INITIAL STUDY/MITIGATED NEGATIVE DECLARATION

RTI INFRASTRUCTURE, INC.
EUREKA SUBSEA FIBER OPTIC CABLES PROJECT

February 2021

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

Applicant:
RTI Infrastructure, Inc.
268 Bush Street, #77
San Francisco, CA 94104

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 through preservation, restoration, enhancement, responsible economic development, and the promotion of public access.

CEQA DOCUMENT WEBSITE

www.slc.ca.gov/ceqa/

Geographic Location (Point at Mean High-Tide Line)

Latitude: 40º 48.19’ N
Longitude: 124º 12.05’ W
NAD83 Datum

Cover Photo: Aerial view of the cable landing site

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APPENDICES

In bound copies, appendices are provided on CD.

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LIST OF ABBREVIATIONS AND ACRONYMS

	2017 Scoping Plan	CARB 2017 Climate Change Scoping Plan
	°F	degrees Fahrenheit
A	AB	Assembly Bill
	AMS	Applied Marine Sciences
	APM	Applicant Proposed Measure
	APN	Assessor's Parcel Number
	Applicant	RTI Infrastructure, Inc.
	AWOIS	Automated Wreck and Obstructions Information System
B	BACT	Best Available Control Technology
	BAU	business as usual
	BOEM	Bureau of Ocean Energy Management
	BSA	biological study area
C	CAA	Clean Air Act
	CAAQS	California ambient air quality standards
	cable	fiber optic cable
	Cal OES	California Governor's Office of Emergency Services
	Caltrans	California Department of Transportation
	CARB	California Air Resources Board
	CCA	California Coastal Act
	CCC	California Coastal Commission
	CDFG	California Department of Fish and Game
	CDFW	California Department of Fish and Wildlife
	CEQA	California Environmental Quality Act
	CESA	California Endangered Species Act
	CFR	Code of Federal Regulations
	CGS	California Geological Survey
	CH_4	methane
	CHIRP	compressed high-intensity radiated pulse
	CHRIS	California Historical Resources Information System
	CNDDB	California Natural Diversity Database
	CNPS	California Native Plant Society
	CO	carbon monoxide
	CO_2	carbon dioxide
	CO_2e	CO_2 equivalent
	CRHR	California Register of Historical Resources
	CRPR	California Rare Plant Rank
	CSLC	California State Lands Commission

D	dB	decibel
	DC	direct current
	DEPM	California State Lands Commission's Division of Environmental Planning and Management
	DPM	diesel particulate matter
	DPS	distinct population segment
E	ECOS	Environmental Conservation Online System
	EFH	essential fish habitat
	EIR	Environmental Impact Report
	EPA	U.S. Environmental Protection Agency
	ESHA	environmentally sensitive habitat area
	ESU	evolutionary significant unit
F	FEMA	Federal Emergency Management Agency
	FESA	federal Endangered Species Act
	FHWA	Federal Highway Administration
	FMP	fishery management plan
G	GHG	greenhouse gas
	GPS	global positioning system
	GWP	global warming potential
H	HAPC	habitat area of particular concern
	Harbor District	Humboldt Bay Harbor, Recreation, & Conservation District
	HBAP	Humboldt Bay Area Plan
	HCAOG	Humboldt County Association of Governments
	HDD	horizontal directional drilling
	HLRR	Hammond Lumber Railroad
	HOODS	Humboldt Open Ocean Disposal Site
I	IPaC	Information for Planning and Consultation
	IPCC	Intergovernmental Panel on Climate Change
	IS	Initial Study
	IS/MND	Initial Study/Mitigated Negative Declaration
K	kV	kilovolt
L	LAFCo	Humboldt County Local Agency Formation Commission
	LCP	Local Coastal Program
	LOS	level of service
	LV	landing vault

M	Magnuson-Stevens Act	Magnuson-Stevens Fishery Conservation and Management Act
	MMO	mixed metal oxide
	MMP	Mitigation Monitoring Program
	MM	mitigation measure
	MMT	million metric ton(s)
	MND	Mitigated Negative Declaration
	MSA	marine biological study area
	MWMCP	Marine Wildlife Monitoring and Contingency Plan
N	N_2O	nitrous oxide
	NAAQS	national ambient air quality standards
	NAHC	Native American Heritage Commission
	NCAB	North Coast Air Basin
	NCRWQCB	North Coast Regional Water Quality Control Board
	NCUAQMD	North Coast Unified Air Quality Management District
	nm	nautical mile(s)
	NMFS	National Marine Fisheries Service
	NO	nitric oxide
	NO_2	nitrogen dioxide
	NOAA	National Oceanic and Atmospheric Administration
	NO_X	nitrogen oxides
	NPDES	National Pollutant Discharge Elimination System
	NRCS	Natural Resources Conservation Service
	NRHP	National Register of Historic Places
	NSR	New Source Review
	NWIC	Northwest Information Center
O	O_3	ozone
	OCS	Outer Continental Shelf
	OEHHA	California Office of Environmental Health Hazard Assessment
	OGB	ocean ground bed
	OHP	California Office of Historic Preservation
	OHWM	ordinary high-water mark
	OPC	Ocean Protection Council
	OPR	Governor’s Office of Planning and Research
P	PCSD	Peninsula Community Services District
	PG&E	Pacific Gas and Electric Company
	PM_{10} and $PM_{2.5}$	particulate matter with diameters of 10 and 2.5 microns or less
	ppm	parts per million

	PPV	peak particle velocity
	PTS	permanent threshold shifts
R	ROGs	reactive organic gases
	ROV	remotely operated vehicle
	RTI	RTI Infrastructure, Inc.
S	SO_2	sulfur dioxide
	SOx	sulfur oxide
	SP-CA	Singapore to California
	SPL	sound pressure level
	SWPPP	stormwater pollution prevention plan
	SWRCB	State Water Resources Control Board
T	TAC	toxic air contaminant
	THPO	Tribal Historic Preservation Officer
	TTS	temporary threshold shifts
U	USACE	U.S. Army Corps of Engineers
	USCG	U.S. Coast Guard
	USFWS	U.S. Fish and Wildlife Service
	USGS	U.S. Geological Survey
V	VMT	vehicle miles traveled

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EXECUTIVE SUMMARY

The California State Lands Commission (CSLC) is the lead agency under the California Environmental Quality Act (CEQA) (Pub. Resources Code, § 21000 et seq.) and has prepared this Initial Study (IS)/Mitigated Negative Declaration (MND) that analyzes and discloses the environmental effects associated with the proposed RTI Infrastructure, Inc. Eureka Subsea Fiber Optic Cables Project (Project) in the unincorporated community of Samoa, Humboldt County. The Project would authorize RTI Infrastructure, Inc. (Applicant or RTI) to build telecommunication infrastructure on land (terrestrial) and in ocean (marine) areas within and offshore of Samoa. The infrastructure includes transpacific fiber optic cables (cables) that would carry telecommunication data to connect the United States with Asia (e.g., Singapore, Taiwan, and Japan) and Australia (Figure ES-1).

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 would avoid or mitigate those impacts to a point where no significant impacts would occur.

PROPOSED PROJECT

The Applicant proposes to install and operate four cables (coming from Asia or Australia) and their related structures on land above the ordinary high-water mark (OHWM) (outside of the CSLC's jurisdiction) (Figure ES-2). The terrestrial Project components include the following:

- **Cable Landing Site.** The four cables would land in an unoccupied area of the Humboldt Bay Harbor, Recreation, & Conservation District. An approximately 150-foot by 150-foot area would be used for the following key Project components:
    - Staging Area. The cable landing site would be used to park vehicles and store construction-related equipment for both terrestrial and marine work.
    - Landing Vaults (LVs). Four LVs (approximately 8 feet wide by 12 feet long by 9 feet deep) would be buried with a cast-iron vault cover (36 inches in diameter) at grade level, meaning flush with the ground.
    - Landing Pipes. A separate landing pipe (described below) would be installed from each of the LVs and would exit offshore into the Pacific Ocean. Once the landing pipes are installed, each individual cable (from different Project phases) would be pulled from the Pacific Ocean through its own designated landing pipe into its own designated LV.
    - Ocean Ground Beds (OGB) Onshore. A grounding system known as an OGB would be needed for cathodic protection to control corrosion and to provide a ground for the electricity travelling through the cable to power the marine cable amplifiers. The four OGBs (one for each cable) would be

installed onshore (underground in the cable landing site or offshore (about 50 feet west of where the landing pipes would exit).

The scope of this Project ends at 3 nautical miles (nm) offshore to correspond with the boundaries of CSLC's jurisdiction (after 3 nm, federal waters extend 12 nm from shore and the United States Exclusive Economic Zone extends 200 nm from shore). The following marine Project components would start at the OHWM of the Pacific Ocean and end at 3 nm from the shoreline:

- **Landing Pipes.** As noted above, four landing pipes (approximately 5 to 6 inches in diameter) would be installed. Each landing pipe would be approximately 4,600 feet long, starting from the LV and ending offshore. The landing pipes would be installed at least 35 feet under the cable landing site and beach using the horizontal directional drilling (HDD) construction method; they would exit at about 3,600 feet (0.5 nm or 0.6 mile) offshore at a water depth of approximately 40 feet. This exit point would be just beyond the surf zone where it would be safe for divers to work.
- **Fiber Optic Cables.** The cable lay ship (with the help of a dive support vessel and divers) would bring each cable (in different Project phases) from its international destination to the end of the landing pipe at about 3,600 feet offshore (or 4,600 feet from the LVs) where the ocean water depth is approximately 40 feet. Each cable then would be pulled through its own individual landing pipe (constructed in Phase 1) to its respective LV.

  Before reaching the landing pipe, the cable would be installed as follows:

  - In ocean water 5,904 feet deep or more, the cables would lay directly on the ocean floor at approximately 32 miles offshore from the LVs at the Outer Continental Shelf.
  - In ocean water between 98 and 5,904 feet deep, the cable would be buried under the ocean floor by cable plow, or by diver-assisted or remotely operated vehicle (ROV)- assisted post-lay burial, depending on ocean floor characteristics.
  - In ocean water between 40 and 98 feet deep, the cable would be installed by diver-assisted post-lay burial.
- **Ocean Ground Beds.** An OGB would be installed onshore or offshore (to be determined after the electronic components of the cable system are designed and manufactured) for each cable to ground the cable. An OGB is crucial for cathodic protection to control corrosion and to provide a ground for the electricity that would travel through the cable to power the marine cable amplifiers.

The proposed Project would be completed when the four cables are installed into the landing pipes and are pulled into their respective LVs. The LVs also would provide access to the landing pipes for maintenance activities related to the cables. After completing the

Project, the four cables would connect to a single vault that would be built by a local telecommunications company (Vero Networks)[1] and would be outside of the scope of this Project. The local telecommunications company project is a separate project and has independent utility from the Project analyzed in this MND and requires a separate CEQA analysis. Each cable would be connected to this soon-to-be-built vault that would be located adjacent to the Project vaults. The local telecommunications company would then install conduits west to New Navy Base Road and then northerly along New Navy Base Road to connect with an existing building that will become a new cable landing station (also not part of the Project).

This Project would be built in four phases. Phase 1 (year 2021) would be the initial phase that would build the infrastructure to receive four cables and bring the very first cable from Singapore to California. Phase 2 (year 2022) would connect California to Taiwan. Phase 3 (year 2023) and Phase 4 (year 2024) would connect California to either Japan or Australia; it has not yet been determined which connection would be installed first.

ENVIRONMENTAL IMPACTS AND PROPOSED MITIGATION MEASURES

The environmental issues checked below in Table ES-1 have the potential to be affected by this Project; a checked box indicates that at least one impact would be a "potentially significant impact." The Applicant has agreed to Project revisions, including implementation of mitigation measures (MMs) that would reduce the potential impacts to "less than significant with mitigation," as detailed in Section 3.0, *Environmental Checklist and Analysis,* of this MND.

The Applicant has identified three Applicant Proposed Measures (APMs) that will be implemented as part of the Project to avoid or minimize impacts on environmental resources and to ensure that certain potential impacts are reduced to or remain at a less than significant level. The following APMs are discussed for the respective resources in Section 3:

- APM-1: Fishing Agreement
- APM-2: Marine Anchor Plan
- APM-3: Cable Burial Surveys

Table ES-2 lists the proposed MMs and APMs designed to reduce or avoid potentially significant impacts. With implementation of the proposed MMs and APMs, all Project-related impacts would be reduced to or remain at less than significant levels.

[1] The local telecommunications company (Vero Networks) would obtain their authorizations from the California Public Utilities Commission. Because they are a Competitive Local Exchange Carrier, they have an existing Certificate of Public Convenience and Necessity from the California Public Utilities Commission. They would obtain their authorization under that permit to connect to the LVs when the proposed Project is completed.

Table ES-1. Environmental Issues and Potentially Significant Impacts

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

Table ES-2. Summary of Mitigation Measures and Applicant Proposed Measures

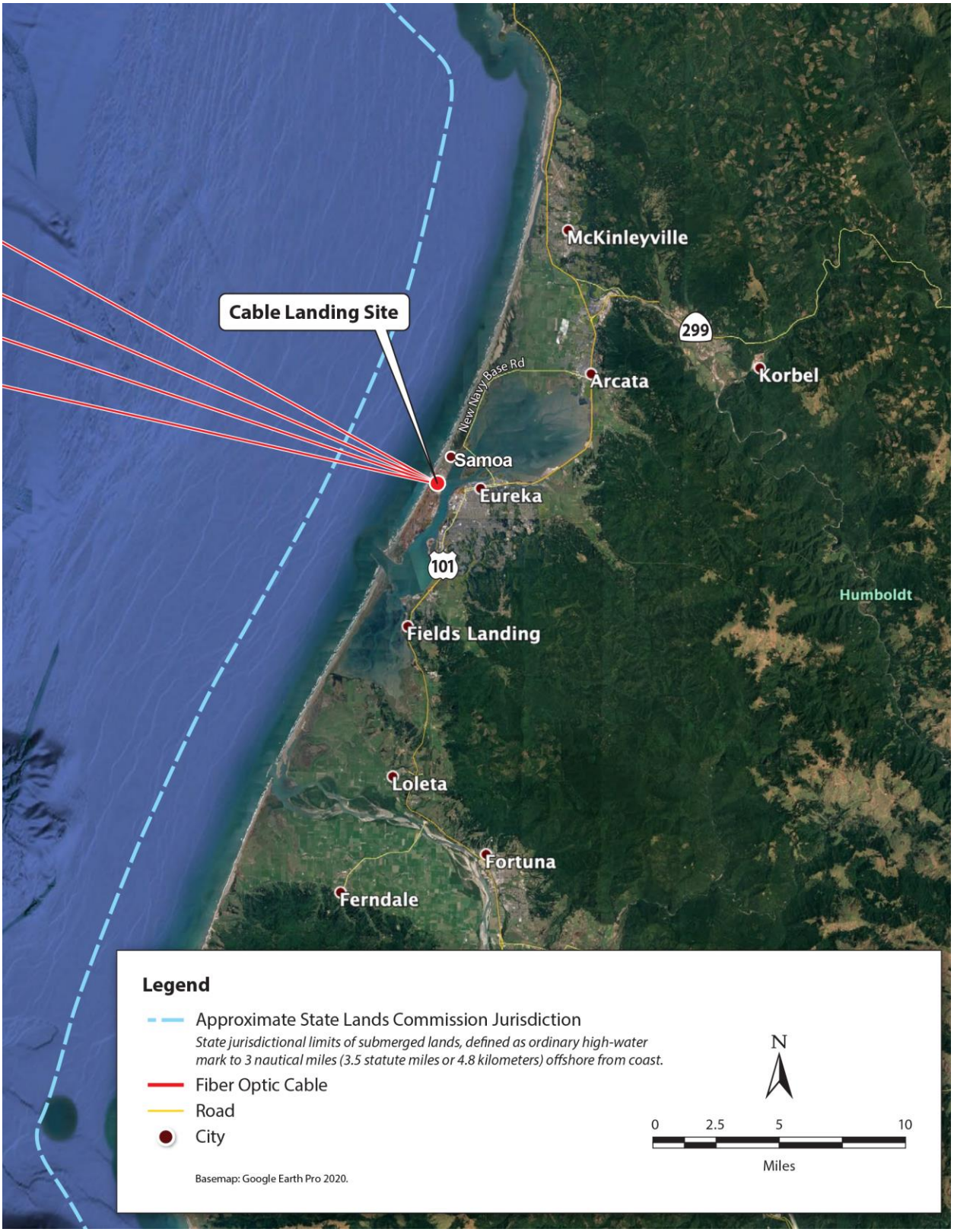
Biological Resources
MM BIO-1: Provide Environmental Awareness Training
MM BIO-2: Conduct Biological Surveying and Monitoring
MM BIO-3: Delineate Work Limits to Protect Sensitive Biological Resources
MM BIO-4: Install Covers or Some Kind of Escape Ramps in Open Trenches
MM BIO-5: Prepare and Implement an Inadvertent Return Contingency Plan
MM BIO-6: Conduct Pre-Construction Nesting Bird Surveys and Implement Avoidance Measures
MM BIO-7: Implement Best Management Practices for Horizontal Directional Drilling Activities
MM BIO-8: Cable Entanglements and Gear Retrieval
MM BIO-9: Prepare and Implement a Marine Wildlife Monitoring and Contingency Plan
MM BIO-10: Minimize Crossing of Hard Bottom Substrate
MM BIO-11: Contribute Compensation to Hard Substrate Mitigation Fund
MM BIO-12: Control of Marine Invasive Species
MM HAZ-1: Develop and Implement Spill Contingency and Hazardous Materials Management Plans
APM-1: Fishing Agreement
APM-3: Cable Burial Surveys
Cultural Resources
MM CUL-1/TCR-1: Discovery of Previously Unknown Cultural or Tribal Cultural Resources
MM CUL-2/TCR-2: Cultural Resources Contractor Awareness Training
MM CUL-3: Conduct a Pre-Construction Offshore Archaeological Resources Survey
MM CUL-4: Conduct a Pre-Construction Offshore Historic Shipwreck Survey
MM CUL-5: Prepare and Implement an Avoidance Plan for Marine Archaeological Resources
MM CUL-6/TCR-3: Unanticipated Discovery of Human Remains
Cultural Resources – Tribal
MM CUL-1/TCR-1: Discovery of Previously Unknown Cultural or Tribal Cultural Resources
MM CUL-2/TCR-2: Cultural Resources Contractor Awareness Training
MM CUL-6/TCR-3: Unanticipated Discovery of Human Remains
Greenhouse Gas Emissions
MM GHG-1: Purchase GHG Carbon Offsets for Construction Emissions

Table ES-2. Summary of Mitigation Measures and Applicant Proposed Measures

Hazards and Hazardous Materials
MM HAZ-1: Develop and Implement Spill Contingency and Hazardous Materials Management Plans
MM BIO-1: Provide Environmental Awareness Training
MM BIO-3: Delineate Work Limits to Protect Sensitive Biological Resources
MM BIO-5: Prepare and Implement an Inadvertent Return Contingency Plan
MM BIO-7: Implement Best Management Practices for Horizontal Directional Drilling Activities
Hydrology and Water Quality
MM BIO-5: Prepare and Implement an Inadvertent Return Contingency Plan
MM BIO-7: Implement Best Management Practices for Horizontal Directional Drilling Activities
MM HAZ-1: Develop and Implement Spill Contingency and Hazardous Materials Management Plans
Noise
MM NOI-1: Implement Construction Noise Control Measures
MM BIO-9: Prepare and Implement a Marine Wildlife Monitoring and Contingency Plan
Recreation
MM REC-1: Advanced Local Notice to Mariners
Transportation
MM REC-1: Advanced Local Notice to Mariners
APM-2: Marine Anchor Plan
Commercial and Recreational Fishing
MM BIO-10: Minimize Crossing of Hard Bottom Substrate
MM BIO-11: Contribute Compensation to Hard Substrate Mitigation Fund
MM REC-1: Advanced Local Notice to Mariners
APM-1: Fishing Agreement
APM-3: Cable Burial Surveys

Figure ES-1. Proposed Project Phases

Figure ES-2. Project Location



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1.0 PROJECT AND AGENCY INFORMATION

1.1 PROJECT TITLE

RTI Infrastructure, Inc. Eureka Subsea Fiber Optic Cables Project (Project).

1.2 LEAD AGENCY AND PROJECT SPONSOR

Lead Agency	Contact Person
California State Lands Commission 100 Howe Avenue, Suite 100-South Sacramento, CA 95825	Afifa Awan, Senior Environmental Scientist Environmental Planning and Management Division Afifa.Awan@slc.ca.gov (916) 574-1891
Applicant	**Contact Person**
RTI Infrastructure, Inc. 268 Bush Street, #77 San Francisco, CA 94104	Chris Brungardt, Senior Vice President Chris.Brungardt@rticable.com (916) 949-9141

1.3 PROJECT LOCATION

The Project would be located on the following land (terrestrial) and ocean (marine) areas within and offshore of the incorporated community of Samoa, Humboldt County:

- **Terrestrial Components.** These would include the cable landing site and the landing vaults (LV). The cable landing site would be on the east side of New Navy Base Road and west side of Vance Avenue in an unoccupied area with Assessor's Parcel Number (APN) 401-112-021 (Figure 1-1). The cable landing site would be used as a staging area for terrestrial and marine work. Four LVs would be buried at the cable landing site. A separate landing pipe would be installed from each of the LVs by horizontal directional drilling (HDD) construction methods.
- **Marine Components.** These would include the four landing pipes installed from the cable landing site by HDD construction methods and extend under the adjacent property and CSLC's jurisdiction, exiting the ocean bottom approximately 3,600 feet (0.6 mile or 0.5 nm) offshore in the Pacific Ocean (Figure 1-1). A cable lay ship (with the help of a dive support vessel and divers) would bring each cable (in different Project phases) to the end of the landing pipe at about 3,600 feet offshore (or 4,600 feet from the LVs) where the ocean water depth is approximately 40 feet. Each cable then would be pulled through its own individual landing pipe (constructed in Phase 1) to its respective LV. The cables would be buried in water shallower than 5,904 feet and lay directly on the ocean floor in water deeper than 5,904 feet (approximately 32 miles offshore from the LVs at the Outer Continental Shelf [OCS]).[2]

[2] U.S. federal jurisdiction extends to the edge of the OCS under the Outer Continental Shelf Lands Act.

Figure 1-1. Project Location

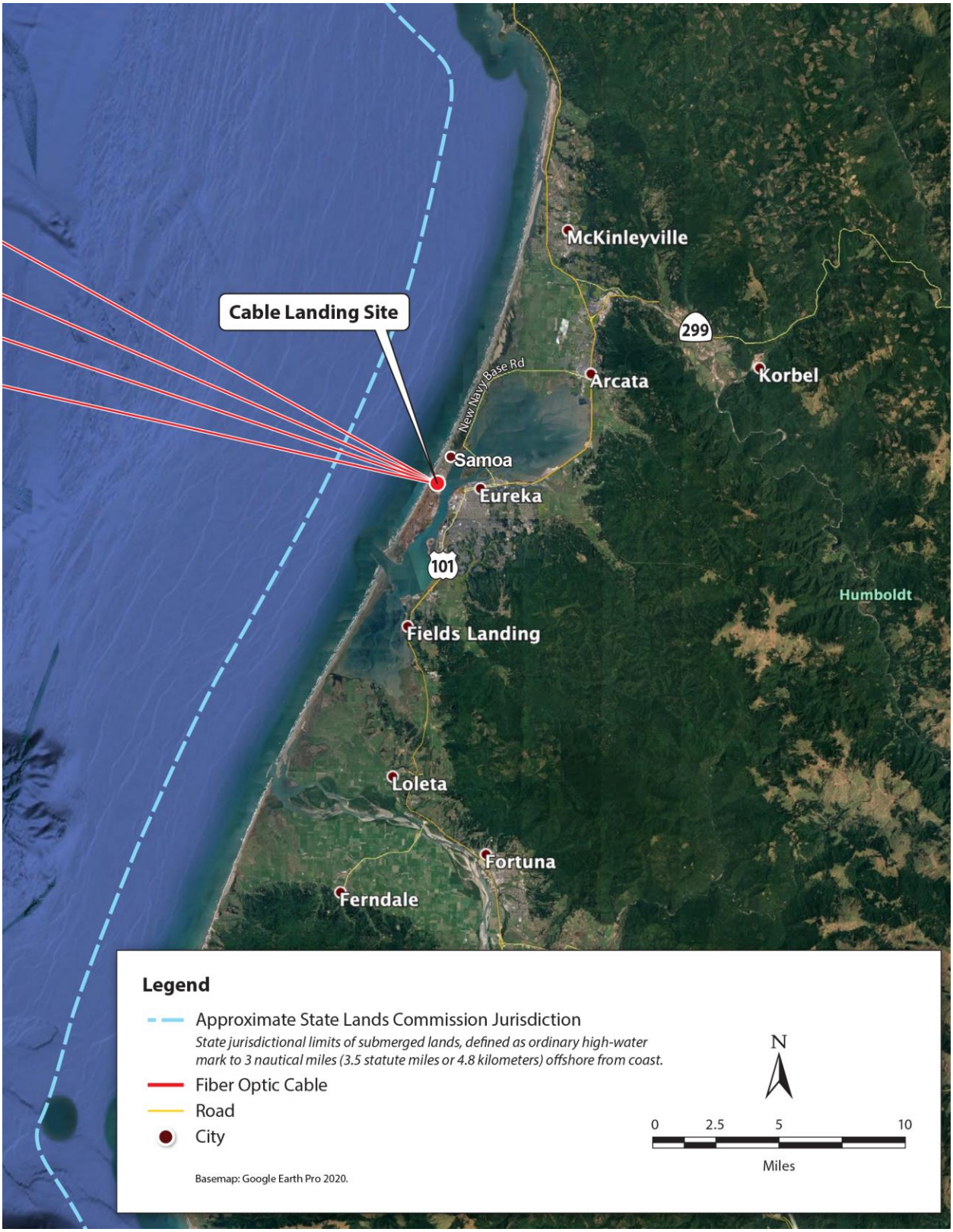
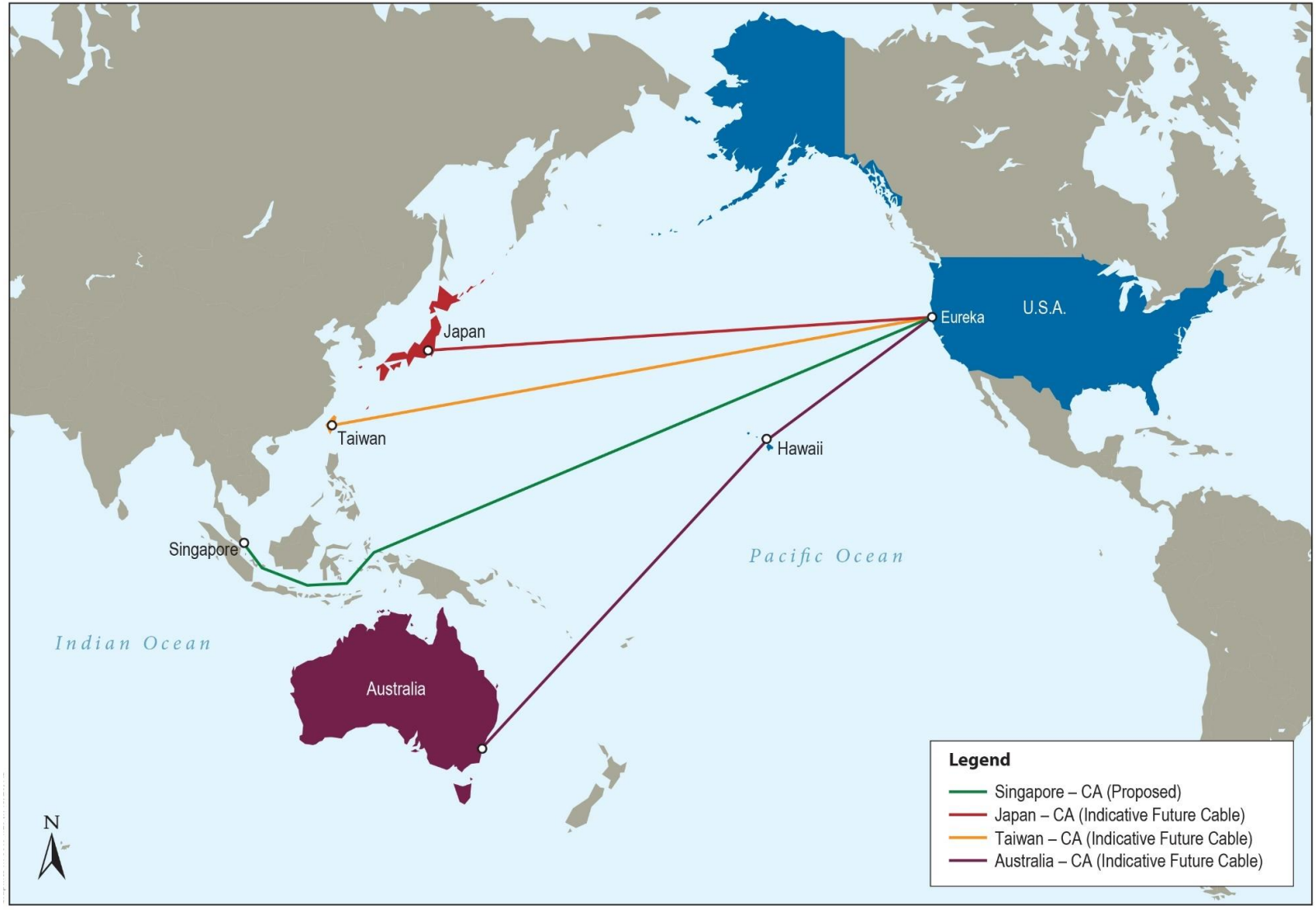


Figure 1-2. Proposed Project Phases



1.4 ORGANIZATION OF THE MITIGATED NEGATIVE DECLARATION

This Initial Study/Mitigated Negative Declaration (IS/MND) is intended to provide the California State Lands Commission (CSLC), as lead agency under the California Environmental Quality Act (CEQA) (Pub. Resources Code, § 21000 et seq.), and other responsible agencies with the information required to exercise their discretionary responsibilities for the proposed Project. The MND is organized as follows:

- **Section 1** presents the Project location and background, agency and Applicant information, Project objectives, anticipated agency approvals, and a summary of the public review and comment process.
- **Section 2** describes the proposed Project including its layout, equipment, facilities, operations, and schedule.
- **Section 3** presents the IS, including 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.[3]
- **Section 4** presents the Mitigation Monitoring Program.
- **Section 5** discusses other CSLC considerations relevant to the Project, such as climate change, sea-level rise, commercial and recreational fishing, and environmental justice, in addition to the environmental review required pursuant to CEQA.
- **Section 6** presents information on report preparation and references.
- **Appendices** include specifications, technical data, and other information supporting the analysis presented in this MND:
    - Appendix A: Abridged List of Major Federal and State Laws, Regulations, and Policies Potentially Applicable to the Project
    - Appendix B: Air Quality and Greenhouse Gas Analysis Methods and Results
    - Appendix C: Terrestrial and Marine Biological Resource Information
    - Appendix D: Marine Cultural Resources Report

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

1.5 PROJECT BACKGROUND AND OBJECTIVES

1.5.1 Project Need

Technology has been connecting the world during the recent COVID-19 pandemic. The world has relied on technology now more than ever before for staying connected with loved ones, for work, for education, and even for telemedicine. As the world relies on faster digital media and telecommunication systems (e.g., cell phones, Internet, voice, social media, streaming videos, telework, online learning, telemedicine, banking transactions, and shopping online), the data transferring systems such as fiber optic cables (cables) also need to be upgraded to keep up with the technical advancements to be able to transmit uninterrupted telecommunication data. Virtually all communications and data transmissions are converted to digital data and transmitted across cables. The proposed Project would transmit telecommunication data at a faster speed to connect the United States with Asia (i.e., Singapore, Taiwan, and Japan) and Australia (Figure 1-2). In addition, this Project location was strategically selected as part of a broader plan to ensure that statewide telecommunications needs are met.

1.5.2 Existing Technology and Infrastructure

Ten operating transpacific cable systems link the Western United States to Asia (Japan, mainland Asia, and southeast Asia) and Australia.[4] The cables connecting the United States to Japan carry 82 percent of existing transpacific telecommunication capacity. The older cable technology limits the amount of telecommunication data that can be transferred between the United States and Asia and Australia. Also, the older cable technology could only transmit signals up to 5,500 miles and requires multiple cables to connect the United States to Asia (e.g., Singapore, Taiwan, and Japan) and Australia.

1.5.3 Proposed Technology and Infrastructure

As the world relies on faster and more bandwidth-intensive data transmission and 4G and 5G[5] networks, the proposed Project is needed to keep up with the technical advancements to transmit uninterrupted data. Even though radio and satellite can transmit data long distances, only subsea cables can supply the volume, speed, reliability, and cost efficiency to meet current and future data demands.

1.5.4 Project Objectives

The proposed Project would help achieve the following objectives:

[4] The 10 cable systems are: Pacific Crossing-1 (PC-1); Tata TGN-Pacific; New Cross Pacific (NCP); FASTER; Japan-U.S.; Unity/EAC-Pacific; Southern Cross Cable Network (SCCN); Huawei; SEA-US; and Asia-America Gateway (AAG).

[5] 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.

- Respond to the increasing need for connecting the United States with Asia (e.g., Singapore, Taiwan, and Japan) and Australia by installing modern cables with higher data transmission capacity and direct connections between termini
- Increase telecommunication data transmission speeds
- Avoid identified seismically unstable zones
- Create diverse telecommunication pathways between the United States and Pacific Rim cities and countries

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 CSLC's staff report. In accordance with State CEQA Guidelines section 15074, subdivision (b), the CSLC will review and consider the MND, together with any comments received during the public review process, prior to taking action on the MND and Project at a noticed public meeting.

