wharf. This water would be obtained from the contractor's local offsite source, supplied by East Bay Municipal Utility District (EBMUD), and used to fill tanks installed on the work barges. The Project would use an estimated 400,000 gallons of water total. This amount of water would be negligible compared to the billions of gallons of water supplied by EBMUD annually. There would be no permanent increase in water demand once the Project is completed. This would represent a less than significant impact to local water supply.

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. During demolition and eelgrass habitat restoration activities, portable restrooms would be provided for workers over each approximate 6-month work period. Wastewater would be disposed at an appropriately licensed local facility with adequate capacity to accommodate Project needs. No wastewater would be generated after the Project is completed. 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. The Project would require demolition and removal of the Wharf in its entirety, which is estimated to generate approximately 36 barge loads of demolition debris over the two work seasons. Waste generated from demolition could include pipes, pipe supports, piles, light poles, and other Causeway mounted structures. Approximately 3,500 cubic yards of the total amount of demolition debris would be disposed of at an appropriately licensed landfill.

The 2019 California Green Building Standards Code (CalGreen Code) (Cal. Code Regs., tit. 24, pt. 11) requires all construction contractors to reduce construction waste and demolition debris by 65 percent. Code requirements include preparing a construction waste management plan (where a local jurisdiction does not have a waste management ordinance that is more stringent); identifying the materials to be diverted from disposal by efficient use, recycling, or reuse by the Project, or salvaged for future use or sale; determining whether materials should be sorted on site or mixed; and identifying diversion facilities where the materials collected should be taken. All materials generated during the demolition process would be taken off site (for example, to Pier 96 in San Francisco) for processing and sorting, and any demolition debris that

could not be reused would be transported and disposed in accordance with all applicable federal and state laws at a nearby, appropriately licensed landfill. The total approximate remaining capacity of the landfills in the Bay Area is approximately 85.6 million cubic yards. Solid waste generated by the Project would be unlikely to exceed the maximum daily disposal limits of any nearby receiving landfill. There would be a less than significant impact.

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

No Impact. The Project would comply with all statutes and regulations related to solid waste, including the 2019 CalGreen Code (Cal. Code Regs., tit. 24, pt. 11). Prior to commencement of demolition activities, the Project contractor would submit applicable demolition and waste-management plans/reports to local City and/or County enforcement agencies that comply with all local, state, and federal laws, regulations, and ordinances related to solid waste. The contractor would obtain required permits from local agencies, such as the City of Richmond, that include waste-reduction policies. There would be no impact.

3.19.4 Mitigation Summary

The Project would have no significant impacts to utilities or service systems; therefore, no mitigation is required.

1 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, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	☐	☒
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☐	☐	☒
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☐	☒

2 3.20.1 Environmental Setting

3 CAL FIRE's Fire Hazard Severity Zones Map was developed to guide building
 4 standards for new construction; require use of natural-hazard disclosure at time of sale;
 5 include a 100-foot defensible space clearance around buildings; establish property
 6 development standards; and provide considerations of fire hazards in municipal and
 7 County general plans.

8 According to CAL FIRE, the Project area is not in a State Responsibility Area or a Very
 9 High Fire Hazard Severity Zone, and is more than 1.5 miles from the nearest such area
 10 or zone (CAL FIRE 2020). However, the City of Richmond identifies the Project area as
 11 Very High Fire Hazard Severity Zone (City of Richmond 2019).

12 3.20.2 Regulatory Setting

13 Federal and state laws and regulations pertaining to wildfire and relevant to the Project
 14 are identified in Appendix A. There are no local laws or regulations relevant to wildfire
 15 applicable to the Project.

3.20.3 Impact Analysis

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

No Impact. As discussed in Section 3.10, *Hazards and Hazardous Materials*, all Project-related demolition work would occur from barges on the water and would not affect local roadways in the Project vicinity. The amounts of traffic generated would be very small in comparison to regular daily traffic amounts and would not impair the implementation of emergency response or evacuation plans. There would be no permanent modifications to road alignments, and the amount of Project-related traffic would not interfere with an emergency response plan. Therefore, no impact would occur.

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

No Impact. The majority of the Project would take place over water in San Francisco Bay. Demolition would occur entirely offshore in San Francisco Bay, shoreline repair would occur landside of the Wharf, and sorting of demolition debris would occur at the existing Pier 96 facility in the City of San Francisco. The shoreline work would occur in the upper intertidal area and be conducted from the edge of the roadway, which is unvegetated or very sparsely vegetated gravel areas. Therefore, the Project would not exacerbate wildfire risk, or expose Project occupants to pollutant concentrations from a wildfire or uncontrolled spread of a wildfire. There would be no impact.

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

No Impact. The Project would involve removing the Wharf in its entirety from within San Francisco Bay. The Project would not connect to existing utilities and would not require the installation or maintenance of additional associated infrastructure. Additionally, all Project activities would follow applicable federal and state fire regulations. Therefore, the Project would not exacerbate fire risk in the Project area. There would be no impact.

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?***

No Impact. No recent fires have occurred in the Project vicinity that could result in post-fire slope instability or drainage changes. Additionally, the Project would not include development that would expose people or structures to significant risks associated with

- 1 wildfires, including downslope or downstream flooding or landslides as a result of runoff,
- 2 post-fire instability, or drainage changes. There would be no impact.

3 **3.20.4 Mitigation Summary**

- 4 The Project would have no impacts to related to wildfire; therefore, no mitigation is
- 5 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 require an Environmental Impact Report to be prepared for the project where there is substantial evidence, in light of the whole record, that any of the conditions listed below may occur.

However, where a project proponent, prior to commencement of the environmental analysis, agrees to mitigation measures or project modifications that would avoid any significant effect on the environment or would mitigate the significant environmental effect to a less than significant level, a lead agency need not prepare an Environmental Impact Report solely because without mitigation the environmental effects would have been significant (in accordance with 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 considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☒	☐	☐
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☒	☐	☐

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?

