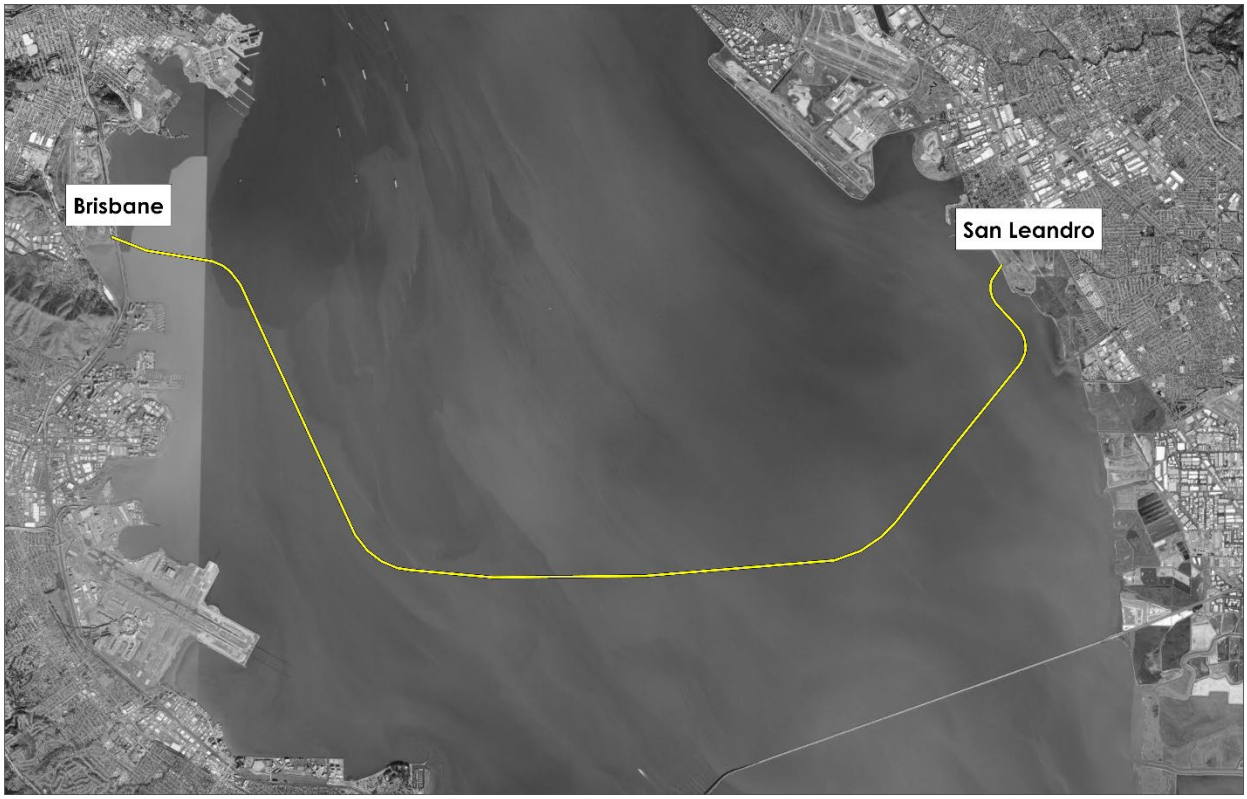
INITIAL STUDY/MITIGATED NEGATIVE DECLARATION

SAN FRANCISCO BAY FIBER OPTIC CABLES PROJECT

April 2023



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

Applicant:
Bandwidth Infrastructure Group, LLC
536 Stockton Avenue
San Jose, CA 95126

MISSION STATEMENT

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

CEQA DOCUMENT WEBSITE
www.slc.ca.gov/ceqa/

Geographic Location (Western Cable Site)

Latitude: 37°41'22.09" N
Longitude: 122°23'30.59" W
WGS84 Datum

Geographic Location (Eastern Cable Landing Site)

Latitude: 37°41'14.48" N
Longitude: 122°10'50.82" W
WGS84 Datum

Cover Photo: Proposed fiber optic cable system route across San Francisco Bay (Photo courtesy of ERM)

Prepared by ERM

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LIST OF ABBREVIATIONS AND ACRONYMS

	§, §§	Section, Sections
	°	degrees
	°F	degrees Fahrenheit
	‘	minutes
	”	seconds
	>	greater than
	µPa	micropascal
A	a.m.	morning (ante meridian)
	AB	Assembly Bill
	APN	Assessor’s parcel number
	Applicant	Bandwidth Infrastructure Group, LLC
	ATOC	Acoustic Thermometry of Ocean Climate
B	BAAQMD	Bay Area Air Quality Management Board
	BCDC	Bay Conservation and Development Commission
	BIO	Biological
	BMP	Best Management Practice
C	CA	California
	CAAQS	California Ambient Air Quality Standards
	CalEnviroScreen	California Communities Environmental Health Screening Tool
	CalEEMod	California Emissions Estimator Model
	CAL FIRE	California Department of Forestry and Fire Protection
	Cal OES	California Governor’s Office of Emergency Services
	Caltrans	California Department of Transportation
	CAM	California Administrative Metals
	CAP	Climate Action Plan
	CARB	California Air Resources Board
	CBIA	California Building Industry Association v. Bay Area Air Quality Management District (2015) 62 Cal.4th 369, 386
	CDFW	California Department of Fish and Wildlife
	CEQA	California Environmental Quality Act
	CESA	California Endangered Species Act
	CFR	Code of Federal Regulations
	CH_4	methane
	CNG	compressed natural gas
	CO	carbon monoxide
	CO_2	carbon dioxide
	CO_2e	carbon dioxide equivalents
	COVID-19	coronavirus disease 2019
	CPUC	California Public Utilities Commission
	CSLC	California State Lands Commission

	CUL	Cultural
D	dB	decibels
	dBA	decibels on the A-weighted scale
	DDT	dichlorodiphenyltrichloroethane
	DESPM	Division of Environmental Science, Planning, and Management
	DPM	Diesel particulate matter
	DPS	Distinct Population Segment
	DTSC	Department of Toxic Substances Control (Cal/EPA)
E	EFH	Essential Fish Habitat
	EIR	Environmental Impact Report
	EMFAC	EMission FACtor model
	EO	Executive Order
	ERM	Environmental Resources Management
	ES	Executive Summary
	ESA	Endangered Species Act
	ESHA	Environmentally Sensitive Habitat Areas
	et al.	and others
	et seq.	and following
F	FESA	Federal Endangered Species Act
	ft	foot
G	GHG	Greenhouse Gas
	GIS	Geographic Information System
	GPS	global positioning system
	GWP	global warming potential
H	HAPC	Habitat Area of Particular Concern
	HAZ	Hazards and Hazardous Materials
	HDD	horizontal directional drilling
	HDPE	high-density polyethylene
	HYD	Hydrology
I	ID	identification
	IPaC	Information for Planning and Consultation
	IPCC	Intergovernmental Panel on Climate Change
	IS	Initial Study
K	km	kilometer
L	LCP	Local Coastal Program
	LNG	liquefied natural gas
	LOS	Level of Service
M	MARS	Monterey Accelerated Research System Cable
	mg/m^3	milligrams per cubic meter
	MM	mitigation measure
	MND	Mitigated Negative Declaration
	MPA	Marine Protected Area
	MRZ	Mineral Resource Zone

	MSA	Magnuson-Stevens Fishery Conservation and Management Act
N	N	north
	N/A	not applicable or insufficient, or no data were available to determine the value
	N_2O	nitrous oxide
	NAAQS	National Ambient Air Quality Standards
	NAHC	Native American Heritage Commission
	NHL	National Historic Landmark
	NO	nitric oxide
	No.	number
	NOI	Noise
	NO_2	nitrogen dioxide
	NO_x	nitrogen oxides
	NOAA	National Oceanic and Atmospheric Administration
	NPDES	National Pollutant Discharge Elimination System
O	O_3	ozone
	OHWM	ordinary high-water mark
P	PCBs	polychlorinated biphenyls
	PE	polyethylene
	PG&E	Pacific Gas and Electric
	p.m.	afternoon (post meridian)
	PM	particulate matter
	PM_{10}	particulate matter less than 10 micrometers
	$PM_{2.5}$	particulate matter less than 2.5 micrometers
	ppm	parts per million
	PPV	peak particle velocity
	Project	San Francisco Bay Fiber Optic Cables Project
	PTS	permanent threshold shifts
	Pub.	Public
R	re 1 µPa	referenced to 1 micropascal
	REC	Recreation
	ROG	reactive organic gases
	ROV	remotely operated vehicle
S	SB	Senate Bill
	SCHMOP	Spill Contingency and Hazardous Materials Offshore Plan
	SCHMTP	Spill Contingency and Hazardous Materials Terrestrial Plan
	SEL	sound exposure level
	SF Bay	San Francisco Bay
	SFBAAB	San Francisco Bay Area Air Basin
	SO_2	sulfur dioxide
	SPL	sound pressure level
	SVOCs	semi-volatile organic compounds

	SWEMP	Solid and Waste Excavation and Management Plan
	SWPPP	Stormwater Pollution Prevention Plan
	SWRCB	State Water Resources Control Board
T	TAC	toxic air contaminant
	TCR	Tribal Cultural Resource
	TRA	Transportation
	TTS	temporary threshold shifts
U	USACE	U.S. Army Corps of Engineers
	U.S.C.	United States Code
	UNESCO	United Nations Educational, Scientific and Cultural Organization
	USCG	U.S. Coast Guard
	USEPA	U.S. Environmental Protection Agency
	USFWS	U.S. Fish and Wildlife Service
	USGS	U.S. Geological Survey
	USGS PAD-US	U.S. Geological Survey Protected Areas Database of the United States
V	v.	versus
	VHF-FM	Very High Frequency-Frequency Modulation
	VMT	Vehicle Miles Traveled
	VOCs	volatile organic compounds
W	W	west
	WHSP	Worker Health and Safety Plan

EXECUTIVE SUMMARY

This Initial Study/Mitigated Negative Declaration (IS/MND) has been prepared by the California State Lands Commission (CSLC), as lead agency under the California Environmental Quality Act (CEQA) (Pub. Resources Code, § 21000 et seq.), to analyze and disclose the environmental effects associated with the proposed San Francisco Bay Fiber Optic Cables Project (Project). The Project would authorize Bandwidth Infrastructure Group, LLC (Applicant or Bandwidth) to build two nonlinear, parallel, and close-together fiber optic cables and related infrastructure onshore (terrestrial) and across the San Francisco Bay (SF Bay) (marine) between the cable landing sites in Brisbane in San Mateo County (western SF Bay), and San Leandro in Alameda County (eastern SF Bay) in California (Figures ES-1 and ES-2).

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

PROPOSED PROJECT

The Applicant proposes to build two nonlinear, parallel, and close-together fiber optic cables between the cable landing sites in Brisbane and San Leandro. A majority of the Project components would be within the SF Bay under CSLC's jurisdiction, which is generally below the ordinary high-water mark (OHWM). Other Project components would be within the SF Bay but outside of CSLC's jurisdiction (e.g., on legislatively granted tide and submerged lands or on tidelands lots sold to private parties in the 1800s) or on land above the OHWM (Figures ES-2, ES-3, and ES-4).

One new 8-inch (20-centimeter) diameter high-density polyethylene (HDPE) conduit would be installed using the horizontal directional drilling (HDD) method in the western SF Bay (Figure ES-3) and another of the same size would be installed in the eastern SF Bay (Figure ES-4) to house these two fiber optic cables near the shore. The HDPE conduit on the western side of the SF Bay would be longer and deeper than the HDPE conduit on the eastern side of the SF Bay. Once the HDPE conduits are installed, the fiber optic cables would be pulled through them starting from the western side of the SF Bay and going toward the eastern side of the SF Bay. The fiber optic cables would be in the HDPE conduits from the terrestrial landing sites into the SF Bay and then the fiber optic cables would be buried between 3 to 6 feet (1 to 2 meters) deep using a jetting sled

starting from the western HDPE conduit and going toward the eastern HDPE conduit across the SF Bay.

This Project would connect into a partially complete terrestrial cable network, with independent utility from the Project analyzed in this MND.[1] The partially complete terrestrial cable network extends throughout the SF Bay region and would connect to the Project at the landing vaults. The Project would improve capacity and speed of telecommunication data connectedness within the SF Bay Area, and its surrounding region, by adding a physical fiber optic cable connection across the SF Bay to the terrestrial cable network (Figures ES-2, ES-3, and ES-4).

PROJECT COMPONENTS

Construction of the Project components is expected to begin in summer or fall of 2023, and construction would take approximately 3 months:

- Two Cable Landing Sites: Each cable landing site would be used as a staging area to park vehicles and store construction-related equipment for terrestrial work, marine work, and HDD work to install the HDPE conduits. An area approximately 66 feet by 66 feet (20 meters by 20 meters) would be used.
- Two Landing Vaults: A pre-cast concrete landing vault (12 feet long, 9 feet wide, and 10 feet deep [3.7 meters long, 2.7 meters wide, and 3 meters deep]) would be installed at each cable landing site, with a cast-iron vault cover (36 inches [91 centimeters] in diameter) and buried flush with the ground. The landing vaults would provide access to the cables and HDPE conduits for maintenance activities. There would be no aboveground structures associated with the Project.
- One Western HDPE Conduit: On the western side of SF Bay (in Brisbane), a single 8-inch (20-centimeter) diameter HDPE conduit would be installed using the HDD method from an entry pit (where the landing vault would eventually be installed) and would exit within the SF Bay marine environment. This HDPE conduit would be from approximately 686 to 2,731 feet (209 to 832 meters) long depending on the route selected. Final

[1] The Applicant (Corporate ID U7336C) will complete this terrestrial network project under California Public Utilities Commission (CPUC) authorizations. The CPUC has issued a Notice to Proceed for the network connection at the eastern landing vault in San Leandro. A Notice to Proceed is anticipated from the CPUC in April 2023 for the network connection to the western landing vault in Brisbane.

route selection and HDPE conduit length may vary to avoid existing utilities (Figure ES-3) and associated pipeline crossing agreements with existing utility owners. The HDPE conduit would exit at a location in the SF Bay where water depth at mean lower low tide is approximately 5 feet (1.5 meters). The marine end of the HDPE conduit would be buried under 5 feet (1.5 meters) of sediment during and after installation, except when exposed to pull the fiber optic cables through. The western HDPE conduit would be installed from the bottom of the landing vault, approximately 6.5 feet (2 meters) below ground surface, toward the SF Bay transiting at a possible maximum depth of 66 feet (20 meters) using the HDD method to the exit point within the SF Bay.

- One Eastern HDPE Conduit: On the eastern side of SF Bay (in San Leandro), a single 8-inch (20-centimeter) diameter HDPE conduit would be installed from an entry pit also exiting into the SF Bay. The eastern HDPE conduit would be approximately 150 to 325 feet (50 to 100 meters) long and would exit at a water depth of 0 foot (0 meter) at mean lower low tide, which would be buried under 5 feet (1.5 meters) of nearshore sediment during and after installation except when exposed to pull the fiber optic cables through. The eastern HDPE conduit would be installed from the bottom of the landing vault, approximately 6.5 feet (2 meters) below ground surface, towards the SF Bay transiting at a possible maximum depth of 30 feet (9 meters) using the HDD method to the exit point within the SF Bay.
- Two Fiber Optic Cables: Once the HDPE conduits are installed, then the fiber optic cables would be pulled through the HDPE conduits and housed in them in the nearshore environment to the exit point in SF Bay. Once outside of the conduit (past the exit point), the rest of the fiber optic cables would be buried 3 to 6 feet (1 to 2 meters) deep in the SF Bay floor using a cable-lay vessel (with the help of two anchor-lay vessels) and jetting sled. The buried cables would not be housed in an HDPE conduit. A jetting sled is a burial tool that would be deployed by the cable-lay vessel where water depth allows for its use across the majority of the SF Bay fiber optic cables route. Close to the HDD exit points, where the SF Bay is too shallow for the jetting sled, the fiber optic cables would be installed by divers (with a dive support boat) with hand-jetting techniques.

Western Cable Landing Site

There would be four possible alternative landing sites for the western cable landing site (Figure ES-3). The exact location cannot be finalized now due to the local utilities' complexities, road infrastructure, and multiple land ownership. However, the Applicant expects the "Proposed Western Cable Landing Site" as explained below to be selected. If that site is not possible, then one of the three alternative sites would be selected:

- **Proposed Western Cable Landing Site,** in Brisbane, at coordinates 37°41'22.09" N and 122°23'30.59" W. This site is along the Bay Trail at the southern corner of Lagoon Road and Sierra Point Parkway in Brisbane in an unoccupied area. The offshore HDPE conduit exit point would be approximately 2,519 feet (768 meters) from the landing vault and in approximately 5 feet (1.5 meters) water depth in the SF Bay.

  This site was part of a formal landfill parcel where landfill operation ended in 1960s. All landfill material is located approximately 200 feet (61 meters) northwest of the landing site, north of Lagoon Road.

- **Alternative 1,** in Brisbane, at coordinates 37°41'19.42" N and 122°23'30.15" W. Alternative 1 is located 270 feet due south of the southern corner of Lagoon Road and Sierra Point Parkway in Brisbane. The HDPE conduit exit point would be 2,731 feet (832 meters) from the landing vault and in approximately 5 feet (1.5 meters) water depth in the SF Bay.

  This site was also part of a formal landfill parcel where landfill operation ended in 1960s. All landfill material is located approximately 200 feet (61 meters) northwest of the landing site, north of Lagoon Road.

- **Alternative 2,** in Brisbane, at coordinates 37°41'19.55" N and 122°23'27.62" W. Alternative 2 is located on a narrow parcel of land between the Bayshore Freeway and Sierra Point Parkway in Brisbane. The HDPE conduit exit point would be 686 feet (209 meters) from the landing vault and in approximately 5 feet (1.5 meters) water depth in the SF Bay.

- **Alternative 3,** in Brisbane, at coordinates 37°41'15.11" N and 122°23'26.23" W. Alternative 3 is located on a narrow parcel of land between the Bayshore Freeway and Sierra Point Parkway in Brisbane. The HDPE conduit exit point would be 1,640 feet (500 meters) from the landing vault and in approximately 5 feet (1.5 meters) water depth in the SF Bay.

Eastern Cable Landing Site

The eastern cable landing site would be along the Bay Trail at coordinates 37°41'14.48" N and 122°10'50.82" W, west of the Tony Lema Golf Course and south of the Marina Dog Park within an unoccupied area (Figure ES-4). The planned HDPE conduit and HDD exit point would be approximately 150 to 325 feet (50 to 100 meters) from the landing vault and would exit at a water depth of 0 foot (0 meter) at mean lower low tide. The HDPE conduit would be buried under 5 feet (1.5 meters) of nearshore sediment during and after installing the conduit except when exposed to pull the fiber optic cables through.

Figure ES-1. Project Vicinity

Figure ES-2. Project Site Location

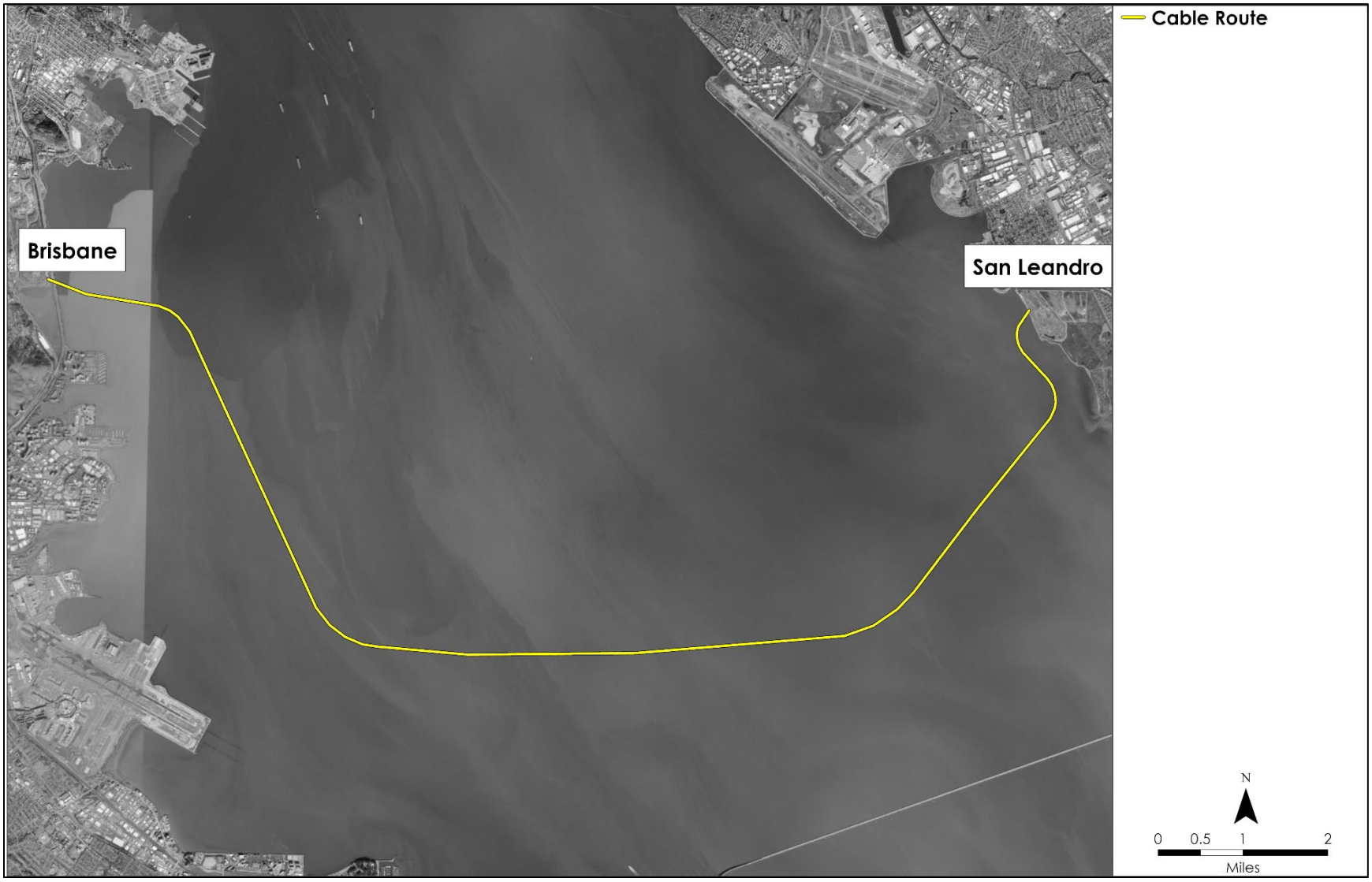

Figure ES-3. Western Cable Landing Site

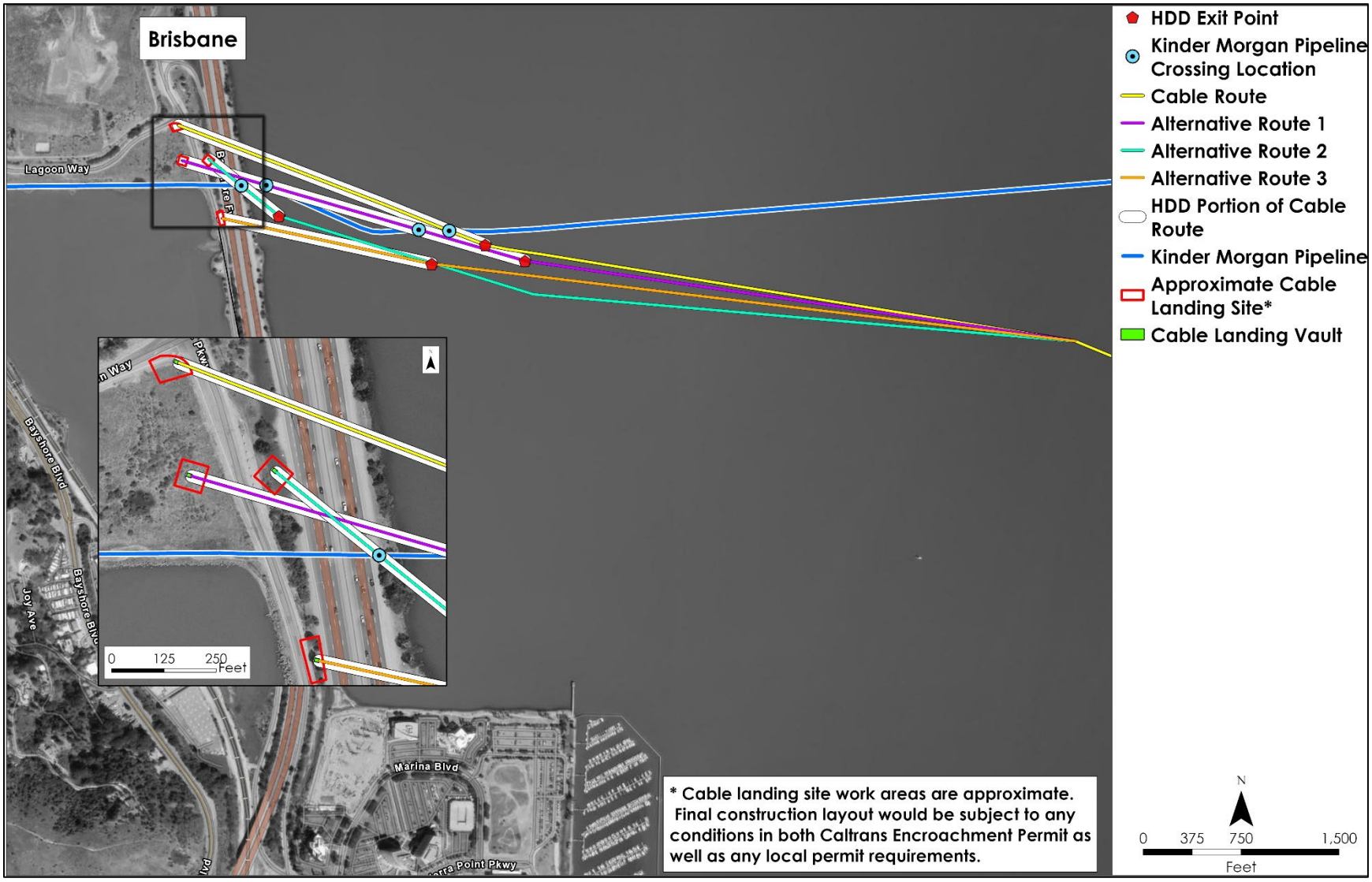

Figure ES-4. Eastern Cable Landing Site

ENVIRONMENTAL IMPACTS AND PROPOSED MITIGATION MEASURES

The environmental issues listed below under the "Environmental Issues with Potentially Significant Impacts" are resources areas with at least one impact that would be a "potentially significant impact."

Environmental Issues with Potentially Significant Impacts:

- Air Quality
- Biological Resources
- Cultural Resources
- Cultural Resources – Tribal
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Noise
- Hydrology and Water Quality
- Recreation
- Transportation
- Mandatory Findings of Significance

The environmental issues listed below under the "Environmental Issues Without Potentially Significant Impacts" are resource areas that do not have any impacts that would be considered potentially significant.

Environmental Issues Without Potentially Significant Impacts:

- Aesthetics
- Agriculture and Forestry Resources
- Energy
- Geology, Soils, and Paleontological Resources
- Land Use and Planning
- Mineral Resources
- Population and Housing
- Public Services
- Utilities and Service Systems
- Wildfire

The Applicant has agreed to Project revisions, including the implementation of MMs that would reduce potentially significant impacts to "less than significant with mitigation," as detailed in Section 3.0, Environmental Checklist and Analysis, of this MND.

Table ES-1 lists the proposed MMs designed to reduce or avoid potentially significant impacts. With implementation of the proposed MMs, Project-related impacts would be reduced to less than significant levels.

Table ES-1. Summary of Proposed Project Mitigation Measures (MM)

Proposed Project Mitigation Measures
Air Quality
MM AIR-1: Use of Tier 4 Equipment
MM AIR-2: Standard Control Measures for Construction Equipment
MM AIR-3 : Minimize Fugitive Dust
Biological Resources
MM BIO-1: Provide Worker Environmental Awareness Training
MM BIO-2: Conduct Biological Surveying and Monitoring
MM BIO-3: Delineate Work Limits to Protect Sensitive Biological Resources
MM BIO-4: Install Covers or Escape Ramps in Open Trenches
MM BIO-5: Conduct Pre-Construction Nesting Bird Surveys and Implement Avoidance Measures
MM BIO-6: In-Water Work Window
MM BIO-7: Fish Screen on the Jet Sled Intake
MM BIO-8: Cable Burial Surveys
MM BIO-9: Cable Entanglements and Gear Retrieval
MM BIO-10: Control of Marine Invasive Species
MM HYD-1: Develop and Implement Stormwater Pollution Prevention Plan
MM HAZ-1: Develop and Implement Spill Contingency and Hazardous Materials Management Plans
MM HAZ-2: Prepare and Implement an Inadvertent Return Contingency Plan
Cultural Resources
MM CUL-1/TCR-1: Discovery of Previously Unknown Cultural or Tribal Cultural Resources
MM CUL-2/TCR-2: Unanticipated Discovery of Human Remains
MM CUL-3/TCR-3: Cultural and Tribal Resources Awareness Training
Cultural Resources - Tribal
MM CUL-1/TCR-1: Discovery of Previously Unknown Cultural or Tribal Cultural Resources
MM CUL-2/TCR-2: Unanticipated Discovery of Human Remains
MM CUL-3/TCR-3: Cultural and Tribal Resources Awareness Training
Greenhouse Gas Emissions
MM AIR-1: Use of Tier 4 Equipment
MM AIR-2: Standard Control Measures for Construction Equipment

Proposed Project Mitigation Measures
Hazards and Hazardous Materials
MM HAZ-1**:** Develop and Implement Spill Contingency and Hazardous Materials Management Plans
MM HAZ-2 : Prepare and Implement an Inadvertent Return Contingency Plan
MM BIO-1: Provide Worker Environmental Awareness Training
MM BIO-3: Delineate Work Limits to Protect Sensitive Biological Resources
Hydrology and Water Quality
MM HYD-1: Develop and Implement Stormwater Pollution Prevention Plan
MM HAZ-1**:** Develop and Implement Spill Contingency and Hazardous Materials Management Plans
MM HAZ-2: Prepare and Implement an Inadvertent Return Contingency Plan
Noise
MM NOI-1: Implement Construction Noise Control Measures
Recreation
MM REC-1: Advanced Local Notice to Mariners
Transportation
MM TRA-1: Marine Anchor Plan
MM TRA-2: Traffic Control Plan
MM REC-1: Advanced Local Notice to Mariners
Commercial and Recreation Fishing
MM BIO-6: In-Water Work Window
MM BIO-7: Fish Screen on the Jet Sled Intake
MM BIO-8: Cable Burial Surveys
MM BIO-9: Cable Entanglements and Gear Retrieval
MM BIO-10: Control of Marine Invasive Species
MM REC-1: Advanced Local Notice to Mariners
MM TRA-1: Marine Anchor Plan

1.0 PROJECT AND AGENCY INFORMATION

1.1 PROJECT TITLE

San Francisco Bay Fiber Optic Cables Project (Project)

1.2 LEAD AGENCY AND PROJECT SPONSOR

Lead Agency:
California State Lands Commission
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303.517.1539

1.3 PROJECT BACKGROUND AND OBJECTIVES

1.3.1 Project Need

The use of telecommunication systems and digital media (e.g., cell phones, internet, voice, social media, streaming videos, telework, online learning, telemedicine, banking transactions, and online shopping) have experienced a significant increase in usage during the recent COVID-19 pandemic. As the world relies on faster digital media and telecommunication systems, more bandwidth-intensive data transmission, and 4G and 5G[2] networks, the data transferring infrastructure, such as fiber optic cables, need to be upgraded to keep up with technical advancements to transmit uninterrupted data. Virtually all communications and data transmissions are converted to digital data and transmitted across fiber optic cables. Even though radio and satellites can transmit data over long distances, only fiber optic cables can supply the

[2] This refers to the data bandwidth, meaning the amount of data that can be moved (uploaded or downloaded) through a network over a certain time.

volume, speed, reliability, and cost efficiency to meet current and future data demands.

The proposed Project would transmit telecommunication data across the SF Bay, which would bring greater connectivity to the SF Bay Area and surrounding region. In addition, this Project's location was strategically selected by the Applicant to meet present and future statewide telecommunications needs.

1.3.2 Project Objectives

According to the Applicant, the Project would enhance telecommunication capacity within the greater SF Bay Area and connected regions by adding a direct telecommunications link across the SF Bay, which would:

- Increase telecommunications reliability
- Increase diversity of telecommunication pathways
- Increase data transmission capacity and speeds to satisfy growing demand
- Respond to increasing demand for connectivity

1.4 PROJECT LOCATION

The following Project components would be located onshore (terrestrial) and within and across the San Francisco Bay (SF Bay) (marine) between Brisbane, San Mateo County, and San Leandro, Alameda County, in California (Figures 1.3-1 and 1.3-2):

- **Terrestrial Components**: The terrestrial Project components would include the western and eastern cable landing sites comprised of temporary staging and construction areas, permanent landing vaults, and subsurface high-density polyethylene (HDPE) conduits from the landing vault into the SF Bay. The western cable landing site, on the western side of the SF Bay, would be in Brisbane along the Bay Trail[3] at the southern corner of Lagoon Road and Sierra Point Parkway in an unoccupied area within Assessor's parcel number (APN) 005-162-430 or the immediately adjacent Caltrans right-of-way to the east (Figure 1.3-3). The eastern cable landing site, on the east side of the SF Bay, would be in San Leandro along the Bay Trail, west of the Tony Lema Golf Course and south of the

[3] Please see the Bay Trail map at https://mtc.ca.gov/operations/regional-trails-parks/san-francisco-bay-trail/bay-trail-navigational-map.

Marina Dog Park in an unoccupied area within APN 080G-0910-001-06 (Figure 1.3-4). The cable landing sites (both in the eastern and the western SF Bay) would also be used as staging areas for both the terrestrial and marine work.

A single landing vault would be buried at each landing site. The HDPE conduits would be installed under the shoreline to exit out in the SF Bay using the horizontal directional drilling (HDD) method. The entry pits, or excavations (both in the eastern SF Bay and in the western SF Bay), would be required to allow the HDD rig to operate. These entry pits would then be used to install the permanent landing vaults.

- **Marine Components**: The marine Project components would include the two fiber optic cables and the HDPE conduits from the landing vaults to the HDD exit points within the SF Bay. A single HDPE conduit would be installed on the western side of the SF Bay, and a single HDPE conduit would be installed on the eastern side of the SF Bay using the HDD method from the cable landing site, under the shoreline, and into the SF Bay. On the western side, the one HDPE conduit would extend between approximately 686 feet and 2,731 feet (209 to 832 meters) from the western landing vault, depending on the alternative selected, and exit into the SF Bay in about 5 feet (1.5 meters) of water depth (Figure 1.3-2). On the eastern side, the HDPE conduit would extend approximately 150 to 325 feet (50 to100 meters) from the eastern landing vault and exit within the intertidal zone of the SF Bay. Both HDPE conduits would be buried during installation and operations except when the fiber optic cables would be pulled into the HDPE conduits. A cable-lay vessel, with the help of a dive support boat and divers, would bring each fiber optic cable to the marine end of the HDPE conduits. Both fiber optic cables would be pulled through the HDPE conduits to the landing vault at each landing site. These fiber optic cables would be buried along a specific route across the SF Bay (Figure 1.3-2).

See Section 2.0, Project Description, for additional Project location details.

Figure 1.3-1. Project Vicinity

Figure 1.3-2. Marine Route of the Cables Across the San Francisco Bay

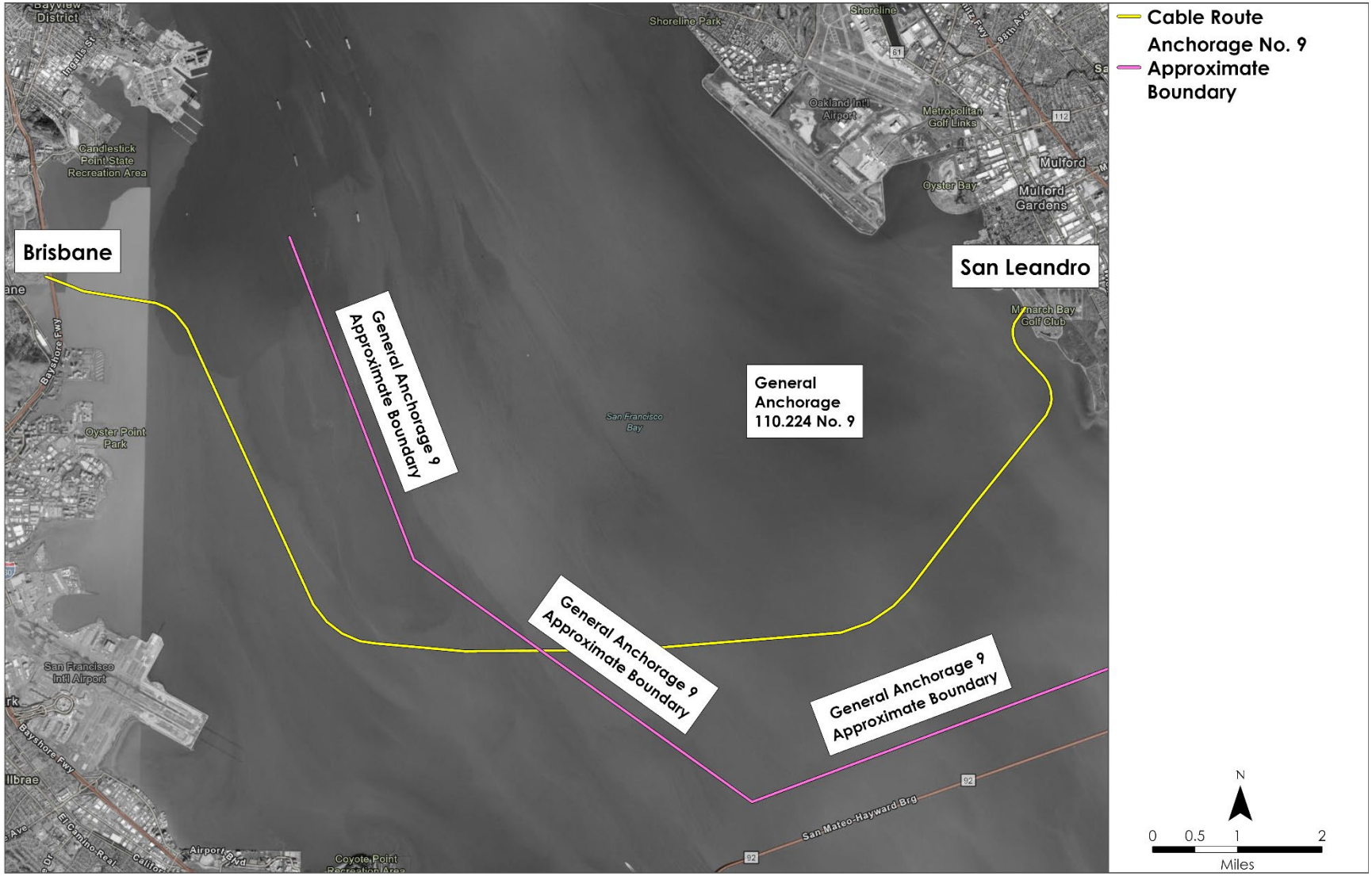


Figure 1.3-3. Western Cable Landing Site

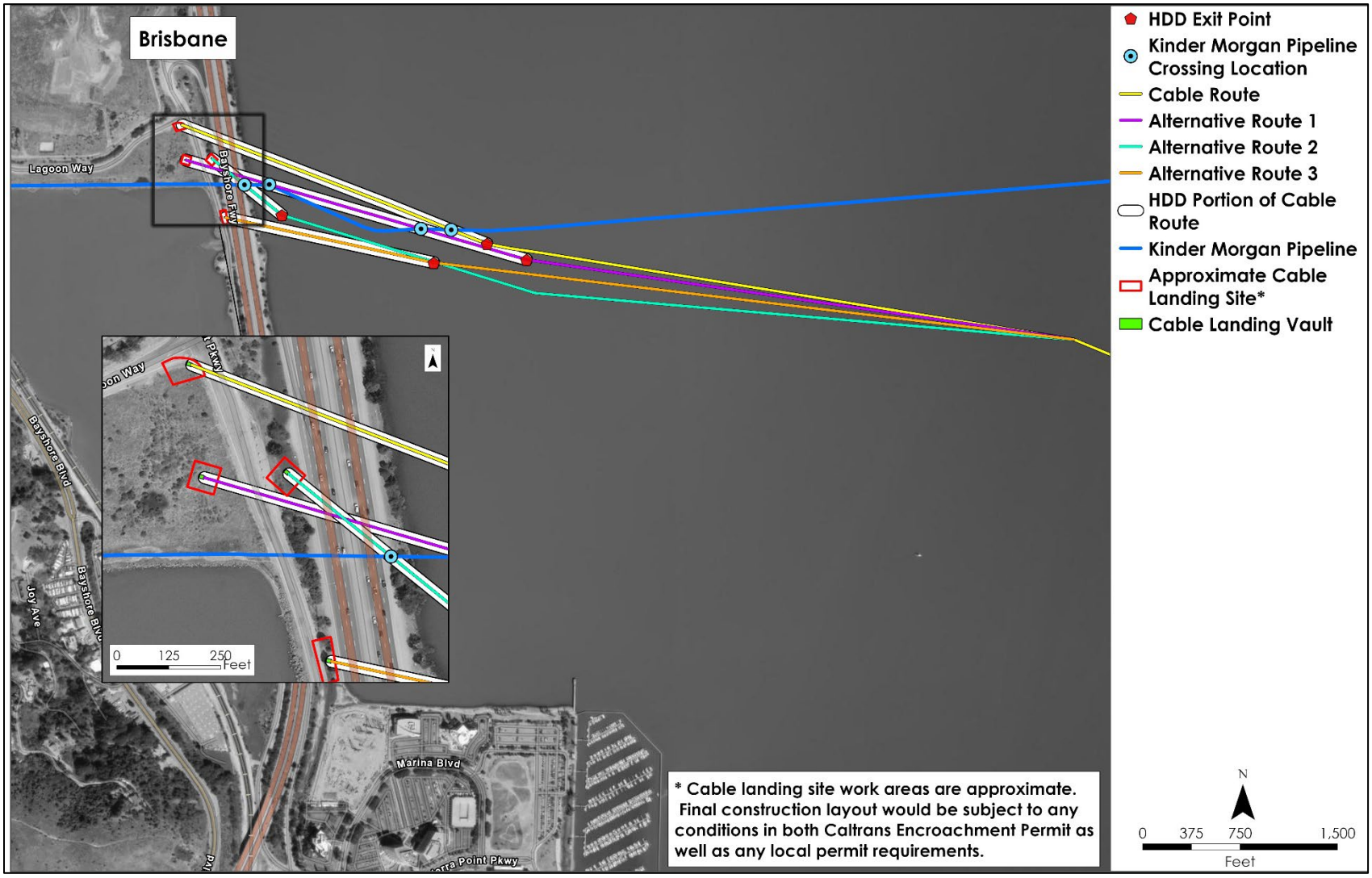
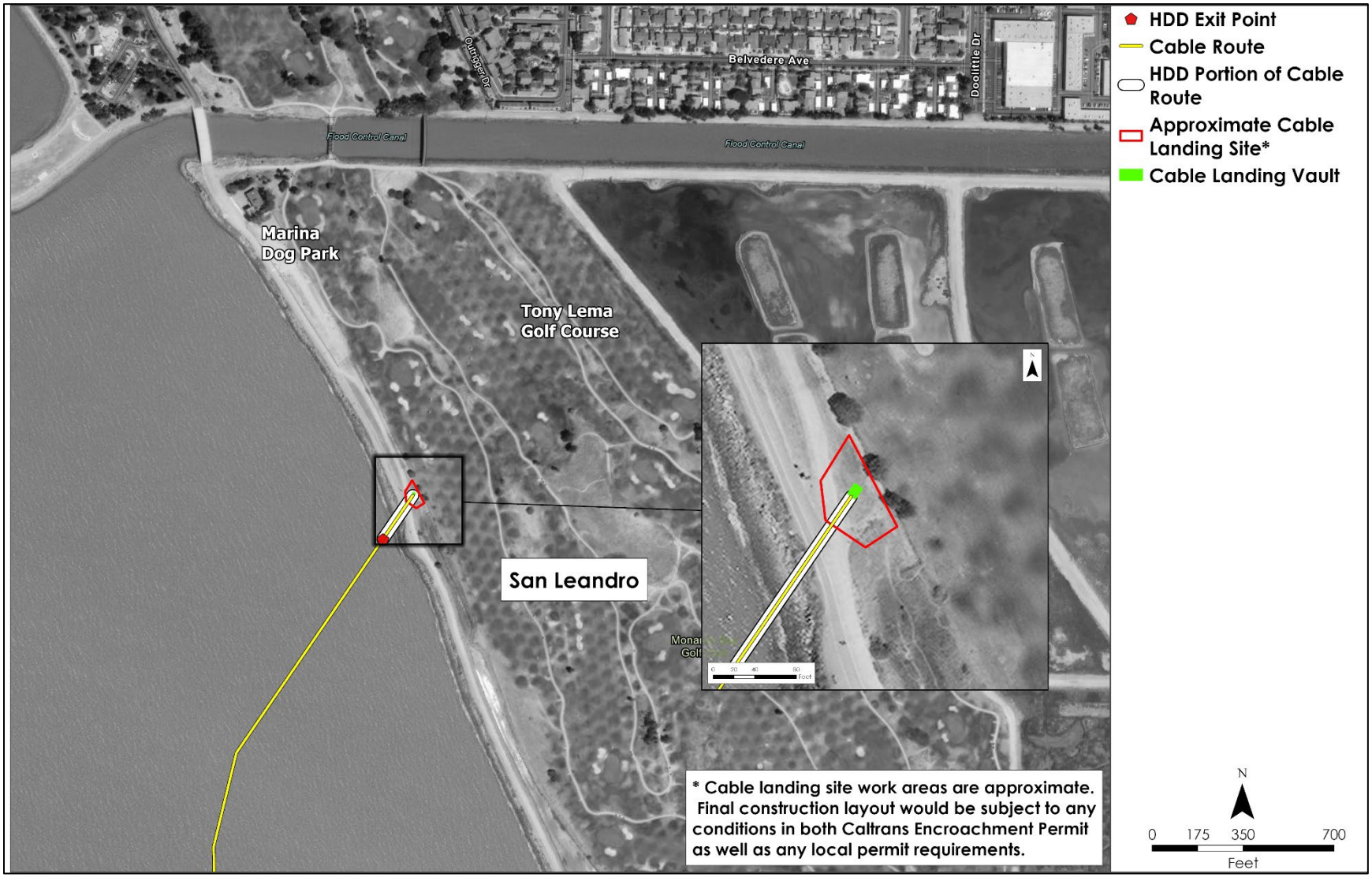


Figure 1.3-4. Eastern Cable Landing Site



1.5 ORGANIZATION OF THE MITIGATED NEGATIVE DECLARATION

This Initial Study/Mitigated Negative Declaration (IS/MND) is intended to provide the California State Lands Commission (CSLC), as lead agency under the California Environmental Quality Act (CEQA) (Pub. Resources Code, § 21000 et seq.), and responsible agencies with the information required to exercise their discretionary responsibilities for the proposed Project. The MND also provides the public with information about the proposed Project, an analysis of potential environmental impacts from the Project, and identification of mitigation measures that will be implemented to reduce those environmental impacts as much as possible. The MND is organized as follows:

Section 1.0 presents the Project background and Project location, agency and Applicant information, Project objectives, anticipated agency approvals, and a summary of the public review and comment process.

Section 2.0 describes the proposed Project—its layout, equipment, and facilities—and provides an overview of the Project's operations and schedule.

Section 3.0 presents the IS, which includes the environmental setting, identification and analysis of potential impacts, and discussion of Project changes and other measures that, if incorporated into the Project, would mitigate or avoid those impacts, such that no significant effect on the environment would occur. The CSLC prepared this IS pursuant to State CEQA Guidelines section 15063.[4]

Section 4.0 discusses other CSLC considerations relevant to the Project, such as climate change and sea level rise, commercial fishing, and environmental justice, that are in addition to the environmental review required by CEQA.

Section 5.0 presents information on report preparation and references.

Appendices include the Mitigation Monitoring Program, Project design specifications, technical data, and other information supporting the analysis presented in this IS/MND:

Appendix A: Abridged List of Major Federal and State Laws, Regulations, and Policies

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

Appendix B: List of Major Local Laws, Regulations, and Policies

Appendix C: Mitigation Monitoring Program

Appendix D: Terrestrial and Marine Biological Resource Information

Appendix E: Air Quality and Greenhouse Gas Calculations

Appendix F: Scour/Erosion Analysis and Climate Change Effects

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 CSLC during the 30-day public review period will be incorporated into the MND, if necessary, and provided in the staff's report to the Commission. In accordance with State CEQA Guidelines section 15074, subdivision (b), the Commission will review and consider the MND, together with any comments received during the public review process, prior to acting 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. The State of California acquired sovereign ownership of all tidelands and submerged lands and beds of navigable lakes and waterways upon its admission to the United States in 1850. The state holds these lands for the benefit of all people of California 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 (OHWM), which is generally reflected by the mean high tide line, except for areas of fill or artificial accretion. For this Project, the state's sovereign fee ownership extends generally below the OHWM. Project components may be within the SF Bay but outside CSLC's jurisdiction (e.g., on legislatively granted tide and submerged lands or on tidelands lots sold to

private parties in the 1800s) or on land above the OHWM. The CSLC authority is set forth in the Public Resources Code, Division 6, and in the California Code of Regulations, title 2, sections 1900–2970. The CSLC has authority to issue leases or permits for the use of sovereign land held in the Public Trust, including ungranted tidelands, submerged lands, and the beds of navigable lakes and waterways, as well as certain residual and review authority for tidelands and submerged lands legislatively granted in trust to local jurisdictions (Pub. Resources Code, §§ 6009, subdivision l; 6009.1; 6301; 6306). The CSLC must comply with CEQA when it undertakes an activity defined by CEQA as a "project" that must receive discretionary approval (i.e., the CSLC has the authority to approve or deny the requested lease, permit, or other approval) and that may cause either a direct physical change 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.

The Applicant applied for a new General Lease – Right-of-Way Use to use state-owned land to install two fiber optic cables and related infrastructure in the SF Bay (Figure 1.3-2).

1.7.2 Other Agencies

In addition to the CSLC, the Project is subject to the review and approval of other federal, state, and local entities with statutory or regulatory jurisdiction over various aspects of the Project (Table 1.7-1). The Applicant has been proactively and regularly coordinating with the relevant regulatory permitting agencies.

Here are some major coordination efforts:

- In 2021, initial agency outreach during Project scoping occurred with informal outreach to the U.S. Army Corps of Engineers (USACE), National Oceanic and Atmospheric Administration (NOAA) Fisheries, U.S. Coast Guard (USCG), CSLC, and San Francisco Bay Conservation and Development Commission (BCDC) to introduce the Project concept and assist with Project site selection.
- On September 9, 2021, an interagency meeting introduced the Project after the fiber optic cables' route was selected to the USACE, San Francisco Regional Water Quality Control Board, CSLC, California Department of Fish and Wildlife (CDFW), U.S. Environmental Protection Agency (USEPA), California Public Utilities Commission, NOAA Fisheries, and BCDC.

- In October 2022, a Project update was provided to the BCDC and the USACE staff.
- On February 23, 2023, an interagency meeting provided Project description updates to the agency staff contacts. All permits required for the Project would be obtained before starting any Project-related activities.