1.7 APPROVALS AND REGULATORY REQUIREMENTS

1.7.1 California State Lands Commission

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

On tidal waterways, 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 or where the boundary has been fixed by agreement or a court. CSLC's authority is set forth in Division 6 of the Public Resources Code and the agency is regulated by the California Code of Regulations, title 2, sections 1900–3016. CSLC has authority to issue leases or permits for the use of sovereign lands held in the Public Trust, including all ungranted tidelands, submerged lands, and the beds of navigable lakes and waterways, and retains certain residual and review authority for tidelands and submerged lands legislatively granted in trust to local jurisdictions (Pub. Resources Code, §§ 6009, subd. (c); 6009.1; 6301; 6306). 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 lease to use the area under the CSLC's jurisdiction from the OHWM to 3 nm offshore from the coast (Figure 1-1).

1.7.2 Other Agencies

In addition to 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 1-1). The Applicant has started coordination with some of the relevant regulatory permitting agencies (Appendix B). As part of the Project, all permits required for the Project would be obtained before starting construction.

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

Permitting Agency		Anticipated Approvals/Regulatory Requirements
Federal	U.S. Army Corps of Engineers (USACE)	CWA Section 404 and Section 10 Permit (under Nationwide Permit No. 12)
	U.S. Coast Guard (USCG)	Notice to Mariners
	U.S. Fish and Wildlife Service (USFWS)	Federal Endangered Species Act (FESA) Section 7 consultation (if required)
	National Marine Fisheries Service (NMFS)	FESA Section 7 consultation and consultation on marine mammal/sea turtle protection
State	California Coastal Commission (CCC)	Coastal Zone Management Act Consistency Certification for the U.S. Army Corps of Engineers Section 404 Authorization and Coastal Development Permit
	California State Lands Commission (CSLC)	Submerged Lands Lease and CEQA Lead Agency
	Native American Heritage Commission (NAHC)	Tribal Consultation
	State Historic Preservation Office	National Historic Preservation Act Section 106 Compliance
Regional	Humboldt Bay Harbor, Recreation, & Conservation District	Land Lease
	North Coast Regional Water Quality Control Board (North Coast RWQCB)	Clean Water Act (CWA) Section 401 Water Quality Certification
	North Coast Unified Air Quality Management District	Authority to Construct and Permit to Operate

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2.1 PROJECT WORK AREAS

RTI Infrastructure, Inc. (Applicant) is proposing the RTI Infrastructure, Inc. Eureka Subsea Fiber Optic Cables Project (Project) to install four subsea fiber optic cables (cables) carrying telecommunication data to connect the United States with Asia (e.g., Singapore, Taiwan, and Japan) and Australia. Because the MND analyzes impacts from the Project under California's jurisdiction, the analysis would not change if the cables came from a location other than Singapore, Taiwan, or Japan as long as the cable stayed within the same route analyzed in California's jurisdiction. The Project entails four phases (Section 2.2.1, *Work Phases*) (Figure 1-1). Phase 1 would build all of the infrastructure to receive these four cables and bring the first cable from Singapore to California (SP-CA) in 2021. The subsequent phases would install future cables in the ocean and utilize the infrastructure constructed in Phase 1. The cables would be connected with soon-to-be-built terrestrial cable infrastructure that is not part of the proposed Project.[6] Project-related work would take place in both terrestrial (land) and marine (ocean) areas onshore and offshore of a privately-owned parcel of land in Samoa, a census-designated[7] place in Humboldt County, California. Samoa is 1.5 miles northwest of Eureka, at an elevation of 23 feet in the northern peninsula of Humboldt Bay (Figure 1-2).

2.1.1 Summary of Terrestrial Project Components

The cable landing site is the only terrestrial Project component (further discussed in Section 2.3, *Detailed Terrestrial Project Components*) needed to install four cables (coming from Asia or Australia) and their related structures on land above the ordinary high-water mark (OHWM) (Figure 2-1). The California State Lands Commission's (CSLC) jurisdiction extends from the OHWM to 3 nautical miles[8] (nm) offshore.

The four cables would land in a private and unoccupied area of the Humboldt Bay Harbor, Recreation, & Conservation District (Harbor District). An approximately 1-acre area would be used for the following key Project components in the cable landing site:

- **Staging Area.** The cable landing site would be used to park vehicles and store construction-related equipment for both terrestrial and marine work. An additional already paved staging area would be used in a nearby location, not yet determined.
- **Landing Vaults (LVs).** Four LVs (approximately 8 feet wide by 12 feet long by 9 feet deep) would be buried at the cable landing site. Each LV would have its own

[6] The subsea cables would connect to soon-to-be-built terrestrial cable infrastructure owned by Vero Networks, a local telecommunications company.

[7] A census-designated place is a population that, unlike a city, has not been incorporated.

[8] One nautical mile is equal to 1.1508 statute miles. Nautical miles relate to charting and ocean navigation and are based on degrees of latitude around the equator. Statute or "land" miles is used throughout the rest of the document.

cast-iron vault cover (36 inches in diameter) and would be at grade level (flush with the ground) (Figure 2-1). A separate landing pipe (described below) would be installed from each of the LVs and would exit offshore into the Pacific Ocean. Once the landing pipes are installed, each individual cable (from different Project phases) would be pulled from the Pacific Ocean through its own designated landing pipe into its own designated LV. After completion of the Project, the cables ultimately would connect to onshore cables operated by local telecommunications carriers. The LVs also would provide access to the landing pipes for maintenance activities related to the cables.

- **Landing Pipes.** An independent landing pipe[9] (approximately 5 to 6 inches in diameter) would be installed from each LV for each of the four cables. Each landing pipe would be approximately 4,600 feet long, starting from the LV and ending offshore. The landing pipes would be installed using the horizontal directional drilling (HDD) construction method, starting from the LVs (Figure 2-3). Each landing pipe would continue waterward of the LV at a minimum depth underground of approximately 35 feet, going under the beach and surf zone, and gradually would move upward until it exits the ground offshore at approximately 4,600 feet waterward of the LV and in about 40 feet of water depth.
- **Ocean Ground Beds (OGBs).** A grounding system known as an OGB would be needed for cathodic protection to control corrosion and to provide a ground for the electricity travelling through the cable to power the marine cable amplifiers (Figure 2-2). The four OGBs (one for each cable) would be installed onshore (underground in the cable landing site (Figure 2-1) or offshore (about 50 feet west of where the landing pipes would exit, as seen in Figure 2-3).

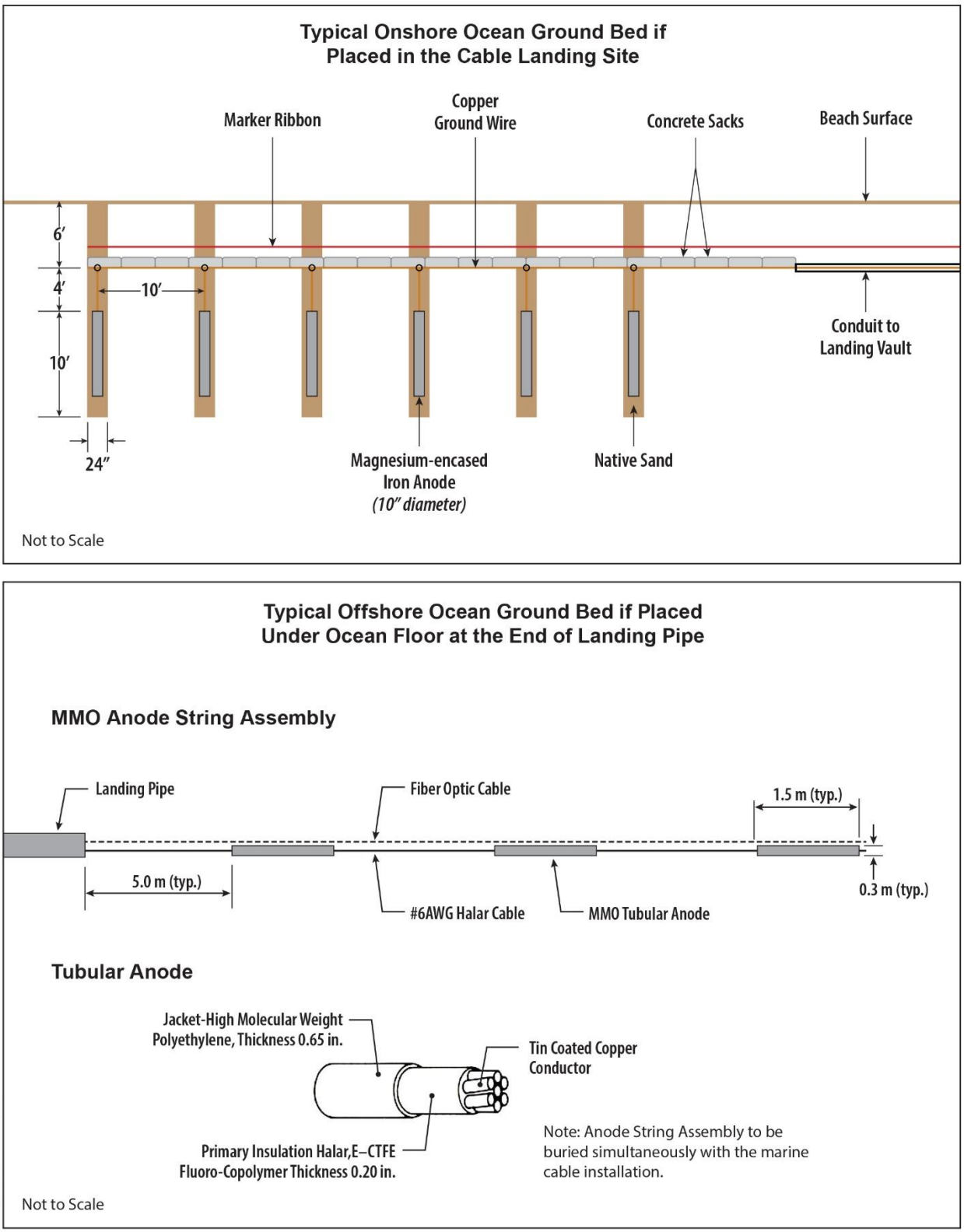
Ultimately, the four cables would connect to a single vault (Figure 2-1) that would be built by a local telecommunications company (Vero Networks)[10] and would be outside of the scope of this Project. The local telecommunications company project is a separate project and has independent utility from the Project analyzed in this MND and requires a separate CEQA analysis. Each cable would be connected to this soon-to-be-built vault that would be located adjacent to the Project vaults. The local telecommunications company would then install conduits west to New Navy Base Road and then northerly along New Navy Base Road to connect with an existing building that will become a new cable landing station (also not part of the Project).

[9] Each landing pipe (about 5 or 6 inches in diameter) would be approximately 4,600 feet long; approximately 3,600 feet of this amount would be offshore. The total length for all four landing pipes would be about 18,400 feet.

[10] The local telecommunications company (Vero Networks) would obtain their authorizations from the California Public Utilities Commission. Because they are a Competitive Local Exchange Carrier, they have an existing Certificate of Public Convenience and Necessity from the California Public Utilities Commission. They would obtain their authorization under that permit to connect to the LVs when the proposed Project is completed.

Figure 2-1. Terrestrial Project Components

Figure 2-2. Cross Section of Ocean Ground Bed (Onshore and Offshore)



2.1.2 Summary of Marine Project Components

The marine Project components (further discussed in Section 2.4, *Detailed Marine Project Components*) would be needed to install four cables (coming from Asia or Australia) and their related structures. Landing pipes would be installed from the cable landing site and would extend offshore about 3,600 feet (0.6 mile or 0.5 nm) beyond the cable landing site to water depth of approximately 40 feet. This exit point would be just beyond the surf zone where it would be safe for divers to work. From the offshore exit point, the cables would be buried under the ocean floor until they reach the Outer Continental Shelf (OCS) at 5,904 feet water depth (deep waters) where the cables would not be buried and would just be dropped on the ocean floor.

The scope of this Project ends at 3 nm[11] offshore to correspond with the boundaries of CSLC's jurisdiction, as seen in Figure 1-1. The following marine Project components (Figure 2-3) would start at the OHWM of the Pacific Ocean and end at 3 nm from the shoreline:

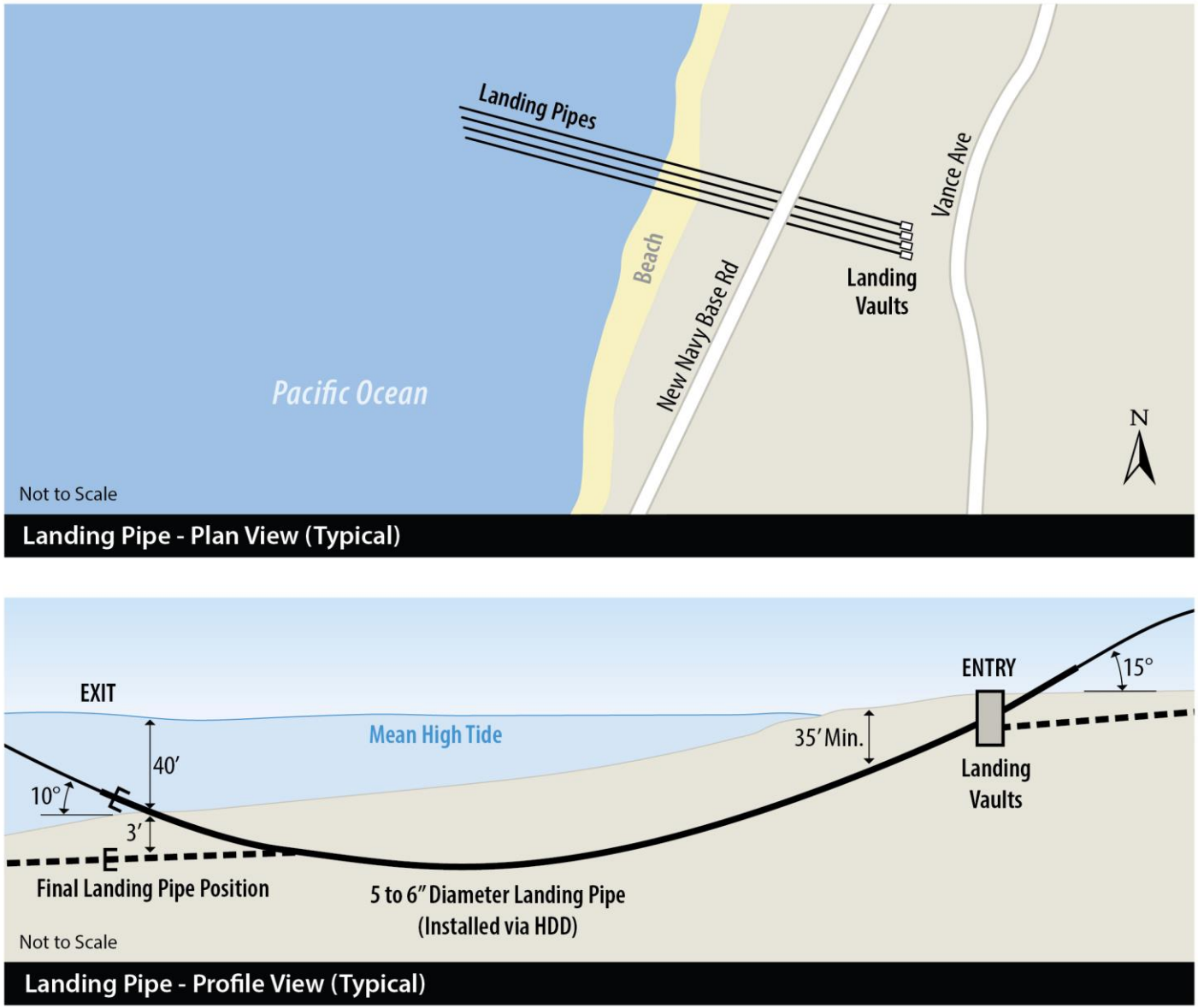
- **Landing Pipes.** As noted above, four landing pipes (approximately 5 to 6 inches in diameter) would be installed. Each landing pipe would be approximately 4,600 feet long, starting from the LV and ending offshore. The landing pipes would be installed at least 35 feet under the cable landing site and beach using the HDD construction method and would exit at about 3,600 feet (0.5 nm or 0.6 mile) offshore at a water depth of approximately 40 feet. Four cables would be pulled through these landing pipes and brought into the LVs.
- **Fiber Optic Cables.** The cable lay ship (with the help of a dive support vessel and divers) (Figure 2-5 below) would bring each cable (in different Project phases) to the end of the landing pipe at about 3,600 feet offshore (or 4,600 feet from the LVs) where the ocean water depth is approximately 40 feet. Each cable then would be pulled through its own individual landing pipe (constructed in Phase 1) to its respective LV.

  Before reaching the landing pipe, the cable would be installed as follows:

  - In ocean water 5,904 feet deep or more, the cables would lay directly on the ocean floor at approximately 32 miles offshore from the LVs at the OCS.
  - In ocean water between 98 and 5,904 feet deep, the cable would be buried under the ocean floor by cable plow, or by diver-assisted or remotely operated vehicle- (ROV) assisted post-lay burial, depending on ocean floor characteristics.
  - In ocean water between 40 and 98 feet deep, the cable would be installed by diver-assisted post-lay burial.

[11] After 3 nm, federal waters extend 12 nm from shore and the United States Exclusive Economic Zone extends 200 nm from shore.

Figure 2-3. Marine Project Components



- **Ocean Ground Bed (OGB) Offshore.** An OGB would be installed onshore or offshore (to be determined after the electronic components of the cable system are designed and manufactured) for each cable to ground the cable. An OGB is crucial for cathodic protection to control corrosion and to provide a ground for the electricity that would travel through the cable to power the marine cable amplifiers. This MND will analyze both onshore (Figure 2-1) and offshore (Figure 2-3) OGB installation options.

2.2 PROJECT WORK PHASES AND WORK SCHEDULE

2.2.1 Work Phases

Four cables would be installed to connect the United States to Asia and Australia (Figure 1-1). Regardless of where these cables originate, construction activities associated with their installation in California would be similar, as summarized below.

- **Phase 1: Singapore to California (SP-CA) Expected in 2021.** This initial phase would build the infrastructure to receive four cables and bring the very first cable from Singapore to California through the following key Project components:
    - Set up the cable landing site (including the staging area and LVs)
    - Install four landing pipes (for four cables)
    - Install cable starting from offshore by laying it on the ocean floor up until 5,904 feet depth, and then burying it from here until 40 feet depth until it reaches the landing pipe
    - Pull the marine cable through its own dedicated landing pipe to end in its own designated LV
    - Install one OGB (onshore or offshore) for this cable
- **Phase 2: Taiwan to California Expected in 2022.** This phase would connect California to Taiwan through the following key Project components:
    - Install cable starting from offshore by laying it on the ocean floor up until 5,904 feet depth, and then burying it from here until 40 feet depth until it reaches the landing pipe
    - Pull the marine cable through its own dedicated landing pipe to end in its own designated LV
    - Install one OGB (onshore or offshore) for this cable
- **Phase 3: Japan or Australia to California Expected in 2023.** This phase would connect California to Japan or Australia (not yet determined which would be installed first) through the following key Project components:

  - Install cable starting from offshore by laying it on the ocean floor up until 5,904 feet depth, and then burying it from here until 40 feet depth until it reaches the landing pipe
  - Pull the marine cable through its own dedicated landing pipe to end in its own designated LV
  - Install one OGB (onshore or offshore) for this cable
- **Phase 4: Japan or Australia to California Expected in 2024.** This phase would connect California to Japan or Australia (not yet determined which would be installed first) through the following key Project components:
  - Install cable by laying it on or burying it under the ocean floor until it reaches the landing pipe
  - Pull the marine cable through its own dedicated landing pipe to end in its own LV
  - Install one OGB (onshore or offshore) for this cable

2.2.2 Work Schedule

Table 2-1 provides the anticipated work schedule for the Project's four phases. The terrestrial and nearshore activities would take place during daylight hours, 7 days a week, to comply with Humboldt County noise standards.

- **Terrestrial Work.** Terrestrial work would take place only during daylight hours and would require the following lengths of time (Table 2-1):
  - Phase 1. Approximately 5 months[12]
  - Phases 2, 3, and 4. Approximately 3.5 months for each phase
- **Marine Work.** Offshore marine-related work would continue for 24 hours a day for 7 days a week, or for 12 hours a day for 6 days a week (Table 2-1). The duration of marine work would depend on the permit requirements from the California Coastal Commission (CCC). Once the cable ship arrives offshore near the seaward end of the landing pipe and work starts, it would take up to 48 hours to pull the cable from offshore through the landing pipe that would bring the cable into the LV (referred to as "Marine cable pulling from offshore to onshore" in Table 2-1).

[12] Installation of the landing pipes could require from 3 to 4 weeks or from 5 to 7 weeks, depending on the construction schedule (see Table 2-1).

Table 2-1. Proposed Construction Schedule for Project Phases 1–4

Component	Proposed Start Date	Proposed Hours	Duration
Phase 1			
Install landing pipes using marine HDD machines	Summer 2021	24 hours/day for 7 days/ week or 12 hours/day for 6 days/ week	3 to 4 weeks or 5 to 7 weeks
Install OGB onshore or offshore and landing vaults	Summer 2021	Daylight, 7 days/week	2 weeks
Pre-lay grapnel run	Summer 2021	24 hours/day, 7 days/week	1 week
Marine cable pulling from offshore to onshore	Fall 2021	24 hours/day, 7 days/week	2 days
Marine cable lay on the ocean floor	Fall 2021	24 hours/day, 7 days/week	4 weeks
Marine cable burial (diver-assisted)	Fall 2021	Daylight, 7 days/week	1 week
Marine cable burial (ROV-assisted)	Fall 2021	24 hours/day, 7 days/week	2 weeks
Phase 2			
Install OGB onshore or offshore	Fall 2022	Daylight, 7 days/week	2 weeks
Pre-lay grapnel run	Fall 2022	24 hours/day, 7 days/week	1 week
Marine cable pulling from offshore to onshore	Fall 2022	24 hours/day, 7 days/week	2 days
Marine cable lay on the ocean floor	Fall 2022	24 hours/day, 7 days/week	4 weeks
Marine cable burial (diver-assisted)	Fall 2022	Daylight, 7 days/week	1 week
Marine cable burial (ROV-assisted)	Fall 2022	24 hours/day, 7 days/week	2 weeks
Phase 3			
Install OGB onshore or offshore	Fall 2023	Daylight, 7 days/week	2 weeks
Pre-lay grapnel run	Fall 2023	24 hours/day, 7 days/week	1 week
Marine cable pulling from offshore to onshore	Fall 2023	24 hours/day, 7 days/week	2 days
Marine cable lay on the ocean floor	Fall 2023	24 hours/day, 7 days/week	4 weeks
Marine cable burial (diver-assisted)	Fall 2023	Daylight, 7 days/week	1 week
Marine cable burial (ROV-assisted)	Fall 2023	24 hours/day, 7 days/week	2 weeks
Phase 4			
Install OGB onshore or offshore	Fall 2024	Daylight, 7 days/week	2 weeks
Pre-lay grapnel run	Fall 2024	24 hours/day, 7 days/week	1 week
Marine cable pulling from offshore to onshore	Fall 2024	24 hours/day, 7 days/week	2 days
Marine cable lay on the ocean floor	Fall 2024	24 hours/day, 7 days/week	4 weeks
Marine cable burial (diver-assisted)	Fall 2024	Daylight, 7 days/week	1 week
Marine cable burial (ROV-assisted)	Fall 2024	24 hours/day, 7 days/week	2 weeks

Terms:
HDD = horizontal directional drilling
OGB = ocean ground bed
ROV = remotely operated vehicle
Note: For each phase, the staging area at the cable landing site would be occupied from approximately 2 weeks before starting construction until approximately 2 weeks after construction ends.

2.3 DETAILED TERRESTRIAL PROJECT COMPONENTS

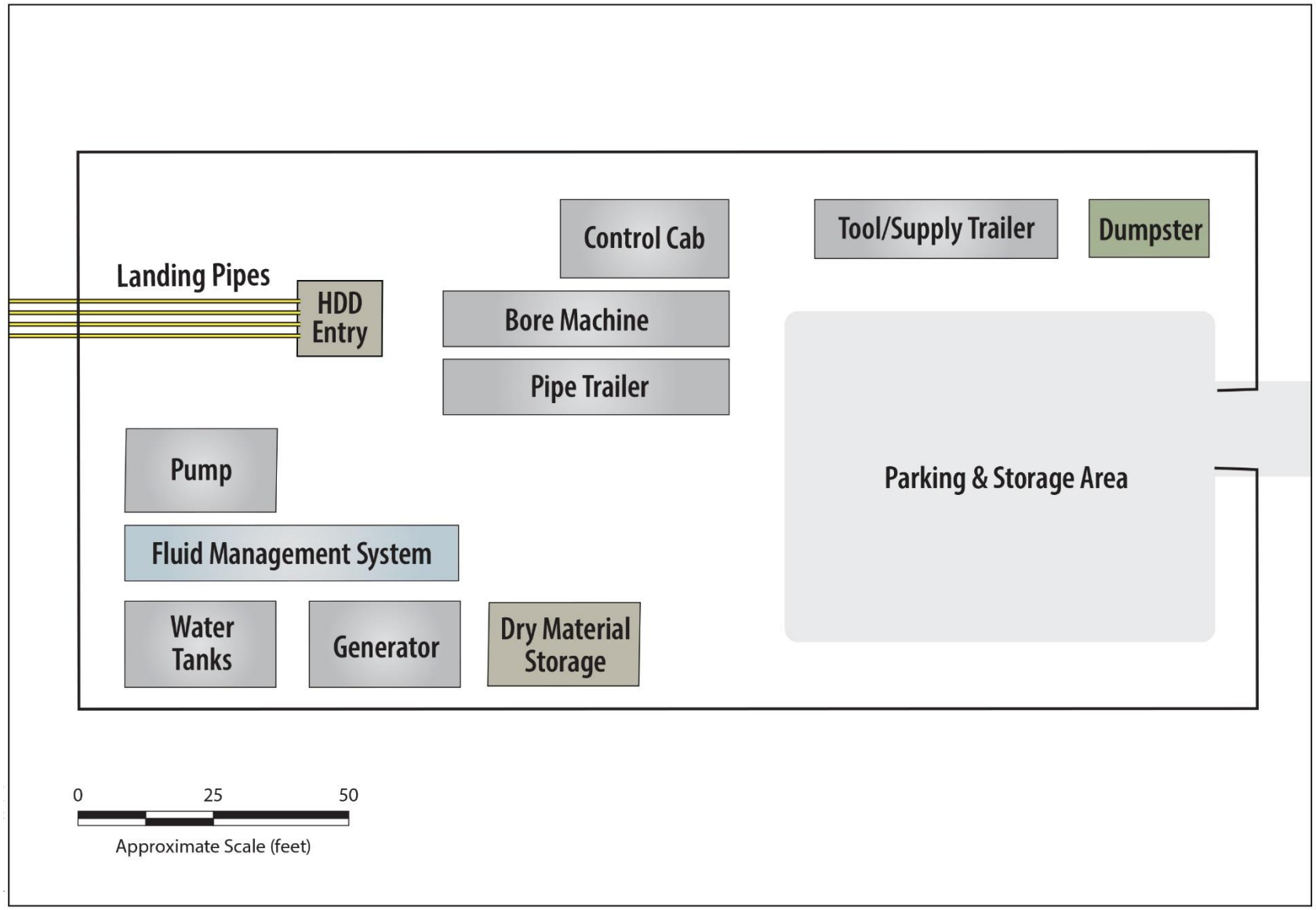
Terrestrial Project activities are those landward of the OHWM and would include the key Project components described below.

2.3.1 Cable Landing Site

The cables would be pulled into the LV on the cable landing site from offshore landing pipes (Figure 2-4). Some of the key Project components in the cable landing site are listed below:

- **Staging Area.** For each phase, the staging area at the cable landing site 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 material such as backhoes, landing pipe, and drilling equipment needed to install the terrestrial components of the Project would be brought to the staging area and stored there (Figure 2-4). As noted above, four landing pipes would be installed in Phase 1. For Phases 2 through 4, the cable landing site would be used to install the OGBs and to pull the cables into their designated landing pipes to their respective LVs.
- **Landing Pipes.** In Phase 1, the HDD construction equipment would be operated in the cable landing site to install all four landing pipes (5 to 6 inches diameter each and approximately 4,600 feet long). As part of Phase 1, the first cable would be brought to Samoa. As part of Phases 2, 3, and 4, each of the remaining three cables (Figure 1-1) would be pulled through its designated landing pipe offshore (installed as part of Phase 1) (one per pipe) and be brought onshore into its designated LV (see Section 2.4.4 for additional detail).
- **Landing Vaults (LVs).** For each landing pipe, a separate LV (approximately 8 feet wide by 12 feet long by 9 feet deep) would be buried at grade level with a cast-iron vault cover (36 inches in diameter). The vault covers would be marked with appropriate identification and would be secured (i.e., locked and bolted). The LVs would be installed in 2 days by excavating with a rubber-tired backhoe or excavator, placing the vault in the excavation, and then backfilling around the vault. Operators then would compact the material using a hand-operated vibratory compactor. Although excess material is not expected, any material that is not replaced on site would be hauled to a local landfill site.

Figure 2-4. Cable Landing Site



Splicing of the marine cable to the soon-to-be-built terrestrial cables would occur at a later date by the local cable provider and is not part of the proposed Project. This future work would happen completely within the LVs. The cables would be pulled into the LV and spliced onto the terrestrial cable. After the fiber optic cables are fused together, they would be encased in a splice case and secured to the wall of their respective LV.

The proposed Project would be completed when the four cables are installed into the landing pipes and terminated in their respective LVs.

- **Ocean Ground Beds (OGBs).** An OGB would be installed onshore or offshore for each cable for cathodic protection to control erosion and to ground electrical signals traveling through the cable to power the marine cable amplifiers. The final location of the OGBs would be determined after the electronic components of the cable system are designed and manufactured. At that time, the system engineers would be able to select the grounding location that would offer the best performance characteristics.

  Figure 2-2 above illustrates a cross section of the onshore and offshore OGB options, with the following differences:

  - Onshore near the location of the LV. If installed on land, the OGB would be within approximately 100 feet of the LV. Each OGB would consist of up to six anodes constructed of cast iron and encased in a magnesium canister 10 inches in diameter and up to 84 inches in length. The anodes would be placed in a line and spaced at 10-foot intervals. The tops of the anodes would be approximately 10 feet below grade. Ground cable would be buried approximately 6 feet below grade and lead from each OGB to the LV. The OGBs would be located approximately 250 feet landward of the mean high-water line.

  - Offshore under the ocean floor. If the offshore anode (i.e., American wire gauge mixed metal oxide [MMO]) array is used, the OGB would be installed in the ocean about 50 feet offshore from where the landing pipes would exit. The tubular anodes would be MMO rods approximately 11.8 inches in diameter and approximately 4.9 feet in length. Three to five anodes would be connected in a linear or string fashion to create an MMO anode string assembly. Each anode on the array would be approximately 9.8 feet apart and connected by an insulated copper conductor. The MMO anode string assembly would be installed by diver jet burial in the same operation as the marine cable burial. The cable and the ocean anode string assembly would be tied together and buried as part of the same burial operation.

2.3.2 Terrestrial Fiber Optic Cable

The terrestrial cable would be encased in a landing pipe installed 35 feet below the cable landing site. This would protect the cable from future geologic and sedimentary conditions.

2.3.2.1 Install Landing Pipes Using Marine HDD Machines

Using the HDD construction method, four landing pipes (5 to 6 inches in diameter and 4,600 feet long) would be installed from the cable landing site and would achieve a minimum depth of 35 feet as they pass under the beach. The landing pipes would maintain a minimum depth of 35 feet under the ocean floor until the point where they would be directed upward to the exit location offshore. Use of HDD would avoid impacts on the surface area of the shore, surf zone, and ocean floor. At least 60 days before HDD operations, the engineers would provide the CSLC detailed engineering drawings with a supporting site-specific geotechnical report (with surveys completed by an entity with an offshore geophysical survey permit) and calculations. These drawings would depict the horizontal and vertical alignment best fitting the site conditions based on the site-specific geotechnical report.

The cable landing site is approximately 1 acre that includes access roads and equipment and material storage areas. The bore entry pit (shown in the cable landing site in Figure 2-4) for the landing pipes would measure approximately 10 feet wide by 12 feet long by 4 feet deep. A containment pit would be used to capture the material that would be removed from the hole being drilled. This containment pit (not in the water table) would be about 4 feet deep and would contain only inert materials. As the pit would fill with material, the material would be loaded into a dump truck, removed from the site, and disposed of offsite per industry standards. The bore entry pit also would serve as the HDD fluid return pit to collect the HDD fluid that would return to the bore entry site.

Once the landing pipes are completed, the LVs would be installed at the end of their respective landing pipe. Topsoil from the expanded bore pit would be stockpiled during LV installation and used to restore the cable landing site.

2.3.2.2 HDD Machine 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. Two types of drill heads could be used, 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 conduit is inserted. This type of

drill head is used in soft soils such as sands, silts, and clays—the expected composition of material to be encountered during landing pipe installation.

- **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.

The landing pipe would be advanced in 30-foot sections through the bore hole as it is created. Surveys would be conducted in 15-foot and 30-foot increments (using 30-foot joint sections) to verify the drill position and path. The HDD machine would occupy the bore entry site, drilling steel casing into the ground at an angle (Figure 2-3). Once the landing pipe reaches the desired depth, the direction would level out as the drilling continues to push the landing pipe horizontally through the ground. Once the landing pipe reaches the appropriate distance offshore, the drill head would be guided to the ocean bottom at approximately 40 feet of water depth. This operation would happen four times to install four independent landing pipes for the four cables.

The marine HDD would be guided by a drill head fitted with a wireline steering tool in conjunction with an energized wire tracking loop to track the direction of advance (horizontally and vertically) and to determine the exact location of the drill head. The tracking system would be implemented continuously to verify the drill position and path. The wire loop would be placed on the ground in the cable landing site and would be energized for a fraction of a second after each 30-foot joint of pipe is installed. The loop allows the drill operator to triangulate the exact location of the drill head. T-posts would be used to secure the wire and show its location. The cable landing site is private property, without public access. However, there is public access to the beach between the landing vaults and offshore where the landing pipes exit. The crew would instruct anyone in the area to avoid the tracking wire.