Less than Significant with Mitigation. Based on background research, site visits, and the analysis presented herein, the Project would not have the potential to substantially degrade the quality of the environment, 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, or substantially reduce the number or restrict the range of a rare or endangered plant or animal. As discussed in Section 3.4, *Biological Resources*, with implementation of MMs BIO-1, BIO-2, BIO-3, BIO-4, BIO-5, and BIO-6, impacts to migratory birds and sensitive natural communities would be less than significant.

As concluded in Section 3.5, *Cultural Resources*, and Section 3.6, *Cultural Resources – Tribal*, the Project would lessen any potential impacts by implementing MM CUL-1/TCR-1, requiring cultural resources contractor awareness training, MM CUL-2/TCR-2, requiring procedures in the event of unanticipated discovery of cultural resources; and MM CUL-3/TCR-3, requiring treatment of the unanticipated discovery of human remains. With implementation of mitigation measures discussed throughout this document, Project-related impacts would be reduced to a less than significant level or would be less than significant.

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

Less than Significant with Mitigation. Lists of current and potential projects in the region from CSLC and the City of Richmond were reviewed in connection with preparing this document. No past, present, or reasonably foreseeable future projects in the Project area were identified that, when taken together with the Project, would result in significantly cumulative impacts to any environmental factor. Given the short duration of the Project, its identified impacts, and the proposed mitigation measures that would be implemented, as well as the fact that the Project would not involve the construction of any new permanent structures, the potential for a significant cumulative impact resulting from the Project in combination with other planned or reasonably foreseeable projects is low.

The Project’s impacts to hydrology and water quality are short-term in nature and geographically limited. There are no past, present, or reasonably foreseeable future projects that would impact the same water bodies as the Project. The implementation of management actions to control water quality and of MMs HYD-1, HYD-2, HYD-3, and

1 HYD-4 would reduce the Project's impacts to hydrology and water quality to a less than
2 significant level.

3 The Project would comply with all applicable regulations, as outlined in this document.
4 In general, individual GHG emissions do not have a large impact on climate change.
5 However, once added with all other GHG emissions in the past and present, they
6 combine to create a perceptible change to climate. Because of the extended length of
7 time that GHGs remain in the atmosphere, any amount of GHG emissions can be
8 reasonably expected to contribute to future climate change impacts. However, the
9 amount of Project GHG emissions, although measurable, would be minor, and because
10 the Project would not result in any significant GHG emission impacts, the potential for
11 project cumulative effects in combination with other planned or anticipated
12 improvements is low. The GHG emissions impact analysis in this document constitutes
13 a cumulative analysis, in that it considers global, statewide, and regional projections of
14 GHG emissions, as well as the contribution of the Project to GHG emission impacts. On
15 a global scale, the Project would contribute a negligible amount to global cumulative
16 effects to climate change. Because the Project's GHG emissions would not be
17 considerable on an individual basis, neither would they be considerable on a cumulative
18 basis. Therefore, the Project's contributions to cumulative impacts to GHG emissions
19 would be less than cumulatively considerable.

20 The SFBAAB is designated as a nonattainment area for ozone and PM_{2.5}, and as an
21 attainment or unclassified area for all other pollutants. Maximum and average daily
22 emission pollutants as a result of the Project's demolition and restoration activities are
23 listed in Table 3.3-3. Project activities would be short term, taking place over
24 approximately two work periods, each lasting roughly 6 months. As explained in
25 Section 3.3, Air Quality, with implementation of MM AQ-1, the Project would not result in
26 a cumulatively considerable net increase of any criteria pollutant for which the Project
27 region is in nonattainment under an applicable federal or state ambient air quality
28 standard. Therefore, the Project's contributions would be less than cumulatively
29 considerable.

30 ***c) Does the project have environmental effects which will cause substantial***
31 ***adverse effects on human beings, either directly or indirectly?***

32 **Less than Significant with Mitigation.** The Project could cause substantial adverse
33 effects on human beings in one identified scenario, by potentially exposing people to
34 hazardous spills or construction debris and waste. However, MMs HYD-1, HYD-2, and
35 HYD-3 would be implemented as part of the Project. Therefore, with mitigation in place,
36 Project impacts to human beings would be less than significant with mitigation
37 incorporated.

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4.0 MITIGATION MONITORING PROGRAM

The California State Lands Commission (CSLC) is the lead agency under the California Environmental Quality Act (CEQA) for the Project. In conjunction with approval of this Project, the CSLC adopts this Mitigation Monitoring Program (MMP) for implementation of mitigation measures for the Project to comply with Public Resources Code section 21081.6, subdivision (a) and State CEQA Guidelines sections 15074, subdivision (d) and 15097.

The Project authorizes the Applicant to remove the now-decommissioned Point Orient Wharf in San Francisco Bay.

4.1 PURPOSE

It is important that significant impacts from the Project be mitigated to the maximum extent feasible. The purpose of a MMP is to ensure compliance and implementation of mitigation measures; this MMP shall be used as a working guide for implementation, monitoring, and reporting for the Project's mitigation measures.

4.2 ENFORCEMENT AND COMPLIANCE

The CSLC is responsible for enforcing this MMP. The Project Applicant is responsible for the successful implementation of and compliance with the mitigation measures identified in this MMP. This includes all field personnel and contractors working for the Applicant.

4.3 MONITORING

The CSLC staff may delegate duties and responsibilities for monitoring to other environmental monitors or consultants as necessary. Some monitoring responsibilities may be assumed by other agencies, such as affected jurisdictions, cities, or the California Department of Fish and Wildlife. The CSLC or its designee shall ensure that qualified environmental monitors are assigned to the Project.