Table 1.7-1. Anticipated Agencies with Review or Approval over Project Activities

Permitting Agency	Anticipated Approvals or Regulatory Requirements
State	
California State Lands Commission (CSLC)	CEQA Lead Agency General Lease – Right-of-Way Use
California Department of Transportation (Caltrans)	Encroachment Permit
San Francisco Bay Regional Water Quality Control Board	Clean Water Act Section 401 Water Quality Certification
San Francisco Bay Conservation and Development Commission (BCDC)	Administrative Permit (Minor Permit) and Federal Consistency
Native American Heritage Commission (NAHC)	Tribal Consultation
State Historic Preservation Office	Section 106 of the National Historic Preservation Act
Federal	
U.S. Army Corps of Engineers - San Francisco District (USACE)	Clean Water Act Section 404 (under Nationwide Permit No. 57)
U.S. Coast Guard (USCG)	Notice to Mariners
U.S. Fish and Wildlife Service (USFWS)	Section 7 Consultation (Federal Endangered Species Act [FESA])
NOAA Fisheries	Section 7 Consultation (FESA) and Marine Mammal Protection Act consultation
Local	
City of San Leandro	Easement or Access Agreement
City of Brisbane	Easement or Access Agreement

2.0 PROJECT DESCRIPTION

The Bandwidth Infrastructure Group, LLC (Applicant) proposes the San Francisco Bay Fiber Optic Cables Project (Project) to construct and install two nonlinear, parallel, and close-together fiber optic cables and related telecommunication infrastructure onshore (terrestrial) and across the San Francisco Bay (SF Bay) (marine). The fiber optic cables would be installed between the cable landing site in Brisbane in San Mateo County (western SF Bay) to the cable landing site in San Leandro in Alameda County (eastern SF Bay) within California (Figure 2.1-1). The fiber optic cables would be housed in a new 8-inch (20-centimeter) diameter high-density polyethylene (HDPE) conduit (a tube or pipe for protecting wiring) that would be installed on the western SF Bay side and another one on the eastern SF Bay side using the horizontal directional drilling (HDD) method. HDD is a trenchless construction method used to install pipes underground without disturbing the ground surface. The HDPE conduit on the western SF Bay side would be installed starting from land at the cable landing site, going under the shoreline, and exiting at approximately 2,200 feet (671 meters) into the SF Bay (Figures 2.1-1 and 1.3-3). The HDPE conduit on the eastern SF Bay side would also be installed starting from land at the cable landing site, going under the shoreline, and exiting approximately 25 feet (8 meters) from the shore into the SF Bay (Figures 2.1-1 and 1.3-4).

Once the HDPE conduits are installed, the fiber optic cables would be pulled through them from the western side of the SF Bay to the eastern side of the SF Bay. The fiber optic cables would be buried between 3 to 6 feet (1 to 2 meters) deep using a jetting sled from the ends of the HDPE exit points on each side of the SF Bay and across the SF Bay floor.

This Project would connect into a partially complete terrestrial cable network, with independent utility from the Project analyzed in this MND.[5] The partially complete terrestrial cable network extends throughout the SF Bay region and would connect to the Project at the landing vaults. The Project would improve capacity and speed of telecommunication data connectedness within the SF Bay Area, and its surrounding region, by adding a physical fiber optic cable

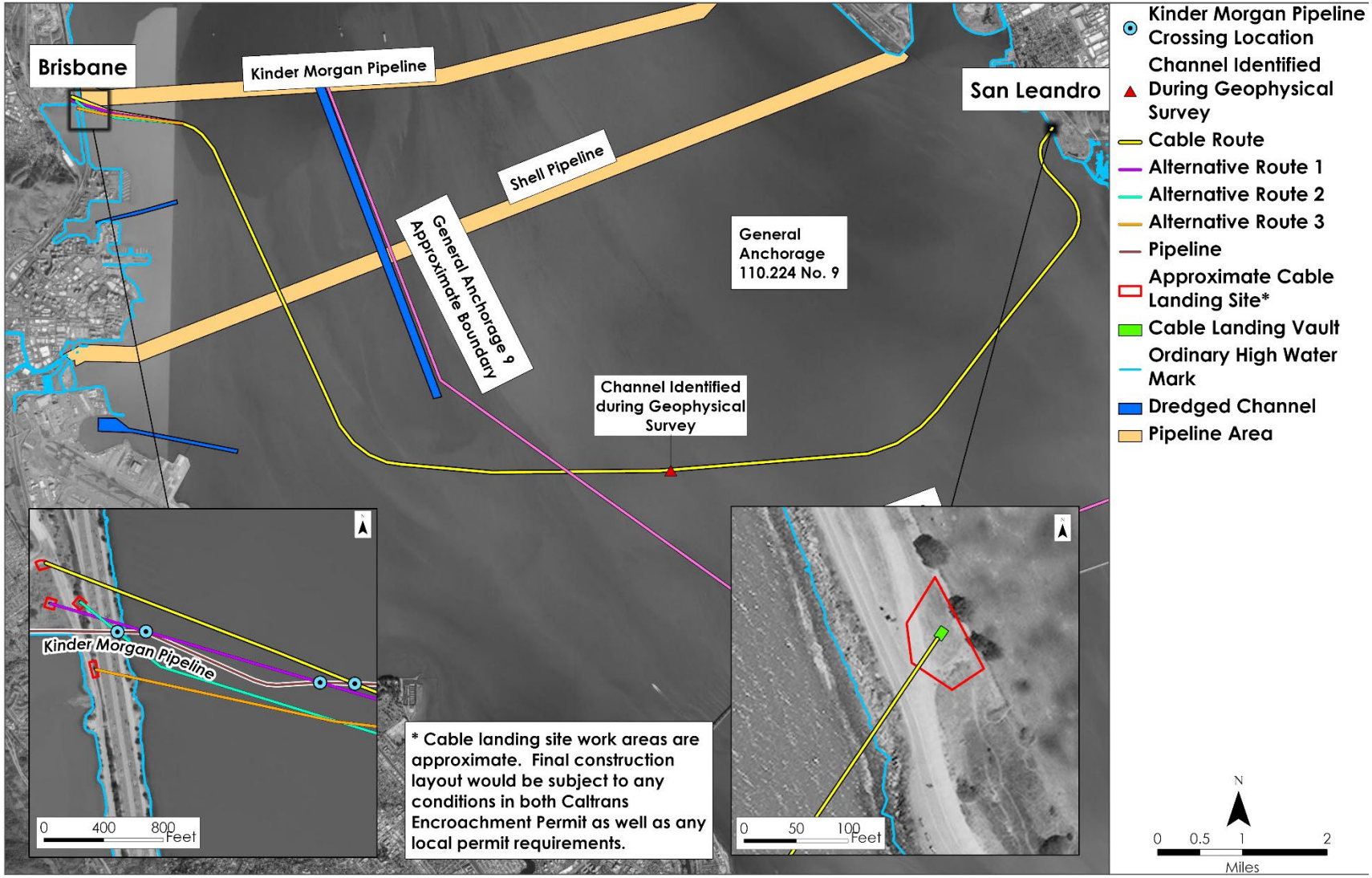
[5] The Applicant (Corporate ID U7336C) will complete this terrestrial network project under California Public Utilities Commission (CPUC) authorizations. The CPUC has issued a Notice to Proceed for the network connection at the eastern landing vault in San Leandro. A Notice to Proceed is anticipated from the CPUC in April 2023 for the network connection to the western landing vault in Brisbane.

connection across the SF Bay to the terrestrial cable network (Figures ES-2, ES-3, and ES-4).

2.1 PROJECT WORK AREAS

Project work areas would be on land and in the SF Bay between Brisbane and San Leandro (Figure 2.1-1). Using the HDD method instead of other non-HDD methods to install the HDPE conduits (extending from the terrestrial habitat into the marine habitat) would help avoid possible environmental impacts on terrestrial habitats (except for the landing sites), roads or trails, shoreline habitats, and marine habitat in the nearshore (except for the HDD exit points).

Figure 2.1-1. Project Work Areas



2.1.1 Summary of Terrestrial Project Areas

Two parallel and nonlinear fiber optic cables would have two landing sites, one on each side of the SF Bay. The cable landing sites would be comprised of temporary staging and construction areas, permanent landing vaults, and subsurface HDPE conduits up to the ordinary high-water mark (OHWM) on each side of the SF Bay (Figure 2.1-1). The State Lands Commission (CSLC) jurisdiction generally includes the portion of the Project below the OHWM. Project components may be within the SF Bay but outside of CSLC jurisdiction (e.g., on legislatively granted tide and submerged lands or on tidelands lots sold to private parties in the 1800s) or on land above the OHWM.

There would be a total of four potential landing sites for the western landing due to the local utilities' complexities, road infrastructure, and multiple landowners. The following paragraphs describe the Proposed Western Cable Landing Site along the Bay Trail[6] and the three additional alternative sites (total of four sites on Figure 2.1-1):

- **Proposed Western Cable Landing Site** in Brisbane would be at coordinates 37°41'22.09" N and 122°23'30.59" W. This site would be along the Bay Trail at the southern corner of Lagoon Road and Sierra Point Parkway in Brisbane in an unoccupied area within Assessor's parcel number (APN) 005-162-430 (Figure 2.1-2). The planned HDD exit point would be 2,519 feet (768 meters) from the landing vault and would exit in approximately 5 feet (1.5 meters) water depth in the SF Bay.

  This site would be located within a large parcel where the former Brisbane Landfill was located before ending operation in the 1960s; however, all landfill material at the municipal Brisbane Landfill facility is located approximately 200 feet (61 meters) northwest of the nearest landing site, the Proposed Western Cable Landing Site, north of Lagoon Road.

[6] Please see the Bay Trail map at https://mtc.ca.gov/operations/regional-trails-parks/san-francisco-bay-trail/bay-trail-navigational-map.

Figure 2.1-2. Brisbane: Looking West Across the Proposed Western Cable Landing Site

- **Alternative 1** in Brisbane would be at approximate coordinates of 37°41'19.42" N and 122°23'30.15" W, located 270 feet due south of the southern corner of Lagoon Road and Sierra Point Parkway in Brisbane. This alternative is in an unoccupied area within APN 005-162-430 (Figure 2.1-3). The planned HDD exit point would be 2,731 feet (832 meters) from the landing vault and would exit in approximately 5 feet (1.5 meters) water depth in the SF Bay.

  This site would be in the former landfill site that ended operation in the 1960s as explained above in the Proposed Western Cable Landing Site. All landfill material at this site is located approximately 200 feet (61 meters) from the nearest landing site.

Figure 2.1-3. Brisbane: Looking East Across the Alternative 1 Landing Site

- **Alternative 2** in Brisbane would be at approximate coordinates of 37°41'19.55" N and 122°23'27.62" W, located on a narrow parcel of land, within the Highway 101 right-of-way, between the Bayshore Freeway and Sierra Point Parkway in Brisbane (Figure 2.1-4). The planned HDD exit point would be 686 feet (209 meters) from the landing vault and would exit in approximately 5 feet (1.5 meters) water depth in the SF Bay.

Figure 2.1-4. Brisbane: Looking East Across the Alternative 2 Landing Site

- **Alternative 3** in Brisbane would be at coordinates 37'41'15"11" N and 122'23'26"23" W, located on a narrow parcel of land in between the Bayshore Freeway and Sierra Point Parkway in Brisbane (Figure 2.1-5). The planned HDD exit point would be 1,640 feet (500 meters) from the landing vault and would exit in approximately 5 feet (1.5 meters) water depth in the SF Bay.

Figure 2.1-5. Brisbane: Looking West Across the Alternative 3 Landing Site

The **eastern cable landing site** would be along the Bay Trail at approximate coordinates of 37°41'14.48" N and 122°10'50.82" W, west of the Tony Lema Golf Course and south of the Marina Dog Park within an unoccupied area within APN 080G-0910-001-06 (Figure 2.1-1). An approximately 0.1-acre (0.04-hectare) area would be used (Figure 2.1-6). The planned HDD exit point would be approximately 150 to 325 feet (50 to 100 meters) from the eastern landing vault and would exit in the SF Bay at a water depth of 0 foot (0 meter) at mean lower low tide, which would be buried under 5 feet (1.5 meters) of nearshore sediment during and after installation except when exposed to pull the fiber optic cables through.

Figure 2.1-6. San Leandro: Looking East Across the Eastern Cable Landing Site

2.1.2 Summary of Marine Project Area

The marine Project area comprises the two parallel and nonlinear fiber optic cables' route across the SF Bay from the OHWM at the Brisbane western cable landing site to the OHWM at the San Leandro eastern cable landing site (Figure 2.1-1). The proposed route is U-shaped, rather than straight from west to east across the SF Bay, to avoid marine anchorage and dredge channels within the SF Bay.

A marine geophysical survey of the proposed fiber optic cables' route was conducted in summer 2022 (A2Sea 2022). During the survey, sediment grab samples and core samples were also collected. The bathymetry data from this survey was used to map the SF Bay floor topography and assess the SF Bay floor make-up, which consisted of clay, clay with shells, clay with sand, sandy clay with shells, and clayey sand with shells[7]. This information is being used to propose the final cables' alignment for the best burial success. The fiber optic cables would be buried approximately 3 to 6 feet deep (1 to 2 meters) in the SF Bay (Figure 2.1-1).

Within the CSLC's jurisdiction, the fiber optic cables would be installed in soft-bottom substrates. No hard substrate was identified in the route survey (A2Sea 2022). However, if hard substrate is identified during installation, it would be avoided. If hard substrate is identified during burial, the final alignment can be routed around the hard substrate using available slack in the fiber optic cables.

2.1.2.1 Marine Hazards in the Project Area

The following marine hazards on Figure 2.1-1 would be in the Project work areas:

<u>General Anchorage 9</u>

The eastern portion of the fiber optic cables' route would pass through "Anchorage 9" which is a large, federally designated anchorage area within the SF Bay (Figure 2.1-1). Once the fiber optic cables are installed, they would be charted by the National Oceanic and Atmospheric Administration (NOAA) and the USCG based on Applicant-provided information including: 1) as-built plans in writing (Route Position List) and alignment or strip charts depicting bathymetry, seafloor substrates or features, seabed profile, depth of cable burial below the seafloor, and cable tension; and 2) as-built plans overlaid on NOAA navigation charts.

[7] "Clay" is sediment composed of 75 percent or more (the majority) clay with low percentages of sand and silt. "Clay with shells" is sediment comprised of 75 percent or more clay and containing shell fragments. "Clay with sand" is sediment comprised of 75 percent or less clay and more sand than silt. "Sandy clay with shells" is sediment comprised of 75 percent or less clay, more sand than silt, and contains shell fragments. "Clayey sand with shells" is sediment comprised of 75 percent or less sand, more clay than silt, and contains shell fragments.

If any vessels were to anchor over the fiber optic cables (even though this is not expected), the fiber optic cables should be protected from potential entanglement or breaking by unexpected anchors since they would be buried deeper than typical anchor penetration depth (A2Sea 2022). Another potential hazard to the fiber optic cables is anchors dragging at the bottom of the SF Bay. Shallow sediment scarring, or drag marks, were identified along the fiber optic cables' path during the geophysical survey for the Project. These scarring patterns are thought to be caused by anchor drags. Even though anchor penetration or anchor drags are potential risks to the fiber optic cables, any anchoring over the fiber optic cables is perceived to be a low-risk threat based on the planned burial depth and survey data showing that scarring, likely caused by anchor drags, did not penetrate deeply (A2Sea 2022).

Dredged Channel Identified During Geophysical Survey

The geophysical survey identified a historically dredged section of the SF Bay 3,064 feet (934 meters) wide and between 15.4 and 23.3 feet (4.7 and 7.1 meters) deep shown as "Channel Identified During Geophysical Survey" on Figure 2.1-1 (A2Sea 2022). There are no records of dredging activities within this identified area for the past 10 years. Since this is not a U.S. Army Corps of Engineers-designated channel, it is assumed that this is a historical dredge channel and is no longer maintained. The fiber optic cables would be buried approximately 3 to 6 feet (1 to 2 meters) deep across this section of the fiber optic cables' route.

Existing Kinder Morgan Pipelines and Shell Pipeline Crossings

The proposed Project would cross the following three existing pipelines in the marine environment within the SF Bay as shown on Figure 2.1-1:

- Two Kinder Morgan pipelines (bundled into one trench shown on Figure 2.1-1 as Kinder Morgan Pipeline) close to the western shore
- One abandoned Shell pipeline close to the western shore (A2Sea 2022)

International standards for crossing fiber optic cables and pipelines, published by the International Cable Protection Committee, were followed in designing the Project's fiber optic cables' crossing options (ICPC 2021).

The Kinder Morgan pipelines' alignment was verified during a comprehensive cable route survey, and both horizontal and vertical pipeline positions were confirmed via a combination of magnetometer and sub-bottom profiler (A2Sea

2022). Pipeline horizontal and vertical alignment would be re-verified prior to starting any installation activities. The following portions of the Project cable routes would cross the existing Kinder Morgan pipelines in the marine environment (Figure 2.1-1):

- Proposed western cable route would cross the Kinder Morgan pipeline in one place in the marine environment (037° 41' 14.54 N, 122° 23' 04.88 W). There is no evidence of pipeline exposure at the proposed western cable route crossing location. The Kinder Morgan pipelines are buried approximately 5.25 to 8 feet (1.6 to 2.5 meters) below the bay floor (A2Sea 2022).
- Alternative 1 cable route would cross the Kinder Morgan pipeline in two places in the marine environment (037° 41'17.71 N, 122° 23' 22.24 W and 037° 41' 14.63 N, 122° 23' 07.95 W). Alternative 1 cable route has pipeline protection and rock dumping at the first crossing location in the shore zone, and there is no evidence of pipeline exposure at the second proposed crossing location farther east of the shore zone. The Kinder Morgan pipelines are buried approximately 6.6 to 8.2 feet (2.0 to 2.3 meters) below the seabed (A2Sea 2022).
- Alternative 2 route would cross the Kinder Morgan pipelines in the terrestrial environment (037°'41'17.64 N, 122'23'24.52 W). Alternative 2 cable route does not cross the Kinder Morgan pipelines in the marine environment. The cable route crosses the Kinder Morgan pipelines beneath U.S. Highway 101.
- Alternative 3 route would not cross the Kinder Morgan pipelines in the marine or terrestrial environments.

The HDD method would be used wherever the Kinder Morgan pipelines would be crossed in the marine or terrestrial environments. During HDD crossing, in the marine or terrestrial environments, there would be approximately 16 to 32 feet (5 to 10 meters) of vertical separation between the HDPE conduit and the Kinder Morgan pipelines (A2sea 2022). The HDD exit point would be located approximately 250 feet (76 meters) or greater beyond the crossing location. Diver burial techniques would be used at the marine HDD exit location, and at no point would the jetting sled cross over the pipeline or be placed within 250 feet (76 meters) of the pipeline crossing location.

The Shell pipeline would be crossed in the marine environment (Figure 2.1-1). At the Shell pipeline, a surface-laid crossing above the pipeline in the marine environment is anticipated. The Shell pipeline alignment was verified during a

comprehensive cable route survey, and both horizontal and vertical pipeline positions were confirmed via a combination of magnetometer and sub-bottom profiler. The Shell pipeline is buried approximately 4 to 5.25 feet (1.2 to 1.6 meters) below the SF Bay floor (A2Sea 2022). No evidence of pipeline exposure at the proposed crossing location was present. Pipeline horizontal and vertical alignment will be re-verified before starting any installation work.

The fiber optic cable would be surface-laid beginning approximately 165 feet (50 meters) on either side of the Shell pipeline and protected with Uraduct®[8] as agreed after discussions with Shell. A surface-laid crossing would have up to 5.25 feet (1.6 meters) of physical separation between the fiber optic cables and the Shell pipeline. This approximately 330 feet (100 meters) of surface-laid fiber optic cable could also be buried in whole or in part if requested by Shell. However, any burial would maintain at least 18 inches (0.5 meters) of separation between the fiber optic cables and the pipeline to meet CSLC's requirements.

2.2 PROJECT COMPONENTS

Key Project components are described below:

- **Two Cable Landing Sites**: The cable landing sites would be occupied from approximately 2 weeks before starting construction or installation work until approximately 2 weeks after construction or installation work ends. Equipment and materials such as backhoes, HDPE conduits, and HDD equipment needed to install the terrestrial portions of the Project would be brought to the cable landing sites, operated from there, and stored there (Figures 1.3-3 and 1.3-4).

  The western cable landing site in Brisbane would be accessed via Lagoon Road and Sierra Point Parkway. The eastern cable landing site in San Leandro would be accessed via the paved Bay Trail, thereby avoiding impacts to undisturbed habitats. Each landing site would be used for staging, operation, and storage of the HDD rig and associated equipment, along with a crane transported to the sites on the trucks delivering equipment and supplies, which will not be stored on-site. The crane would be used to offload equipment and supplies only.

- **One Western HDPE Conduit**: On the western side, a single 8-inch (20-centimeter) diameter HDPE conduit would be installed from an entry

[8] Uraduct® is a cable protection system designed and developed to protect subsea fiber optic cables from abrasion and impact. Uraduct® is made from abrasion-resistant polyurethane.

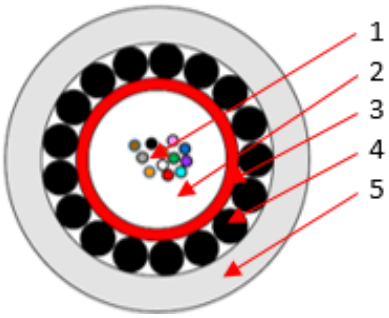
pit for both fiber optic cables to be pulled through. The HDPE conduit would be between 686 and 2,731 feet (209 to 832 meters) long, depending on the route selected and final Kinder Morgan pipeline crossing agreement, and would exit in approximately 5 feet (1.5 meters) water depth. The marine end of the HDPE conduit would remain buried during installation and operation and would only be exposed to pull the fiber optic cables into the HDPE conduit during landing. The western HDPE conduit would be installed from the bottom of the landing vault, approximately 6.5 feet (2 meters) below ground surface, toward the SF Bay at a possible maximum depth of 66 feet (20 meters) under the cable landing site and shoreline using the HDD method to the exit point within SF Bay.

- **One Eastern HDPE Conduit**: On the eastern side, a single 8-inch (20-centimeter) diameter HDPE conduit would be installed using the HDD method from the planned location of the landing vault for both fiber optic cables to be pulled through. The eastern HDPE conduit would be approximately 150 to 325 feet (50 to 100 meters) long and would exit at a water depth of 0 foot (0 meter) at mean lower low tide, which would be buried under 5 feet (1.5 meters) of nearshore sediment during and after installation except when exposed to pull the fiber optic cables through. The eastern HDPE conduit would be installed seaward of the landing vault at a minimum depth of 6.5 feet (2 meters) under the cable landing site and shoreline using the HDD method to the exit point within SF Bay.
- **Two Landing Vaults**: There would be two pre-cast concrete landing vaults: one at the western cable landing site and one at the eastern cable landing site. Each landing vault (12 feet long, 9 feet wide, and 10 feet deep [3.7 meters long, 2.7 meters wide, and 3 meters deep]) would be installed at each cable landing site (western and eastern) into the HDD entry pit following completion of drilling activities. Once installation is complete, the only component of the landing vault that would be exposed is a 36-inch (91-centimeter) diameter, cast-iron landing vault cover at grade level. Alternatively, if a landing vault with twin cover access is installed, both 2 feet by 2 feet (0.6 meter by 0.6 meter) covers would be exposed at grade level.
- **Two Fiber Optic Cables**: Once the HDPE conduits are installed as explained above, then a portion of the bundled fiber optic cables would be pulled through the conduits and housed in them. The bundled cables would be pulled from the SF Bay through the HDPE conduit and into the landing vault at each landing site. The remainder of the fiber optic cables

would be buried in the SF Bay floor using a cable-lay vessel (with the help of two anchor-lay vessels) and jetting sled and would not be in conduit. A jetting sled is a burial tool that would be deployed by the cable-lay vessel. The fiber optic cable design includes armoring (Figure 2.2-1), and that, along with a fiber optic cable burial depth of between 3 and 6 feet (1 and 2 meters), would be expected to provide protection from sedimentary conditions, such as scour encountered during installation, and from potential interactions with fishing gear or anchors; that penetration depth would be below most fishing gear and anchors (Maushake 2013; Hiddink et al. 2017).

The single-armored fiber optic cable design would be just over 2 inches (5 centimeters) in diameter and would have a central polyethylene (PE) filler with six helically wound lightweight fiber cores (Figure 2.2-1). The fiber cores would be packed with an outer PE filler and would be covered with 54 galvanized wires and an outer layer of tar-soaked nylon yarn. This single-armored fiber optic cable design would be used in the SF Bay.

Figure 2.2-1. Single-Armored Fiber Optic Cable Design



Notes: 1 = Optical fibers; 2 = Protective core; 3 = Copper sheath; 4 = Steel wires; 5 = Outer protection or armor layer

2.3 PROJECT INSTALLATION METHODS

2.3.1 Horizontal Directional Drilling

Horizontal directional drilling is a method of installing an underground conduit along a prescribed bore path using a surface-launched drilling rig. Initially, the HDD rig drills a relatively small diameter pilot hole along the drilling path and then enlarges or "reams" the pilot hole to a larger diameter bore hole that can accommodate the final conduit. The enlargement or opening of the pilot hole is accomplished using a "back reamer" that is pulled back along the pilot hole

path by the HDD rig after the pilot hole is drilled. The permanent conduit can be installed concurrently with enlarging (reaming) the pilot hole.

Using a trenchless HDD method, instead of trenching to install the HDPE conduits (extending from the terrestrial habitat into the marine habitat), would help avoid possible environmental impacts on terrestrial habitats (except for the landing sites), roads or trails, shoreline habitats, and marine habitat in the nearshore (except for the HDD exit points). The same process would be completed at both the western and eastern cable landing sites before installing the fiber optic cables.

Before HDD drilling activities begin, a temporary tracking wire would be installed between the HDD entry point on shore and the HDD exit point in the SF Bay, as much as possible,[9] to help guide the HDD installation. A tracking wire would not be installed across roadways, including Highway 101.

The tracking wire in the marine region would be installed using 8 to12 concrete eco-blocks[10] to help keep the tracking wire anchored on the SF Bay floor. The eco-blocks and tracking wire would be installed at the same time the drilling equipment would be rigged up in the cable landing site. The two anchor support vessels (details in Section 2.3.1.5) would be used to help place these eco-blocks on the SF Bay floor along the tracking wire's alignment. Each eco-block would be 2 feet by 2 feet by 2 feet (0.6 by 0.6 by 0.6 meter) and would be attached to a galvanized wire and buoy ball so it could be identified from the surface. These eco-blocks would be spaced approximately 300 feet (91.4 meters) apart and would avoid the Kinder Morgan pipeline identified along the fiber optic cables' route (Figure 2.1-1).

The tracking wire would be strung using a dive boat (details in Section 2.3.1.5) and dive crew from the entry pit on shore, through the eco-blocks, around the last eco-block in the SF Bay, and then back to the shore again. The tracking wire

[9] The tracking wire is a redundant tracking tool used by the HDD company to identify the drill position relative to the proposed route in addition to the tracking equipment within the drill head. If the tracking wire cannot be installed (e.g., on Highway 101), the drill head would use a Falcon HDD locating system to provide tracking information.

[10] An eco-block is a concrete block generally made from recycled concrete that has a hole in the center through which a tracking wire can be passed and held in place. The eco-blocks would be temporarily used to hold the tracking wire during HDD activities. Once the HDD is complete, these would be removed from the SF Bay.

would end up being approximately 450 feet (137 meters) to 4,500 feet (1,372 meters) on the western side of the SF Bay (depending on the western cable landing site alternative selected, see Figure 1.3-3) and approximately 200 feet (61 meters) on the eastern side of the SF Bay (Figure 1.3-4).

Each cable landing site, on the west and east sides of the SF Bay, would be approximately 0.1-acre (0.04-hectare) area, including equipment and material storage areas. An entry pit for the steel HDD drill string would be excavated, with the soil placed at another location in the cable landing site, covered, then used to fill in the entry pit around the landing vaults after installation is complete. Each entry pit would measure approximately 5 feet long, 4 feet wide, and 5 feet deep (1.5 meters long, 1.25 meters wide, and 1.5 meters deep), and would be excavated in line with the HDD rig to initiate the pilot hole. The purpose of the entry pit would be to capture and contain the returning drilling fluid[11] from the HDD work. A slurry sump pump would be set in place next to the entry pit to pump out the returning fluid in containment bins so they can be taken to the on-site recycling unit for further treatment, adjustment, and reuse. A containment bin at the on-site recycling unit would be used to capture the material pumped from the hole being drilled that is unable to be reused. As the bin fills with material, the material would be loaded into a dump truck, removed from the site, and disposed of off-site per industry standards.

The steel drill string would be advanced in 10-foot-long (3-meter-long) sections through the 6-inch pilot bore hole as created. The HDD rig would occupy the site adjacent to the entry pit, advancing the drill string into the ground at an angle (Figures 1.3-3 and 1.3-4). Once the drill string reaches the desired depth, the angle would level out as the rig would continue to push the drill string horizontally through the ground. Water, instead of drilling fluid, would be used to drill the last 100 to 130 feet (30 to 40 meters) of the drilling to reduce the chance of drilling fluid entering the marine environment when the drill head exits the sediment in the SF Bay floor. Adequate drilling fluid volumes would be calculated by the HDD operators so that water would have displaced all the drilling fluid when the drill head exits the SF Bay floor. Ground conditions and sediment type, mainly clay in this area, were sampled during the geophysical survey to inform this transition from drilling fluid to water during the HDD

[11] Drilling fluid is a mixture of clay and other chemicals with water that is circulated around the drill bit to lubricate and cool the bit, flush cuttings to the surface, and plaster the side of the well to prevent cave-ins.

operation. See Section 2.1 for distances from the entry pits to the exit locations and water depths.

Before the drill head exits the SF Bay floor, an approximately 10-foot-long, 10-foot-wide, and 10-foot-deep (3-meter-long, 3-meter-wide, and 3-meter-deep) preconstructed shoring box or plastic dam would be placed in the SF Bay by the support dive crew. The support dive crew and related equipment would be based on a shallow-draft barge[12] that would be used later to install the HDPE conduit and the fiber optic cable. The tracking wire and drill head locating system would be used to confirm siting of the preconstructed shoring box or plastic dam at the planned HDD exit point location within the SF Bay. The tracking wire and drill head locating system allows the HDD crew to track the path of the HDD head. During placement of the shoring box or plastic dam, water would be pumped from within the shoring box or plastic dam into an industrial-grade vertical tank on the shallow-draft barge for off-site disposal at a permitted landfill site. At this time, and before the HDPE conduit pullback, the HDPE conduit would be stored in 40-foot (12-meter) segments on the same shallow-draft barge used for the cable installation. The HDPE conduit would be produced by fusing the HDPE pipes together using a fusion machine on the barge and fed manually to the HDD exit pit during the pullback.

Once the drill head exits the SF Bay floor, the support dive crew would then remove excess sediment from around the end of the drill head using their hands or other small tools (e.g., a hand trowel or wire brush), remove the drill head by hand, and then install a 12-inch-diameter back reamer and a swivel to attach to the 8-inch-diameter HDPE conduit. The HDPE conduit has an attached "head" that connects to the swivel. The back reamer is used to enlarge the pilot bore hole to the anticipated final bore hole size. Bore hole reaming and the HDPE conduit pullback would be conducted concurrently. The HDD rig would then pull through the drill string, back reamer, swivel, and the attached HDPE conduit while reaming the pilot borehole toward the entry pit. Prior to the marine end of the HDPE conduit being pulled below the existing bay floor, a flapper valve or a cap would be added with a buoy attached to the marine end of the HDPE conduit. The pullback would continue until the terrestrial end of the HDPE conduit exits the entry pit and the marine end of the HDPE conduit is at least 5 feet below the SF Bay floor. At this time, the shoring box or plastic dam, eco-blocks, and tracking wire would be removed.

[12] See Section 2.3.1.5 for additional details on vessels.

Once the HDPE conduit is installed, the landing vaults would be installed at the terrestrial end of the HDPE conduits.

2.3.1.1 Horizontal Directional Drilling Rig Drill Heads

The HDD would be guided by a drill head fitted with a steering tool, using magnetometers and inertial devices to track the direction of advance (horizontally and vertically) and the absolute location. The following two types of drill heads could be used for the Project, depending on geologic conditions:

- **Spud Jet**: Spud jets force the drilling fluid through the jet bit to erode the earth material and create the bore hole into which the HDPE conduit would be inserted. This type of drill head is used in soft soils such as sands, silts, and clays, which are the expected composition of material to be encountered during the drilling operation based on the shallow water geophysical survey report provided (A2Sea 2022).
- **In-hole Mud Motor**: An in-hole mud motor would use drilling fluids to rotate a drill head though hard rock such as limestone, sandstone, and granite. This type of head would be used if such conditions were encountered but are not expected in the SF Bay based on the shallow geophysical survey carried out (A2Sea 2022).

2.3.1.2 Horizontal Directional Drilling Fluid

The HDD drilling fluid, a non-toxic, inert material, typically a solution of bentonite clay and water, would be circulated into each bore hole to prevent them from caving in and collapsing. HDD drilling fluid would coat the bore hole walls to minimize fluid losses to permeable rock and soil types. Drilling fluid would also serve as a lubricant for the drill head and carry the cuttings (i.e., pieces of drilled rock) back to the entry pit, where the cuttings (rock, sand, and other materials) would be removed so the drilling fluid could be recirculated back into the bore hole. Drilling fluid would be used for drilling the entire bore hole except for the final approximately 100 to 130 feet (30 to 40 meters), where the drilling fluid would be changed to water. Changing to water would help minimize releasing HDD drilling fluid onto the SF Bay floor when the drill head would exit at the HDD exit points in SF Bay (Figures 1.3-3 and 1.3-4).

The primary clay sediment in this area would allow the bore hole to maintain its form with only water (A2Sea 2022). If any drilling fluid is released during the HDD drill head exit into SF Bay, the fluid would be collected behind the preconstructed shoring box or plastic dam, and then it would be pumped into

an industrial-grade vertical tank on the barge to be disposed of at a permitted landfill. Spent drilling fluid, except for that lost to the surrounding subsurface material, and cuttings would also be temporarily collected at the cable landing sites and similarly disposed of at a permitted landfill.

Given the variety of geologic conditions that may be encountered, it is possible that some of the HDD drilling fluid may be absorbed into fractures in the surrounding subsurface material. In cases where the fracture is lateral and subterranean, lost HDD drilling fluid would not rise to the surface. In other cases, HDD drilling fluid may reach the surface (e.g., if the fracture comes close enough to the surface that the pressure causes a release of drilling fluid above the SF Bay floor).

The potential for substantial releases of HDD drilling fluid into the marine and terrestrial environment would be minimized through these measures:

- Before drilling, the geologic characteristics of the substrate would be evaluated by a deeper geotechnical survey specific for HDD to determine the most appropriate route for the HDPE conduit installations.
- During drilling, the potential for losing drilling fluid to the substrate would be assessed by monitoring the volume of the drilling fluid returning to the entry pit and monitoring for changes in the drilling fluid's pressure.

2.3.1.3 Restoration of Terrestrial Surfaces

The cable landing sites are located in terrestrial areas (Figures 1.3-3 and 1.3-4) with a history of disturbance (e.g., Highway 101 right-of-way). The cable landing sites would be used for temporarily storing equipment and construction related to the HDD operation to install the HDPE conduits and landing vaults. Any topsoil removed for staging, HDD activities, and installation of each landing vault would be stockpiled, covered, and used to backfill the area after construction. Any disturbed areas around the landing vaults in the cable landing sites would be restored to pre-Project conditions through minor grading to restore original contours and the installation of erosion control devices (e.g., geotextiles, straw mulch, and hydroseeding) at locations susceptible to erosion as directed by the Stormwater Pollution Prevention Plan (**MM HYD-1**). The last step would be native seeding, mulching, and fertilizing to return the site to pre-construction conditions.

2.3.1.4 Fiber Optic Cables Installation Methods

Installation of the fiber optic cables across the SF Bay would involve a marine barge (i.e., a barge without engines) with four to six anchors as the primary

cable-lay vessel, two anchor-lay vessels to support anchor movement, two guard vessels to help other marine users avoid the Project, a crew transfer vessel, and a dive support boat. The following sections explain the typical marine construction methods that would be used at different distances along the cables' route. Before work within the SF Bay waters would occur, an Advanced Local Notice to Mariners would be submitted to the United States Coast Guard (**MM REC-1**) to notify mariners of Project vessels. Additionally, all anchoring would be conducted as described in a Marine Anchor Plan (**MM TRA-1**), and the anchor drop zones would avoid any existing utilities.

Dive Support Boat

A 20- to 75-foot-long (6- to 22-meter) shallow water dive support boat would be used within about 50 feet (15 meters) of the western HDD exit point using anchor mooring with an anchor spread of up to 175 feet (53 meters). A secondary anchor-lay vessel may be required to assist the dive support boat to set and retrieve anchors, and a crew transfer vessel would be used to shuttle crew between the work vessels and the shore. All vessels would be hired locally in California to the extend feasible. All anchors would be set and retrieved vertically to avoid dragging them across the bay floor. All anchoring would be conducted as described in a Marine Anchor Plan (**MM TRA-1**), and the anchor drop zones would avoid any existing utilities.

Cable-Lay Vessel

Due to the shallow waters of the SF Bay, a shallow-draft barge with four to six anchors would be mobilized to install the fiber optic cables, with two smaller (100- to 200-foot [30- to 61-meter]) anchor-lay vessels providing anchor placement support. The barge would be approximately 220 feet long by 75 feet wide (67 meters long by 22 meters wide), although the actual vessel has not been selected at the time of writing.

The initial plan is to work first on the two cable landing sites with the barge and then lay the fiber optic cables along the fiber optic cables' route from the western cable landing toward the eastern cable landing. This direction may be reversed during the detailed planning phase.

Western HDD Exit Point in the SF Bay

The barge would be anchored in place as close as possible to the HDD exit point (Figure 1.3-3). After the HDD operation and HDPE conduit installation, the

barge would be loaded with the fiber optic cable and related equipment to support fiber optic cable installation. Due to the shallow nature of the SF Bay, it is possible, but not intended, that the barge may be grounded (i.e., resting on the SF Bay floor) when close to the landing site during low tide (see Section 3.4, Biological Resources). Once the installation barge has been set up at the predetermined position, the following would occur:

- Divers using hand jets or other hand tools would remove the sediment surrounding the buried HDPE conduit to expose the last 5 feet (1.5 meters) below the SF Bay floor. See Section 2.3.1, Horizontal Directional Drilling, for HDPE conduit installation.
- Divers would remove the flapper valve or end cap to expose the end of the drill string.
- Divers would add a swivel to the end of the drill string and attach the bundled cables to the swivel.
- The HDD rig positioned landward of the landing vault would then pull the drill string and bundled fiber optic cables through the HDPE conduit from the HDD exit point to the landing vault onshore. The fiber optic cables would be fed from the barge.
- Divers would monitor the fiber optic cables being pulled through the HDD exit point.
- The fiber optic cable would then be anchored to the landing vault wall (SF Bay facing). Ultimately, the fiber optic cable would be spliced into a separate project's fiber optic project at the landing vault.
- Once the fiber optic cables are secured in the landing vault, the cable-lay vessel would begin to install the fiber optic cables toward the eastern cable landing site.
- Divers would use hand-jetting techniques to bury the fiber optic cables and the end of the HDPE conduit in the vicinity of the HDD exit point, up to the point where the jetting sled can be deployed to start burying the fiber optic cables on the SF Bay floor. The HDPE conduit would be reburied to at least 5 feet (1.5 meters) below the SF Bay floor (Section 2.3.1).

Eastern HDD Exit Point in the SF Bay

The barge would lay fiber optic cables along the proposed route across the SF Bay as close to the eastern HDD exit point as possible within the intertidal zone (Figure 1.3-4). Due to the shallow nature of the SF Bay, especially at the eastern

HDD exit point, the barge would be grounded (i.e., resting on the bay floor) at low tide at several locations when close to the eastern HDD exit point. Once the barge has been set up at the predetermined position, the following would occur:

- Divers using hand jets would remove the sediment surrounding the buried HDPE conduit to expose the last 5 feet (1.5 meters) below the SF Bay floor.
- Divers would remove the flapper valve or end cap.
- The HDD rig, positioned landward of the landing vault, would run drill string through the installed HDPE conduit to the HDD exit point where divers would add a swivel to the end of the drill string and attach the bundled fiber optic cables to the swivel using a fiber optic cable pulling attachment.
- The HDD rig, positioned landward of the landing vault, would then pull the drill string and bundled fiber optic cables through the HDPE conduit from the HDD exit point to the landing vault onshore. The fiber optic cables would be fed from the barge.
- Divers or the shore-end team would monitor the fiber optic cable being pulled from the barge through the HDD exit point.
- Once enough slack has been pulled ashore, the fiber optic cables would be released from the barge and the final slack pulled through the HDPE conduit and into the landing vault.
- The fiber optic cables would then be anchored to the landing vault wall (SF Bay facing). Ultimately, the fiber optic cable would be spliced into a separate project's fiber optic project at the landing vault.
- The cables would then be buried from the HDD exit point to the end of the jetting sled deployment location using divers with hand jets at high tide. This hand-jetting will include the area around the HDPE conduit to ensure the HDPE conduit is buried at least 5 feet (1.5 meters) under sediment and is not exposed at low tide.

2.3.1.5 Fiber Optic Cables Installation from Western HDD Exit Point to Eastern HDD Exit Point

<u>Pre-lay Grapnel Run</u>

Before each fiber optic cable is installed or tied-in with the western HDPE conduit and landing vault, a pre-lay grapnel run would be performed along the proposed cables' route. The purpose of an engineered pre-lay grapnel run

would be to clear debris on the bottom of the SF Bay floor (e.g., discarded fishing gear) along the routes where the fiber optic cables would be buried. A grapnel, typically of the flatfish type, would be dragged along the fiber optic cables' route before fiber optic cables would be installed to clear out the path for burying fiber optic cables.

The grapnel would be attached to a length of chain to ensure that it touches the bottom of the SF Bay floor. The anchor-lay support vessel or the dive support boat would tow the grapnel at approximately 1.2 miles per hour (approximately 1 knot per hour). The arms of the grapnel are designed to hook debris lying on the SF Bay floor or shallowly buried to approximately 1.3 feet (0.4 meter). If debris is hooked and towing tension increases, towing would stop, and the grapnel would be retrieved by a winch. Any debris recovered during the operation would be kept on the vessel until it can be appropriately examined and, if appropriate, disposed of in port. After debris removal, the grapnel would be redeployed to the bottom of the SF Bay with a suitable overlap and the grapnel run operations would continue.

Fiber Optic Cables Installation

The installation of the two fiber optic cables would begin at the western HDD exit point (Figure 1.3-3). The two fiber optic cables would be stored on the barge in two separate baskets. The fiber optic cables would be pulled out of the baskets, using a series of quadrants, and simultaneously pulled through the main deck-mounted linear cable engine. The fiber optic cables would then pass through a bundling machine where the fiber optic cables are bundled with thin twine before passing through the deck-mounted cable chute, which overhangs the barge stern, and then overboard. Cables near the HDD exit point would be buried by divers using hand-jetting techniques.

A specialized water-jetting sled cable burial tool would be used for fiber optic cable installation and burial across the SF Bay. The plan is to simultaneously lay and bury the fiber optic cables. A jetting sled is a burial tool that would be deployed by the cable-lay vessel (Figure 2.3-1). The sled, supported by two skids that are approximately 1.5 feet (45 centimeters) wide, would only impact the SF Bay floor directly under the sled and where the skids touch (depressing the seabed by approximately 1 to 2 inches, dependent on sediment types). The jetting nozzle assembly ("legs" or "Jet Share") is located between the two skids and fluidizes the sediment within a 12-inch-diameter (30-centimeter) swath.

Once the jetting sled is deployed to the bottom, divers would assist with loading the fiber optic cables into the sled's guidance set-up. The sled would be towed behind the barge. The jets would fluidize the sediment around the fiber optic cables, allowing the fiber optic cables to settle into the bottom of the furrow, which would naturally close under the weight of the sediments and the sled runners, and with the disturbed sediment settling back over the fiber optic cables. Depending on the SF Bay bottom conditions, the fiber optic cables would be buried to a depth of approximately 3 to 6 feet (1 to 2 meters).

Once the fiber optic cables have been connected to the western landing vault, the cable-lay vessel would begin to move along the proposed route toward the east landing vault, rolling out the fiber optic cables as it goes. Travel speed would not be set since the barge would not move under its own propulsion. Instead, the barge will set anchors along the route, then be pulled to each set of anchors with support from the anchor-lay vessels. As the barge is pulled to a new set of anchors, the support vessels would move the anchors behind the barge to new locations ahead of it and set them. The jetting sled would be towed behind the barge as the barge moves along the anchor system.

On the east landing vault (Figure 1.3-4), close to the HDD exit point, the water may be too shallow to use the jetting sled up to the HDD exit point. Any portions of the fiber optic cables not buried by the jetting sled offshore of the OHWM would be buried using divers and a hand-jetting system.

2.3.1.6 Fiber Optic Cable Post-Lay Inspection and Burial

The fiber optic cables would be inspected post-lay using divers or a small remotely operated vehicle. Any areas where remedial burial is required would use divers and a hand-jetting system. This post-lay inspection would also serve as the record to confirm where the fiber optic cables were installed on the SF Bay floor, the status of the SF Bay floor after installation, and that no Project-related debris would be left in the SF Bay.

Figure 2.3-1. Surface-Powered Jetting Sled Burial Tool

Source: ETA 2022

2.4 PROJECT WORK SCHEDULE

Table 2.2-1 provides the anticipated work schedule for the Project. The terrestrial and marine activities would take place during daylight hours, 7 days a week, based on local noise standards (Appendix B). The marine cable-lay activities may require some periods of 24-hour work.

Table 2.2-1. Proposed Construction Schedule for Project

Component	Proposed Start Date	Proposed Hours	Duration
Prepare landing site (western side)	Summer 2023	5 hours per day	3 days
Install HDPE conduit using HDD (western side)	Summer 2023	2 to 8 hours per day, equipment dependent	20 days
Install landing vault (western side)	Summer 2023	2 to 8 hours per day, equipment dependent	3 days
Prepare landing site (eastern side)	Summer 2023	5 hours per day	5 days
Install HDPE conduit using HDD (eastern side)	Summer 2023	2 to 8 hours per day, equipment dependent	10 days
Install landing vault (eastern side)	Summer 2023	2 to 8 hours per day, equipment dependent	3 days

Component	Proposed Start Date	Proposed Hours	Duration
Run pre-lay grapnel	Summer 2023	12 hours per day	2 days
Lay and bury marine cables across the SF Bay	Summer 2023	3 to 12 hours per day, equipment dependent	30 days
Landing site demobilization/restoration (western side)	Summer 2023	1 to 6 hours per day, equipment dependent	3 days
Landing site demobilization/restoration (eastern side)	Summer or Fall 2023	2 to 6 hours per day, equipment dependent	3 days
Post-lay inspection and burial	Summer or Fall 2023	12 hours per day	2 days

Terms:
HDD = horizontal directional drilling
HDPE= high-density polyethylene
SF Bay = San Francisco Bay

2.5 FIBER OPTIC CABLE OPERATIONS, MAINTENANCE, AND REPAIR

A differential global positioning system (GPS) would be used when the fiber optic cables are installed. Records would be maintained to track the exact locations of the cable-lay vessel and jet sled during the installation process. After installation, the data would be compiled into a standard-format cable record and distributed to all cable maintenance zone ships, government charting agencies, the CSLC, and other data users. These records can be used in the future to locate these cables on the SF Bay floor when a cable repair is needed. These records would be maintained throughout the system's life and after the system is retired. The cables' owner is responsible for cable repairs and maintenance.

2.5.1 Fiber Optic Cable Operations and Maintenance

No routine maintenance is planned for the submerged cable system. These cables in the marine system typically operate for at least 25 years. Because of the stability of the bottom environment, regular maintenance is unnecessary.

2.5.2 Emergency Fiber Optic Cable Repair (Marine)

Even though the fiber optic cables' burial target is 3 to 6 feet (1 to 2 meter) below the SF Bay sediment, they can still be damaged causing a fault (i.e., the

point at which transmission is interrupted). The following two types of emergency repairs could occur:

- **Repair of a Shallow Water Buried Fault**: The fault usually can be pinpointed by using low-frequency electroding and Optical Time Domain Reflectometer, and then inspected by divers. This type of repair would require adding a small section of replacement fiber optic cable, approximately 150 to 350 feet (45 to 106 meters). Buried fiber optic cable recovery would be carried out using either a grapnel, divers, or a remotely operated vehicle to remove the fiber optic cable from the burial trench and bring it to the surface. The fiber optic cable then would be repaired and reburied as close to its original position as is practicably possible.

  During the repair operation, the first end would be recovered and tested to locate the fault more precisely. If there is no fault on the first end, the fiber optic cable would be sealed and buoyed-off for later recovery. If a fault is present on the first end, the fault would be removed, and the cable sealed and buoyed-off for later recovery. The repair vessel would then recover the second fiber optic cable end and test to locate the fault. If there is no fault on the second fiber optic cable end, the first joining of the broken fiber optic cable would be started. If there is a fault on the second end, the fiber optic cable would be recovered, the fault removed, and the first joining of the broken fiber optic cable started. Once the first joining of the broken fiber optic cable is completed, the fiber optic cable would be rolled out as the vessel returns to the buoyed end. When the buoy is recovered, the two fiber optic cable ends would be joined, and the repaired fiber optic cable would be put back into position on the SF Bay floor. The repair would then be followed by diver burial operations, where sediments allow.

- **Repair in the Nearshore Area**: This may require the fiber optic cable to be cut close to the HDD exit point and a new shore-end fiber optic cable landing installed, with a marine joint installed bayward of the HDD exit point.

2.6 RETIREMENT, ABANDONMENT, OR REMOVAL OF THE CABLE SYSTEM

Cable abandonment or removal are not analyzed as part of this Project. The Applicant has requested a 25-year lease from the CSLC for the Project components under the CSLC's jurisdiction. CSLC authorization would be required for continued occupation beyond the lease term. CSLC staff's

preference is the removal of all structures under the CSLC's jurisdiction and to ensure that the structures do not become a future public hazard.

At least 2 years before the lease expires, the fiber optic cables' owner would submit a CSLC lease application to remove all Project components (within the CSLC's leasing jurisdiction) or to request continued use and maintenance of these components. At least 90 days before taking the fiber optic cables out of service, the fiber optic cables' owner would notify San Mateo and Alameda counties and the CSLC of their decision and how they plan to dispose of the inactive fiber optic cables.

If the Project components are removed, the potential impacts would be similar to those associated with installing the Project. The significance of impacts related to removal would depend on the existing setting and significance criteria at the time of removal. At the end of the cables' 25 to 30 years of expected lives, subsequent environmental documentation likely would be required to analyze environmental impacts at that time.

3.0 ENVIRONMENTAL CHECKLIST AND ANALYSIS

This section contains the Initial Study (IS) that was completed for the proposed San Francisco Bay Fiber Optic Cables Project (Project) by Bandwidth Infrastructure Group, LLC (Applicant or Bandwidth) in accordance with the requirements of the California Environmental Quality Act (CEQA). The IS identifies site-specific conditions and impacts, evaluates their potential significance, and discusses ways to avoid or lessen impacts that are potentially significant. The information, analysis, and conclusions included in the IS provide the basis for determining the appropriate document needed to comply with CEQA. For the Project, based on the analysis and information contained herein, California State Lands Commission (CSLC) staff has found that the IS shows that there is substantial evidence that the Project may have a significant effect on the environment, but that revisions to the Project would avoid the effects or mitigate the effects to a point where clearly no significant effect on the environment would occur. As a result, CSLC has concluded that a Mitigated Negative Declaration (MND) is the appropriate CEQA document for the Project.

The evaluation of 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 and 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 effect may be significant. If there are one or more "Potentially Significant Impacts," a Project Environmental Impact Report (EIR) would be prepared.

Less than Significant with Mitigation. This column is checked when the Project may result in a significant environmental impact, but the incorporation of identified Project revisions or mitigation measures would reduce the identified effects to a less than significant level.

Less than Significant Impact. This column is checked when the Project would not result in any significant effects. The Project's impact is less than significant even without the incorporation of Project-specific mitigation measures.

No Impact. This column is checked when the Project would not result in any impact in the category or the category does not apply.