The drill head would remain at the landing pipe's exit point offshore (at approximately 40 feet of water depth) until divers would take it off and install a flapper valve. The flapper valve would prevent ocean water from entering the offshore landing pipe. Once a cable comes from Asia or Australia to the landing pipe exit point offshore, the flapper valve would be taken off, and a hydraulic winch in the LV would use a wire rope installed in the landing pipe to pull the cable through the landing pipe and bring it onshore into the LV. This operation would happen four times for the four cables (during each Project phase).

2.4 DETAILED MARINE PROJECT COMPONENTS

The marine Project components are segments between the OHWM and the outer limit of the OCS, at approximately 5,904 feet of seawater depth. The CSLC has jurisdiction from the OHWM to 3 nm offshore (Figure 1-2); the federal jurisdiction is past 3 nm to the OCS. In the CSLC's jurisdiction, the cable would be installed in both soft and hard bottom substrates. The soft bottom substrate predominates, consisting of sand, silt, and clay—

with silt and clay components increasing with greater water depth. Some low- to high-relief hard substrates could be present, but they would be avoided, where feasible, using data from the ocean bottom surveys being conducted by the Applicant prior to construction.

Prior to the installation of each cable, a marine geophysical survey will be conducted. The survey will use hull-mounted sonar to collect bathymetry (ocean floor topography). The survey will also utilize a towed side scan sonar and a subbottom profiler. These tools will allow the determination of the ocean floor makeup, for example sand, soft bottom, rock, etc. This information would be used to determine the final cable alignment of each of the cables proposed to make sure that it would offer the best burial success.

2.4.1 Marine Protected Areas

The Samoa State Marine Conservation Area is located a few miles north of the cable landing site (Figure 3.4-3). This area is located within the larger State Marine Recreation Management Area that extends several miles into the Pacific Ocean. This marine protected area conserves and restores ocean biodiversity and protects cultural marine resources for recreational and commercial purposes, while allowing certain activities such as marine recreation, research, allowing specific recreational and commercial take of salmon, and exempting the Wiyot Tribe from take regulations (CDFW 2020b).

2.4.2 Humboldt Open Ocean Disposal Site

Offshore several kilometers into the Pacific Ocean is the Humboldt Open Ocean Disposal Site (HOODS) (Figure 3.4-3). Periodic dredging is necessary for maintaining safe navigation in the Humboldt Bay area, and an environmentally appropriate disposal site for the dredged sediment is crucial to the area's maritime economy. HOODS was designated by the U.S. Environmental Protection Agency (EPA) in 1995 for this purpose. EPA Region 9 periodically monitors HOODS to ensure that unexpected or significant negative effects are not occurring from past or continued use of the disposal site and to verify regulatory and permit compliance. EPA recently proposed expanding HOODS and depending on the final boundary selection, the southernmost Project cable could potentially be buried under the northernmost boundary of HOODS.

2.4.3 Offshore Wind Farms

In January 2016, the Bureau of Ocean Energy Management (BOEM) received an unsolicited request for a commercial lease from Trident Winds, LLC. The BOEM reviewed the lease application and determined in March 2016 that Trident Winds was legally, technically, and financially qualified to hold a commercial lease on the OCS. The location of the proposed wind farm is approximately 40 kilometers offshore in the Pacific Ocean (Figure 3.4-3). Any future proposed wind farm projects would consider the location of cables during environmental review.

2.4.4 Horizontal Directional Drilling Fluid

HDD drilling fluid (a non-toxic, inert material, typically a solution of bentonite clay and water) would be circulated into the bore hole to prevent it from caving in; the fluid would coat the wall of the bore hole to minimize fluid losses to permeable rock and soil types. Drilling fluid also serves as a lubricant for the drill head and carries the cuttings (pieces of drilled rock) back to the entry pit, where the cuttings (rock, sand, and other materials) are removed so the drilling fluid can be recirculated into the bore hole. Drilling fluid would be used for drilling all conduit except for the final approximately 30 feet of the bore hole offshore. The drilling fluid would be changed to water (instead of the drilling fluid) at the end of the bore hole installing the landing pipes; this would minimize the release of drilling fluid into the ocean floor when the drill bit exits offshore. Spent drilling fluid (except for that lost to the surrounding subsurface material) and cuttings would be temporarily collected in the cable landing site and disposed of at a permitted landfill.

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

The potential for substantial releases of drilling fluid into the environment would be minimized through several measures. Prior to drilling, the geologic characteristics of the substrate would be evaluated to determine the most appropriate route for the landing pipe installation. During drilling, the potential for losing drilling fluid to the substrate would be assessed by monitoring the volume of the drilling fluid that is returning to the bore entry point and monitoring for changes in the drilling fluid’s pressure.

2.4.5 Inadvertent Releases of Horizontal Directional Drilling Fluid

If a loss of fluid volume or pressure is detected, drilling may be stopped or slowed to allow close observation for a surface release in the ocean. If a release is discovered, the marine monitor would work with the driller to take feasible measures to reduce the quantity of fluid released by lowering drilling fluid pressures, thickening the drilling fluid—or both, depending on geologic conditions.

Any surface releases above the OHWM would be contained with sandbags and collected for reuse or disposal as required in an Inadvertent Return Contingency Plan (**MM BIO-5**). For inadvertent releases below the OHWM, it may be impractical to contain and collect releases because of ambient wind and wave energy in nearshore ocean environment. The wind, wave, and subsurface current energy in the nearshore waters of the Project site can be expected to quickly dissipate any inadvertently released drilling fluid.

However, the landing pipe operation would be closely monitored, as directed in the Inadvertent Return Contingency Plan to be developed.

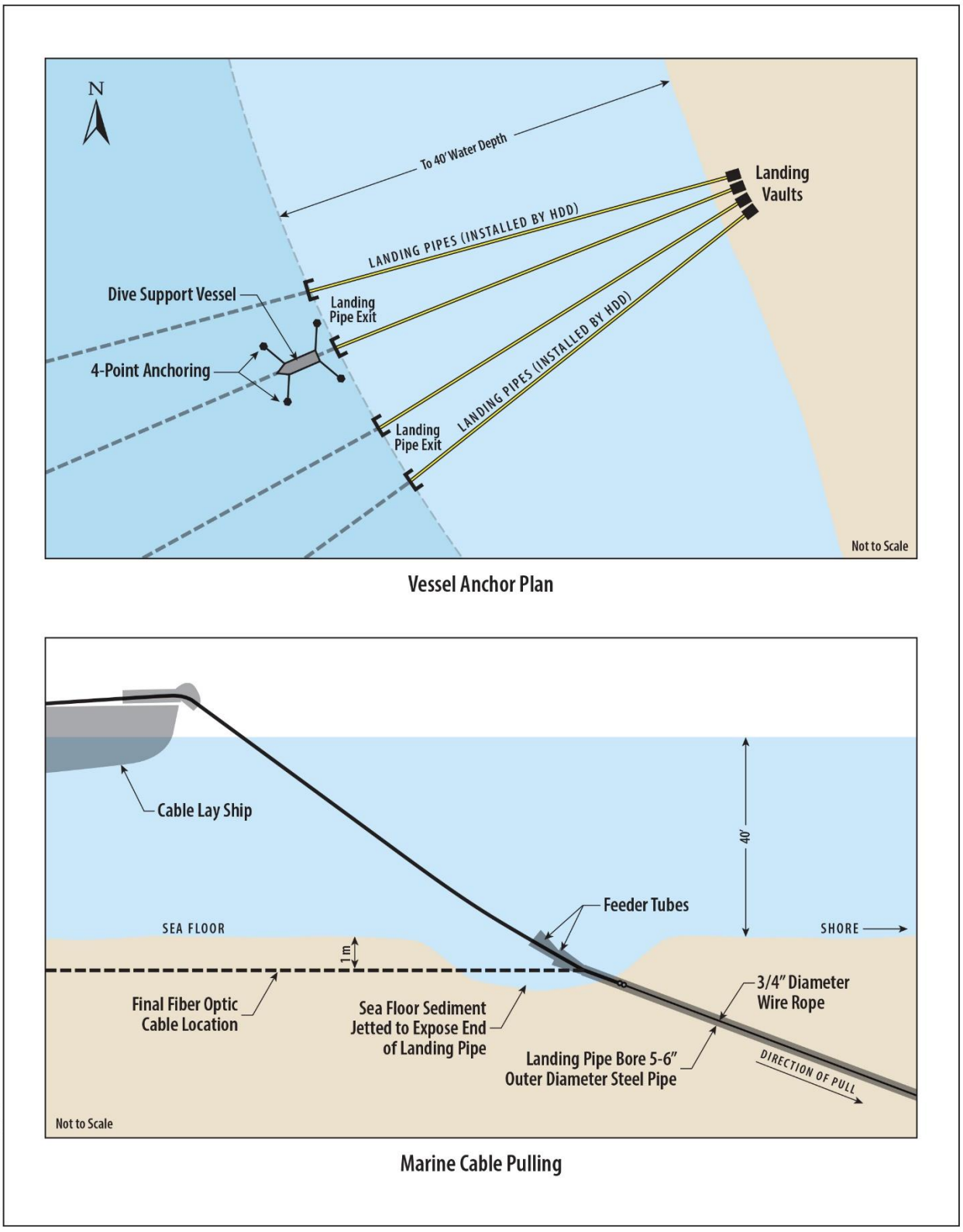
If inadvertent drilling fluid releases are detected in the water column, additional operational measures would be implemented to stop, minimize and control the inadvertent release, as determined feasible by the onsite marine biological monitors, in consultation with the drilling crew and key State agency personnel. Exactly what altered operational measures might be implemented are highly incident specific. Typical measures would include adding lost control materials (e.g., saw dust, binding polymers, and ground nut shells) to the drilling mud to attempt to plug the pathway by which drilling fluid is flowing to the ocean floor, reducing downhole mud pressure to slow the movement of drilling fluid to the ocean, and limiting the flow of drilling fluid into the ocean so that natural oceanographic conditions (wind, wave and current action) can dissipate the released drilling fluid.

Depending on the volume of released material, ocean floor habitats at the point of discharge, and existing oceanographic conditions, if sufficiently large volumes of drilling fluid are deposited onto the ocean floor and pose a significant threat to marine taxa, additional clean-up and removal actions can be implemented including using commercial divers to contain the release with hand-placed barriers (e.g., Brady barrels, or sandbags, silt fences, or silt curtains) and collect released material using vacuum pumps, as practical.

2.4.6 Landing Pipes

Four new landing pipes (5 to 6 inches in diameter) would extend west from the four LVs into the ocean (Figure 2-3), as explained in Section 2.3. These landing pipes would be installed using the HDD construction method. Once a marine cable arrives offshore from Asia or Australia, it would be pulled through a landing pipe and brought onshore into its designated LV (Figure 2-5).

Figure 2-5. Marine Cable Pulling from Offshore to Onshore

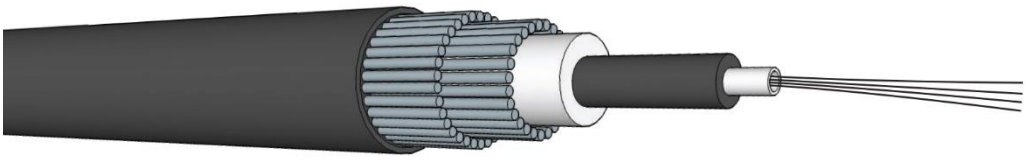


2.4.7 Marine Fiber Optic Cable Design

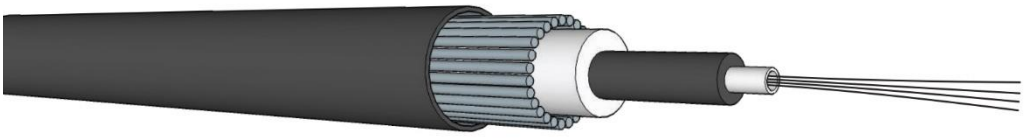
The following two marine cable armoring designs (double armor and single armor) would be used to provide an appropriate degree of protection from geologic and sedimentary conditions encountered during installation and from potential interactions with fishing gear (Figure 2-6):

- **Double-Armored Cable.** This design (less than 2 inches in diameter) offers the greatest degree of protection and is recommended for use in rocky or coarse substrate areas where protection from fishing gear may be warranted. There are two surrounding layers of galvanized wires that are coated with tar to reduce corrosion, two layers of polypropylene sheathing, and an outer layer of tar-soaked nylon yarn.
- **Single-Armored Cable.** This design (less than 2 inches in diameter) is like double-armored cable but with only a single layer of polypropylene sheathing and a single ring of galvanized wires. This cable would be used where there is reduced risk of damage caused by substrate conditions or fishing by burying the cables in soft bottom sediments using a sea plow or ROV.

Figure 2-6. Marine Fiber Optic Cable Designs



Double Armor Marine Fiber Optic Cable



Single Armor Marine Fiber Optic Cable

2.4.8 Signal Regenerators in the Marine Fiber Optic Cables

The marine cable would contain a copper conductor to transmit telecommunication data signals (light pulses). The maximum distance a signal can travel without a regenerator is approximately 35 miles. Therefore, signal regenerators would be required at appropriate intervals in the cables to help transmit the signals from the United States to Asia or Australia.

The regenerator equipment[13] would operate from 48 volts of direct current (DC) electricity using DC power feed equipment housed at the existing cable landing station. The marine cable would transmit this signal (DC electrical power) to the regenerators. The DC power equipment system is not part of the proposed Project because the closest one to California would be more than 3 nm offshore. The completed system would include protective equipment to detect a sharp decrease or sharp increase in electrical current flow in the cables. If an abnormal current flow is detected in the cable, the DC power system would shut down. The DC power would generate a magnetic field on the order of 5 milligauss at 3.28 feet from the cable. The magnetic field would diminish with distance from the cable (such that, at 33 feet, it would be approximately 0.5 milligauss).[14]

2.4.9 Marine Project Construction Methods

Marine Project construction would happen during all Project phases (Table 2-1). The first marine Project component would be to install four landing pipes from the LVs to exit offshore, using the HDD method.

Appendix B discusses the types and number of equipment, and an estimated number of personnel required for Project-related marine construction activities. Overall, marine construction would involve a dive support vessel (primary work vessel), a smaller secondary work vessel, and a cable lay ship (Figure 2-5). Table 2-2 and the text following explains the different marine construction methods that typically would be used at different water depths.

[13] The equipment would be in an existing building not part of this MND.

[14] This magnetic field strength would not adversely affect marine life. The field strength level at 3.3 feet (5 milligauss) is far below the most protective field strength for human health (833 milligauss from the International Commission on Non-Ionizing Radiation Protection [ICNIRP]) and is the equivalent to the field strength from a personal computer at 3.3 feet.

Table 2-2. Summary of Proposed Marine Construction Methods

Approximate Water Depth Range	Approximate Distance Offshore	Likely Installation Method
Landing vault to 40 feet deep	Up to 0.66 mile	Horizontal directional drilling
Between 40 and 98 feet deep	From 0.66 to 1.3 miles	Diver-assisted post-lay burial
Between 98 and 5,904 feet deep	From 1.3 to 32 miles	Cable plow, or diver- or ROV-assisted post-lay burial
Greater than 5,904 feet deep	Beyond 32 miles	Direct-surface lay

Term:
ROV = remotely operated vehicle
Note: All buried and unburied sections would be detailed in a burial report, prepared after each Project phase.

2.4.9.1 Onshore Landing Vault to 40 Feet Water Depth (0.66 mile offshore)

Once all four landing pipes are installed, the cable lay ship would arrive offshore at about 40 feet water depth (about 3,600 feet or 0.66 mile) as it keeps dropping the cable on the ocean floor coming from Asia or Australia.

Exposing Landing Pipe Exit

At approximately 3,600 feet offshore (where the landing pipes exit) (Figure 2-5), divers would jet approximately 10 to 15 cubic yards of ocean floor sediment to expose the end of the landing pipe. The divers would remove the drill head from the landing pipe and install a flapper valve on the end of the landing pipe to keep seawater from entering until the cable is installed into the landing pipe.

Dive Support Vessel (Primary Work Vessel)

A 100- to 200-foot-long dive support vessel (Figure 2-5) would arrive and set up on station within about 50 feet of the landing pipe exit point (about 3,600 feet offshore), using a four-point mooring with an anchor spread of 328 feet. A smaller secondary work vessel would be used with the dive support vessel to set and retrieve anchors, and to shuttle crew between the diver support vessel and the shore. Both of these vessels would be hired locally in California or Oregon. All anchors would be set and retrieved vertically to avoid dragging them across the ocean floor. All anchoring would be conducted as described in a Marine Anchor Plan (**APM-2**), and the anchor drop zones would avoid hard bottom and existing utilities. Refer to Appendix B, Table B-6 (Marine Vessel Inventory) for a list of vessels by phase and the hours per day that each vessel would be in use. Up to 10 employees per day during construction were assumed for purposes of modeling air quality emissions.

Cable Lay Ship

The cable lay ship is a large vessel typically measuring approximately 300 feet to 400 feet and would originate outside of the U.S. The cable lay ship would be laying cable as it arrives in the California coastal waters. Once the cable lay ship arrives offshore, it would position itself several hundred feet oceanward of the end of the landing pipe (3,600 feet offshore) at about 40-foot depth. The divers would connect the end of the incoming cable to an existing wire rope in the landing pipe,[15] install cable chutes (also known as *feeder tubes* as seen in Figure 2-5) into the end of the landing pipe, and attach floats to the cable so it can be pulled through the landing pipe and brought onshore in the LV. The cable would be pulled onshore into the LV by a hydraulic winch and anchored behind the LV. Once the cable is secured in the LV, the cable lay ship would move away from that location. Divers would manage and monitor the pulling process from the dive support vessel.

2.4.9.2 40 to 5,904 Feet Water Depth (0.66 to 32 miles offshore)

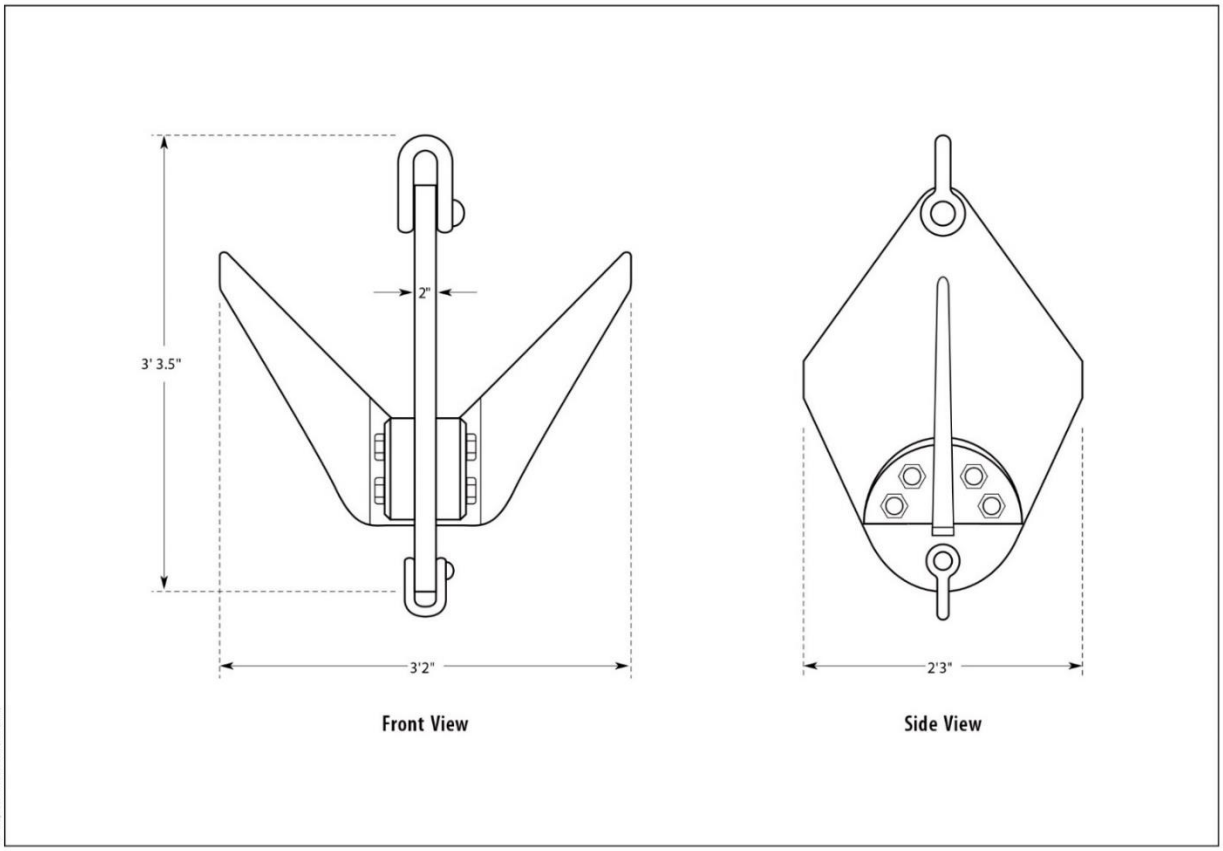
Information from the ocean-bottom surveys[16] would be used to assist in this “run.” The purpose of an engineered pre-lay grapnel run is to clear debris on the bottom of the ocean floor (e.g., discarded fishing gear) along the routes where the cables would be buried. A grapnel, typically of the *flat fish* type, would be dragged along the cable route before cable installation to clear out the path for burying cables (Figure 2-7).

The grapnel would be attached to a length of chain to ensure that it touches the bottom of the ocean floor. The cable lay ship or a dive support vessel 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 ocean floor or shallowly buried to approximately 1.3 feet. If debris is hooked and towing tension increases, towing would stop, and the grapnel would be retrieved by winch. Any debris recovered during the operation would be stowed on the vessel for subsequent disposal in port.

[15] A 0.75-inch wire rope or *pull cable* in the landing pipe would be attached to a hydraulic winch in the LV when the landing pipe is installed.

[16] There is no permit process for surveys outside state waters. Inside state waters, the Low Energy Geophysical Survey Permit would be obtained from CSLC.

Figure 2-7. Flat Fish Grapnel to Clear Ocean Bottom Debris



2.4.9.3 40 to 98 Feet Water Depth (0.66 to 1.3 miles offshore)

Once the cable has been connected to the LV, the cable lay ship would begin to move west (farther offshore) along the predetermined course, rolling out (paying out) the cable as it goes traveling at approximately 2.3 miles per hour (2 knots per hour). The cable would be temporarily laid directly on the ocean floor and later the divers would bury it, starting from the landing pipes exit point at about 0.66 mile (40 feet water depth) to 1.3 miles (98 feet water depth) offshore. Post-lay burial of the cable by ROV would take place between 1 day and 3 weeks after the cable is first laid on the ocean floor.

Divers would use hand jets to open a narrow furrow beneath the cable, allowing the heavy cable to drop into the furrow. The disturbed sediments then would settle back over the cable, filling the furrow and restoring the surface to original grade. Depending on bottom conditions, the cable would be buried to a depth of approximately 3.3 feet.

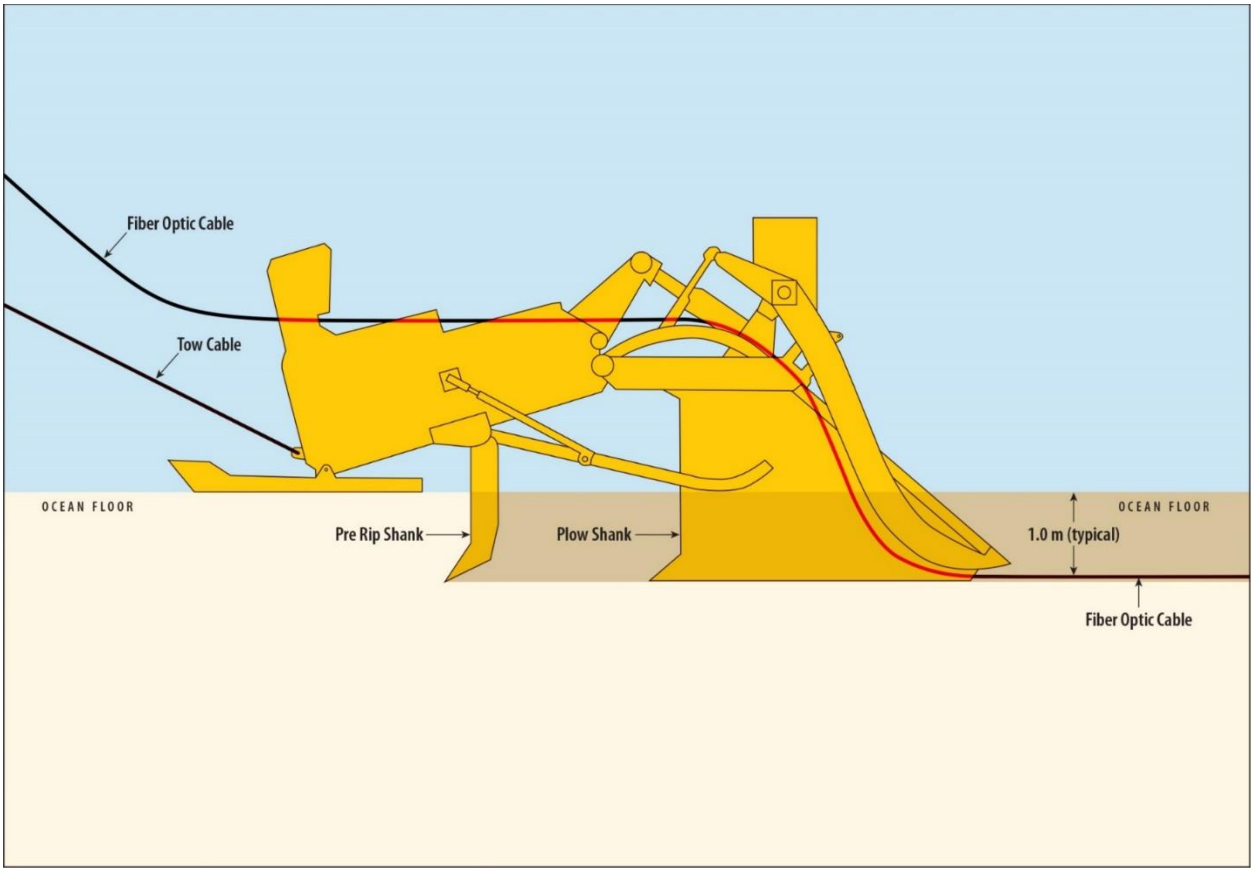
2.4.9.4 98 to 5,904 Feet Water Depth (1.3 to 32 miles offshore)

Sea plow burial would be used beyond water depths of 98 feet to a depth of 5,904 feet. In some locations where plow burial is not possible, the cable would be buried using post-lay burial methods (ROV-assisted post-lay burial) as explained below.

Cable Plow Post-Lay Burial

The cables can be plow buried at water depths of approximately 98 to 5,904 feet, from approximately 1.3 to 32 miles offshore. A sea plow is a sled-like burial tool that would be deployed by the cable lay ship after the shore-end landing operations are complete (Figure 2-8). Once the sea plow, supported by two sled outriggers to a total width of approximately 20 feet, is deployed to the bottom, divers would assist with loading the cable into the sea plow's burial shank. The mechanical movements would be controlled by an operator watching the divers through a video camera mounted on the plow. The cable would be buried at the same time as it would continue to feed through the sea plow shank and into the bottom of the furrow, all in a single operation. The 3.3-foot-wide sea plow furrow would naturally close under the weight of the sediments and the plow sled outriggers. The plow would be expected to operate at the rate of approximately 0.6 mile per hour (approximately 0.5 knot per hour).

Figure 2-8. Sea Plow for Burying Marine Fiber Optic Cables on Ocean Floor



Remotely Operated Vehicle Cable Post-Lay Burial

At water depths of approximately 98[17] to 328 feet, from 1.3 to 8 miles offshore, or where the sea plow cannot be deployed because of bottom conditions, an ROV (a robotic device operated from the cable lay ship) or a similar vessel would be used to bury the cable (Figure 2-5). The ROV would move under its own power and would be tethered to and guided from the cable lay ship. ROV jets would loosen the ocean floor sediments beneath the cable, allowing it to settle to the desired depth of 3 to 4 feet. The disturbed sediments would settle back over the area to their original grade, leaving the cable buried. The ROV would operate at a nominal speed of 0.35 mile per hour (0.3 knot per hour) when jetting. However, the overall rate of forward progress would depend on the number of passes needed to attain target burial depths, a variable that is in turn a function of sediment stiffness. The post-lay burial of cable by ROV would disturb about 15 feet of the ocean floor (not the water column).

2.4.9.5 Greater Than 5,904 Feet Water Depth (32 miles and beyond offshore)

At this depth, the cable lay ship would lay the cable directly on the ocean floor without burial, while maintaining slack control to ensure a straight lay of the cable and ensuring contact with the ocean floor to avoid suspensions.

2.5 CABLE OPERATIONS, MAINTENANCE, AND REPAIR

A differential global positioning system (GPS) would be used when the cable systems are installed. Extensive records would be maintained to track the exact locations of the cable lay ship, sea plows, and ROVs 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, CSLC, and other data users. These records can be used in the future to locate these cables on the ocean floor when a cable repair is needed. These records would be maintained throughout the system's life and after the system is retired. The cable owner is responsible for repair and maintenance of the cable.

2.5.1 Cable Operations and Maintenance

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

[17] There is overlap between the ROV and the plow post-lay burial methods (both start at 98 feet). This is because some plows and vessels can deploy at water depths of 98 feet, while others need more depth.

2.5.2 Emergency Cable Repair (Marine)

Even though the cable would be buried at least 3.3 feet deep below the ocean floor, it can still be damaged by saltwater entering into the landing pipe, or by anchors or fishing gear snagging the cable and causing a *fault* (the point at which transmission is interrupted). There is no specific source with the information of how often faults have happened within the State waters. The Applicant and ICF are not aware of any such faults in California.

These are the two types of emergency repairs that would happen:

- **Buried Repair.** A buried fault would be repaired one of these ways:
    - Shallow-burial repair. The fault usually can be pinpointed by using low-frequency electroding. This type of repair would require adding little if any extra cable (to replace the bad cable) during the repair because of the shallow depth.
    - Up to 20 inches depth repair. A grapnel would be rigged to this location to penetrate and recover the cable buried up to 20 inches.
    - Deeper than 20 inches depth repair. A grapnel, divers, or an ROV would remove the cable from the burial trench and bring it to the surface. The cable then would be repaired and reburied in its original position to the extent practicable.
- **Unburied Repair.** It may be possible to engage the cable and bring it to the surface without cutting. If not, then a cutting blade would be fitted to a grapnel to cut the cable close to the fault location before recovery. A grapnel then would be used to recover each cut end, which would be sealed and temporarily buoyed off for easy recovery later. The other end would be recovered and tested to locate the fault more precisely. The repair vessel would recover the cable until the cable's fault site is on the ship. After the fault site is removed from the system, the repaired cable would be joined to the fault-free cable end, and then the cable would be rolled out (paid out) as the vessel returns to the buoyed end. When the buoy is recovered, the two cable ends would be joined, and the repaired cable would be put back into the ocean.

2.6 RETIREMENT, ABANDONMENT, OR REMOVAL OF THE CABLE SYSTEM

The Applicant has requested a 25-year lease from the CSLC for the Project components under the CSLC's jurisdiction. The Applicant proposes that all terrestrial and marine Project components be left in place and available for future cable systems. Even though the Applicant proposes to keep the structures in place, CSLC authorization would be required for continued occupation beyond the cable's life or once the cable is taken out of service. CSLC's preference is to remove all structures under the CSLC's jurisdiction to ensure that these structures do not become a future public hazard.

At least 2 years before the lease expires, the cable owner(s) 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 cables out of service, the cable owner(s) would notify Humboldt County and the CCC of their decision and how they plan to dispose of the inactive 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 cable's life, subsequent environmental documentation likely would be required to analyze environmental impacts at that time with those existing environmental conditions.

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3.0 ENVIRONMENTAL CHECKLIST AND ANALYSIS

This section presents the Initial Study (IS) for the proposed RTI Infrastructure Inc. Eureka Subsea Fiber Optic Cables Project (Project) in accordance with the requirements of the California Environmental Quality Act (CEQA). The IS identifies site-specific conditions and impacts, evaluates their potential significance, and discusses ways to avoid or lessen impacts that are potentially significant. The information, analysis, and conclusions included in the IS provide the basis for determining the appropriate document needed to comply with CEQA. Based on the analysis and information contained herein, California State Lands Commission (CSLC) staff has found evidence that the Project may have a significant effect on the environment but that revisions to the Project would avoid the effects or mitigate them to a point where clearly no significant effect on the environment would occur. As a result, the 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 document 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 (e.g., Aesthetics, Air Quality, and Biological Resources), are "intended to encourage thoughtful assessment of impacts." Each question is followed by a check-marked box with column headings that are defined below:

- **Potentially Significant Impact.** This column is checked if there is substantial evidence that a Project-related environmental effect may be significant. If there are one or more "Potentially Significant Impacts," a Project Environmental Impact Report (EIR) would be prepared.
- **Less than Significant with Mitigation.** This column is checked when the Project may result in a significant environmental impact, but the incorporation of identified Project revisions or mitigation measures would reduce the identified effect(s) to a less than significant level.
- **Less than Significant Impact.** This column is checked when the Project would not result in any significant effects. The Project's impact is less than significant for the category 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 factors checked below (Table 3-1) would be potentially affected by this Project; a checked box indicates that at least one impact would be a "Potentially Significant Impact" except that the Applicant has agreed to Project revisions, including implementation of mitigation measures, that would reduce the impact to "Less than Significant with Mitigation."

Table 3-1. Environmental Issues and Potentially Significant Impacts

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

Detailed descriptions and analyses of impacts from Project activities and the basis for their significance determinations are provided for each environmental factor on the following pages, beginning with Section 3.1, *Aesthetics*. Relevant 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 – Abridged List of Major Federal and State Laws, Regulations, and Policies Potentially Applicable to the Project.

AGENCY 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.