Environmental Monitors. To ensure implementation and success of the mitigation measures, an environmental monitor must be on site during all Project activities that have the potential to create significant environmental impacts or impacts for which mitigation is required. Along with the CSLC staff, the environmental monitor(s) are responsible for:

- Ensuring that the Applicant has obtained all applicable agency reviews and approvals
- Coordinating with the Applicant to integrate the mitigation monitoring procedures during Project implementation
- Ensuring that the MMP is followed

The environmental monitor shall immediately report any deviation from the procedures identified in this MMP to the CSLC staff or its designee. The CSLC staff or its designee shall approve any deviation and its correction.

Workforce Personnel. Implementation of the MMP requires the full cooperation of Project personnel and supervisors. Many of the mitigation measures require action from site supervisors and their crews. The following actions shall be taken to ensure successful implementation:

- Relevant mitigation procedures shall be written into contracts between the Applicant and any contractors.

General Reporting Procedures. A monitoring record form shall be submitted to the Applicant; once the Project is complete, a compilation of all the logs shall be submitted to the CSLC staff. The CSLC staff or its designated environmental monitor shall develop a checklist to track all procedures required for each mitigation measure and shall ensure that the timing specified for the procedures is followed. The environmental monitor shall note any issues that may occur and take appropriate action to resolve them.

Public Access to Records. Records and reports are open to the public and would be provided upon request.

4.4 MITIGATION MONITORING TABLE

This section presents the mitigation monitoring table (Table 4-1) for the following environmental disciplines: Air Quality; Biological Resources; Cultural Resources; Cultural Resources-Tribal; Geology, Soils, and Paleontological Resources; Hazards and Hazardous Materials; and Hydrology and Water Quality. All other environmental disciplines were found to have less than significant or no impacts and are, therefore, not included below. The table lists the following information by column:

- Potential Impact (impact, title, and impact class)
- Mitigation Measure (full text of the measure)
- Location (where impact occurs and mitigation measure should be applied)
- Monitoring/Reporting Action (action to be taken by monitor or Lead Agency)
- Responsible Party
- Timing (before, during, or after construction; during operation, etc.)
- Effectiveness Criteria (how the agency can know if the measure is effective)

Table 4-1. Mitigation Monitoring Program

Potential Impact	Mitigation Measure	Monitoring/ Reporting Action	Responsible Party	Timing	Effectiveness Criteria
Air Quality					
Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard.	MM AQ-1: Implement Basic Construction Emission Control Practices (Best Management Practices). The demolition contractor shall comply with the following BAAQMD best management practices, as applicable, for reducing construction emissions of uncontrolled fugitive dust (PM₁₀ and PM_{2.5}): A. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day. B. All haul trucks transporting soil, sand, or other loose material offsite shall be covered. C. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited. D. All vehicle speeds on unpaved roads shall be limited to 15 miles per hour. E. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations). Clear signage shall be provided for Project workers at all access points.	Incorporation of BAAQMD BMPs as applicable	Chevron and CSLC	During Wharf demolition and eelgrass restoration	Reduction in fugitive dust generation

Potential Impact	Mitigation Measure	Monitoring/ Reporting Action	Responsible Party	Timing	Effectiveness Criteria
	F. The contractor bid documentation and contract specifications shall state that all construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation. Chevron will report results to CSLC staff. G. A publicly visible sign shall be posted with the telephone number and person to contact at Chevron regarding dust complaints. Chevron shall inform CSLC staff and respond and take corrective action within 48 hours. The BAAQMD's phone number shall also be visible to ensure compliance with applicable regulations.				
Biological Resources					
Impact Migratory Birds	MM BIO-1: Nesting Bird Surveys. Chevron shall conduct pre-activity surveys for nesting birds if work is to take place during the nesting season (April 1 through August 31). A qualified wildlife biologist shall conduct a pre-activity nest survey no more than 3 to 5 days prior to initiation of activities to search for active migratory bird or raptor nests. If active nests are encountered, Chevron will contact the California Department of Fish and Wildlife to determine the best course of action for the situation encountered. Measures may include nest-start removal or relocation, species-specific avoidance buffers to prevent abandonment of the nest until the young have fledged, and/or measures such as incubation of eggs that will be implemented by a qualified biologist in consultation with state and/or federal resources.	Document site visit/ Incorporation of mitigation strategies	Chevron and CSLC	Prior to the start of Project activities conducted between April 1 and August 31	Nesting birds and nest failures avoided; any established buffers adhered to

Potential Impact	Mitigation Measure	Monitoring/ Reporting Action	Responsible Party	Timing	Effectiveness Criteria
Impact Eelgrass	MM BIO-2: Environmental Awareness Training. Conduct environmental training for work crews with specific information on reducing eelgrass damage by following barge corridors, minimizing vessel movements in very shallow water or low tides, reducing propeller thrust, and positioning tugs and tender boats carefully to avoid scouring the bottom during vessel movements.	Document training for all work personnel prior to working on the Project	Chevron and CSLC	Prior to project activities	All construction workers complete the program, impacts to eelgrass appropriately minimized
Impact Eelgrass	MM BIO-3: Mark Barge Operations Corridor. Mark the barge work corridor along the Wharf with upright posts or large floats on self-centering anchors to reduce potential encroachment on the existing eelgrass beds to the minimum needed.	Onsite monitor to verify	Chevron and CSLC	Prior to Wharf demolition in-water activities	Impacts to eelgrass appropriately minimized
Impact Eelgrass	MM BIO-4: Perform Pre- and Post-Demolition Surveys. Conduct eelgrass surveys in accordance with the California Eelgrass Mitigation Policy and Implementing Guidelines to document any impacts during demolition activities (see Section 2.3 for details). Complete two annual surveys following Wharf removal to evaluate how the removal of the Wharf influences scour and deposition in the removal area and how this may influence eelgrass restoration.	Conduct survey and prepare report with mapping	Chevron and CSLC	Prior to and following Wharf demolition	Impacts to eelgrass appropriately minimized
Impact Eelgrass	MM BIO-5: Debris Booms. Set surface debris booms tied to the Wharf pilings or anchored with limited anchor points along the Project footprint boundary to catch all floating debris from decking removal. In the shallow Causeway area supporting eelgrass, an alternative for debris capture would be use of a small shallow-draft skiff and trained crew to skim up floatable debris on a consistent basis during demolition. Silt curtains will not be placed around the Wharf during demolition because, in the shallow Causeway, curtains could drag on the bottom and damage eelgrass; or could accelerate water under the curtains during changing tides, resulting in potential scour impacts.	Onsite monitor to verify	Chevron and CSLC	During Wharf demolition	Impacts to eelgrass appropriately minimized