The environmental resource areas listed below would be potentially affected by this Project. These were selected because there would be at least one impact that would be a "Potentially Significant Impact" but the Applicant has agreed to Project revisions, including the implementation of mitigation measures, that would reduce the impact to less than significant with mitigation.

Environmental Issues with Potentially Significant Impacts:

- Air Quality
- Biological Resources
- Cultural Resources
- Cultural Resources – Tribal
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Recreation
- Transportation
- Mandatory Findings of Significance

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

AGENCY STAFF DETERMINATION

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

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

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

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

Signature

4/6/2023
Date

Afifa Awan, Senior Environmental Scientist
Division of Environmental Science, Planning, and Management
California State Lands Commission

3.1 AESTHETICS

AESTHETICS – Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☒	☐
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
c) In 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?	☐	☐	☒	☐

3.1.1 Environmental Setting

The Project consists of temporary work onshore (terrestrial) and in the San Francisco Bay (SF Bay) (marine).

3.1.1.1 Terrestrial Areas

Sensitive Receptors

Airport, Residential, School

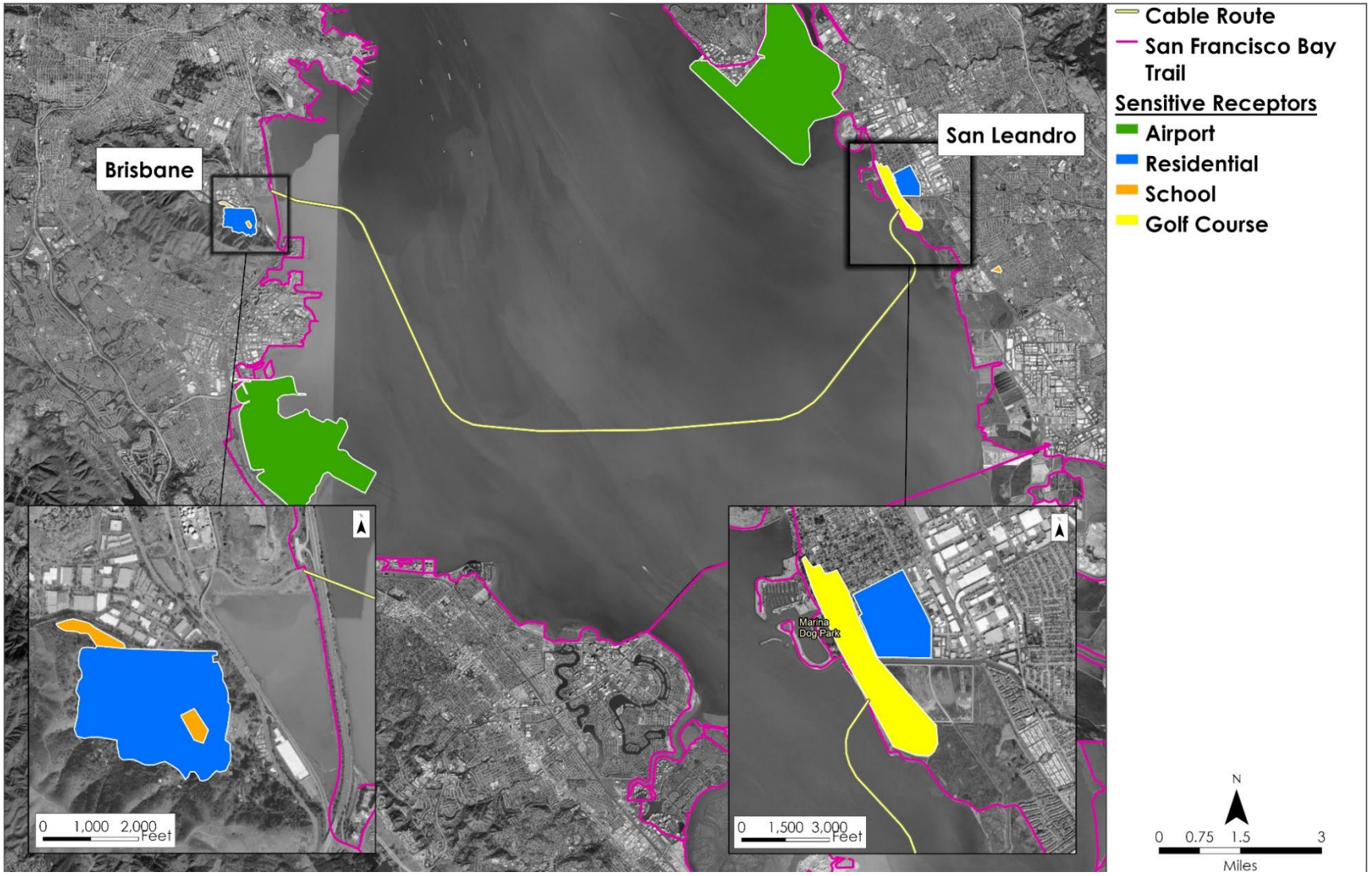
Sensitive aesthetic receptors, such as airports, residential areas, and schools, were identified in the vicinity of the western and eastern Project areas (Figure 3.1-1). The western Project area analyzed includes all four potential western landing sites. Distances were calculated between the sensitive receptor and the nearest western landing site alternative. The closest airport to the western landing site (San Francisco International Airport) is approximately 4.0 miles south (6.4 kilometers), and the closest airport to the eastern landing site (Oakland International Airport) is approximately 2.0 miles (3.2 kilometers) northwest. The closest residences to the western cable landing site in Brisbane are along San Francisco Avenue approximately 0.47 mile (0.76 kilometer) southwest, and the closest school zone is approximately 0.77 mile (1.2 kilometers) southwest. The closest residences to the eastern cable landing site in San Leandro are approximately 0.3 mile (0.48 kilometer) northeast on Outrigger Drive, and the closest school zone is approximately 1.1 miles (1.8 kilometers) southeast (Figure 3.1-1).

The San Francisco Bay Trail (The Bay Trail)

The San Francisco Bay Trail, also known as the Bay Trail, is present along Sierra Point Parkway, along the east side of the western cable landing site in Brisbane (Figures 3.1-2 through 3.1-5). This trail consists of 350 miles of paved and unpaved areas encircling the SF Bay used for walking, hiking, biking, running, dog trails and parks, picnicking, birding, wildlife observation, fishing, education, history, beach access, park access, and art viewing. The current Bay Trail ends at the corner of Sierra Point Parkway and Lagoon Road, but there are future plans for the Bay Trail to continue north adjacent to Highway 101. The western cable landing site would be visible to users of the Bay Trail passing by the cable landing site.

The Bay Trail is directly adjacent to the western side of the eastern cable landing site in San Leandro (Figures 3.1-6 through 3.1-9). The eastern cable landing site would be visible to users of the Bay Trail passing by the cable landing site.

Figure 3.1-1. Sensitive Receptors



Roads

The western cable landing site is generally bordered by Lagoon Road and Sierra Point Parkway, with Highway 101 between the cable landing site and the shoreline (Figures 3.1-2 through 3.1-5). No roads are located within visual distance of the eastern cable landing site (Figures 3.1-6 through 3.1-9).

Figure 3.1-2. Brisbane: Looking East Across the Western Cable Landing Site with Sierra Point Parkway, the Bay Trail, Highway 101, and the San Francisco Bay in the Background

Figure 3.1-3. Brisbane: Looking South Across the Western Cable Landing Site with Brisbane Lagoon in the Background

Figure 3.1-4. Brisbane: Looking West Across the Western Cable Landing Site Along Lagoon Road

Figure 3.1-5. Brisbane: Looking North of the Western Cable Landing Site Across Lagoon Road

Brisbane Lagoon Fisherman's Park

The Brisbane Lagoon Fisherman's Park is a small park in Brisbane located on a small point that extends into the northeast corner of Brisbane Lagoon, just south of the bridge over Guadalupe Canal, off Sierra Point Parkway. The park offers water and fishing access to the lagoon and canal, with several parking spots and benches. The western cable landing site would be located approximately 0.186 mile (0.3 kilometer) north of the Brisbane Lagoon Fisherman's Park and would be visible to users of this Brisbane Lagoon Fisherman's Park.

Marina Dog Park

The Marina Dog Park is approximately 580 feet north of the eastern cable landing site in San Leandro and is visible from the cable landing site in the eastern SF Bay. The primary access route to the Marina Dog Park Area is approximately 1,020 feet north of the eastern cable landing site. This Marina Dog Park attracts dog owners for recreational opportunities for their dogs.

Tony Lema Golf Course

The eastern side of the eastern cable landing site in San Leandro borders the western side of the Tony Lema Golf Course and the cable landing site would be visible to golfers (Figures 3.1-6 through 3.1-9). The Tony Lema Golf Course is part of the Monarch Bay Golf Club. The main access point for the Tony Lema Golf Course is approximately 0.25 mile (0.40 kilometers) north of the cable landing site and is not visible from the cable landing site in the eastern SF Bay due to topography and vegetation. The remainder of the Monarch Bay Golf Course is located farther north of this access point, across an inlet of the SF Bay, and is not visible from the cable landing site.

Figure 3.1-6. San Leandro: Looking East Across the Eastern Cable Landing Site with the Tony Lema Golf Course in the Background

Figure 3.1-7. San Leandro: Looking South Across the Eastern Cable Landing Site with the Tony Lema Golf Course and the Bay Trail in the Background

Figure 3.1-8. San Leandro: Looking West Across the Eastern Cable Landing Site and the Bay Trail with San Francisco Bay in the Background

Figure 3.1-9. San Leandro: Looking North Across the Eastern Cable Landing Site Along the Bay Trail with the Marina Dog Park in the Background

3.1.1.2 Marine Areas

The marine route of the Project includes south SF Bay from Brisbane to San Leandro.

3.1.2 Regulatory Setting

No federal laws, regulations, or policies pertaining to aesthetics are relevant to the Project. Appendices A and B contain the state and local laws, regulations, and policies pertaining to aesthetics relevant to the Project.

3.1.3 Impact Analysis

The terrestrial and marine Project-related work construction would be temporary. Once the work is completed, there would be no new permanently visible aboveground structures. The closest residences to the western cable landing site in Brisbane are along the San Francisco Avenue approximately 0.47 mile (0.76 kilometer) southwest with no view of the Project area (Figure 3.1-1). Construction activities at the western cable landing site is unlikely to be visible from the waters of the SF Bay and from the shoreline due to topography.

People on Lagoon Road, Sierra Point Parkway, Bay Trail, Highway 101, and the Brisbane Lagoon Fisherman's Park would be able to see construction at the site as they pass by. The closest residences to the eastern cable landing site in San Leandro are approximately 0.3 mile (0.48 kilometer) northeast on Outrigger Drive and do not have views of the cable landing site (Figure 3.1-1). People recreating along the Bay Trail, within the Marina Dog Park, within the Tony Lema Golf Course, and on the waters of the SF Bay would be able to see the cable landing site and would temporarily see construction at the eastern cable landing site.

The marine portions of the cable installation would be visible from roads close to shore within southern SF Bay, such as portions of Highway 101, San Mateo-Hayward Bridge, and recreational and fishing vessels within south SF Bay. Additionally, the equipment used in the SF Bay waters would be lit at night in accordance with applicable USCG safety regulations for marine vessels, even when work is not occurring at night.

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

Less than Significant Impact

Construction of western landing site infrastructure (e.g., marine bore, landing vault) would take place in the vicinity of the undeveloped and unoccupied southern corner of Lagoon Road and Sierra Point Parkway in Brisbane. This area is not a popular recreation site, but occasional recreational or vehicular users may pass by on Lagoon Road and Sierra Point Parkway, including along the end of the Bay Trail which runs along Sierra Point Parkway and currently terminates at the intersection with Lagoon Road. However, the area surrounding the western cable landing site does not have an expansive view of the SF Bay. Therefore, the impact would be less than significant.

Construction of the eastern landing site infrastructure would take place at an undeveloped and unoccupied area along the Bay Trail in San Leandro, west of the Tony Lema Golf Course and south of the Marina Dog Park. These adjacent features are popular public settings with scenic vistas of SF Bay. The Bay Trail and the Tony Lema Golf Course provide vantage points of the SF Bay for recreationalists. Onshore construction equipment would be visible from these locations. Since this equipment would be present only on a temporary basis during construction, these impacts are anticipated to be less than significant.

Marine Project activity would require the use of vessels to install two cables in parallel. Project vessels might be visible from the shoreline and by other offshore

recreationalists and fishermen near both the eastern and western cable landing sites, as well as while working on SF Bay waters. Project vessels would be present only during construction, and all Project features would be buried offshore. Therefore, the impact would be less than significant.

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

No Impact

There are no designated scenic resources within the western or eastern cable landing sites. Near the western cable landing site, the Lagoon Road and Sierra Point Parkway are not designated as local scenic routes, and the portion of Highway 101 in San Mateo County is not a designated or eligible State Scenic Highway. Near the eastern cable landing site, there are no scenic roadways or highways have been designated. Therefore, there would be no impacts at the western and eastern cable landing sites.

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?

Less than Significant Impact

The temporary and short-term Project-related activities may impact users of the western and the eastern cable landing site areas. This impact would last approximately 1.5 months for upland staging, HDD, and demobilization and 2 months offshore for the cable installations. The western cable landing site would be visible and may affect the visual character, quality, and possibly the experience of the drivers and recreational users of Lagoon Road, Sierra Point Parkway, the Bay Trail, Highway 101, and at the Brisbane Lagoon Fisherman's Park. The eastern cable landing site would be visible and would affect the visual character, quality, and possibly the experience of people using the Bay Trail, Tony Lema Golf Course, and Marina Dog Park.

The Project would not conflict with applicable zoning and other regulations because it would be temporary construction. No natural landforms would be changed, and no permanent aboveground structure would be built, thereby

maintaining the existing visual character of the sites. Therefore, the impacts would be less than significant.

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

Less than Significant Impact

The temporary and short-term HDD-related activities are anticipated to occur primarily during daylight hours. Construction equipment used for HDD and cable installations at the western and eastern cable landing sites and Project vessels offshore would require lighting for safe operation 24 hours per day during construction activities (Table 2.2-1). The nighttime vessel lighting would meet all applicable USCG navigational standards. Lighting would be visible to marine users in the Project area and people driving by or recreating near the cable landing sites. No new lighting would be present once installation is complete. Therefore, the impacts would be less than significant.

Potential effects of lighting on terrestrial and marine wildlife are analyzed under Section 3.4, Biological Resources.

3.1.4 Mitigation Summary

The Project would not result in significant impacts on Aesthetics; no mitigation is required.

3.2 AGRICULTURE AND FORESTRY RESOURCES

AGRICULTURE AND FORESTRY RESOURCES[13] – Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Natural Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Pub. Resources Code, § 12220, subd. (g)), timberland (as defined by Pub. Resources Code, § 4526), or timberland zoned Timberland Production (as defined by Gov. Code, § 51104, subd. (g))?	☐	☐	☐	☒

[13] In determining whether impacts on agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (California Department of Conservation 2022a) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts on forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the State's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project, and the forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board (CARB).

AGRICULTURE AND FORESTRY RESOURCES[13] – Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

3.2.1 Environmental Setting

San Mateo and Alameda counties are included in the California Natural Resources Agency's Farmland Mapping and Monitoring Program (California Department of Conservation 2022b). The western cable landing site in San Mateo County is designated as Other Land Type and is surrounded by Urban and Built-Up Land. The eastern cable landing site in Alameda County is designated as Urban and Built-Up Land with nearby Other Land Type. There is no designated Prime Farmland, Unique Farmland, or Farmland of Statewide Importance in the western or eastern terrestrial Project areas. No forest lands or agricultural lands are in the Project area.

The Project area is not under a Williamson Act contract. The closest Williamson Act-contracted lands are approximately 8.5 miles southwest of the western cable landing site and 8 miles east of the eastern cable landing site (Bay Area Open Space Council 2011; California Department of Conservation 2017; County of San Mateo 2022).

The western cable landing site, located in APN 005-162-430 or within the Highway 101 right-of-way, is zoned as No Data Assigned in incorporated Brisbane (County of San Mateo 2022). The eastern cable landing site, located in APN 080G-0910-001-06, is zoned as Exempt Public Agency, Unspecified in San Leandro (County of Alameda 2021).

3.2.2 Regulatory Setting

No major federal laws, regulations, and/or policies are potentially applicable to this Project. Appendix A contains the state laws and regulations pertaining to

agriculture and forestry resources relevant to the Project. At the local level, no goals, policies, or regulations are applicable to the Project.

3.2.3 Impact Analysis

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

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

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

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

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

No Impact (a through e)

All Project Components

The Project would not result in impacts on agriculture or forestry resources and would not conflict with a Williamson Act contract because no farmland, forest land, or Williamson Act contract land is within the Project area. Therefore, there would be no impact.

3.2.4 Mitigation Summary

The Project would have no impact on Agriculture and Forestry Resources; no mitigation is required.

3.3 AIR QUALITY

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

3.3.1 Environmental Setting

3.3.1.1 Local Climate and Meteorology

The Project area would be in the San Francisco Bay Area Air Basin (SFBAAB), which includes[14] all of Alameda County, Contra Costa County, Marin County, Napa County, San Francisco County, San Mateo County, Santa Clara County, the southern portion of Sonoma County, and the southwestern portion of Solano County. The SFBAAB is managed by the Bay Area Air Quality Management District (BAAQMD) (PlaceWorks 2016). The area generally experiences a Mediterranean-type climate, characterized by cool, wet winters and warm, dry summers. A variety of microclimates can be observed throughout the SF Bay Area due to topography, bay currents, inversion zones, and onshore winds, resulting in low interannual and daily temperature variability throughout the year (Ackerly et al. 2018).

[14] Jurisdiction map at https://ww3.arb.ca.gov/ei/maps/basins/absfmap.htm.

Annual average rainfall (as reported by the San Francisco climate monitoring station) is about 24 inches (Western Regional Climate Center 2020) but is highly variable by location and can range from 16 to 40 inches. Winter rains account for most of the annual precipitation. The San Francisco International Airport's annual average rainfall from 1945 to 2016, which is the closest monitor to the western cable landing site, was approximately 20 inches, while the Oakland International Airport, located 2 miles north of the eastern cable landing site, had an annual average precipitation of about 18 inches from 1948 to 2016 (Western Regional Climate Center 2022a,b).

Dominant winds in the SF Bay exhibit seasonal patterns. During the summer, northwestern winds are drawn inland through the Golden Gate Strait and over lower portions of the San Francisco Peninsula. These winds then create a split jet that develops northwest toward Richmond and southwest toward San Jose. In the winter months, the basin frequently experiences moderate to strong winds, interspersed with periods of stagnation and light winds. Winter stagnation episodes create drainage flows, in which air moves from the Central Valley toward the coast and back down toward SF Bay from the smaller valleys within the Air Basin.

Two types of inversion conditions[15] are common in the SFBAAB due to the region's topography and air movements: (1) elevation inversions in the summer and fall and (2) radiation inversions in the winter. Inversions affect air quality conditions because they influence the atmospheric mixing depth (i.e., the vertical depth in the atmosphere available for diluting air contaminants near the ground) and pollution may be trapped near the ground.

3.3.1.2 Sensitive Receptors

Sensitive land uses are locations where human populations, especially children, seniors, and sick persons, are found and where there is reasonable expectation of continuous human exposure according to the averaging period for the air quality standards (e.g., 24-hour, 8-hour). Typical sensitive receptors are residences, hospitals, schools, and parks.

Based on the Project footprint, sensitive receptors are within a 1,000-foot (305-meter) buffer of the Project footprint at both the eastern and western cable landing sites. The sensitive receptors at the western cable landing site in Brisbane

[15] Inversion conditions are created when warm air above traps cool air near the ground surface and prevents vertical air dispersion.

are the Bay Trail, approximately 50 feet (15 meters) north of the proposed landing site, and the Brisbane Lagoon Fisherman's Park, approximately 1,000 feet (305 meters) south of the proposed landing site. At the eastern cable landing site, sensitive receptors within the 1,000-foot (305-meter) buffer include the Marina Dog Park (approximately 580 feet [177 meters] north), the Tony Lema Golf Course (approximately 65 feet [20 meters] away), and the Bay Trail (approximately 45 feet [14 meters] away). No residences, hospitals, or schools are within the 1,000-foot (305-meter) buffer at either landing site. The closest school zones and residential areas to the western and eastern landing sites can be seen on Figure 3.1-1. At the western landing site, the nearest residential area and school zone are 0.47 mile and 0.77 miles, respectively. At the eastern landing site, the nearest residential area and school zone are 0.3 mile and 1.1 miles, respectively.

3.3.1.3 Pollutants of Concern

Criteria pollutants are those contaminants for which ambient air quality standards have been established for the protection of public health and welfare. Criteria pollutants include ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), lead, and particulate matter with diameters of 10 (PM_{10}) and 2.5 ($PM_{2.5}$) microns or less. These pollutants commonly are used as indicators of ambient air quality conditions.

Criteria pollutants are regulated under the National Ambient Air Quality Standards (NAAQS) by the United States Environmental Protection Agency (USEPA) and under the California ambient air quality standards (CAAQS) by the California Air Resources Board (CARB). All criteria pollutants can cause human health and environmental effects at certain concentrations. The NAAQS and CAAQS limit criteria pollutant concentrations to protect human health and prevent environmental and property damage. Epidemiological (i.e., the branch of medicine which deals with the distribution and control of diseases), controlled human exposure, and toxicology studies evaluate potential health and environmental effects of criteria pollutants; these studies form the scientific basis for new and revised ambient air quality standards.

The primary criteria pollutants of concern generated by the Project from mobile equipment emissions are CO, PM, and SO_2. Other pollutants of concern are nitrogen oxides (NOx) and reactive organic gases (ROGs), which are precursors

to O_3; and the toxic air contaminant (TAC) diesel particulate matter (DPM).[16] Principal characteristics and possible health and environmental effects from exposure to the primary pollutants generated by the Project are discussed below.

- **Ozone and Ozone Precursors**. O_3 is considered a regional pollutant because its precursors combine to affect air quality on a regional scale. Pollutants such as CO, NO_2, SO_2, and lead are considered local pollutants that tend to accumulate in the air locally. Particulate matter is both a local and a regional pollutant. O_3 or smog, is a photochemical oxidant that is formed when ROGs and NO_X (both by-products of the internal combustion engine) react with sunlight. ROGs are compounds primarily made up of hydrogen and carbon atoms. Internal combustion associated with motor vehicle usage is the major source of hydrocarbons. Other sources of ROGs are emissions associated with the use of paints and solvents, the application of asphalt paving, and the use of household consumer products such as aerosols. The two major forms of NO_X are nitric oxide (NO) and NO_2. Nitric oxide is a colorless, odorless gas formed from atmospheric nitrogen and oxygen when combustion takes place under high temperature or high pressure. Nitrogen dioxide is a reddish-brown irritating gas formed by the combination of NO and oxygen. In addition to serving as an integral participant in ozone formation, NO_X directly acts as an acute respiratory irritant and increases susceptibility to respiratory pathogens due to impairments to the immune system.

  O_3 poses a higher risk to those who already suffer from respiratory diseases (e.g., asthma), children, older adults, and people who are active outdoors. Exposure to O_3 at certain concentrations can make breathing more difficult, cause shortness of breath and coughing, inflame and damage the airways, aggregate lung diseases, increase the frequency of asthma attacks, and cause chronic obstructive pulmonary disease. Studies show associations between short-term O_3 exposure and nonaccidental mortality, including deaths from respiratory issues. Studies also suggest that long-term exposure to O_3 may increase the risk of

[16] Naturally occurring asbestos is found in small concentrations in Alameda and San Mateo Counties, but the Project is not within an area of mapped ultramafic rock (i.e., igneous rock with low silica content which can contain naturally occurring asbestos), and there are no mapped ultramafic rock unit areas in the Project vicinity (California Department of Conservation 2000). Accordingly, naturally occurring asbestos is not considered a TAC of concern for the proposed Project and is not evaluated further.

respiratory-related deaths (USEPA 2019a). The concentration of O_3 at which health effects are observed depends on an individual's sensitivity, level of exertion (i.e., breathing rate), and duration of exposure. Studies show large individual differences in the intensity of symptomatic responses, with one study finding no symptoms to the least responsive individual after a 2-hour exposure to 400 parts per billion of O_3 and a 50 percent reduction in forced airway volume in the most responsive individual. Although the results vary, evidence suggests that sensitive populations (e.g., asthmatics) may be affected on days when the 8-hour maximum ozone concentration reaches 80 parts per billion (USEPA 2016a).

In addition to human health effects, O_3 has been tied to crop damage, typically in the form of stunted growth; leaf discoloration; cell damage; and premature death. Ozone can also act as a corrosive and oxidant, resulting in property damage such as the breakdown of rubber products and other materials.

- **Carbon Monoxide**. Carbon monoxide primarily is formed through incomplete combustion of organic fuels. Higher CO values generally are measured during winter when dispersion is limited by morning surface inversions. Seasonal and daily variations in meteorological conditions lead to lower values in summer and in the afternoon. Carbon monoxide is an odorless, colorless gas that affects red blood cells in the body by binding to hemoglobin and reducing the amount of oxygen that can be carried to the body's organs and tissues. Exposure to CO at high concentrations also can cause fatigue, headaches, confusion, dizziness, and chest pain. There are no ecological or environmental effects of CO at or near ambient levels (CARB 2020a).
- **Particulate Matter**. Particulate matter pollution consists of very small liquid and solid particles floating in the air, which can include smoke, soot, dust, salts, acids, and metals. Particulates now generally are divided into two categories of respirable particles:
  - PM_{10}. These particles have an aerodynamic diameter of 10 microns or less and are about 1/7 the thickness of a human hair. Major sources of PM_{10} include motor vehicles; wood burning stoves and fireplaces; dust from construction, landfills, and agriculture; wildfires, brush, and waste burning; industrial sources; windblown dust from open lands; and atmospheric chemical and photochemical reactions.
  - $PM_{2.5}$. These fine particles have an aerodynamic diameter of 2.5 microns or less and are roughly about 1/28 the diameter of a

human hair. Major sources of $PM_{2.5}$ include fuel combustion (from motor vehicles, power generation, and industrial facilities), residential fireplaces, and wood stoves.

Particulate matter also forms when gases emitted from industries and motor vehicles, such as SO_2, NO_X, and ROG, undergo chemical reactions in the atmosphere.

Particulate pollution can be transported over long distances and may adversely affect the human respiratory system, especially for people who are naturally sensitive or susceptible to breathing problems. Numerous studies have linked PM exposure to premature death in people with preexisting heart or lung disease, nonfatal heart attacks, irregular heartbeat, aggravated asthma, decreased lung function, and increased respiratory symptoms. Depending on its composition, both PM_{10} and $PM_{2.5}$ also can affect water quality and acidity, deplete soil nutrients, damage sensitive forests and crops, affect ecosystem diversity, and contribute to acid rain (USEPA 2020a).

- **Sulfur Dioxide**. SO_2 is generated by burning fossil fuels, industrial processes, and natural sources, such as volcanoes. In recent years, emissions of SO_2 have been reduced significantly by increasingly stringent controls on the sulfur content of fuels used in stationary sources and mobile sources. SO_2 is a precursor to fine PM formation in the form of sulfates, such as ammonium sulfate. Short-term exposure to SO_2 can aggravate the respiratory system, making breathing difficult. Controlled laboratory studies indicate that brief exposure (5 to 10 minutes) of exercising asthmatics to an average SO_2 level of 0.4 part per million (ppm) can result in increases in air resistance. Healthy adults do not show any symptoms to SO_2 at levels as high as 1 ppm, even after up to 3 hours of exposure. SO_2 also can affect the environment by damaging foliage and decreasing plant growth (USEPA 2019b).
- **Diesel Particulate Matter**. Although NAAQS and CAAQS have been established for criteria pollutants, no ambient standards exist for TACs. A TAC is defined by California law as an air pollutant that "may cause or contribute to an increase in mortality or an increase in serious illness, or which may pose a present or potential hazard to human health." DPM is emitted by diesel-powered engines. The CARB estimates that DPM emissions are responsible for about 70 percent of the total ambient air toxics risk in California (CARB 2020b). Short-term exposure to DPM can cause acute irritation (e.g., eye, throat, and bronchial),

neurophysiological symptoms (e.g., lightheadedness and nausea), and respiratory symptoms (e.g., cough and phlegm).

3.3.1.4 Ambient Criteria Pollutant Concentration Stations

Several monitoring stations measure criteria pollutant concentrations in Alameda and San Mateo counties and the SFBAAB. The nearest stations to the Project landing sites are the Oakland – 9925 International Boulevard Station, which is approximately 3.8 miles north of the proposed eastern cable landing site, and the San Francisco – Arkansas Street Station, which is approximately 5.5 miles north of the proposed western cable landing site. Pollutant concentrations monitored at these stations are considered representative of ambient air quality in the Project area. Table 3.3-1 shows the available monitoring data collected at the Oakland – 9925 International Boulevard Station from 2018 to 2020, and Table 3.3-2 shows the available monitoring data collected at the San Francisco – Arkansas Street Station.

Table 3.3-1. Available Ambient Criteria Air Pollutant Monitoring Data from the Oakland – 9925 International Boulevard Station (2018–2020)

Pollutant and Standard	2018	2019	2020
Ozone (O_3)			
Maximum 1-hour concentration (ppm)	0.061	0.098	0.090
Maximum 8-hour concentration (ppm)	0.052	0.073	0.066
Number of days O_3 standard exceeded[a]			
CAAQS 1-hour (>0.09 ppm)	0	1	0
NAAQS 8-hour (>0.070 ppm)	0	2	0
CAAQS 8-hour (>0.070 ppm)	0	2	0
Nitrogen Dioxide (NO_2)			
National maximum 1-hour concentration (ppm)	72.9	61.8	59.2
State maximum 1-hour concentration (ppm)	72	61	59
State annual average concentration (ppm)	10	8	9
Number of days NO_2 standard exceeded[a]			
NAAQS 1-hour (98th percentile >0.100 ppm)	0	0	0
CAAQS 1-hour (0.18 ppm)	0	0	0
Annual standard exceeded?			
NAAQS annual (>0.053 ppm)	No	No	No
CAAQS annual (>0.030 ppm)	No	No	No
Particulate Matter (PM_{10})[b]			

Pollutant and Standard	2018	2019	2020
National[c] maximum 24-hour concentration (mg/m^3)	N/A	N/A	N/A
National[c] second-highest 24-hour concentration mg/m^3)	N/A	N/A	N/A
State[d] maximum 24-hour concentration (mg/m^3)	N/A	N/A	N/A
State[d] second-highest 24-hour concentration (mg/m^3)	N/A	N/A	N/A
National annual average concentration (mg/m^3)	N/A	N/A	N/A
State annual average concentration (mg/m^3)[e]	N/A	N/A	N/A
Number of days PM_{10} standard exceeded[a]			
NAAQS 24-hour (>150 mg/m^3)[f]	N/A	N/A	N/A
CAAQS 24-hour (>50 mg/m^3)[f]	N/A	N/A	N/A
Annual standard exceeded?			
CAAQS annual (>20 mg/m^3)	N/A	N/A	N/A
Particulate Matter ($PM_{2.5}$)			
National[c] maximum 24-hour concentration (mg/m^3)	172.1	24.7	167.7
National[c] second-highest 24-hour concentration (mg/m^3)	152.3	20.9	117.3
State[d] maximum 24-hour concentration (mg/m^3)	172.1	24.7	167.7
State[d] second-highest 24-hour concentration (mg/m^3)	152.3	20.9	117.3
National annual average concentration (mg/m^3)	11.7	6.7	11.4
State annual average concentration (mg/m^3)[e]	11.7	6.7	11.4
Number of days $PM_{2.5}$ standard exceeded[a]			
NAAQS 24-hour (>35 mg/m^3)[f]	13	0	11
Annual standard exceeded?			
NAAQS annual (>12.0 mg/m^3)	No	No	No
CAAQS annual (>12 mg/m^3)	No	No	No
Carbon Monoxide (CO)			
No data available			
Sulfur Dioxide (SO_2)			
No data available			

Source: CARB 2020c

Terms:

> = greater than

CAAQS = California Ambient Air Quality Standards

CO = carbon monoxide

mg/m^3 = milligrams per cubic meter

N/A = not applicable or insufficient, or no data were available to determine the value

NAAQS = National Ambient Air Quality Standards

O_3 = ozone
PM_{10} = particulate matter 10 microns or less in diameter
$PM_{2.5}$ = particulate matter 2.5 microns or less in diameter
ppm = parts per million
SO_2 = sulfur dioxide
Notes:

[a] An exceedance of a standard is not necessarily a violation because of the regulatory definition of a violation.
[b] National statistics are based on standard conditions data. In addition, national statistics are based on samplers using federal reference or equivalent methods.
[c] State statistics are based on local conditions data.
[d] Measurements usually are collected every 6 days.
[e] State criteria for sufficiently complete data for calculating valid annual averages are more stringent than the national criteria.
[f] Mathematical estimates of how many days' concentrations would have been measured as higher than the level of the standard had each day been monitored. Values have been rounded.

Table 3.3-2. Available Ambient Criteria Air Pollutant Monitoring Data from the San Francisco – Arkansas Street Station (2018–2020)

Pollutant and Standard	2018	2019	2020
Ozone (O_3)			
Maximum 1-hour concentration (ppm)	0.065	0.091	0.088
Maximum 8-hour concentration (ppm)	0.049	0.073	0.055
Number of days O_3 standard exceeded[a]			
CAAQS 1-hour (>0.09 ppm)	0	1	0
NAAQS 8-hour (>0.070 ppm)	0	1	0
CAAQS 8-hour (>0.070 ppm)	0	1	0
Nitrogen Dioxide (NO_2)			
National maximum 1-hour concentration (ppm)	68.8	61.0	47.7
State maximum 1-hour concentration (ppm)	68	61	47
State annual average concentration (ppm)	11	9	8
Number of days NO_2 standard exceeded[a]			
NAAQS 1-hour (98th percentile >0.100 ppm)	0	0	0
CAAQS 1-hour (0.18 ppm)	0	0	0
Annual standard exceeded?			
NAAQS annual (>0.053 ppm)	No	No	No
CAAQS annual (>0.030 ppm)	No	No	No

Pollutant and Standard	2018	2019	2020
Particulate Matter (PM10)[b]			
National[c] maximum 24-hour concentration (mg/m^3)	40.9	42.1	102.3
National[c] second-highest 24-hour concentration mg/m^3)	35.7	34.2	58.0
State[d] maximum 24-hour concentration (mg/m^3)	43.0	42.0	105.0
State[d] second-highest 24-hour concentration (mg/m^3)	37.0	35.0	59.0
National annual average concentration (mg/m^3)	10.0	7.5	12.0
State annual average concentration (mg/m^3)[e]	N/A	14.8	23.3
***Number of days* PM10 *standard exceeded*[a]**			
NAAQS 24-hour (>150 mg/m^3)[f]	0	0	0
CAAQS 24-hour (>50 mg/m^3)[f]	0	0	2
Annual standard exceeded?			
CAAQS annual (>20 mg/m^3)	No	No	Yes
Particulate Matter ($PM_{2.5}$)			
National[c] maximum 24-hour concentration (mg/m^3)	177.4	25.4	147.3
National[c] second-highest 24-hour concentration (mg/m^3)	145.4	22.0	123.1
State[d] maximum 24-hour concentration (mg/m^3)	177.4	25.4	147.3
State[d] second-highest 24-hour concentration (mg/m^3)	145.4	22.0	123.1
National annual average concentration (mg/m^3)	11.6	7.6	10.5
State annual average concentration (mg/m^3)[e]	11.7	7.6	10.5
***Number of days* $PM_{2.5}$ *standard exceeded*[a]**			
NAAQS 24-hour (>35 mg/m^3)[f]	14	0	8
Annual standard exceeded?			
NAAQS annual (>12.0 mg/m^3)	No	No	No
CAAQS annual (>12 mg/m^3)	No	No	No
Carbon Monoxide (CO)			
No data available			
Sulfur Dioxide (SO_2)			
No data available			
No data available			

Source: CARB 2020c

Terms:

> = greater than

CAAQS = California Ambient Air Quality Standards

CO = carbon monoxide

mg/m^3 = milligrams per cubic meter

N/A = not applicable or insufficient, or no data were available to determine the

value
NAAQS = National Ambient Air Quality Standards
O_3 = ozone
PM_{10} = particulate matter 10 microns or less in diameter
$PM_{2.5}$ = particulate matter 2.5 microns or less in diameter
ppm = parts per million
SO_2 = sulfur dioxide
Notes:

[a] An exceedance of a standard is not necessarily a violation because of the regulatory definition of a violation.
[b] National statistics are based on standard conditions data. In addition, national statistics are based on samplers using federal reference or equivalent methods.
[c] State statistics are based on local conditions data.
[d] Measurements usually are collected every 6 days.
[e] State criteria for sufficiently complete data for calculating valid annual averages are more stringent than the national criteria.
[f] Mathematical estimates of how many days' concentrations would have been measured as higher than the level of the standard had each day been monitored. Values have been rounded.

As shown in Tables 3.3-1 and 3.3-2, the Oakland – 9925 International Boulevard Station and the San Francisco – Arkansas Street Station have not experienced any exceedances of the NO_2 ambient air quality standards for which recent data are available. The San Francisco – Arkansas Street station did record two exceedances of the PM_{10} 24-hour CAAQS in 2020, 14 exceedances of the $PM_{2.5}$ 24-hour NAAQS in 2018, and eight violations of the same standard in 2018 (CARB 2020c). The San Francisco – Arkansas Street station also recorded one exceedance each of the O_3 1–hour CAAQS, the 8-hour NAAQS, and the 8-hour CAAQS in 2019 (CARB 2020c). The Oakland – 9925 International Boulevard Station recorded 13 exceedances of the $PM_{2.5}$ 24–hour NAAQS in 2018 and 11 exceedances of the same standard in 2020 (CARB 2020c). The Oakland – 9925 International Boulevard Station recorded one exceedance of the O_3 1–hour CAAQS, and two exceedances of both the 8-hour NAAQS and CAAQS in 2019 (CARB 2020c). As discussed above, the CAAQS and NAAQS are concentration limits of criteria air pollutants needed to adequately protect human health and the environment. Existing exceedances of the 24-hour PM_{10} CAAQs and $PM_{2.5}$ NAAQS indicate that certain individuals exposed to this pollutant may experience increased acute cardiovascular and respiratory ailments.

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. Local laws, regulations, and policies pertaining to air quality applicable to the Project are discussed in Appendix B.

3.3.3 Impact Analysis

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

No Impact

The proposed Project is not expected to conflict with or obstruct implementation of the applicable air quality plan based on currently known information and based on similar and recent fiber optic cable projects evaluated off the coast of California. The Project would generate criteria pollutants primarily during construction from marine vessels, off-road equipment (e.g., HDD rig, backhoes), and on-road vehicles used for employee commuting and hauling. For purposes of modeling air quality emissions, up to 25 employees per day during construction were assumed. Once construction and installation are complete, no routine maintenance would be required to operate the system.

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

Less than Significant With Mitigation

Ambient air quality standards have been developed at the state and federal level. The SF Bay Area including Alameda and San Mateo counties is designated nonattainment[17] for the following criteria pollutants:

- Federal and state O_3 standards
- Federal and state $PM_{2.5}$ standards
- State PM_{10} standards

BAAQMD has developed regional- and local-scale emission thresholds for those criteria pollutants and precursors that are designated as nonattainment above which impacts from a proposed project may be considered to have significant impacts on air quality.

[17] Nonattainment is when the pollutant concentrations are above the ambient air quality standards in a specific air district (BAAQMD for this Project).

As detailed in Appendix E, the average daily criteria emissions during construction were calculated using CalEEMod for off-road equipment, EMFAC for on-road equipment, and USEPA's Ports Emissions Inventory Guidance for marine vessels. Expected construction emissions per day within the BAAQMD Air Basin are presented in Table 3.3-3 along with the thresholds of significance BAAQMD has established.

Table 3.3-3. Expected Average Daily Construction Pollutant Emissions

Pollutant	Expected Average Emissions (pounds per day)	BAAQMD Thresholds of Significance (pounds per day)	Threshold Exceeded?
NOx	47.6	54	No
ROG	4.4	54	No
PM_{10} (exhaust)	1.5	82	No
$PM_{2.5}$ (exhaust)	1.5	54	No

Terms:
NOx = nitrous oxides
$PM_{2.5}$ = particulate matter with a diameter of 2.5 microns or less (fine)
PM_{10} = particulate matter with a diameter of 10 microns or less (respirable)
ROG = reactive organic gases

As detailed in Appendix E, PM_{10} and $PM_{2.5}$ emissions from exhaust are anticipated to be below the BAAQMD significance thresholds without minimization or mitigation. To reduce NOx emissions to be below the BAAQMD CEQA significance thresholds, the following mitigation measures will be implemented:

MM AIR-1: Use of Tier 4 Equipment. All off-road diesel-powered heavy equipment used to construct the Project shall be equipped with Tier 4 engines, except for specialized equipment or when Tier 4 engines are not available. Retrofits that achieve or exceed emission reductions equivalent to that of a Tier 4 engine may be used in lieu of Tier 4 engines.

MM AIR-2: Standard Control Measures for Construction Equipment. The following air quality control measures shall be implemented during terrestrial construction.

- Maintain all construction equipment in proper tune according to manufacturer's specifications.

- Fuel all off-road and portable diesel-powered equipment with CARB-certified motor vehicle diesel fuel (non-taxed version suitable for use off-road).
- All on- and off-road diesel equipment shall not idle for more than 5 minutes continuously.
- Signs shall be posted in the designated queuing areas and job sites to remind drivers and operators of the 5-minute idling limit.
- Diesel idling within 1,000 feet of sensitive receptors is not permitted.
- Staging and queuing areas shall not be located within 1,000 feet of sensitive receptors.
- Electrify equipment when feasible.
- Substitute gasoline-powered in place of diesel-powered equipment, where feasible.
- Use alternatively fueled construction equipment on-site where feasible, such as compressed natural gas (CNG), liquefied natural gas (LNG), propane, or biodiesel.

The BAAQMD does not have thresholds of significance for fugitive dust. Instead, they recommend implementing the Basic Construction Mitigation Measures for all proposed projects, which is **MM AIR-3**:

MM AIR-3: Minimize Fugitive Dust. Minimize fugitive dust during construction by implementing the following measures:

- Reduce the amount of disturbed area where possible.
- Use water trucks / construction trailers or sprinkler systems in dry weather in sufficient quantity to prevent airborne dust from leaving the site.
- Implement dust control measures as soon as possible following completion of any soil-disturbing activities.
- Establish a policy that vehicle speed for all construction vehicles is not to exceed 15 miles per hour (24 kilometers per hour) on any unpaved surface.
- Water all active construction areas (including storage piles) as needed to suppress dust. Base the frequency on the type of operation and the soil and wind exposure.

- Cover or maintain at least 2 feet (0.6 meter) of space between the material and the top of the container on haul trucks transporting soil, sand, or other loose material on and off the site.
- Sweep adjacent public roads if visible soil material is carried out from a work site.

The proposed Project would not generate emissions during the operational phase. As shown in Table 3.3-3 and with the implementation of **MM AIR-1** through **MM AIR-3**, Project emissions during construction would be below BAAQMD's thresholds of significance and would not 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. Therefore, the impact would be less than significant with mitigation.

c) Expose sensitive receptors to substantial pollutant concentrations?

Less than Significant Impact

As described in Section 3.3.1.2, there are sensitive receptors within 1,000 feet of the Project site. These receptors are parks; there are no residences, hospitals, or schools within 1,000 feet of the Project site. Given that the estimated Project emissions are below significance thresholds, as shown in Table 3.3-3, the Project would not expose these sensitive receptors to substantial pollutant concentrations.

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

Less than Significant Impact

Project construction equipment and vessels would generate emissions from diesel, gasoline, and marine fuel combustion. In addition, soil disturbance may result in odors, depending on the contents of the soil to be disturbed. Most Project construction and installation activity is not expected to be near receptors and would generally not be considered objectionable (Figure 3.1-1). Odors are expected to be most noticeable at the western cable landing site to receptors on the Bay Trail and at the eastern cable landing site to receptors on the Bay Trail and Tony Lema Golf Course. Odors generated by equipment during construction would be temporary (during the day for approximately 1 month) in the immediate surrounding area. Odor impacts are therefore anticipated to be less than significant.

3.3.4 Mitigation Summary

Implementation of the following mitigation measures would reduce the potential for Project-related impacts on Air Quality to less than significant:

MM AIR-1: Use of Tier 4 Equipment
MM AIR-2: Standard Control Measures for Construction Equipment
MM AIR-3: Minimize Fugitive Dust

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, or that is a species of interest to the State Lands Commission or the California Coastal Commission; or cause a marine wildlife population to drop below self-sustaining levels?	☐	☒	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife, U.S. Fish and Wildlife Service, State Lands Commission, or California Coastal Commission?	☐	☒	☐	☐
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒

BIOLOGICAL RESOURCES – Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☒	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance (including essential fish habitat)?	☐	☐	☒	☐
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan?	☐	☐	☐	☒

3.4.1 Environmental Setting

3.4.1.1 Terrestrial Biological Resources

The western terrestrial biological study area evaluated in this MND includes the four approximately 0.1-acre (0.04-hectare) area potential landing sites with a 500-foot (153-meter) buffer for each site near the corner of Lagoon Road and Sierra Point Parkway in Brisbane (Figure 3.4-6). The buffer around the Project site accounts for environmentally sensitive natural Bay habitats, regulated by the San Francisco Bay Conservation and Development Commission (BCDC), which include habitats that are scarce or have an abundance of wildlife and aquatic organisms.

The eastern terrestrial biological study area evaluated in this MND is an approximately 0.1-acre (0.04-hectare) area with a 500-foot (153-meter) buffer along the Bay Trail in San Leandro (Figure 3.4-7).

The Project area, inclusive of both the western and eastern cable landing sites, is in the Central California Coast subdivision of the California Floristic Province (Baldwin et al. 2012). The climate is characterized by cool, wet winters and foggy summers. Annual average temperatures in the general Project area range from 41.9 degrees Fahrenheit (°F) to 73.4°F, with the coolest temperatures occurring in December and January, and the warmest in August and September (Western Regional Climate Center 2020). Average annual rainfall in the Project vicinity is 18.03 inches, most of which falls from November through March.

Land Cover

The land cover within the western biological study area may be characterized as disturbed (i.e., ruderal). The fiber optic cables would be installed in an area directly adjacent to two roadways and was historically part of a larger landfill property, although the southern edge of the landfill itself was located approximately 200 feet (61 meters) northwest of the primary western cable landing site, north of Lagoon Road. This is the nearest cable landing site to the landfill itself. Based on site photographs, the western cable landing site offers low-quality habitat, where non-native annual grasses and occasional coyote brush species dominate the landscape.

The land cover within the eastern biological study area may also be characterized as disturbed or ruderal. The cables would be installed in an area between a recreation pathway and a heavily disturbed golf course. Based on site photographs, the eastern cable landing site offers low-quality habitat, dominated by non-native annual grasses and scattered shrubs between the recreation features.

The terrestrial cable landing sites on each side of the SF Bay offer minimal habitat value. Areas that may offer more habitat value, such as locations closer to the tidal zones, would be avoided with the use of the HDD method at both cable landing sites. Additionally, areas such as the Brisbane Lagoon, south of the western cable landing site, and Heron Bay lagoons, located south of the eastern cable landing site, provide potential habitat for certain special-status species[18] such as California Ridgeway's rail (*Rallus obsoletus* [*longirostris*] *obsoletus*), salt marsh harvest mouse (*Reithrodontomys raviventris*), and California seablite

[18] This is not a comprehensive list of possible species present in the nearby potentially suitable habitat. See Appendix D for more details.

(*Suaeda californica*). However, the cable landing sites were purposely sited to avoid these potential habitat areas.

Special-Status Species

For this MND, special-status species are plants and animals that are legally protected under the federal Endangered Species Act (FESA), California Endangered Species Act (CESA), or other regulations, and species that are considered sufficiently rare by the scientific community to qualify for such listing. Special-status species are defined as follows:

- Species that are listed or proposed for listing as threatened or endangered under FESA (Title 50 Code of Federal Regulations section 17.11 [50 CFR 17.11; listed animals], 50 CFR 17.12 [listed plants], and various notices in the Federal Register)
- Species that are candidates for possible future listing as threatened or endangered under FESA (81 Federal Register 87246 87272, December 2, 2016)
- Species that are listed or proposed for listing by the State of California as threatened or endangered under CESA (Cal. Code Regs., § 670.5)
- Animals listed as California species of special concern on the CDFW Special Animals List (CDFW 2022a)
- Animals listed as California fully protected species as described by Fish and Wildlife Code sections 3511 (birds), 4700 (mammals), and 5050 (reptiles and amphibians)
- Plants listed as rare under the California Native Plant Protection Act (Fish and Wildlife Code sections 1900 et seq.)
- Plants with a California Rare Plant Rank of 1A, 1B, 2A, and 2B on CDFW's Special Vascular Plants, Bryophytes, and Lichens List (CDFW 2022b), and considered threatened or endangered in California by the scientific community
- Plants designated as California Rare Plant Rank of 3 and 4 that may warrant legal consideration if the population is locally significant and meets the criteria under State CEQA Guidelines section 15380(d)

The following existing natural resource information was reviewed to identify special-status species and other sensitive biological resources that could occur in the Project terrestrial biological study areas:

- The U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) species report for the Project area (USFWS 2022a)
- USFWS Critical Habitat Portal (USWFS 2022b)
- California Natural Diversity Database records search within 3 kilometers (1.7 miles) of the Project area (CDFW 2021)
- California Native Plant Society Inventory of Rare and Endangered Plants of California (CNPS 2022)

Special-Status Wildlife Species

Based on the desktop review, 19 special-status wildlife species were identified with the potential to occur in or near the Project area (Table 1 of the USFWS Biological Assessment in Appendix D). When potential habitat at the eastern and western cable landing sites was compared to the habitat requirements for these special-status wildlife species, a total of four wildlife species were determined to have the potential to be present or seasonally present in the terrestrial biological study areas (Table 2 of the USFWS Biological Assessment in Appendix D):

1. California Least Tern (*Sterna antillarum browni*): Federally Endangered, State Endangered, CDFW Fully Protected, and potentially seasonally present

2. California Ridgway's Rail (*Rallus obsoletus* [*longirostris*] *obsoletus*): Federally Endangered, State Endangered, and potentially present year-round

3. Western Snowy Plover (*Charadrius nivosus nivosus*): Federally Threatened, CDFW Species of Special Concern, and potentially seasonally present

4. Brown Pelican (*Pelecanus occidentalis californicus*): CDFW Fully Protected, Federally Delisted, and potentially present year-round

California Least Tern

California least tern are federally and state Endangered and CDFW Fully Protected. They breed along the coastline in the SF Bay Area from April until

October (CDFW 2017). This species requires undisturbed stretches of sparsely vegetated ground near water resources such as lagoons, estuary or bay, and coastal waters for nesting. Nests consist of shallow depressions on the ground camouflaged using pebbles, shells, or debris. This species may be present seasonally in the biological study areas, foraging near open water. The biological study areas contain little to no open sandy areas and are not likely to support breeding colonies.

California Ridgway's Rail

The federally and state Endangered California Ridgway's rail is generally associated with densely vegetated salt marshes, with foraging habitat consisting of tidal channels and open mudflats near vegetation and nesting habitat consisting of a compromise between higher-elevation marsh vegetation that provides less cover and low-lying tall cordgrass that may flood during high tide events (Cornell Lab 2022a). This species may be present in the biological study areas, foraging in tidal mudflats during lower tides. The biological study areas do not support salt marches and are not likely to support breeding colonies.

Western Snowy Plover

The Western Snowy Plover, federally Threatened and a CDFW Species of Special Concern, are generally associated with unvegetated bare ground near wet or marine foraging habitats. Nesting habitat consists of open, sandy areas adjacent to open water including coastal beaches, or shorelines of saline lakes (Cornell Lab 2022b). Western Snowy Plover may be present seasonally (March through September) in the biological study area, foraging in tidal mudflats during lower tides or along the riprap bulkheads. The Project areas do not support open sandy areas and therefore are not likely to support breeding colonies.