Afifa Awan — 12/11/2020

Signature — Date

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

3.1 AESTHETICS

AESTHETICS - Except as provided in Public Resources Code Section 21099, would the Project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation**	**Less Than Significant Impact**	**No Impact**
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☒	☐
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the Project is in an urbanized area, would the Project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☐	☒
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

3.1.1 Environmental Setting

The Project consists of temporary work on land (terrestrial) and in the ocean (marine).

3.1.1.1 Terrestrial Components

Cable Landing Site

The Pacific Ocean and Samoa Beach are not visible from the cable landing site due to intervening dune vegetation and topography. Project-related equipment and work in the cable landing site would be visible to individuals traveling along Vance Avenue. An additional already paved staging area would be used in a nearby location, not yet determined.

The Redwood Marine Terminal II (pulp mill), adjacent and to the east, is no longer in operation. The closest residences to the cable landing site are along Bay Street approximately 0.5 mile southeast (Fay Street and Bay Street) and these residents do not have views of the cable landing site. Reference Figure 3.1-1 for sensitive receptors in the Project area and reference the photographs in Figures 3.1-2a through 3.1-2d for views of the Project site from different vantage points.

Figure 3.1-1. Sensitive Receptors

Figure 3.1-2a. Photographs of Project Site Views

Looking east across the cable landing site with the former pulp mill in the background

Figure 3.1-2b. Photographs of Project Site Views

Looking northwest across the cable landing site with the water tower in the background

Figure 3.1-2c. Photographs of Project Site Views

Looking south across the middle of the cable landing site with an old pulp mound in the background

Figure 3.1-2d. Photographs of Project Site Views

Looking southeast across the cable landing site

Samoa Dunes Recreation Area

The Samoa Dunes Recreation Area is located along the beach to the west and south of the cable landing site but is not visible from the cable landing site. The primary access route to the Samoa Dunes Recreation Area is more than 2 miles south of the cable landing site off New Navy Base Road. The Samoa Dunes Recreation Area is a multi-recreational park that attracts off-highway vehicle enthusiasts, hikers, surfers, beachcombers, and fishing enthusiasts from throughout the region.

Highway 101 (Eligible State Scenic Highway)

Highway 101, an eligible State Scenic Highway, is not visible from the cable landing site and is approximately 1.3 miles east of the cable landing site (Caltrans 2018).

3.1.1.2 Marine Components

The temporary marine work would happen about 40 feet below the ocean surface where the approximately 4,600-foot landing pipes would exit offshore. In this offshore area, fishing vessels or freighters pass by periodically. The equipment used offshore would be lit at night in accordance with applicable U.S. Coast Guard (USCG) safety regulations for marine vessels.

3.1.2 Regulatory Setting

Appendix A contains the federal and state laws and regulations pertaining to aesthetics relevant to the Project. Local policies from Humboldt County's Local Coastal Program (LCP) are listed below:

- **Electrical Transmission Lines. Policy 6.a.** Transmission line rights-of-way shall be routed to minimize impacts on the viewshed in the coastal zone, especially in highly scenic areas, and to avoid locations which are on or near habitat, recreational, or archaeological resources, whenever feasible. Scarring, grading, or other vegetative removal shall be minimized and revegetated with plants similar to those in the area.
- **Visual Resource Protection. Policy 30251.** The scenic and visual qualities of coastal areas shall be considered and protected as a resource of public importance. Permitted development shall be sited and designed to protect views to and along the ocean and scenic coastal areas, to minimize the alteration of natural land forms, to be visually compatible with the character of surrounding areas, and, where feasible, to restore and enhance visual quality in visually degraded areas. New development in highly scenic areas such as those designated in the California Coastline Preservation and Recreation Plan prepared

by the Department of Parks and Recreation and by local government shall be subordinate to the character of its setting.

The proposed Project-related activities would be consistent with the above policies and would not result in a potentially significant environmental impact.

3.1.3 Impact Analysis

The terrestrial and marine Project-related work would be temporary. Once the work is completed, there would be no new permanently visible structures. The closest residence to the cable landing site is approximately 0.5 mile southeast on Fay Street and Bay Street, with no view of the Project (Figure 3.1-1). People recreating on Samoa Beach, approximately 0.2 mile west of the cable landing site would not be able to see the site because of intervening topography and vegetation.

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

Less than Significant Impact.

Terrestrial Components

The Project site is not within a scenic vista according to the Humboldt County LCP (Humboldt County 2014). The aesthetic impacts would be temporary for locals, tourists, and recreationalists from the following locations since they would not have Project views:

- **Cable Landing Site.** There would be no new above ground structures at the cable landing site.
- **Samoa Dunes Recreation Area and Samoa Beach.** These areas are not visible from the cable landing site.
- **Residents.** The closest residence to the cable landing site is approximately 0.5 mile southeast on Fay Street and Bay Street. There would be temporary visual impacts (i.e., the presence of construction equipment and trucks) during construction for travelers along Vance Avenue and at the second staging area. Based on the short construction window and compliance with local regulations, and the absence of sensitive receptors (e.g., residences, hospitals, schools, and parks) in the Project vicinity with views of the Project, these temporary visual impacts would be less than significant.

Marine Components

The temporary marine work (about 3,600 feet offshore) and vessels would be visible offshore by boats and onshore from Samoa Beach. This work would last about 7 weeks (or 51 days) during each phase (Table 2-1). Based on the temporary nature of the offshore marine work, visual impacts 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?

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?

(b and c) No Impact.

All Project Components

There are no scenic resources within the Project area. Vance Avenue or New Navy Base Road are not designated as local scenic routes. The Project site is well out of view from highway travelers. Highway 101, approximately 1.3 miles east of the cable landing site, is well out of view of the travelers. Even though Highway 101 is an eligible State Scenic Highway, it has not yet been designated as such (Caltrans 2018). Therefore, there is no impact on scenic resources.

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 structures would be built, thereby maintaining the existing visual character of the site.

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.

All Project Components

There would be no impact from terrestrial areas because this work would occur during daytime hours without introducing any new light or glare to the area. Even though offshore work would be continuous for 24 hours, it would comply with USCG regulations. The night-time lighting would meet all applicable USCG navigational standards. The dive support vessel and secondary work vessel would remain offshore at night, with some limited lighting on the vessels and anchor crown buoys to avoid a navigational hazard to existing marine traffic. This impact would be less than significant.

3.1.4 Mitigation Summary

The Project would not result in significant impacts related to aesthetics; therefore, no mitigation is required.

3.2 AGRICULTURE AND FORESTRY RESOURCES

AGRICULTURE AND FORESTRY RESOURCES[18] - Would the Project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation**	**Less Than Significant Impact**	**No Impact**
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Natural Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Pub. Resources Code, § 12220, subd. (g)), timberland (as defined by Pub. Resources Code, § 4526), or timberland zoned Timberland Production (as defined by Gov. Code, § 51104, subd. (g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

3.2.1 Environmental Setting

Because Humboldt County has not yet been included in the California Natural Resources Agency's Farmland Mapping and Monitoring Program, no lands are designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. There are no forest lands or agricultural lands in the Project area. The Project site is not under Williamson Act contract. The closest Williamson Act-contracted lands are over 5 miles northeast (Humboldt County 2020a). The cable landing site and the existing cable landing station are located on Assessor's parcel number (APN) 401-112-021, and are zoned MC/MG (Industrial, Coastal Dependent Heavy/Industrial General). The adjacent parcels to the north, south, and east also are zoned for industrial uses; and the land west of New Navy

[18] 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 (2019) 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.

Base Road is zoned Natural Resources with a Combining Zone overlay of Coastal Wetlands and Beach and Dune Areas.

3.2.2 Regulatory Setting

Appendix A contains the federal and 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?

(a to e) No Impact.

<u>All Project Components</u>

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

3.2.4 Mitigation Summary

The Project would not affect agriculture or forestry resources; therefore, no mitigation is required.

3.3 AIR QUALITY

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

3.3.1 Environmental Setting

3.3.1.1 Local Climate and Meteorology

The Project is in the North Coast Air Basin (NCAB), which includes Mendocino, Del Norte, Humboldt, Trinity, and northern Sonoma Counties. The climate generally is characterized by cool (dry) summers and mild (relatively damp) winters. Along the coast (terrestrial Project components), temperatures are relatively constant throughout the year (41 to 63 degrees Fahrenheit [°F]). Annual average rainfall (as reported by the Eureka climate monitoring station) is about 40 inches (Western Regional Climate Center 2020). Dominant winds along the coast exhibit a seasonal pattern. In summer months, strong north to northwesterly winds are common; during winter, storms from the south Pacific increase the percentage of days when winds are from the south.

Inversion conditions are common in the NCAB because of the region's topography and coastal air movements. Inversions are created when warm air traps cool air near the ground surface and prevents vertical dispersion of air. During summer, inversions are less prominent, and vertical dispersion of the air is good. However, during cooler months between late fall and early spring, inversions last longer and are more geographically extensive; vertical dispersion is poor, and pollution may be trapped near the ground for several concurrent days.

3.3.1.2 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 U.S. Environmental Protection Agency (EPA) 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, 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 are CO, PM, and SO_2.[19, 20] Other pollutants of concern are nitrogen oxides (NO_X) and reactive organic gases (ROGs), which are precursors to O_3; and the toxic air contaminant (TAC) diesel particulate matter (DPM).[21] Principal characteristics and possible health and environmental effects from exposure to the primary pollutants generated by the Project are discussed below.

- **Ozone (O_3) 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. PM 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. NO is a colorless, odorless gas formed from atmospheric nitrogen and oxygen when combustion takes place under high temperature or high pressure. NO_2 is a reddish-brown irritating gas formed by the combination of NO and oxygen. In addition to

[19] There are also ambient air quality standards for lead, sulfates, hydrogen sulfide, vinyl chloride, and visibility particulates. However, these pollutants typically are associated with industrial sources, which are not included as part of the proposed Project. Accordingly, they are not evaluated further.

[20] Most emissions of NOx are in the form of nitric oxide (Reşitoğlu 2018). Conversion to NO_2 occurs in the atmosphere as pollutants disperse downwind. Accordingly, NO_2 is not considered a local pollutant of concern for the proposed Project and is not evaluated further.

[21] Naturally occurring asbestos (NOA) is found in Humboldt County, but the Project is not within an area of mapped ultramafic rock, and there are no mapped ultramafic rock unit areas in the Project vicinity (California Department of Conservation 2000). Accordingly, NOA is not considered a TAC of concern for the proposed Project and is not evaluated further.

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 respiratory-related deaths (EPA 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 decrement 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 (EPA 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 also can act as a corrosive and oxidant, resulting in property damage such as degradation of rubber products and other materials.

- **Carbon Monoxide (CO).** CO 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 diurnal variations in meteorological conditions lead to lower values in summer and in the afternoon. CO 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 levels at or near ambient (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 the two categories of respirable particles:

    - PM10. These particles have an aerodynamic diameter of 10 microns or less and are about 1/7th the thickness of a human hair. Major sources of PM10

include motor vehicles; wood burning stoves and fireplaces; dust from construction, landfills, and agriculture; wildfires and brush/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 1/28th the diameter of a human hair. Major sources of PM2.5 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 PM10 and PM2.5 also can affect water quality and acidity, deplete soil nutrients, damage sensitive forests and crops, affect ecosystem diversity, and contribute to acid rain (EPA 2020a).

- **Sulfur Dioxide (SO_2).** Sulfur dioxide 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 placed 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 parts 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 part per million, even after up to 3 hours of exposure. Sulfur dioxide also can affect the environment by damaging foliage and decreasing plant growth (EPA 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." Diesel particulate matter 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).

3.3.1.3 Ambient Criteria Pollutant Concentration Stations

Several monitoring stations measure criteria pollutant concentrations in Humboldt County and the NCAB. The nearest station to the Project is the Eureka-Jacobs station, which is approximately 2 miles southeast of the proposed cable landing site. Pollutant concentrations monitored at this station are considered representative of ambient air quality in the Project area. Table 3.3-1 shows the available monitoring data collected at the station from 2017 to 2019.

Table 3.3-1. Available Ambient Criteria Air Pollutant Monitoring Data from the Eureka-Jacobs Station (2017–2019)

Pollutant and Standards	2017	2018	2019
Ozone			
Maximum 1-hour concentration (ppm)	0.063	0.045	0.051
Maximum 8-hour concentration (ppm)	0.059	0.041	0.049
Number of days standard exceeded[a]			
CAAQS 1-hour (>0.09 ppm)	0	0	0
NAAQS 8-hour (>0.070 ppm)	0	0	0
CAAQS 8-hour (>0.070 ppm)	0	0	0
Nitrogen Dioxide (NO_2)			
National maximum 1-hour concentration (ppm)	22.4	58.1	27.9
State maximum 1-hour concentration (ppm)	22	58	27
State annual average concentration (ppm)	2	2	2
Number of days 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]			
National[c] maximum 24-hour concentration (mg/m^3)	114.1	71.0	49.3
National[c] second-highest 24-hour concentration mg/m^3)	72.5	55.4	44.4
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)	17.4	18.6	15.1
State annual average concentration (mg/m^3)[e]	N/A	N/A	N/A
Number of days standard exceeded[a]			
NAAQS 24-hour (>150 mg/m^3)[f]	0	0	0
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

Table 3.3-1. Available Ambient Criteria Air Pollutant Monitoring Data from the Eureka-Jacobs Station (2017–2019)

Pollutant and Standards	2017	2018	2019
Particulate Matter ($PM_{2.5}$)			
National[c] maximum 24-hour concentration (mg/m^3)	49.0	39.6	18.7
National[c] second-highest 24-hour concentration (mg/m^3)	30.5	39.5	18.5
State[d] maximum 24-hour concentration (mg/m^3)	49.0	39.6	18.7
State[d] second-highest 24-hour concentration (mg/m^3)	30.5	39.5	18.5
National annual average concentration (mg/m^3)	8.3	7.7	6.7
State annual average concentration (mg/m^3)[e]	N/A	7.7	N/A
Number of days standard exceeded[a]			
NAAQS 24-hour (>35 mg/m^3)[f]	3	6	0
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.

As shown in Table 3.3-1, the Eureka-Jacobs station has not experienced any violations of the O_3, PM10, or NO_2 ambient air quality standards for which data are available but recorded three violations of the PM2.5 24-hour NAAQS in 2017 and six violations of the same standard in 2018 (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 violations of the 24-hour PM2.5 NAAQS indicate that certain individuals exposed to this pollutant may experience increased acute cardiovascular and respiratory ailments.

3.3.1.4 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 (i.e., 24-hour, 8-hour). Typical *sensitive receptors* are residences, hospitals, schools, and parks. Based on the Project footprint and National Agriculture Imagery Program imagery from the U.S. Department of Agriculture (2018), there are no sensitive receptors within a 1,000-foot buffer of the Project footprint (Figure 3.1-1). The closest residential receptor to the cable landing site is approximately 0.5 mile (2,500 feet) to the southeast, off Fay Street and Bay Street.

3.3.2 Regulatory Setting

Appendix A contains the federal and state laws and regulations pertaining to air quality laws and regulations relevant to the Project. The federal Clean Air Act (CAA) of 1969 and its subsequent amendments form the basis for the nation's air pollution control effort. The EPA is responsible for implementing most aspects of the CAA. A key element of the CAA is the NAAQS for criteria pollutants. The CAA delegates enforcement of the NAAQS to the states. In California, the CARB is responsible for enforcing air pollution regulations and implementing the California Clean Air Act, which requires attainment of the CAAQS by the earliest practical date.

The EPA and CARB use ambient air quality monitoring data to determine whether geographic areas achieve the following NAAQS and CAAQS:

- **Attainment Areas.** Areas with pollutant concentrations that are below or within the ambient air quality standards for the respective air district.
- **Nonattainment or Maintenance Areas.** Areas that do not meet the ambient air quality standards for the respective air district.

For regions that do not attain the NAAQS, the CAA requires preparing a State Implementation Plan. The Project area within Humboldt County is designated as an attainment area (pollutant concentrations are below the ambient air quality standards) for all criteria pollutants under the NAAQS (EPA 2020b). Humboldt County is designated as a nonattainment area (pollutant concentrations are above the ambient air quality standards) for the state 24-hour PM10 standard (CARB 2020d). The County attains all other CAAQS.

The CARB delegates to local air agencies the responsibility of overseeing stationary-source emissions, approving permits, maintaining emissions inventories, maintaining air quality stations, overseeing agricultural burning permits, and reviewing air quality-related sections of environmental documents required by CEQA.

The North Coast Unified Air Quality Management District (NCUAQMD) has air quality jurisdiction within Del Norte, Humboldt, and Trinity Counties. The NCUAQMD published a study titled *1995 PM10 Attainment Plan*, which presents available information about the nature and causes of exceedances of the PM10 CAAQS standards and identifies cost-effective control measures that can be implemented to reduce ambient PM10 levels (NCUAQMD 2020). The air district also has established local air quality rules and regulations that address the requirements of federal and state air quality laws to ensure that the NAAQS and CAAQS are met. The Project would be subject to NCUAQMD rules and regulations. Construction activities would require an Authority to Construct pursuant to Rule 102 prior to groundbreaking (or any disturbances to the vegetation).

NCUAQMD has not established CEQA significance criteria to determine the significance of impacts that would result from projects. However, NCUAQMD Rule 110 (New Source Review [NSR]) identifies thresholds for new or modified stationary sources, which represent levels above which emissions from these sources could conflict with regional attainment efforts. By permitting large stationary sources, the NSR program ensures that new emissions will not slow regional progress toward attaining the NAAQS. While NCUAQMD's NSR thresholds are related to stationary source emissions, they represent emissions levels required to attain the NAAQS and CAAQS based on the regional attainment status of Humboldt County. The NAAQS and CAAQS are informed by a wide range of scientific evidence demonstrating that there are known safe concentrations of criteria pollutants. While recognizing that air quality is cumulative problem, the NCUAQMD considers projects that generate criteria pollutant and ozone precursor emissions below these thresholds to be minor and to not adversely affect air quality such that the NAAQS or CAAQS would be exceeded. The NCUAQMD's significance thresholds from Rule 110 are presented in Table 3.3-2.

Table 3.3-2. North Coast Unified Air Quality Management District Thresholds of Significance

Pollutant	Significance Thresholds[a]	
	Daily (pounds per day)	Annual (tons per year)
Reactive organic gases	50	40
Carbon monoxide	500	100
Particulate matter with a diameter of 10 microns or less	80	15
Particulate matter with a diameter of 2.5 microns or less	50	10
Sulfur oxide	80	40
Nitrogen oxides	50	40

Source: NCUAQMD 2015

Note:

[a] The North Coast Unified Air Quality Management District has developed a threshold for lead. However, lead emissions are not associated with the Project; therefore, the threshold is not shown in this table.

Construction of the proposed Project would require both terrestrial (e.g., underground landing pipe installation) and marine (e.g., installing landing pipes and laying and burying marine fiber optic cable [cable] on the ocean floor) activities. The CSLC has exclusive jurisdiction over California's sovereign tide and submerged lands. The offshore boundary of the State's sovereign lands was established in the case of *United States of America, Plaintiff v. State of California*, 135 S. Ct. 563; 190 L. Ed. 2d 514; 2014 U.S. LEXIS 8436 (2014). The U.S. Supreme Court decision permanently fixes the offshore boundary between the United States and California at 3 nautical miles (nm) off the coast of California ("State waters").

This analysis evaluates construction emissions within State waters (i.e., up to 3 nm from shore) consistent with the regulatory authority of the CSLC as a state agency under CEQA. Appendix B presents the methodology used for the air quality evaluation and its results.

Appendix B also presents criteria pollutant emissions within 24 nm to support the greenhouse gas (GHG) emissions analysis (Section 3.9) to be consistent with the State's GHG emissions inventory and reduction planning goals.

The cable owner is responsible for repair and maintenance of the cable. No routine maintenance is planned for the submerged cable network. Because of the stability of the ocean bottom environment, regular maintenance is unnecessary. Monthly inspection trips and routine testing of emergency generators for the terrestrial cable network would be conducted by the local cable provider. These activities are not part of the proposed Project and are part of a separate CEQA analysis. Accordingly, Project operations are not discussed further.

3.3.3 Impact Analysis

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

Less than Significant Impact.

All Project Components

The proposed Project would not conflict with or obstruct implementing the applicable air quality plan. The Project would generate criteria pollutants primarily from marine vessels, off-road equipment (e.g., backhoes), and on-road vehicles used for employee commuting and hauling. Since Humboldt County is in attainment (pollutant concentrations are below the ambient air quality standards) for all NAAQS, there is no applicable State Implementation Plan. The NCUAQMD has adopted the *1995 PM10 Attainment Plan* that outlines recommended control measures to reduce emissions and attain the state PM10 standard (NCUAQMD 2020).

A project may be inconsistent with air quality plans if it would result in population or employment growth that exceeds estimates used to develop the emissions inventories for the plans. As discussed in Section 3.12, *Land Use and Planning* and in Section 3.15, *Population and Housing*, the proposed Project would not change current land use or zoning designations and would not induce growth or significantly increase employment in the area. Therefore, the Project would be consistent with regional growth and labor projections. While construction activities would generate criteria pollutants (discussed below), those emissions would not exceed the analysis thresholds. The Project would require contractors to comply with NCUAQMD Rule 104, which establishes general limitations related to public nuisances, particulate matter and fugitive dust emissions, and SOx emissions. Therefore, the proposed Project would not conflict with, or obstruct implementation of, the current NCUAQMD air quality plan. This impact would be less than significant.

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

Less than Significant Impact.

All Project Components

Terrestrial construction would generate criteria pollutant emissions from off-road equipment (e.g., backhoes), vehicles used for employee commuting and hauling, earthmoving activities, and marine vessels operating within 3 nm offshore. These criteria pollutant emissions were estimated for each of the four construction phases (Figure 1-2 and Table 2-1). Tables 3.3-3 and 3.3-4 (below) summarize the results of the analysis and compare the estimated daily and annual emissions to the NCUAQMD's recommended

analysis thresholds. Phase 1 would result in the highest emissions of all four phases because that is when the terrestrial infrastructure for all four cables would be built (Section 2.2.1, *Work Phases*). Appendix B includes details about the modeling methods, schedule, and equipment inventories assumed in the modeling.

Table 3.3-3. Estimated Daily Construction Criteria Pollutant Emissions

Phase	ROG	NOx	CO	PM10	PM2.5	SOx
Phase 1	5	27	11	1	1	1
Phase 2	1	15	2	<1	<1	1
Phase 3	1	15	2	<1	<1	1
Phase 4	1	15	2	<1	<1	1
Threshold	*50*	*50*	*500*	*80*	*50*	*80*
Exceed threshold?	*No*	*No*	*No*	*No*	*No*	*No*

Terms:
CO = carbon monoxide
NO_X = nitrogen oxides
PM10 = particulate matter with a diameter of 10 microns or less
PM2.5 = particulate matter with a diameter of 2.5 microns or less
ROG = reactive organic gases
SOx = sulfur oxide

Table 3.3-4. Estimated Annual Construction Criteria Pollutant Emissions

Phase	ROG	NOx	CO	PM10	PM2.5	SOx
Phase 1	<1	5	2	<1	<1	<1
Phase 2	<1	3	<1	<1	<1	<1
Phase 3	<1	3	<1	<1	<1	<1
Phase 4	<1	3	<1	<1	<1	<1
Threshold	*40*	*40*	*100*	*15*	*10*	*40*
Exceed threshold?	*No*	*No*	*No*	*No*	*No*	*No*

Terms:
CO = carbon monoxide
NO_X = nitrogen oxides
PM10 = particulate matter with a diameter of 10 microns or less
PM2.5 = particulate matter with a diameter of 2.5 microns or less
ROG = reactive organic gases
SOx = sulfur oxide

As provided in Tables 3.3-3 and 3.3-4, construction-generated emissions would not exceed NCUAQMD's recommended analysis thresholds. Accordingly, these emissions would not be expected to contribute a significant level of air pollution such that regional air quality within the NCAB would be degraded. Therefore, this impact would be less than significant.

c) Expose sensitive receptors to substantial pollutant concentrations?

Less than Significant Impact.

Criteria Pollutants

All Project Components

All criteria pollutants can cause human health and environmental effects at certain concentrations. Negative health effects associated with criteria pollutant emissions are highly dependent on a multitude of interconnected variables (e.g., cumulative concentrations, local meteorology and atmospheric conditions, and the number and character of exposed individuals [e.g., age, preexisting health conditions]). Ozone and secondary PM can be formed through complex chemical reactions over long distances. In addition, directly emitted PM does not always equate to a specific localized impact because emissions can be transported and dispersed. Given the factors that influence the formation and transportation of pollution, the model designed to evaluate future criteria pollutant concentrations and resulting health effects was not conducted because it would not yield reliable or accurate results.

As discussed above, the ambient air quality standards for criteria pollutants are set to protect public health and the environment within an adequate margin of safety (42 U.S. Code § 7409 [b] [1]). NCUAQMD's recommended NSR thresholds are used to determine whether increased emissions from a new source could cause or contribute to a violation of the NAAQS or CAAQS, requiring further analysis. The thresholds for criteria pollutants are provided in Table 3.3-2. Projects with emissions below the thresholds are not anticipated to contribute to violations of the NAAQS or CAAQS and thus meet the EPA and CARB health-protective standards.

As provided in Tables 3.3-3 and 3.3-4, construction of the Project would not exceed the NCUAQMD criteria pollutant thresholds for violations of the health-protective CAAQS and NAAQS, and potential impacts would be less than significant.

Diesel Particulate Matter

Terrestrial Components

Terrestrial construction would generate short-term diesel exhaust emissions from the use of heavy-duty equipment and vehicles. However, no residential or non-residential receptors are within 1,000 feet of the Project footprint. The closest residence to the Project is approximately 2,500 feet from the cable landing site. The concentration of DPM decreases dramatically as a function of distance from the source. For example, studies show that DPM concentrations at 1,000 feet from the source can be reduced by more than 65 percent, compared to concentrations directly at the source (CARB 2005). Consequently, DPM concentrations, and thus health risks, would be reduced substantially at the nearest receptor location. Moreover, health risks related to DPM generally are associated with chronic exposure and are assessed over a 30- or 70-year exposure period. Emissions generated during terrestrial construction would be temporary.

Consequently, individual receptors would not be exposed to elevated levels of DPM for an extended period. Therefore, the DPM emissions from terrestrial construction would have a limited potential to affect sensitive receptors, and impacts would be less than significant.

Marine Components

Marine vessels would generate DPM even though they would occur exclusively offshore. Support vessels would operate no closer than 2,000 feet from the shore, and ocean-going vessels approximately 3,600 feet from shore (Brungardt pers. comm.). The nearest sensitive receptor from the shore (a residence) is approximately 3,000 feet. Accordingly, the distance between the marine emissions source and the closest receptor is approximately 5,600 feet. DPM concentrations, and thus health risks, would be substantially reduced at the nearest receptor location. Moreover, marine vessels would have a limited potential to affect sensitive receptors since they would operate only during marine cable-laying operations, with marine vessel activity occurring for fewer than 10 days per year during this phase. Therefore, this impact would be less than significant.

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

Less than Significant Impact.

All Project Components

Project construction would not create objectionable odors affecting a substantial number of people. Diesel-powered equipment used during construction would generate temporary odors in the immediate surrounding area. Like DPM, odor emissions decrease as a function of distance, and therefore would be far less perceptible at the nearest receptor, which is about 2,500 feet from the cable landing site. Accordingly, this impact would be less than significant.

3.3.4 Mitigation Summary

The Project would not have significant impacts on air quality; therefore, no mitigation is required.

3.4 BIOLOGICAL RESOURCES

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

3.4.1 Environmental Setting

3.4.1.1 Terrestrial Biological Resources

The terrestrial biological study area (BSA) evaluated for this MND extends roughly from Old Navy Base Road east to Vance Avenue near the town of Samoa (Figure 3.4-1). The BSA is within the North Coast Geographic Subdivision of the California Floristic Province (Baldwin et al. 2012). The BSA includes a 100-foot buffer around the Project site to account for environmentally sensitive habitat areas (ESHAs) defined in the California Coastal Act (CCA) and regulated by the California Coastal Commission (CCC).

Figure 3.4-1. Terrestrial Biological Study Area

The climate is characterized by cool, wet winters and dry (foggy) summers. Annual average temperatures within the terrestrial BSA range from 47 to 59°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 38 inches, most of which falls between December and March.

Land Cover Types

The 5.071-acre BSA (Table 3.4-1) occurs within an industrial area and is heavily disturbed because of historical and current industrial land uses.

Table 3.4-1. Vegetation and Land Cover Types in the BSA

Vegetation and Land Cover Type	State Rarity Ranking	Acres	CDFW Sensitive Natural Community?[a]	California Coastal Commission Wetland?[b]
Coyote brush scrub (*Baccharis pilularis* shrubland alliance)	S5	0.144	No	No
Degraded dune mat (*Abronia latifolia* – *Ambrosia chamissonis* herbaceous alliance)	S3	0.680	**Yes**	No
Coastal dune willow thicket (*Salix hookeriana*)	S3	0.176	**Yes**	**Yes[c]**
Non-native European beach grass swards (*Ammophila arenaria* herbaceous semi-natural alliance)	Not ranked	1.509	No	No
Non-native Monterey pine, and Monterey cypress stands (*Pinus radiata* – *Hesperocyparis macrocarpa* landscaped forest alliance)	Not ranked	0.044	Not ranked	No
Non-native pampas grass (*Cortaderia jubata* herbaceous semi-natural alliance)	Not ranked	0.020	Not ranked	No
Non-native sweet vernal grass and ripgut brome grassland (*Anthoxanthum odoratum* and *Bromus diandrus* herbaceous alliance)	Not ranked	1.765	Not ranked	No
Ruderal/paved and developed	Not ranked	0.733	Not ranked	No
Total in BSA	–	**5.071**	**Two**	**Two**

Terms:
BSA = terrestrial biological study area
CDFW = California Department of Fish and Wildlife
Notes:
[a] CDFW 2020a. S1–S3 ranks are considered sensitive natural communities.
[b] Not formally delineated with soil excavations. These vegetation types were within localized depressions, and the plant wetland indicator status of the dominant species suggested that sufficient water was near the surface during the growing season to support hydrophytic plant communities in these isolated depressional aquatic features.
[c] Two patches of coastal dune willow occur in the BSA.

The land cover types in the BSA consist mostly of invasive grasses (66%), open sand and degraded dune mat habitat (14%), and ruderal/developed (13%). The degraded dune mat consists of scattered patches of some native dune plant species among non-native invasive grasses, all of which appear to have recently colonized bare sand disturbed habitat. The remaining land cover in the BSA consists of coastal dune willow thickets (4%), coyote brush scrub (3%), and non-native Monterey pine and cypress stands. Acreages of land cover types mapped in the BSA are described below and listed in Table 3.4-1 above.

Coyote Brush Scrub

Coyote brush scrub (*Baccharis pilularis* shrubland alliance) grows along the edge of the coastal dune willow thicket. Coyote brush contain non-native grasses and scattered individuals of coastal bush lupine (*Lupinus arboreus*).

Degraded Dune Mat

In the BSA, degraded dune mat (*Abronia latifolia – Ambrosia chamissonis* herbaceous alliance) was mapped where native dune indicator plants species achieved 25% or greater relative cover in the mapping unit and where the ground layer comprised mostly open sand. The use of a 25% relative cover convention follows the methods used in this area on a previously approved project (GHD 2012a; CCC 2013). Mapping alliances based on just 10% native plant cover is recommended by vegetation scientists at NatureServe, the California Native Plant Society, and the California Department of Fish and Wildlife (CDFW) for seasonal grasslands; no such recommendations are provided for other vegetation types (CDFW 2020a). The native dune mat indicator species used included yellow sand verbena (*Abronia latifolia*), silver beachweed (*Ambrosia chamissonis*), coastal sagewort (*Artemisia pycnocephala*), beach morning glory (*Calystegia soldanella*), sand mat (*Cardionema ramosissima*), and coast buckwheat (*Eriogonum latifolium*).

The degraded dune mat areas in the BSA are heavily disturbed and considered relatively low quality compared to those dune mat areas along Old Navy Base Road with greater proportions and distribution of native species and habitat that also support populations of special-status plant species. The degraded dune area on the Project site has been subjected to regular staging, dewatering of materials, or other construction activities associated with the pulp-mill industry of the area; and much of the dune mat habitat consists of bare sand and invasive grasses. Specifically, the degraded dune mat areas are threatened by invading non-native European beachgrass from the north, east, and south (Figure 3.4-2) and by recent invasions of non-native pampas grass (*Cortaderia jubata*).

Coastal Dune Willow Thicket

Coastal dune willow thickets (*Salix hookeriana* shrubland alliance) occur in two depressional areas in the BSA. The location southeast of the BSA, opposite the eastern access road from Vance Avenue, is smaller in stature (i.e., less than 10 feet tall) and consists exclusively of coastal dune willow. The location southwest of the BSA is larger in size and contains greater than 50% coastal dune willow growing along with arroyo willow (*Salix lasiolepis*), wax myrtle (*Morella californica*), and California blackberry (*Rubus ursinus*). Coastal dune willow thickets are considered a sensitive natural community (CDFW 2020a). Although neither thicket is associated with a watercourse, they were mapped as CCC wetlands because they are dominated by willows, which are facultative wetland species, and because they are within depressions in the landscape where rainy season high water tables are likely.

Non-Native European Beach Grass Swards

European beach grass swards (*Ammophila arenaria* herbaceous semi-natural alliance) are dominated by non-native and invasive grasses that are considered a regional threat to coastal habitats.

Non-Native Monterey Pine and Monterey Cypress Stands

Two areas within the northwest BSA contain Monterey pine and Monterey cypress stands (*Pinus radiata – Hesperocyparis macrocarpa*).

Non-Native Grassland

In the BSA, non-native invasive grassland is the dominant landcover and is dominated by Pampas grass (*Cortaderia jubata*) or a combination of sweet vernal grass (*Anthoxanthum odoratum*) and ripgut brome (*Bromus diandrus*). Pampas grass has a California Invasive Plant Council rating score of “High” overall impact. Both sweet vernal grasses, an escaped cultivar, and ripgut brome have a rating score of “Moderate” overall impact. Other grasses present in the vegetation type include foxtail barley (*Hordeum murinum* subsp. *leporinum*), wild oat (*Avena fatua*), rattlesnake grass (*Briza maxima*), and soft chess (*Bromus hordeaceus*).