Potential Impact	Mitigation Measure	Monitoring/ Reporting Action	Responsible Party	Timing	Effectiveness Criteria
Impact Eelgrass	MM BIO-6: Vessel Operation. Conduct vessel operation and movements at slack high tides or during neap tide exchanges to reduce the need for excessive thrust to maneuver the barges.	Onsite monitor to verify	Chevron and CSLC	During Wharf demolition and eelgrass restoration	Impacts to eelgrass appropriately minimized
Cultural Resources/Tribal Cultural Resources					
Disturb Archaeological Resources	MM CUL-1/TCR-1: Cultural Resources Contractor Awareness Training. Prior to beginning construction, the Applicant shall retain a qualified archaeologist to prepare a Cultural Resources Contractor Awareness Training, subject to CSLC approval. Local Native American representatives with an interest in the Project should also be invited to provide training to construction personnel. The training shall be given to all construction personnel prior to working on the Project, and the training shall include, but not be limited to, the following: ○ Guidance on identification of potential cultural resources that may be encountered, including Tribal cultural resources ○ The probability of exposing cultural resources ○ Clear direction on procedures if a find is encountered	Document training for all work personnel prior to working on the Project, including identification and handling of previously unknown cultural resources	Prior to Project activities	Chevron and CSLC	Educate workers regarding cultural resources

Potential Impact	Mitigation Measure	Monitoring/ Reporting Action	Responsible Party	Timing	Effectiveness Criteria
Disturb Archaeological Resources	MM CUL-2/TCR-2: Unanticipated Discoveries. If construction personnel unearth Tribal cultural resources, or precontact or historic-period archaeological resources during Project implementation, all Project activities within 100 feet will halt until a professional archaeologist who meets the Secretary of the Interior's Professional Qualifications Standards in archaeology is retained and determines the significance of the discovery. Precontact archaeological materials/Tribal cultural resources might include obsidian and chert flaked-stone tools (e.g., projectile points, knives, or scrapers) or toolmaking debris; culturally darkened soil (midden) containing heat-affected rocks, artifacts, or shellfish remains; stone milling equipment (e.g., mortars, pestles, hand stones, or milling slabs); and/or battered stone tools, such as hammerstones. Historic period materials may include shipwreck debris. The qualified archaeologist will determine impacts, significance, and mitigation in consultation with local Native American representatives. If the resource is a Tribal Cultural Resource, substantial adverse changes to this resource shall be avoided or minimized following the measures identified in Public Resources Code section 21084.3, subdivision (b), if feasible, unless other equally or more effective measures are mutually agreed on by CSLC, the archaeologist, and the interested local Native American representative(s).	Inform Project contractors of unearthed Tribal cultural resources, or precontact or historic-period archaeological resources procedure/ Document any reported finds and treatment plan, if needed	Chevron and CSLC	During Wharf demolition and eelgrass restoration	Disturbance of any discovered Tribal cultural resources, precontact or historic-period archaeological resources reduced

Potential Impact	Mitigation Measure	Monitoring/ Reporting Action	Responsible Party	Timing	Effectiveness Criteria
	A treatment plan, if needed to address a find, shall be developed cooperatively by the archaeologist and, for Tribal cultural resources, the interested local Native American representative(s). The plan will be submitted to the appropriate tribal representatives and CSLC staff for review, input, and concurrence prior to its implementation. Protection in place of Tribal cultural resources shall be prioritized, if feasible; if the archaeologist or Tribal representative determines that damaging effects on the cultural Tribal cultural resource can be avoided in place, then work in the area may resume provided the area of the find is clearly marked for no disturbance. If avoidance in place of tribal cultural resources is infeasible, the treatment plan shall include measures that place priority on Tribal self-determination over collection and curation, including the option to repatriate (rebury) materials nearby at a location of their choosing, and to transfer possession/ ownership to the culturally affiliated Tribe. Title to all archaeological sites, historical 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.				

Potential Impact	Mitigation Measure	Monitoring/ Reporting Action	Responsible Party	Timing	Effectiveness Criteria
Disturb unanticipated discovery of Human Remains	MM CUL-3/TCR-3: Treatment of Human Remains. If human remains are encountered, all provisions of California Health and Safety Code section 7050.5 and California Public Resources Code section 5097.98 shall be followed. Work shall stop within 100 feet of the discovery, and both an archaeologist and CSLC staff must be contacted within 24 hours. The archaeologist shall consult with the County Coroner. If human remains are of Native American origin, the County Coroner shall notify the Native American Heritage Commission within 24 hours of this determination, and a Most Likely Descendent shall be identified. No work is to proceed in the discovery area until consultation is complete and procedures to avoid or recover the remains have been implemented.	Inform Project contractors of human remains notification procedure/ Document any reported finds	Chevron and CSLC	During Wharf demolition and eelgrass restoration	Potential impacts on human remains reduced
Geology, Soils, and Paleontological Resources					
Disturb Paleontological Resources	See MM CUL-2/TCR-2: Unanticipated Discoveries				
Hazards and Hazardous Materials					
Degrade Water Quality	See MM HYD-1: Spill Prevention, Control, and Countermeasure Plan.				