California Brown Pelican

The CDFW Fully Protected and federally delisted California Brown Pelican can be observed year-round along the California coast, including SF Bay (NPS 2016). Breeding is limited to the Channel Islands off southern California; therefore, nesting habitat is not located within the biological study areas. Non-breeding pelicans may be present within the biological study area along the riprap shoreline.

Special-Status Plant Species

Based on the desktop review, 10 special-status plant species were identified with the potential to occur in or near the Project area (Table 1 of the USFWS Biological Assessment in Appendix D). When potential habitat at the cable landing sites was compared to the habitat requirements for these special-status plant species, only one species was found to have the potential to be present or seasonally present in the terrestrial biological study areas (Table 2 of the USFWS Biological Assessment in Appendix D):

1. California seablite (*Suaeda californica*): Federally Endangered and potentially present year-round in the Project biological study areas

California Seablite

Federally endangered California seablite can be found in sandy coastal dunes in southern California and around the SF Bay. California seablite was extirpated (locally extinct) from the SF Bay but has since been reintroduced in tidal marshes on the eastern side of the SF Bay, north of the biological study area (USFWS 2010). There is potential for occurrence of this species on the eastern cable landing site Project area. However, due to the poor-quality coastal scrub habitat, proximity to the Tony Lema Golf Course, and presence of non-native species, occurrence is unlikely.

Sensitive Natural Communities

Wetlands and Non-Wetland Waters

There are two potentially state or federally regulated features, a swale-like ditch and concrete v-notch drainage ditch, within the Project biological study areas at the western cable landing sites (Figure 3.4-3). No wetlands or non-wetland waters were identified within the biological study area of the eastern cable landing site. The Project was specifically sited to avoid wetland and non-wetland communities such as salt marshes, lagoons, and freshwater wetlands.

Environmentally Sensitive Natural Habitats

The BCDC is interested in a Project's impacts on all SF Bay coastal areas but is especially interested in areas containing environmentally sensitive natural habitats, which are habitats that are scarce or have an abundance of wildlife and aquatic organisms.

The eastern and the western cable landing sites (proposed cable route and the three alternatives) do not contain environmentally sensitive natural habitats for BCDC, and the sites do not qualify as environmentally sensitive habitat areas (ESHA) based on the San Mateo Local Coastal Program (LCP) (County of San Mateo 2013). Areas of sensitive habitat, such as eelgrass and salt marshes, were identified early in the planning stages and the Project was routed to avoid them.

3.4.1.2 Marine Biological Resources

The marine biological study area extends across the SF Bay, from the OHWM along the cable route on the western side of the SF Bay, regardless of HDD exit location (Figure 1.3-3), to the OHWM along the cable route on the eastern side of the SF Bay (Figure 3.4-1). The study area includes a buffer zone of 1.62 nautical miles (3 kilometers) to encompass indirect effects on marine species that could result from vessel noise and movement.

Marine Habitat

The marine habitat consists of intertidal and nearshore habitat zones and the open water habitat zone of the SF Bay, as further discussed below.

Intertidal and Nearshore Habitat

The intertidal and nearshore zones on both sides of the SF Bay along the cable route include rocky (riprap) shorelines or intertidal and mudflat intertidal or subtidal habitats that support marine biota. These areas are tidally influenced and therefore are covered to a variable extent with seawater when the tide is in and are exposed to the air at low tide.

Rocky (riprap) shorelines and intertidal habitats can support marine vegetation (e.g., algae, seagrass), mobile epifauna,[19] sessile encrusting invertebrates (i.e., organisms without a spine),[20] fish, sea turtles, marine mammals, and marine birds, depending on the water level. All, except for sea turtles, are expected along the fiber optic cables' route in the SF Bay.

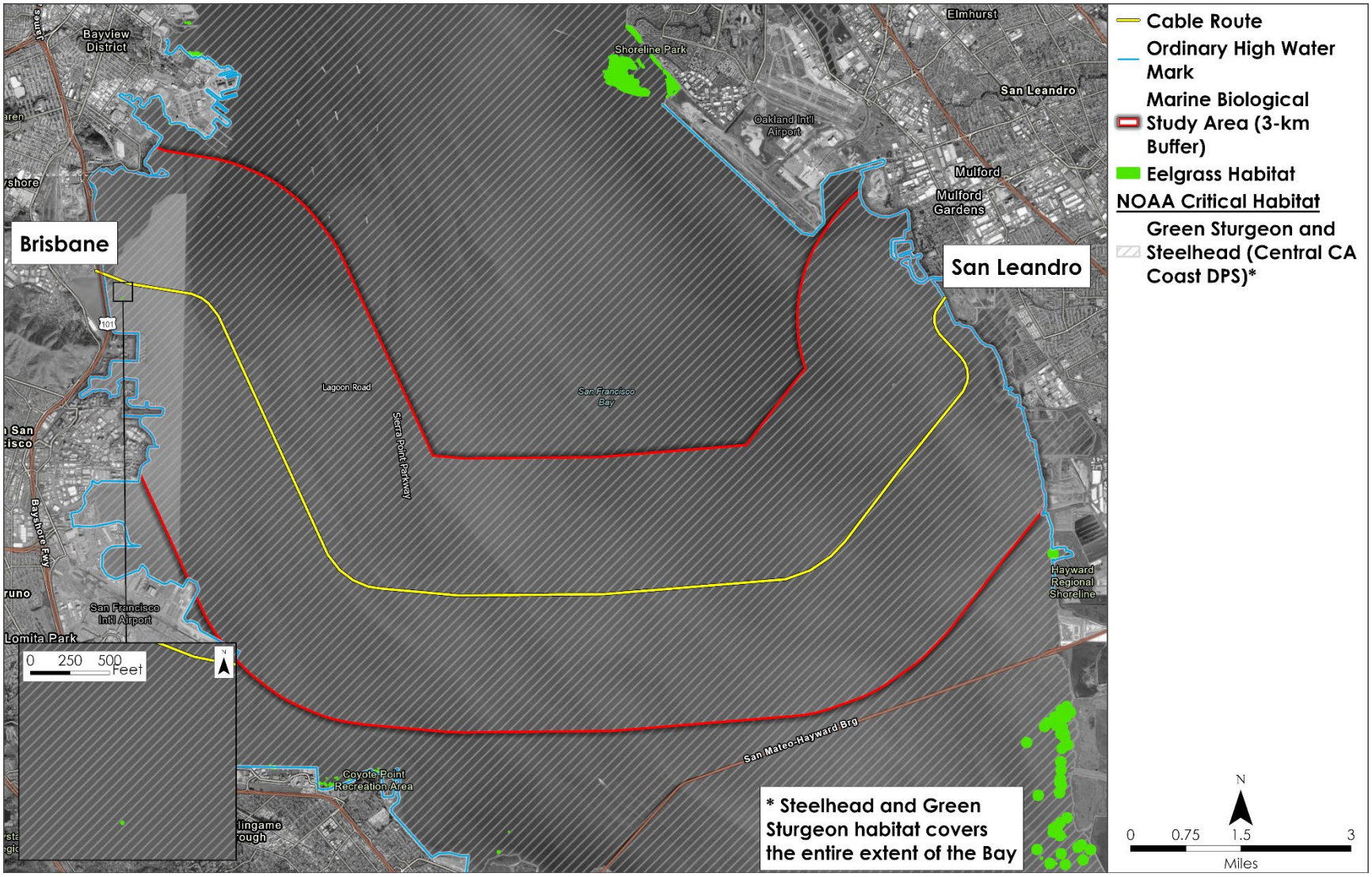
[19] Organisms living on the surface of the substrate or attached to submerged objects.
[20] Organisms that are permanently attached or established on hard substrate habitat and typically are not free to move around.

In comparison, mudflat habitats are comprised of soft sediments[21] that typically support invertebrate infauna,[22] vertebrate (i.e., organisms with a spine) infauna, mobile epifauna, planktonic organisms, fish, sea turtles, marine mammals, and marine birds, again depending on the water depth. All, except for sea turtles, are expected along the fiber optic cables' route in the SF Bay.

[21] Soft sediments can range from coarse sand to fine muds. Mudflats are typically comprised of sediments more on the fine mud side of the soft sediment range.

[22] Organisms living in the sediment of the beach or seabed.

Figure 3.4-1. Marine Biological Resources and Marine Biological Study Area



Rocky shorelines would be present at both the eastern and western ends of the cable route before the cables would enter the terrestrial environment. Heading away from shore along the fiber optic cables' route, the route passes through mudflat intertidal and subtidal habitats. The fiber optic cables' installation on the western side of the SF Bay would use the HDD method to install a HDPE conduit from the cable landing site out past the rocky shoreline and mudflat intertidal. On the eastern side of the fiber optic cables' route, the HDPE conduit would be approximately 200 feet (60 meters) long, which would extend past the rocky shoreline and exit within the mudflat intertidal. The average water depth at the western HDD exit point would be 5 feet (1.5 meters), and the average depth at the eastern HDD exit point would be within the intertidal zone.

The HDD exit points on both the western and eastern sides of the SF Bay would remain buried by 5 feet (1.5 meters) of bay floor sediment at all times except during drilling exit activities and when the fiber optic cables would be pulled into the HDPE conduits, when the HDPE conduit ends would be exposed by jets. The substrate at both HDD exit points would be soft substrate comprised of clay and sandy clay (A2Sea 2022).

Open Water Habitat

Open water habitats support planktonic organisms (phytoplankton, zooplankton, and ichthyoplankton) that have restricted swimming abilities and float with the currents, as well as nektonic organisms such as fishes, sharks, sea turtles, and marine mammals that move freely against local currents. Marine birds can also be found in this habitat, at or near the sea surface.

The open water habitat of the SF Bay along the fiber optic cables' route would only be approximately 34 feet (10 meters) deep on average and it would change depth with the tides, limiting the size of species potentially present. Species present in the open water along the fiber optic cables' route would likely include plankton, fish, sharks, marine mammals, and marine birds.

The benthic habitat (i.e., habitat occurring on or in the seabed) along the fiber optic cables' route away from the subtidal zone would still be composed of soft sediments, meaning the species present along the route would likely be composed of invertebrate and vertebrate infauna, mobile epifauna, plankton, fish, and marine mammals.

Special-Status Marine Species

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

- Listed or proposed, or are candidate species for listing as threatened or endangered by USFWS and National Oceanic and Atmospheric Administration (NOAA) pursuant to FESA
- Listed as rare, threatened, or endangered by CDFW pursuant to CESA
- Managed and regulated under the Magnuson-Stevens Fishery Conservation and Management Act (MSA)
- Protected under the Marine Mammal Protection Act
- Managed and regulated by CDFW under the Nearshore Fisheries Management Plan and the Market Squid Fisheries Management Plan
- Designated by CDFW as a California species of concern
- Designated by NOAA as a species of concern
- Not currently protected by statute or regulation but considered rare, threatened, or endangered under CEQA (State CEQA Guidelines section 15380)

The following existing natural resource information was reviewed to identify special-status species and other sensitive biological resources that could occur in the Project marine biological study areas:

- California Natural Diversity Database records search within 3 kilometers of the Project area (CDFW 2021)
- NOAA Fisheries Essential Fish Habitat Mapper (NOAA Fisheries 2022a): Interactive map of Essential Fish Habitat areas
- NOAA Fisheries ESA Threatened and Endangered Species List (NOAA Fisheries 2022b): ESA Threatened and Endangered species under NOAA jurisdiction
- NOAA Fisheries All Species List (NOAA Fisheries 2022c): All species under NOAA jurisdiction, including marine mammals, invertebrates, and fishes

- The U.S. Fish and Wildlife Service (USFWS) IPaC species report for the Project area (USFWS 2022a)
- Merkel and Associates San Francisco Bay Eelgrass Inventory (Merkel and Associates 2014): locations of eelgrass in the SF Bay
- San Francisco Estuary Institute (2021): Eelgrass habitat throughout the SF Bay

Special-status species considered for evaluation and their likelihood to occur in the marine study area are discussed in detail in the National Marine Fisheries Service Biological Assessment in Appendix D, Terrestrial and Marine Biological Resource Information. Table 1 in the National Marine Fisheries Service Biological Assessment in Appendix D lists special-status marine species and their potential to occur in the Project marine study area. The special-status species discussed here are those that are considered present[23] or seasonally present[24] and likely to occur[25] (i.e., have a high probability to occur at some point in the year) or have the potential to occur[26] (i.e., have a moderate probability to occur at some point in the year) in the Project marine study area.

Marine Mammals

The marine mammal species determined to be present and would likely occur within the Project area all year long would be California sea lion (*Zalophus californianus*), common bottlenose dolphin (*Tursiops truncatus*), harbor porpoise (*Phocoena phocoena*), and harbor seal (*Phoca vitulina*). The seasonally present marine mammal species with the potential to occur within the Project area during some seasons would be the northern elephant seal (*Mirounga angustirostris*) and northern fur seal (*Callorhinus ursinus*). There are no established haul-out, pupping, or birthing sites in the Project marine study area.

[23] Species are potentially present in the Project marine study area at all times of the year based on database records and species life history.
[24] Species are potentially present in the Project marine study area based on database records but are only present at certain periods of the year due to species life history.
[25] The species is likely to occur in the Project marine study area. The likelihood is dependent on time of year and reproductive criteria, migration routes, food availability, and habitat suitability. Considered a high probability of occurrence.
[26] The species is potentially found in the Project marine study area. This is also dependent on time of year and reproductive criteria, migration routes, food availability, and habitat suitability. Considered a moderate probability of occurrence.

Fishes

Five special-status fish species were determined to be present or seasonally present and would likely be present or have the potential to be present, based on the marine study area conditions, the species' life history, and species' range. The green sturgeon (Southern Distinct Population Segment [DPS], *Acipenser medirostris*) and steelhead (Central California Coast DPS, *Oncorhynchus mykiss irideus* population 8) were determined to be present and would likely occur within the Project area. Coho salmon (Central California Coast Evolutionarily Significant Unit, *Oncorhynchus kisutch*) and longfin smelt (San Francisco Bay-Delta DPS, *Spirinchus thaleichthys*) were determined to be present with the potential to occur within the Project area. Specifically for longfin smelt, open waters within and adjacent to the Project area are suitable habitat throughout the year, with individuals moving to deeper or shallower portions of the water column depending on water temperature (colder water is preferred). The Pacific herring (*Clupea pallasii*) was considered seasonally present and would likely occur within the Project marine study area (Figure 3.4-1).

Significant Ecological Areas

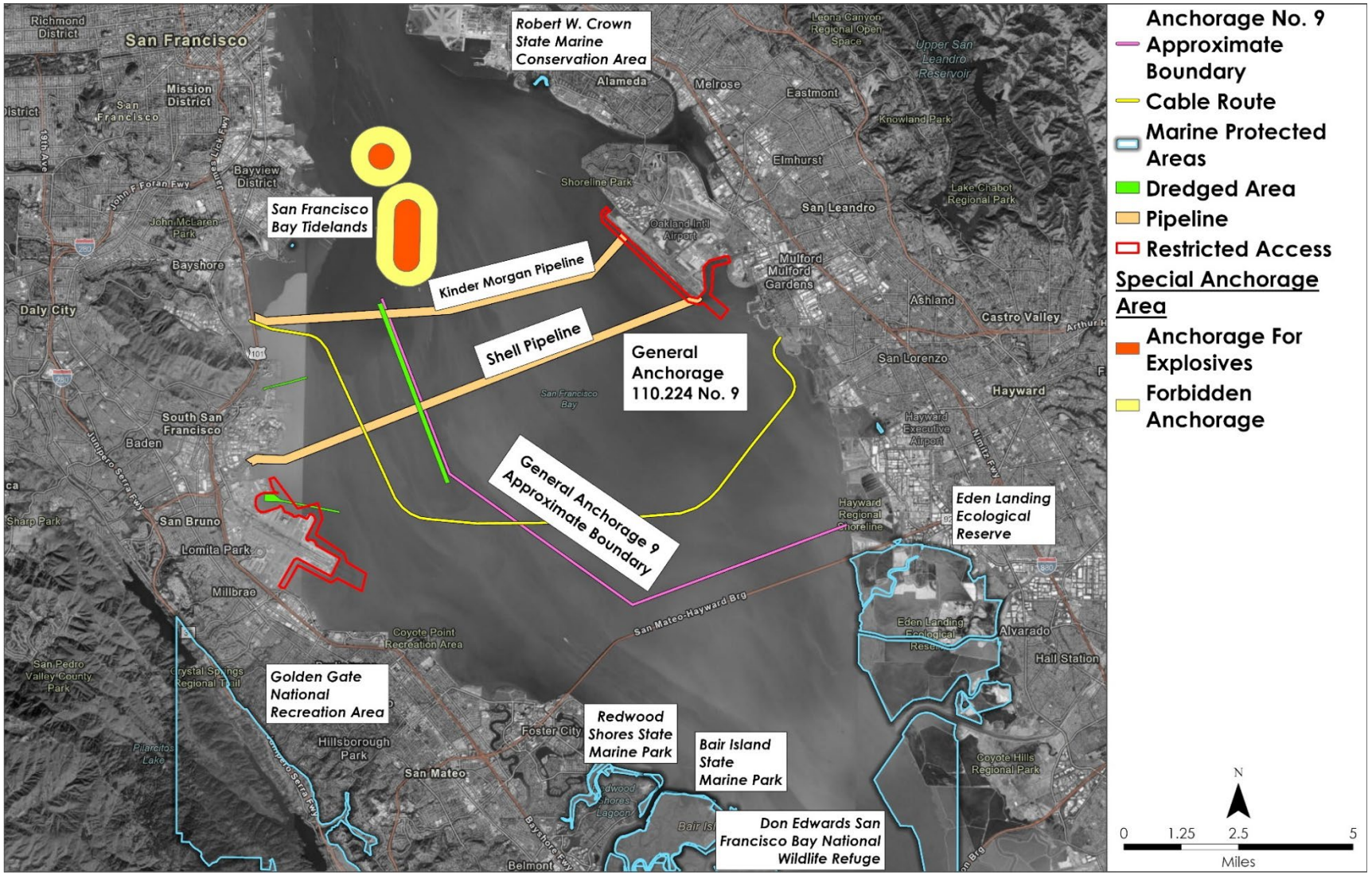
The proposed marine fiber optic cables' route would not transit any areas of special biological importance (e.g., Areas of Special Biological Significance, Marine Protected Areas, State Marine Reserves, State Marine Parks, State Marine Conservation Areas) (Figures 3.4-1 and 3.4-2). The fiber optic cables' route would also not pass through any areas identified as critical habitat and Essential Fish Habitat (EFH) (Figures 3.4-1 and 3.4-2).

Marine Protected Areas

All the SF Bay protected areas, including marine protected areas (MPAs), are outside both the Project area and its buffered1.62-nautical-mile (3-kilometer) area around the marine cable route (Figure 3.4-1). Below are the protected areas identified in southern SF Bay, closest to the fiber optic cables' route. Almost the entire southern margin of the SF Bay is inside the Don Edwards National Wildlife Refuge, which extends from San Mateo County to Alameda County. The proposed Project is located approximately 6.6 miles (10.6 kilometers) from the nearest border of the Don Edwards National Wildlife Refuge Protected Area, which is well outside the action area. Other MPAs within the SF Bay include (Figure 3.4-2):

- Eden Landing Ecological Reserve: In 1998, this area of salt ponds, diked marshes, and transitional areas was designated an ecological reserve, managed by California Department of Fish and Wildlife. The closest border of this reserve is approximately 3.3 miles (5.3 kilometers) from the proposed Project, outside the action area.
- Bair Island State Marine Park: This area has historically been tidal salt marsh and was designated as an ecology reserve by the Fish and Game Commission in 1986. Bair Island is composed of approximately 3,000 acres of former salt ponds. Approximately 2,000 acres are within the Bair Island Ecological Reserve on the Middle and Outer islands. The remainder of the islands are part of the Don Edwards National Wildlife Refuge (CDFW 2022c). The closest border of this reserve is approximately 6 miles (9.6 kilometers) from the proposed Project, outside the action area.
- Redwood Shores Ecological Reserve: This 268-acre area was designed as an ecological reserve by the Fish and Game Commission in 1976 and consists of salt marsh, levees, and mud flats (CDFW 2022d). The closest border of this reserve is approximately 5 miles (8 kilometers) from the proposed Project, outside the action area.
- SF Bay Tidelands: This marine protected area was designed in 1973 as a National Private Conservation Land. According to the U.S. Geological Survey (USGS) PAD-US (USGS 2022), this MPA is managed by The Nature Conservancy and it protects the local biodiversity, with a sustainable use of natural resources. This MPA is located approximately 2 miles (3.2 kilometers) north of the proposed Project, outside the action area.
- Other Protected Areas: Other protected areas, such as the Robert W. Crown State Marine Conservation Area and the Golden Gate National Recreation Area are more than 6.2 miles (10 kilometers) from the Project area and therefore are not included here.

Figure 3.4-2. Marine Protected Areas and Other Avoidance Areas in Southern San Francisco Bay



Critical Habitat

Critical habitat for the southern DPS for green sturgeon (*A. medirostris*) was designated by NOAA Fisheries on October 9, 2009 (74 Federal Register 52300) and took effect on November 9, 2009. This designation includes all waters of the SF Bay Estuary, which includes the Project marine study area in the south SF Bay, and the Sacramento and San Joaquin Delta (NOAA Fisheries 2020b).

Critical habitat for central California coast DPS of steelhead (*O. mykiss irideus* population 8) was designated on September 2, 2005, with an effective date of January 2, 2006. This designation includes multiple drainages into the south SF Bay, though none of these drainages are located near the Project areas (NOAA Fisheries 2020c).

Essential Fish Habitat

Section 3(10) of the MSA defines EFH as "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity." Habitat Areas of Particular Concern (HAPCs) are considered a subset of EFH and are EFH areas that are stressed by development, rare, especially vulnerable to degradation from human impacts, or provide ecological functions for federally managed species (NOAA Fisheries 2020a).

The Pacific Fisheries Management Council manages several species units in California through fishery management plans, which are required under the MSA, to describe and identify EFH for a fishery to minimize, to the extent practicable, adverse effects on such habitat caused by fishing (Title 16, United States Code, section 1853 [16 U.S.C. 1853]; MSA 303(a)(7)). The following interpretations have been made by NOAA Fisheries to clarify this definition:

- "Waters" include aquatic areas and their associated physical, chemical, and biological properties that are used by fish, and may include historical areas if appropriate.
- "Substrate" includes sediment, hard bottom, structures underlying the waters, and associated biological communities.
- "Necessary" means the habitat required to support a sustainable fishery and the managed species contribution to a healthy ecosystem.
- "Spawning, breeding, feeding, or growth to maturity" covers a species' full life cycle (PFMC 2020).

The SF Bay, including the marine portion of the Project, has been designated as EFH for groundfish, coastal pelagic species, finfish, Chinook salmon, and coho salmon.

The NOAA Fisheries EFH Mapping Tool has identified estuaries, canopy kelp, seagrass, and rocky reefs as HAPC for groundfish, while complex channels and floodplains, thermal refugia, spawning habitat, estuaries, and marine and estuarine submerged aquatic vegetation are HAPC for salmon (NOAA Fisheries 2022a). As an estuary, all the SF Bay is mapped as groundfish HAPC and, while not mapped as salmon HAPC, may still qualify. Eelgrass, which is a type of seagrass, is another HAPC within the SF Bay, but the cables were routed to avoid all mapped eelgrass (Figure 3.4-1).

The closest mapped eelgrass to the cable route is one small, approximately 129-square-foot (12-square-meter) area of eelgrass located 1,140 feet (347 meters) from the planned cable route on the west side of the SF Bay (Figure 3.4-1).

Non-Native and Invasive Species

Project-specific marine surveys were not conducted. Data on marine habitats and species were obtained from previous studies. Non-native and invasive species are spread through human activities such as work vessels like the cable-lay vessel, international shipping, recreational boating, aquaculture, and aquarium trade. Biofouling is identified as the leading cause of the introduction of marine non-native species to California, followed by ship ballast water discharge (CDFG 2008). Most species that are introduced to California are from the northwest Atlantic, northwest Pacific, and northeast Atlantic (CDFG 2008). The most commonly introduced organisms are snails, shrimp, plankton, crabs, and algae.

All shipping operations that involve major marine vessels (i.e., vessel 300 gross registered tons or greater that can carry ballast water) are subject to the Marine Invasive Species Act of 2003 (Pub. Resources Code §§ 71200 et seq.), which revised and expanded the California Ballast Water Management for Control of Nonindigenous Species Act of 1999 (Assembly Bill [AB] 703). The CSLC administers the Marine Invasive Species Program (CSLC 2023a), which regulates biofouling and ballast water discharge from vessels arriving in California ports to prevent or minimize the introduction of invasive species from other regions.

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 policies and programs are included in Appendix B.

3.4.3 Impact Analysis

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service, or that is a species of interest to the State Lands Commission or the California Coastal Commission; or cause a marine wildlife population to drop below self-sustaining levels?

Less than Significant with Mitigation

Terrestrial Components

The following special-status species have the potential to be present or seasonally present in the Project terrestrial biological study area[27]:

- California Least Tern: Potentially seasonally present
- California's Ridgway's Rail: Potentially present year-round
- Western Snowy Plover: Potentially seasonally present
- California Brown Pelican: Potentially present year-round
- California Seablite (plant): Potentially present year-round

The Project may temporarily impact non-breeding California Ridgway's Rail, California Least Tern, Western Snowy Plover, and California Brown Pelican. The Project is not likely to affect California seablite. Potential impacts on these species include temporary displacement to other foraging grounds due to increases in noise and human activity in the action area. The Project would not result in permanent direct impacts on suitable habitat or critical habitat for these species. Therefore, the impact would be less than significant after implementing the following **MM BIO-1** through **MM BIO-5** and **HAZ-2**:

MM BIO-1: Provide Worker Environmental Awareness Training. Bandwidth shall provide environmental awareness training before starting construction

[27]Biological study areas are defined as 500-foot buffered areas around, and inclusive of, the cable landing sites and are shown on Figures 3.4-3 and 3.4.4.

activities for all construction personnel (including new personnel as they are added to the Project) working on the terrestrial and marine Project components. This training would be given by biological monitors (approved by CSLC staff) to help the trainees understand the following:

- Surrounding common and special-status species and their habitats
- Sensitive natural communities and ESHAs
- Applicable regulatory requirements
- MMs designed to avoid or minimize impacts on sensitive resource areas

The training materials shall be developed and approved by CSLC staff at least 30 days before starting Project activities in the terrestrial and marine work areas. The biological monitors shall maintain a list of all contractors who have been trained and shall submit this list and the final training material to CSLC staff within 30 days after construction starts and shall provide an updated final list after construction is completed.

The lead biological monitor, which would be the monitor with the most professional experience if more than one monitor is selected for the Project, shall be the main contact for reporting any special-status species observed in or near the Project area by any employee or contractor. Bandwidth shall provide the contact information for the lead biological monitor and the biological monitors to on-site construction workers, USFWS, CDFW, and CSLC staff before construction starts.

MM BIO-2: Conduct Biological Surveying and Monitoring. A biological monitor (typically with a college degree in a field of biology or environmental science, knowledge of species surveying for, and experience with pre-construction and construction monitoring), approved by CSLC staff, shall be present on-site to survey the work area for special-status species and nesting birds (as applicable) before starting work in the terrestrial work area to minimize potential impacts on any special-status species or other wildlife that may be present during Project construction. Because the eastern cable landing site is adjacent to the shoreline and the potential western cable sites are not, the biological monitor would also observe the shoreline adjacent to the eastern cable landing site for special-status species before starting work in the terrestrial area. When work would occur at the eastern or western marine HDD exit locations, the biological monitor would observe the shallow tidal flats surrounding the HDD exit locations for foraging by special-status species such as birds. Observations of the marine HDD exit locations would occur from shore.

The biological monitor must be on-site full-time during the initial equipment mobilization and site preparation (including fence installation), during the final demobilization phase of construction at the cable landing sites, and during all HDD exit location work (observed from the shore). In addition, the biological monitor must make weekly site visits during Project construction for all work on the cable landing site. From shore, the biological monitor would monitor the work at the HDD exit locations in case of special-status species such as birds foraging nearby during low tides. While on-site or observing the HDD exit locations from shore, the biological monitor has the authority to stop all work, and Bandwidth shall contact the appropriate agency, (i.e., CDFW or USFWS and Commission staff) to discuss ways to protect the special-status species. If a biological monitor was not monitoring the Project site during construction when a special-status species was observed on the site, the biological monitor would be contacted immediately to determine the appropriate course of action.

Construction monitoring reports will be submitted daily during above-described construction between the OHWM on the eastern and western locations within CSLC's jurisdiction and otherwise weekly outside of CSLC's jurisdiction.

MM BIO-3: Delineate Work Limits to Protect Sensitive Biological Resources. Natural areas outside the construction work area shall not be disturbed. Before starting Project construction, sensitive biological resource areas within and adjacent to the cable landing site work areas shall be staked and flagged by the biological monitor (**MM BIO-2**). The location of the staking and flagging and barrier fencing, if applicable, would be documented in the daily monitoring log and provided to CSLC before starting construction. These demarcated areas shall be inspected daily by construction personnel throughout the construction area to make sure that they are visible for construction personnel. If construction personnel note damage to the demarcated areas, they shall notify the biological monitor, who will come to the site, if not present, and fix the barriers.

MM BIO-4: Install Covers or Escape Ramps in Open Trenches. To prevent wildlife species from accidentally being entrapped during construction, all excavated holes to be left open overnight shall have a cover or soil ramp installed, allowing wildlife an opportunity to exit. If escape ramps are installed, the construction inspector or the biological monitor must inspect excavations before starting construction each day to confirm that no wildlife

species are entrapped. If any wildlife species are entrapped and the biological monitor is not on-site, the construction inspector shall notify the biological monitor, who will travel to the site to remove wildlife species that are unable to escape on their own. Any wildlife handling shall be conducted under the biological monitor's applicable collection permit or as authorized by the appropriate wildlife agency. If a biological monitor is not on-site, a local biologist (with appropriate permits) may be called out to remove any species.

MM BIO-5: Conduct Pre-Construction Nesting Bird Surveys and Implement Avoidance Measures. If construction occurs during the bird nesting season (from February 1 to September 1), the following conditions (designed to protect both special-status and non–special-status birds) shall be implemented:

- No more than 1 week before starting Project-related construction, a biological monitor, approved by CSLC staff, shall survey within the biological study areas[28] shown on Figures 3.4-6 and 3.4-7 to look for nesting activity.
- If no active nests are detected during these surveys, no additional measures are required.
- If an active nest is found, an appropriate avoidance buffer shall be established around the bird nest site to avoid disturbance or destruction of the nest until the end of the breeding season (generally August 31) or until after the biological monitor determines that the young have fledged and moved out of the area (this date varies by species). Suitable buffer distances may vary between species. The extent of these buffers shall be determined by the biological monitor in coordination with the applicable wildlife agency (i.e., CDFW and/or USFWS) and would depend on the bird species, level of construction disturbance, line-of-sight between the nest and the disturbance, ambient levels of noise and other disturbances, and other topographical or artificial barriers. Disturbances shall not occur within the protective buffer(s) until all young birds have fledged, as confirmed by the biological monitor.
- A biological monitor shall be hired by Bandwidth, approved by the CSLC (**MM BIO-2**), and shall be on-site every day if construction activities

[28] Biological study areas are defined as 500-foot buffered areas around, and inclusive of, the cable landing sites and are shown on Figures 3.4-6 and 3.4.7.

happen during bird nesting season and a nest is identified within the protective buffer area.

Marine Components

Special-status marine taxa with the potential to occur in the Project marine study area (Figure 3.4-1) include marine mammals, marine birds, and fishes. Installation, operation, and repair of the marine components of the Project have the potential to affect marine species or groups of species, either directly or indirectly, through habitat modification and interactions with individuals. The Project design, construction methods, duration, and extent of construction activities would reduce possible impacts to less than significant with implementation of **MM BIO-1** and **MM HAZ-2**. Additionally, the Applicant would implement **MM BIO-6** and **MM BIO-7** to protect herring spawning populations (peak spawning from November to March in bays and estuaries) and longfin smelt (peak spawning from January to April in freshwater rivers).

MM BIO-6: In-Water Work Window. In-water work would occur only from June 1 through November 30 to protect herring spawning populations and adult longfin smelt migrating to and from spawning locations.

MM BIO-7: Fish Screen on the Jet Sled Intake. A screen would be installed on the jet sled intake to reduce the chance of fish being pulled into the jet sled intake with the jetting water. The fish screen would adhere to the following criteria, provided by the California Department of Fish and Wildlife:

- The screen will be designed to allow uniform flow distribution through the entire face of the screen during use.
- If the screen is self-cleaning, the specific screen intake velocity will be 0.2 foot per second, which is the protection velocity for delta smelt (*Hypomesus transpacificus*) and is also considered protective of longfin smelt. If the screen is not self-cleaning, the screen will be designed so that the approach velocity is one-fourth of the self-cleaning approach velocity (0.05 feet per second). For non-self-cleaning screens, the frequency of cleaning will be such that flow is not impaired and approach velocity is not exceeded. A cleaning frequency of once per 5 minutes is considered appropriate.
- The required screen area in square feet will be determined by dividing the maximum diverted flow (cubic feet per second) by the allowable approach velocity (feet per second) to get square feet of screen area needed.

- The screen surface will have a minimum open area of 27 percent, but open areas of 40 percent or greater are recommended. Round openings will not exceed 5/32 inch (3.96 millimeter). Square openings will not exceed 5/32 inch (3.96 millimeters) diagonally. Slotted openings will not exceed 3/32 inch (2.38 millimeters).
- Screens can be constructed of any rigid material that allows water passage but excludes fish. Stainless steel is recommended to reduce corrosion-associated clogging. No sharp edges or projections that could harm fish will be present. The largest screen open area possible for the Project should be used. If anti-fouling materials are used, they should not be deleterious to fish or other wildlife.
- The intake with the screen cover will be placed in the deepest area of water possible for the jet sled location.
- The plans and design of the fish screen showing the applicable screening criteria will be provided to the California Department of Fish and Wildlife for approval.

As discussed in greater detail below, the potential effects on marine habitats in the study area would be temporary, affecting a small area of habitat. Disturbed habitat is expected to recover rapidly to pre-disturbance conditions. Consequently, none of the potential Project-related effects on marine ecosystems, once MMs are implemented, are expected to eliminate a marine plant or wildlife community or cause a fish or marine wildlife population to decline below self-sustaining levels.

Contaminant Release

Accidental release of fuel, oil, hydraulic fluids, or HDD drilling mud could affect special-status marine species. These impacts are addressed in detail in Section 3.10, Hazards and Hazardous Materials, and Section 3.11, Hydrology and Water Quality. Implementing **MM HYD-1**, **MM HAZ-1,** and **MM HAZ-2** would reduce this impact to a less than significant level.

HDD of the HDPE conduits poses a small risk of an accidental release of HDD drilling fluid to the marine environment in the SF Bay. HDD drilling fluid is composed of water and bentonite, which is a natural marine clay. The drilling fluid is used to lubricate the bore head cutting tool and transport borehole cuttings[29] back to shore. During the HDD process, it is possible that some

[29] Bits of rock and sand resulting from the bored HDD hole.

bentonite drilling fluid could be released to the SF Bay floor and thus into the water column. An accidental release of drilling fluid to the SF Bay floor could result in a temporary negative impact on the marine environment and associated marine biota. The bentonite contained in the drilling fluid could result in short-term burial and smothering of benthic epifauna and infauna, clog fish gills (Robertson-Bryan 2006), and cause increased turbidity around the area of release.

Since 2000, bentonite fluid has been detected in only 4 of 29 HDD-bored coastal landings for which records are available (AMS 2020). In each of these discharges, the borehole locations were suspected to be naturally fractured due to the proximity of known geologic fault lines. In some cases, an accidental release of drilling fluid occurred just before the drill head exited the ocean floor. So, the drilling fluid immediately was replaced with water, which prevented any further loss of drilling fluid.

Rhodamine dye, an environmentally safe fluorescent dye, would also be added to the drilling fluid for the Project to enable earlier detection of any bentonite release to the marine environment by an onshore biological monitor. An Inadvertent Return Contingency Plan (**MM HAZ-2**) would outline detailed procedures for preventing accidental release of HDD drilling fluid during HDD work, monitoring for HDD drilling fluid release using Rhodamine dye, and responding to HDD drilling fluid release. These measures would reduce the chance of an inadvertent discharge of bentonite drilling fluid to the marine environment and minimize its impact if a discharge were to occur. Implementing **MM HAZ-2** would reduce this potential impact to a less than significant level.

Cable Entanglement

The manufacturing and installation processes of modern fiber optic cables minimizes the risk of entangling marine wildlife. Modern fiber optic cable systems and installation techniques have improved torsional and flexion (i.e., twisting and bending) characteristics in subsea cables (Wood and Carter 2009), virtually eliminating the potential for exposed fiber optic cables to entangle marine species. Still, there could be a small potential for exposure or suspension of the fiber optic cables to entangle marine species. The fiber optic cables for the Project would be buried approximately 3 to 6 feet (1 to 2 meters) under the SF Bay floor, which would further reduce or eliminate the potential for entanglement. No mammal or wildlife entanglements have been reported in fiber optic cable systems installed in California waters since 2000 (AMS 2020).

Implementing **MM BIO-8** would ensure that Project's fiber optic cables would remain buried throughout their operating life and further prevent any potential for entanglement of any kind with the Project's installed fiber optic cables.

> **MM BIO-8: Cable Burial Surveys.** Bandwidth would conduct an initial survey and periodic post-lay surveys of all installed fiber optic cables and conduits between the mean high tide lines to verify that the fiber optic cables and conduits were and would remain buried as initially planned or to the maximum extent feasible as determined by the initial post-lay assessment. These surveys would assess and report the following to CSLC:
>
> - The depth of burial achieved along the fiber optic cable route.
> - Any areas of fiber optic cable or conduit suspension greater than 3.3 feet from the SF Bay floor and an explanation of why the fiber optic cables could not be rerouted to avoid suspension.
> - The consistency of fiber optic cable installation with the Project description.
>
> These post-lay surveys and assessments would be conducted as follows:
>
> - "As-built" plans showing where the improvements have been placed would be provided within 60 days of completing construction and additional post-lay surveys would be conducted at a frequency to be determined by lease conditions.
> - After any incident or activity, including but not limited to potential commercial fishing gear snags, severe earthquake in the vicinity of the fiber optic cables, or an extreme storm event that could result in excessive SF Bay floor scouring, that could result in the fiber optic cables or conduit exposure to the SF Bay floor surface.
>
> Should a fiber optic cable or conduit be observed to have become unburied in any location where it should have been buried or had been buried, Bandwidth shall ensure reburial to the initial burial depth at that location. A survey and burial report would be prepared and distributed to CSLC and other responsible state agencies after each survey.

Fishing Gear Entanglement

Fiber optic cables could be a source of fishing gear entanglement and continued entrapment of marine species if fishing gear were to get snagged and abandoned on exposed fiber optic cables' segments. Most abandoned

fishing gear is the result of snagging on marine debris (Laist and Liffmann 1997; Watters et al. 2010) rather than on active and maintained cables. Nevertheless, snagged nets or fishing gear may incidentally entangle marine wildlife until the gear is removed or recovered.

The potential for exposed fiber optic cables to snag or become entangled with commercial fishing gear would be reduced by routing and installing fiber optic cables with state-of-the-art cable route planning and installation techniques designed to increase burial success. These routes were developed by desktop and SF Bay floor surveys that map substrate types along the proposed cables' path. The cables would be buried in soft sediments to a depth of 3 to 6 feet (1 to 2 meters) where feasible from HDPE conduit to HDPE conduit across the SF Bay. No hard-bottom substrate was identified in the geophysical survey of the cable route (A2Sea 2022). Therefore, it is not anticipated that the fiber optic cables would need to be surface-laid over hard substrate along any portion of the fiber optic cables route. If hard substrate is encountered, the fiber optic cables would be routed to avoid hard substrate and remain in soft substrate, where burial is possible. Post-lay burial and inspection would be conducted by a remotely operated vehicle (ROV) in accordance with the installation procedures outlined in Section 2.0, Project Description.

If areas of exposed cable are identified during the post-lay inspection survey, the segments would be reburied to a depth of 3 to 6 feet (1 to 2 meters), or to the deepest depth feasible for the substrate. As discussed in Section 4.2, Commercial and Recreational Fishing, the likelihood of Project cables becoming entangled with commercial fishing gear is extremely unlikely. Since 2000, one commercial fisher's longline fishing gear might have become entangled with a cable and was requested to abandon his gear. His lost gear was replaced by the local commercial fisher's liaison committee and the cable operator. Despite the unlikely potential of commercial fishing gear becoming entangled with a buried fiber optic cable, implementing **MM BIO-9** would ensure that any potential for fiber optic cable entanglement with fishing gear and subsequent effects of abandoned gear to entrap marine wildlife would remain at a less than significant level.

> **MM BIO-9: Cable Entanglements and Gear Retrieval.** If fishing gear snags on a fiber optic cable and is lost or cut, or if Bandwidth snags fishing gear, Bandwidth shall use all feasible measures (for example, deploying divers), in discussion with and guided by the local Fishing Association (San Francisco Community Fishing Association, n.d.), to retrieve the fishing gear or inanimate

object. Retrieval shall occur no later than 42 days after discovering or receiving notice of the incident. If full removal of gear is not feasible, Bandwidth shall remove as much gear as practicable to minimize harm to wildlife (e.g., fishes, birds, and marine mammals). Within 14 days of completing the recovery operation, Bandwidth shall submit to CSLC staff a report describing the following:

- Nature and location of the entanglement (with a map and/or GPS coordinates).
- Method used for removing the entangled gear or object, or the method used for minimizing harm to wildlife if gear retrieval proves infeasible.

Increased Turbidity

During cable jet sled installation activities, when both cables would be buried at the same time and after grounding the barge (if it occurs), temporary spikes in turbidity near the SF Bay floor may occur. Increased turbidity typically is restricted to the region of the water column immediately above and adjacent to the SF Bay floor where jetting would be occurring. Depending on water depth and natural wave or current energy generated through the water column, any generated turbidity plumes are expected to dissipate quickly, and any resuspended sediments would settle to the SF Bay floor. During ROV surveys of proposed fiber optic cables' routes, marine sediments frequently are disturbed by the ROV thrusters and generate similar turbidity plumes (AMS 2008, 2016). These turbidity plumes dissipate quickly, and the resuspended sediments settle within minutes of the disturbance. Similarly, it is expected that the sediments would quickly settle after the sable jet sled installs the fiber optic cables on the SF Bay floor.

Like local increases in turbidity from cable jet sled installation activities, installing HDPE conduits could result in an accidental release of HDD drilling fluid to nearshore subtidal habitats, resulting in temporarily altered sediment composition and increased turbidity. During installation of the HDPE conduits, **MM HAZ-2** would be implemented to reduce the potential for an accidental release of HDD drilling fluid to the marine environment. The HDD method would terminate the HDPE conduits at approximately 5 feet (1.5 meters) (western side) and within the intertidal zone (eastern side) water depths. In general, the HDD exit points along the cable route are selected over a soft-bottom habitat. Based on the geophysical survey of the cables' route, the sediment in these locations is comprised of clay or sandy clay (A2Sea 2022). While some nearshore benthic infauna such as clams may experience smothering with the accidental release

of small volumes of bentonite drilling fluid, the impact is expected to be localized and is not expected to result in population-level effects on marine organisms that may be present around the release or to result in any permanent changes to soft-bottom habitat.

Underwater Noise

The Project-related activities associated with installing the HDPE conduits in the SF Bay and burying the fiber optic cables would generate temporary and isolated non-impulsive underwater noise (Table 2.2-1). The HDD method and vessel support needed to drill the initial bore hole before installing the HDPE would be the noisiest since it would generate non-impulsive, continuous noise. The HDD-related activities are anticipated to occur primarily during daylight hours, although 24-hour operations could occur (Table 2.2-1 in Section 2.2). Installing and burying the fiber optic cables 3 to 6 feet (1 to 2 meters) deep in the SF Bay between HDPE conduits would occur 24 hours a day for about 2 weeks (Table 2.2-1). Peak nearshore background underwater noise levels have been reported averaging between 128 and 138 decibels (dB) (re 1 µPa[30] at 3.3 feet [1 meter]) for nearshore coastal waters in Central California (Fabre and Wilson 1997). Project-related marine activities can be expected to generate the following ranges of underwater noise:

- Cable Trenching: Studies in the North Sea assessing cable trenching and plowing projects for offshore wind farms reported peak underwater noise sound levels (sound pressure levels [SPLs]) of 178 dB (re 1 µPa at 3.3 feet [1 meter]) (Nedwell et al. 2003).
- Cable Installation and Lay Vessel: Peak underwater noise levels for cable-lay vessels have been reported to range between 170 and 180 dB (re 1 µPa at 3.3 feet [1 meter]) (Hale 2018), and between 160 and 180 dB (re 1 µPa at 3.3 feet [1 meter]) for small work vessels (Caltrans 2015), depending on the vessel size and design.

The following sections discuss the expected impact of underwater noise on fishes and marine mammals for species groups expected within the Project marine study area.

[30] A Pascal (Pa) is the unit for pressure and stress in the metric system. In underwater acoustics a micropascal (µPa) is one-millionth of a Pascal.

Fishes

In the absence of formal non-impulsive, continuous noise thresholds for fishes, the established impulsive noise thresholds of 183 dB and 187 dB for fishes less than and greater than 2 grams in mass, respectively, can be used (Fisheries Hydroacoustic Working Group 2008). As detailed above, Project-related non-impulsive underwater noise levels from fiber optic cables' installation and cable-lay vessel operations would be below these established sound criteria for acute impacts on fish. Using the 150 dB noise level established for non-lethal behavioral responses in fish (Andersson et al. 2007; Wysocki et al. 2007; Mueller-Blenkle et al. 2010; Purser and Radford 2011), it is estimated that generated underwater noise would drop to this level in less than 210 feet from the noise source. Furthermore, potential ambient noise levels are anticipated to be attained within 420 to 840 feet from the source (AMS 2020). Consequently, the non-impulsive underwater sound generated by the Project is not expected to cause any substantive impact on fish.

Marine Mammals

As discussed above, Project-related work vessel activities can be expected to generate peak underwater noise levels ranging between 170 and 180 dB, based on anticipated vessel sizes. In 2018, NOAA established updated thresholds for the onset of permanent threshold shifts (PTS) and temporary threshold shifts (TTS) for impulsive and non-impulsive noise sources based on marine species hearing groups. These thresholds identify underwater noise levels where marine mammals are predicted to have short or long-term changes in hearing sensitivity. The updated impulsive noise thresholds are dual metric, meaning whichever results in the largest isopleth[31] for calculating PTS or TTS onset should be used.

NOAA recommends that the peak SPL threshold for impulsive noise be used if a non-impulsive sound has the potential to exceed the peak SPL noise threshold associated with impulsive sounds. Therefore, the following PTS and TTS values shown in Table 3.4-1 were used for the Project's underwater noise analysis because the Project-related activities would create non-impulsive underwater noise that is not expected to exceed the peak SPL thresholds for impulsive sound (NOAA Fisheries 2018).

[31] An isopleth is a line on a map connecting points at which a given variable has a specified constant value.

Except for the sound exposure levels established for porpoises, all NOAA-established underwater thresholds for non-impulsive sound levels (PTS and TTS) are greater than, or at the upper limit of, the underwater noise generated by cable installation equipment and vessels. For any porpoises to be affected by Project-generated underwater noise, they would need to be positioned at the noise source, which is unlikely to occur. As discussed above for underwater noise effects on fishes, assuming a 5 to 6 dB decrease in noise level for every doubling of the distance from the noise source, cable installation underwater noise can be expected to decrease to levels less than 153 dB approximately 26 feet from the sound source.

Table 3.4-1. Non-Impulsive Cumulative Sound Exposure Levels for Marine Mammals

Marine Mammal Group	Onset of Permanent Threshold Shifts (Cumulative SEL)	Onset of Temporary Threshold Shifts (Cumulative SEL)
Baleen whales	199 dB	179 dB
Dolphins and toothed whales	198 dB	178 dB
Porpoises	173 dB	153 dB
True seals	201 dB	181 dB
Sea lions and fur seals	219 dB	199 dB

Source: NOAA Fisheries 2018
Terms:
dB = decibel
SEL = sound exposure level

The harbor porpoise is the only porpoise species determined to be present and is likely to occur within the Project marine study area (Figure 3.4-1). It is expected that marine wildlife would avoid the immediate area where underwater noise would be generated during cable-lay activities, likely starting as soon as the equipment is placed into the water. Project-related work vessel activities can be expected to generate peak underwater noise levels ranging between 170 and 180 dB, based on anticipated vessel sizes. Sound levels generated by the Project would fall below ambient underwater noise levels beyond 105 feet from the cable-lay vessel or diver support boat. Therefore, there would be no impact on fishes or marine mammals from underwater noise.

Electromagnetic Field

The two fiber optic cables to be installed would be passive cables and would not generate an electromagnetic field. The electricity levels in the fiber optic cables would be below measurable levels. Therefore, there would be no impact on species from an electromagnetic field. With implementation of mitigation measures **MM BIO-1** through **MM BIO-9, MM HAZ-1** and **MM HAZ-2**, the impact would be less than significant on biological resources. Generally, the primary impacts from construction of the terrestrial and marine components would be temporary and occur over a short period of time in a limited physical footprint. Therefore, the impact would be less than significant.

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

Less than Significant with Mitigation

Terrestrial Components

The terrestrial cable landing sites are not within identified sensitive natural communities or ESHAs. Therefore, there would be no impact.

Marine Components

The proposed fiber optic cables' route in the marine environment does not pass through any areas of special biological importance (e.g., Areas of Special Biological Significance, Significant Ecological Areas, Marine Protected Areas, State Marine Reserves, State Marine Parks, State Marine Conservation Areas, and ESHAs) (Figure 3.4-2). The fiber optic cables' route does pass through areas defined as a HAPC and EFH for groundfish and EFH for coastal pelagic species, finfish, Chinook salmon, and coho salmon. No kelp forests or eelgrass beds are known to exist along the proposed fiber optic cables' route (Figure 3.4-1).

Soft Substrate Communities

Impacts on soft substrate benthos may include disturbance of mobile organisms and localized displacement or mortality of infauna and epifauna from barge grounding during low tide, installing the HDPE conduits in the SF Bay, and installing and burying the fiber optic cables.

Project components with the potential to affect soft substrate communities would be the following:

- During the times when the barge (used to install the HDPE conduits and pull the fiber optic cables through them) would be sitting on the SF Bay floor during low tides
- During the pre-lay grapnel run
- Using jet sled when installing the fiber optic cables
- During the ROV operation
- During the diver activities associated with exiting the HDPE conduits at the marine HDD exit points
- During and repairs (if needed)

The fiber optic cables would be installed starting from the western HDD exit point and going toward the eastern HDD exit point. The potential scale and duration of the SF Bay floor disturbance caused by Project installation and maintenance activities would be limited, resulting in predominantly localized and temporary disturbance to the SF Bay floor. In undisturbed areas adjacent to the fiber optic cables laying, the benthic infauna are expected to begin recolonizing the affected area in a matter of weeks as demonstrated by the ATOC/Pioneer seamount cable (Kogan et al. 2006), PC-1 cable in the Olympic Coast National Marine Sanctuary (Antrim et al. 2018), and the MARS cable in the Monterey Bay National Marine Sanctuary studies (Kuhnz et al. 2015). Full recovery should be achieved within a few years. Marine invertebrates, fishes, and other wildlife are anticipated to move away from, and thus avoid, all physical disturbances and to recolonize the area after it is disturbed. Consequently, any impact of Project activities on soft substrate habitat and associated biological communities would be less than significant.

Burying the fiber optic cables through soft sediment on the SF Bay floor areas also could temporarily increase turbidity in the pelagic zone (upper layers of the bay). Any resuspended sediments would resettle onto the SF Bay floor quickly. Implementing **MM HAZ-2** would address any potential inadvertent return during HDD. Consequently, any increased water turbidity is expected to cause a less than significant effect on pelagic marine habitats and associated biological resources.