Ruderal/Paved and Developed

Ruderal/paved and developed areas include roads, a few small built structures associated with municipal water lines, a storage tank to the west, and areas that are unvegetated or primarily support sparse or ruderal or managed vegetation around structures, roads, and a wood chip pile north of the BSA.

Special-Status Species

For the purpose of 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 (50 Code of Federal Regulations [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 (14 California Code of Regulations 670.5).
- Animals listed as California species of special concern on CDFW's Special Animals List (CDFW 2020c).
- Animals listed as California fully protected species as described by Fish and Game Code sections 3511 (birds), 4700 (mammals), and 5050 (reptiles and amphibians).
- Plants listed as rare under the California Native Plant Protection Act (Fish and Game Code 1900 et seq.).
- Plants with a California Rare Plant Rank (CRPR) of 1A, 1B, 2A, and 2B on CDFW's Special Vascular Plants, Bryophytes, and Lichens List (CDFW 2020e), and considered threatened or endangered in California by the scientific community.
- Plants designated as CRPR 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).

ICF's terrestrial biological team reviewed the following existing natural resource information to identify special-status species and other sensitive biological resources that could occur in the BSA:

- California Natural Diversity Database (CNDDB) records search of the 7.5-minute U.S. Geological Survey (USGS) quadrangle containing the BSA (Eureka) and the six neighboring quadrangles (Tyee City, Arcata North, Arcata South, McWhinney, Fields Landing, and Cannibal Island) (CDFW 2020e).
- The U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) species report for the BSA (USFWS 2020a).
- Final designated critical habitat as mapped by the USFWS Environmental Conservation Online System (ECOS).

- Recovery Plan for the Pacific Coast Population of the Western Snowy Plover (USFWS 2007).
- A Petition to the State of California Fish and Game Commission to List the Crotch bumble bee (*Bombus crotchii*), Franklin's bumble bee (*Bombus franklini*), Suckley cuckoo bumble bee (*Bombus suckleyi*), and western bumble bee (*Bombus occidentalis occidentalis*) as endangered under CESA (Xerces Society et al. 2018).

The ICF terrestrial biological team also coordinated with relevant resource agencies to discuss sensitive biological resources expected within the BSA. A summary of agency communications is provided in Appendix C.

Special-Status Wildlife Species

There were 24 special-status wildlife species identified with the potential to occur in or near the BSA (Table C-1 in Appendix C). At least 3 (Northern harrier, White-tailed kite, and Western bumble bee) out of 24 species have moderate to low potential to occur in the BSA or to be affected by Project activities.

ICF conducted two different field surveys. On July 10, 2020, ICF's wildlife biologist Steve Yonge conducted a field survey by walking the BSA and evaluated existing conditions, including vegetation composition, aquatic resources, and land use to determine the potential for special-status wildlife species (see Table C-1 in Appendix C) to occur on the Project site.

On August 12 and 19, 2020, ICF biologist Jordan Mayor conducted follow-up surveys to assess the potential habitat for western bumble bee. An initial habitat assessment was conducted to determine whether the Project supported hive or nesting habitat and pollen or nectar sources. Both surveys also included the survey of two plots to determine use by special-status bumble bee species. Suitable nectar sources and multiple species of insect pollinators were observed.

ICF consulted with CDFW (Mr. Greg O'Connell, Environmental Scientist) to discuss species that could occur near the BSA (see a summary of this coordination effort under *Resource Agency Coordination* in Appendix C). The species discussed were native bumble bees, specifically the western bumble bee, a CDFW candidate for listing. The western bumble bee has been documented within 5 miles of the BSA (CDFW 2020e) and could use the BSA to forage. Based on the sandy soil conditions and lack of hive or nest substrates, there is no potential for the western bumble bee to nest in the BSA. The BSA contains suitable nectar sources, and multiple species of insect pollinators as observed on August 12 and 19, 2020, bumble bee habitat assessment surveys.

Based on a review of existing information, existing habitat conditions documented during the field survey, the anticipated level of disturbance, and coordination with resource agencies (Appendix C), 24 special-status wildlife species were identified with the potential to occur in or near the BSA (Table C-1 in Appendix C). Out of these 24, at least the following three have moderate to low potential to occur in the BSA or to be affected by Project activities:

- Northern harrier (*Circus cvaneus*) – State Species of Special Concern – moderate potential to occur in the BSA
- White-tailed kite (*Elanus leucurus*) – State Fully Protected Species – moderate potential to occur in the BSA
- Western bumble bee (*Bombus occidentalis occidentalis*) – State Candidate for Listing as Endangered – low potential to occur in the BSA

Northern Harrier

The northern harrier is a State Species of Special Concern that is known to occur in the vicinity of the BSA (CDFW 2020e; ebird 2020). The vegetated dune and scrub habitat within and adjacent to the BSA provides suitable foraging and nesting habitat. Because the Project site is sparsely vegetated, it provides only foraging habitat for the northern harrier and no suitable nesting habitat.

White-Tailed Kite

The white-tailed kite is a State Fully Protected Species that is known to occur in the vicinity of the BSA (CDFW 2020e; ebird 2020). The vegetated dune and scrub habitat within and adjacent to the BSA provides suitable foraging habitat. Mature coastal willow thicket and the non-native Monterey pine and Monterey cypress stands in the BSA provide suitable nesting habitat. Because the Project site is sparsely vegetated and lacks trees, there is no suitable nesting habitat present, and the area only provides foraging habitat for the white-tailed kite.

Western Bumble Bee

The western bumble bee is a state candidate for listing as endangered. The western bumble bee has been documented in the vicinity of the BSA (CDFW 2020e) and is known to occur in coastal habitat types (Xerces et al. 2018). Their hives or nests typically are found in abandoned small mammal burrows, but they may nest in inactive bird nests (Osbourn et al. 2008 *in* Xerces et al. 2018). They also may use aboveground substrates such as rock or brush piles or downed woody debris to nest or overwinter. Soils within and adjacent to the BSA are sandy, lack small mammal burrows, and have limited woody debris or other substrates required for ground nests or hive construction. However,

flowering plant species are present in the BSA that could provide a nectar and pollen source for the bee.

To determine the potential for the western bumble bee to occur in the BSA, two surveys were conducted on the afternoons of August 12 and 19, 2020. Surveys were targeted to occur between the hours of 12 and 4 p.m., when temperatures were greater than 60°F, wind speeds were below 8 miles per hour, and the conditions were sunny to partly cloudy – an approach modified from Ward et al. (2014) to accommodate the local northern coastal climate conditions. Ward et al. (2014), recommend that surveys in California be conducted during the growing season (May-July). However, given the California north coast climate is dramatically different from most of the state, (cooler and moister), nectar and pollen sources were prevalent and because our surveys were performed during the recommended weather conditions, our August surveys were conducted during appropriate conditions to detect western bumble bee.

During the August 12, 2020 survey, a series of meandering transects were walked through the BSA to assess small mammal burrow density, nest or hive habitat, and pollen and nectar resources. Two of the highest density of floral resources within or near the access roads in the BSA were selected for 30-minute observations of pollinator activity. Streamlined protocols based on 3 years of surveys in California, Michigan, and New Jersey found that simply observing and recording the abundance of native bees on flowers during two site visits of 15 minutes each provide good estimates of both abundance and diversity of bees visiting the sites (Ward et al. 2014). ICF consulted with CDFW staff about their survey approach and met with them on site to review the terrestrial portion of the project.

No mammal burrows were observed in the BSA. The only sources of woody nesting material were those derived from bush lupine coyote brush, wax myrtle, or arroyo willow located around the margins of the BSA. These shrub species were absent within the BSA. The sandy soils and lack of other suitable substrates for hive construction in the Project site would prevent construction of ground hives by the western bumble bee.

Even though extensive floral resources were present, the only *Bombus* spp. observed were the relatively common yellow-faced bumblebee (*B. vosnesenskii*). A few other individuals that were observed may had been *B. mixtus*, *B. caliginosus* or *B. vandykei.* The western bumble bee was not observed during the August 12 or 19, 2020 survey. The surveys were appropriately timed because nectar and pollen sources were prevalent and were performed during the recommended weather conditions (warm sunny and calm; Ward et al. 2014).

Special-Status Plant Species

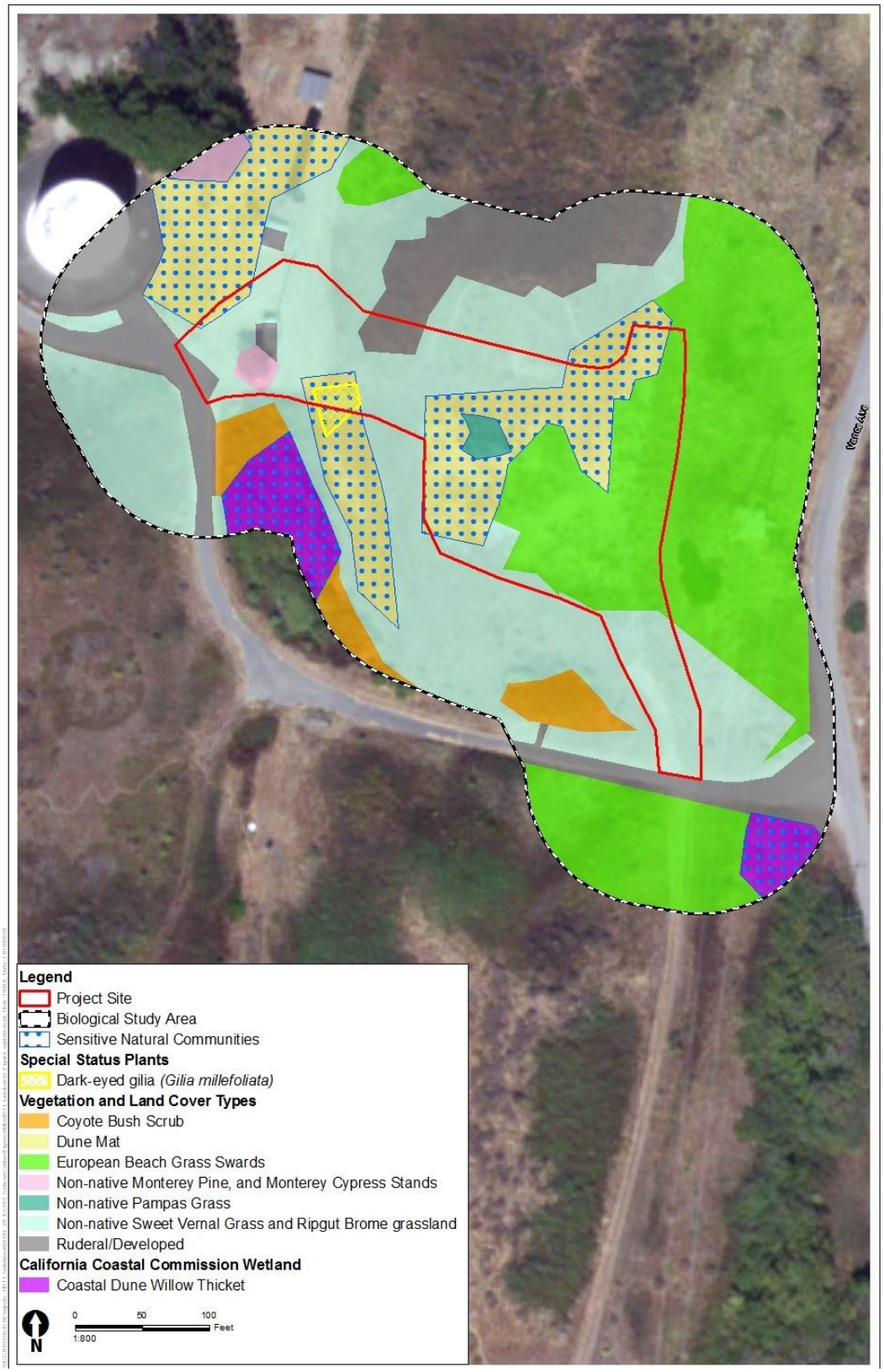
ICF conducted floristic surveys on April 14, May 7, and July 13, 2020. Surveys were timed to coincide with the flowering and identification periods of the potentially occurring special-status plant species. Prior to conducting the botanical surveys, ICF conducted a search of the California Natural Diversity Database [CNDDB] (CDFW 2020e) and the California Native Plant Society's online Inventory of Rare and Endangered Plants (CNPS 2020a). The CNDDB only documents occurrences of species from previous surveys reported to the CDFW and does not predict occurrences. ICF reviewed this existing information and identified 10 special-status plant species (Table C-2 in Appendix C) with the potential to occur in the Project region based on the species range, habitat characteristics present in the BSA (Figure 3.4-2), and nearby documented occurrences.

The field surveys followed current CDFW protocols (CDFW 2018). The botanist traversed the BSA on foot, using meandering parallel transects spaced at a distance that enabled visibility of all plant species present. Hand-held GPS units were ready to be used to record the locations of special-status plant species and habitat types observed. A list of plant species observed during the floristic surveys is provided in Table C-3 in Appendix C.

One special-status plant (dark-eyed gilia [*Gilia millefoliata*, California Rare Plant Rank [CRPR] 1B.2]) was documented in the BSA. Dark-eyed gilia occurs in open stabilized sandy foredune habitats along the coastal strand of California, from Del Norte to Santa Barbara Counties. Dark-eyed gilia is known in the CNDDB from several populations along Old Navy Base Road, including one population within the northern portion of the BSA that was observed in 1963 and one population 400 feet south of the BSA that was observed in 2003.

Disturbance of non-native grasses, through removing competition and opening bare sand habitats, allows these annual plants to persist in and around the BSA. Approximately 50 individual dark-eyed gilia plants were found in the BSA on the edge of the disturbed dune habitat.

Figure 3.4-2. Aquatic Resources, Sensitive Natural Communities, and Special-Status Plants in the BSA



Sensitive Natural Communities

Field surveys to map sensitive natural communities were conducted concurrently with the floristic surveys. Rarity of each vegetation type was determined from CDFW's current California Natural Community List (CDFW 2020a), the current list of vegetation alliances, associations, and special stands, which notes which natural communities are considered sensitive. Natural communities with ranks of 1-3 are considered sensitive. Semi-natural stands are not ranked because they are dominated by non-native species.

CDFW regulates sensitive natural communities (CDFW 2020a), and they generally are considered ESHAs under the CCA.

Based on a query of the CNDDB, several natural communities in the Project region are afforded protection by a state or local authority and may support special-status plants and wildlife. For this analysis, sensitive communities are communities that meet the following criteria:

- Sensitive natural communities defined by CESA and protected by CDFW or local agencies.
- Sensitive habitats protected by the County of Humboldt and the CCC.
- Rare habitats protected by local professional organizations or the scientific community.

Sensitive natural communities are habitats that have been assessed for their range, distribution, trends, and threats. Vegetation communities observed in the BSA were identified using the *Manual of California Vegetation*, Online Edition (CNPS 2020b), and their sensitive status was informed by review of CDFW's (2019) California Natural Community List descriptions. In the BSA, the land cover types that meet the criteria for sensitive natural communities include coastal dune willow thickets and degraded dune mat (Table 3.4-1; Figure 3.4-2).

<u>Wetlands and Non-Wetland Waters</u>

Potential wetlands and non-wetland waters were identified and mapped concurrently with the floristic surveys. During the field surveys, ICF walked the BSA and identified potential wetlands and non-wetland areas based on observable characteristics (e.g., a prevalence of hydrophytic vegetation, surface hydrologic indicators, and topography).

ICF looked for areas that potentially could be regulated as waters of the United States by USACE, waters of the State regulated by the North Coast Regional Water Quality Control Board and CDFW, and coastal zone wetlands regulated by the CCC. USACE defines jurisdictional wetlands under the Clean Water Act Section 404 as areas that exhibit positive field indicators for all three wetland parameters: hydrophytic vegetation, hydric

soils, and wetland vegetation. The CCC regulates features that display one or more of the wetland parameters provided above as defined in the *Definition and Delineation of Wetlands in the Coastal Zone* (CCC 2011). The CCA section 30121 defines wetlands as "lands within the coastal zone which may be covered periodically or permanently with shallow water and include saltwater marshes, freshwater marshes, open or closed brackish water marshes, swamps, mudflats, and fens."

Coastal dune willow thicket was the only potential wetland identified in the BSA (Figure 3.4-2). This wetland type was in landscape depressions dominated by coastal dune willow and with minor components of arroyo willow, both of which are facultative wetland species (Lichvar et al. 2016). Coastal dune willow thicket occupied 0.176 acres in the BSA. No non-wetland waters (e.g., stream or ditch) were observed in the BSA during the field surveys.

Environmentally Sensitive Habitat Areas (ESHAs)

Areas that qualify as ESHA in the BSA include the coastal dune willow thicket, degraded dune mat habitat, and occurrences of dark-eyed gilia (*Gilia millefolia;* Figure 3.4-2). ESHA for terrestrial wildlife species include coastal dune willow thicket and non-native Monterey pine and Monterey cypress stands that provide nesting habitat for the white-tailed kite; and degraded dune mat, non-native grasslands, and non-native European beach grass swards that provide nesting habitat for the northern harrier and foraging habitat for the western bumble bee. These areas qualify as potential ESHAs based on the CCA definition of an environmentally sensitive area. An ESHA is defined as "Any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments*"* (section 30107.5).

There are three important elements to the definition of an ESHA. First, a geographic area can be designated as an ESHA because of the presence of individual species of plants or animals or because of the presence of a particular habitat. Second, in order for an area to be designated as an ESHA, the species or habitat must be rare or especially valuable. Finally, the area must be easily disturbed or degraded by human activities. (CCC 2003).

The CCC and the Humboldt County Planning Department, through their LCP, regulate coastal wetlands and ESHA in the coastal zone at the Project site; specific protection measures for wetland ESHAs are included in the Humboldt Bay Area Local Coastal Program (2014). For instance, section 30240 states:

> (a) Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only uses dependent on such resources shall be allowed within such areas.

(b) Development in areas adjacent to environmentally sensitive habitat areas and parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade such areas and shall be compatible with the continuance of such habitat areas.

Protection measures that will be implemented to the Project and minimize impacts to ESHA include regular biological monitoring of work activities and delineating the work area and installing fencing or flagging to ensure ESHA is avoided and impacts minimized.

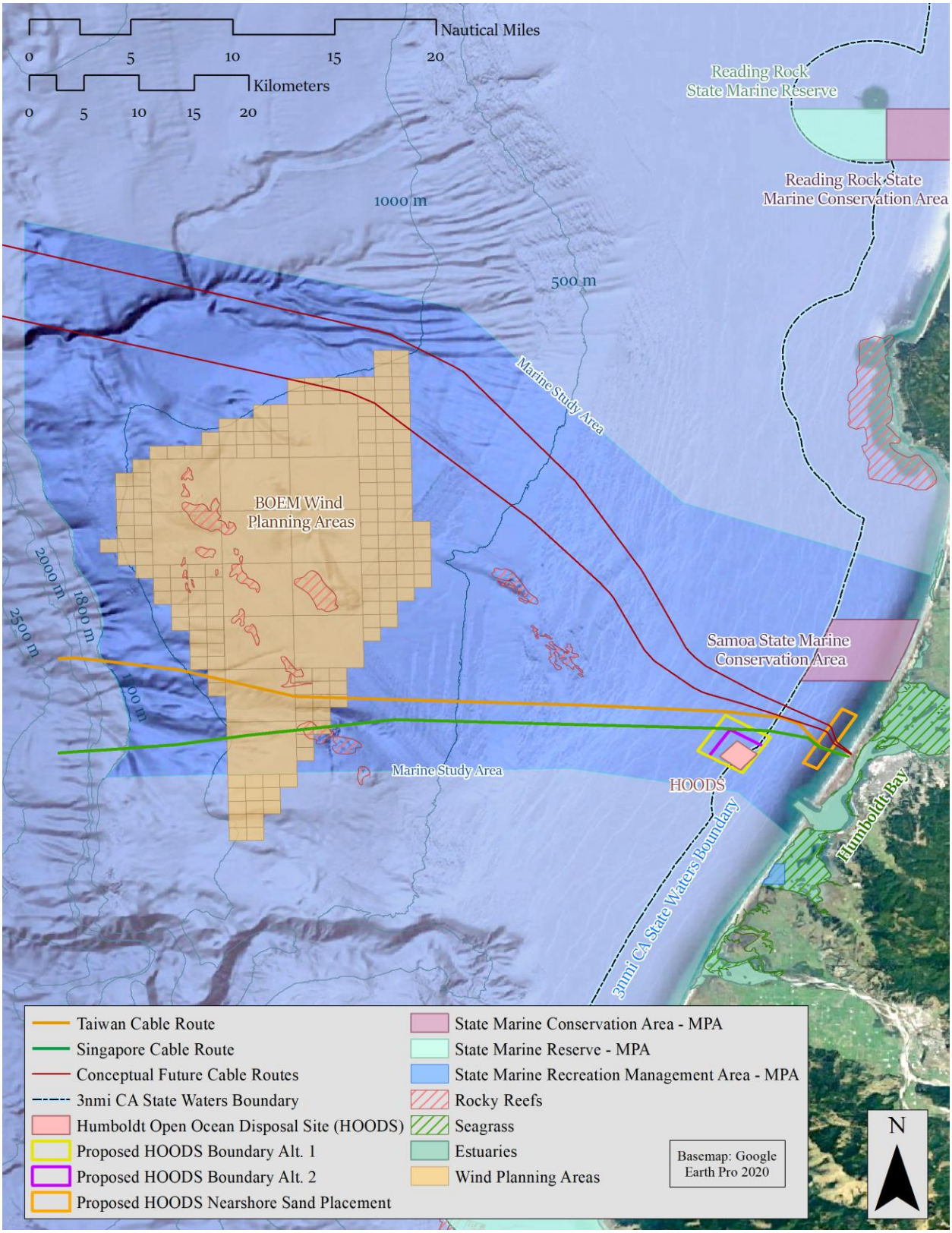
3.4.1.2 Marine Biological Resources

The marine biological study area (MSA) extends west into the Pacific Ocean and is south of Samoa State Marine Conservation Area (Figure 3.4-3). It extends to the 5,940-foot depth contour from the mean high-tide line and comprises coastal water and intertidal and subtidal habitats occurring offshore of the cable landing site. It also extends approximately 1,650 feet (about 0.5 mile) up-coast and down-coast of the proposed cable routes. Because there would be four fiber optic cables for this Project, the 1,650-foot buffer in the MSA would be beneficial to plan cable routes.

Please note the following for Figure 3.4-3:

- This map is only meant to broadly show the different components of the surrounding area and does not depict precise locations of the features
- The EFH (essential fish habitat) is the entire region, as discussed in detail in Section 3.4.1.2, *Marine Biological Resources* and Section 5.2, *Commercial and Recreational Fishing*.
- The ocean floor habitats are predominantly soft bottom except for rocks that are indicated by the National Oceanic and Atmospheric Association (NOAA) as possible habitat areas of particular concern (HAPCs) (e.g., rocky reefs, seagrass) as pointed out in the figure.
- The rocky reefs identified in the figure were based on NOAA-identified potential HAPCs. Although the Singapore cable (solid green line) shows crossing rocky reefs south of the Bureau of Energy Management (BOEM) Wind Planning Area, it does not mean that rocky reefs are actually present at that location because of the scale of NOAA data maps. Detailed high-resolution surveys would be completed for each cable route to ensure that all rocky reefs are avoided when laying the cable. All known rocky reefs would be avoided.
- There are virtually no established fishing locations even though there are some restrictions on where commercial trawling can happen. The commercial and recreational fishers are quite secretive about where they set traps and trawl.
- The southernmost cable could be buried under the northern Humboldt Open Ocean Disposal Site (HOODs) boundary (Section 2.4.2, *Humboldt Open Ocean Disposal Site)*.

Figure 3.4-3. Marine Biological Study Area



Marine Biota

The marine biota in the MSA (Figure 3.4-3) include invertebrate infauna,[22] mobile epifauna,[23] sessile[24] encrusting invertebrates, marine vegetation attached to either natural or artificial hard substrate, planktonic organisms, fish, marine mammals, and marine birds that inhabit or use the open waters. These habitats and their associated biological communities are briefly discussed below and are described in more detail in Appendix C.

Marine Habitat

The marine habitat consists of intertidal and nearshore habitat zone and pelagic open water habitat zone as further discussed below.

Intertidal and Nearshore Habitat

The intertidal and nearshore zones include sandy beach and subtidal habitats that support benthic species and demersal fishes, as described below.

Sandy Beach

The beach habitat primarily is unvegetated, consisting of sand and drift debris. Wildlife species commonly using this habitat include shorebirds, gulls, terns, pelagic birds, raptors, fishes, marine mammals, crustaceans and other invertebrates. Sandy beaches are among the most intensely used coastal ecosystems for human recreation and are important to coastal economies, as well as to foraging shorebirds and surf zone fishes. Western snowy plovers and California least terns are known to nest on some sandy beaches and coastal dunes. Pinnipeds haul out on isolated beaches and sand spits, including gravel and fine- to medium-grained beaches (Horizon Water and Environment 2012).

Generally, beaches are highly dynamic environments subject to intense wave-related energy, exposure to air and sun during low tides, constant reworking, and large-scale seasonal substrate variations (Thompson et al. 1993). In addition, the distribution of organisms within the sand is subject to daily fluctuations in the temperature, salinity, and moisture content of the sand (Dugan et al. 2015). Many individual animals that live in the sand are mobile and frequently shift position in response to environmental fluctuations. California beaches support a variety of invertebrate species that live in the sand or in wracks of decaying seaweed and other detritus on the beach surface. Kelp wrack and

[22] Organisms living in the sediments of the beach or ocean floor.
[23] Organisms living on the surface of the ocean floor or attached to submerged objects.
[24] Organisms that are permanently attached or established on hard substrate habitat and typically are not free to move about.

other washed-up organic debris are the predominant energy and food source for beach ecosystems (Nielsen et al. 2017).

Subtidal Habitats

Ocean floor sediment composition is dependent on physical factors such as wave energy, water depth, and currents. Subtidal habitats generally are broken into two broad categories:

- Soft Substrate – typically ranges from coarse sands to finer silts and clays.
- Hard Substrate – can be composed of naturally occurring features (e.g., rocky outcrops) or artificial structures (e.g., concrete, pilings, and debris).

Soft substrate is the predominant habitat on the Outer Continental Shelf (OCS[25]) (Horizon Water and Environment 2012). The elevation (relief) of hard substrates above the ocean floor commonly is quantified as low, moderate, high, and mixed because species abundance and diversity tend to increase with an increase in elevation above the ocean floor (AMS 2020)[26]; the increased species diversity and abundance generally are attributed to decreasing turbidity, sand scouring, periodic burial and exposure cycles, and increased water flow.

Benthic Species

Benthic (bottom-dwelling) biological communities change with both the type of substrate and water depth. Mobile scavengers, predators, and burrowing organisms are common on soft substrates;[27] while hard substrates typically support abundant sessile organisms that anchor to sturdy surfaces or species preferring physical features that provide hiding spaces. Many subtidal benthic species are not restricted by substrate type, as many (e.g., crabs, sea stars, brittle stars, and fishes) can inhabit both soft and hard substrate habitats. Depth also influences benthic community composition because sediments change with depth due to the decreasing influence of wave energy.

As ocean depth increases and wave energy decreases, the substrate composition shifts from coarse sand with low organic content nearshore to fine muds with higher organic content farther offshore (AMS 2020). Apart from rock jetties flanking the entrance to Humboldt Bay, there are no known occurrences of hard substrate habitats occurring offshore Eureka shallower than 656 feet water depth (RCEA 2018). However, there may be sporadic pieces of discarded debris that could provide artificial hard substrate in

[25] The cables would lay directly on the ocean floor in water deeper than 5,904 feet (approximately 32 miles offshore from the LV)

[26] "AMS 2020" is used when showing the source for a specific fact or measurement from Appendix C. "Appendix C" is used when referring to the report or a table within the report.

[27] Soft substrate can range from coarse sands to fine muds, while hard substrate can be divided into natural (rocky outcrop) or artificial substrate and further characterized by elevation or rise above the ocean floor.

shallower water depths (AMS 2020). Hard substrate occurring in the MSA between 656 and 1,640 feet water depth (Figure 3.4.3) is identified as habitat areas of particular concern (HAPCs) under the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act). Specific invertebrate organisms found at various depths and substrate types within the MSA are discussed in detail in Appendix C.

Demersal Fishes

Demersal fishes are species that live and feed on or near the ocean floor. They are found in coastal waters and over the OCS but are not common in the abyssal plain (the deepest part of the ocean). Seamounts and islands also provide suitable habitats for demersal fishes. Examples of demersal fishes that inhabit soft substrate ocean floor include flounders (*Pleuronectoidei*), soles (*Soleidae*), sanddabs (*Citharichthys* spp.), eelpouts (*Zoarcidae*), hagfish (*Myxinae*), combfishes (*Zaniolepsis* spp.), and skates and rays (*Rajidae*). Fishes that typically associate with hard substrate habitats include the rockfishes (*Sebastes* spp.), lingcod (*Ophiodon elongatus*), staghorn sculpin (*Leptocottus armatus*), and wolf eels (*Anarrhichthys ocellatus*).

Details about specific fish species found at various depths and ocean floor substrate types in the MSA are provided in Section 4 of the Marine Biological Technical Report (Appendix C).

Pelagic Open Water Habitats

The pelagic zone supports 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, and marine mammals that move freely against local and oceanic currents.

Phytoplankton

Phytoplankton, the primary producers at the base of the pelagic food web, are consumed by many species of zooplankton. In turn, zooplankton support a variety of species, including small schooling fishes (e.g., sardines, herring) and baleen whales (*Mysticeti*). In the marine environment, phytoplankton typically occur at higher densities near coastlines where nutrient inputs from terrestrial point and nonpoint sources help promote their growth (Fischer et al. 2014). The abundance and composition of phytoplankton along the California coast are heavily influenced by upwelling and often are dominated by diatoms year-round (Du et al. 2015). Winds blowing from the north create a southward current along the shore that causes upwelling and mixing of plankton over large spatial scales. Relaxation of upwelling and stratification of the water column promote the growth of phytoplankton, such as dinoflagellates and various *Pseudonitzschia* species that can be harmful to marine organisms (Du et al. 2016).

Organisms that complete their entire lifecycle as planktonic forms are called holoplankton; these include phytoplankton such as diatoms and zooplankton such as *Acartia tonsa*. Plankton that spend only part of their life cycle in the plankton form (as eggs or larvae) are called meroplankton. Holoplankton have short generation times (hours to weeks), can reproduce continually (i.e., are not dependent on a certain season), and are not restricted to specific geographic zones. In contrast, meroplankton, which only spend a portion of their life cycle as plankton, make up a small fraction of the total number of planktonic organisms in the ocean. Additionally, they have shorter spawning seasons and are restricted to a narrow region of the coast. Important meroplankton include fish larvae and fish eggs (ichthyoplankton) as well as larvae of invertebrates such as lobsters, crabs, octopus, mollusks, and squid.

Fish

Pelagic fish communities tend to be similar throughout the coastal waters of Northern California. They are characterized by small schooling species such as Pacific sardine (*Sardinops sagax*) and northern anchovy (*Engraulis mordax*); schooling predators such as bluefin tuna (*Thunnus thynnus*), thresher shark (*Alopias vulpinus*), and swordfish (*Xiphias gladius*); and large, solitary predators such as Mako (*Isurus oxyrinchu*) and leopard (*Triakis semifasciata*) sharks (CDFW 2020f). Other common fish species that inhabit the open water environment include Chinook salmon (*Oncorhynchus tshawytscha),* market squid (*Doryteuthis opalescens*), smelt (*Spirinchus stark*), jack and Pacific mackerel (*Trachurus symmetricus* and *T. symmetricus*), opah (*Lampris* spp*.),* and assorted perches *(Embiotocidae)*. More information on fish species inhabiting the open waters in the Project vicinity is provided in Section 6 of the Marine Biological Technical Report (Appendix C).

Marine Mammals and Sea Turtles

Marine mammals and sea turtles in open ocean habitat along the California coast are identified as special-status species.

Special-Status Marine Species

The Northern California coast supports numerous special-status marine mammals, birds, turtles, and fishes. Special-status species 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 are 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 NOAA pursuant to FESA.
- Listed as rare, threatened, or endangered by CDFW pursuant to CESA.

- Managed and regulated under the Magnuson-Stevens Act.
- 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 the National Oceanic and Atmospheric Administration (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).

Special-status species considered for evaluation and their likelihood to occur in the MSA are discussed in detail in the Marine Biology Technical Report (Appendix C). Table 7.1 in Appendix C lists special-status marine species and their potential to occur in the MSA.

Marine Mammals

Of the approximately 40 marine mammals known to occur along the California coast, a few have been observed in the MSA near Eureka (Table 7.1 in Appendix C).

Those species with a moderate or high probability to occur in the MSA (and thus potentially subject to Project effects) are California sea lion (*Zalophus californianus*), harbor seal (*Phoca vitulina*), humpback whale (*Megaptera novaeangeliae*), blue whale (*Balaenoptera musculus*), common dolphin (*Delphinus delphis*), fin whale (*Balaenoptera physalus*), gray whale (*Eschrichtus robustus*), harbor porpoise (*Phocoena phocoena*), northern elephant seal (*Mirounga angustirostris*), and Steller sea lion (*Eumetopias jubatus*). These species can be expected to be present in the MSA seasonally when migrating along the coast or opportunistically when foraging in the area. There are no established haul-out, pupping, or birthing sites in the MSA.

Sea Turtles

Five species of sea turtles are known to inhabit coastal waters of California: the green sea turtle *(Chelonia mydas*), loggerhead sea turtle (C*aretta caretta*), leatherback sea turtle (*Dermochelys coriacea*), Pacific hawksbill sea turtle (*Eretmochelys imbricata*), and olive ridley sea turtle (*Leipidochelys olivacea*). Of these five species, only the olive ridley sea turtle has been recorded in the nearshore waters of Northern California; however, no olive ridley sea turtles are expected to occur in the MSA because they are primarily a pelagic species and rare observations have coincided with warmer El Niño years (Table 7.1 in Appendix C). The other four turtle species are not expected to occur within the MSA.