Potential Impact	Mitigation Measure	Monitoring/ Reporting Action	Responsible Party	Timing	Effectiveness Criteria
Hydrology and Water Quality					
Degrade Water Quality	MM HYD-1: Spill Prevention, Control, and Counter-measure Plan. A hazardous material spill prevention, control, and countermeasure plan will be developed and implemented at the Project site. The purpose of this plan will be to reduce the potential for, and the potential impacts associated with, spills of hazardous, toxic, and/or petroleum substances. The plan will provide the protocols for providing notification to appropriate agencies (such as CSLC, resource agencies, and the California Governor's Office of Emergency Services, as required) and protocols for spill containment and clean-up. Chevron and CSLC staff will review and approve the plan before demolition work begins. The plan will contain practices such as: • Equipment shall be inspected daily by the operator for leaks or spills. If leaks or spills are encountered, the source of the leak shall be identified, equipment leaks shall be repaired promptly, leaked material shall be cleaned up, and all spilled and cleaning materials shall be collected and properly disposed. • All fuel, waste, oils, and solvents shall be stored away from the Project site. Fueling of marine-based equipment shall be conducted in accordance with Best Management Practices described in the plan. Any spills shall be contained and properly cleaned up. Chevron will be notified by the contractor of all spills, regardless of size. Chevron will notify CSLC staff. • Containment booms and sorbent materials will be available during all work activities and will be deployed immediately in the event of a spill to limit its spread. Containment booms with absorbent materials will also be deployed during removal of creosote-treated piles to contain any residual creosote oil sheen incidentally released during pile removal.	Incorporation of hazardous material spill prevention, control, and counter-measure plan	Chevron and CSLC	During Wharf demolition and eelgrass restoration	Unanticipated impacts to water quality avoided or appropriately mitigated

Potential Impact	Mitigation Measure	Monitoring/ Reporting Action	Responsible Party	Timing	Effectiveness Criteria
Degrade Water Quality	MM HYD-2: Treated Wood Pile Extraction. The following practices shall be implemented during pile removal to protect water quality: • Debris barges for treated wood pile removal will be equipped with containment basins to prevent wastes (sediment, liquid, or debris) from falling back into the water. • Vibratory extraction will be employed first unless the pile is too decayed or short for the vibratory hammer to grip. • If a pile needs to be cut, no hydraulic jetting devices shall be used to move sediment away from piles. Excavation of sediment in subtidal areas to expose broken piles shall be accomplished by divers using hand tools. • During pile extraction, piles will be lifted slowly from the water and placed directly into the containment basin on the debris barge. Piles will not be washed, shaken, or otherwise held to be allowed to drain over Bay waters or to remove sediment prior to placement on the debris barge. • The deck of the debris barge will not be washed in a manner that would allow wastewater to enter the Bay. • Sediment accumulated from the pile removal operations will be assumed to contain creosote and will be captured, tested, and disposed off site in an appropriate landfill.	Onsite monitor to verify	Chevron and CSLC	During Project pile removal	Unanticipated impacts to water quality avoided or appropriately mitigated

Potential Impact	Mitigation Measure	Monitoring/ Reporting Action	Responsible Party	Timing	Effectiveness Criteria
Degrade Water Quality	MM HYD-3: Debris Management and Demolition Waste. The following practices shall be followed for the handling of demolition wastes from the Project: - During demolition activities, the contractor will install floating debris booms (in accordance with MM BIO-5) to capture floating surface debris to contain releases if they occur. - When cutting materials above water, any debris generated will be contained and prevented from entering the Bay by using platforms or other devices below the work area to catch debris before it enters the Bay. - If any solid materials or wastes are inadvertently released to the Bay, the contractor will use all available resources to contain and remove the material. - Demolition waste will be collected and transported to an authorized upland disposal or recycling site by a properly licensed transporter (in accordance with Cal. Code Regs., tit. 22, div. 4.5).	Onsite monitor to verify	Chevron and CSLC	During Wharf demolition	Project demolition waste properly collected and disposed of reduces degradation to water quality
Degrade Water Quality	MM HYD-4: Demobilization. Upon Project completion, Chevron shall safely demobilize all equipment and materials from the Project site(s) and (in accordance with Cal. Code Regs., tit. 22, div. 4.5): - All debris will be unloaded from barges and placed into trucks for proper disposal. - All wastes, demolition debris, sediment, rubbish, trash, etc., will be removed from the site and the waste handling facility and transported to an authorized disposal or recycling site. - Shoreline fill will be sufficiently stabilized to eliminate erosion.	Onsite monitor to verify	Chevron and CSLC	Upon Project completion	Project equipment and materials safely demobilized following completion

5.0 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:

- Commercial and recreational fishing
- Climate change and sea-level rise
- 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.

5.1 COMMERCIAL AND RECREATIONAL FISHING

San Francisco Bay is home to the largest commercial herring fishery in the state of California (CDFW 2019). The commercial herring fishery targets roe products as well as adult fish for bait or eating. There are currently no other commercial fisheries that are active in the waters of San Francisco Bay.

The commercial herring fishery in California is regulated by the California Department of Fish and Wildlife, which produces Fisheries Management Plans that establish catch limits (quotas); sets gear limitations (such as mesh sizing); and establishes closed areas and fishing windows (CDFW 2019). Pacific Herring are a pelagic schooling fish that are found in coastal waters of the west coast of North America. See Section 3.4.1.5 for more information regarding the biology of Pacific Herring. Spawning occurs in shallow, protected areas of estuaries and coastlines, where the fish deposit their sticky eggs on red algae, eelgrass, rocks, or man-made structures such as pilings and boat hulls. Since 2008, the Point Richmond shoreline has become an important spawning area for Pacific Herring (CDFW 2019). For 2020-2021, the commercial fishing season for Pacific Herring in San Francisco Bay extends from January 2 to March 31, with fishing prohibited from noon on Fridays to 5 p.m. on Sundays (Cal. Code Regs., tit. 14, § 163).