Hard Substrate Communities

No known hard substrate was identified along the fiber optic cables' route during the geophysical survey (A2Sea 2022). Therefore, no hard substrate would be impacted since the fiber optic cables' route was selected based on soft substrate. If hard substrate were encountered, which is not anticipated based on the results of the geophysical survey, the fiber optic cables would be routed to avoid the hard substrate and remain in soft substrate where burial is possible.

Introduction of Non-Native and Invasive Species

As discussed in Section 3.4.1.2, Marine Biological Resources, many non-native and invasive species can be introduced by vessels—either as encrusting organisms on the hulls or other submerged parts of the vessels, or when ballast water is discharged from the vessels. No introduction of marine invasive species through ballast water discharge is anticipated in the marine study area (Figure 3.4-1) because Project vessels would not discharge ballast water within the marine study area and would be sourced from California to the extent feasible. Implementing **MM BIO-10** would further reduce any potential Project-related contribution to the spread of invasive non-native species to a less than significant level, if vessels need to be sourced from outside California.

> **MM BIO-10: Control of Marine Invasive Species.** Bandwidth shall ensure that the underwater surfaces of all Project vessels are clear of biofouling organisms before arriving in state waters. The determination of underwater surface cleanliness shall be made in consultation with CSLC staff. Regardless of vessel size, ballast water for all Project vessels must be managed consistent with the CSLC's ballast management laws and regulations, and a Ballast Water Management Report and a Marine Invasive Species Program Annual Vessel Reporting Form shall be submitted to CSLC staff at least 24 hours in advance of arrival in state waters, as required by regulation.

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?

No Impact

Terrestrial Components

There are two potentially state or federally regulated features within the Project biological study areas (Figure 3.4-3). At western landing site Alternative 2, there is

a swale-like feature (Ditch 1 on Figure 3.4-4) running through the biological study area, which likely conveys runoff from Highway 101. At western landing site Alternative 3, there is a 24-inch-wide concrete v-notch drainage ditch (Ditch 2 on Figure 3.4-5) which conveys flows along Sierra Point Parkway. The Project would avoid these potentially regulated features during final design of facilities and during construction activities. Therefore, there would be no impact.

Figure 3.4-3. Potentially Regulated Features at the Western Cable Landing Site

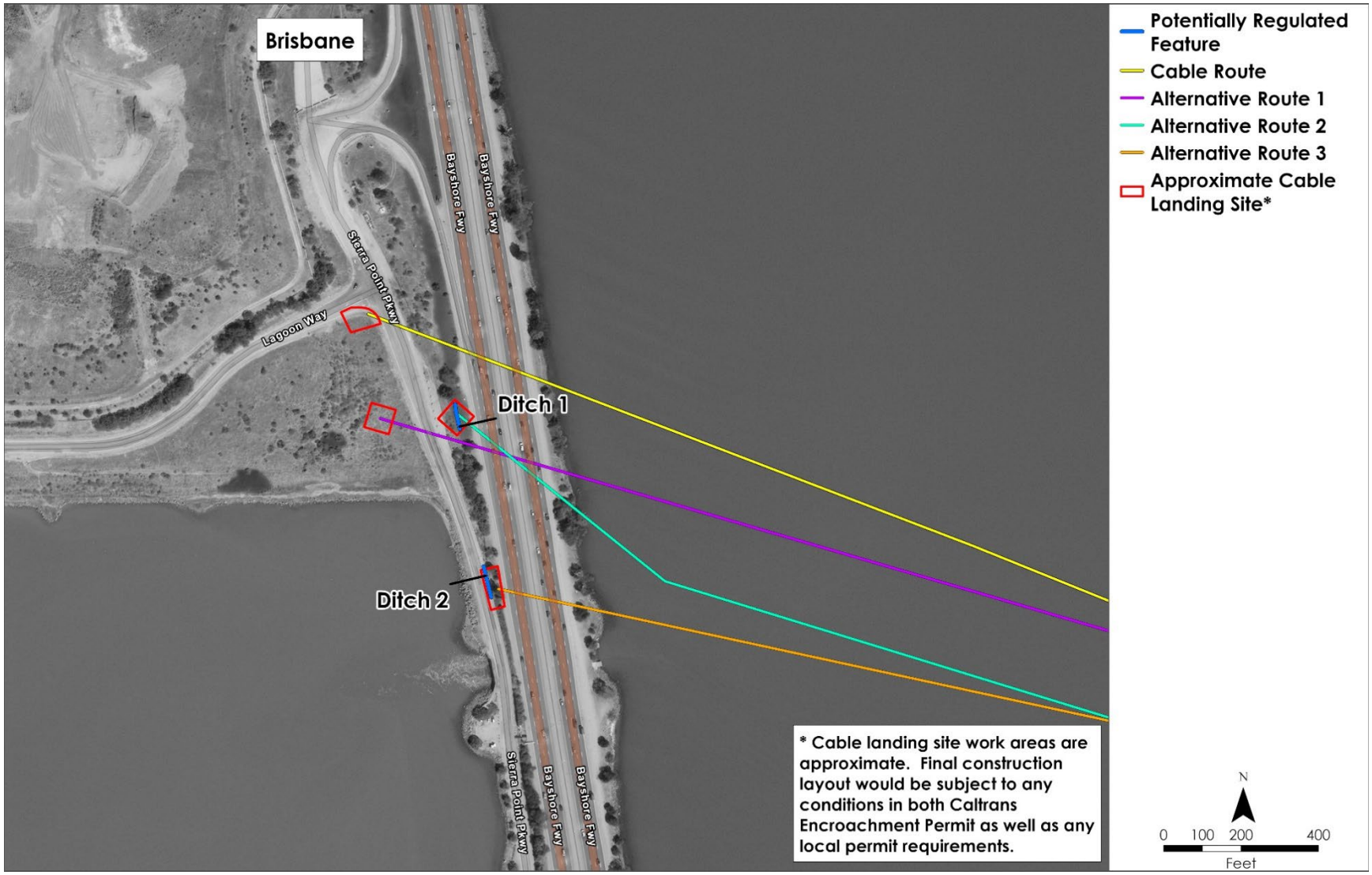


Figure 3.4-4. Swale-like Feature at the Western Landing Site Alternative 2

Figure 3.4-5. Concrete Drainage Ditch at the Western Landing Site Alternative 3

Marine Components

No federally protected wetlands occur within the Project area and state-protected wetlands near terrestrial components would be avoided through landing site placement as discussed above. The Applicant would obtain the appropriate state and federal permit authorizations to comply with Sections 404 and 401 of the Clean Water Act and Section 10 of the Rivers and Harbors Act. All permit conditions would be implemented as part of the Project. Potential water quality impacts associated with disturbance of the SF Bay sediments are addressed in Section 3.11, Hydrology and Water Quality. Therefore, there would be no impact.

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

Less than Significant Impact

Terrestrial Components

Based on current conditions and the proposed Project design, construction would not substantially impede the movement of fish or wildlife species, block or interfere with resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites. The biological study areas (Figures 3.4-6 and 3.4-7) consist mostly of ruderal, developed areas, and invasive grasses. These areas are not part of an established movement or migratory corridor, and Project activities would not substantially impede wildlife movements. Therefore, there would be no impact.

Figure 3.4-6. Terrestrial Biological Study Area at the Western Cable Landing Site

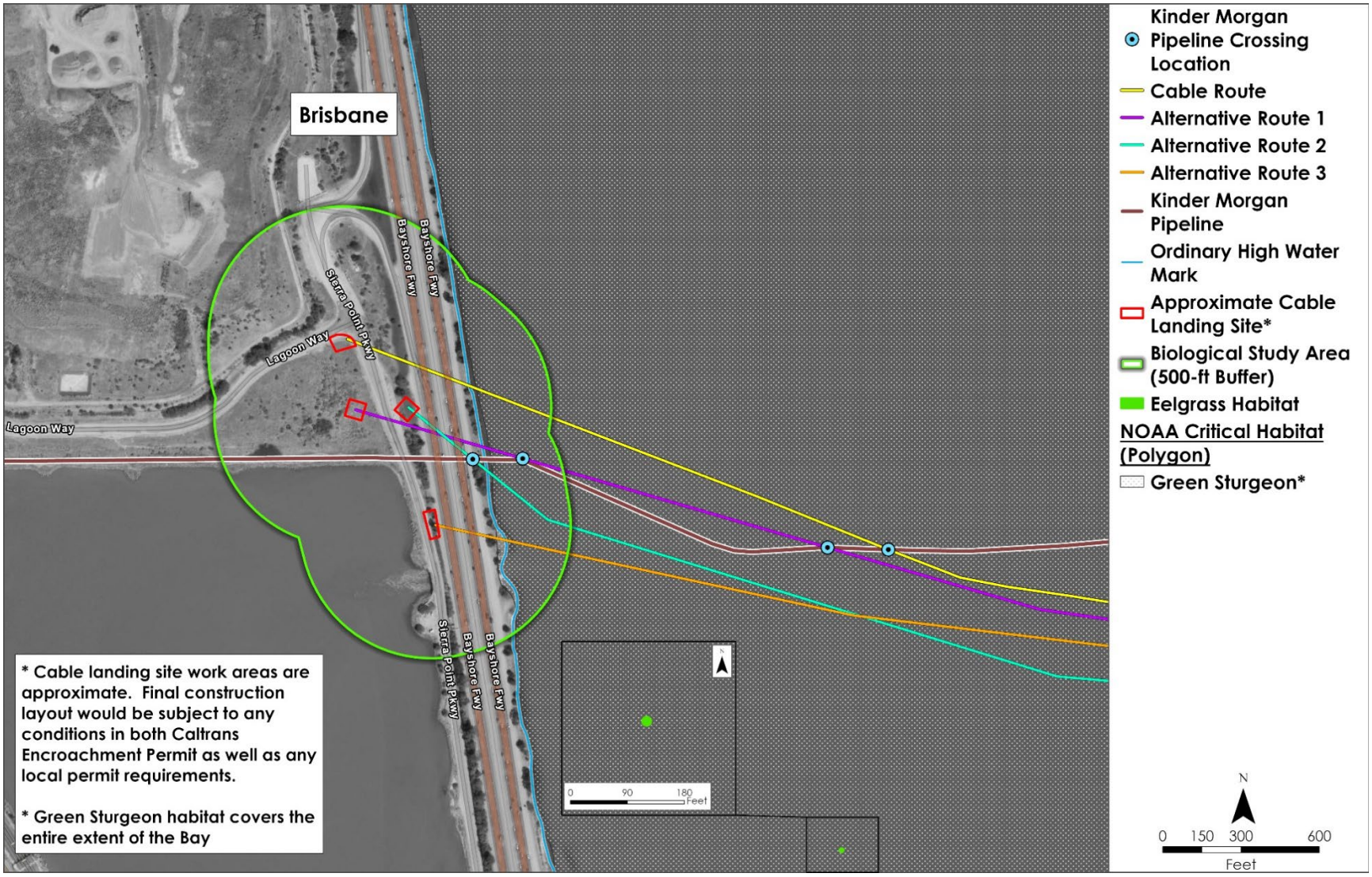
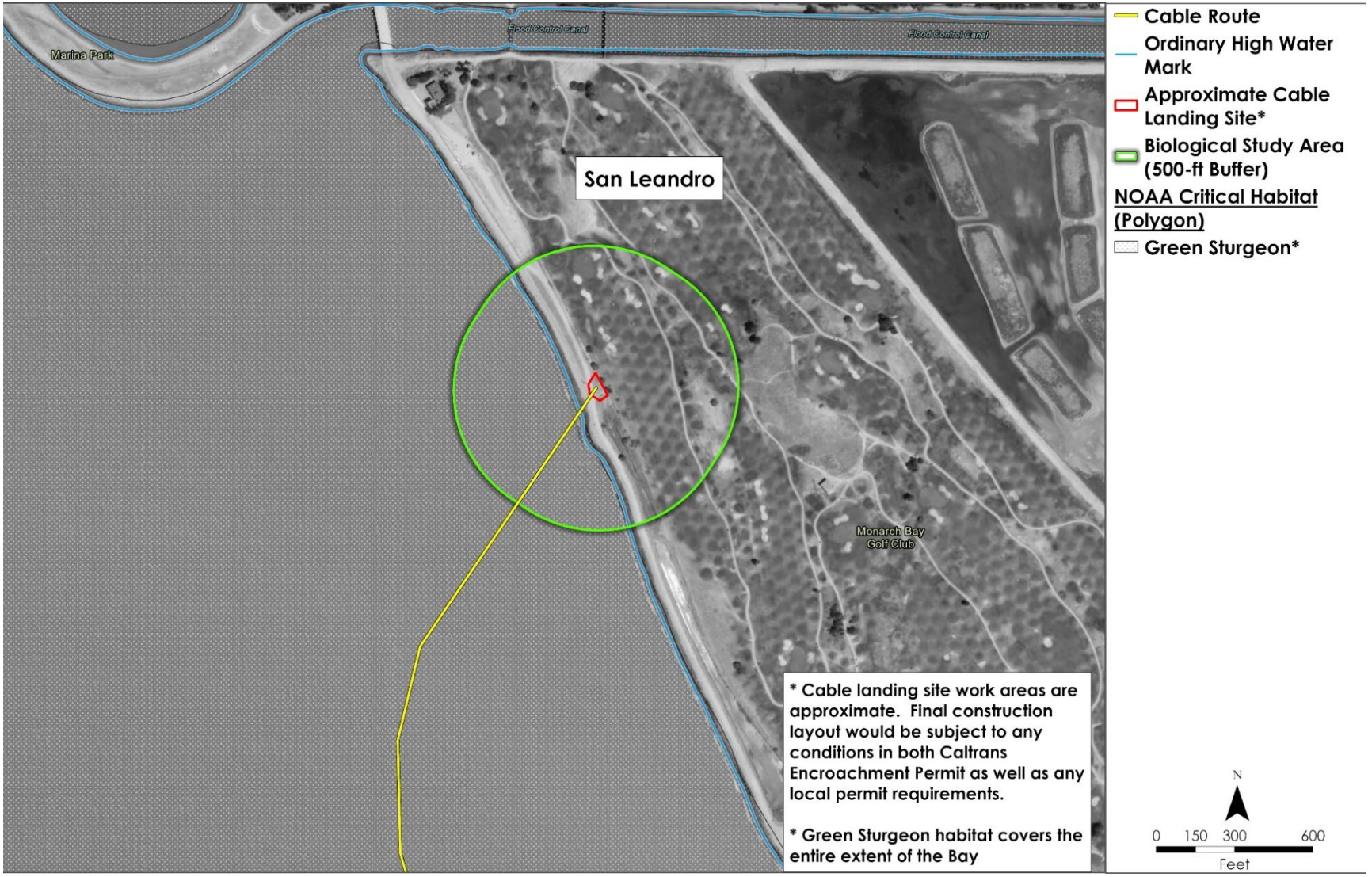


Figure 3.4-7. Terrestrial Biological Study Area at the Eastern Cable Landing Site



Marine Components

Marine fish and mammals could be present in the Project area at any time of the year. Movement and noise from Project work vessels during installation of the fiber optic cables or repairs have the potential to temporarily disturb individuals' movements and activities. Based on previous observations, it is generally expected that any fish or marine mammals would avoid Project vessels and activities. Ship strikes of large marine mammals have become a growing concern. However, ship strikes during fiber optic cables' installation would be unlikely because the speed of the ship during cable-lay activities is very slow (approximately 0.5 to 1.5 nautical miles per hour [0.5 to 1.5 knots] while plowing or jetting) compared with the speed of sea lions, seals, or cetaceans (AMS 2020).

Work vessel movement and noise often result in disruption of animal movements or altered behavior. Such disturbances usually are temporary and confined to the immediate vicinity of the vessel. Disruption caused by Project vessels (e.g., noise) would not be substantially different from that resulting from normal ship traffic in the marine study area (AMS 2020) (Figure 3.4-1). According to the Large Whale Ship Strike Database, most strikes involve vessels traveling between 13 and 15 knots, and no strikes have been reported for vessels traveling slower than 2 knots (Jensen and Silber 2003).

The likelihood of offshore construction vessels interfering substantially with the movement of any native, resident, or migratory fish—or with established, native, resident, or migratory wildlife—is considered negligible and less than significant. Therefore, there would be no impact.

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

Less than Significant Impact

Terrestrial Components

The areas of the cable landing sites are zoned as Other Land Type (western cable landing site) and Urban and Built-Up Land (eastern cable landing site). Project activities would not conflict with the San Mateo County LCP (County of San Mateo 2013) Policy 7.3 (Protection of Sensitive Habitats), City of Brisbane General Plan (1994) Policies 81 and 82, and City of San Leandro Municipal Code section 4-1-1000. Project design, and the corresponding HDD method, occurring

primarily below ground, maximizes avoidance of the nearshore environment and avoids significant disruption of habitat values and impacts on ESHAs. The Project would not conflict with local policies or ordinances, and potential impacts would be less than significant.

Marine Components

Although no local policies or ordinances pertain to the Project's marine components, installing fiber optic cables would involve work in an area identified as federal EFH for commercially important fish species under the MSA. Impacts caused by installation and maintenance of the marine segments of the fiber optic cables would be temporary, and the affected area would be very small relative to the extent of EFH in the broader SF Bay and within the marine study area (Figure 3.4-1). The Project would not introduce permanent structures that would block emigration or immigration, and invertebrate forage organisms are expected to quickly recruit into the affected area and repopulate. Consequently, any potential effects on EFH along the fiber optic cables' route would be less than significant.

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

No Impact

All Project Components

There are no local, regional, or state habitat conservation plans or natural community conservation plans in the Project area. There would be no impact.

3.4.4 Mitigation Summary

Implementation of the following mitigation measures would reduce the potential for Project-related impacts on Biological Resources to less than significant:

- **MM BIO-1: Provide Worker Environmental Awareness Training**
- **MM BIO-2: Conduct Biological Surveying and Monitoring**
- **MM BIO-3: Delineate Work Limits to Protect Sensitive Biological Resources**
- **MM BIO-4: Install Covers or Escape Ramps in Open Trenches**
- **MM BIO-5: Conduct Pre-Construction Nesting Bird Surveys and Implement Avoidance Measures**
- **MM BIO-6: In-Water Work Window**

MM BIO-7: Fish Screen on the Jet Sled Intake
MM BIO-8: Cable Burial Surveys
MM BIO-9: Cable Entanglements and Gear Retrieval
MM BIO-10: Control of Marine Invasive Species
MM HYD-1: Develop and Implement Stormwater Pollution Prevention Plan
MM HAZ-1: Develop and Implement Spill Contingency and Hazardous Materials Management Plans
MM HAZ-2: Prepare and Implement an Inadvertent Return Contingency Plan

3.5 CULTURAL RESOURCES

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

3.5.1 Environmental Setting

3.5.1.1 Terrestrial Components

A search of the California Office of Historic Preservation records included a 0.25-mile buffer around the landing site and 1-mile buffer around the HDPE conduit route. The record search identified no California Historical Resources in Alameda County near the proposed landing site in San Leandro or in San Mateo County near the proposed landing site in Brisbane (Office of Historic Preservation 2022).

3.5.1.2 Marine Components

The Project area for marine cultural resources consists of the proposed cable route from the OHWM at the Brisbane western cable landing site across the SF Bay to the OHWM at the San Leandro eastern cable landing site, including a 1-nautical-mile (1.85-kilometer) buffer around the fiber optic cables' route. One wreck was identified approximately 0.86 nautical mile (1.59 kilometers) southwest of Kilometer Point 6.771 of the proposed route. These data do not identify a date or name for the sunken vessel. No additional marine resources were identified within the 1-nautical-mile (1.85-kilometer) search radius. Sources consulted for shipwreck data included cultural resource inventories provided by the CSLC staff, USCG, and the NOAA Electronic Navigational Chart geographic information system (GIS) layer.

A search of the CSLC's Shipwrecks database (CSLC 2023b) and consultation with CSLC staff revealed 49 shipwrecks within San Mateo County and Alameda County (J. Garrett, pers. comm. October 10, 2022). Except as verified by actual surveys, CSLC data on shipwrecks were taken from books, old newspapers, and other contemporary accounts that do not contain precise locations. The CSLC's Shipwrecks database reflects information from many sources and generally does not reflect actual fieldwork. Additionally, not all shipwrecks are listed in the CSLC's Shipwrecks database, and their listed locations may be inaccurate, as ships often were salvaged or refloated.

3.5.1.3 Cultural Setting

Historical Context

A few early Spanish and English expeditions landed on the California coast in the 16th and 17th centuries, but few remained for any extended period. None of them lived inland. Inspired by the 1539 expedition of Francisco de Ulloa around the Baja Peninsula, Juan Rodriguez Cabrillo sailed up the California coast in 1542–1543 as far as the mouth of the Russian River (Oakland Museum 2021). The latter half of the 16th century would see several Spanish trading galleons crossing the Pacific from the Philippines and sailing down the California coast to Acapulco, Mexico. English privateer and explorer Sir Francis Drake landed in the vicinity of Point Reyes in 1579, where his crew remained for a month and interacted with the local Coast Miwok population (NPS 2020). Spaniard Sebastián Vizcaíno mapped the California coastline in 1602 (Oakland Museum 2021).

No permanent European presence in modern-day California would exist until 1769, when the Presidio of San Diego was established by the Portolá expedition (Oakland Museum 2021). The Portolá expedition was the first European presence in the SF Bay, ironically by an overland route. Under the directive of the Franciscan Order, several missions were established up the California coastline as far north as San Francisco. Californian Native American Tribes were subject to a program of attempted cultural assimilation and forced labor with the intention of creating industrious, Catholic subjects of the Spanish crown. Resistance took a few forms: violent revolts, flight to the interior Central Valley, and the secret practice of forbidden traditional ceremonies (Jackson and Castillo 1995). Unsanitary, cramped living conditions, harsh punishment, and European diseases decimated the mission populations, forcing Spanish authorities to search farther afield for "converts." During the Mission Period (1769 to 1834),

California's indigenous population is estimated to have dropped by half (Library of Congress 2021).

As early as 1776, Chochenyo and Ramaytush peoples were forcibly brought to Mission Dolores (Mission San Francisco) within the traditional homeland of the Ramaytush (Milliken et al. 2009). The 1776 construction of the mission in the heart of Ramaytush territory depopulated the San Leandro area. By the time of the 1834 discontinuation of the missions by the Mexican government, only a few families from each mission survived as a large percentage died in the missions.

The Mexican Civil War in 1810 cut California off from its main supplier of goods, leading to a profitable illegal trade with foreign ships and the arrival of the first American and Anglo-European settlers to the area (Evans 2020). Mexico won its independence from Spain in 1821 and took possession of California. This led to an improvement in the economy in the late 1820s and early 1830s, a legalization of trade with foreign ships, the secularization of the declining mission systems, and the legal emancipation of indigenous people as Mexican citizens. In California, the reality for most indigenous people was a shift from religious to secular servitude in the growing ranchos that expropriated mission lands (Jackson and Castillo 1995). To stimulate colonization, Mexico passed a law in 1824 allowing the settlement of vacant lands by any citizen, whether native or foreign, who would petition the governor for a specific tract (Evans 2020).

California became an American territory in 1848 through the Treaty of Guadalupe Hidalgo, which ended the Mexican War of 1846 to 1847, and became a state in 1850. Most of the rancho and pueblo lands, as well as some ungranted lands, were subdivided because of American takeover, population growth, and confirmation of the titles granted during the period of Mexican control (Evans 2020). Population growth was a result of the 1848 Gold Rush, the completion of the transcontinental railroad in 1869, and local railroad construction.

The city of San Leandro developed from two grants to settlers in the 19th century. Luis Marin Peralti's Rancho San Antonio (44,000 acres) extended from San Leandro Creek to El Cerrito Creek, while Jose Joaquin Estudilo's Rancho San Leandro (9,000 acres) extended from San Leandro Creek south to San Lorenzo Creek. Estudilo's rancho was named for the Mission San Jose's El Rodeo de San Leandro, the mission's cattle roundup area, that had been established in 1797 (SLHS, n.d.). The city received its name from Estudilo's rancho, and the Project is located within the bounds of this grant.

When Mexico ceded California to the United States in 1848, settlers flooded the region following the discovery of gold. Thomas Mulford and his partners were among those early squatters on San Lorenzo Creek, becoming so numerous that the area soon became known as Squattersville. Two of Estudilo's sons-in-law, John B. Ward and William Heath Davis, laid out the townsite in 1855. The town gained importance for its central location and became the county seat from 1855 to 1873.

When the seat moved north to Oakland, farming became the town's main economic focus, with the SF Bay and railroads allowing produce to be quickly shipped to distant markets. Products included dairy, chicken, wheat, orchards, and a variety of vegetables. Many of the settlers in the 1890s arriving to work on the farms were Azorian Portuguese, coming from Hawaii where the economic depression had ruined the sugar crop there. Due to the high percentage of Portuguese that swelled the town's population, making up two-thirds of it by 1910, it soon became known as the Portuguese Capital of the West. Industrialists also arrived in San Leandro in the late 19th century, also drawn by the importance of agriculture. Their goal was to produce farm equipment such as tractors, combines, hay presses, and other farm equipment as well as establish canneries to pack the products. World War II later increased the population again as immigrants arrived to fill the needs for workers in the booming wartime production industries. The population grew again following the war and farms were sold to developers who built houses for the new arrivals.

The 1899 USGS topographic map shows the Project site as an area of higher ground within a network of marshes to the east, west, and south. This area remains unchanged on the 1915 map. Beginning on the 1942 topographic map, marsh drainage ditches are depicted around the marsh in which the Project site is located, and on the 1959 topographic map, the whole area is marked as marsh. The 1993 topographic map shows a golf course occupying the area formerly identified as marshes. This golf course was redesigned in 2001.

The city of Brisbane originally was part of the grant of Rancho Canada de Guadalupe La Visitacion y Rodeo Vlego, consisting of 9,500 acres south of Mission San Francisco, having been acquired by Jacob Lesse in 1833. The rancho comprised three separate valleys, La Visitacion, Rodeo Vlejo, and Canada de Guadalupe. The last contains the present city of Brisbane. The grant was traded by Lesse in 1843 to Robert T. Ridley who subsequently lost it due to debt. The land lay largely undeveloped and sparsely populated until 1908, when, following the San Francisco earthquake, developers turned their eyes to

the valley to build new homes for displaced families. The American Realty Company began terracing a semicircle of land to build new homes, naming it the City of Visitacion. This planned town failed, leaving the area as little more than cow trails with a few constructed homes.

Despite the grand designs of the development companies, early settlers continued to slowly tame the land on their own, building the Allemand Hotel, the town's first major structure in 1909. The hotel soon became the center of town life, serving as the first grocery store, mercantile, post office, and hunting club. Population growth in the early 20th century was very slow and there were reportedly only 28 residents by the 1920s, becoming the home to bootleggers and the location of speakeasies and gambling dens. The town soon began to rapidly develop with the arrival of Arthur Annis in 1929. Annis was a realtor and developer who saw the area as a potential low cost of living market for immigrants and people wishing to live outside San Francisco. Annis' plan was to permit good citizens of small means an opportunity to build homes without unreasonable restrictions. His plan was a success with over 400 new homes built by 1933 and the population dramatically increasing. Town infrastructure was also soon established with a post office, library, public school, fire department, water and natural gas service, new roads, and bus routes to San Francisco all established in the first decade. The Great Depression also brought new residents due to low rent and good land at affordable prices.

The town continued to flourish in the 1940s, with a population of 2,500 and many new businesses being established. One of those new businesses was the Brisbane Quarry, which supplied stone for military home front programs during the war, operating 24 hours a day to meet the demand. People worked in the nearby shipyards and Army and Navy bases were established bringing more money into the economy and a boom of immigrants after the war. The town was incorporated in 1961.

The 1892 USGS topographic map shows that the Project site existed under the Bay in that year. The map depicts Guadalupe Valley to the north of the Project area and the route of present-day Valley Shore Drive to the west of it. A single structure is shown in what would become Brisbane at the end of the Guadalupe Valley near what was identified as Visitation Point. The 1915 topographic map shows the railroad line running along the shore to the west of the Project area and depicts the town as more developed, with roads laid out. The shoreline was approximately 900 feet west of the Project area. The 1939 topographic map shows Bay Shore Road, while the 1956 topographic map depicts Highway 101

having been built by this point, effectively creating a lagoon between it and the shore. The 1971 map shows that this land was all filled in, creating the land where the Project is sited.

Existing Conditions

According to the UNESCO World Heritage List (UNESCO 2022), no world heritage sites are near the Project footprint.

No property listed on the National Register of Historic Places was identified near or crossed by the cable route (NPS 2021).

Nine National Historic Landmark (NHL) sites are designated by the Secretary of the Interior in the State of California, in Almeda (seven NHLs) and San Mateo (two NHLs) counties. None are located within in the SF Bay or the 0.25-mile search area.

The California Office of Historic Preservation's California Historical Landmarks website did not identify any California Historical Landmarks, historical resources, or historic properties in the Project area or 0.25-mile search area.

3.5.2 Regulatory Setting

Federal and state laws and regulations pertaining to cultural resources and relevant to the Project are identified in Appendix A. At the local level, the policies and programs are included in Appendix B.

3.5.3 Impact Analysis

Potential impacts of the proposed Project on cultural resources are discussed in the context of State CEQA Guidelines checklist items.

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

No Impact

There are no known historic resources or archaeological sites within the Project area or near either of the terrestrial cable landings. The shoreline of both route landings is composed of Urban Land-Orthents (i.e., shallow soils in areas of paved materials like roads or sidewalks) from historic reclamation of the SF Bay shore and largely composed of improved roadbeds. The proposed fiber optic

cable route does not cross any known submerged shipwrecks or other marine historical resources. Therefore, there would be no impact.

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

Less than Significant with Mitigation

No known archaeological resources were identified in the Project area. However, if previously unknown archaeological resources (terrestrial or submerged) are encountered during Project activities, they could be adversely affected. Implementing **MM CUL-1/TCR-1**, **MM CUL-2/TCR-2**, and **MM CUL-3/TCR-3** would reduce potential impacts on previously unknown terrestrial archaeological resources to a less than significant level. The CUL/TCR MMs apply to both cultural resources and tribal cultural resources.

> **MM CUL-1/TCR-1: Discovery of Previously Unknown Cultural or Tribal Cultural Resources.** Before disturbing the ground, Bandwidth shall contact culturally affiliated tribes and retain a culturally affiliated tribal monitor if requested. Bandwidth shall also retain a qualified archaeologist, jointly with any requested culturally affiliated tribal monitor, to train construction staff to be able to identify potential cultural and tribal cultural resources. If potential cultural or tribal cultural resources are uncovered during Project implementation, all earth-disturbing work within 100 feet of the find must be suspended or redirected until an approved archaeologist and tribal monitor, if retained, has evaluated the nature and significance of the discovery.
>
> If a potentially significant cultural or tribal cultural resource is discovered, CSLC, and any local, state, or federal agency with approval or permitting authority over the Project that has requested and/or required notification shall be notified within 48 hours. The location of any such finds shall be kept confidential and measures must be taken to secure the area from site disturbance and potential vandalism. Impacts on previously unknown significant cultural or tribal cultural resources shall be avoided through preservation in place if feasible. Damaging effects on tribal cultural resources shall be avoided or minimized following the measures identified in Public Resources Code section 21084.3, subdivision (b), if feasible, unless other measures are mutually agreed to by the lead archaeologist and culturally affiliated tribal monitor that would be as or more effective.

A treatment plan, if needed to address a find, shall be developed by the archaeologist and, for tribal cultural resources, the culturally affiliated tribal monitor, and submitted to CSLC staff for review and approval prior to implementation of the plan. If the archaeologist or tribe determines that damaging effects on the cultural or tribal cultural resource shall be avoided or minimized, then work in the area may resume.

Title to all abandoned shipwrecks, archaeological sites, historic or cultural resources, and tribal cultural resources on or in the tide and submerged lands of California is vested in the state and under CSLC jurisdiction. The final disposition of archaeological, historical, and tribal cultural resources recovered on state lands under CSLC jurisdiction must be approved by CSLC.

MM CUL-2/TCR-2: Unanticipated Discovery of Human Remains. If human remains are encountered, all provisions provided in 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 (NAHC) 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.

MM CUL-3/TCR-3: Cultural and Tribal Resources Awareness Training. Before beginning construction, Bandwidth must hire a qualified archaeologist and a culturally affiliated tribal monitor (if requested by culturally affiliated tribes) to prepare a Cultural Resources Contractor Awareness Training subject to CSLC approval. The training shall be given by a qualified archaeologist and a culturally affiliated tribal monitor (if one is available) to all construction personnel before working on the Project, and the training shall include, but not be limited to, the following:

- Guidance on identifying potential cultural resources encountered
- The probability of exposing cultural resources
- Clear direction on procedures if a find is encountered

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

Less than Significant with Mitigation

No cemeteries were identified in or near the Project area. However, the possibility always exists that unmarked burials may be unearthed during subsurface construction activities. 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-2/TCR-2**.

3.5.4 Mitigation Summary

Implementation of the following mitigation measures would reduce the potential for Project-related impacts on Cultural Resources to less than significant:

MM CUL-1/TCR-1: Discovery of Previously Unknown Cultural or Tribal Cultural Resources
MM CUL-2/TCR-2: Unanticipated Discovery of Human Remains
MM CUL-3/TCR-3: Cultural and Tribal Resources Awareness Training

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
i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1, subdivision (k), or	☐	☒	☐	☐
ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code section 5024.1. In applying the criteria set forth in subdivision(c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☒	☐	☐

3.6.1 Environmental Setting

3.6.1.1 Ethnographic Context

Ethnographically, the Project area in San Leandro is within the traditional territory of the Chochenyo, an Ohlone tribelet whose territory was bordered by the Karkin to the north at Mount Diablo, the Tamyen to the south and southwest, SF Bay to the west, and the Bay Miwok and Yokuts to the south.

The Project area in Brisbane is within the traditional territory of the Ramaytush. Ramaytush territory extended along the San Francisco Peninsula, bordered by the Tamyen and Awaswas to the south. The Chochenyo and the Ramaytush, as with other coastal Ohlone groups, would have been clustered in permanent polities of several dozen to several hundred villages along the shores and inland overlooking the Bay and river courses (Milliken 1995). They both would have occupied specific territories measuring approximately 8 to 12 miles in size that was defined by specific physiographic features. They would have controlled access to the natural resources within the territory with one or more primary villages and numerous smaller locations used seasonally for resource procurement. The nearest Chochenyo village site, per imperfect Spanish records and contemporary tribal ethnographers, was Jaiquin in the Castro Valley 2 miles south of the Project area. The nearest Ramaytush village site was Yelamu in the northern part of the San Francisco Peninsula. This village was politically aligned with the Huimen Mewok village across the Golden Gate at the time of contact.

3.6.1.2 Tribal Coordination

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

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

CSLC staff contacted the NAHC, which maintains two databases to assist cultural resources specialists in identifying cultural resources of concern to

California Native Americans (Sacred Lands File and Native American Contacts). CSLC staff contacted the NAHC to obtain information about known cultural and Tribal cultural resources and request a list of Native American Tribal representatives who may have geographic or cultural affiliation in the proposed Project area. The NAHC responded on September 19, 2022, stating that the Sacred Lands File database did not include any previously identified sacred sites in the proposed Project area. The NAHC also forwarded a list of 11 tribal contacts for 8 Native American Tribes.

Even though there were no tribes on the CSLC's AB-52 list, CSLC staff sent tribal outreach letters on October 24, 2022, to individuals of the following eight tribes on the NAHC list:

- Amah Mutsun Tribal Band of Mission San Juan Bautista
- Costanoan Rumsen Carmel Tribe
- Indian Canyon Mutsun Band of Costanoan
- Muwekma Ohlone Indian Tribe of the SF Bay Area
- North Valley Yokuts Tribe
- The Ohlone Indian Tribe
- Wuksache Indian Tribe/Eshom Valley Band
- The Confederated Villages of Lisjan

To date, only the Confederated Villages of Lisjan responded to the CSLC's outreach letter on February 3, 2023, stating they did not have any further information to supply about the Project site. The Tribe wishes to be contacted if there are any findings.

3.6.2 Regulatory Setting

Federal and state laws and regulations pertaining to Tribal cultural resources and relevant to the Project are identified in Appendix A. At the local level, the policies and programs are included in Appendix B.

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:

(i) Listed or eligible for listing in the California Register of Historical Resources (CRHR), or in a local register of historical resources as defined in Public Resources Code section 5020.1, subdivision (k), or

(ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

Less than Significant with Mitigation (i and ii)

The CSLC staff requested information from the NAHC on July 25, 2022, regarding sites, resources, or locations of cultural importance to the local Native American community. The NAHC responded on September 19, 2022, with the information that the Sacred Lands File database search results were negative to indicate the presence of Native American cultural resources in the immediate Project vicinity. The NAHC also forwarded a list of Native American groups or individuals interested in development projects in the study area. CSLC staff sent tribal outreach letters on October 24, 2022, to all the individuals on the NAHC list. To date, only the Confederated Villages of Lisjan responded to the CSLC's outreach letter on February 3, 2023, stating they did not have any further information to supply about the Project site. The Tribe wishes to be contacted if there are any findings. To avoid potential impacts on tribal cultural resources or mitigate them to less than significant levels, **MM CUL-1/TCR-1**, **MM CUL-2/TCR-2**, and **MM CUL-3/TCR-3** would be implemented (see Section 3.5, Cultural Resources, for mitigation measures full text).

3.6.4 Mitigation Summary

Implementation of the following mitigation measures would reduce the potential for Project-related impacts on Cultural Resources - Tribal to less than significant. The CUL/TCR mitigation measures apply to both cultural resources and tribal cultural resources:

MM CUL-1/TCR-1: Discovery of Previously Unknown Cultural or Tribal Cultural Resources
MM CUL-2/TCR-2: Unanticipated Discovery of Human Remains
MM CUL-3/TCR-3: Cultural and Tribal Resources Awareness Training

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

Energy users in Brisbane rely on Peninsula Clean Energy for electricity and natural gas, with Pacific Gas and Electric (PG&E) as a non-default alternative option. Energy users in San Leandro use East Bay Community Energy, with PG&E again as an alternative. Power in both cities is distributed via private lines and each structure has its own meter.

3.7.2 Regulatory Setting

There are no federal or local laws, regulations, or policies pertaining to energy that are potentially applicable to this Project. Appendix A contains the state laws, regulations, and policies pertaining to utilities and service systems relevant to the Project.

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?

No Impact

All Project Components

The Project's use of diesel and diesel-electric energy during construction is necessary to provide for improved telecommunications services and is not wasteful or inefficient.

During construction, the Project would use a variety of terrestrial equipment and marine vessels, including heavy equipment, trucks, cars, and cable-lay and support vessels. Most of the energy for the Project would be consumed during installation of the HDPE conduits and landing vaults at each cable landing site. Installation of the HDPE conduits and landing vaults would be performed during the same mobilization phase to be as efficient as possible, and so there would be no need to separately mobilize the construction equipment needed for these activities later in the Project. When installing the fiber optic cables, most of the energy would be used laying the fiber optic cables across the SF Bay floor and pulling the fiber optic cables onshore. None of these uses of energy would be wasteful, inefficient, or unnecessary. Therefore, there would be no impact.

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

No Impact

All Project Components

The Project would not obstruct any state or local plans for renewable energy or energy efficiency. Therefore, there would be no impact.

3.7.4 Mitigation Summary

The Project would have no impact on Energy Resources; no mitigation is required.

3.8 GEOLOGY, SOILS, AND PALEONTOLOGICAL RESOURCES

GEOLOGY, SOILS, AND PALEONTOLOGICAL RESOURCES - Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☒	☐
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv) Landslides?	☐	☐	☒	☐
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the Project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☒	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	☐	☐	☒	☐

GEOLOGY, SOILS, AND PALEONTOLOGICAL RESOURCES - Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☒	☐

3.8.1 Environmental Setting

3.8.1.1 Regional Setting

The SF Bay is a relatively hazardous area in terms of dredging and rapid water discharge, and an extremely hazardous area in terms of groundshaking and fault rupture. SF Bay is located within some of the highest seismic risk zones in California (Figure 3.8-1). The converging Pacific and North American plates form the "San Andreas Zone," which runs west on shore through San Mateo County (Wald et al. 2017). Additionally, the converging Pacific and North American plates form the "Hayward Zone," which runs east on shore through Alameda County. Research shows that the San Andreas system produced a series of great earthquakes (magnitude 6.0 and higher) over the last 165 years at intervals of 200 to 300 years. The last great earthquake occurred about 116 years ago (Brocher et al. 2018). Alternatively, the Hayward system has produced a series of great earthquakes (magnitude 6.3 and higher) over the last 1,900 years at intervals of 95 to 183 years. The last great earthquake occurred about 155 years ago (Brocher et al. 2018).

3.8.1.2 Site-Specific Setting

<u>Topography</u>

The Project area extends across the southern portion of the SF Bay, with a cable landing site on each side of the SF Bay. The terrestrial portions of the Project range in elevation from sea level to approximately 10 feet above mean sea level. The coastal topography of both ends of the Project area consists of mild

sloping tidal flats with slopes less than 2 degrees along the entire fiber optic cable route (SubCom 2021).

Geology

Western Cable Landing Site

The eastern lowlands of San Mateo County (areas along the SF Bay, where the western cable landing sites are located) consists mostly of alluvial fan (i.e., triangular shaped sediment deposits) and fluvial (i.e., river or stream deposits) deposits of Holocene age. This entire area has been heavily modified by land filling operations since the early 1900s and now consists of a top layer of fill ranging from 6 to 40 feet over Bay Mud and Franciscan bedrock assemblages (ESA 2013).

Eastern Cable Landing Site

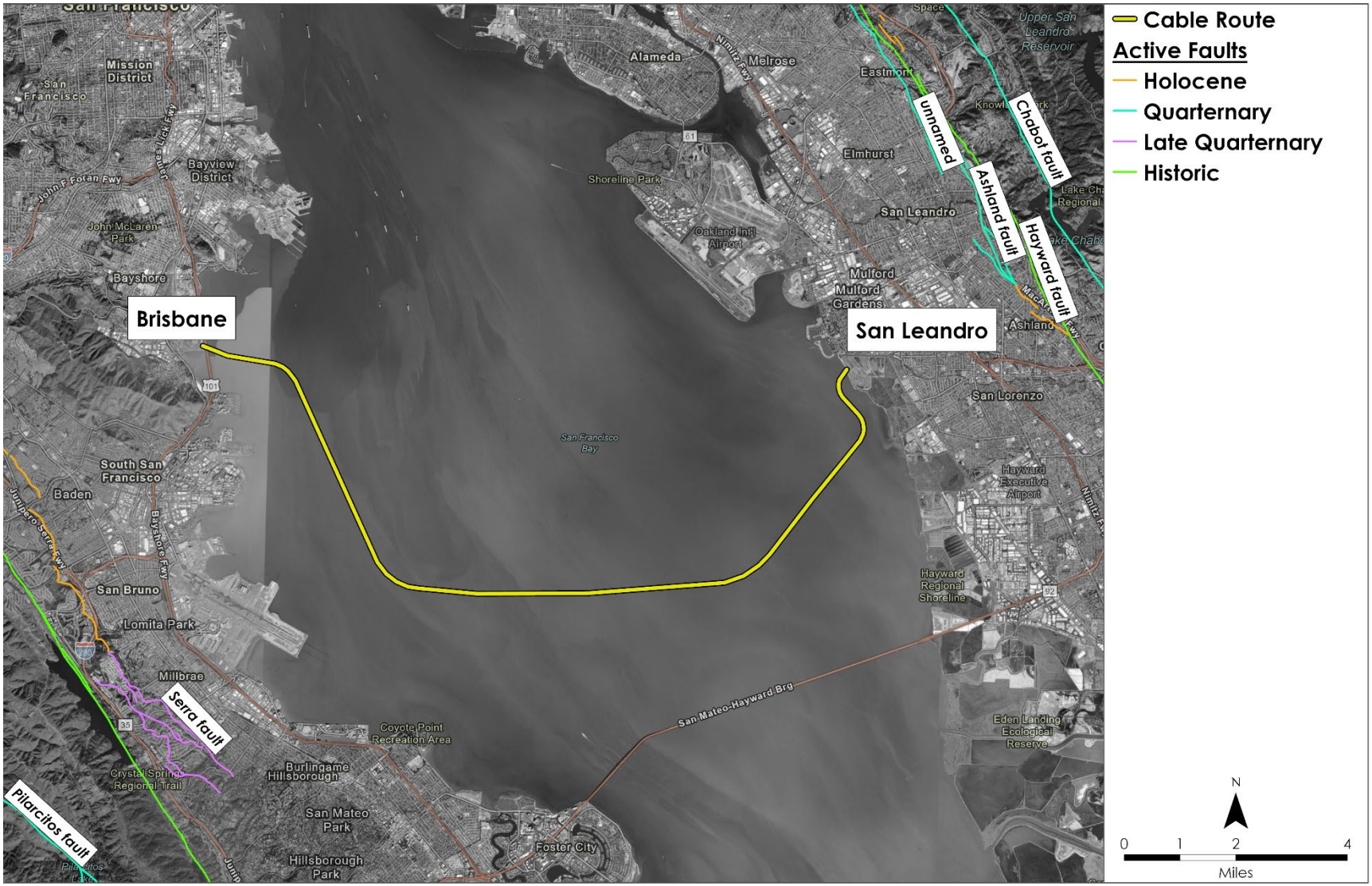
The underlying geology of San Leandro consists predominantly of Holocene alluvium (i.e., sediment deposited after a flood) with fluvial deposits and areas of bedrock east of San Leandro. Along the west side of San Leandro, near the shores of the SF Bay where the eastern cable landing site is located, the fluvial deposits become less coarse, eventually becoming dominated by Bay Mud and artificial fill (Graymer 2000; PlaceWorks 2016).

Seismicity

Surface Fault Rupture

Surface fault rupture is a particular type of seismic hazard that is specifically addressed by California legislation: the Alquist-Priolo Earthquake Fault Zoning Act. This act generally requires disclosure and avoidance. The Project area is located within the SF Bay, a tectonic depression bounded on the east by the Hayward Fault system (Alameda County) and the west by the San Andreas Fault system (San Mateo County). According to the California Department of Conservation's online Earthquake Hazards Zone Application mapping tool, the fiber optic cable route does not cross any faults, and the fiber optic cable landing sites are not located on an Alquist-Priolo identified fault (California Department of Conservation 2021a). Figure 3.8-1 shows that the nearest historical quaternary fault to the western cable landing site is the Serra fault zone, approximately 4 miles to the west, and the nearest historical quaternary fault to the eastern cable landing site is the Hayward Fault zone, approximately 3.4 miles to the east.

Figure 3.8-1. Active Faults near the Project



Liquefaction, Landsliding, and Lateral Spreading

Groundshaking gives rise to two secondary natural hazards, liquefaction and landsliding. Liquefaction involves a sudden loss in strength of a water-saturated soil and results in temporary transformation of the soil into a fluid mass. Recent alluvial floodplain soils and coastal sand deposits exhibit the highest liquefaction hazard. According to the California Department of Conservation's online Earthquake Hazards Zone Application mapping tool, both the eastern and western cable landing sites are in areas subject to potential liquefaction (California Department of Conservation 2021a).

Groundshaking can induce landslides, especially under saturated conditions. Both cable landing sites are at lower elevations and on relatively flat slopes (less than 2 degrees). According to the California Department of Conservation's online Earthquake Hazards Zone Application mapping tool, both cable landing sites are not in landslide zones (California Department of Conservation 2021a).

Lateral spreading is a failure of soil and sediment within a nearly horizontal zone that causes the soil to move toward a free face (such as a streambank or canal) or down a gentle slope. Lateral spreading can occur on slopes as gentle as 0.5 percent. Even a relatively thin seam of liquefiable sediment can create planes of weakness that could result in continuous lateral spreading over large areas (ESA 2013). However, the cable landing sites are located on flat terrain where lateral spreading is not a risk.

Soils

Fiber Optic Cables Route

Geotechnical sampling was completed by eTrac, Inc., as authorized by the CSLC under the General Offshore Geophysical Survey Permit[32] to conduct offshore geophysical surveys in the marine waters of the State of California (Permit #9235). The fiber optic cables route has a surface geomorphology of fine sediments with clayey (containing clay) sediment dominating the SF Bay floor composition. Aside from clayey, sand sediment areas, the sediment types are differentiated by the amount of sand sediments or shells present in the predominantly clayey sediment (A2Sea 2022).

[32] Please see https://www.slc.ca.gov/ogpp/ for more information.

Western Cable Landing Site

The soils mapped near the western cable landing sites consist of Urban Land-Orthents, or fill. The depth of fill in this area can vary depending on development activity and steepness of slope but can be greater than 71 feet (ESA 2013). Bay Mud is the predominant soil unit below the fill, which can be present at shallow depths particularly along the SF Bay shoreline. If not fully saturated and below the groundwater table, Bay Mud has a shrink-swell potential that can damage buried features and structures (Helley and LaJolie 1979; ESA 2013). The risk of soil erosion near the eastern cable landing site is low due to the gentle slope of this site (less than 2-degree slopes).

Eastern Cable Landing Site

The soils beneath San Leandro can be summarized as deep, poorly drained, fine-grained soils such as clays and silty clay loams. West of San Leandro, near the SF Bay and the eastern cable landing site, soils are typically very deep, poorly drained clays that extend out into the tidelands. The soils found near the eastern cable landing site consists of Reyes clay (0 to 2-degreeslopes) and clayey Xerothents (fill) (PlaceWorks 2016). Other soils identified west of San Leandro, such as Clear Lake clay, are known to have high shrink-swell potential. These expansive soils, which have a high amount of plasticity, expand and contract with changes in moisture content and can damage buried features and structures. The risk of soil erosion near the eastern cable landing site is low due to the gentle slope of this site (less than 2-degree slopes).

<u>Paleontological Resources</u>

The primary source used to collect information on existing paleontological resources in the Project area was the paleontological database at the University of California, Berkeley. Effects on paleontological resources were analyzed qualitatively, based on professional judgment and the Society of Vertebrate Paleontology's Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources (Society of Vertebrate Paleontology 2010). These guidelines reflect the accepted standard of care for paleontological resources and identify two key phases in the process for protecting paleontological resources from Project effects:

- Assess the likelihood that the area contains significant nonrenewable paleontological resources that could be directly or indirectly affected, damaged, or destroyed because of the Project.

- Formulate and implement measures to mitigate potential adverse effects.

The assessment of paleontological sensitivity is based on the paleontological potential of the stratigraphic units present, the local geology and geomorphology, and other factors relevant to fossil preservation and potential yield. The criteria in the Society's guidelines for determining sensitivity are: (1) the potential for a geological unit to yield abundant or significant vertebrate fossils or to yield a few significant fossils, large or small, vertebrate, invertebrate, or paleobotanical remains; and (2) the importance of recovered evidence for new and significant taxonomic, phylogenetic, paleontological, or stratigraphic data (Table 3.8-1).

Table 3.8-1. Paleontological Sensitivity Ratings

Potential	Definition
High	Rock units from which vertebrate or significant invertebrate, plant, or trace fossils have been recovered are considered to have a high potential for containing additional significant paleontological resources. Paleontological potential consists of both (a) the potential for yielding abundant or significant vertebrate fossils or for yielding a few significant fossils, large or small, vertebrate, invertebrate, plant, or trace fossils and (b) the importance of recovered evidence for new and significant taxonomic, phylogenetic, paleoecologic, taphonomic, biochronologic, or stratigraphic data.
Undetermined	Rock units for which little information is available concerning their paleontological content, geologic age, and depositional environment are considered to have undetermined potential. Further study is necessary to determine if these rock units have high or low potential to contain significant paleontological resources.
Low	Reports in the paleontological literature or field surveys by a qualified professional paleontologist may allow determination that some rock units have low potential for yielding significant fossils. Such rock units will be poorly represented by fossil specimens in institutional collections, or based on general scientific consensus, will only preserve fossils in rare circumstances and the presence of fossils is the exception not the rule.