Fishes

Of the 20 shark and bony fish species listed in Table 7.1 (Appendix C), the following species have a moderate to high potential to occur within the MSA: bluefin tuna (*Thunnus thynnus*), Chinook salmon (*Oncorhynchus tshawytscha*, California Coastal Evolutionary Significant Unit [ESU] and Klamath-Trinity Rivers spring run), cowcod (*Sebastes levis*), coho salmon (*Oncorhynchus kisutch*, Southern Oregon/Northern California ESU), longfin smelt (*Spirinchus thaleichthys*), steelhead trout (*Oncorhynchus mykiss irideus*, Northern California distinct population segment [DPS]) and Klamath Mountains Province), and white shark (*Carcharodon carcharias*) (Table 7.1 in Appendix C).

Invertebrates

The range of the four special-status gastropods discussed in Table 7.1 (Appendix C) does not extend north into the MSA; therefore, these species are not expected to be present within the MSA.

Significant Ecological Areas

The proposed marine cable route does 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, or ESHAs). The cable route does pass through portions of the MSA marked as rocky reef and identified as critical habitat and EFH.

Critical Habitat

Although many state- and federally listed species may occur in the coastal and offshore waters of the MSA (Table 7.1 in Appendix C), the MSA includes designated critical habitat only for North American green sturgeon, northern DPS.

Essential Fish Habitat

The MSA offshore Eureka is located in an area designated as EFH under four fishery management plans (FMPs): the Coastal Pelagic Species FMP (PFMC 2016), Pacific Coast Groundfish FMP (PFMC 2019b), Pacific Coast Salmon FMP (PFMC 2016), and Highly Migratory Species FMP (PFMC 2017). An EFH assessment is being prepared and will be submitted to the National Marine Fisheries Service (NMFS) with a biological assessment for the Project.

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 marine vessels like the cable lay ship, 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 taxa 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 are capable of carrying ballast water) are subject to the Marine Invasive Species Act of 2003 (Pub. Resources Code §§ 71200–71271), 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, which regulates biofouling and ballast water discharge from marine vessels arriving in California ports to prevent or minimize the introduction of invasive species from other regions.

3.4.2 Regulatory Setting

Appendix A contains the relevant federal and state laws and regulations pertaining to biological resources. At the local level, the following policies and programs in the Humboldt County General Plan, Volume II, Humboldt Bay Area Plan of the Humboldt County Local Coastal Program (2014) are immediately applicable.

3.4.2.1 Humboldt County Local Coastal Program (2014)

Policy 3.13 – Section 3.13 (Coastal-Dependent Development)

> **30255.** Coastal-dependent developments shall have priority over other developments on or near the shoreline. Except as provided elsewhere in this division, coastal-dependent developments shall not be sited in a wetland.

The following text quotes the Development Policies included in Section B:

1. Industrial:
    a. within areas designated Coastal Dependent Industrial (MC), the principal uses shall be any coastal-dependent industrial use that requires access to a maintained navigable channel in order to function, including, but not limited to: …, outfall or discharge pipelines serving offshore facilities, ….
4. Where coastal-dependent uses conflict among themselves, priority shall be given to industrial over recreational or commercial uses, and to recreational over commercial uses; except that industrial, recreational, and visitor serving

use of private lands shall not displace existing agricultural use where the Area Plan or zoning protect the use.

Policy 3.30 – Section 3.30 (Natural Resources Protection Policies and Standards)

30240. (a) Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only uses dependent on such resources shall be allowed within such areas.

(b) Development in areas adjacent to environmentally sensitive habitat areas and parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade such areas, and shall be compatible with the continuance of such habitat areas.

The following text quotes the Planned Uses included in Section A:

The dune area west of New Navy Base Road and south of the intersection that includes the Samoa Bridge is a greatly disturbed dune habitat. This area has both natural resource values and utility to the adjacent coastal dependent industrial area on the east side of New Navy Base Road. In order to accommodate these seemingly opposite values, as well as preserve the recreational and visual resources of this area, a natural resources designation has been proposed with the following industrial-related uses permitted. The applicant shall demonstrate that there is no less environmentally damaging alternative in the immediate area:

1. transmission and water line construction
2. dredge spoils disposal
3. pipeline construction for surf zone disposal of dredge spoils
4. parking lot construction for coastal-dependent industrial facilities located directly adjacent to the proposed parking area on the east side of New Navy Base Road; parking shall be made available for public access to the ocean on the subject parcel
5. ocean outfall, intakes and pipelines
6. underground utilities

The following text quotes the Development Policies included in Section B: 6. Wetland Buffer

a. No land use or development shall be permitted in areas adjacent to coastal wetlands, called Wetland Buffer Areas, which degrade the wetland or detract from the natural resource value. Wetland Buffer Areas shall be defined as:

(1) The area between a wetland and the nearest paved road, or the 40 foot contour line (as determined from the 7.5' USGS contour maps), whichever is the shortest distance, or,

(2) 250 feet from the wetland, where the nearest paved road or 40 foot contour exceed this distance, or

(3) Transitional Agricultural lands designated Agriculture Exclusive shall be excluded from the wetland buffer.

b. New development; except for:

(1) development permitted in 3.30B2,3, and 4

(2) wells in rural areas; and

(3) new fencing, so long as it would not impede the natural drainage shall be sited to retain a setback from the boundary of the wetland sufficient to prevent adverse effects to the wetland's habitat values.

f. All new development within the wetland buffer shall include the following mitigation measures:

(1) Not more than 25% of the lot surface shall be effectively impervious.

(2) The release rate of storm runoff to adjacent wetlands shall not exceed the natural rate of storm runoff for a 50 year storm of 10 minute duration.

3.4.3 Impact Analysis

The impact analysis below is based on the State CEQA Guidelines, Appendix G, for biological resources.

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

Less than Significant with Mitigation.

Terrestrial Components

The following three special-status wildlife species (of the 24 species discussed in Table C-1 in Appendix C) have moderate to low levels of potential for occurring in the BSA:

- Northern harrier – moderate potential to occur in the BSA
- White-tailed kite – moderate potential to occur in the BSA
- Western bumble bee – low potential to occur in the BSA

Dark-eyed gilia was the only special-status plant documented within the BSA (of the 32 species discussed in Table C-2 in Appendix C). The following sections describe potential impacts associated with each of the special-status species listed above.

Northern Harrier/White-Tailed Kite and Other Non-Special-Status Migratory Birds

Northern harrier and white-tailed kite have a moderate potential to occur in the BSA. These special-status bird species and other non-special-status migratory birds protected under the federal Migratory Bird Treaty Act and Fish and Game Code have the potential to nest in or adjacent to the BSA suitable nesting habitat for migratory birds is present in coastal dune willow thicket, non-native Monterey pine and Monterey cypress stands, and dune habitats in the BSA (Figure 3.4-2). No suitable nesting habitat is present on the Project site based on site surveys and because adjacent nesting habitat would be avoided by the HDD west toward the Pacific Ocean, direct impacts on nesting habitat would be minimized. Nevertheless, noise associated with the HDD could directly affect nesting behavior and cause nest abandonment or premature fledging of young.

Project activities could result in a significant impact on these species. Project construction activities during the migratory bird breeding season (typically from February 1 to September 1) could disturb occupied nests of migratory birds. Increased levels of noise and human activity in the vicinity of an active nest could result in nest abandonment or forced fledging and subsequent loss of fertile eggs, nestlings, or juveniles. Implementing **MM BIO-1** through **MM BIO-6** would reduce these potential impacts to a less than significant level.

MM BIO-1: Provide Worker Environmental Awareness Training. The Applicant shall provide environmental awareness training before starting construction 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 environmental monitor shall be the main contact for reporting any special-status species observed in or near the Project area by any employee or contractor. The Applicant shall provide the contact information for the lead environmental monitor and the biological monitors to onsite 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 onsite to survey the work area for special-status species and nesting birds (as applicable) prior to 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.

The biological monitor shall be onsite full-time during the initial equipment mobilization and site preparation (including fence installation) and during the final demobilization phase of construction at the cable landing site. In addition, the monitor shall make weekly site visits during Project construction for all work on the cable landing site. While onsite, if the biological monitor observes special-status species on the Project site, the biological monitor shall have the authority to stop all work, and the Applicant shall contact the appropriate agency, (i.e., CDFW or USFWS and CSLC 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 lead environmental monitor for the Project would be contacted immediately to determine the appropriate course of action.

Construction monitoring reports for marine work under CSLC's jurisdiction shall be submitted daily, and for terrestrial work outside of the CSLC's jurisdiction shall be submitted weekly.

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 station work area shall be staked and flagged by the biological monitor (**MM BIO-2**). The special-status plant (dark-eyed gilia) located along the southern edge of the cable landing site work area will be protected with orange construction barrier fencings. The location of the staking and flagging and barrier fencing will be documented in the daily monitoring log and provided to CSLC prior to the start of construction. These demarcated areas shall be inspected daily throughout construction to ensure that they are visible for construction personnel.

MM BIO-4: Install Covers or Some Kind of Escape Ramps in Open Trenches. To prevent accidental entrapment of wildlife species during construction, all excavated holes that will be left open overnight shall have a cover or some kind of soil ramp installed, allowing wildlife an opportunity to exit. If escape ramps are installed, a biological monitor or the construction inspector shall inspect excavations before starting construction each day to confirm that no wildlife species are entrapped or to remove wildlife species that are unable to escape on their own. Any wildlife handling will be conducted under the biological monitor's applicable collection permit or as authorized by the appropriate wildlife agency. If a biological monitor is not onsite, a local biologist (with appropriate permits) would be called out to remove any species.

MM BIO-5: 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 terrestrial and marine areas. The plan shall include the following:

- Measures to stop work, maintain appropriate control materials onsite, contain and remove drilling mud before demobilization, prevent further migration of drilling mud into the stream or waterbody, and notify all applicable authorities.
- Control measures of constructing a dugout/ settling basin at the bore exit site to contain drilling mud to prevent sediment and other deleterious substances from entering waterbodies.
- Onshore and offshore biological monitors shall monitor the onshore and offshore to identify signs of an inadvertent release of drilling fluids.
- Any abandonment contingency plans in case the HDD operations are forced to be suspended and a partially completed bore hole abandoned.
- Complete list of the agencies (with telephone number) to be notified, 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.

MM BIO-6: Conduct Pre-Construction Nesting Bird Surveys and Implement Avoidance Measures. If construction occurs during the nesting season (typically from February 1 to September 1), the following conditions (designed to protect both special-status and non–special-status birds) shall be implemented:

- Areas within the BSA: No more than 1 week before starting Project-related construction, a biological monitor, approved by CSLC staff, shall survey the non-developed natural areas within the BSA 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 (based on the species as explained below) shall be established around the 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 will 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. No disturbances shall occur within the protective buffer(s) until all young birds have fledged, as confirmed by the biological monitor.
- A biological monitor shall be retained by the Applicant (MM BIO-2) and shall be onsite every day if construction activities happen during bird nesting season and a nest is identified within the buffer area.

Western Bumble Bee

Based on existing habitat conditions and results of the August 2020 field surveys, it was determined that the western bumble bee has a low potential to occur on the Project site. As described previously, the potential for this species to occur within and adjacent to the Project was identified during the pre-survey efforts. However, the western bumble bee was not observed during the field surveys, and no suitable hive or nesting habitat was found in the BSA. Project activities may affect foraging resources, but these impacts would be less than significant because of the availability of pollen and nectar sources adjacent to the Project site. Therefore, the Project would have a less than significant impact on western bumble bee.

Special-Status Plant Species

One population of dark-eyed gilia (CRPR 1B.2) was documented in the Project work area along the southern edge of a proposed access road (Figure 3.4-2). This population consists of approximately 50 plants on a patch of degraded dune habitat.

Project activities associated with using the proposed access road to the cable landing site work area could result in the loss of dark-eyed gilia. To avoid direct impacts the dark-eyed gilia, the dune habitat along the access road will be fenced and avoided (MM BIO-3). In addition to potential direct effects, ground disturbance could further degrade the habitat occupied by a special-status plant species and render it vulnerable to colonization by

invasive species. Establishment of invasive species in disturbed areas would decrease the potential for recruitment of special-status plant species. These impacts would be considered significant. Implementing **MM BIO-1** through **MM BIO-3** would reduce potential impacts to a less than significant level.

Marine Components

Special-status marine taxa with the potential to occur in the MSA (Figure 3.4-3) include marine mammals, sea turtles, marine birds, fishes, and invertebrates. 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 mitigation measures **MM BIO-1, MM BIO-5,** and **MM BIO-7**. As discussed in greater detail below, the potential effects on marine habitats in the MSA (Figure 3.4-3) 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 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 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 HAZ-1, MM BIO-5,** and **MM BIO-7** would reduce this impact to a less than significant level.

Horizontal directional drilling of the landing pipes poses a small risk of an accidental release of drilling fluid to the marine environment. 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[28] back to shore. During the HDD process, it is possible that some bentonite drilling fluid could be released to the ocean floor and thus into the water column. An accidental release of drilling fluid to the ocean 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.

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

In some cases, an accidental release of drilling fluid occurred just prior to the drillhead exiting the ocean floor; the drilling fluid immediately was substituted for water, which curtailed any further loss of drilling fluid. Rhodamine dye, an environmentally safe fluorescent dye, is added to the drilling fluid to enable earlier detection of any discharge of bentonite to the marine environment by an onshore or offshore marine biological monitor. **MM BIO-5** details procedures for preventing the accidental release of drilling fluid during HDD work, monitoring for a release using Rhodamine dye, and responding to a release. These measures would prevent an inadvertent discharge of large volumes of bentonite drilling fluid to the marine environment or minimize its impact. Implementing **MM BIO-5** and **MM BIO-7** would reduce this potential impact to a less than significant level by implementing an Inadvertent Return Contingency Plan and best management practices for HDD activities.

MM BIO-7: Implement Best Management Practices for Horizontal Directional Drilling Activities. When using the large HDD equipment to install landing pipes, the following shall be submitted to CSLC staff for review at least 60 days prior to construction of Phase 1 as defined in the MND:

- Engineering design drawings for construction certified by a California-registered Civil/Structural Engineer.
- A site-specific geotechnical report certified (stamped, signed, and dated) by a California-registered Geotechnical Engineer, including boring logs and any geotechnical recommendations (including, but not limited to, identification of reasonably foreseeable risks during HDD installation and proposed risk mitigations) for safe HDD installation.
- If HDD is under CSLC jurisdiction, a minimum depth of 35 feet is required unless a shallower depth is recommended by a California-registered Geotechnical Engineer.
- The Applicant shall incorporate any BMPs identified in the reports or reviews into the HDD plans in order to minimize potential impacts on marine wildlife and water quality.

Cable Entanglement

There could be a potential for cable exposures or suspensions to entangle marine species. Whale entanglements described in a 1957 paper raised concerns about hazards posed to marine species. The paper documented and investigated 14 instances of sperm whale entanglements with submarine cables at depths to 3,720 feet (Heezen 1957). Replacement of historical telegraphic cables with modern fiber optic cable systems and installation techniques has improved torsional and flexion characteristics in subsea cables (Wood and Carter 2009), virtually eliminating the potential for exposed cable to entangle marine species. In addition, burying the cable to a maximum depth of 1 meter (3.3 feet)

out to a water depth of 5,904 feet 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). Additionally, implementing **APM-3** would ensure that Project cables would remain buried throughout their operating life and further prevent any potential for entanglement of any kind with the installed cable.

APM-3: Cable Burial Surveys. The Applicant will conduct an initial and periodic post-lay surveys of all installed cables between the mean high tide line to where project operations extend into federal waters and out to the 1,800-meter depth contour to verify that the cable was and remains buried as initially planned or to the maximum extent feasible as determined by the initial post-lay assessment. These surveys will assess and report to the CSLC and CCC the following:

- The depth of burial achieved along the cable route.
- Any areas of cable suspension greater than 3.3 feet from the ocean floor and an explanation of why the cable could not be re-routed to avoid suspension.
- The consistency of cable installation with the project description.

These post-lay surveys and assessments will be conducted as follows:

- Within 60 days of cable installation.
- Every 5 years after cable installation or until such time as the Applicant can demonstrate following one or more post-lay burial survey that the cable remains buried.
- After any incident or activity, including but not limited to potential commercial fishing gear snags, severe earthquake in the vicinity of the cable, or extreme storm event that could result in excessive ocean floor scouring, that could result in cable exposure to the ocean floor surface.

Should the cable be observed to have become unburied in any location where it should have been buried or had been buried, the Applicant shall ensure that the cable is reburied to the initial cable burial depth at that location. A survey/burial report will be prepared and distributed to responsible State agencies following each survey.

Fishing Gear Entanglement

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 cable 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 cables to snag or become entangled with commercial fishing gear would be reduced by routing and installing cable with state-of-the-art cable route planning and installation techniques designed to increase burial success. These routes are developed by desktop and ocean floor surveys that map substrate types along the proposed cable path. The cables would be buried in soft sediments to a depth of 3.3 feet where feasible in water depths less than 5,904 feet. In areas of hard bottom, the cable would be surface laid with only enough slack to allow the cable to conform to the ocean floor. 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 3.3 feet, or to the deepest depth feasible for the substrate. As discussed in Section 5.2, *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 cable, implementing **MM BIO-8** would ensure that any potential for 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-8: Cable Entanglements and Gear Retrieval. If fishers snag a cable and lose or cut gear, or if the Applicant snags fishing gear, the Applicant shall use all feasible measures 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, the Applicant 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, the Applicant shall submit to CSLC staff a report describing the following:

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

In addition, the Applicant has implemented **APM-1** by enacting a Fishing Agreement that establishes methods of gear replacement and costs claims in the unlikely event that fishing gear is entangled near a cable owned by the Applicant.

APM-1: Fishing Agreement. The Applicant is actively involved in a Fishing Agreement with the regional commercial fishing cable liaison committee. This agreement, in part, establishes the following:

- A cable/fishing liaison committee that manages the interactions between the fishers and the cable companies.
- Policies for how the fishermen will work around the cables and what to do if they think their fishing gear is caught on a cable or similar issue.
- Methods of gear replacement and costs claims in the unlikely event that fishing gear is entangled in cable owned by the Applicant.
- Design and installation procedures to minimize impacts on fishing activities, such as:
  - Burying cable where possible, and
  - Allowing fishing representatives to review marine survey data and participate in cable alignment selection.
- Communication and notification procedures.
- Contributions to fishing improvement funds

Increased Turbidity

During plow and trenching activities, temporary spikes in turbidity near the ocean floor may occur. Increased turbidity typically is restricted to the region of the water column immediately above and adjacent to the ocean floor where the plowing or trenching 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 ocean floor. During ROV surveys of proposed cable routes, ocean floor 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 trenching and plowing activities.

Like local increases in turbidity from cable trenching and plowing activities, installing landing pipes could result in an accidental release of bentonite drilling fluid to nearshore subtidal habitats, resulting in temporarily altered sediment composition and increased turbidity. During installation of the landing pipes, **MM BIO-5** will be implemented to reduce the potential for an accidental release of bentonite drilling fluid to the marine environment. The HDD construction method typically terminates the landing pipe at water depths between 40 and 55 feet. In general, the offshore termination point along the cable route is selected over a soft bottom habitat. Throughout most of California, the ocean floor

sediments occurring at these water depths largely are composed of sand with some silt and clay components. Coastal ocean floor sediments at these shallow depths are regularly exposed to extreme wind and wave energy, producing an environment with naturally elevated turbidity. The accidental release of small volumes of bentonite drilling fluid into this environment is not expected to result in any detectable effects on marine biota 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 the offshore installation of landing pipes (Figure 2-5) and burial of the cable would generate temporary (Table 2-1) and isolated non-impulsive underwater noise. The HDD construction method and vessel support for the landing (Appendix B) would generate non-impulsive, continuous noise as explained in Section 2.4.4, *Marine Project Construction Methods*. The HDD-related activities would occur primarily during daylight hours, although 24-hour operations could occur (Table 2-1) (Section 2.3.8.1, *Install Landing Pipes Using Marine HDD Machines for Landing Pipes)*. Installation and burial of the cable to a depth of 3.3 feet offshore to a water depth of 5,904 feet would occur 24 hours a day for about 3 weeks (Table 2-1). Peak nearshore background underwater noise levels have been reported averaging between 128 and 138 decibels (dB) (re 1 μPa at 3.3 feet) for nearshore coastal waters in Central California (Fabre and Wilson 1997). Higher background noise levels can be expected offshore Eureka because of increased wave and surf heights. 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) (Nedwell et al. 2003).
- Cable Installation and Lay Vessel. Peak underwater noise levels for cable-laying ships have been reported to range between 170 and 180 dB (re 1 μPa at 3.3 feet) (Hale 2018), and between 160 and 180 dB (re 1 μPa at 3.3 feet) for small work vessels (Caltrans 2015), depending on the vessel size and design.

The following are detailed discussions of fishes, marine mammals, and sea turtles expected within the MSA (Figure 3.4-3) (Section 3.4.1.2, *Marine Biological Resources* and Table 7.1 in Appendix C).

FISHES

Of the 18 special-status marine fish species expected in these waters, only bluefin tuna, Chinook salmon (California Coastal ESU, Upper Klamath-Trinity Rivers), cowcod, coho salmon (Southern Oregon/Northern California Coast ESU), longfin smelt, steelhead trout

(Northern California DPS, Klamath Mountains Province), and white shark (*Carcharodon carcharias*) are regarded as having at least a moderate potential to occur in the MSA (Figure 3.4-3) (Section 3.4.1.2, *Marine Biological Resources* and Table 7.1 in Appendix C). 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. As detailed above, Project-related non-impulsive underwater noise levels from cable installation and cable lay vessel operations are below these established sound criteria for acute impacts on fish. Using the 150-dB noise level established for non-lethal behavioral responses in fish, it is estimated that generated underwater noise will drop to this level in less than 210 feet from the noise source. Furthermore, potential ambient noise levels are anticipated to be attained within 420–840 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 AND SEA TURTLES

Of the 40 marine mammal species found along the coast of California, only 10 have a moderate to high potential to occur within the MSA (Figure 3.4-3) (Section 3.4.1.2, *Marine Biological Resources* and Table C-4 in Appendix C). The California sea lion, harbor seal, humpback whale, blue whale, common dolphin, fin whale, gray whale, harbor porpoise, northern elephant seal, and Steller sea lion could be affected by Project-related generated noise as explained above. No sea turtle species are expected within the MSA as their ranges occur further south.

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 the levels at which a marine mammal is predicted to experience changes in hearing sensitivity, whether temporary or permanent, from acute exposure to loud underwater anthropogenic sound sources. The updated impulsive noise thresholds are dual metric, meaning whichever results in the largest isopleth 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 3.4-2 were used for the Project's underwater noise analysis because the Project-related activities would create non-impulsive underwater noise that are not expected to exceed the peak SPL thresholds for impulsive sound (NOAA 2018).

With the exception of 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 <153 dB approximately 26 feet from the sound source.

Table 3.4-2. 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
Dolphin 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 2018
Term:
SEL = sound exposure level

Dall's porpoise and harbor porpoise (Table C-4 in Appendix C) are the only porpoise species with "low to moderate" and "moderate" potential to occur in the coastal waters offshore of Eureka. It is expected that marine wildlife would avoid the immediate area where underwater noise would be generated during cable-laying activities. Sound levels generated by the Project would fall below ambient underwater noise levels beyond 105 feet from the cable lay ship or diver support vessel (Figure 2-5). Additionally, a marine mammal observer would be present onboard the cable lay vessel per **MM BIO-9**.

MM BIO-9: Prepare and Implement a Marine Wildlife Monitoring and Contingency Plan. The Applicant shall prepare and implement a Marine Wildlife Monitoring and Contingency Plan (MWMCP) for installing or repairing cables with the following elements, procedures, and response actions:

- Awareness training for Project vessel crew that includes identification of common marine wildlife and avoidance procedures included in the MWMCP for Project activities.
- Have two qualified shipboard marine mammal observers onboard all cable installation vessels during cable installation activities. The MWMCP shall establish the qualifications of and required equipment for the observers.
- In consultation with NMFS, establish a safety work zone around all Project work vessels that defines the distance from each work vessel that marine mammals

and sea turtles may approach before all operations must stop until the marine mammal or sea turtle has moved beyond.

- Project-specific control measures for Project vessels (including support vessels) and actions to be undertaken when marine wildlife is present, such as reduced vessel speeds or suspended operations.
- Reporting requirements and procedures for wildlife sightings and contact made to be required in the post-installation reports. The MWMCP shall identify the resource agencies to be contacted in case of marine wildlife incidents and to receive reports at the conclusion of Project installation.
- The MWMCP shall be submitted to the CSLC and CCC for review at least 60 days before starting marine installation activities.

SEA TURTLES

Sea turtles are not expected to occur within the MSA. Little scientific information is known about the effects of anthropogenic underwater noise on sea turtles or at what potential threshold levels acute or behavioral responses may occur (Williams et al. 2015). Sea turtles appear to be sensitive to low-frequency sounds, with a functional hearing range of approximately 100 Hz to 1.1 kHz (Grebner and Kim 2015). Scientific information on direct measurements of underwater noise sources on sea turtles concerns impulsive sound sources (not generated from the Project-related activities), such as airguns and dynamite explosions (not part of the proposed Project-related activities). These studies indicated that marine turtles may be somewhat resistant to successive dynamite blasts (Erbe 2012) and can detect and exhibit avoidance behavior in response to 175 dB RMS-generating impulsive airgun sounds (Weilgart 2012) when roughly 1 mile away from the source.

The Acoustical Society of America developed guidelines for sound exposure criteria for fishes and turtles, and suggested that (1) sea turtle hearing probably was more similar to that of fishes than marine mammals; and (2) when assessing potential underwater noise effects on sea turtles, the peak SPL and acute threshold level for fishes of 206 dB might be an appropriate measure (Grebner and Kim 2015).

As indicated above, potential Project-related underwater peak SPL noise levels are expected to be in the 170- to 180-dB range, which is well below the 206-dB level for acute impacts. Based on the behavioral responses to impulsive sound sources, it is anticipated that any sea turtles approaching Project-related active cable installation activities would avoid Project work vessels. If avoidance does not occur and a sea turtle approached a Project work vessel, an onboard observer (**MM BIO-9**) would observe the sea turtle and stop cable installation activities until the sea turtle had transited a safe distance away from operations. Implementing this MM would further prevent exposing sea turtles, porpoises, and other marine mammals to underwater noise levels of sufficient magnitude to result in any effect and would reduce potential impacts to less than significant 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?

Less than Significant with Mitigation.

Terrestrial Components

The area of the cable landing site is designated as Coastal Dependent Industrial (MC), and the pipelines serving offshore facilities are a coastal-dependent use identified in the 2014 Humboldt County LCP (Section 30255). The project is specifically in an area where industrial-related uses, including underground utilities, are permitted by the LCP (Section 30240).

Sensitive Natural Community and Wetland ESHAs

Two areas of coastal dune willow thickets in the BSA are recognized as a sensitive natural community by CDFW and as wetland habitat ESHAs. The willow thickets occur outside the cable landing site work area but within the ESHA buffer identified for the BSA. The two willow thickets would not be directly affected by Project-related activities. However, they could be indirectly affected by Project activities on the paved access road leading to the cable landing site if the planned fencing of the ESHA were compromised and if construction crews were unaware of their protected status. The existing road use for maintenance of the buried pipes and outbuildings maintained by the Humboldt Bay Municipal Water District is a regular occurrence in this area. The small amount of permanent belowground landing vault and ocean ground bed installations would not effectively reduce wetland buffer distances as these project installations are comparable to the existing infrastructure surrounding the cable landing site and are not likely to contribute to the degradation of these ESHAs.

Two degraded dune mat habitat patches (totaling 0.288 acre) are within the cable landing site. Although degraded, these areas could be classified as a dune mat sensitive natural community because they contain up to 25% local dune mat indicator species. However, the presence of invading pampas and European beach grass indicate that the open sandy conditions necessary to maintain dune mat composition and diversity will decline as the dominance of the invading species increases. The western dune mat polygon also contains dark-eyed gilia and would be considered an ESHA because it is rare plant habitat. This dune mat habitat will be avoided by fencing and other measures to ensure that the access road entering the cable landing site from the west, if used, is properly sited. The remaining dune mat habitat to the east is degraded; it is threatened by the continued encroachment of European beach grass from the south, west, and north of the cable landing site, as well as a patch of invading pampas grass within the degraded dune mat area. The cable landing site is on leased land managed for coastal-dependent industrial uses that historically have experienced regular disturbance. Routine driving and

land use disturbance at this site is expected to continue in the future. Given that the area is *already disturbed and degraded by human activities and developments,* this area of dune mat habitat is not considered an ESHA (italicized text from Section 30107.5 ESHA definition). This determination is in accordance with local precedent established for degraded dune mat in this area of the Samoa peninsula (GHD 2012; CCC 2013).

No work is proposed within an ESHA at the cable landing site. The work adjacent to the willow and degraded dune mat ESHAs is an allowable use by the Humboldt County LCP and is not likely to substantially affect the total area or the quality of dune mat and willow habitats in the area. The Project is not likely to increase the risk of disturbance or degradation in the area.

ESHA delineation in the BSA includes nesting habitat for white-tailed kite and northern harrier, and foraging habitat for western bumble bee. Bird nesting habitat in the BSA could be directly affected by construction noise. Foraging habitat for the western bumble bee could be directly affected by ground disturbance associated with mobilization of equipment. The cable landing site does not support nesting habitat for northern harrier or white-tailed kite and lacks soils, woody debris, and other substrates that could support a western bumble beehive or nest. Work would occur adjacent to suitable nesting habitat and nectar and pollen sources. Because of the availability of alternative nesting and foraging habitat in the Project vicinity and the limited footprint of construction activities at the cable landing site, ESHA for terrestrial wildlife would not be substantially affected.

Implementing **MM BIO-1** through **MM BIO-3**, **MM BIO-5,** and **MM BIO 6** would reduce potential direct and indirect impacts on ESHAs to a less than significant level. A stormwater pollution prevention plan (SWPPP) would ensure that no construction materials, spoils, soil, debris, or waste would be placed or stored where it may be subject to entering coastal waters or environmentally sensitive areas.

Less than Significant with Mitigation.

<u>Marine Components</u>

The proposed marine cable route does not transit 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). The cable route does pass through portions of the MSA marked as rocky reef and generally defined as a HAPC and EFH for groundfish. Other sensitive marine habitats may include communities of deep-sea corals and sponges. No kelp forests are known to exist along the proposed cable route. The nearest kelp forest is 27 miles south of the MSA near False Cape. No deep-sea corals are known to occur along the proposed cable route within the MSA. Some combination of mixed- to high-relief hard substrate habitat appears to occur approximately from 656 to 1,969 feet

(from 200 to 600 meters) north and south of proposed cable routes, in water depths from 207 to 266 feet where soft and hard corals might occur.

Soft Substrate Communities

Impacts on soft substrate benthos may include disturbance of mobile organisms and localized displacement or mortality of infauna and epifauna from cable burial and installation and seaward completion of the landing pipes. Project components with the potential to affect soft substrate communities are the pre-lay grapnel run, cable installation with the cable plow, ROV operation, diver activities associated with exiting the landing pipes at the seaward terminal point, and repairs (if needed). Cable installation would extend from the landing pipe exits and continue offshore along the transpacific routes.

The potential scale and duration of ocean floor disturbance caused by Project installation and maintenance activities would be limited, resulting in predominantly localized and temporary disturbance to the ocean floor. In undisturbed areas adjacent to cable laying, benthic infauna are expected to begin recolonizing the affected area in a matter of weeks, as demonstrated in studies of the ATOC/Pioneer seamount cable (Kogan et al. 2006), the PAC fiber optic cable in the Olympic Coast National Marine Sanctuary (Antrim et al. 2018), and the MARS fiber optic cable in the Monterey Bay National Marine Sanctuary (Kuhnz et al. 2015); full recovery should be achieved within a few years. In the assessment of the ATOC/Pioneer cable, it was noted that the cable provided an artificial hard substrate for anchorage that quickly was colonized by *M. farcimen* and *Urticina* spp. anemones, occasional sponges, and other low-relief colonizing taxa (Kogan et al. 2006); in the sediments, the cable actually had higher species diversity and established a microcosm that attracted fish and crab taxa (Kogan et al. 2006). Marine invertebrates, fishes, and other wildlife are anticipated to move away from, and thus avoid, all physical disturbances and to recolonize the area after the disturbance has occurred. Consequently, any impact of Project activities on soft substrate habitat and associated biological communities would be less than significant.

Burying cables through soft sediment ocean floor areas also could temporarily increase turbidity in the pelagic zone. Any resuspended sediments would resettle onto the ocean floor quickly. Implementing **MM BIO-5** 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

Cable installation along hard bottom substrate, if unavoidable and if the cable is installed directly onto these habitats, could directly affect hard substrate habitats and associated marine biological resources. Biota associated with hard substrate habitat are predominantly slow growing and susceptible to crushing, dislodgement, and other physical disturbances. Preliminary ocean floor mapping of the proposed southernmost

cable routes (Figure 3.4-3) does not cross hard substrate habitats. The un-surveyed northernmost cable routes intend to avoid crossing any hard substrate habitats (Figure 3.4-3). Although the routing of one of the two southernmost cables (Figure 3.4-3) appears to cross hard substrate habitat, review of the cable routing ocean floor mapping indicates that the cable route does not cross any hard substrate habitat (EGS 2020).

In the event that one of the unmapped cables must cross hard substrate habitat, any potential impact would be restricted to an area proportional to the width (approximately 3 inches) and length of the cable through the hard substrate area and would affect less-sensitive hard substrate organisms. Laying the cable on moderate- and high-relief hard substrate features exposes the cable to unnecessary suspension, increased tension stress, and possible damage; therefore, it is strongly avoided.