San Francisco Bay also supports recreational fisheries, including chartered fishing for halibut, salmon, white sturgeon, striped bass, and shark. Recreational fishing for Pacific Herring also occurs, with a daily bag limit of 10 gallons (approximately 100 pounds) of

fish (CDFW 2021). Other species that may be recreationally fished include surfperch, rockfish, flounder, and lingcod.

In-water work would occur outside of the commercial herring fishing season; therefore, the Project would not result in any disruption of commercial fishing activities if they were to occur in the Project area. Removal of the Wharf would open up additional waters that would otherwise be obstructed from fishing via vessels. Because the Project includes eelgrass restoration, and eelgrass provides an important spawning substrate for Pacific Herring, the Project may have long-term benefits to commercially and recreationally fished Pacific Herring populations.

Because the Wharf is a private structure, not open for use as a recreational fishing platform, it does not currently provide any opportunities for recreational shoreline fishing. Therefore, the removal of the Wharf would have no impact on recreational fishing opportunities. Eelgrass provides nursery grounds for many species of fish, including many of those targeted by recreational fishermen. By expanding eelgrass beds in the Project area, the Project may be contributing to healthy fish populations in San Francisco Bay.

5.2 CLIMATE CHANGE AND SEA-LEVEL RISE

Sea-level rise as a function of global climate change is not expected to affect the Project because there are no permanent structures or infrastructure proposed. The Project involves removing the unused and decommissioned Wharf pile-supported overwater structure. The removal of the Wharf piles may change the local hydrodynamic conditions at the project site. Current speeds would be more uniformly distributed over the site, which would reduce the localized scour that is currently seen in the bathymetry around the piles and beneath the Wharf. Areas currently beneath the Wharf are likely to become depositional without the influence of the piles. Generally, removing piles would allow waves to pass through the project site undisturbed, potentially increasing the wave action at the shore. Because the waves and currents are relatively small to begin with, it is unlikely that the removal of the Wharf would change the conditions enough to negatively impact eelgrass habitat or the shoreline relative to other portions of the shoreline north and south of the Wharf that do not have existing structures (AECOM 2020). This would be the case in the short term, as well as long term under conditions of sea-level rise. Sea-level rise may negatively impact the shoreline in the Project area, but the project would not exacerbate these conditions.

The following discussion provides background information on climate change and sea-level rise in the Project area. Climate change and sea-level rise accelerate and exacerbate natural coastal processes, such as the intensity and frequency of storms, erosion and sediment transport, currents, wave action, and ocean chemistry. Sea-level rise is driven by the melting of polar ice caps and land ice, as well as thermal expansion of sea water. Accelerating rates of sea-level rise are attributed to increasing global

1 temperatures associated with climate change. Estimates of projected sea-level rise vary
2 regionally and are a function of different greenhouse gas emissions scenarios, rates of
3 ice melt, and local vertical land movement.

4 The California Ocean Protection Council updated the State of California Sea-Level Rise
5 Guidance in 2018 to provide a synthesis of the best available science on sea-level rise
6 projections and rates. The “high emissions,” “medium-high risk aversion” scenario was
7 evaluated to apply a conservative approach based on current emission trajectories at
8 the Project site. The San Francisco tide gauge, which is approximately 11 miles
9 southwest of the Project site, was used for the projected sea-level rise scenario. Based
10 on the 2018 California Ocean Protection Council guidance projections for the San
11 Francisco tide gauge, the Project area could see 0.8 foot of sea-level rise by 2030,
12 1.3 feet by 2040, 1.9 feet by 2050, and 6.9 feet by 2100 (CNRA and OPC 2018). The
13 City of Richmond projection estimates that the shoreline at the Wharf location is not in
14 an area that would be affected by a potentially lower 3.3-feet of sea-level rise by 2100
15 (City of Richmond 2012). The range in potential sea-level rise from different sources
16 indicates the complexity and uncertainty of projecting these future changes—which
17 depend on the rate and extent of ice melt—particularly in the second half of the century.
18 As discussed above, the Project does not propose any permanent structures that could
19 be impacted by sea-level rise or erosion over time.

20 Along with higher sea levels, winter storms of greater intensity and frequency resulting
21 from climate change would further affect coastal areas. The combination of these
22 conditions likely would result in increased wave run-up, storm surge, and flooding in
23 coastal and near-coastal areas. In rivers and tidally influenced waterways, more
24 frequent and powerful storms can result in increased flooding conditions and damage
25 from storm-generated debris. Climate change and sea-level rise also would affect
26 coastal and riverine areas by changing erosion and sedimentation rates. Beaches,
27 coastal landscapes, and near-coastal riverine areas exposed to increased wave force,
28 run-up, and total water levels potentially could erode more quickly than before.
29 However, rivers and creeks also are predicted to experience flashier sedimentation
30 pulse events from strong winter storms, punctuated by periods of drought. Therefore,
31 depending on precipitation patterns, sediment deposition and accretion may accelerate
32 along some shorelines and coasts.

33 Weather systems and extreme storms also can uncover dangerous coastal hazards on
34 shorelines; however, there are no known coastal hazards in the Project area. When
35 funding is available, CSLC implements a program to remove coastal hazards along the
36 California coast (CSLC 2020). Examples of hazards are remnants of coastal structures,
37 such as the Wharf, piers, oil wells and pilings, and deteriorated electric cables and old
38 pipelines. Many coastal hazards are on Public Trust lands set aside for commerce,
39 navigation, fishing, and recreation; these hazards can impede coastal uses as well as
40 threaten public health and safety.