Potential	Definition
No	Some rock units, such as high-grade metamorphic rocks (such as gneisses and schists) and plutonic igneous rocks (such as granites and diorites), have no potential to contain significant paleontological resources. Rock units with no potential require neither protection nor impact mitigation measures relative to paleontological resources.

Source: Society of Vertebrate Paleontology 2010

In evaluating a proposed Project's potential to disturb or damage significant paleontological resources, the following factors are considered. First, most vertebrate fossils are rare and therefore are considered important paleontological resources. Second, unlike archaeological sites, which are narrowly defined, paleontological sites are defined by the entire extent (both areal and stratigraphic) of a unit or formation. In other words, once a unit is identified as containing vertebrate fossils, or other rare fossils, the entire unit is a paleontological site (Society of Vertebrate Paleontology 2010).

According to the University of California Museum of Paleontology, no paleontological records are known to exist near either cable landing site. As noted above, both sites have been previously altered and are in areas that are dominated by artificial fill and Bay Mud. Artificial fill materials would not contain significant paleontological resources or geologic features. Bay Mud, found underneath much of the artificial fill in both cable landing sites, does not typically hold paleontological resources due its young age and lack of consolidation (ESA 2013).

3.8.2 Regulatory Setting

Federal and state laws and regulations pertaining to geology, soils, and paleontological resources and relevant to the Project are identified in Appendix A. At the local level, the policies and programs are included in Appendix B.

3.8.3 Impact Analysis

The evaluation of the geology, seismicity, soils, and paleontological impacts in this section is based on information from published maps, reports, and other documents that describe the geologic, seismic, soil, and paleontological conditions of the Project area and vicinity, and on professional judgment. The analysis assumes that the Project would conform to the latest California Building

Standards Code and the seismic safety standards of the Counties' General Plan requirements.

Project components that could cause impacts related to geology, seismicity, soils, and paleontology are above ground and below ground terrestrial construction, such as minor grading for the cable landing site, excavating for the landing vaults, HDD to install the HDPE conduits, and the presence of Project features that could be damaged.

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

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

(ii) Strong seismic ground shaking?

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

(iv) Landslides?

Less than Significant Impact (i through iv)

<u>All Project Components</u>

According to the California Department of Conservation's online Earthquake Hazards Zone Application mapping tool, the western and eastern cable landing sites and the proposed cable route are not located over or near (less than 1 mile) any Alquist-Priolo fault zones (California Department of Conservation 2021a). Therefore, the restrictions of the California Alquist-Priolo Earthquake Fault Zoning Act do not apply to the Project. The Project does not include construction of a structure for human occupation. Both cable landing sites and the cable route consist of slopes less than 2 degrees, and the HDD activities would not be sufficiently strong to trigger an earthquake, liquefaction, or landslide.

Project engineers would provide detailed engineering drawings with a supporting site-specific geotechnical report and calculations before HDD operations. These drawings would depict the horizontal and vertical alignment best fitting site conditions based on the site-specific geotechnical report.

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

Project activities would not exacerbate existing geological conditions. This analysis therefore does not evaluate existing environmental risks that could affect the Project because the Project would not exacerbate them, consistent with the Court's ruling in *CBIA v. BAAQMD*. Therefore, the impacts would be less than significant.

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

Less than Significant Impact

<u>All Project Components</u>

Both cable landing sites are low-gradient areas (less than 2-degree slope) dominated by artificial fill and Bay Mud, with clay below. Due to the flat nature of both cable landing locations, the potential for Project components to generate erosion is relatively low. The HDPE conduits at each cable landing site will be installed via HDD operations. Excavation at each cable landing site will also be required to install each landing vault. Topsoil removed for staging, HDD activities, and installation of each landing vault will be stockpiled and used to backfill the area after construction. Any stockpiled soil will be managed as described in Section 3.3.1.3, Restoration of Terrestrial Surfaces (e.g., covering stockpiles). Therefore, the Project's potential impact on soil erosion would be less than significant.

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

Less than Significant Impact

All Project Components

As noted above, both cable landing sites can be considered low-gradient (less than 2-degree slope), making them low risk for landslide activity. Liquefaction is a potential hazard at both cable landing sites particularly during seismic events. Geotechnical design standards have been established to address liquefaction hazards and will be used for this Project. A detailed geotechnical survey and associated report were prepared for the entire Project area to collect site-specific geotechnical data and precise depths of fill material and Bay Mud at each site (A2Sea 2022). These data and associated report were used to inform the final design of the Project and the HDD operations and will be provided to regulatory agency staff. The proposed construction activities, including the HDD method does not involve strong vibration activities that would induce liquefaction or subsidence. The scale and type of HDD method used to install the HDPE conduits would lessen the potential risks associated with lateral spread and subsidence because the method would avoid impacts on the surface area of the shore and surf zone. Therefore, the impacts would be less than significant.

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

Less than Significant Impact

All Project Components

As noted above, both cable landing sites are in areas where potentially expansive soils exist (Bay Mud). However, the fiber optic cables and the HDPE conduits are designed to withstand shrinking and swelling and, as such a substantial risk to property is not anticipated. Additionally, none of the Project infrastructure components will be occupied by humans and therefore no risk to life would be created. Therefore, the impacts would be less than significant.

e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

No Impact

All Project Components

The Project does not include the use of septic tanks or alternative wastewater disposal systems, such as leach fields. Therefore, there would be no impact.

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

Less than Significant Impact

All Project Components

According to the University of California Museum of Paleontology, no paleontological records are known to exist near either cable landing site. Both cable landing sites and the cable route are dominated by soil types that do not typically hold paleontological resources. Because Project area soils are geologically young, terrestrial HDD is relatively shallow, and the construction footprint is small, the potential for impacts on paleontological resources is considered less than significant.

3.8.4 Mitigation Summary

The Project would not result in significant impacts on Geology, Soils, and Paleontological Resources; no mitigation is required.

3.9 GREENHOUSE GAS EMISSIONS

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

3.9.1 Environmental Setting

A greenhouse gas (GHG) is defined as any gas that absorbs infrared radiation in the atmosphere. These gases include, but are not limited to, carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. These GHGs lead to the trapping and buildup of heat in the atmosphere near the Earth's surface, commonly known as the greenhouse effect. There is overwhelming scientific consensus that human-related emissions of GHGs above natural levels have contributed significantly to global climate change by increasing the concentrations of the gases responsible for the greenhouse effect, which causes atmospheric warming above natural conditions.

The atmospheric concentration of CO_2 measured at Mauna Loa, Hawaii, in February 2022 was approximately 420 ppm (NOAA 2022a) compared to the pre-industrial levels of 280 ppm plus or minus 20 ppm (Intergovernmental Panel on Climate Change 2007). The NOAA Mauna Loa data also show that the mean annual CO_2 concentration growth rate is accelerating. In the 1960s, it was about 0.9 ppm per year; in the first decade of the 2000s, the average annual concentration was 2 ppm per year; and in the last 3 recorded years (2017 to 2020), the average annual concentration was approximately 2.3 ppm (NOAA 2022a).

Because GHG emissions are known to increase atmospheric concentrations of GHGs, and increased GHG concentrations in the atmosphere exacerbate global warming, a project that adds to the atmospheric load of GHGs adds to the problem. To avoid disruptive and potentially catastrophic climate change, annual GHG emissions not only must be stabilized, but also must be substantially reduced. The impact on climate change from the increase in ambient concentrations of GHGs differs from criteria pollutants (Section 3.3, Air Quality) in that GHG emissions from a specific project do not cause direct, adverse, localized human health effects. Rather, the direct environmental effect of GHG emissions is the cumulative effect of an overall increase in global temperatures, which in turn has numerous indirect effects on the environment and humans.

The Intergovernmental Panel on Climate Change (IPCC) completed a Sixth Assessment Report (IPCC 2022b) in 2022 that contains information on the state of scientific, technical, and socioeconomic knowledge about climate change and integrates knowledge more strongly across the natural, ecological, social, and economic sciences than earlier IPCC assessments. The Sixth Assessment Report includes working group reports on basics of the science, potential impacts and vulnerability, and mitigation strategies. Global climate change has caused physical, social, and economic impacts in California (e.g., land surface and ocean warming; decreasing snow and ice; rising sea levels; increased frequency and intensity of droughts, storms, and floods; and increased rates of coastal erosion) (IPCC 2022a). The AR6 Synthesis Report, which is part of the Sixth Assessment, was released on March 20, 2023 (IPCC 2022b). In its Climate Change 2023 Synthesis Report, the Panel notes:

> Human activities, principally through emissions of greenhouse gases, have unequivocally caused global warming, with global surface temperature reaching 1.1°C above 1850–1900 in 2011–2020. Global greenhouse gas emissions have continued to increase, with unequal historical and ongoing contributions arising from unsustainable energy use, land use and land-use change, lifestyles and patterns of consumption and production across regions, between and within countries, and among individuals.

Although modeling indicates that climate change will occur globally and regionally, uncertainty remains about characterizing the precise local climate characteristics and predicting precisely how various ecological and social systems will react to any changes in the existing climate at the local level.

Regardless of this uncertainty, it is widely understood that some degree of climate change is expected because of past and future GHG emissions.

The potential of a gas or aerosol to trap heat in the atmosphere is called its global warming potential (GWP). The GWP of different GHGs varies because they absorb different amounts of heat. CO_2, the most ubiquitous GHG, is used to relate the amount of heat absorbed to the amount of the gas emissions; this is referred to as the CO_2 equivalent (CO_2e). The CO_2e is the amount of GHG emitted multiplied by the GWP. The GWP of CO_2, as the reference GHG, is 1. CH_4 has a GWP of 25; therefore, 1 pound of CH_4 equates to 25 pounds of CO_2e. Table 3.9-1 provides a range of gases with GWP over a 100-year timeframe and their estimated lifetime in the atmosphere.

Table 3.9-1. Lifetimes and Global Warming Potentials of Key Greenhouse Gases

Greenhouse Gas	100-Year Global Warming Potential (Average)	Life in Atmosphere (Years)
Carbon dioxide (CO_2)	1	50-200
Methane (CH_4)	25	12
Nitrous oxide (N_2O)	298	114
Hydrofluorocarbons	124 to 14,800	1 to 270
Perfluorocarbons	7,390 to 12,200	3,200 to 50,000
Sulfur hexafluoride	22,800	3,200

Source: CARB 2022a

3.9.1.1 Emission Inventories and Projections

A GHG inventory is a quantification of all GHG emissions and sinks[33] within a selected physical or economic boundary. Table 3.9-2 outlines the most recent global, national, statewide, and local GHG inventories to provide context for the magnitude of Project emissions.

[33] A GHG sink is a process, activity, or mechanism that removes a GHG from the atmosphere.

Table 3.9-2. Global, National, State, and Local Greenhouse Gas Emissions Inventories

Emissions Inventory	Annual CO_2e (metric tons)
2019 Intergovernmental Panel on Climate Change global GHG emissions inventory	59,000,000,000
2020 USEPA national GHG emissions inventory	5,222,400,000
2019 CARB state GHG emissions inventory	418,115,000
2017 City of San Leandro GHG emissions inventory	573,580
2010 City of Brisbane GHG emissions inventory	142,843

Sources: IPCC 2014; USEPA 2022; CARB 2022b
Terms:
CARB = California Air Resources Board
CO_2e = carbon dioxide equivalent
GHG = greenhouse gas
USEPA = U.S. Environmental Protection Agency

3.9.1.2 National Inventory

The primary source of GHG in the United States is energy-use-related activities, which include fuel combustion and energy production, transmission, storage, and distribution. The electricity and transportation sectors generated 55 percent of the total U.S. emissions in 2020 (transportation representing 28 percent of total emissions, and electricity 26 percent), with CO_2 being the primary GHG (79 percent of total emissions).

3.9.1.3 State Inventory

Despite growing population and gross domestic product, GHG emissions in California are decreasing, as are emissions per capita (per capita emissions have dropped from a 2001 peak of 14.1 metric tons to 10.5 metric tons in 2019), exhibiting a major decline in the "carbon intensity" of California's overall economy. In 2016, statewide GHG emissions dropped below the 2020 GHG limit and have remained below the limit since that time (CARB 2021). The transportation sector remains responsible for the largest share of GHG emissions in the 2019 state inventory, accounting for almost 41 percent of the total. Greenhouse gas emissions generated by most sectors have been flat or decreasing, and recently the transportation sector joined those sectors showing decreases. The transportation sector saw a 3.5 percent decrease in emissions in 2019 over 2018 levels, which is an improving trend as seen from 2013 to 2017 when levels escalated (CARB 2021). It is expected that the COVID-19 pandemic

generally reduced emissions, but the CARB 2021 levels are probably more protective than COVID-19 reduced emission periods.

Even though California is aggressively moving to reduce its annual GHG emissions, it is already experiencing the effects of GHG-related climate change, which is a relevant aspect of the environmental setting. A 2018 report, *Indicators of Climate Change in California* (California OEHHA 2018), concluded that the changes occurring in California are largely consistent with those observed globally. These climate change indicators show the following:

- Annual average temperatures in California are on the rise, including increases in daily minimum and maximum temperatures.
- Extreme events, including wildfires and heat waves, are more frequent.
- Spring runoff volumes are declining because of a diminished snowpack.
- The number of "winter chill hours" crucial to produce high-value fruit and nut crops, are declining.
- Species are on the move, showing up at different times and locations than previously recorded, including both flora and fauna at higher elevations.

3.9.2 Local Inventory

The City of San Leandro emitted 573,580 metric tons of CO_2e in 2017, which was approximately 0.14 percent of the statewide inventory in 2017. The largest contributing sector was transportation (60 percent), followed by nonresidential (15 percent), and residential (13 percent) energy (City of San Leandro 2021).

The City of Brisbane emitted 142,843 metric tons of CO_2e in 2010, or approximately 0.03 percent of the statewide inventory in 2010. The transportation sector was the largest contributor of emissions in Brisbane (69.7 percent), followed by commercial and industrial (13.5 percent), and off-road equipment (4.5 percent) (City of Brisbane 2015).

3.9.3 Regulatory Setting

Federal and state laws and regulations pertaining to GHG emissions and relevant to the Project are identified in Appendix A. At the local level, the policies and programs are included in Appendix B.

3.9.4 Impact Analysis

The impact analysis includes construction emissions generated by all terrestrial activity and marine vessels operating within the SF Bay. The cables' owner is responsible for repair and maintenance of the cables. No routine maintenance is planned for the submerged cable network.

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

Less than Significant with Mitigation

All Project Components

As discussed in Section 3.3, Air Quality, construction of the proposed Project would require both terrestrial (e.g., HDPE conduit installation) and marine activities. Off-road equipment, including the HDD rig, on-road vehicles, and marine vessels would emit CO_2, CH_4, and N_2O. Emissions were estimated using the methods described in Appendix E and are summarized in Table 3.9-3. One hundred percent of the emissions during the Project would occur within the boundary of the state of California, including state waters, with most of these emissions originating from marine vessels (50 percent) and off-road equipment (48.5 percent).

Table 3.9-3. Estimated Construction Greenhouse Gas Emissions

Construction Equipment	Carbon Dioxide Equivalent (CO_2e) (metric tons)
Off-road equipment	130.9
On-road vehicles	4.0
Marine Vessels	130.8
Total	**265.7**

For this analysis, because construction is the primary emission source associated with the Project, CSLC has conservatively determined that any substantial increase in construction-related GHG emissions above net zero would result in a significant impact. However, it is worth noting that the estimated 265.7 metric tons of CO_2e expected to be generated during the construction phase of the Project would be below the significance thresholds of the BAAQMD and would occur only during the brief construction period. Implementing **MM AIR-1** and **MM AIR-2** would reduce impacts to 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 with Mitigation

All Project Components

Assembly Bill (AB) 32 and Senate Bill (SB) 32 are California's plans for reducing GHG emissions. The Project's consistency with AB 32 and SB 32 was assessed to determine the significance of this potential impact. The analysis also considers consistency with the state's long-term emissions reduction trajectory (as articulated under Executive Order (EO) B-55-1832).

Assembly Bill 32 codifies the California's GHG emissions reduction targets for 2020. The CARB adopted the 2008 Scoping Plan and the 2014 first update as a framework for achieving AB 32 (CARB 2008, 2014). The 2008 scoping plan and 2014 first update outlined a series of technologically feasible and cost-effective measures to reduce statewide GHG emissions. In November 2017, CARB adopted the 2017 Scoping Plan as a framework for achieving the 2030 GHG emissions reduction goal described in SB 32 (CARB 2017).

The 2008 and 2014 Scoping Plans indicate that reductions would need to happen from the following sources of GHG emissions:

- Vehicle emissions
- Mileage standards
- Sources of electricity
- Increased energy efficiency at existing facilities
- State and local plans, policies, or regulations to lower carbon emissions, relative to business-as-usual conditions

The 2017 Scoping Plan (CARB 2017) carries forward GHG emissions reduction measures from the 2014 first update as well as new measures to help achieve the state's 2030 target across all sectors of the California economy. The majority of measures target energy and transportation emissions from commercial and residential development and therefore are not directly applicable to the Project. Measures that expand the transit network and support electric vehicles may reduce emissions from the employee trips to the Project site.

Policies in the 2017 Scoping Plan are state programs (e.g., SB 350) that require no action at the local or project level.

State EO S-3-05 established GHG reduction targets for California. The targets called for a reduction of GHG emissions to 2000 levels by 2010, a reduction of GHG emissions to 1990 levels by 2020, and a reduction of GHG emissions to 80 percent below 1990 levels by 2050. The California Environmental Protection Agency secretary is required to coordinate development and implementation of strategies to achieve the GHG reduction targets.

In April 2015, Governor Brown signed EO B-30-15. The EO added the intermediate target of reducing GHG emissions to 40 percent below 1990 levels by 2030.

State EO S-01-07 mandates that a statewide goal must be established to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020. The EO established a Low Carbon Fuel Standard and directed the Secretary for Environmental Protection to coordinate the actions of the California Energy Commission, CARB, the University of California, and other agencies to develop and propose protocols for measuring the "life-cycle carbon intensity."

The City of Brisbane created a Climate Action Plan (CAP) intended to quantify and reduce GHG emissions in the city (City of Brisbane 2015). The plan outlines GHG reduction targets and energy efficiency measures to reduce GHG emissions from local sources to comply with state legislative targets. Proposed measures are focused on energy, water use, solid waste, road emissions, transportation, and a green business program.

The City of San Leandro created a CAP intended to quantify and reduce GHG emissions in the city (City of San Leandro 2021). The plan outlines GHG reduction targets and energy efficiency measures to reduce GHG emissions from local sources to comply with state legislative targets. Proposed measures are focused on building electrification, energy efficiency measures, renewable energy portfolios, alternative transportation and electrification, low-carbon fuels, waste management including reduction and reuse, water efficiency, and community consumption.

The Project does not entail any features or elements that would obstruct implementation of these programs. Short-term construction emissions would be offset through implementing **MM AIR-1** and **MM AIR-2**. Therefore, the Project would not conflict with achieving the state's adopted GHG reduction goals under AB 32 and SB 32, the County's CAPs, or their long-term emissions reduction trajectory. This impact is considered less than significant with mitigation.

3.9.5 Mitigation Summary

Implementation of the following mitigation measures would reduce the potential for Project-related impacts of greenhouse gas emissions to less than significant:

MM AIR-1: Use of Tier 4 Equipment
MM AIR-2: Standard Control Measures for Construction Equipment

3.10 HAZARDS AND HAZARDOUS MATERIALS

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

HAZARDS AND HAZARDOUS MATERIALS – Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?	☐	☐	☐	☒

3.10.1 Environmental Setting

3.10.1.1 Project Location and Surroundings

The Project area spans across the SF Bay with cable landing sites in Brisbane (west site) and San Leandro (east site).

Western Cable Landing Site

The nearest school to the western cable landing site (specifically western cable landing site Alternative 3) is Brisbane Elementary School approximately 0.77 mile southwest. San Francisco International Airport is the closest airport, approximately 4 miles south of the western cable landing site Alternative 3. The Brisbane Fire Department provides fire suppression services in the vicinity, and the Brisbane Police Department provides law enforcement services. The Brisbane Police Department enforces traffic laws on roadways within Brisbane whereas the San Mateo County Sheriff's Department and California Highway Patrol are responsible for unincorporated areas in and around San Mateo County.

Eastern Cable Landing Site

The nearest school to the eastern cable landing site is Garfield Elementary School, approximately 1.1 miles north. Approximately 2 miles north is the Oakland International Airport, the closest airport to the eastern cable landing site. The Alameda County Fire Department provides fire suppression services in the vicinity, and the San Leandro Police Department provides law enforcement services. The San Leandro Police Department enforces traffic laws on roadways within San Leandro; the Alameda County Sheriff's Department and California

Highway Patrol are responsible for unincorporated areas in and around Alameda County.

3.10.1.2 Online Review

The California Environmental Protection Agency's Cortese List Data Resources website was searched on July 7, 2022. The California Department of Toxic Substances Control (DTSC) Envirostor database revealed no listings within the Project area (California DTSC 2022). The State Water Resources Control Board (SWRCB) Geotracker site also did not identify any active cleanup sites within the Project area. No sites in Alameda or San Mateo County were identified on the SWRCB's list of Sites Identified with Waste Constituents above Hazardous Waste Levels Outside the Waste Management Unit (California Environmental Protection Agency 2022). According to the California Environmental Protection Agency's list of hazardous waste facilities subject to corrective action pursuant to section 25187.5 of the Health and Safety Code, the California DTSC has identified two sites in San Leandro and one site in Brisbane.

The SWRCB's Cease and Desist Orders and Cleanup and Abatement Orders list identifies three sites within San Leandro and one site in Brisbane (California Environmental Protection Agency 2022). The site near Brisbane (SFPP, L.P. Brisbane Terminal at 950 Tunnel Road, Brisbane) is approximately 0.5 mile west of the western cable landing sites; the site closest to San Leandro (Freight Terminals Inc. facility at 2075 Williams Street, San Leandro) is approximately 1.47 miles north of the eastern cable landing site. Due to the minimal ground-disturbing activities occurring at each cable landing site for this Project, the distance from these cleanup sites is anticipated to be adequate for safe construction and operation of this Project.

The western cable landing sites are located at or near the southeastern edge of what used to be the Brisbane Landfill. Subsurface soil and groundwater surveys have been conducted for this area dating back to1977 for potential future commercial and industrial developments. A preliminary geotechnical investigation of the former landfill area was conducted in 2008 to evaluate subsurface stratigraphy of the site, slope stability, and settlement issues for shallow and deep foundations.

A Gas Collection System was constructed under the BAAQMD's oversight in 1991 (Sunquest Properties, Inc. 2003). Even before constructing the Gas Collection System, the internal gas pressure within the landfill was not high enough to cause high concentrations of methane gas to migrate from the perimeter of the landfill

since the landfill was closed 30 years before installing this system in 1991. After closing the landfill, the bulk of the biodegradable refuse had degraded by 1991. Gas probes used to monitor possible off-site gas migration of methane gas, including a probe located approximately 525 feet southeast from the nearest potential landing vault, consistently showed that methane gas was not detected over 10 years or more before the Sunquest Properties, Inc. 2003 report.

Ongoing monitoring of landfill ground water, surface water, and leachate is occurring pursuant to Regional Water Quality Control Board Waste Discharge requirements, and a settlement evaluation program of the area has been in place since 2008. The summaries of these surveys and associated reports are described in more detail in the Brisbane Baylands Draft EIR (State Clearinghouse #2006022136[34]), as part of the planned development of this area (ESA 2013). All potential western landing sites are located on the opposite side of Lagoon Road from the former landfill, which is assumed to be adequate for safe construction and operation of this Project based on the above referenced results of the existing soil and groundwater surveys.

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 policies and programs are included in Appendix B.

3.10.3 Impact Analysis

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

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?

Less than Significant with Mitigation (a through c)

[34] See https://ceqanet.opr.ca.gov/Project/2006022136 (CEQA 2023).

All Project Components

The Project would involve routine transport, storage, use, and disposal of small quantities of hazardous materials during construction such as gasoline, diesel, lubricants, and solvents. The use, handling, transportation, storage, and disposal of these hazardous materials (necessary for Project-related work) would be regulated by existing laws and regulations. The Project would not create a health hazard as stated in questions a), b), and c) above. Safe handling of hazardous materials would be considered during all phases of Project construction (terrestrial and marine) to protect the public, school children, Project personnel, and the environment. As noted above, the closest school to the western cable landing site is 0.77 mile, and the closest school to the eastern cable landing site is 1.1 miles. No aspect of the Project would affect these schools.

The Project is not anticipated to emit any hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste. However, as described above, the western cable landing site occurs within a former landfill site boundary, though the actual landfill location was north of Lagoon Road while the cable landing sites are south of Lagoon Road. While it is not likely for workers, the public, and the environment to be exposed to accumulated landfill gases during Project construction, **MM HAZ-1** will be implemented to reduce potential exposure to landfill gases during construction. Requiring soil and waste management during construction would also reduce the potential for exposure to hazards and hazardous materials to a less than significant level.

Project work vehicles would be refueled off-site. The HDD rig would be refueled by a mobile fuel truck in a designated fueling area (**MM BIO-3**). At the end of construction, all disturbed areas would be returned to their natural state, leaving no potential health hazard.

The offshore vessels and both the offshore and onshore equipment may accidentally release hazardous materials (possible environmental and human exposure) from accidental petroleum (including diesel fuel) spills. Implementing **MM HAZ-1** would avoid potential impacts associated with the accidental release of hazardous substances or reduce them to a less than significant level.

MM HAZ-1: Develop and Implement Spill Contingency and Hazardous Materials Management Plans. At least 30 days before start of construction of the Project, Bandwidth shall submit the following plans for review and approval by CSLC staff:

Worker Health and Safety Plan

A final Worker Health and Safety Plan (WHSP) that has been reviewed and approved by the San Mateo County Division of Environmental Health shall address measures to minimize risks from landfill gases and potential worker exposure to hazardous materials associated with construction activities at the western cable landing site and within 1,000 feet of the former Brisbane Landfill. The WHSP shall be prepared by a qualified geologist or engineer.

A. The WHSP shall include, at a minimum, measures to:
    a. Address the potential for the presence and migration of landfill gases during construction.
    b. Minimize risks of exposure by construction workers to anticipated hazardous materials, to potential unanticipated waste types, and to potential landfill gas accumulation post-construction by operational and maintenance personnel.
    c. Assure Project stability and structural integrity associated with any incompetent waste fill material that may be present.

B. Bandwidth shall undertake development in accordance with the approved final WHSP. Any proposed changes to the approved final WHSP shall be reported to CSLC and San Mateo County Division of Environmental Health. No changes to the approved final WHSP shall occur without written approval from CSLC and San Mateo County Division of Environmental Health.

Soil and Waste Excavation and Management Plan

A final Soil and Waste Excavation and Management Plan (SWEMP) that has been reviewed and approved by the San Mateo County Division of Environmental Health shall address soil and waste management for construction activities at the western cable landing sites. The SWEMP shall be prepared by a qualified geologist or engineer.

A. The SWEMP must include, at a minimum, the following:
    a. A description of the specific locations, methods, and procedures for staging, stockpiling, managing, characterizing, testing, and disposing of soil (including bentonite material), groundwater, and waste material expected to be encountered during construction.

b. Procedures for managing unanticipated waste types that may be encountered during construction.

c. Best management practices for odor and dust control, including, but not limited to, measures to reduce the potential for exposure of staged and stockpiled materials to wind and stormwater runoff.

d. Provisions for characterizing and testing soil, groundwater, and waste material in accordance with California DTSC Protocol for Burn Dump Site Investigation and Characterization. Testing should include, at a minimum, volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs), polycyclic aromatic hydrocarbons, dioxins and furans, organochlorine pesticides, and California Administrative Metals (CAM-17) heavy metals.

e. Provisions for proper waste disposal at authorized facilities capable of receiving the waste(s).

B. Bandwidth shall undertake development in accordance with the approved final SWEMP. Any proposed changes to the approved final SWEMP shall be reported to CSLC and San Mateo County Division of Environmental Health. No changes to the approved final SWEMP shall occur without written approval from CSLC and San Mateo County Division of Environmental Health.

Spill Contingency and Hazardous Materials Terrestrial Plan

Measures for terrestrial operations shall include, but not be limited to, identifying appropriate fueling and maintenance areas for equipment, a daily equipment inspection schedule, and spill response procedures including maintaining spill response supplies on-site. The Spill Contingency and Hazardous Materials Terrestrial Plan (SCHMTP) could be prepared separately or the elements of the SCHMTP could be included in the SWEMP.

The terrestrial SCHMTP will identify the actions and notifications to occur if contaminated soil is encountered during onshore excavation. Bandwidth shall notify the San Mateo and Alameda Counties' Divisions of Environmental Health within 24 hours of discovering contaminated materials during Project construction activities. Work in the area suspected of contamination shall stop until the notified agencies, together with Bandwidth, have determined the next steps.

The terrestrial SCHMTP will identify, at a minimum, the following Best Management Practices (BMPs) related to using hazardous substances:

- Follow manufacturer's recommendations on use, storage, and disposal of chemical products used in construction.
- Avoid overtopping construction equipment fuel gas tanks.
- During routine maintenance of construction equipment, properly contain and remove grease and oils.
- Conduct all equipment fueling at least 100 feet from wetlands and other waterbodies.
- Properly dispose of discarded containers of fuels and other chemicals.
- Maintain a complete list of agencies (with their telephone numbers) to be notified of potential hazardous material spills, including but not limited to, the CSLC's 24-hour emergency notification number and the California Governor's Office of Emergency Services contact number.

Spill Contingency and Hazardous Materials Offshore Plan

For offshore activities involving work vessels, the primary work vessel (cable-lay vessel) will be required to carry onboard a minimum 400 feet of sorbent boom, five bales of sorbent pads at least 18 inches by 18 inches square, and a small, powered vessel for rapid deployment to contain and clean up any small hazardous material spill or sheen on the water surface. The Spill Contingency and Hazardous Materials Offshore Plan (SCHMOP) shall provide for the immediate call out of additional spill containment and cleanup resources in the event of an incident that exceeds the rapid cleanup capability of the on-site work force. These offshore measures may be provided as part of a separate SCHMOP or combined with the terrestrial plan (SCHMTP) as described above.

Spill response training, including the locations of spill response supplies, would be required as part of the environmental awareness training for personnel in **MM BIO-1**. The **MM BIO-3** would require the cable landing sites, including equipment staging and fueling areas, to be delineated before starting construction to protect environmentally sensitive areas and resources. Potential impacts stemming from an inadvertent return of drilling fluid (consisting of bentonite and water) and associated mitigation measures are discussed in Section 3.4, Biological Resources (**MM HAZ-2**).

If the HDD drilling fluid volume or pressure loss is detected, HDD drilling would be stopped or slowed to allow close observation for a surface release in the SF Bay. If an HDD drilling fluid release is discovered, the marine monitor would work with the driller to take feasible measures as outlined in the Inadvertent Return Contingency Plan (**MM HAZ-2**) to reduce the quantity of fluid released by lowering drilling fluid pressures, thickening the drilling fluid, or both, depending on geologic conditions.

If any HDD drilling fluid is released on the surface above the OHWM, it would be contained with sandbags and collected for reuse or disposal as required in **MM HAZ-2**, to be developed before starting work. For inadvertent releases below the OHWM, efforts would be made as outlined in **MM HAZ-2,** and explained in the next paragraphs, to contain the released HDD drilling fluids in the SF Bay. Even after the efforts to contain, it may be impractical to contain and collect releases because of ambient wind, wave, and current energy in the nearshore bay environment. The wind, wave, and subsurface current energy in the nearshore waters of the Project site can be expected to dissipate any inadvertently released drilling fluid. However, the drilling operation would be closely monitored, as directed in **MM HAZ-2**.

If inadvertent HDD drilling fluid releases are detected in the water column within the SF Bay, additional operational measures would be implemented to stop, minimize, and control the inadvertent release, as determined feasible by the on-site marine biological monitors, in consultation with the drilling crew and key state agency personnel (**MM HAZ-2**). Exactly what altered operational measures might be implemented are highly incident-specific. Likely, scientific divers or a small ROV would be deployed to assess the potential drilling fluid release since the HDD exit points are closer to the SF Bay shoreline (Figures 1.3-3 and 1.3-4).

If an HDD drill fluid release is identified in the SF Bay, typical containment measures can include adding loss control materials (e.g., saw dust, binding polymers, and ground nut shells) to the drilling fluid to attempt to plug the pathway by which HDD drilling fluid is flowing to the SF Bay. This would reduce downhole mud pressure to slow the movement of HDD drilling fluid to the SF Bay and limit the flow of HDD drilling fluid into the SF Bay so that natural oceanographic conditions (wind, wave, and current action) can dissipate the released HDD drilling fluid.

Depending on the HDD drilling fluid material fluid loss, agency consultation, SF Bay habitats at the point of discharge, and existing oceanographic conditions, additional cleanup and removal actions can be taken. These

actions may include using commercial divers (contact information would be in **MM HAZ-2** Inadvertent Return Contingency Plan) to contain the release with hand-placed barriers such as Brady barrels, or sandbags, silt fences, or silt curtains, and collect released material using vacuum pumps, as practical.

MM HAZ-2: Prepare and Implement an Inadvertent Return Contingency Plan. A Final Inadvertent Return Contingency Plan (either one report that describes a plan for both terrestrial and marine areas or separate reports for each area) shall be submitted to CSLC staff for review and approval at least 30 days before starting construction in terrestrial and marine areas. The plan(s) must include the following:

- Measures to stop work, maintain appropriate control materials on the site, contain and remove drilling mud before demobilization, prevent further migration of drilling mud into the waterbody, and notify all applicable authorities in the case of an inadvertent return of any size.
- Control measures of constructing a dugout or settling basin at the cable landing site to contain drilling mud to prevent sediment and other deleterious substances from entering waterbodies.
- Requirements for onshore biological monitors to monitor onshore and offshore to identify signs of an inadvertent release of drilling fluids, which may include the use of Rhodamine dye.
- An abandonment contingency plan in case the HDD operations are forced to be suspended and a partially completed bore hole is abandoned.
- Complete list of the agencies (with telephone number) to be notified in case of an inadvertent return of any size, including, but not limited to, the CSLC's 24-hour emergency notification number (562) 590-5201 and the California Governor's Office of Emergency Services (Cal OES) contact number (800) 852-7550.

During operations, the Project would not create a significant hazard to the public or the environment through reasonably foreseeable upset or accident conditions involving the release of hazardous materials; 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?

Less than Significant Impact

All Project Components

As noted in Section 3.10.1, Environmental Setting, the California Environmental Protection Agency's Cortese List Data Resources website was searched on July 7, 2022, for potential hazardous materials and leaking underground storage tank sites in the Project area. No active hazardous materials sites were identified within the Project area during the online review for each of the databases (California DTSC 2022; SWRCB 2022a, 2022b). The western cable landing site is located along the edge but within the boundary of a former landfill. However, this site was not identified through the Cortese List Data Resources website, and **MM HAZ-1** would be implemented to mitigate for any potential exposure to hazardous materials during Project construction. Therefore, the impact would be less than significant with mitigation.

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

No Impact

All Project Components

The San Francisco International Airport is approximately 4 miles south of the western cable landing site, and the Oakland International Airport is approximately 2 miles northwest of the eastern cable landing site. There would be no impact because no aspect of the proposed Project would create a safety hazard or excessive noise for people residing or working in the Project area. The Project does not include any structures for human occupation. This question does not apply to the offshore Project components. Therefore, there would be no impact.

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

No Impact

All Project Components

The Project area at each cable landing site is limited to approximately 0.1 acre (0.04-hectare). All proposed construction activities would occur at the Project site and would not block roads or emergency evacuation routes. Emergency access along local roadways would be maintained during Project construction, staging, and access activities. The Project would not alter existing conditions for emergency response either during or after construction. Therefore, there would be no impact.

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

No Impact

All Project Components

Public Resources Code sections 4201 through 4204 direct the California Department of Forestry and Fire Protection to map fire hazards within State Responsibility Areas, based on relevant factors such as fuels, terrain, and weather. According to the Fire Hazard Severity Zone Viewer online tool (CA OSFM 2022), both cable landing sites are not in fire hazard areas and are in Local Responsibility Areas. For the western cable landing site, the Brisbane Fire Department provides fire suppression services in Brisbane. For the eastern cable landing site, in San Leandro, the Alameda County Fire Department provides fire suppression services. The Project would not require construction crews to traverse wildlands. The Project would not require the use of ignition sources, except for operating construction vehicles. This question does not apply to the offshore Project components. Because neither people nor structures would be exposed to a significant risk of wildland fire, there would be no impact.

3.10.4 Mitigation Summary

Implementation of the following mitigation measures would reduce the potential for Project-related impacts of Hazards and Hazardous Materials to less than significant:

- **MM HAZ-1: Develop and Implement Spill Contingency and Hazardous Materials Management Plans**
- **MM HAZ-2: Prepare and Implement an Inadvertent Return Contingency Plan**
- **MM BIO-1: Provide Environmental Awareness Training**
- **MM BIO-3: Delineate Work Limits to Protect Sensitive Biological Resources**

3.11 HYDROLOGY AND WATER QUALITY

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

HYDROLOGY AND WATER QUALITY - Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☐	☒

3.11.1 Environmental Setting

3.11.1.1 Surface Waters

The entire Project area is within the SF Bay watershed, which covers 4,600 square miles and is the largest Pacific estuary in the Americas (USEPA 2016b). The SF Bay is further partitioned into three main bays (i.e., San Francisco, San Pablo, and Suisun) and smaller bays. The Project occurs in the central-southern portion of the main SF Bay (i.e., south of the San Francisco Peninsula).

SF Bay may be described as a lagoon-type estuary that exhibits a fluctuating tidal regime, with water movement influenced primarily by its interactions with the tidal currents of the Pacific Ocean, water exchange between the Bay and coastal waters, freshwater influx into the Bay, local and regional wind currents, and bathymetry. The Pacific Ocean swell infiltrates the SF Bay via the Golden Gate passage; however, the swell-induced turbulence that results within the SF Bay does not markedly impact the southern portion of the Bay (Barnard et al. 2013).

The currents in the southern part of SF Bay range from approximately 0 to 1.5 knots, depending on the tides, season, and measurement location (NOAA 2022b). For example, current speeds are higher in the center of the bay compared to the speeds closer to shore. Current velocity was measured along the cable route, within a shipping channel, where maximum current velocity was anticipated. The dominant current direction was north-northwest and south-southeast, with a peak flow of approximately 2 knots. The mean current velocity within the channel over a 33-day dataset was 0.74 knots (A2Sea 2022). The cables in the proposed Project would be buried to a depth of approximately 3 to 6 feet (1 to 2 meters). Barnard et al. (2013) noted that the shallow water of the South Bay, combined with the local winds often results in sediment resuspension, but that the sediment resuspension typically is highest during flood tides, resulting in general sediment movement toward the southeast. Therefore, it is

anticipated that even if some sediment above the cables is resuspended during low tides, the movement of sediment toward the southeast from the northern portion of the bay during flood tides would add new sediment over the cables, resulting in no net change in burial. Additionally, a high-resolution seabed mapping and surficial sediment classification assessment showed several historic, static seabed features along the cable route (A2Sea 2022). The visible presence of such features years after the original activity indicates low rates of erosion along the cable route.

Portions of SF Bay are listed as impaired water bodies in the SF Bay Hydrologic Unit (USEPA 2021). Pollutants affecting SF Bay include pesticides (e.g., diazinon, DDT), metals (e.g., mercury, zinc, selenium), and manufacturing compounds (e.g., dioxins, polychlorinated biphenyls, furan). Some pollutants are legacy problems, such as remnant pollution from abandoned mines; although most pollutants found today exist due to a variety of current inputs from industrial, agricultural, urban, and transportation sources (USEPA 2021).

3.11.1.2 Groundwater

The groundwater table is anticipated to be relatively shallow in the Project area, where the area surrounding the western cable landing site has a depth to water ranging from 10.07 to 11.34 feet (SWRCB 2022a), and the area surrounding the eastern cable landing site ranging from 0.39 to 8.1 feet (SWRCB 2022b). Overall, the groundwater is expected to occur within the upper 10 feet of the ground surface.

3.11.1.3 Flooding

Generally, flooding conditions may be induced or exacerbated by king tides (i.e., highest and lowest tides of the year, which occur when the Earth is closest to the sun and to the moon) or extreme tides (i.e., still-water elevation, where local sea level temporarily increases for a duration of hours to days). Both cable landing sites are located just outside the 100-year flood-zone (FEMA 2021a,b).

3.11.1.4 Tsunami Inundation

Typically, tsunamis occur from seismic activity along subduction zones. SF Bay is located within some of the highest seismic risk zones in California (Section 3.8.1, Environmental Setting) but is not located along a subduction zone. However, the nearshore, low-laying areas along the west and east coasts of SF Bay are most likely to experience intermittent tsunami inundation. Localized tsunami modeling demonstrated that tsunamis caused by distant earthquakes had a

wave size of roughly 3 meters (10 feet), and after passing through the Golden Gate corridor, 1 mile in width between the ocean and bay, waves had lost energy and the size decreased to 0.25 to 2 meters (0.8 to 6.6 feet; Ward 2015).

Given the elevation at the eastern and western cable landing sites, in the event of a large tsunami, there is a likelihood of inundation to occur. Within the SF Bay, 6 tsunamis have been generated out of the 51 that have been recorded and observed in the vicinity (Borrero et al. 2006).

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. At the local level, the policies and programs are included in Appendix B.

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

<u>All Project Components</u>

Construction activities associated with the proposed Project include ground-disturbing activities such as jetting operations on the bay floor to install the fiber optic cables, HDD, backfilling, and minor grading.

As discussed in Section 3.4.3, Impact Analysis (Biological), jet sled installation activities and beaching of the barge (if it occurs), are anticipated to result in temporary spikes in turbidity near the SF Bay floor. Increased turbidity typically is restricted to the region of the water column immediately above and adjacent to the bay floor where the jetting is occurring. Depending on water depth and natural wave or current energy generated through the water column, any generated turbidity plumes can be expected to dissipate quickly, and any resuspended sediments will settle to the bay floor. During ROV surveys of the proposed cable route, marine sediments frequently are disturbed by the ROV thrusters and generate similar turbidity plumes (AMS 2008, 2016). These turbidity plumes dissipate quickly, and the resuspended sediments settle within minutes of the disturbance. Similarly, rapid settlement of sediments can be expected following cable jet sled installation activities.

Ground-disturbing activities and runoff from upland work areas could cause soil erosion and sedimentation, reducing water quality in SF Bay. Potential impacts on water quality are related to sediment and sediment-bound pollutants that may be mobilized into the Bay. Additionally, hazardous materials (e.g., gasoline, oils, grease, and lubricants) from construction equipment could be released accidentally during construction. Accidental discharge of hazardous materials to surface waters during construction could temporarily adversely affect water quality or result in a violation of water quality standards. **MM HAZ-2** would reduce these potential impacts to less than significant levels. Contaminants from construction vehicles and equipment and sediment from soil erosion could increase the pollutant load in runoff transported to receiving waters. **MM HAZ-1**, which includes requirements for both a SWEMP and Spill Contingency and Hazardous Materials plans, would reduce these potential impacts to less than significant levels. Erosion control BMPs would include source control measures such as wetting of dry and dusty surfaces to prevent fugitive dust emissions; preserving existing vegetation; and using effective soil cover (e.g., geotextiles, straw mulch, and hydroseeding) for inactive areas and finished slopes to prevent sediments from being dislodged by wind, rain, or flowing water. Sediment control BMPs would include measures such as installation of fiber rolls and sediment basins to capture and remove particles that already have been dislodged. Restoration would include minor grading to restore contours, installing erosion control devices at locations susceptible to erosion, as well as seeding, mulching, and fertilizing to return the site to pre-construction conditions.

Measures for hazardous materials management, such as identification of appropriate fueling and maintenance areas for equipment, are provided in **MM HAZ-1**. In addition, if contaminated material is encountered during Project construction, these Plans would be implemented. The Plans identify the actions and notifications to occur if evidence of soil contamination is encountered during onshore excavation.

Horizontal directional drilling for the HDPE conduits would be approximately 6.5 to 66 feet (2 to 20 meters) below the ground surface. Shallow groundwater is likely to occur in the subsurface of the HDPE conduits where HDD would be conducted. Construction dewatering in areas of shallow groundwater may be required during excavation activities, which could result in potential exposure of pollutants from spills or other activities that may contaminate groundwater. For water to be discharged to surface waters, the contractor would need to notify the San Francisco Bay Regional Water Quality Control Board and comply with the Board's requirements related to the quality of water and discharges. The

National Pollutant Discharge Elimination System (NPDES) Construction General Permit includes dewatering activities as authorized non-stormwater discharges if dischargers prove the quality of water to be adequate and not likely to affect beneficial uses. The permit also includes discharge sampling, monitoring, and reporting requirements. In addition to the requirements outlined in the Construction General Permit, the Project would comply with the Waste Discharge Requirements for Discharges to Land with a Low Threat to Water Quality of the SWRCB (Water Quality Order No. 2003-0003-DWQ). If it is found that the groundwater does not meet water quality standards, it must (1) be treated as necessary prior to discharge so that all applicable water quality objectives (as designated in the Water Quality Control Plan for the SF Bay Basin are met, or (2) hauled off-site for treatment and disposal at an appropriate waste treatment facility that is permitted to receive such water.

During drilling of the bore hole, a drilling fluid (a non-toxic, inert material, typically a solution of bentonite clay and water) would be circulated. The drilling fluid minimizes fluid losses to permeable rock and soil types. To minimize the potential for material release into the marine environment, the last 100 feet of the bore hole would be drilled using potable water as a drilling fluid. Spent drilling fluids (those used for drilling from under the cable landing site to offshore, except for those lost to the surrounding subsurface material) and cuttings (natural material that is drilled through as the HDD moves forward) would be collected and disposed of at a permitted landfill. The potential for significant releases of drilling fluids into the terrestrial environment would be minimized through implementing **MM HAZ-2**.

As discussed in Section 3.4, Biological Resources, some drilling fluids might inadvertently be released into the sea water. Any drilling fluids released to the marine environment through subsurface fractures likely would be dispersed rapidly by currents and wave-induced turbulence. The potential for significant releases of drilling fluids into the marine environment would be minimized through implementing **MM HAZ-2**. All Project activities would be subject to existing regulatory requirements. The proposed Project would be required to meet all applicable water quality objectives for surface waters and groundwater contained in the Water Quality Control Plan for the SF Bay Basin (SWRCB 2017), to act in accordance with related regulatory agencies guidelines, and to meet the goals and objectives of the San Mateo County's LCP. Further, discharge of pollutants from urban runoff would be minimized with implementation of practices required by other CEQA, federal, and state requirements. Because construction activities would not violate water quality

standards or waste discharge requirements, impacts on water quality would be less than significant with mitigation.

The SWRCB and the Bay Protection and Toxic Cleanup Program has identified sediment "toxic hot spots" where sediment disturbance could impact SF Bay water quality (California Environmental Protection Agency 1999). The cable route avoids the toxic hot spots identified in the Bay Protection and Toxic Cleanup Program.

During operation, no aspect of the Project would affect surface water or groundwater because Project components would be located underground, with no potential to release hazardous materials; therefore, no impact would occur.

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

<u>All Project Components</u>

The Project area occurs within the SF Bay groundwater basin. The Project would add minimal areas of additional impervious surface (i.e., landing vault covers at the cable landing sites). Recharge in the area would continue to occur through infiltration of precipitation. Using surface water or groundwater for construction activities or Project operation is not intended, and no groundwater pumping is required. The Project's minimal use of water would not deplete or interfere with groundwater supply or recharge or impede sustainable groundwater management of the basin. Therefore, there would be no impact on groundwater supplies or recharge.

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

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

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

Less than Significant with Mitigation (i through ii)

All Project Components

During construction, existing drainage patterns could be altered temporarily through minor grading, potentially resulting in temporary erosion. Best management practices would be implemented through the Stormwater Pollution Prevention Plan (SWPPP) required as part of San Francisco Bay Regional Water Quality Control Board permitting (**MM HYD-1**), in addition to implementing **MM HAZ-2** and **MM HAZ-1**.

MM HYD-1: Develop and Implement Stormwater Pollution Prevention Plan. Bandwidth shall develop and implement a SWPPP consistent with the Statewide NPDES Construction General Permit (Order 2009-0009-DWQ). At a minimum, the SWPPP shall include measures for:

- Maintaining adequate soil moisture to prevent excessive fugitive dust emissions, preservation of existing vegetation, and effective soil cover (e.g., geotextiles, straw mulch, hydroseeding) for inactive areas and finished slopes to prevent sediments from being dislodged by wind, rain, or flowing water.
- Installing fiber rolls and sediment basins to capture and remove particles that have already been dislodged.
- Establishing good housekeeping measures such as construction vehicle storage and maintenance, handling procedures for hazardous materials, and waste management BMPs, including procedural and structural measures to prevent the release of wastes and materials used at the site.

The SWPPP shall also detail spill prevention and control measures to identify the proper storage and handling techniques of fuels and lubricants, and the procedures to follow in the event of a spill. The SWPPP shall be provided to CSLC staff a minimum of 30 days prior to Project implementation.

Minimal additional impervious surface would be added as part of the Project (i.e., the cast-iron covers of the landing vault at the cable landing sites). The Project sites would remain like its existing configuration, and the Project would not substantially alter the existing drainage pattern. Most construction activities and the primary staging areas occur within the Project area associated with each cable landing site.

Once the HDPE conduits are installed, the entry pits would be expanded to allow installation of the landing vault access. Topsoil from the expanded HDD entry pits would be stockpiled during landing vault installation and used as part

of restoration efforts at the cable landing sites before using effective soil cover (e.g., geotextiles, straw mulch, and hydroseeding).

In addition, standard erosion and sediment control measures and other construction SWPPP BMPs would be implemented (**MM HYD-1**). As a result, surface runoff, excess soil disturbance, and soil erosion and siltation impacts would be reduced to a less than significant level with mitigation.

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

iv) Impede or redirect flood flows?

No Impact (iii through iv)

All Project Components

The drainage patterns of the cable landing sites may be altered temporarily during the short-term construction period. Construction equipment would be located to minimize any potential for flood risks. The Project would install the fiber optic cables below ground. The Project would not create or contribute to runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff. The Project would not impede or redirect flood flows. The Project site would be stabilized and restored immediately after Project-related construction activities. Therefore, there would be no impact.