Installing a fiber optic cable on any potential low-relief (less than 3.3 feet high) hard substrate could be expected to bury or crush any taxa attached to the hard substrate directly under the cable. As observed and documented in visual surveys of cable routes in California coastal waters, low-relief hard substrate habitats often are exposed to cycles of periodic burial by sand as well as increased turbidity (AMS 2015). This typically results in lower species diversity and abundances of the taxa inhabiting these features than occurs in high-relief (more than 3.3 feet high) hard substrate communities. These harsh physical conditions have been observed to support a more ephemeral community that is dominated by organisms more tolerant of high turbidity and sand scouring, or whose individual growth is enough to avoid burial (AMS 2020). Typical taxa observed in prior habitat and macrobenthic taxa surveys conducted by ROVs for cable routes in nearby marine protected areas include cup corals, puffballs, and other similar sponges; gorgonian soft corals; and some species of anemones, such as *Stomphia* spp. and *Urticina* spp. (AMS 2020).

High-relief hard substrate areas typically have higher species diversity than low-relief habitats because their elevation results in lower turbidity, less sand scouring, and less periodic burial. Such areas typically support organisms sensitive to physical disturbances such as erect turf species, hard and soft hydrocorals, branching corals, and branching and erect sponges. High-relief hard substrate areas generally are more sensitive to physical impacts than low-relief hard substrate habitat.

The potential for post-lay effects on hard substrate areas depends on the location of the individual cable. The cable would be placed on the ocean floor at all water levels in a way that avoids suspension; suspension can result in some movement of the cable in response to currents and wave action in shallow depths (i.e., less than 100 feet). This causes continuous abrasion of hard substrate habitat and damage to attached biota, as well as unnecessary cable tension stress and possible damage. There is no hard substrate habitat in the MSA in water depths less than 656 feet; therefore, the potential for abrasion of the cable into the hard substrate is not expected to occur. In addition, the

Applicant would avoid any hard substrate habitat areas along the nearshore coastal route whenever possible; moreover, the cable would be buried in soft substrate to a water depth of 5,904 feet.

Past cable route and post-lay surveys conducted in California coastal waters have observed minimal impacts on hard substrate communities. During a survey of the AT&T Asia-America Gateway S-5 cable, which ran parallel to previously laid fiber optic cables in low-relief hard substrate, AMS (2008) reported no noticeable impacts from previously laid cables in the area. Two years after laying cable offshore British Columbia, Dunham et al. (2015) reported that glass sponge reefs had recovered to approximately 85% of natural growth and cover when compared to control sites. Summaries from other surveys indicated that large erect sponges and other sessile invertebrate species were observed growing on or over exposed cables (AMS 2020).

The marine segments of the path of cables are designed to maximize installation along soft substrate (where the cables can be buried) and avoid areas identified as hard substrate where feasible. Anchoring of support vessels would be kept to a minimum and would result in only minor, temporary disturbances of soft substrate ocean floor sediments. Implementing **MM BIO-10** would further minimize potential impacts on hard substrate habitat areas during cable installation. If any hard substrates are affected, **MM BIO-11** would provide compensation for the impairment or loss of hard substrate-associated marine taxa and their role in marine ecosystems in the marine MSA (Figure 3.4-3).

MM BIO-10: Minimize Crossing of Hard Bottom Substrate. At least 30 days before starting construction of Phase I, a pre-construction ocean floor survey shall be conducted and provided to CSLC covering the proposed cable lease area and the temporary construction corridor (including construction vessels anchoring areas and depicting ocean floor contours, all significant bottom features, hard bottom areas, sensitive habitats, the presence of any existing wellheads, pipelines, and other existing utilities) to identify any hard bottom habitat, eelgrass, kelp, existing utilities (including but not limited to pipelines), and power cables. The proposed cable routes and anchoring locations shall be set to avoid hard bottom habitat (to the extent feasible), eelgrass, kelp, existing utilities (including but not limited to pipelines), and power cables, as identified in the ocean floor survey.

MM BIO-11: Contribute Compensation to Hard Substrate Mitigation Fund. The following would be proposed if slow-growing hard substrate organisms are damaged:

- CCC compensation fees (based on past projects) will be required to fund the U.C. Davis Wildlife Health Center's California Lost Fishing Gear Recovery Project or other conservation programs for impacts on high-relief hard substrate affected by the Project. The amount of the hardbottom mitigation fee shall be

calculated by applying a 3:1 mitigation ratio to the total square footage of affected hard bottom and multiplying that square footage by a compensation rate of $14.30 per square foot.

- A final determination of the amount of high-relief hard substrate affected (used to calculate the total compensation fee) will be based on a review of the final burial report from the cable installation. The total assessment and methods used to calculate this figure will be provided to the CSLC and CCC for review and approval. Both the CSLC and CCC also will be provided documentation of the total amount of mitigation paid and the activities for which the funds will be used.

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 exchange is anticipated in the MSA because Project vessels would not exchange ballast water within the MSA (Figure 3.4-3). Implementing **MM BIO-12** would further reduce any potential Project-related contribution to the spread of invasive non-native species to a less than significant level.

MM BIO-12: Control of Marine Invasive Species. The Applicant shall ensure that the underwater surfaces of all Project vessels are clear of biofouling organisms prior to arrival 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 CSLC's ballast management regulations, and Biofouling Removal and Hull Husbandry Reporting Forms shall be submitted to CSLC staff as required by regulation. No exchange of ballast water for Project vessels shall occur in waters shallower than the 5,904-foot isobath.

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

Less than Significant with Mitigation.

Terrestrial Components

See discussion above under b). The Project would avoid impacts on coastal dune willow thickets, a CCC wetland within the terrestrial BSA. There are no other state- or federally protected wetlands in the BSA. Implementing **MM BIO-1** through **MM BIO-3** would reduce potential indirect impacts on the coastal dune willow thicket to a less than significant level.

No Impact.

Marine Components

Because no federally protected wetlands occur in the ocean, there would be no impact. 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 ocean sediments are addressed in Section 3.10, *Hydrology and Water Quality*.

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 BSA (Figure 3.4-1) consists mostly of open sand, disturbed dune habitat, ruderal/developed, and invasive grasses A small portion of the land cover in the BSA consists of coastal dune willow thickets, non-native Monterey pine and cypress stands, and coyote brush scrub. This area could be used by resident terrestrial wildlife; however, the area is not part of an established movement or migratory corridor, and Project activities would not substantially impede wildlife movements. Natural areas in the BSA include coyote brush scrub and coastal dune willow thickets that also could be used as a movement corridor by wildlife species. However, the Project would not impede wildlife movements through these habitats.

Less than Significant Impact.

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 cable installation or repair have the potential to temporarily disturb individuals' movements and activities. Based on previous observations, it is generally expected that any fish, marine mammals, or sea turtles would avoid Project vessels and activities. Ship strikes of large marine mammals have become a growing concern; however, ship strikes during cable installation are unlikely because the speed of the ship during cable-laying activities is very slow (approximately 0.5 to 1.5 nautical miles per hour [0.5 to 1.5 knots] while plowing)

compared with the speed of sea lions or migrating whales (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 MSA (AMS 2020). 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.

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

Less than Significant Impact.

Terrestrial Components

The area of the cable landing site is designated as Coastal Dependent Industrial (MC). The pipelines serving offshore facilities are a coastal-dependent use identified in the 2014 Humboldt County LCP (Section 30255) and are located in an area where industrial-related uses, including underground utilities, are permitted (Section 30240).

Project activities would not conflict with Section 30240 (a) and (b) (Policy 3.30 – Natural Resources Protection Policies and Standards) which state that "Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only uses dependent on such resources shall be allowed within such areas" and "Development in areas adjacent to environmentally sensitive habitat areas and parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade such areas, and shall be compatible with the continuance of such habitat areas." The Project has been designed to avoid 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.

Less than Significant Impact.

Marine Components

Although no local policies or ordinances pertain to the marine components of the Project, installing cables would entail work in an area identified as federal EFH for commercially important fish species under the Magnuson-Stevens Act. Impacts caused by installation and maintenance of the marine segments of the cable would be temporary, and the affected area would be very small relative to the extent of EFH in the broader Eureka

offshore region and within the MSA. 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 cable 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; therefore, there would be no impact.

3.4.4 Mitigation Summary

Implementation of the following mitigation measure(s) 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 Some Kind of Escape Ramps in Open Trenches
- MM BIO-5: Prepare and Implement an Inadvertent Return Contingency Plan
- MM BIO-6: Conduct Pre-Construction Nesting Bird Surveys and Implement Avoidance Measures
- MM BIO-7: Implement Best Management Practices for Horizontal Directional Drilling Activities
- MM BIO-8: Cable Entanglements and Gear Retrieval
- MM BIO-9: Prepare and Implement a Marine Wildlife Monitoring and Contingency Plan
- MM BIO-10: Minimize Crossing of Hard Bottom Substrate
- MM BIO-11: Contribute Compensation to Hard Substrate Mitigation Fund
- MM BIO-12: Control of Marine Invasive Species
- MM HAZ-1: Develop and Implement Spill Contingency and Hazardous Materials Management Plans
- APM-1: Fishing Agreement
- APM-3: Cable Burial Surveys

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 Marine Components

The Project area for marine cultural resources consists of the four proposed cable routes and a 10-nm buffer around each route, beginning at the mean high tide line of the North Spit of the Humboldt Bay Bar situated between Fairhaven and Samoa and westward to the continental shelf break. A total of 146 documented shipwrecks, unknown wreckage, and debris locations are reported within the Project area. Sources consulted for shipwreck data included cultural resource inventories provided by the CSLC, BOEM Pacific OCS Region (BOEM 2013; former Bureau of Land Management Pacific OCS Region [Stickel & Marshack] 1979), the Minerals Management Service (MMS 1990 [Gearhart et al.]), and the National Oceanic and Atmospheric Administration (NOAA) Automated Wreck and Obstructions Information System (AWOIS) database (1988). A majority of these vessels were built between 1838 and 1899. No record could be found in the historic literature of any historic landings along the North or South Spits of the Humboldt Bay Bar, where vessels offshore would have anchored and lightered (process of transferring cargo between vessels of different sizes) in their cargos.

A search of the CSLC Shipwrecks Database (https://www.slc.ca.gov/shipwrecks/) revealed at least five shipwrecks directly offshore along the Samoan peninsula. Except as verified by actual surveys, CSLC data on shipwrecks was taken from books, old newspapers, and other contemporary accounts that do not contain precise locations. The CSLC Shipwrecks Database reflects information from many sources and generally does not reflect actual fieldwork. Additionally, not all shipwrecks are listed in the CSLC Shipwrecks Database and their listed locations may be inaccurate, as ships often were salvaged or re-floated. One shipwreck to note is the USS Milwaukee, which can be seen at low tide and whose memorial is located approximately 0.5 mile north of the landing site.

Historic-period shipwrecks may consist of the remains of watercraft that were used as early as the 16th century in the Project area to traverse Pacific waters. The majority of shipwrecks reported in this area may occur near natural hazards such as rocky shoals, headlands, and reefs and in the vicinity of coves, historic landings, anchorages, wharves and lighthouses, or other ports-of-call. However, they also may occur in deeper waters such as those associated with historically established shipping lanes. Ports-of-call are accessed from the coastal shipping lanes. These historic watercrafts most often sank due to numerous causes, such as equipment failure; inclement weather; and associated marine casualties such as capsizing, foundering, stranding, explosion, fire, and collision occurring during their travels on the Pacific Ocean. They also may be present due to purposeful scuttling. Their *in-situ* remains may be partially or wholly obscured by sediments and in rocky strata along the ocean floor in the Project area.

3.5.1.2 Terrestrial Components

The cable landing site is the only terrestrial Project component (further discussed in Section 2.3, *Detailed Terrestrial Project Components*) needed to install four cables (coming from Asia or Australia) and their related structures on land in an unoccupied area of the Harbor District.

3.5.1.3 Cultural Setting

Historic Context

This section discusses Cultural and Historic resources, as well as prehistoric archaeological resources that are not affiliated with the Native people who have inhabited the Humboldt and Eureka area for millennia. The ethnographic and archaeological context related to the Native American society and culture in the Project vicinity is discussed in Section 3.6, *Cultural Resources – Tribal*.

Background research conducted for the Project revealed several key themes that frame the post-European influence historical context for which cultural resources in the Project area are best understood (e.g., early exploration and community development, including the lumber industry and railways). A discussion of these themes follows. The ethnographic and archaeological context related to Native American occupation of the Project vicinity is discussed in Section 3.6, *Cultural Resources – Tribal*.

<u>Early Exploration and European American Contact</u>

Juan Rodriguez Cabrillo, a Portuguese pilot and navigator, commanded an expedition to explore the California coast north of Cedros Island in Baja California. With the hope of locating the fabled northwest passage, the “Strait of Annan,” and determining whether Asia could be reached by following the Pacific Coast north, he departed Navidad near Acapulco in June 1542, in the *San Salvador* and the *Victoria* (Bancroft 1886). Cabrillo’s

was the first European expedition to explore along the California coast. Cabrillo died during the voyage, and his remains are believed to be buried on one of the Channel Islands, possibly San Miguel Island (Moriarty and Keistman 1973). When Cabrillo died, Bartolome Ferrer assumed command of the expedition and led it as far north as the southern Oregon border.

Although explorers Juan Rodriquez Cabrillo and Sir Francis Drake had sailed the Humboldt County coastline, it was not until 1775 that a Spanish vessel captained by Juan Francisco de Bodega landed at Patricks Point in Trinidad and claimed the land for the King of Spain. Trinidad Bay located north of the Project area served as a port for fur trading and Chinese trade expeditions.

The first significant contacts by Europeans with the Native Americans of northwestern California by Juan Francisco de la Bodega y Quadra in 1775 and George Vancouver in 1793 were with the Yurok People, the northern coastal neighbors of the Wiyot Tribe.

During the following period of Spanish rule, George Vancouver, an Englishman, explored much of the Pacific coast between 1791 and 1795; this was the last documented exploration of coastal California by ship.

Given the relative difficulty of reaching the area overland and its distance from existing European and colonial American settlements, European American arrival in Humboldt Bay occurred relatively late in time. The first documented European American to arrive in Humboldt Bay was Captain Jonathan Winship in 1806 during a Russian-American fur trading expedition. Winship's men, primarily members of the Aleutian and Kodiak tribes (Giesecke 1997) had encountered the bay while hunting sea otter along the coast. At the time, Winship named the bay "the Bay of Indians," noting a high density of native villages along the rim of the bay (Davidson 1891).

There were no further European colonizers until 1849, with the arrival of Dr. Josiah Gregg, and in 1850 with the arrival of Lieutenant Douglass Ottinger in command of the ship the *Laura Virginia.* Exploration by these groups was driven in general by the ongoing California Gold Rush and in particular by the discovery of gold on the Trinity River (Krause 2010).

Contact with European Americans and ensuing encroachment on native lands led to escalating conflict between 1850 and 1865. This drove the U.S. Government to establish a military fort in the area as a means of mediating disputes, with a heavy emphasis on the protection of settlers and their interests; this fort, Fort Humboldt, was built in 1853 on a bluff above Humboldt Bay (California State Parks 2020). These hostilities culminated in the unprovoked massacre of 50 to 250 Wiyot people on Gunther Island by white settlers (Elsasser 1978).

Development of Timber Operations

Exploration, exploitation, and development of timber operations in the area was meant largely to develop and support gold mining operations in the area. This was driven by the region-wide California Gold Rush following the discovery of gold at Sutter's Mill (now Coloma) in El Dorado County in 1848, and the discovery of gold along the Trinity River the following year (Krause 2010). This focus on gold is reflected in construction of the first rail line servicing the Humboldt area, the Arcata and Mad River Railroad. Established in 1854, this rail ran directly from Humboldt Bay to mines along the Trinity River (OHP 2020).

While timber operations first focused on supplying gold mining operations, it became clear that timber harvesting itself was the more lucrative endeavor. Increased timber production for export rather than for supply to mining operations resulted in the development of additional rail lines throughout Humboldt County. Timber from Humboldt County soon was being exported for construction elsewhere. Redwood from this area was used extensively in the construction of housing and infrastructure in the San Francisco Bay area, especially following the 1906 San Francisco Fire (Timber Heritage Association 2020a).

The original sawmill in Samoa was 270 acres, with 1 mile of waterfront. The land was bought by heirs to the Humboldt logging magnate John Vance's fortune in 1893, who in turn improved the land and built the lumber mill, the railroad, and other industrial buildings on the site. The mill produced its first wood in 1894, and the Vance company extended their railroad, the Eureka & Klamath River Railroad, south to Samoa to service the mill by 1896. The mill and railroad were bought by Andrew Hammond in 1900 for $1 million. By 1912, Hammond also had purchased the housing stock in Samoa to turn the area into a company town dominated by Hammond Lumber. The mill and its associated shops were the biggest in Humboldt County and were operated under the Hammond name for 56 years before being bought by Georgia Pacific in 1956, by which time the Hammond Lumber Railroad (HLRR) servicing the mill had been largely abandoned (Timber Heritage Association 2020b, 2020c).

Timber operations remained a major part of the area's economy into the modern era; as of 1974, the Humboldt area supplied 25% of the State of California's lumber and, despite impacts on the timber industry since this period, timber still accounts for over half of Humboldt County's manufacturing (Eschker et al. 2008).

Development of Nearby Communities

As the Wiyot People were forcibly displaced from their lands directly adjacent to the Humboldt and Arcata Bays, a number of small European American settlements formed to support mining and logging operations in the surrounding areas and to support milling and shipping operations in the immediate vicinity. These communities include Humboldt City, Bucksport, Eureka, Uniontown, and Arcata. While some of these smaller

communities are visible on historic maps, most had been absorbed into the growing borders of Eureka and Arcata, the dominant settlements of the region by the 1920s (USACE 1922). While timber harvesting grew to become the dominant economic activity of the region, with the Homestead Act, the 1860s saw an increase in agricultural growth and development of orchards and cattle ranches across Humboldt County (Krause 2010).

Development of the Samoa Peninsula began in 1889; with investment from prominent Eureka businessmen, the area was organized under the name "the Samoa Land and Improvement Company." The group hoped to develop Samoa as the "Coney Island of Humboldt Bay," with an emphasis on recreation and lavish amenities for residents. The Samoa Land and Improvement Company failed to generate interest in this development, and in 1893 sold their holdings to the Vance Lumber Company. The Vance Lumber Company developed the peninsula as a sprawling timber processing complex including a mill and company town. In 1900, the company was acquired by the Hammond Lumber Company, who further expanded and developed timber operations in the area, including construction of the HLRR (McCormick 1989).

The history of timber harvesting in the region is obvious not only through the presence of historic and modern mills throughout the area but also in other prominent historic resources in the Project vicinity. These include the Carson Mansion in Eureka and the Samoa Cookhouse on the Samoa Peninsula. The Carson Mansion, perhaps the most imposing historic home in Eureka, was built in the Victorian style between 1884 and 1886. The mansion was owned by the wealthy lumber magnate William Carson, the man credited as being the first to mill redwood lumber in the area (Historic American Buildings Survey 2020). The Samoa Cookhouse, located near the Project area, was constructed in 1900 to feed workers at the Hammond Lumber Company. The cookhouse operates now as a working restaurant and small museum dedicated to the history of timber harvesting in the region (Samoa Cookhouse Museum 2020).

Existing Conditions

Terrestrial Archaeological and Built Environment Records Search

The California Historical Resources Information System (CHRIS) Northwest Information Center (NWIC) in Rohnert Park maintains the California Office of Historic Preservation (OHP) cultural resource records for Humboldt County. On June 30, 2020, the NWIC provided record search results for the terrestrial Project area and an additional 0.25-mile radius surrounding the Project area.

The records search found that eight (8) cultural resources studies had been conducted in the record search radius, with three of those encompassing portions of the Project (Table 3.5-1). These studies collectively covered the entire Project area; however, the studies were conducted over 20 years ago. The records search also found that one

previously recorded historic-era built environment resource, a segment of the HLRR, is located in the Project area (Table 3.5-2).

Table 3.5-1. Previously Conducted Cultural Resources Studies in the Project Area

NWIC Study No.	Year	Author(s)	Title
S-00886	1977	Benson, Fredrickson, McGrew	*Humboldt Bay Wastewater Authority, Regional Water Pollution Control Board Facility, Archaeological Resource Analysis: Archaeological Reconnaissance of the Humboldt Bay Area*
S-16879	1975	Fredrickson, Tamez, Roberts	*An Archaeological Survey of the Proposed McKinleyville Sewage Collection and Treatment Facility*
S-30202	2000	URS Greiner Woodward Clyde Federal Services	*Restoration of the Northwestern Pacific Railroad, Humboldt, Trinity, and Mendocino Counties*

Term:
NWIC = Northwest Information Center

Table 3.5-2. Previously Recorded Cultural Resources in the Project Area

Primary/ Trinomial	Age/Type	Description	CHRS Code
P-12-003142/ CA-HUM-1495H	1896/Historic-era built environment	Hammond Lumber Railroad	N/A

Term:
CHRS = California Historical Resource Status

On August 5, 2020, ICF sent letters to the Humboldt County Historical Society, the Eureka Heritage Society, and the Clarke Historical Museum to request historical resources information about the Project area. To date, ICF has not received responses from any of these interest groups.

Additional sources of information, such as historic maps from the USGS and General Land Office, and historic aerial photographs were selectively reviewed to gather historical data and to determine areas with a high potential for the presence of historic and prehistoric sites. The following sources were reviewed:

- National Park Service's National Register of Historic Places (NRHP) Digital Archive website
- OHP's California Historical Landmarks website
- Historic General Land Office plat maps (1855 to 1902)
- Historical USGS topographic maps (1922 to 1987)
- Historical aerial photographs (1931 to 1972)

The OHP California Historical Landmarks website and the National Park Service's NRHP Digital Archive website did not identify any California Historical Landmarks, historical resources, or historic properties in the Project area. Staff at the NWIC reviewed the *Archaeological Determination of Eligibility* for Humboldt County and provided OHP's *Built Environment Resources Directory*. No historic properties or historical resources were identified in the Project area.

A review of historical maps and aerial photographs indicated that, with the exception of the railroad grade, the Project area was not built upon or visibly modified until the mid-1960s, when the adjacent Kraft Pulp Mill was built

Marine Cultural Resources Records Search

Research methods were limited to an archival and records search to inventory marine cultural resources. All marine cultural resources cited consisted of shipwrecks. No downed aircraft or prehistoric archaeological sites and isolated artifacts were listed. The inventory completed for the marine Project area covers the four potential cable routes plus a 10-nm buffer. No remote sensing survey of the ocean floor for shipwrecks and other debris or predictive modeling for prehistoric archaeological resources has yet been completed for the marine portion of the Project area. A complete list of sources consulted is included in the Marine Cultural Resources Report (Appendix D).

Sources consulted for marine cultural resources included:

- CSLC (cultural resource inventories – shipwreck and downed aircraft listings)
- NOAA Automated Wreck and Obstructions Information System database (1988)
- U.S. Army Corps of Engineers (USACE) Los Angeles and San Francisco Districts
- National Maritime Museum in San Francisco
- Los Angeles Maritime Museum
- Commerce Department files at the National Archives in Washington D.C.
- San Bruno, Regional Records Centers at Laguna Nigel, and San Bruno
- The Huntington Library in San Marino
- Published volumes of Lloyds of London Ships Registry 1850–1980 and 1885–1950
- U.S. Department of Commerce Merchant Vessels of the United States 1867–1933
- USCG Merchant Vessels of the United States 1933–1982 (and supplements 1982–1988)

As part of this analysis, shipwrecks were mapped in relation to the alternate cable routes based on their reported coordinates or other relevant information. Centered on the North Spit of Humboldt Bay cable origin, the marine Project area extends 10 nm (18.5 km) north to include waters offshore of Camel Rock south of Trinidad Head, excluding the immediate inshore area of that location and southward to the Eel River.

The records search yielded no maritime finds of prehistoric origin within the Project area. All known underwater prehistoric resources on file appear to be in Oregon and southern California waters. It should be noted that there is a recognized potential for the remains of prehistoric and historic sites, artifacts, and Native American watercraft to be present offshore—although there is a lower potential for their *in-situ* preservation.

A total of 146 documented shipwrecks, unknown wreckage, and debris locations are reported within the marine Project area. The majority of these vessels were built between 1838 and 1899. No record could be found in the historic literature of any historic landings along the North or South Spits of the Humboldt Bay Bar where vessels offshore would have anchored and lightered in their cargoes. The references consulted as part of the records search for submerged historic period cultural resources provided information on shipwrecks, unknown wreckage, and debris locations. As previously referenced, these historic-period watercraft came to rest on the ocean floor due to marine casualties such as foundering (casualties due to leaking or capsizing of vessels, vessels lost at sea not due to collision or burning, and vessels not reported after sailing), stranding (casualties due to vessels running aground on a sandbar or reef, striking rocks, or becalming),[29] colliding (collision between vessels), burning (casualties due to fire and explosion), or from being abandoned (abandonment at sea not due to age) during travel on the ocean. Vessels that foundered are those that took on water and sank below the surface of the water.

None of the 146 shipwrecks reported in the Project area have been previously evaluated for their significance or importance in California history, and no degree of accuracy of location has been evaluated previously for any of the shipwrecks.

The reported locations of historic-period shipwrecks are characterized by inaccuracies. Many, if not most, vessels reported as lost in the Project area have not been accurately located or assessed for their eligibility for listing in the California Register of Historical Resources (CRHR). Therefore, the potential for the Project to affect these shipwrecks cannot be accurately assessed. However, given the large number of shipwrecks reported within or near the Project area, it is likely that one or more may be found by site-specific remote sensing surveys for each of the four cable routes.

[29] *Stranding* is often misused by mariners to indicate running out of fuel, engine trouble, or trouble with the ship's machinery rather than the vessel itself.

Fieldwork

A cultural resources survey of the Project area was conducted by archaeologist Stephen Pappas of ICF on August 11, 2020. The surveyed area consisted of heavily disturbed areas east of New Navy Base Road and west of the Kraft Pulp Mill facilities bound by an access road and dense vegetation to the south and an artificial waste management mound to the north.

The archaeological survey consisted of a pedestrian inspection, walking a maximum of 15-meter-wide transects in the survey area. All exposed ground surface was intensively inspected for any indications of archaeological sites or artifacts. Overall surface visibility was excellent to moderate in the Project area; however, the majority of the ground surface appeared disturbed due to installation of underground water treatment facilities and placement of fill for the waste management mound along the northern portion of the Project area. The location of the landing site appeared to be excavated as a result of waste management operations associated with the pulp mill, revealing sandy soils approximately 2 to 3 feet below the surrounding ground surface. No newly identified archaeological resources were observed or recorded within the Project area during identification efforts.

ICF architectural historians conducted a desktop survey of the Project area. An ICF cultural resources specialist revisited and documented a segment of the HLRR identified in the Project area during the cultural resources' fieldwork on August 11, 2020. Some of the subject segment of rail was covered in dense vegetation that obscured the grade. In general, the visible portions of the subject segment ranged from no rail, track, or ballast remaining on the grade to the remains of two steel rails lacking ties or ballast. At the southern end of the subject segment, the grade was clear of vegetation and contained two steel rails and remnant ties.

3.5.1.4 Findings

Built Environment Resources

ICF cultural resources specialists identified one historic-era built environment architectural resource in the Project area: a segment of the HLRR.

Hammond Lumber Railroad (P-12-003142; CA-HUM-001495H)

A 300-foot-long segment of the HLRR is located in the eastern end of the Project area. The HLRR is an abandoned railroad that has been out of commission for over 70 years. The HLRR was constructed in 1896 and served as a logging line, bringing heavy timber harvests from the forests to the company's lumber mills in Samoa for processing timber and then distributing lumber products to markets. Dozens of similar small service lines crisscrossed the Humboldt region. Forest fires at Hammond holdings destroyed rail

trestles at Big Lagoon and Little River in 1945, and service on the line was abandoned in 1948. Desktop review and field survey revealed that the segment of the resource in the Project area was no longer in use, and most of its components were no longer present.

ICF architectural historians evaluated the railroad in the Project area and recommended the structure ineligible for inclusion in the NRHP or CRHR due to lack of integrity. Therefore, the rail segment is not considered a historical resource for purposes of CEQA.

Archaeological Resources

Terrestrial Archaeological Resources

The records search and pedestrian survey revealed no terrestrial archaeological resources in the Project area.

Submerged Offshore Archaeological Resources

The records search, including the shipwrecks database search, revealed no submerged offshore prehistoric resources in the Project area. A total of 146 documented historic shipwrecks, unknown wreckage, and debris locations are reported within the Project area. Sources consulted for shipwreck data included cultural resource inventories provided by the CSLC, BOEM Pacific OCS Region (BOEM 2013; former Bureau of Land Management Pacific OCS Region [Stickel & Marshack] 1979), the Minerals Management Service (MMS 1990 [Gearhart et al.]), and the National Oceanic and Atmospheric Administration (NOAA) Automated Wreck and Obstructions Information System (AWOIS) database (1988). The majority of these vessels were built between 1838 and 1899. All resources that could be placed to within 10 nm of each of the proposed routes have been included for consideration.

Of the 146 shipwrecks documented within the Project area, 12 potentially may be eligible for listing in the NRHP based on age of construction and lives lost. As noted, any resource eligible for listing in the NRHP also is eligible for listing in the CRHR. The eligibility of the remaining 134 shipwrecks reported in the Project area remains undetermined.

3.5.2 Regulatory Setting

Appendix A contains the federal and state laws and regulations pertaining to cultural resources relevant to the Project. At the local level, the following policies and programs are included in Chapter 3.18 of the *Humboldt County Humboldt Bay Area Plan*, which incorporates the Humboldt County LCP (Humboldt County 2014).

3.5.2.1 Humboldt County Bay Area Plan

Where new development would adversely impact archaeological or paleontological resources as identified by the State Historic Preservation Officer, reasonable mitigation measures shall be required.

A. Planned Uses

The Native American Wiyot tribe, part of the Algonkian family, once occupied the Humboldt Bay area. The Humboldt County Department of Public Works has identified 117 known archaeological sites in this planning area. The Wiyots depended heavily upon the resources of Humboldt Bay, and their heritage is an important resource within the Humboldt Bay area. Areas with great archaeological and paleontological values have been identified within the planning area, as identified with the Humboldt County Public Works, Natural Resource Division.

B. Development Policies

1. Reasonable mitigation measures may include but are not limited to:

   a. Changing building and construction sites and/or road locations to avoid sensitive areas.

   b. Providing protective cover for sites that cannot be avoided.

   c. Where appropriate and with the approval of all parties concerned, provide for the removal or transfer of culturally significant material by a professional archaeologist or geologist.

3.5.3 Impact Analysis

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

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

No Impact.

<u>All Project Components</u>

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

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

Less than Significant with Mitigation.

All Project Components

The proposed Project would not cause a substantial adverse change in the significance of a unique archaeological resource as defined in section 15064.5 because no archaeological resources were identified in the Project area. However, if previously unknown archaeological resources (terrestrial or submerged) are encountered during construction of the proposed Project, they could be adversely affected. Implementing **MM CUL-1/TCR-1**, **MM CUL-2/TCR-2**, and **MM CUL-6/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. In addition, implementing **MM CUL-3**, **MM CUL-4**, and **MM CUL-5** would reduce potential impacts on previously unknown offshore archaeological resources to a less than significant level.

MM CUL-1/TCR-1: Discovery of Previously Unknown Cultural or Tribal Resources. In the event that potential cultural or tribal cultural resources are discovered during Project implementation, all earth-disturbing work within 50 feet of the find shall be temporarily suspended or redirected until a qualified archaeologist retained by the Applicant can adequately assess the find and determine whether the resource requires further study. In the event that a cultural or tribal cultural resource discovery is potentially significant, the Applicant, CSLC, and any local, state, or federal agency with approval or permitting authority over the Project that has requested/required notification shall be notified within 48 hours.

For all discoveries known or likely to be associated with Native American heritage (precontact sites and select post contact historic-period sites), the Tribal Historic Preservation Officers (THPOs) for the Bear River Band of Rohnerville Ranchería, Blue Lake Ranchería, and Wiyot Tribe shall be contacted immediately by the CSLC to evaluate the discovery and, in consultation with the Applicant and a qualified archaeologist, develop a treatment plan in any instance where significant impacts cannot be avoided. The treatment plan shall be submitted to the CSLC staff and any participating tribe for review and approval prior to its implementation, and additional work in the vicinity of the discovery shall not proceed until the plan is in place.

The location of any such finds must be kept confidential, and measures shall 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 tribes that would be as or more effective.

Title to all shipwrecks, archaeological sites, and historic or 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 shipwrecks, archaeological, historical, and tribal cultural resources recovered on State lands under CSLC jurisdiction must be approved by the CSLC.

MM CUL-2/TCR-2: Cultural Resources Contractor Awareness Training. Prior to beginning construction, the Applicant shall retain a qualified archaeologist to prepare a Cultural Resources Contractor Awareness Training subject to CSLC approval. The training shall be given to all construction personnel prior to working on the Project, and the training shall include, but not be limited to, the following:

- Guidance on identification of potential cultural resources that may be encountered
- The probability of exposing cultural resources
- Clear direction on procedures if a find is encountered

The archeologist shall provide construction personnel with an orientation on the requirements of the treatment plan, including the probability of exposing cultural resources, guidance on recognizing such resources, and direction on procedures if a find is encountered.

MM CUL-3: Conduct a Pre-Construction Offshore Archaeological Resources Survey. Using the results of an acoustic survey (e.g., a CHIRP [compressed high-intensity radiated pulse] system survey) for evidence of erosion/incision of natural channels, the nature of internal channel-fill reflectors and the overall geometry of the seabed, paleochannels, and the surrounding areas shall be analyzed for their potential to contain intact remains of the past landscape with prehistoric archaeological deposits. The analysis shall include core sampling in various areas, including but not limited to, paleochannels to verify the seismic data analysis. Based on the CHIRP survey and coring data, a Marine Archaeological Resources Assessment Report shall be produced by a qualified maritime archaeologist and reviewed by the California Coastal Commission or the State Historic Preservation Officer and the CSLC to document effects on potentially historic properties.