Governor Brown’s Executive Order B-30-15 instructed all state agencies to take climate change into account in their planning and investment decisions, and to give priority to actions that build climate preparedness. The preceding discussion of climate change and sea-level rise is intended to provide the local/regional overview and context that CSLC staff considered pursuant to this Executive Order; additionally, it will facilitate CSLC staff’s consideration of the Project.

5.3 ENVIRONMENTAL JUSTICE

Environmental justice is defined by California law as “the fair treatment and meaningful involvement of people of all races, cultures, 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. CSLC adopted an Environmental Justice Policy in December 2018 ([Item 75, December 2018](#)) to ensure that environmental justice is an essential consideration in CSLC’s processes, decisions, and programs. 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.”

5.3.1 U.S. Census Bureau Statistics

Table 5-1 presents income, employment, and race data for the state, county, and Census Tract 3780 in the Project vicinity, based on the most recently available information from the U.S. Census Bureau’s 2019 American Community Survey 5-Year Estimates Data Profiles.

5.3.2 Population and Economic Characteristics

Based on the information provided in Table 5-1, Census Tract 3780 includes a median household income that is approximately \$2,341 more than Contra Costa County and \$26,822 more than the State of California. Additionally, the percentage of households living below the poverty line in Census Tract 3780 is 1.8 percentage points lower than Contra Costa County and 6.5 percentage points lower than the State of California. Therefore, households in Census Tract 3780 do not appear to be disproportionately burdened by poverty when compared to the county and state as a whole.

Table 5-1. 2019 U.S. Census Bureau Statistics

Subject	California	Contra Costa County	Census Tract 3780
Population and Income			
Total population	39,283,497	1,142,251	3,327
Median household income	\$75,235	\$99,716	\$102,057
Percent below the poverty line ¹	13.4%	8.7%	6.9%
Employment by Industry (by percentage)			
Agriculture, forestry, fishing and hunting, and mining	2.2%	0.7%	0%
Construction	6.3%	7.2%	4.5%
Manufacturing	9.1%	6.5%	8.1%
Wholesale trade	2.8%	2.3%	2.9%
Retail trade	10.5%	10.1%	8.8%
Transportation and warehousing; and utilities	5.3%	5.5%	5.8%
Information	2.9%	2.5%	2.8%
Finance and insurance; and real estate and rental and leasing	6.0%	8.3%	6.2%
Professional, scientific, and management; and administrative and waste management services	13.7%	16.5%	20.9%
Educational services and health care and social assistance	21.0%	22.2%	28.7%
Arts, entertainment, and recreation; and accommodation and food services	10.4%	9.1%	5.9%
Other services, except public administration	5.2%	5.1%	1.7%
Public administration	4.4%	4.1%	3.7%
Race (by percentage)			
Race (White)	37.2%	43.8%	68.0%
Race (Black or African American)	5.5%	8.4%	3.9%
Race (American Indian or Alaska Native)	0.4%	0.2%	0.0%
Race (Asian)	14.3%	16.5%	5.8%
Race (Hispanic or Latino)	39.0%	25.6%	18.5%
Race (Other)	0.7%	0.8%	0.0%

1-Poverty threshold as defined in the American Community Survey is not a singular threshold but varies by family size. Census data provide 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. In 2019, the poverty threshold for a family of four was \$26,172.

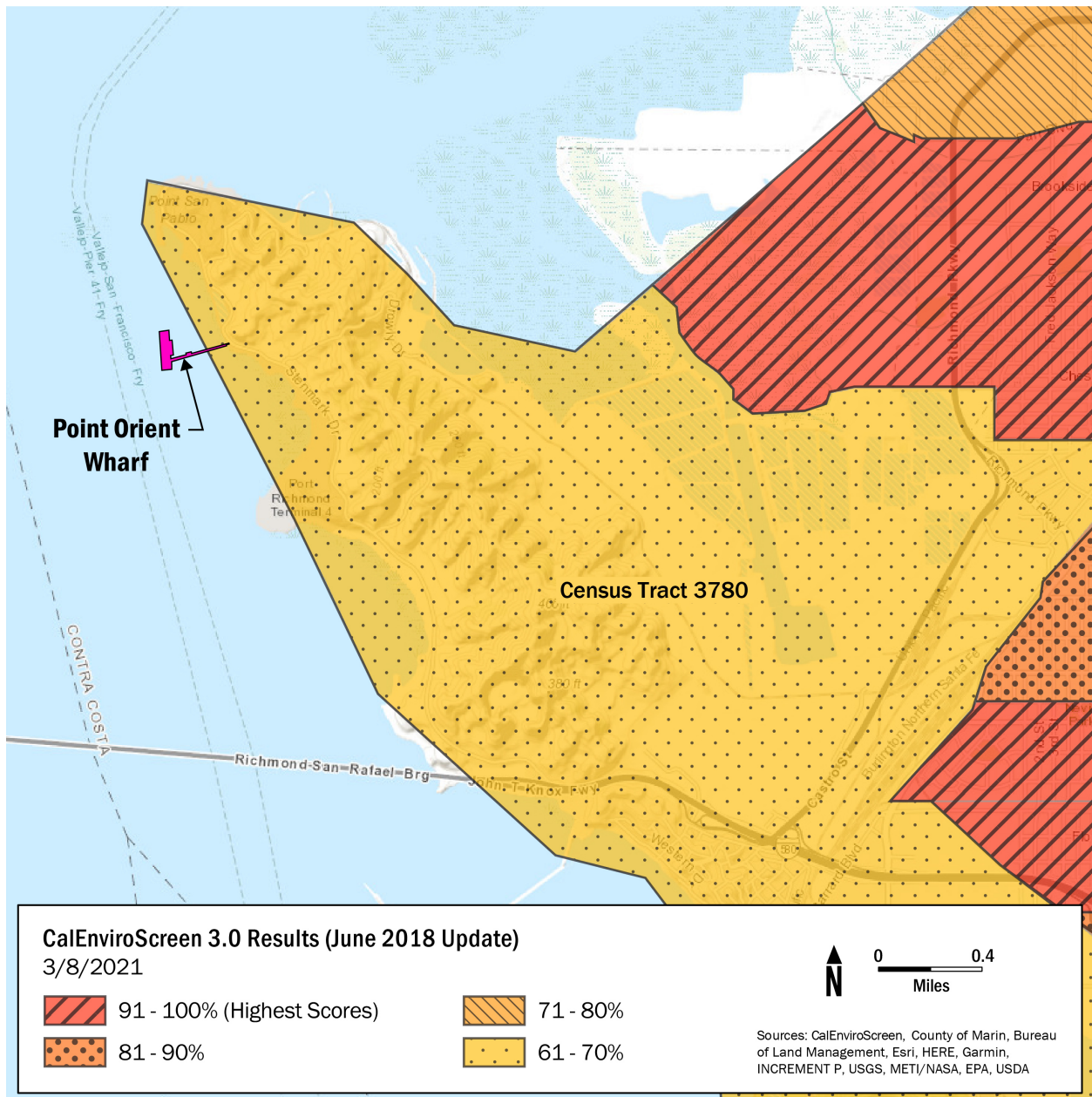
Sources: U.S. Census Bureau 2019a; 2019b; 2019c; 2019d