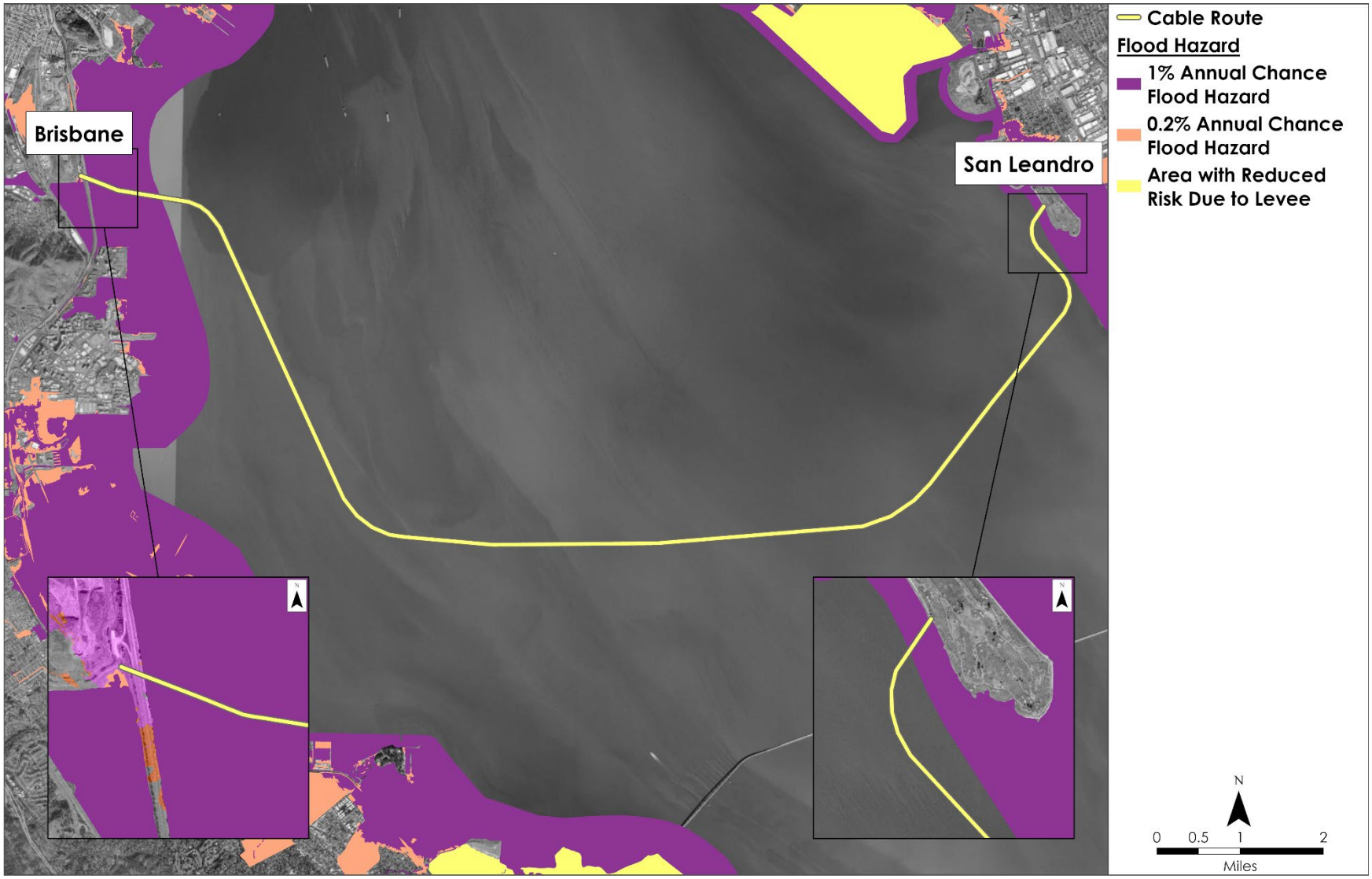
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?

No Impact

All Project Components

Both cable landing sites would be located just outside the 100-year flood zones (Figure 3.11-1). The western cable landing site is not within the tsunami hazard area. The eastern cable landing site is within the tsunami hazard area (California Department of Conservation 2021b). The landing vaults associated with each cable landing site would not store pollutants and would therefore not release pollutants if inundated by flood, seiche (i.e., a temporary disturbance of the water column), or tsunami. Therefore, there would be no impact.

Figure 3.11-1. Location of the Cable Landing Sites in Relation to the 100-Year Flood Zones



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

No Impact

All Project Components

The proposed Project would comply with the appropriate water quality objectives for the region. Commonly practiced BMPs would be implemented to control construction site runoff and to reduce the pollutant discharges to storm drain systems from stormwater and other nonpoint-source runoff. As part of compliance with permit requirements during ground-disturbing or construction activities, and the preparation of a SWPPP, implementing water quality control measures and BMPs (**MM HYD-1**) would ensure that water quality standards would be achieved, including the water quality objectives that protect designated beneficial uses of surface and groundwater as defined in the Water Quality Control Plan for the San Francisco Bay Basin (SWRCB 2017). The NPDES Construction General Permit requires that stormwater discharges not contain pollutants that cause or contribute to an exceedance of any applicable water quality objectives or water quality standards, including designated beneficial uses. Therefore, there would be no impact.

3.11.4 Mitigation Summary

Implementation of the following mitigation measures would reduce the potential for Project-related impacts on Hydrology and Water Quality to less than significant:

MM HYD-1: Develop and Implement Stormwater Pollution Prevention Plan
MM HAZ-1: Develop and Implement Spill Contingency and Hazardous Materials Management Plans
MM HAZ-2: Prepare and Implement an Inadvertent Return Contingency Plan

3.12 LAND USE AND PLANNING

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

3.12.1 Environmental Setting

3.12.1.1 Western Cable Landing Site

The western cable landing site is located at the southern corner of Lagoon Road and Sierra Point Parkway, along a portion of the Bay Trail, in Brisbane, California. The area, located on APN 005-162-430, is undeveloped. However, as stated in Section 3.10, Hazards and Hazardous Materials, the area was a former landfill which is no longer operating. East of the western cable landing site is Highway 101, which separates the site from the waters and shoreline of the SF Bay (approximately 450 feet or 137 meters). The western cable landing site is zoned as commercial mixed-use by the City of Brisbane (City of Brisbane 2022a). The closest residences to the western cable landing site in Brisbane are along San Francisco Avenue approximately 0.47 mile southwest.

3.12.1.2 Eastern Cable Landing Site

The eastern cable landing site is between the Bay Trail and the Tony Lema Golf Course, south of the Marina Dog Park, in San Leandro. The site, located on APN 080G-0910-001-06, is on an undeveloped, unincorporated piece of land. The Bay Trail is located between the eastern cable landing site and the waters and shoreline of SF Bay. More information on the Tony Lema Golf Course, the Marina Dog Park, and the Bay Trail can be found in Section 3.1, Aesthetics. The eastern cable landing site is zoned as Commercial Recreation and Open Space (City of San Leandro 2022a). The closest residences to the eastern cable landing site are approximately 0.3 mile northeast on Outrigger Drive.

3.12.2 Regulatory Setting

Federal and state laws and regulations pertaining to land use and planning and relevant to the Project are identified in Appendix A. Since the Project does not involve a change in land use, local goals, policies, and/or regulations are not applicable and are not discussed in Appendix B.

3.12.3 Impact Analysis

a) Physically divide an established community?

No Impact

All Project Components

The cable landing sites, including staging and construction areas, landing vaults, and HDPE conduits, would be on undeveloped land in Brisbane and San Leandro. The Project would not physically divide a community. Therefore, there would be no impact.

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?

No Impact

All Project Components

The Project would install telecommunication cables below ground and under the SF Bay. The cable landing sites would be located on undeveloped land that is not within any habitat conservation plan or natural community conservation plan area. The aboveground land uses would not change, and there would be no land use impact. Because the Project would not change an existing land use, there would be no conflict with local land use policies. Therefore, there would be no impact.

3.12.4 Mitigation Summary

The Project would have no impact on Land Use and Planning; no mitigation is required.

3.13 MINERAL RESOURCES

MINERAL RESOURCES – Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State?	☐	☐	☐	☒
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

3.13.1 Environmental Setting

According to the USGS's Mineral Resource Data System, the Project area is not located within a mineral resource zone (MRZ-2) that indicates a known mineral deposit. Sand mining occurs in central SF Bay and in the SF Bay delta; however, these lease areas are approximately 9.3 miles north of the Project area and will not be affected by the Project (SubCom 2021).

3.13.2 Regulatory Setting

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

3.13.3 Impact Analysis

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

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

No Impact (a and b)

All Project Components

No known mineral resources exist in or near the Project area, and neither construction nor operation of the Project would hinder access to a mineral resource zone. Therefore, there would be no impact.

3.13.4 Mitigation Summary

The Project would have no impact on Mineral Resources; no mitigation is required.

3.14 NOISE

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

3.14.1 Environmental Setting

3.14.1.1 Existing Land Uses

Noise-sensitive land uses generally are defined as locations where people live or where having unwanted sound could adversely affect use of the land. Noise-sensitive land uses typically include single- and multi-family residential areas, health care facilities, lodging facilities, and schools. Recreational areas, like golf courses, where quiet is an important part of the environment also can be considered sensitive to noise. Some commercial areas like outdoor restaurant seating areas may be considered noise sensitive.

As shown on Figure 3.1-1, the closest noise-sensitive land uses would be Tony Lema Golf Course near the eastern cable landing site within the Project vicinity. Golfers recreating at the Tony Lema Golf Course would be approximately

100 feet (0.02 mile) east of the eastern cable landing site to the nearest fairway edge of the Tony Lema Golf Course. People recreating at the Marina Dog Park would be approximately 300 feet (0.06 mile) north of the eastern cable landing site. Even though Marina Dog Park is a recreational area, it is not considered noise-sensitive land use because of the high levels of local recreation along the Bay Trail and the noise caused by dogs at a dog park. The closest residences to the eastern cable landing site are approximately 0.3 mile northeast on Outrigger Drive. The closest residences to the western cable landing site in Brisbane are along San Francisco Avenue approximately 0.47 mile southwest. No health care facilities are within 1 mile of the Project areas. There is lodging approximately 1 mile south of the western cable landing site. The closest school near the eastern cable landing site is Garfield Elementary School and on the western cable landing site is Brisbane Elementary School, which are approximately 1.1 and 0.77 miles, respectively from any Project-related activities.

3.14.1.2 Existing Ambient Noise Levels

The western and eastern cable landing sites are near exiting traffic noise, recreational noise, and even overflights noise from the nearby airports. Vehicle traffic on local roadways and aircraft overflight noise are the dominant noise sources in the area. Additionally, other natural noise sources, such as bird vocalizations, leaves rustling in the wind, and waves breaking at the shoreline, also are audible in the Project area. The ambient noise environment in the eastern cable landing site of the Project area is characteristic of a developed environment (e.g., moderate traffic and heavy aircraft overflights because it is approximately 2 miles away from the Oakland International Airport). An estimate of existing ambient noise levels at the eastern landing site, can be obtained by examining the airport noise contours provided in the City of San Leandro general plan, which shows the work area at the eastern cable landing site lies just outside of the 65 decibels on the A-weighted scale (dBA) noise contour for Oakland International Airport. As provided in the general plan, a 65 dBA sound level is comparable to the sound level generated by heavy vehicular traffic at a distance of 300 feet.

On the western cable landing site, the San Francisco International Airport is approximately 4 miles from the Project-related activities and industrial noise sources. Highway 101, and associated traffic noise, is another dominant noise source at the western landing sites. A noise level measurement program was conducted during February 2021 by the San Francisco International Airport Aircraft Noise Office on Trinity Road in Brisbane, approximately 2,500 feet from

the western cable landing sites (SFO Aircraft Noise Office 2021). Measured average noise levels were 57 dBA, with maximum average daily levels of up to 66 dBA. The measured noise level data from this program can be used as an estimate of the existing noise environment in the area.

Section 3.4, Biological Resources, addresses noise associated with offshore work and impacts on marine species.

3.14.2 Regulatory Setting

No federal or state laws, regulations, or policies pertaining to noise are relevant to the Project. Local policies and programs relevant to the Project are included in Appendix B. The applicable regulations are summarized below.

3.14.2.1 Alameda County Noise Element and Noise Ordinance

The Alameda County noise element provides for acceptable noise level environments for new, proposed noise-sensitive areas. The noise element further provides that construction hours should be limited to the hours between 7 a.m. and 7 p.m. on weekdays, and 8 a.m. to 5 p.m. on weekends and holidays. The Alameda County noise ordinance, in Goal N-1 (Chapter 6.60: Noise), provides the same limitations on allowable construction hours.

3.14.2.2 City of San Leandro General Plan and Noise Ordinance

The City of San Leandro general plan (Chapter 4.10) contains similar construction hour limitations as the Alameda County noise element, although allowable weekend construction hours extend from 8 a.m. to 7 p.m. Notably, the hour limitations only apply for construction located across a street or right-of-way from a residence. The City's general plan provides that impacts due to construction are deemed to be less than significant provided that construction is limited to the prescribed hours, and that the activity includes certain noise mitigation measures (e.g., inspecting all equipment for properly functioning mufflers, limiting idling, locating equipment as far as possible from residences, etc.).

The City of San Leandro noise ordinance (Chapter 4-1: Prohibitions, Section 4-1-11) contains the same construction hour limits at the City's general plan.

3.14.2.3 San Mateo County and City of Brisbane Noise Ordinances

The San Mateo County noise ordinance (Chapter 4.88 Noise Control) allows construction during the hours of 7 a.m. to 6 p.m. on weekdays, and 9 a.m. to

5 p.m. on weekends and holidays. The City of Brisbane noise ordinance (Chapter 8.28 Noise Control) allows construction between 7 a.m. to 7 p.m. on weekdays and 9 a.m. to 7 p.m. on weekends. Further the City noise ordinance limits noise levels outside of the plane of the construction site to no greater than 86 dBA.

3.14.3 Impact Analysis

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

Less Than Significant with Mitigation

Short-term Project construction activities would progress within the Project site during approximately 4 months. Terrestrial and nearshore construction would occur during daylight hours, 7 days a week, to comply with the local and county noise ordinance limits. Construction noise-related activities would include site preparation, drilling, marine cable pulling from offshore to onshore, and demobilization. However, the construction noise-related activities would include primarily HDD operation.

HDD uses equipment that includes power generation, drill pile storage, control rooms, an excavator, and storage trailers. Of these sources, the diesel engine power generation units are the most significant noise-generating sources. Noise level data for HDD activities indicate that equipment at full load at HDD entry points generate a sound level of approximately 83 dBA at 50 feet. Noise propagation calculations were conducted to determine the HDD noise levels that would be experienced for nearby noise-sensitive areas, mainly on the eastern side of the Project. The calculations were conducted following the methodology prescribed in the International Organization for Standardization 9613-1 standard (ISO 1996). The standard considers the reduction in noise with distance and absorption by the atmosphere, the latter being significant for large distances. Table 3.14-1 provides a summary of the calculated HDD noise levels for noise-sensitive areas and non-sensitive public use areas.

Table 3.14-1. Calculated HDD Noise Levels

Location	Approximate Distance from HDD (feet)	Calculated HDD Noise Level (dBA)
East Side		
Bike Path	50	83
Tony Lema Golf Course (nearest approach)	100	77
Marina Dog Park	300	67
Nearest Residences	1,600	50
West Side		
Nearest Residences	2,500	44

As provided in Table 3.14-1, the highest HDD noise levels on the eastern side of the Project would be experienced on the bike path immediately adjacent to the HDD entry point in the eastern cable landing site and are expected to exceed existing ambient noise levels estimated at 65 dBA based on airport noise contours. Lower HDD noise levels are shown with increasing distances from the site. Users at the golf course and, in particular, along the bike path would only briefly experience the noise levels shown above, as use of these areas is temporary during recreational activities. At the western cable landing sites, there are no noise-sensitive areas within approximately 2,500 feet.

No permanent increases in noise levels would occur because of the Project. Operation of the cables would not generate noise, and no noise-generating routine maintenance is required. Construction would be a temporary feature. Construction noise levels at the most proximate receivers will exceed the existing ambient levels, although due to the nature of these uses, the noise levels would only be experienced for very short durations. Construction activities at both the western and eastern cable landing sites shall comply with **MM NOI-1.** Implementing **MM NOI-1** would reduce this impact to less than significant.

MM NOI-1: Implement Construction Noise Control Measures. The Applicant shall ensure that its contractor implements specific noise attenuation measures to ensure compliance with applicable City and County noise ordinances for the **duration of the construction period. Noise measures shall include the following and shall be included in the construction specifications:**

- Limit construction activities to the hours specified in each local noise ordinance.
- Maintain all equipment in accordance with manufacturer's recommendations to minimize noise emissions.

- Inspect all gasoline and diesel-powered equipment to ensure they are equipped with properly functioning exhaust mufflers and intake silencers.
- Limit unnecessary idling.
- Use low noise emission equipment where feasible and practical.

Therefore, the impact would be less than significant with mitigation.

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

Less than Significant Impact

Short-term vibration would be generated by HDD activities and the use of other large equipment and trucks during construction. The human response thresholds for vibration indicate that vibration is barely perceptible with a peak particle velocity (PPV) of 0.035. Table 3.14-2 provides vibration source levels for some construction equipment that is expected to be used for the Project. Vibration levels would be below the barely perceptible response level at distances of less than 50 feet from where construction equipment would be in operation. The closest sensitive receptor at the eastern cable landing site is the Bay Trail approximately 50 feet from the landing vault where vibration would be barely perceptible, or imperceptible, to Bay Trail users. No sensitive receptors are located within 50 feet of the western cable landing site.

Table 3.14-2. Vibration Source Levels for Construction Equipment

Equipment	PPV at 50 Feet	PPV at 25 Feet
Large Bulldozer	0.031	0.089
Caisson Drilling	0.031	0.089
Loaded Truck	0.027	0.076
Backhoe	0.001	0.003

Source: FTA 2018
Term:
PPV = peak particle velocity

The proposed Project would not use equipment during construction that generates excessive ground-borne vibration, such as pile driving. Vibration levels may be barely perceptible for users on the Bay Trail. Therefore, the impact would be less than significant.

c) Be located within the vicinity of a private airstrip or an airport land use plan, or, where such a plan has not been adopted, within two miles of a public airport

or public use airport and expose people residing or working in the project area to excessive noise levels?

Less Than Significant Impact

The Project does not include construction of residences, commercial buildings, or any other noise-sensitive uses. The proposed western cable landing sites are approximately 4 miles from the San Francisco International Airport and the eastern cable landing site is approximately 2 miles from the Oakland International Airport. Therefore, the construction workers for this proposed Project would be exposed to noise from airport activities. However, this exposure would be consistent with noise levels experienced by existing receptors in the area. There are no existing residential uses in the vicinity of the construction sites. The nearest existing residential uses are located approximately 1,600 feet and 2,500 feet from the eastern and western cable landing sites, respectively. Construction noise levels were shown to reduce dramatically over these distances. Therefore, the impact would be less than significant.

3.14.4 Mitigation Summary

Implementation of the following mitigation measure would reduce the potential for Project-related impacts associated with Noise to less than significant:

MM NOI-1: Implement Construction Noise Control Measures

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 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 housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

3.15.1 Environmental Setting

The western cable landing site is in Census Tract 6001 in Brisbane and is located just south of San Francisco. This area has an estimated population of 5,101 (906 people per square mile) and an estimated 2,232 housing units with an average 2.3 people per household (U.S. Census Bureau 2020a). The closest residences to the western cable landing site in Brisbane are along San Francisco Avenue approximately 0.47 mile southwest.

The western cable landing site parcel (APN 005-162-430) is owned by Oyster Point Properties Inc., a development company with plans to develop the land north of the proposed landing site. No plans are currently known to develop the area of the western cable landing site. However, due to ownership, discussions for access are ongoing with Oyster Point Properties Inc.

The eastern cable landing site is in Census Tract 4334 in Alameda County, south of the Oakland International Airport, near Heron Bay. This area has an estimated population of 6,084 (2,908.9 people per square mile) and an estimated 2,127 housing units with an average of 2.9 people per household (U.S. Census Bureau 2020b). The closest residences to the eastern cable landing site are approximately 0.3 mile northeast on Outrigger Drive.

3.15.2 Regulatory Setting

No federal, state, or local laws, regulations, and/or policies relevant to population and housing are applicable to the Project. Since the Project does not involve a change in land use, local goals, policies, or regulations are not applicable.

3.15.3 Impact Analysis

a) Induce substantial 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 housing, necessitating the construction of replacement housing elsewhere?

No Impact (a and b)

All Project Components

The Project would not directly or indirectly induce population growth or displace anyone. A limited crew (about 10 people) would be working on the Project construction at any one time. Also, the crews will be staying in temporary (rental) housing or hotel amenities during the construction phase of the Project and not requiring the introduction of any permanent housing or other structures to the Project area. Therefore, there would be no impact.

3.15.4 Mitigation Summary

The Project would have no impact on Population and Housing; no mitigation is required.

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?	☐	☐	☐	☒

3.16.1 Environmental Setting

3.16.1.1 Fire Protection

Western Cable Landing Site

The proposed and alternative western cable landing sites would be under the Brisbane Fire Department. The nearest station is approximately 0.46 mile (0.74 kilometer) away. The Brisbane Fire Department is part of a larger authority called the North County Fire Authority that provides Fire Department emergency and non-emergency services to three communities (Brisbane, Daly City, and Pacifica; North County Fire Authority 2022). The Daly City Fire Department is approximately 1 mile (1.6 kilometers) away from the western cable landing site.

Eastern Cable Landing Site

The eastern cable landing site would be serviced by the Alameda County Fire Department. The nearest station (Fire Station 11) is approximately 0.38 mile (0.61 kilometer) away, with several other stations in proximity. Station 11 has full engine capabilities and has the primary water rescue response capability for the SF Bay with a 21-foot, rigid-hull boat (Alameda County Fire Department 2022).

3.16.1.2 Police Protection

Western Cable Landing Site

The Brisbane Police Department provides law enforcement services for the western cable landing site. The Brisbane Police Department enforces traffic laws on roadways within Brisbane. The San Mateo County Sheriff's Department and the California Highway Patrol are responsible for unincorporated areas in and around San Mateo County.

Eastern Cable Landing Site

The San Leandro Police Department provides law enforcement services at the eastern cable landing site. The San Leandro Police Department enforces traffic laws on roadways within San Leandro. The Alameda County Sheriff's Department and California Highway Patrol are responsible for unincorporated areas in and around Alameda County.

3.16.1.3 Schools

Western Cable Landing Site

Brisbane Elementary School is the nearest school to the western cable landing site at 500 San Bruno Ave, approximately 0.77 mile (1.2 kilometers) southwest. The school is K through 5 with 230 students enrolled in the 2020–2021 school year (Education Data Partnership 2022a).

Eastern Cable Landing Site

The nearest school to the eastern cable landing site is Garfield Elementary School at 13050 Aurora Drive, approximately 1.1 miles (1.8 kilometers) north. This elementary school is K through 5 with 322 students enrolled in the 2020–2021 school year (Education Data Partnership 2022b).

3.16.1.4 Parks and Recreation Facilities

Western Cable Landing Site

San Francisco Bay Trail, also known as the Bay Trail, is directly adjacent to the eastern side of the western cable landing site, along Sierra Point Parkway. This trail consists of 350 miles (563 kilometers) of paved and unpaved areas encircling SF Bay that are used for walking, hiking, biking, running, dog trails and parks, picnicking, birding, wildlife observation, fishing, education, history, beach

access, park access, and art viewing. The Brisbane Lagoon Fisherman's Park is the only park in proximity to the western cable landing site, located off Sierra Point Parkway near the northeast corner of the Brisbane Lagoon. The park is located on a small point that extends into the lagoon just south of the bridge over Guadalupe Canal, approximately 0.19 mile (0.3 kilometer) south of the western cable landing site. The park offers water and fishing access to the lagoon and canal, with several parking spots and benches.

Eastern Cable Landing Site

The San Francisco Bay Trail, also known as the Bay Trail, is directly adjacent to the western side of the eastern cable landing site. The Marina Dog Park is approximately 580 feet north and the Tony Lema Golf Course is just east of the eastern cable landing site, which is part of the Monarch Bay Golf Club. The golf course has both 18-hole and 9-hole golf courses, both of which are located next to the water.

3.16.2 Regulatory Setting

Federal and state laws and regulations pertaining to public service and relevant to the Project are identified in Appendix A. No local policies and/or regulations pertaining to public service are applicable to the Project.

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

All Project Components

The Project is not anticipated to create a significant fire, security hazard, or generate a need for additional fire or law enforcement personnel since there would be no full-time employees and the equipment would be contained within

enclosed landing vaults. There be no new permanent residents to use the schools, parks, or other public facilities. Therefore, there would be no impact.

3.16.4 Mitigation Summary

The Project would have no impact on Public Services; no mitigation is required.

3.17 RECREATION

RECREATION	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☒	☐
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒
c) Would the project interfere with existing use of offshore recreational boating opportunities?[35]	☐	☒	☐	☐

3.17.1 Environmental Setting

Refer to Section 3.16.1.4, Environmental Setting (Public Services), for information on recreational facilities and resources in the Project vicinity.

3.17.2 Regulatory Setting

State laws and regulations pertaining to recreation and relevant to the Project are identified in Appendix A. At the local level, the policies and programs are included in Appendix B. There are no federal laws, regulations, or policies regarding recreation that are potentially applicable to the Project.

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

3.17.3 Impact Analysis

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

Less than Significant Impact

All Project Components

As stated in Section 3.16, Public Services, parks, and recreational facilities are located near both proposed cable landing sites. The installation activities proposed for this Project may result in short-term impacts, particularly near the eastern cable landing site, due to noise and the potential footprint of the landing site. A diversion of the Bay Trail of approximately 250 to 500 feet at the eastern cable landing site may be required when mobilizing construction equipment to the cable landing site during installation of the conduit. Signage, temporary hazard tape and personnel would be on hand to guide users. Prior to construction, a notification would be posted at the cable landing site. Additionally, temporary fencing would be placed around the construction work areas during the duration of construction activities. The City of San Leandro Engineering and Transportation Department would issue ministerial construction permits. This diversion and any other potential impacts during installation would be temporary in nature and may result in a less than significant impact on existing nearby neighborhood and regional parks. Once installation is complete, these areas would be fully restored and no impacts on recreational facilities would persist. No diversion at the western cable landing site along the Bay Trail is anticipated due to the presence of additional roads for access to the site. Therefore, the impact would be less than significant.

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?

No Impact

All Project Components

The proposed Project does not include the construction or expansion of any recreational facilities. Once installation is complete, the proposed cable landing areas and surrounding areas would be restored to original conditions. Therefore, there would be no impact.

c) Would the project interfere with existing use of offshore recreational boating opportunities?

Less than Significant with Mitigation

All Project Components

Offshore recreational activities (e.g., pleasure boating, recreational fishing, and kayaking) along the marine portions of the route may be affected for a short period during cable-lay activities. The affected area would be minimal, and the impacts on users would be less than significant when they have advanced notice by implementing **MM REC-1**.

> **MM REC-1: Advanced Local Notice to Mariners.** At least 15 days before (1) start of the HDD operation, and (2) start of offshore cable laying activity, a Local Notice to Mariners (https://www.dco.uscg.mil/Featured-Content/Mariners/Local-Notice-to-Mariners-LNMs/District-11/) would be submitted to the USCG describing all activities in the SF Bay. A copy of the published notice shall be provided immediately to CSLC. The Notice must include:
>
> - Type of operation (i.e., jet sledding, diving operations, construction)
> - Specific location of operation or repair activities (including whether there is a possibility of exposed cable), including latitude and longitude and geographical position, if applicable
> - Estimated schedule of activities, including start and completion dates (if these dates change, the USCG needs to be notified)
> - Vessels involved in the operation
> - VHF-FM radio frequencies monitored by vessels on the scene
> - Point of contact and 24-hour phone number
> - Chart number for the area of operation

3.17.4 Mitigation Summary

Implementation of the following mitigation measure would reduce the potential for Project-related impacts on Recreation to a less than significant level:

MM REC-1: Advanced Local Notice to Mariners

3.18 TRANSPORTATION

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

3.18.1 Environmental Setting

3.18.1.1 Onshore Transportation

Roadways

The western cable landing sites of the Project are in Brisbane, which is generally served by a multimodal transportation system comprised of highway systems, county roads, local roads, bicycle and pedestrian facilities, and airport facilities. The landing sites can be accessed via Highway 101, exiting Sierra Point Parkway at its intersection with Lagoon Road, which is under the jurisdiction of Brisbane. Alternative access routes include travel from Lagoon Road and Sierra Point Parkway. The Bay Trail runs along Sierra Point Parkway and terminates at the corner of Lagoon Road.

Roadways next to the western cable landing sites that may be encroached upon during installation include Lagoon Road and Sierra Point Parkway. Highway 101, Sierra Point Parkway, and Lagoon Road will likely be used for transporting equipment and crews during Project activities. Lagoon Road and

Sierra Point Parkway are both two-way roads with one travel lane in each direction. Highway 101 is an eight-lane highway with four travel lanes in each direction and both north and south exits to Sierra Point Parkway.

The eastern cable landing site is in San Leandro, which is generally served by a multimodal transportation system comprised of highway systems, county roads, local roads, bicycle and pedestrian facilities, and airport facilities. The landing site is located between the Bay Trail and the Tony Lema Golf Course and can only be accessed by vehicles traveling along the Bay Trail from Neptune Drive through a gate opened by the Marina Office. Vehicles must then travel south, past the Marina Dog Park, to the landing site at approximately 37° 41'14.48" N and 122°10'50.82" W.

No roadways are present at the eastern cable landing site and therefore no roadways are anticipated to be encroached upon. However, Neptune Drive and Monarch Bay Drive will likely be used for transporting equipment and crews during Project activities. Monarch Bay Drive is a two-way road with one travel lane in each direction while Neptune Drive is a single-lane roadway off Monarch Bay Drive.

As of 2013, the State of California passed Senate Bill 743, which mandates that jurisdictions no longer use the Level of Service (LOS) as a tool for transportation analysis under CEQA. The state has issued guidance to use a broader measure, known as Vehicle Miles Traveled (VMT), to perform such analysis, effective July 1, 2020. The intent of this new measure is aimed at promoting the reduction of GHG emissions, the development of multimodal transportation networks, and a diversity of land uses, which can be seen in the Bay Area 2050 Plan. Cities and counties throughout California are in the process of implementing the transition from LOS to VMT, and the transition was mostly complete as of fall 2021 (Valley Transportation Authority 2019; Association of Bay Area Governments and Metropolitan Transportation Commission 2021).

Pedestrian and Bicycle Facilities

Because Lagoon Drive and Sierra Point Parkway at the western cable landing sites do not include sidewalks, pedestrians and recreational users, including Bay Trail users, must travel along the roadway shoulder or in the road right-of-way. Brisbane has an extensive existing network of bicycle and pedestrian environments such as designated trails, sidewalks, and bike paths surrounding Highway 101, Bayshore Boulevard, and the San Bruno Mountains; however, none are located near the western cable landing sites (City of Brisbane 2017). The Bay

Trail, however, is located along Sierra Point Parkway and includes access for pedestrians and bicycle activities, among others. Brisbane's bikeways are generally classified according to Caltrans' definitions for Class I (shared use path), Class II (bike lane), Class III bikeways (bike route), and Class IV bikeways (protected bikeways).

The eastern cable landing site is in an undeveloped area adjacent to the Bay Trail, a public access pedestrian and bicycle pathway. The Bay Trail is maintained by the San Francisco Bay Trail nonprofit. Additional footpaths and bikeways in San Leandro are generally classified according to Caltrans' definitions for Class I (shared use path), Class II (bike lane), and Class III bikeways (bike route).

Airports

The closest airport to the western cable landing site is the San Francisco International Airport, approximately 4 miles (6.4 kilometers) south of the landing site. The San Francisco International Airport is owned and operated by the City and County of San Francisco and serves the SF Bay Area, including San Francisco and Silicon Valley.

The closest airport to the eastern cable landing site is the Oakland International Airport, approximately 2 miles (3.2 kilometers) north of the landing site. The Oakland International Airport is owned and operated by the Port of Oakland and supports the San Francisco International Airport in serving the SF Bay Area.

3.18.1.2 Offshore Transportation

The Project is located within SF Bay, which includes marina vessel launching facilities along both the western and eastern shorelines and is used by recreational and commercial vessels throughout the year.

The closest recreational vessel facility to the western cable landing site in Brisbane is the Brisbane Marina, approximately 1 mile (1.6 kilometers) south of the landing site. The closest commercial vessel facility was the Hunters Point Naval Shipyard, approximately 2.3 miles (3.7 kilometers) northeast of the landing site, which has been closed and is now under remediation. A ferry terminal is located within the Oyster Point Marina, 2 miles (3.2 kilometers) southeast of the western cable landing site.

Commercial and recreational fishing operations occur throughout SF Bay and the cable route. The Port of San Francisco, approximately 7.3 miles

(11.7 kilometers) north of the western cable landing sites, is the main fishing and commercial operations facility in SF Bay and is home to most of SF Bay's commercial and sport fishing fleets. Recreational fishermen may also dock at the Port of San Francisco. Interaction with the Port of San Francisco is not anticipated for this Project.

As the cable route enters SF Bay and travels east, there is a routinely dredged area maintained by the U.S. Army Corp of Engineers, which the route will circumvent to the southeast (Figure 3.4-2). The installation of the cables is not anticipated to interact with this area. A portion of the cable route will traverse an anchorage area (Figure 3.4-2). However, due to shallow waters, anchorage along the cable route is anticipated to be limited, with the exception being during emergencies.

The closest recreational vessel facility to the eastern cable landing site in San Leandro is the San Leandro Marina, approximately 0.84 mile (1.4 kilometers) northwest of the landing site. The closest commercial vessel facility is the Port of Oakland, approximately 9.2 miles (14.8 kilometers) northeast of the landing site.

3.18.2 Regulatory Setting

Federal and state laws and regulations pertaining to transportation and relevant to the Project are identified in Appendix A. At the local level, the policies and programs are included in Appendix B.

3.18.3 Impact Analysis

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

Less Than Significant Impact

<u>All Project Components</u>

The Project may briefly need to block Lagoon Road at the western cable landing site or the Bay Trail at the eastern cable landing site during the set-up of the staging and construction areas or movement of equipment. However, the use of traffic control, coordinated with the local counties, would result in less than significant impacts on established measures of effectiveness stated in a plan, ordinance, or policy.

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

Less Than Significant with Mitigation

Terrestrial Components

CEQA Guidelines section 15064.3(b) indicates that VMT is the most appropriate measure for transportation impacts. In December 2018, the Governor's Office of Planning and Research provided an updated Technical Advisory to evaluate transportation impacts in CEQA. In particular, the advisory suggests that a project generating or attracting fewer than 110 one-way trips per day generally may be assumed to cause a less than significant transportation impact (OPR 2018).

Transportation of workers, materials, equipment, and any removal of soil or solid waste to and from the Project area would generate vehicle trips. Terrestrial and nearshore construction would occur during daylight hours, 7 days a week, to comply with San Mateo and Alameda counties' noise standards for construction. Marine cable laying across SF Bay may require some 24-hour continuous work, but 24-hour work onshore is not anticipated. The Applicant would obtain an encroachment permit from Caltrans for the western cable landing site.

Most traffic-related terrestrial activities at the western cable landing site would travel along Lagoon Road, Sierra Point Parkway, including the Bay Trail, and Highway 101 while access along the Bay Trail, Neptune Drive, and Monarch Bay Drive would be required for the eastern cable landing site. Tractor-trailer loads of construction equipment and materials would be delivered directly to both cable landing sites when starting construction. Based on conservative worker estimates, the Project would create an estimated total of 10 trips per day from local residences or hotels where construction workers would stay during the HDD phase, 2 trips per day during the terrestrial phase, and 25 trips per day during the marine phase. During the landing site preparation phase, the Project would create an estimated total of 5 trips per day from local residences or hotels. This increase in vehicles on local roadways would not reduce the existing LOS designation. Considering the capacity of local roads, the estimated numbers of Project trips, and coordination with the County as needed for traffic control, the Project is not expected to significantly affect local traffic congestion. In addition, the number of peak trips that would occur in any one day is

significantly below the number identified in the Technical Advisory's guidance (OPR 2018).

Marine Components

Cable laying and jetting, as described in detail in Section 2.0, Project Description, could interfere with local marine vessel traffic, including commercial and recreational fishing operations (Section 4.2, Commercial and Recreational Fishing). To minimize interference and ensure safe marine construction, the work would be conducted in accordance with the Applicant's proposed Marine Anchor Plan (**MM TRA-1**), which would be included with the Contractor Work Plan. The Applicant would file an advanced local notice (**MM REC-1**, described in Section 3.17, Recreation) with the USCG to inform local mariners of Project activities because the USCG is responsible for maintaining aids to navigation and safe waterways. The notice would include information such as type, duration, and location of operations, and a phone number for a point of contact for the Project. Implementing **MM TRA-1** and **MM REC-1** would minimize potentially significant impacts on marine vessel traffic to less than significant levels.

> **MM TRA-1: Marine Anchor Plan.** At least 30 days before starting construction, Bandwidth will submit a Marine Anchor Plan to CSLC staff for review and approval with the following:
>
> - Map of the proposed acceptable anchor locations and exclusion zones or offshore temporary anchoring or mooring for work vessels.
> - Narrative description of the anchor setting and retrieval procedures to be employed that will result in minimal impacts on the bay sediments and floor. Anchor dragging along the bay bottom is not allowed.
> - Coordinates of all dropped anchor points during construction shall be recorded and included on the post-construction bay floor survey map.

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

No Impact

The Project does not include any design features or introduce incompatible uses that would increase hazards on local roadways. The primary access to terrestrial Project areas would be accomplished from public roads. Traffic during construction would be coordinated with Caltrans and Cities of Brisbane/San

Leandro. Traffic control would conform to the specifications of these jurisdictions. Emergency access along the surface streets would be maintained during Project construction, staging, and access activities. No impact on emergency access to the Project area or adjoining properties is anticipated. Therefore, there would be no impact.

d) Result in inadequate emergency access?

Less Than Significant with Mitigation

All Project Components

The Project does not include any design features or introduce incompatible uses that would increase hazards on local roadways. Primary access to the terrestrial facilities and locations would be from local roads or adequately wide and paved recreational pathways (Figures 1.3-3 and 1.3-4). Traffic would be controlled and coordinated with the counties as needed, and **MM TRA-2** would be implemented to prepare a Traffic Control Plan to reduce potential hazards to pedestrians, motorists, and workers during the Project to less than significant levels. Traffic control would conform to the specifications of the county. Emergency access along local roadways would be maintained during Project construction, staging, and access activities (Figure 1.3-3 and 1.3-4). With the implementation of mitigation, no significant impact on emergency access to the Project areas or adjoining properties is anticipated.

> **MM TRA-2: Traffic Control Plan**. Before starting the Project activities, a Traffic Control Plan shall be submitted to CSLC staff for review and approval. It shall include measures such as appropriate signage, detour routes, and lane closure to reduce potential hazards to motorists and workers during the Project. In addition, the Traffic Control Plan shall address measures to allow emergency vehicle access, and reduction of impacts on circulation, potential hazards to motorists, bicyclists, pedestrians, and workers during the Project.

3.18.4 Mitigation Summary

Implementation of the following mitigation measures would reduce the potential for Project-related impacts on Transportation to less than significant:

MM TRA-1: Marine Anchor Plan
MM TRA-2: Traffic Control Plan
MM REC-1: Advanced Local Notice to Mariners

3.19 UTILITIES AND SERVICE SYSTEMS

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

3.19.1 Environmental Setting

3.19.1.1 Western Cable Landing Site

Brisbane receives all its water supply from the San Francisco Public Utilities Commission through a series of five turnouts along the Crystal Springs pipeline. Standard conditions require water to be supplied from the Hetch Hetchy Reservoir in Yosemite National Park but may be supplemented or come directly from the East Bay or Peninsula reservoirs (City of Brisbane 2022b). Post-construction, the Project would not use any water for operations. A majority of the city's wastewater is conveyed via a series of smaller pump stations that direct flow to the Valley Drive Pump Station, which is then rerouted to the City of San Francisco interceptor, and ultimately conveyed to the Southeast Water Quality Control treatment facility (City of Brisbane 2022c). No formal storm management systems are located near the Brisbane western cable landing site.

Solid waste and recyclables pickup within Brisbane are collected by Recology and the city has adopted ordinances to improve the disposal and collection of recycling and organic waste. Enforcement of these ordinances is performed by the County of San Mateo. San Mateo County's only active landfill is Ox Mountain, which is owned and operated by Republic Services and located near Half Moon Bay in unincorporated San Mateo County. Currently, 87 percent of the county's waste is disposed at that facility (San Mateo County Civil Grand Jury 2019). The estimated capacity of the Ox Mountain Landfill is expected to expand in 2034, with options for obtaining additional landfill capacity such as opening a new landfill, expanding Ox Mountain's capacity, exporting solid waste to other counties, and/or diverting waste from landfills. According to the 2019 Waste Management Plan, state and county regulations are guiding the implementation of alternative waste reduction and disposal practices, including diversion of organic materials from landfills, and improving the markets for recyclable materials.

Electricity and natural gas are provided to Brisbane by Peninsula Clean Energy, which derives its energy supply principally from wind, solar, and hydro resources, with PG&E as a non-default alternative option. The City of Brisbane derives 100 percent of its power from renewable wind and solar for municipal facilities (City of Brisbane 2022d).

3.19.1.2 Eastern Cable Landing Site

Water service in San Leandro is provided by East Bay Municipal Utility District, a publicly owned utility. The city's water supply is primarily derived from the Mokelumne River watershed, which is fed via snowpack melt from the Sierra Nevada, with the remaining supply coming from watershed lands and reservoirs in the East Bay Hills (PlaceWorks 2016). Post-construction, the Project would not use any water for operations. San Leandro's wastewater is monitored by the Water Pollution Control Division under the city's Sewer System Management Plan. Wastewater is conveyed via 13 remote lift stations and is treated by the city-owned San Leandro Pollution Control Plant at the west end of Davis Street. A single storm drain with an associated drainage ditch is positioned along the shore south of the eastern cable landing site, entering the bay between erosion control boulders.

San Leandro solid waste and recyclables are handled by Alameda County, which supports facilities and programs to collect and dispose of solid waste and to divert materials from landfills through source reduction, reuse, recycling, and composting (City of San Leandro 2022b). The largest handler of solid waste in Alameda County, including the eastern cable landing site, is Waste Management of Alameda County, handling 44 percent of the county's waste. Waste Management of Alameda County is supplemented by Alameda County Industries, which handles approximately 13 percent of the county's waste. Alameda County has two operating landfills, Altamont Landfill and Vasco Road Landfill. Each landfill is privately owned and operated. Some solid waste generated in Alameda County is also transferred to out-of-county landfills (StopWaste 2022). Potrero Hills Landfill is the largest recipient of Alameda County waste (130,000 tons in 2018).

Altamont Landfill is located on a 2,034-acre site, of which 480 acres are permitted for landfill. Daily disposal at Altamont is limited to a maximum of 11,150 tons per day. As of 2018, the estimated remaining refuse capacity for the Altamont Landfill was 65.4 million cubic yards (60 million tons). The permitted capacity at Altamont is 87 million cubic yards. At the average rate of fill from 2014 to 2018, the facility has more than 30 years of capacity remaining and an estimated closure date of 2049.

Vasco Road Landfill is located on 246 acres of a total 435-acre site northeast of the City of Livermore, in unincorporated Alameda County. The landfill operates under a Solid Waste Facility Permit, which allows a maximum of 2,518 tons per day. As of 2018, Vasco Road Landfill reported remaining capacity for about

6 million cubic yards (5.5 million tons) of waste. The estimated closure year for Vasco Road is 2035. Vasco Road Landfill's permitted capacity according to its Solid Waste Facility Permit is 32.97 million cubic yards. Construction activities are estimated to produce 0.1 tons per day.

Electricity and natural gas are provided to San Leandro by East Bay Community Energy, with PG&E as an alternative (PlaceWorks 2016). In 2022, San Leandro plans to convert entirely to clean energy supply through wind and solar (East Bay Community Energy 2022).

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. At the local level, the policies and programs are included in Appendix B.

3.19.3 Impact Analysis

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

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?

No Impact (a through c)

<u>All Project Components</u>

The Project does not involve construction of new water or wastewater treatment facilities. The Project would not create any new stormwater sources or require construction of new stormwater drainage, electric power, telecommunication, or natural gas facilities. The Project itself will contribute to the telecommunications infrastructure available in the region.

Water would generally be supplied from pickup truck pulled construction water trailers, which would be filled off-site at the contractor's office or yard prior to daily construction activity. Water would be used during construction by the HDD

rig and for dust suppression. Water consumption during construction is anticipated to peak at approximately 250 gallons per day during terrestrial construction. Actual consumption will vary depending on weather or soil conditions (e.g., dry and hot weather would require increased dust suppression water). Project activities would occur at onshore landing site work areas as well as onboard Project vessels. Water required for personal consumption and sanitary purposes would be minimal. Supplies would be portable and brought on-site for the duration of Project activities. Water consumption would be limited to the construction window of approximately 3 months. After the Project is complete, no additional water usage would be necessary.

The Project would not generate wastewater that would require treatment by the central sewer treatment systems in the cities of Brisbane and San Leandro. Therefore, there would be no impact.

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

Less than Significant Impact

<u>All Project Components</u>

Waste generated by the Project would include general construction waste, bay floor debris (e.g., discarded fishing gear recovered during the pre-lay grapnel run), spent drilling fluids and cuttings, and trash from workers. The Project is expected to generate 10 to 20 tons of waste during construction. All such materials would be taken to a local transfer station that receives waste for export to an approved landfill. Both the Ox Mountain Landfill (San Mateo County) and the Vasco Road Sanitary Landfill (Alameda County) have adequate capacity to accommodate the Project and all other users in these counties (Republic Services 2019; County of Alameda 2022). Therefore, the impact would be less than significant.

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

Less than Significant Impact

All Project Components

All debris associated with construction and operations would be recycled to the extent feasible. Solid waste would be disposed of in accordance with local, state, and federal laws and regulations as required by the Project plans and specifications. The approximately 10 to 20 tons of solid waste expected to be generated by Project construction would be transported to an approved transfer stations like Ox Mountain or Vasco Road landfills (depending on the landing site producing the waste) or diverted to recycling facilities. This is a small volume of waste relative to the 2,518 tons per day allowed at Vaso Road. Therefore, the impact would be less than significant.

3.19.4 Mitigation Summary

The Project would not result in significant impacts on Utilities and Service Systems; no mitigation is required.

3.20 WILDFIRE

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

3.20.1 Environmental Setting

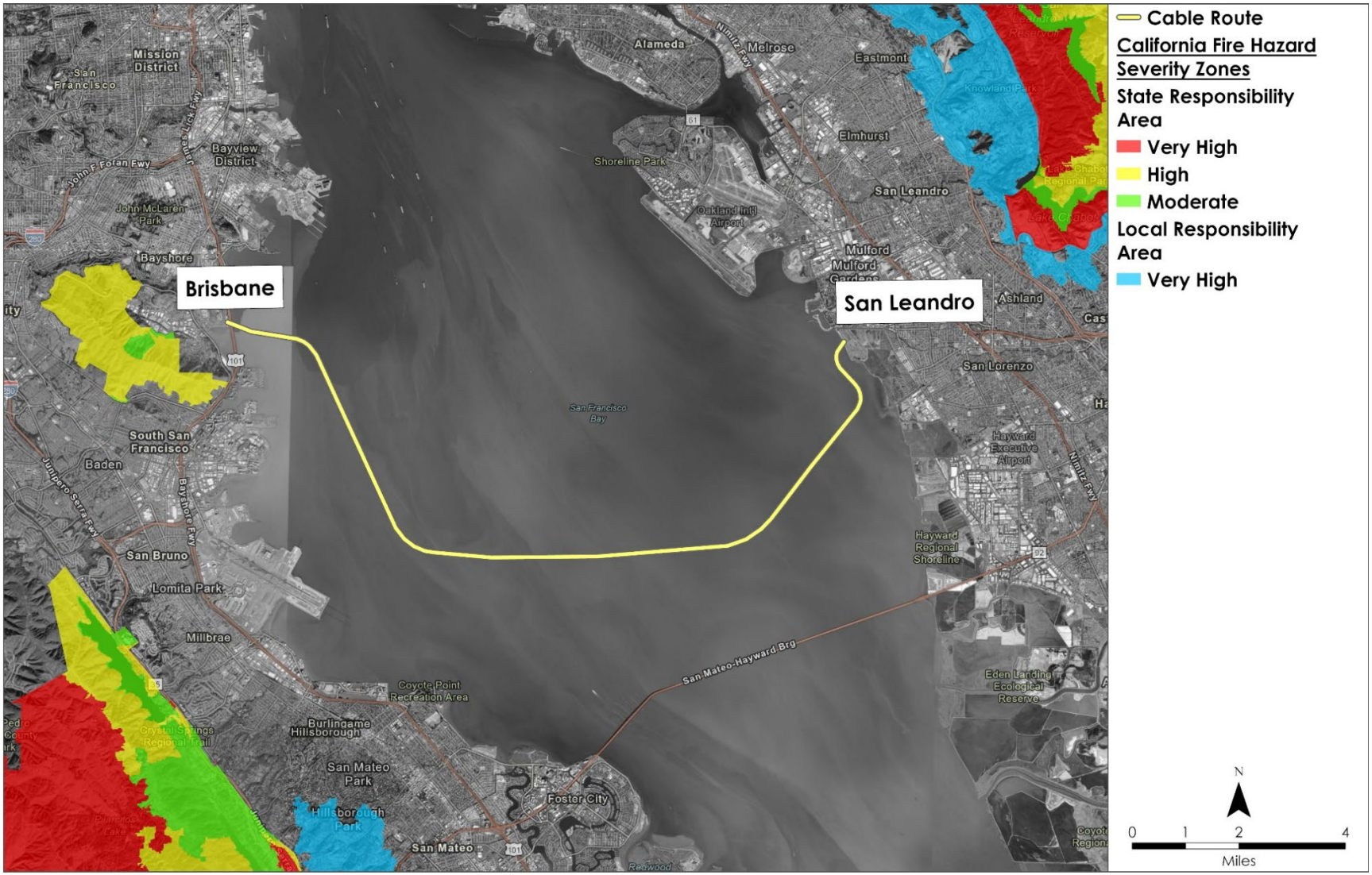
The western cable landing site is on the San Francisco Peninsula in an undeveloped area of Brisbane, which is in a Local Responsibility Area for fire suppression. The Brisbane Fire Department provides fire suppression services. All the terrestrial installation of the cables on the western side of SF Bay would occur in APN 005-162-430, at the southwestern corner of Lagoon Road and Sierra Point Parkway. According to CAL FIRE, the Project area is within a Non-Very High Fire Hazard Severity Zone within an incorporated city (Figure 3.20-1; CAL FIRE 2008a).

The eastern cable landing site is in an undeveloped area of San Leandro, which is in a Local Responsibility Area for fire suppression. The Alameda County Fire Department Fire provides suppression services. All the terrestrial installation of the cables on the eastern side of SF Bay would occur in APN 080G-0910-001-06, along the Bay Trail at coordinates 37° 41'14.48" N and 122°10'50.82" W. According to CAL FIRE, the Project area is within a Non-Very High Fire Hazard Severity Zone within an incorporated city (Figure 3.20-1; CAL FIRE 2008b).

3.20.2 Regulatory Setting

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

Figure 3.20-1. CAL FIRE Fire Hazard Severity Zone Map



3.20.3 Impact Analysis

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

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

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

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

No Impact (a through d)

All Project Components

The Project would not affect issues related to wildfire because it includes buried cable infrastructure and equipment inside a buried vault. The Project areas are not classified as a high or very high fire hazard severity zones (CAL FIRE 2008a,b). Construction would be a temporary activity; an active working crew would control any potential combustible materials through standard Occupational Safety and Health Administration worker protection requirements. Routine operations would not increase the amount of available fuel or create potential ignition sources (such as overhead power lines) in proximity to wildland areas. The cables would be installed underground and underwater; they would be grounded, which would prevent the potential for electrical shorts or arcing. Project construction would not hinder any potential emergency response (Section 3.16, Public Services) or impair an adopted emergency response plan or emergency evacuation plan. Therefore, there would be no impact.

3.20.4 Mitigation Summary

The Project would have no impact on Wildfire; no mitigation is required.

3.21 MANDATORY FINDINGS OF SIGNIFICANCE

The lead agency must find that a project may have a significant effect on the environment and thereby require an EIR to be prepared for the project where there is substantial evidence, considering the whole record, that any of the following conditions may occur. When, prior to commencement of the environmental analysis, a project proponent agrees to MMs or project modifications that would avoid any significant effect on the environment or would mitigate the significant environmental effect, a lead agency need not prepare an EIR solely because without mitigation the environmental effects would have been significant (per State CEQA Guidelines, section 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 degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of past, present and probable future projects)?	☐	☐	☒	☐

MANDATORY FINDINGS OF SIGNIFICANCE –	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☒	☐	☐

3.21.1 Impact Analysis

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

Less Than Significant with Mitigation

All Project Components

As described in Section 3.4, Biological Resources, the Project would not significantly adversely affect fish or wildlife habitat; cause a fish or wildlife population to drop below self-sustaining levels; threaten to eliminate a plant or animal community; or reduce the number or restrict the range of an endangered, rare, or threatened species. With implementation of **MM BIO-1** through **MM BIO-10**, **MM HYD-1 MM HAZ-1** and **MM HAZ-2,** the minor, brief, and localized impacts on special-status species and their habitats would be less than significant.