Similar to Contra Costa County and the State of California, the industries employing the majority of individuals in Census Tract 3780 are educational services and health care and social assistance. In Census Tract 3780, 18.5 percent of the population is Hispanic or Latino; in Contra Costa County and the State of California, the population of Hispanic or Latino is 25.6 percent and 39 percent, respectively. The population of Black or African American residents is 3.9 percent in Census Tract 3780; in Contra Costa County and the State of California, the percentages are 8.4 and 5.5, respectively. The population of American Indian or Alaska Native is under 1 percent under all three location indicators. In Census Tract 3780, the population of Asian residents is just under 6 percent; it is more than 14 percent in both Contra Costa County and the State of California. The population of White residents is approximately 68 percent in Census Tract 3780; it is 43.8 percent in Contra Costa County and 37.2 percent in the State of California. Therefore, the Project would not disproportionately affect low-income or marginalized communities in Census Tract 3780.

5.3.3 California Office of Environmental Health Hazard Assessment CalEnviroScreen Results

The California Communities Environmental Health Screening Tool (CalEnviroScreen Version 3.0) identifies communities disproportionately burdened by socioeconomic or health factors. The Office of Environmental Health Hazard Assessment defines disadvantaged communities as “the top 25 percent scoring areas from CalEnviroScreen” (OEHHA 2021). The project area is in Census Tract 3780, which has a score within the top 30 to 39 percent of all census tracts in California. This means that 29 percent of all census tracts in California have greater population vulnerability to environmental burdens (Figure 5.3-1).

The relatively high CalEnviroScreen score for Census Tract 3780 is driven by several factors, including the number of nearby cleanup sites (99th percentile), groundwater threats (100th percentile), hazardous waste generators and facilities nearby (100th percentile), and rates of asthma (100th percentile). Overall, the census tract includes a pollution burden percentile of 76 and a population characteristic percentile of 51, which includes factors that contribute to a community’s vulnerability, such as housing burden and poverty. The census tract scored relatively low for ozone concentrations (8th percentile), drinking water contaminants (4th percentile), and unemployment rates (10th percentile).

Figure 5.3-1. CalEnviroScreen Assessment

1 5.3.4 Conclusion

2 The Project vicinity is in a relatively sensitive area, although not officially designated as
 3 a Disadvantaged Community. The Project would remove the Wharf and restore
 4 eelgrass to the subtidal habitat in areas under the Causeway that are suitable for
 5 eelgrass and are currently affected by the shading and scour imposed by the structure.
 6 Objectives of the Project include removing the pile-supported overwater structure that
 7 currently adversely affects localized productivity of macroalgae and eelgrass, increasing
 8 the overall ecological health of portions of San Francisco Bay, and providing habitat

1 enhancement through eelgrass expansion. These objectives are designed to ensure
2 that Project activities would not pose a threat to the environment and overall public
3 health and would in fact benefit the environment and overall public health. Therefore, it
4 does not appear that the Project would disproportionately affect an environmental-justice
5 community, and no existing environmental-justice communities would be
6 disproportionately burdened as a result of the Project.

7 **5.4 SIGNIFICANT LANDS INVENTORY**

8 The Project involves lands identified as possessing significant environmental values in
9 the CSLC's Significant Lands Inventory, pursuant to Public Resources Code
10 section 6370 et seq. (CSLC 1975). The Project area is in the Significant Lands
11 Inventory as parcel number 07-063-100, which includes the submerged land in San
12 Francisco Bay. The subject lands are classified in use category Class C, which
13 authorizes multiple uses. Environmental values identified for these lands are mostly
14 biological, including endangered species habitat, migratory path for anadromous fish,
15 and tidal habitat for wildlife support, but also scenic/aesthetic and recreational. Based
16 on CSLC staff's review of the Significant Lands Inventory and the CEQA analysis
17 provided in this Mitigated Negative Declaration, the Project, as proposed, would not
18 significantly affect those lands and is consistent with the use classification.

6.0 MITIGATED NEGATIVE DECLARATION PREPARATION SOURCES AND REFERENCES

This Mitigated Negative Declaration (MND) was prepared by the staff of the CSLC's Division of Environmental Planning and Management (DEPM), with the assistance of AECOM. The analysis in the MND is based on information identified, acquired, reviewed, and synthesized based on DEPM guidance and recommendations.

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