The Project's potential effects on historic and archaeological resources are described in Section 3.5, Cultural Resources, and Section 3.6, Cultural Resources – Tribal. Based on cultural resources records review of the Project area, no cultural resources are known to be present within the Project footprint. Implementing **MM CUL-1/TCR-1**, **MM CUL-2/TCR-2**, and **MM CUL-3/TCR-3** would reduce the potential for Project-related impacts on previously undiscovered cultural and tribal cultural resources to a less than significant level.

b) Does the project have impacts that would be individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the

incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)

Less Than Significant

All Project Components

No past, current, or reasonably foreseeable projects along the SF Bay cable route could be individually limited but cumulatively considerable with the addition of the proposed Project. As provided in this MND, the Project has the potential to significantly affect the following environmental disciplines: Air Quality, Biological Resources, Cultural Resources, Cultural Resources – Tribal, Greenhouse Gas Emissions, Hazards and Hazardous Materials, Hydrology and Water Quality, Recreation, and Transportation. However, mitigation measures have been identified that would reduce these impacts to less than significant. For any Project-related impact to contribute cumulatively to the impacts of past, present, or reasonably foreseeable projects, the other projects would need to result in an impact on the same resource area, occur at the same time, or occur within an area overlapping the proposed Project. No such project was identified that would result in a cumulative impact; therefore, this impact would be less than significant.

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

Less Than Significant with Mitigation

All Project Components

The Project's potential to adversely affect human beings is addressed throughout this document. As discussed in sections on Aesthetics (Section 3.1), Noise (Section 3.14), Public Services (Section 3.16), Recreation (Section 3.17), and Commercial and Recreational Fishing (Section 4.2), the Project would only temporarily affect resources used or enjoyed by the public, residents, or others in the Project area. The Project would not affect Agriculture and Forestry Resources (Section 3.2), Energy (Section 3.7), Land Use and Planning (Section 3.12), Mineral Resources (Section 3.13), Population and Housing (Section 3.15), Utilities and Service Systems (Section 3.19), or Environmental Justice (Section 4.3).

Potential Project-related effects on public safety and well-being are discussed in sections on Air Quality (Section 3.3, **MM AIR-1, MM AIR-2, MM AIR-3**); Cultural

Resources (Section 3.5, **MM CUL-1/TCR-1**, **MM CUL-2/TCR-2**, and **MM CUL-3/TCR-3**); Cultural Resources – Tribal (Section 3.6, **MM CUL-1/TCR-1**, **MM CUL-2/TCR-2**, and **MM CUL-3/TCR-3**); Geology, Soils, and Paleontological Resources (Section 3.8); Greenhouse Gas Emissions (Section 3.9, **MM AIR-1** and **MM AIR-2**); Hazards and Hazardous Materials (Section 3.10, **MM HAZ-1**, **MM HAZ-2, MM BIO-1**, and **MM BIO-3**); Hydrology and Water Quality (Section 3.11, **MM HYD-1**, **MM HAZ-1**, and **MM HAZ-2**); Noise (Section 3.14) **MM NOI-1**; Recreation (Section 3.17, **MM REC-1**); Transportation (Section 3.18, **MM TRA-1**, **MM TRA-2**, **MM REC-1**); Utilities and Service Systems (Section 3.19); Wildfire (Section 3.20); and Commercial and Recreational Fishing (Section 4.2, **MM BIO-6**, **MM BIO-7**, **MM BIO-8**, **MM BIO-9**, **MM BIO-10**, **MM REC-1**, and **MM TRA-1**).

None of these analyses identified a potential adverse effect on human beings that could not be avoided or minimized through implementing identified mitigation measures and Applicant-proposed measures or compliance with standard regulatory requirements. With mitigation in place, all Project impacts on human beings would be less than significant.

4.0 OTHER STATE LANDS COMMISSION CONSIDERATIONS

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

- Climate change and sea level rise
- Commercial and recreational fishing
- Environmental justice
- Significant lands inventory

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

4.1 CLIMATE CHANGE AND SEA LEVEL RISE

The California Ocean Protection Council updated the State of California Sea-Level Rise Guidance in 2018 to provide a synthesis of the best available science on sea level rise projections and rates (California Natural Resources Agency 2018). The "high emissions," "medium-high risk aversion" scenario was evaluated to apply a conservative approach for the eastern and the western cable landing sites based on both current emission trajectories and the lease location. The Project area could see a 0.8-foot sea level rise by 2030, 1.3 feet by 2040, 1.9 feet by 2050, and 6.9 feet by 2100 (California Ocean Protection Council 2018). The range in potential sea level rise indicates the complexity and uncertainty of projecting these future changes—which depend on the rate and extent of ice melt, among other factors—particularly in the second half of the century.

Along with higher sea levels, winter storms of greater intensity and frequency resulting from climate change will further affect coastal areas. In rivers and tidally influenced waterways, more frequent and powerful storms can result in increased flooding conditions and damage from storm-generated debris. Climate change and sea level rise also will affect coastal and riverine areas by changing erosion and sedimentation rates. Beaches, coastal landscapes, and near-coastal riverine areas exposed to increased wave force, run up, and total water levels could potentially erode more quickly than before. However, rivers and creeks also are predicted to experience flashier sedimentation pulse events from strong winter storms, punctuated by periods of drought. Therefore,

depending on precipitation patterns, sediment deposition and accretion may accelerate along some shorelines and coasts.

The eastern and the western shoreline both already have riprap protecting the areas from wave impacts. The western cable landing site routes (Figure 1.3-3) are in the "High Scenario" flooding of 1 percent chance plus 6.6-foot sea level rise, or increased erosion with anticipated sea level rise (Sea Change San Mateo County 2022). The eastern cable landing site (Figure 1.3-2) is within areas subject to flooding at greater than 1 percent chance, annually plus 55 inches of sea level rise (Maizlish et al. 2017).

As seen on Figure 1.3-3, all the western cable landing sites are on the west side of Highway 101. Since Highway 101 is a major highway in the area, it is anticipated that some measures would be proposed to protect this highway resulting in protecting the western cable landing site since it would be within the Caltrans Highway 101 right-of-way. Even if the cable landing site is in the area expected to flood, the fiber optic cables are designed and manufactured to withstand submerged conditions. The fiber optic cables would also be installed within landing vaults, which are designed to protect them from sea level rise and flooding. The vaults could also be opened to access the fiber optic cables if needed during flood conditions. Utility vaults, including those for fiber optic cables, are typically designed to be installed below the surface grade where they are exposed to stormwater and flooding.

The portions of the fiber optic cables' to be buried 3 to 6 feet under the mud within the San Francisco (SF) Bay would not be affected by sea level rise. The fiber optic cables between the cable landing sites on land and the horizontal directional drilling (HDD) exit points in the SF Bay would be drilled deep (approximately 6.5 to 66 feet [2 to 20 meters] below the shoreline) to account for any increased erosion over time.

No significant scour or erosion that might expose the buried fiber optic cables is anticipated based on a scouring and erosion analysis that was completed for this Project, see Appendix F for full analysis.

The analysis examined current and various climate change scenarios over the next 30 years (ERM 2023) by analyzing the following:

- Scouring potential in the nearshore regions of the proposed buried fiber optic cables in the South Bay of the SF Bay
- Impact of climate change on the scouring potential

The analysis applied an evidence-based approach reviewing available literature about erosion in the relevant areas of the SF Bay and a model-based approach computing estimates of sediment transport. Estimates of sediment transport were also examined under various climate change scenarios.

The literature review found that, based on historic bathymetric surveys, the 6-foot contour line is very stable both at the east and west ends of the proposed fiber optic cables route, which indicates that there is not much erosion happening in the nearshore area of the south SF Bay. This supports the assessment that a buried fiber optic cable at a depth of 3 to 6 feet (1 to 2 meters) would not be exposed to the magnitude of scour or erosion that might expose the buried fiber optic cables.

Additionally, a recent study a few kilometers south of the proposed fiber optic cables' route in a shallow water depth of 5 feet (1.5 meters) discussed in Appendix F shows that the combined effect of winds and currents results in bursts of erosion in which sediment get carried away by the tidal current in the water column. The study was conducted over a large area across the southern SF Bay. However, the field study also showed cycles of erosion and deposition bursts resulting in small oscillations in the bed level (changing up or down by a few centimeters) (Egan et al. 2021).

Utilizing geophysical and velocity data collected along the Project route in the geophysical survey (A2Sea 2022), an analysis of sediment transport also shows period of erosion and deposition with erosion increasing with wave heights (ERM 2023). Deposition depends on the availability of total suspended sediments in the water column from both freshly eroded mass as well as coming from other regions of the SF Bay. The analysis concluded that, while there is a small incremental or decremental change in the wave heights and currents through the year 2050 due to climate change, this change should not exacerbate erosion or deposition processes in the SF Bay (ERM 2023).

Brisbane and San Leandro have both adopted Climate Action Plans (City of Brisbane 2015; City of San Leandro 2021), the SF Bay Area has adopted the San Francisco Bay Plan (San Francisco Bay Conservation and Development Commission 2020), and San Mateo County has adopted the Local Coastal Program (County of San Mateo 2013). The Project is not inconsistent with the climate change recommendations in these plans.

Weather systems and extreme storms also can uncover dangerous coastal hazards on shorelines, including bay shorelines. The CSLC, when funding is

available, implements a program to remove coastal hazards along the California coast (CSLC 2017). Examples of hazards are remnants of coastal structures, piers, oil wells and pilings, and deteriorated electric cables and old pipelines. Many coastal hazards are on Public Trust lands set aside for commerce, navigation, fishing, and recreation. These hazards can impede coastal uses as well as 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. This climate change and sea level rise discussion is intended to provide the local and regional overview and context that the CSLC staff considered pursuant to this Executive Order. This climate change and sea level rise analysis would be relied on in the staff report when the Commission considers the Project.

4.2 COMMERCIAL AND RECREATIONAL FISHING

The marine biological study area extends across the SF Bay, from the ordinary high-water mark (OHWM) along the fiber optic cables' route on the western side of the SF Bay to the OHWM along the fiber optic cables' route on the eastern side of the SF Bay (Figure 3.4-1). The study area also included a buffer zone of 1.62 nautical miles (3 kilometers) to encompass indirect effects on marine species that could result from vessel noise and movement, which is not applicable for a commercial and recreational fisheries assessment. Therefore, only the marine area from the western OHWM to the eastern OHWM is analyzed in this section. The analysis of benthic and open water marine habitats and associated marine organisms is discussed in Section 3.4.1.2, Marine Biological Resources.

The marine habitat areas associated with this Project consist of intertidal and nearshore habitat zones and the open water habitat zone that extends across the SF Bay. Both ends of the proposed fiber optic cables' route begin in nearshore and intertidal habitat. This area is predominantly comprised of mudflat habitat which is tidally influenced and covered to a variable extent with seawater at high tide and exposed to air at low tide. The nearshore habitat on both ends of the fiber optic cables' route also contains areas of rocky shorelines that have been artificially hardened by riprap to provide protection from coastal hazards and erosion, followed by an extended intertidal and nearshore mudflat before transitioning to the open water habitat. The open water habitat here has a maximum depth of 34 feet (10 meters). The benthic habitat along the fiber optic cables' route is comprised of soft sediments (A2Sea 2022).

4.2.1 Commercial Fishing

Commercial fishing activities in the SF Bay include the following:

- Pacific herring fishing
- Bay shrimp fishing
- Charter sport fishing

4.2.1.1 Pacific Herring Fishing

Pacific herring (*Culpea pallasii*) is the largest commercial fishery in the SF Bay with a historical average herring spawning stock biomass of 47,491 tons (CDFW 2019a). The Pacific herring spawning season occurs between December 1 and March 15, and the commercial fishing season occurs between January 1 and March 15, with closures every weekend and restrictions in certain parts of the bay (Figure 4.2-1). Both the Pacific herring spawning and commercial fishing seasons would be outside of the Project's in-water work window (**MM BIO-6**), where work would only happen from June 1 through November 30. Therefore, the Project would not have an impact on the Pacific herring commercial fishing.

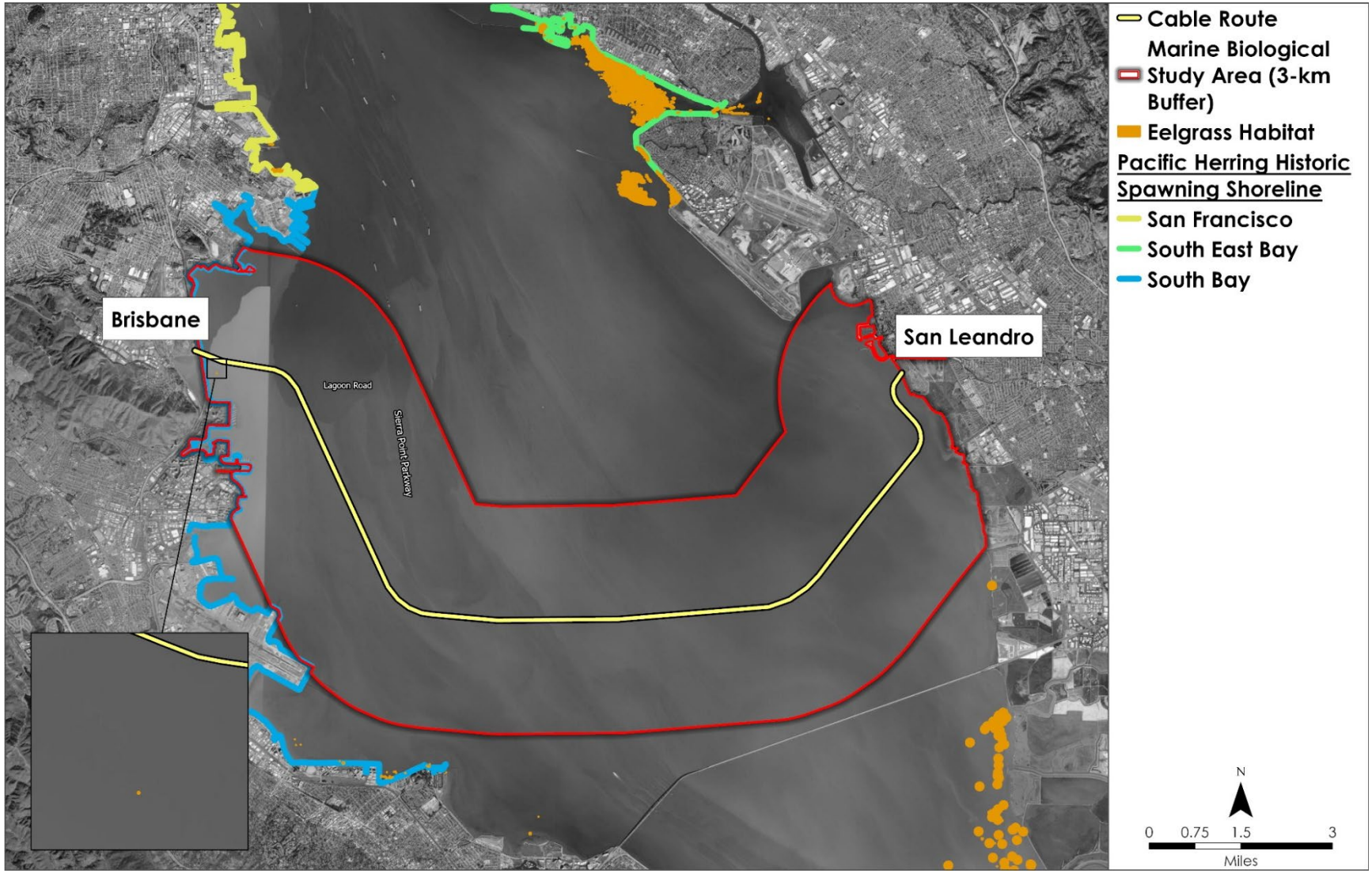
The Pacific herring fishing near the Project area is typically where a wall of netting hangs in the water column and the mesh sizes are designed so the fish head can go through the netting and not its body. The fish's gills get caught in the mesh as the fish tries to back out of the net. The Pacific herring gillnet fishery focuses on catching herring as they move into shallow areas to spawn. Gillnets are set in shallow waters, typically less than 20 feet deep, and anchored at both ends to prevent the net from moving. Special fishing closure areas are designated throughout the bay each year to prevent Pacific herring fishing activities in certain areas, none of which are along the fiber optic cables' route. The general population of Pacific herring in the SF Bay has been on the decline in recent years, with the second lowest spawning stock biomass on record in 2019 (CDFW 2019a).

Herring typically spawn in both the intertidal zone and immediately adjacent subtidal areas. Spawning also occurs in submerged vegetation beds, primarily eelgrass, red algae, and kelp. Herring will spawn in many different habitats within the bay, including the rocky intertidal and subtidal shoreline of the Golden Gate, rocky shorelines inside the bay, protected coves with subtidal vegetation, and placed substrates such as riprap, pilings, piers, and jetties. The only areas not utilized as suitable spawning habitat for herring are large mudflat areas with no vegetation (CDFW 2019b). One recent spawning area,

Candlestick Point, is approximately 1.5 miles northeast of the nearest western cable landing site as of the 2018–2019 spawning season (CDFW 2019a).

The coastline off Brisbane near the western cable landing site is also part of the historic Pacific herring spawning shoreline that runs from the shore down to the 3- to 5-meter contour (Figure 4.2-1). Even though this area has not seen active spawning in the past several years, the California Department of Fish and Wildlife (CDFW) considers all historical spawning grounds to be of potential future use. There is also a small portion of eelgrass habitat in this area close to shore, which is approximately 1,140 feet from the fiber optic cables' route, and therefore would not be affected by the proposed Project-related activities (CDFW 2019b).

Figure 4.2-1. Historical Pacific Herring Spawning Locations from 1973 to 2019



Source: CDFW 2019b

4.2.1.2 Bay Shrimp Fishing

Bay shrimp refers to multiple species of the genus *Crangon*, including the California bay shrimp (*Crangon franciscorum*). The commercial fishery for bay shrimp is confined to the SF Bay. Since 1985, annual landings of bay shrimp have averaged 120,000 pounds. The primary fishing locations include Alviso Slough and Redwood Creek in south SF Bay, north SF Bay, northern San Pablo Bay, Petaluma Creek, and the Carquinez Strait (CDFG 2001). The commercial fishery in the bay uses beam trawls for catching shrimp, and there are no seasonal time constraints on the commercial fisheries. The primary market for bay shrimp is bait for sport fishing (striped bass and sturgeon), and landings are influenced by the demand from bait shops.

4.2.1.3 Charter Fishing

A few commercial charter fishing businesses operate within the SF Bay. These charters typically target sport fish such as salmon (*Oncorhynchus tshawytscha*, *O. kisutch*), striped bass (*Morone saxatilis*), leopard shark (*Triakis semifasciata*), white sturgeon (*Acispencer transmontanus*), ling cod (*Ophiodon elongatus*), rock fish (*Sebastes auriculatus*), and halibut (*Hippoglossus stenolepis*). The fishing methods used vary by species and state regulations, but trolling behind a vessel or using a single hook and line are the most popular methods. Vessels range from 20 to 30 feet (6 to 9 meters) in length and hold two to eight people aboard. The fishing season varies throughout the year by species, but fishing opportunities exist year-round (SubCom 2021).

4.2.2 Recreational Fishing

Recreational fishing in the SF Bay is comprised of shore-based angling, beach foraging, diving, and boat-based angling. Recreational fishing activities are well-managed through permitting, regulations of specific fishing activities and gear used, and regulatory enforcement. The fishing seasons vary throughout the year by species, and seasonal dates and restrictions are reviewed annually by the CDFW.

4.2.3 Fishing Season, Capture Method, and Preferred Habitat

Table 4.2-1 provides detailed information on the fishing season, capture method, and preferred habitat for the more commonly landed commercial and recreational fished species in the SF Bay. The table was modified to only include species with soft-bottom preferred habitat, which is present along the fiber optic

cables burial route. The types of commercial and recreational fishery gear operating in the bay include longline, midwater trawl, trolling (hook and line), shoreline hook and line, offshore hook and line, and various forms of trapping (Table 4.2-1).

Table 4.2-1. Fishing Season, Method, and Habitat for Commonly Fished Species in the San Francisco Bay

Species	Fishing Season	Fishing Method (Most Common)	Habitat	Top Species (Commercial or Recreational)
Bay shrimp (*Crangon* spp.)	Open year-round.	Varies	Pelagic	Commercial and recreational
California halibut (*Paralichthys californicus*)	Open year-round to anglers.	Hook and line	Live on or near the substrate	Recreational
California scorpionfish (*Scorpaena guttata*)	Year-round for shore anglers and divers. Open to boat-based anglers from April 1 through December 31.	Hook and line	Live on or near the substrate	Recreational
Clams	Varies; depends on species, health advisories.	Digging	Live in sand and mud	Recreational
Dungeness crab (*Metacarcinus magister*)	Closed year-round.	N/A	N/A	N/A
Ghost shrimp and blue mud shrimp	Open year-round.	Varies	Live in sand and mud	Recreational
Leopard shark (*Triakis semifasciata*)	Year-round for all anglers and divers.	Hook and line	Live on or near the substrate	Recreational
Mussels	Open year-round; quarantine usually in effect from May 1 through October 31.	Collected	Attached to hard substrate, including rocks, and	Recreational

Species	Fishing Season	Fishing Method (Most Common)	Habitat	Top Species (Commercial or Recreational)
			placed structures	
Other federally managed groundfish	Year-round for shore anglers and divers. Open to boat-based anglers from April 1 through December 31.	Hook and line	Live on or near the substrate	Recreational
Ocean salmon species	June 23 through October 31.[36]	Trolling; hook and line	Pelagic; middle to top of the water column	Recreational
Pacific halibut (*Hippoglossus stenolepis*)	May 1 through August (season end date varies).	Hook and line	Live on or near the substrate	Recreational
Pacific herring (*Clupea pallasii*)	January 1 through March 15.	Varies	Pelagic	Commercial and recreational
Pacific herring eggs	Open year-round.	Collecting	Subtidal vegetation	Recreational
Pacific sanddab (*Citharichthys sordidus*) and other flatfish	Open year-round to anglers and divers.	Hook and line	Live on or near the substrate	Recreational
Petrale sole (*Eopsetta jordani*) and starry flounder (*Platichthys stellatus*)	Open year-round to anglers and divers.	Hook and line	Live on or near the substrate	Recreational
Rock crabs	Open year-round.	Crab rings and pots	Live on the substrate	Recreational

[36] Ocean salmon species fishing season is already closed for 2023 so it should not be impacted by the Project (NOAA Fisheries 2023): https://www.fisheries.noaa.gov/bulletin/inseason-actions-2023-ocean-salmon-fisheries-south-cape-falcon-recreational-commercial

Species	Fishing Season	Fishing Method (Most Common)	Habitat	Top Species (Commercial or Recreational)
Sharks (state-managed)	Open year-round.	Hook and line	Pelagic	Recreational
Soupfin shark (*Galeorhinus galeus*) and spiny dogfish (*Squalus acanthias*)	Year-round for shore anglers and divers. Open to boat-based anglers from April 1 through December 31.	Hook and line	Live on or near the substrate	Recreational
Surfperches (Family Embiotocidae)	Open to anglers August 1 through March 31.	Hook and line	Nearshore waters, near structures	Recreational
White seabass (*Atractoscion nobilis*)	Open year-round.	Hook and line	Pelagic; middle to top of the water column	Recreational
White sturgeon (*Acipenser transmontanus*)	Open year-round to anglers, closure area exists in the central bay between January 1 and March 15.	Hook and line	Live on or near the substrate	Recreational

Source: CDFW 2022c

4.2.4 Commercial Fishing Methods

The commercial Pacific herring fishery in the SF Bay uses gillnets to catch Pacific herring. Gillnet use in the bay is restricted to the take of herring only and may only be possessed by a person with a valid permit aboard a boat authorized to be targeting Pacific herring. A permit holder may fish only one gillnet of 65 fathoms (390 feet) or less in length and 25 feet in depth. There is a cap of 30 permits.

The commercial bay shrimp fishery uses beam trawls that are spread 20 to 25 feet wide. Fishing for bay shrimp is typically focused in waters that are less than 20 feet deep in estuarine areas (CDFG 2001).

Commercial charter fishing typically uses hook and line, either individually dropped off the side of the vessel or trolled behind. Vessels are not allowed to troll more than four lines at any time, with a limit of two hooks attached to each line.

4.2.5 Recreational Fishing Methods

Like the commercial charter fishing methods described above, the most common method of recreational fishing is hook and line and trolling from boats. Several of the species identified in Table 4.2-1 can be collected by hand, dug up in the sand, or caught using crab rings or small pots.

4.2.6 Special-Status Marine Species

As discussed in Section 3.4.1.2, Marine Biological Resources, the SF Bay, including the marine portion of the Project, has been designated as Essential Fish Habitat (EFH) for groundfish, coastal pelagic species, finfish, Chinook salmon, and coho salmon.

The National Oceanic and Atmospheric Administration Fisheries EFH Mapping Tool has identified estuaries, canopy kelp, seagrass, and rocky reefs as Habitat Areas of Particular Concern (HAPC) for groundfish, while complex channels and floodplains, thermal refugia, spawning habitat, estuaries, and marine and estuarine submerged aquatic vegetation are HAPC for salmon (Section 3.4.1.2; NOAA Fisheries 2022a). As an estuary, all the SF Bay is mapped as groundfish HAPC and may qualify as salmon HAPC as well. Eelgrass, which is a type of seagrass, is another HAPC within the SF Bay, and the fiber optic cables were routed to avoid all mapped eelgrass as seen on Figure 3.4-1.

4.2.7 Regulatory Setting

Federal and state laws and regulations pertaining to biological resources relevant to the Project are identified in Appendix A. No local regulations of policies applicable to the Project were identified.

4.2.8 Impact Analysis

As shown on Figures 1.3-3 and 1.3-4, an HDPE conduit would be installed at both landing vaults and exit at between 1,300 feet and 2,600 feet (396 and

792 meters) offshore on the western side in a water depth of approximately 5 feet (1.5 meters) deep and exit at approximately 200 feet (60 meters) offshore on the eastern side within the intertidal zone. From the end of each of the HDPE conduits, the fiber optic cables would be buried approximately 3 to 6 feet (1 to 2 meters) under the SF Bay floor for approximated 16.3 miles (26.2 kilometers; distance between the ends of each HDPE conduit).

An evaluation of the potential impacts of a marine-based Project on commercial and recreational fishing must consider the following multiple sources of potential direct and indirect impacts:

- Direct impacts include lost or reduced fishing area
- Lost or reduced fishing time in a specific area
- Reduced "soak" or fishing time per piece of equipment because of the need to remove and relocate the fixed fishing gear
- Lost or damaged fishing equipment that has become entangled and lost or discarded on Project-related equipment
- Indirect impacts include permanent or temporary damage to the marine habitat(s) supportive of, or essential to, the fish and invertebrate species being commercially or recreationally sought

The following significance criteria, developed by CSLC, were evaluated to determine potential Project impacts on fisheries:

Would the Project activities or installations temporarily reduce any fishery in the Project vicinity by 10 percent or more during a season, or reduce any fishery by 5 percent or more for more than one season?

Less than Significant with Mitigation

The Project's marine components would be installed in Summer to Fall of 2023, outside the commercial Pacific herring commercial fishery window of January 1 to March 31 (per **MM BIO-6)**, so no impacts on the fishery is anticipated.

The coastline of Brisbane in the vicinity of the western cable landing site is part of the Pacific herring spawning shoreline that extends from the shore down to the 3- to 5-meter contour, which includes both HDD exit points. While this area has not seen active spawning in the past several years, the CDFW considers all historical spawning grounds to be potential future spawning sites. Candlestick Point is also just north of the western cable landing site, which is historically an

active Pacific herring spawning area. Future Project maintenance or other Project-related activities that fall within the Pacific herring's fishery window may impact the amount of time or area available for fishing due to restricted access of several hours and closures around Project-related activities. These impacts would be short-term, have a small footprint, and would not have long-lasting impacts.

The bay shrimp fishery is open year-round. Given the amount of similar habitat adjacent to the Project and the overall size of this fishery, installation of the Project's marine components are not anticipated to have an impact on this fishery.

It is anticipated that installing the Project's marine components would overlap with the recreational and commercial sport fishing seasons in the SF Bay since it extends year-round. These fisheries may see short-term impacts for certain fishing seasons, but the impacts would be temporary in nature and would only impact the small area where the fiber optic cables are being installed and not the entire fiber optic cables' route between Brisbane and San Leandro. Also, the SF Bay near the Project area is relatively flat and muddy, so less fishing pressure would be focused around the Project area.

To ensure the commercial and recreational fishing communities near the Project area are informed of when and how long these activities would be happening, Advanced Local Notice to Mariners would be submitted (**MM REC-1**). Also, the San Francisco Community Fishing Association would be contacted to discuss Project installation activities and, in case of a fishing gear snag on the fiber optic cables, would be contacted for advice by implementing **MM BIO-9**. Therefore, the impact would be less than significant with mitigation.

Would the Project activities or installations affect 5 percent or more of kelp and aquaculture harvest areas?

No Impact

Currently no aquaculture or mariculture operations or designated kelp harvest areas are within the Project area. Therefore, there would be no impact.

Would the Project activities or installations cause a loss of harvesting time due to impacts on living marine resources or habitat or cause a loss of equipment or vessel, damage, or replacement?

Less than Significant with Mitigation

As presented in Section 3.4.1.2 and 2.4 (Marine Biological Resources and Project Work Schedule), the Project is not expected to significantly impact marine habitats or associated marine biological resources, including commercially important fisheries. The benthic habitat affected by the Project mostly consists of soft substrate habitat, and the fiber optic cables would be fully buried up to 3 to 6 feet (1 to 2 meters) within the SF Bay. The installation of the marine components is anticipated to occur outside the commercial Pacific herring fishery window in the SF Bay (**MM BIO-6**). These impacts would be short-term and would not have long-lasting impacts.

As previously noted, the Pacific herring commercial fishery in the SF Bay deploys gill nets in shallow water (less than 20 feet deep) that are anchored on both ends to keep the net from moving. Because the small anchors typically used for these nets dig into the SF Bay floor no more than 20 inches (50 centimeters), the likelihood of fishing gear becoming entangled with the Project cables is extremely unlikely. Since 2000, one commercial fisher's longline fishing gear might have become entangled with a cable and was asked to abandon his gear. His lost gear was replaced by the local commercial fisher's liaison committee and the cable operator.

To further minimize potential entanglement with fishing equipment and anchors, the Project fiber optic cables would be buried approximately 3 to 6 feet (1 to 2 meters) beneath the bay floor across the SF Bay. Post-lay surveys (**MM BIO-8**) would also be conducted immediately after the initial installation to confirm the burial status and address any sections of the fiber optic cables found to be exposed. The approximate location of the fiber optic cables would also be charted after installation to notify mariners and fishing industries of its existence and approximate location. If fishing gear is entangled with the Project's fiber optic cables, then **MM BIO-9** would be implemented to ensure effective communication with the fishing industries, including discussions with the San Francisco Community Fishing Association. Therefore, the impact would be less than significant with mitigation.

Would the Project activities or installations result in a significant loss to an essential fish habitat or alter the seafloor in such a manner to reduce the availability of that area to commercial trawling or other commercial gear types?

Less than Significant with Mitigation

SF Bay has been designated as EFH for groundfish, coastal pelagic species, finfish, Chinook salmon, and coho salmon. As an estuary, all the SF Bay is also

mapped as groundfish HAPC and may qualify for salmon HAPC as well. As discussed in Section 2.4, Project Work Schedule, installing the fiber optic cables within the SF Bay is expected to result in only short-term impacts on soft substrate and associated biological organisms used for foraging habitat by commercially important fishes. Short-term impacts would be minimized by implementing **MM TRA-1**, a Marine Anchor Plan developed specifically for this Project. This temporary habitat disturbance would be restricted to the few feet of the SF Bay floor where the fiber optic cables are jetted into the substrate, the sleds pass over, or barges rest on the SF Bay floor. This disturbance would be naturally refilled with sediment, and therefore would not affect adjacent bay floor habitats and would be a temporary habitat disturbance, not habitat loss.

Based on the projected routing of the fiber optic cables through the SF Bay, no hard-bottom habitat is anticipated to be present along the fiber optic cables' installation route (A2Sea 2022). No long-term or permanent loss of hard-bottom habitat for fishes, including EFH, or accessibility to commercial or recreational fishing is anticipated. The proposed fiber optic cables' route is soft substrate habitat where cables would be buried to a 3- to 6-foot (1- to 2-meter) depth to avoid possible entanglements with commercial fishing gear. Implementation of **MMs BIO-6**, **BIO-7**, **BIO-8, BIO-9, BIO-10, REC-1,** and **TRA-1** would further ensure minimal Project impacts on commercial fishing efforts, grounds, and gear use.

Reports from other areas of California and Oregon, where commercial fishermen cable liaison organizations are active, state that installation and other cable-lay operations have not resulted in any substantive restrictions to commercial fishing activities, gear use, or fishing ground accessibility (Oregon Fishermen's Cable Committee pers. Comm. 2020; South Bay Cable/Fisheries Liaison Committee pers. Comm. 2020; Central California Joint Cable Fisheries/Fisheries Liaison Committee pers. Comm. 2020). Therefore, the Project is expected to result in a less than significant impact with mitigation on commercial fishing activities from alterations to EFH or the SF Bay floor.

4.2.9 Mitigation Summary

Implementation of the following mitigation measures would reduce the potential for Project-related impacts on Commercial and Recreational Fishing to less than significant:

MM BIO-6: In-Water Work Window
MM BIO-7: Fish Screen on the Jet Sled Intake
MM BIO-8: Cable Burial Surveys

MM BIO-9: Cable Entanglements and Gear Retrieval
MM BIO-10: Control of Marine Invasive Species
MM REC-1: Advanced Local Notice to Mariners
MM TRA-1: Marine Anchor Plan

4.3 ENVIRONMENTAL JUSTICE

Environmental justice is defined by California law as "the fair treatment and meaningful involvement of people of all races, cultures, and incomes with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies" (Government Code, section 65040.12, subdivision (e)). This definition is consistent with the Public Trust Doctrine principle that the management of trust lands is for the benefit of all people. The CSLC adopted an Environmental Justice Policy in December 2018 (CSLC 2018, Item 75) to ensure that environmental justice is an essential consideration in the CSLC's processes, decisions, and programs (CSLC 2022). 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."[37]

The Project is needed to keep up with the technical advancements for transmitting uninterrupted data in the greater SF Bay Area and connected regions. This direct telecommunication link across the SF Bay would increase telecommunications reliability, diversity of telecommunications pathways, and help respond to growing demand for capacity and speed in the region. These Project benefits would also be realized for marginalized and disadvantaged communities in the SF Bay Area and connected regions.

The available data revealed that with the implementation of specified mitigation measures, no significant environmental impacts would be associated with the issuance of a lease for the proposed fiber optic cables Project. Project

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

landing sites and access would be coordinated with the respective landowners before using them. Therefore, community outreach was not conducted.

4.3.1 U.S. Census Bureau Statistics

Tables 4.3-1 through 4.3-3 present demographics, income, and employment data of the regional and local study area in the Project vicinity, based on the most recently available information from U.S. Census 2016–2020 American Community Survey 5-Year Estimates.[38]

The census tracts for the Project area are as follows:

- Western cable landing site: Census Tract 6001. Area north of the San Francisco International Airport, near the San Bruno Mountain State and County Park, overlapping the western cable landing site. This area has an estimated population of 5,101 (906 people per square mile), with 2,232 households and an average of 2.3 people per household (U.S. Census Bureau 2020a).
- Eastern cable landing site: Census Tract 4334. Area south of the Oakland International Airport, near Heron Bay, within a public park (Marina Park). This area has an estimated population of 6,084 (2,908.9 people per square mile), with 2,127 households and an average of 2.9 people per household (U.S. Census Bureau 2020b).

4.3.2 Population and Economic Characteristics

4.3.2.1 Demographics

As indicated in Table 4.3-1, regionally the population in San Mateo and Alameda counties is comprised of an approximately 28 to 36 percent white and 59 to 66 percent non-white population (Table 4.3-1).

[38] U.S. Census 2016-2020 American Community Survey estimates come from a sample population but are more current and complete than the most recent full census of 2020. Because they are based on a sample of population, a certain level of variability is associated with the estimates. Supporting documentation on American Community Survey data accuracy and statistical testing can be found on the American Community Survey website in the Data and Documentation section available here: https://www.census.gov/programs-surveys/acs.

Western Cable Landing Site

Demographics within Census Tract 6001 indicate most of the population identifies as non-white (56 percent). Of the population, 40 percent of residents in Census Tract 6001 identify as white, 37 percent identify as Asian, and 17 percent identify as Hispanic or Latino, with smaller proportions of other ethnicities. The percentage of the population identifying as Asian in this census tract is higher than the percentage for California or San Mateo County.

Eastern Cable Landing Site

Demographics within Census Tract 4334 indicate most of the population identifies as non-white (76 percent). Of this population, 16 percent of residents in Census Tract 4334 identify as white, 61 percent as Asian, 7 percent as black or African American, and 6 percent as Hispanic or Latino, with smaller proportions of other ethnicities. The percentage of the population identifying as Asian in this census tract is higher than the percentage for California or Alameda County.

Table 4.3-1. Environmental Justice Statistics (Percent Race[a])

Parameter	California	San Mateo County	Census Tract 6001 (Brisbane)	Alameda County	Census Tract 4334 (San Leandro)
White	34%	36%	40%	28%	16%
Black or African American	5%	2%	2%	10%	7%
American Indian and Alaska Native	0%	0%	0%	0%	1%
Asian	15%	31%	37%	32%	61%
Native Hawaiian	0%	1%	0%	1%	1%
Some Other Race	1%	1%	0%	1%	0%
Hispanic or Latino (of Any Race)	40%	24%	17%	22%	6%

Sources: U.S. Census Bureau 2020a,b,c,d,e.
Note:
[a] Race alone or in combination with one or more other races

4.3.2.2 Socioeconomics

Western Cable Landing Site

As shown in Table 4.3-2, from a regional standpoint, the western Project area has a lower median household income level ($116,111) compared to San Mateo

County ($131,796), but a higher median household income level compared to California as a whole ($84,907). San Mateo County and Tract 6001 residents are supported primarily by employment in educational services, health care, and social assistance (Table 4.3-3; U.S. Census Bureau 2022). With respect to populations living below the established poverty level, Census Tract 6001 (3.5 percent) is lower than San Mateo County (6.7 percent) and California overall (12.3 percent).

Eastern Cable Landing Site

As shown in Table 4.3-2, from a regional standpoint, the eastern Project area has a higher median household income level ($120,362) compared to Alameda County ($109,729) and California as a whole ($84,907). Alameda County and Tract 4334 residents are supported primarily by employment in educational services and health care and social assistance (Table 4.3-3; U.S. Census Bureau 2022). With respect to populations living below the established poverty level, Census Tract 4334 (3.9 percent) is lower than Alameda County (9.4 percent) and California overall (12.3 percent).

Table 4.3-2. Environmental Justice Statistics (Income and Population)

Parameter	California	San Mateo County	Census Tract 6001 (Brisbane)	Alameda County	Census Tract 4334 (San Leandro)
Total population	39,237,836	737,888	5,101	1,648,556	6,084
Median household income	$84,907	$131,796	$116,111	$109,729	$120,362
Percent (%) below the poverty level (all families)[a]	12.3%	6.7%	3.5%	9.4%	3.9%

Source: U.S. Census Bureau 2020a,b,c,d,e
Notes:

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

As shown in Table 4.3-3, San Mateo County residents and residents of Tract 6001 are primarily employed in the educational services, health care, and social assistance industry. Alameda County residents and residents of Tract 4334 are also primarily employed in the educational services, health care, and social

assistance industry. Specifically, the educational services, health care, and social assistance industry accounts for the largest percentage of general population employment within the State of California (at 21.5 percent) in this industry.

Table 4.3-3. Environmental Justice Statistics (Employment Industry – Percentage of Total Population)

Parameter	California	San Mateo County	Census Tract 6001 (Brisbane)	Alameda County	Census Tract 4334 (San Leandro)
Agriculture, forestry, fishing and hunting, mining	2.1%	0.5%	0%	0.3%	0.9%
Construction	6.4%	5.5%	5.7%	5.3%	9.0%
Manufacturing	9.0%	7.4%	7.4%	9.9%	8.8%
Wholesale trade	2.8%	2.0%	0.8%	2.4%	2.7%
Retail trade	10.4%	8.9%	6.3%	8.9%	7.2%
Transportation, warehousing, and utilities	5.5%	5.7%	7.4%	5.2%	5.1%
Information	2.9%	4.6%	1.6%	3.6%	1.6%
Finance and insurance, real estate, rental, and leasing	6.0%	7.8%	8.0%	6.1%	6.4%
Professional, scientific, and management, and administrative and waste management services	13.8%	20.0%	20.5%	20.2%	14.1%

Parameter	California	San Mateo County	Census Tract 6001 (Brisbane)	Alameda County	Census Tract 4334 (San Leandro)
Educational services, health care, and social assistance	21.2%	20.4%	22.5%	21.6%	27.6%
Arts, entertainment, and recreation, accommodation, and food services	10.2%	9.1%	8.6%	8.4%	6.3%
Other services, except public administration	5.1%	4.8%	7.9%	4.7%	5.0%
Public administration	4.6%	3.2%	3.3%	3.5%	5.4%

Source: U.S. Census Bureau 2022; U.S. Census Bureau 2020a–e

4.3.3 California Office of Environmental Health Hazard Assessment CalEnviroScreen Results

4.3.3.1 Western Cable Landing Site

According to the California Office of Environmental Health Hazard Assessment's California Communities Environmental Health Screening Tool (CalEnviroScreen 4.0) data (California OEHHA 2022), the Project site within Census Tract 6001 has a score in the 55th percentile, meaning that up to 45 percent of all census tracts in California have greater population vulnerability or environmental burdens (Figure 4.3-1). The existing pollution burden for this tract is in the 85th percentile, with cleanups, traffic, groundwater threats, and hazardous waste as factors with the highest scores. This tract, with a population of 5,101, has a population characteristics (vulnerability) score in the 34th percentile, which represents unemployment, housing burden, and poverty components that could result in increased pollution vulnerability. In addition, the population is 42 percent white or non-minority and has low scores for public health concerns such as unemployment and poverty.

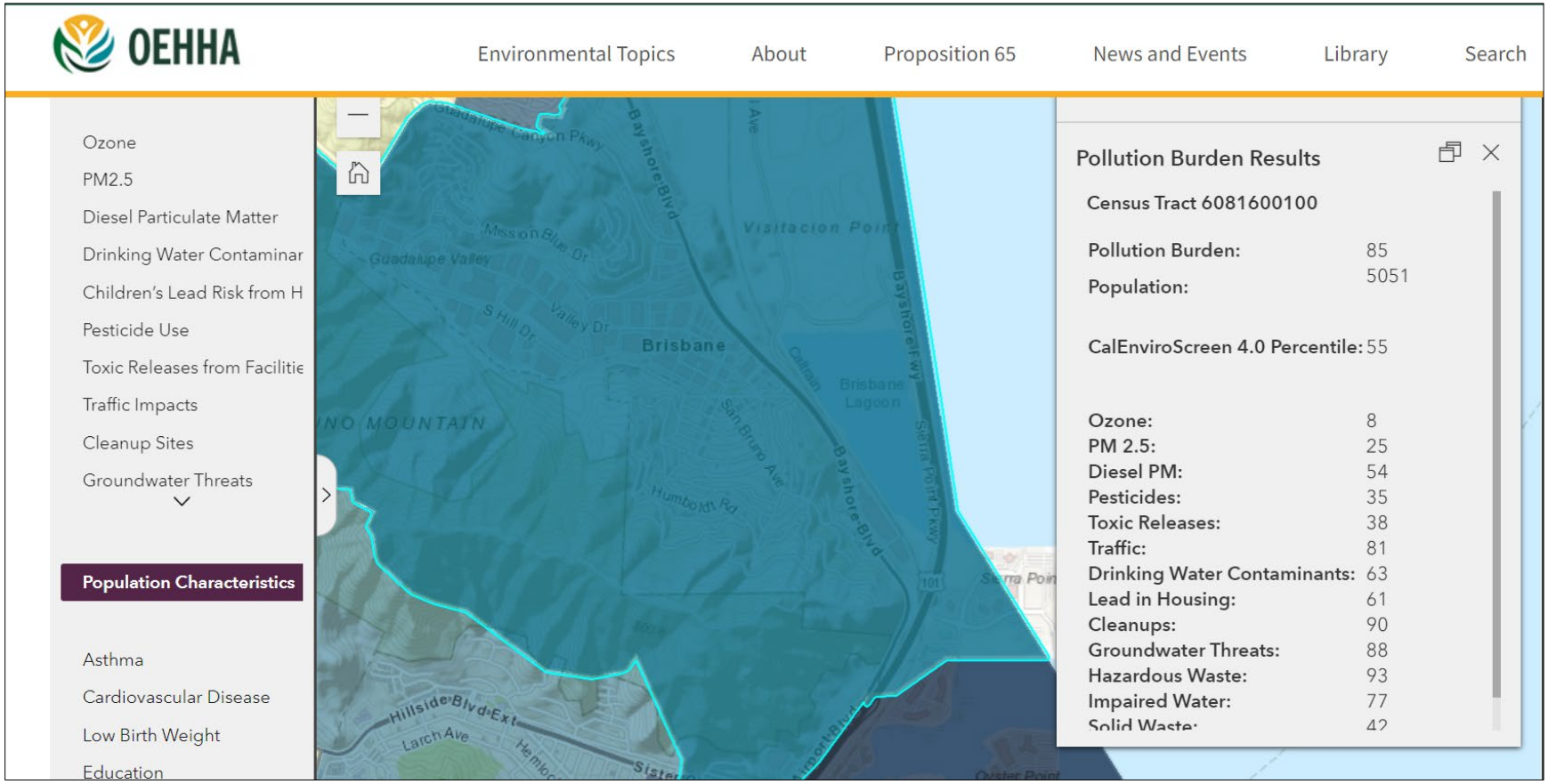
4.3.3.2 Eastern Cable Landing Site

According to the CalEnviroScreen 4.0 data (California OEHHA 2022), the Project site within Census Tract 4334 has a score in the 39th percentile, meaning that up to 61 percent of all census tracts in California have greater population vulnerability or environmental burdens (Figure 4.3-2). The existing pollution burden for this tract is in the 22nd percentile, with groundwater threats, solid waste, impaired waters, and toxic releases as factors with the highest scores. This tract, with a population of 6,084, has a population characteristics (vulnerability) score in the 51st percentile, which represents unemployment, housing burden, and poverty components that could result in increased pollution vulnerability. In addition, the population is 16 percent white or non-minority and has low scores for public health concerns such as poverty and housing burden.

4.3.4 Conclusion

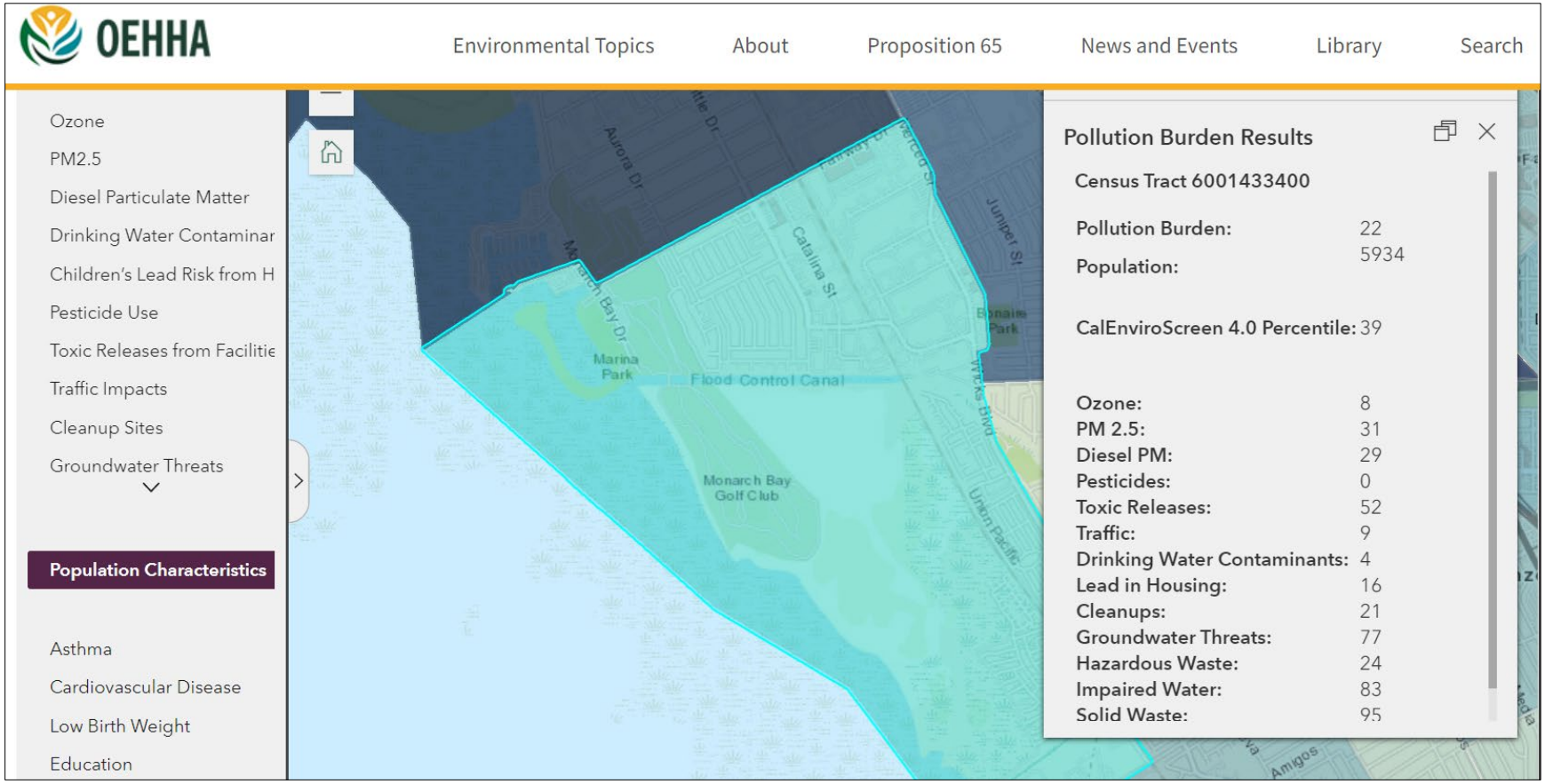
Because the percentage of individuals designated as living below the poverty line in the affected communities is not disproportionately higher than in the surrounding areas, it does not appear that an environmental justice community would be disproportionately affected by this Project. The Project's construction-related activities will have minor and temporary impacts on nearby residential communities (Figure 3.1-1), regardless of their socioeconomic make-up. As noted previously, the closest residences to the nearest western cable landing site in Brisbane are approximately 0.47 mile. The closest residences to the eastern cable landing site are approximately 0.3 mile away.

Figure 4.3-1. CalEnviroScreen Results for the Western Cable Landing Site in Census Tract 6001



Source: California OEHHA 2022

Figure 4.3-2. CalEnviroScreen Results for the Eastern Cable Landing Site in Census Tract 4334



4.4 SIGNIFICANT LANDS INVENTORY

The Project involves lands identified as possessing significant environmental values within CSLC's Significant Lands Inventory, pursuant to Public Resources Code section 6370 et seq. (California Open Data Portal 2022). The Project site is in the Significant Lands Inventory as parcel numbers 01-063-100 (SF Bay tidelands, Alameda County) and 41-063-000 (SF Bay tidelands, San Mateo County). The subject lands are classified as use category Class C, which authorizes multiple use. Environmental values identified for these lands are mostly biological, including endangered species habitat, critical ecosystem, tidal habitat for wildlife support and fisheries, and recreational.

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

5.0 MND PREPARATION SOURCES AND REFERENCES

This Mitigated Negative Declaration (MND) was prepared by the staff of the California State Lands Commission's Division of Environmental Science, Planning, and Management (DESPM), with the assistance of Environmental Resources Management (ERM). The analysis in the MND is based on information identified, acquired, reviewed, and synthesized based on DESPM guidance and recommendations.

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