MM CUL-4: Conduct a Pre-Construction Offshore Historic Shipwreck Survey. A qualified maritime archaeologist, in consultation with the CSLC, shall conduct an archaeological survey of the proposed cable routes. The archaeological survey and analysis shall be conducted following current CSLC, BOEM, and U.S. Army Corps of Engineers (San Francisco and Sacramento Districts) standard specifications for underwater/marine remote sensing archaeological surveys (*Guidelines for Providing Geological and Geophysical, Hazards, and Archaeological Information* pursuant to 30 CFR part 585).

The archaeological analysis shall identify and analyze all magnetic and side-scan sonar anomalies that occur in each cable corridor, defined by a lateral distance of 0.5 kilometer on each side of the proposed cable route. This analysis shall not be limited to side-scan and magnetometer data and may include shallow acoustic (subbottom) data as well as autonomous underwater vehicle and multibeam data that may have a bearing on identification of anomalies representative of potential historic properties. The analysis shall include evaluation to the extent possible of the potential significance of each anomaly that cannot be avoided within the cable corridor. If sufficient data are not available to identify the anomaly and make a recommendation of potential significance, the resource(s) shall be considered as potentially eligible for listing in the NRHP and CRHR and treated as a historic property.

If any cultural resources are discovered as the result of the marine remote sensing archaeological survey, the proposed cable route or installation procedures shall be modified to avoid the potentially historic property. BOEM administratively treats identified submerged potentially historic properties as eligible for inclusion in the NRHP under Criterion D and requires project proponents to avoid them unless the proponent chooses to conduct additional investigations to confirm or refute their qualifying characteristics. BOEM typically determines a buffer (e.g., 164 feet from the center point of any given find beyond which the project must be moved, in order to ensure that adverse effects on the potential historic property will be avoided during construction).

MM CUL-5: Prepare and Implement an Avoidance Plan for Marine Archaeological Resources. An avoidance plan shall be developed and implemented to avoid all documented resources from the Marine Archaeological Resources Assessment Report and the Offshore Historic Shipwreck Survey Report, address discoveries of as yet unidentified resources encountered during the planned marine survey and construction, and provide mitigation monitoring if deemed necessary during construction to ensure compliance.

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

Less than Significant with Mitigation.

All Project Components

No human remains are known to be 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-6/TCR-3.**

MM CUL-6/TCR-3: Unanticipated Discovery of Human Remains. If human remains, including Native American remains or burials are encountered, all provisions provided in California Health and Safety Code section 7050.5 and Pub. Resources Code § section 5097.98 shall be followed. Work shall stop within 100 feet of the discovery, and both the archaeologist retained by the Applicant 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 (see at http://www.nahc.ca.gov/profguide.html) 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.

3.5.4 Mitigation Summary

Implementation of the following mitigation measures would reduce the potential for Project-related impacts on cultural 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
- MM CUL-2/TCR-2: Cultural Resources Contractor Awareness Training
- MM CUL-3: Conduct a Pre-Construction Offshore Archaeological Resources Survey
- MM CUL-4: Conduct a Pre-Construction Offshore Historic Shipwreck Survey
- MM CUL-5: Prepare and Implement an Avoidance Plan for Marine Archaeological Resources
- MM CUL-6/TCR-3: Unanticipated Discovery of Human Remains

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

The Project area falls within the ethnographic territory of the Wiyot Tribe. For his 1918 publication, *Ethnogeography and Archaeology of the Wiyot Territory* (Loud 1918), anthropologist Llewellyn Loud interviewed the Wiyot Tribe members and the European American settlers, which ultimately led him to document Wiyot cultural practices as well as 172 archaeological and active cultural sites in Wiyot Tribal lands. None of Loud's sites are located within the Project. Additionally, Loud conducted an archaeological excavation of the Wiyot village of Tuluwat (CA-HUM-67), work which was continued by successive researchers through the 1940s. Another academic resource is Elsasser's Wiyot chapter in the *Handbook of North American Indians Volume 8*, which synthesizes Elsasser's ethnographic work and that of many others (Elsasser 1978). This ethnographic context is largely adapted from these volumes.

The Wiyot are one of two groups of Algic language stock; the neighboring Yurok are also Algic speakers with the languages having diverged in the fairly distant past. The Algic language group, and likely the Wiyot and Yurok by extension, are distantly related to the Algonquian people of eastern North America (Shipley 1978).The following is excerpted

from the Wiyot Tribe's official website describing a brief history of the Tribe (Wiyot Tribe 2020):

> "Wiyot people have lived in the Humboldt Bay region for thousands of years. The North Coast of California is rich with abundant terrestrial, riverine, estuarine, and marine resources.
>
> Wiyot people lived in permanent villages along the waterways which also served as travel and trade routes. Seasonal camps were made on the tribal lands and prairies, and mountainous regions provided berries, acorns, pine nuts, wild game, and basketry materials.
>
> Wiyot people actively managed their resources, burning for open grasslands, cultivating edible bulbs, and following strict hunting and fishing protocols."

Loud's ethnographic and archaeological work suggest that principal subsistence plants included gray pine and other acorn-producing pines, huckleberry, seed-producing grasses, and bulbs such as *Brodiaea coronaria* or "Indian potato" (Loud 1918). Mammals hunted by the Wiyot included elk, deer, Pacific harbor seal, Steller sea lion, whale, and sea otter. Loud characterizes Wiyot hunting technique and technology as focused on trapping over bow-and-arrow hunting. Numerous bird species were important to the Wiyot, but subsistence activities were focused on waterfowl, including ducks, geese, mud-hens, swans, cranes, pelicans, gulls, and cormorants (Loud 1918).

Salmon was by far the most important fish species for subsistence to the Wiyot, but other important species included sturgeon, smelt, and sardine. Shellfish including clams, cockles, snails, and abalone also were commonly gathered in the same areas where ocean fishing was conducted (Loud 1918).

Known Wiyot villages of the ethnographic period are clustered along the Mad River near the northern extent of their territory and along the Eel River near the southern extent of their territory, with a scattering of smaller villages along the coast and along smaller rivers and tributaries (Elsasser 1978). Elsasser noted a number of villages located along the coastline that were abandoned before the ethnographic period. The Project area is located near some of these known archaeological village sites on the Samoa Peninsula between Humboldt and Arcata Bay (Elsasser 1978, Figure 1). Wiyot villages would likely contain rectangular dwellings and a large, singular sweathouse used for both recreation and ceremonies. In Elsasser's view, the Wiyot like most other northwestern California tribes, had no formal tribal organization or clan system. Descent among the Wiyot was patrilineal, and residence after marriage was typically patrilocal. Of primary importance to Wiyot religious life and ritual, Elsasser wrote that the practice of "World Renewal" or the "Big Time;" other religious practices were smaller affairs and included the practice of employing shamans to cure diseases caused by soul loss and breaches of taboo, and performance of small ritual dances (Elsasser 1978).

The Wiyot were largely dispossessed of their land and displaced between the late 1800s and the mid-1900s. These began with individual shootings of Wiyot Tribal people around 1852 and evolved into full-on massacres of the Wiyot Tribe, such as the massacre of a group near Gunther Island in 1860. As many as 50-250 individuals were killed as part of this massacre (Elsasser 1978). In the early 1900s, the Table Bluff Ranchería of Wiyot Indians was formed to house the remaining, and now largely homeless, population of Wiyot Indians. The legal status of this Tribe was terminated by the California Ranchería Act of 1961; but following a successful lawsuit against the federal government, the legal status of the Table Bluff Tribe of Wiyot was restored. Today, the Tribe consists of over 600 members and is active in the preservation of the Wiyot language and lifeways (Wiyot Tribe 2020).

3.6.1.2 Tribal Coordination

Pursuant to Executive Order B-10-11 concerning coordination with tribal governments in public decision making (Appendix A), the CSLC adopted a Tribal Consultation Policy in August 2016 to provide guidance and consistency 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).

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

On June 1, 2020, the NAHC responded to the CSLC request with a list of seven tribal contacts associated with these four tribes:

- Bear River Band of Rohnerville Ranchería
- Blue Lake Ranchería
- Cher-Ae Heights Indian Community of the Trinidad Ranchería
- Wiyot Tribe

The NAHC's reply from June 1, 2020, also stated that no records were identified in the Sacred Lands File record search for the Project area.

On July 15, 2020, CSLC staff provided CEQA notice of the Project to all tribes on the NAHC list. In addition to CEQA notice letters, the CSLC staff sent out notification of consultation AB 52 letters to the Blue Lake Rancheria who had previously requested to be notified of CSLC projects.

~~Two~~ One responses ~~was~~were received from the AB 52 invitation letters and two~~one~~ responses were received from CEQA outreach letters. To date, no response has been received from the Cher-Ae Heights Indian Community of the Trinidad Rancheria. On August 7, 2020, Janet P. Eidsness, Tribal Historic Preservation Officer for the Blue Lake Rancheria, responded to the AB 52 invitation letter, declining the invitation to consult further on the Project. Ms. Eidsness stated she was not aware of any known tribal or other cultural resources in the area of the Project. She also stated that the area has a low archaeological sensitivity as the dune field has been greatly modified in the past. She did provide an inadvertent archaeological discovery protocol that has been incorporated into **MM CUL-1/TCR-1** and **MM CUL-6/TCR-3**.

Two responses were received from the CEQA outreach letters. One was o~~O~~n August 13, 2020, from Ted Hernandez, Chairman/Cultural Director of the Wiyot Tribe, replied to the ~~AB 52 invitation~~ CEQA outreach letter, stating that he concurred with the Blue Lake Rancheria Tribal Historic Preservation Officer's recommendations for the Project as well as incorporating the inadvertent discovery protocol presented by Ms. Eidsness.

~~One~~ The second response was received ~~as a result of the CEQA outreach letters~~ on September 3, 2020, from Ms. Erika Cooper of the Bear River Band of Rohnerville Rancheria ~~responded via email on September 3, 2020~~, stating that she was not aware of any known resources in the Project area. Ms. Cooper also indicated her agreement with the inadvertent discovery protocol recommendations (MM CUL-1/TCR-1 and MM CUL-6/TCR-3 as seen in Attached Exhibit C) provided by Ms. Eidsness. ~~To date, no response has been received from the Cher-Ae Heights Indian Community of the Trinidad Rancheria.~~

3.6.2 Regulatory Setting

Appendix A contains the federal and state laws and regulations pertaining to Tribal cultural resources relevant to the Project. At the local government level, no goals, policies, or regulations are applicable to this issue area for the Project because of its location and the nature of the activity.

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.

All Project Components

The results from a records search of the NAHC's Sacred Lands Files did not identify any Native American cultural sites within the Project area. The CSLC staff conducted outreach to the tribe who had requested AB 52 notifications for CSLC projects. Three additional tribes listed by the NAHC were sent CEQA outreach letters to seek further information about known tribal cultural resource sites or any other tribal cultural resources in or near the Project area. 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-6/TCR-3** would be implemented (see Section 3.5, *Cultural Resources* for full text).

3.6.4 Mitigation Summary

Implementation of the following mitigation measures would reduce the potential for Project-related impacts on tribal cultural resources to a less than significant level; 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: Cultural Resources Contractor Awareness Training
- MM CUL-6/TCR-3: Unanticipated Discovery of Human Remains

3.7 ENERGY

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

3.7.1 Environmental Setting

Energy users on the Samoa Peninsula rely on Pacific Gas and Electric Company (PG&E) for electricity. Homes in Samoa do not currently have natural gas service, but many homes have propane tanks, served by AmeriGas. Power is transmitted to Samoa through 115 kilovolts (kV) lines to a PG&E substation located in Fairhaven. Electricity is distributed via private lines, and each structure has its own meter.

3.7.2 Regulatory Setting

Appendix A contains the federal and state laws and regulations pertaining to utilities and service systems relevant to the Project. At the local level, the Humboldt County General Plan does not include any policies applicable to the Project about energy resources.

A local cable owner would be responsible for operation of the marine and terrestrial cable network. These activities are not part of the proposed Project and are part of a separate CEQA analysis. Accordingly, Project operations are not discussed further.

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.

<u>All Project Components</u>

The Project's use of energy during construction is necessary to provide for improved telecommunications services and is not wasteful or inefficient. No impact would occur.

During construction, the Project would use a variety of terrestrial equipment and marine vessels, including heavy equipment, trucks, cars, and cable-laying and support vessels. The Project encompasses four phases (see Section 2.2.1, *Work Phases*). Most of the

energy would be consumed during the first phase from installing the four landing pipes and landing vaults (LVs).Installation of all the landing pipes and LVs in Phase 1 is efficient because there is no need to separately mobilize the construction equipment needed for these activities in future phases. In Phases 2 through 4, most of the energy would be expended laying cable across the ocean floor and pulling cable onshore.

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, no impact would occur.

3.7.4 Mitigation Summary

The Project would not affect energy resources; therefore, no mitigation is required.

3.8 GEOLOGY, SOILS, AND PALEONTOLOGICAL RESOURCES

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

3.8.1 Environmental Setting

3.8.1.1 Regional Setting

Humboldt County is a relatively hazardous area in terms of land sliding and soil erosion, and an extremely hazardous area in terms of groundshaking and fault rupture. Humboldt County is located within two of the highest of five seismic risk zones specified by the Uniform Building Code. The subducting Gorda and Juan de Fuca Plates form the "Cascadia Subduction Zone," which runs north offshore of Humboldt County, Del Norte

County, Oregon, and Washington. Research shows that this system produced a series of great earthquakes (magnitude 8 to 9) over the last 20,000 years at intervals of 300–500 years. The last great earthquake occurred about 300 years ago. (Humboldt County 2017)

3.8.1.2 Site-Specific Setting

Topography

The Project area is on the Samoa Peninsula between the unincorporated communities of Samoa and Fairhaven, with elevations ranging from sea level to approximately 62 feet above mean sea level. The coastal topography of the Samoa Peninsula is predominantly flat to gently rolling, with dunes on the landward side of the beach.

Geology

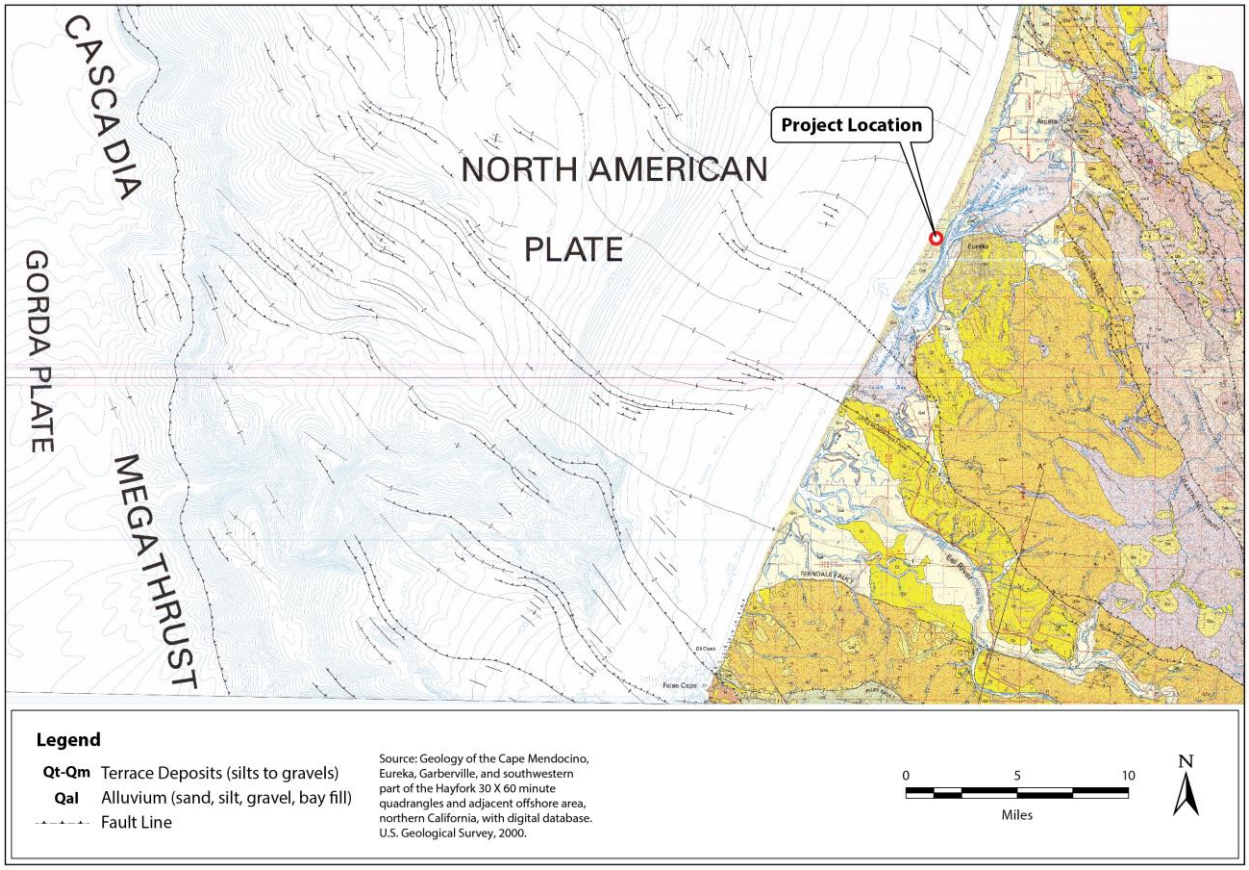
The bedrock geology of the County is divided generally into two provinces: the Klamath Mountains province in the northeast and the Coast Ranges province in the central and southwest portion. The Project area is in the Coast Ranges province. The Coast Ranges province is the dominant geologic province in the County, trending northwest and drained by the Mad, Eel, and Mattole River drainages. The Franciscan and Yager complexes dominate inland, with sand and other alluvial deposits characterizing the lower reaches of the river basins and the area surrounding Humboldt Bay (Figure 3.8-1). (Humboldt County 2017)

Seismicity

Surface Fault Rupture

Surface fault rupture is a particular type of seismic hazard that is specifically addressed by State legislation, the Alquist-Priolo Earthquake Fault Zoning Act. This act generally requires disclosure and avoidance. Humboldt County has a number of fault zones mapped under this law. The County uses a combining zone designation (“G”) to flag these areas where special geologic study is required to identify the precise location of active fault traces to ensure that structures for human occupancy are not placed astride them (Humboldt County 2017). According to Humboldt County’s Web GIS, the Project site is not on an Alquist-Priolo fault (Humboldt County 2020a). The nearest historical quaternary fault is the Little Salmon fault zone approximately 2 miles to the south (Figure 3.8-1). The nearest Alquist-Priolo fault is approximately 5 miles to the south.

Figure 3.8-1. Geologic Map of the Project Area and Vicinity



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. To mitigate this hazard, soils engineering investigations can assess the potential for liquefaction and specify appropriate foundation and building design (Humboldt County 2017). According to Humboldt County's Web GIS, the cable landing site is in an area subject to potential liquefaction (Humboldt County 2020a).

Groundshaking can induce landslides, especially under saturated conditions. Again, soils engineering investigations can evaluate the seismic stability of slopes and prescribe appropriate setbacks. The cable landing site is relatively flat. According to Humboldt County's Web GIS, the Samoa Peninsula is not in an area susceptible to historical landslides, and the cable landing site is on land considered Relatively Stable with slopes primarily less than 15 percent (Humboldt County 2020a).

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 (CGS 2008).

Soils

The Samoa Peninsula is made up of typically well-drained soils (coarse sands) and topographic features that do not require addressing runoff issues. Potential soil concerns in the Project area includes expansive soils. Expansive, or plastic, soils expand and contract with changes in moisture content and can damage buried features, as well as structures. Project site soils consist of Samoa-Clambeach complex, 0- to 50-percent slopes with non-plastic (i.e., non-expansive) properties (NRCS 2020).

The susceptibility of soils to erode in the Project area is mainly related to slope. According to Humboldt County's Web GIS, the cable landing site is on land with 0- to 15-percent slopes (Humboldt County 2020a). As shown in Figure 3.1-2c, the pulp mounds in the Project area came from the former pulp mill east of the cable landing site.

Paleontological Resources

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* (SVP 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, paleoecological, 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.
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: SVP 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 (SVP 2010).

According to the Humboldt County General Plan, prehistoric deposits are known to exist within Humboldt County. However, the Project area soils are geologically young and there are no known paleontological resources within the cable landing site (Humboldt County 2017).

3.8.2 Regulatory Setting

Appendix A contains the federal and state laws and regulations pertaining to geology and soils relevant to the Project. At the local level, the County addresses the potential for ground shaking, liquefaction, landslides, and erosion in the Safety Element of its General Plan (Humboldt County 2017).

For the cable landing site, the relevant local hazard mitigation plan relative to geological hazards appears in the Humboldt Bay Area Plan (HBAP) of the Humboldt County LCP (Humboldt County 2014). As stated within the HBAP, sections marked *** contain relevant Coastal Act policies that also have been enacted as County policy. The pertinent section follows:

Section 3.17 (Hazards) states in part:

> *** 30253. New Development shall:
>
> 1. Minimize risks to life and property in areas of high geologic, flood and fire hazard.
> 2. Assure stability and structural integrity, and neither create nor contribute significantly to erosion, geologic instability, or destruction of the site or surrounding areas or in any way require the construction of protective devices that would substantially alter natural landforms along bluffs and cliffs.

Section A of the HBAP addresses “Planned Uses.” The hazard policies apply to all new development within the planning area. For the most part these policies have been extracted from Humboldt County’s adopted Seismic Safety Element.

The only area with any significant instability problem planned for more intense development is on Humboldt Hill, east of Highway 101, which is classified as an area of “moderate instability,” according to County seismic safety maps. Another significant hazard to development within most of the agricultural lands and along both the North and South Spits is liquefaction. Much of this same area is also within the limit of the 100-year floodplain and is in an area of potential tsunami runup. Maps of slope stability hazards are included in Appendix D of the Humboldt County LCP and are referenced in policies from the Seismic Safety element of the General Plan, which are reiterated below. The numerical index on these maps indicate relative slope stability and are to be used with the risk rating matrix in Appendix C of the Humboldt County LCP. The risk rating matrix indicates where a site investigation would be required prior to issuance of a development permit (see Development Policy 2 below). The Project is not included on the list of building/land use types in the risk rating matrix.

Section B of the HBAP addresses “Development Policies,” as quoted below.

> 1. New development shall be consistent with the adopted Humboldt County Safety and Seismic Safety element of the General Plan. Of particular interest, when siting new development, the Natural Hazards/Land Use Risk Rating Matrix on Figure 3-5, Section 3300 of Vol. 1 should be used in conjunction with Plate III. Plate III is a map delineating seismic zones relating to earthquake shaking as well as land stability and other natural hazard conformation.

2. The County shall amend Chapter 70, Section 7006, of the Uniform Building Code to require soil engineering and geological engineering investigations, prepared by a registered geologist or by a professional civil engineer with experience in soil mechanics or foundation engineering, or by a certified engineering geologist, for classes of development and hazard areas as shown in Table 1 and Plate III and DNOD maps as attached (See Appendices C, D & E).

    a. The report should consider, describe and analyze the following.

        (1) Cliff geometry and site topography, extending the surveying work beyond the site as needed to depict unusual geomorphic conditions that might affect the site;

        (2) Historic, current and foreseeable cliff erosion, including investigation of recorded land surveys and tax assessment records in addition to the use of historic maps and photographs where available and possible changes in shore configuration and sand transport;

        (3) Geologic conditions, including soil, sediment and rock types and characteristics in addition to structural features, such as bedding, joint and faults;

        (4) Evidence of past or potential landslide conditions, the implications of such conditions for the proposed development, and the potential effects of the development on landslide activity;

        (5) Impact of construction activity on the stability of the site and adjacent area;

        (6) Ground and surface water conditions and variations, including hydrologic changes caused by the development (i.e. introduction of sewage effluent and irrigation water to the ground water system; alterations in surface drainage);

        (7) Potential erodibility of site and mitigating measures to be used to ensure minimized erosion problems during and after construction (i.e. landscaping and drainage design);

        (8) Effects of marine erosion on seacliffs;

        (9) Potential effects of seismic forces resulting from a maximum credible earthquake;

        (10) Any other factors that might affect slope stability.

    b. The report should evaluate the off-site impacts of development (e.g., development contributing to geological instability on access roads) and the additional impacts that might occur due to the proposed development (e.g., increased soil moisture from a septic system). The report should also detail

mitigation measures for any potential impacts and should outline alternative solutions. The report should express a professional opinion as to whether the project can be designed so that it will neither be subject to nor contribute to significant geologic instability throughout the lifespan of the project. The report should use a currently acceptable engineering stability analysis method and should also describe the degree of uncertainty of analytical results due to assumptions and unknowns. The degree of analysis required should be appropriate to the degree of potential risk presented by the site and the proposed project.

c. The developments permitted in the hazard areas shall be sited and designed to assure stability and structural integrity for their expected economic life spans while minimizing alteration of natural landforms. Bluff and cliff developments (including related storm runoff, foot traffic, site preparation, construction activity, irrigation, waste water disposal and other activities and facilities accompanying such development) shall not create or contribute significantly to problems of erosion or geologic instability on the site or on surrounding geologically hazardous areas.

d. Alteration of cliffs and bluff tops, faces, or bases by excavation or other means shall be minimized. Cliff retaining walls shall be allowed only to stabilize slopes.

3. Tsunamis–New development below the level of the 100 year tsunami run-up elevation described in Tsunami Predictions for the West Coast of the Continental United States (Technical Report H-78-26 by the Corps of Engineers) shall be limited to public access, boating, public recreation facilities, agriculture, wildlife management, habitat restoration, and ocean intakes, outfalls, and pipelines, and dredge spoils disposal. New subdivisions or development projects which could result in one or more additional dwelling units within a potential tsunami run-up area shall require submission of a tsunami vulnerability report which provides a site-specific prediction of tsunami run-up elevation resultant from a local Cascadia subduction zone major earthquake.

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, the seismic safety standards of the County General Plan and LCP, and National Pollutant Discharge Elimination System (NPDES) 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 LVs, HDD to install the landing pipes, and the presence of Project features that could be damaged.

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).

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.

<u>All Project Components</u>

According Humboldt County's Web GIS website, no Alquist-Priolo Fault Zones or other active or potentially active faults with the potential for surface fault rupture are known to pass directly under or near the cable landing site (Humboldt County 2020a) (Figure 3.8-1). 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. The HDD activities would not be sufficiently strong to trigger an earthquake, liquefaction, or landslides. Because HDD would not affect the dunes since it would be well under the dunes, it would not trigger erosion or landslides.

A Coastal Development Permit would be necessary for Project approval, and its requirements may supplement the requirements of the California Building Standards Code with respect to standard engineering practices and design criteria relative to seismic

and geologic hazards. Additionally, the engineers would provide detailed engineering drawings as part of the permit conditions with a supporting site-specific geotechnical report and calculations before HDD operations. These drawings would depict the horizontal and vertical alignment best fitting the site conditions based on the site-specific geotechnical report.

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

Less than Significant Impact.

All Project Components

The Project area is underlain by loose dune sand with a high erosion potential. Because the cable landing site is relatively flat, the potential for Project components to generate erosion, even in loose dune sands, is relatively low. All construction activities would occur on or well below unpaved surfaces and would not result in substantial soil erosion or loss of topsoil. The bore pits for the landing pipes would be expanded to accommodate installation of the LVs. Topsoil from the expanded bore pits would be stockpiled during LV installation and used to restore the cable landing site. These underground facilities would not cause erosion. 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

The cable landing site is located on a low-gradient, sand-covered coastal peninsula. Although liquefaction is a potential hazard during strong seismic shaking, the area is not subject to "unstable" soils that would be affected by the Project. Nor would the Project alter soil conditions such that previously "stable" soils become "unstable." The HDD construction method does not involve strong vibration activities, such as pile driving, that would result in liquefaction or subsidence. The scale and type of HDD construction method used to install the four landing pipes would lessen the potential risks associated with lateral spread and subsidence because this method would avoid impacts on the surface area of the shore and surf zone. Before HDD operations would commence, the engineers would provide detailed engineering drawings with a supporting site-specific geotechnical report and calculations to CSLC staff and regulatory agency staff for their review (as described in **MM BIO-7**). These drawings would depict the horizontal and vertical alignment best fitting the site conditions based on the site-specific geotechnical report.

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?

No Impact.

All Project Components

The cable landing site is underlain by sandy soils that are not associated with the potential for soil expansion. Geotechnical testing of soils from the Samoa Peninsula have not identified soils subject to potential expansivity (GHD 2019). Therefore, there would be no impact.

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

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

Excavation during Project construction could damage paleontological resources by physically disturbing or damaging (e.g., crushing) them or by removing them from their stratigraphic context. The factors that determine the potential to damage paleontological resources are the paleontological sensitivity of the unit and the depth and extent of excavation. 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, or paleontological resources; therefore, 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* 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.

According to NOAA, the atmospheric concentration of CO_2 measured at Mauna Loa, Hawaii in June 2020 was 416 ppm (NOAA 2020a) compared to the pre-industrial levels of 280 ppm +/- 20 ppm (IPCC 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 2.0 ppm per year; and in the last 3 years (2016 to 2019), the average annual concentration was 2.4 ppm (NOAA 2020b). 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 completed a Fifth Assessment Report in 2014 that contains information on the state of scientific, technical, and socioeconomic knowledge about climate change. The Fifth Assessment Report includes working group

reports on basics of the science, potential impacts and vulnerability, and mitigation strategies.[30] 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). In its *Climate Change 2014 Synthesis Report* (IPCC 2014), which is part of the Fifth Assessment Report, the Panel notes:

> Human influence on the climate system is clear, and recent anthropogenic emissions of greenhouse gases are the highest in history. Recent climate changes have had widespread impacts on human and natural systems. Warming of the climate system is unequivocal, and since the 1950s, many of the observed changes are unprecedented over decades to millennia. The atmosphere and ocean have warmed, the amounts of snow and ice have diminished, and sea level has risen.

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 methane 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 2020e

[30] For additional information on the Fifth Assessment Report, see https://www.ipcc.ch/report/ar5/.

3.9.1.1 Emission Inventories and Projections

A GHG inventory is a quantification of all GHG emissions and sinks[31] 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.

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

Emissions Inventory	CO_2e (metric tons)
2010 Intergovernmental Panel on Climate Change global GHG emissions inventory	52,000,000,000
2018 U.S. Environmental Protection Agency national GHG emissions inventory	6,677,000,000
2017 California Air Resources Board state GHG emissions inventory	424,100,000
2015 Humboldt County GHG emissions inventory	822,509

Sources: IPCC 2014; EPA 2020c; CARB 2020f; Humboldt County n.d.
Terms:
CO_2e = carbon dioxide equivalent
GHG = greenhouse gas

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 2018 (transportation representing 28 percent of total emissions, and electricity 27 percent), with CO_2 being the primary GHG (81 percent of total emissions). The United States, which has about 4.3 percent of the global population, emits roughly 13 percent of all global GHG emissions (Table 3.9-2).

3.9.1.3 State Inventory

California has approximately 0.53 percent of the global population and emits less than 0.85 percent of the total global GHG emissions, which is approximately 40 percent lower per capita than the overall U.S. average. Despite growing population and gross domestic product, GHG emissions in California continue to decrease, as do emissions per capita (per capita emissions have dropped from a 2001 peak of 14.1 metric tons to 10.7 metric tons in 2017), exhibiting a major decline in the "carbon intensity" of California's overall economy (CARB 2019a). The transportation sector remains responsible for the largest share of GHG emissions in the 2017 state inventory, accounting for approximately 41 percent of the total. While GHG emissions generated by most sectors have been flat

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

or decreasing, emissions within the transportation sector have been increasing since 2013. However, the transportation sector saw only a 1-percent increase in emissions in 2017 over 2016 levels, the lowest annual growth rate over the past 4 years (CARB 2019a).

Even though California is aggressively moving to reduce its annual GHG emissions, it already is experiencing the effects of GHG-related climate change, which is a relevant aspect of the environmental setting. A 2018 report entitled *Indicators of Climate Change in California* (OEHHA 2018a) concludes 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 as a result of a diminished snowpack.
- The number of "winter chill hours" crucial for the production of 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.

3.9.1.4 Local Inventory

Humboldt County emitted 822,509 metric tons CO_2e in 2005, which is approximately 0.19 percent of the 2017 statewide inventory. The transportation sector was the largest contributor of emissions (54 percent), followed by the stationary combustion and livestock (each 13 percent). Emissions from refrigerants, wastewater treatment, solid waste, industrial sources, and electricity consumption represented approximately 20 percent of total emissions in 2005 (Humboldt County n.d.).

3.9.2 Regulatory Setting

Currently, no overarching federal law specifically relates to climate change or the reduction of GHG emissions. During the Obama administration, the EPA developed regulations under the CAA and adopted the Clean Power Plan. However, on February 9, 2016, the Supreme Court issued a stay of prior regulations, pending litigation. In addition, former EPA Administrator Scott Pruitt signed a measure to repeal the Clean Power Plan. The fate of federal GHG regulations is uncertain, given the current federal administration and the pending deliberations in federal courts.

California has adopted statewide legislation to address various aspects of climate change and mitigation for GHG emissions. Much of this legislation establishes a broad framework

for long-term reduction of the state's GHG emissions and for the climate change adaptation program. Of importance are AB 32 and SB 32, which outline the state's GHG emissions reduction goals (i.e., 1990 emissions levels by 2020 and 40 percent below 1990 emissions levels by 2030).

In 2008, CARB adopted the initial AB 32 Scoping Plan that described its approach to meeting the AB 32 goal (CARB 2008). The First Update to the Climate Change Scoping Plan was approved in 2014 and builds on the initial Scoping Plan with new strategies and recommendations (CARB 2014). With enactment of SB 32, CARB prepared a 2017 Climate Change Scoping Plan (2017 Scoping Plan) (CARB 2017). CARB also maintains an online inventory of GHG emissions in California. The most recent inventory, released in 2019, includes emissions from 2000 to 2017 (see Table 3.9-2 for the 2017 inventory results). This inventory is an important companion to the Scoping Plans because it documents the historical emission trends and progress toward meeting the 2020 and 2030 targets, which are 431 million metric tons (MMT) CO_2e and 260 $MMTCO_2e$, respectively.

To monitor progress in emissions reduction, the 2017 Scoping Plan includes a modeled reference scenario, or "business as usual (BAU) projection that estimates future emissions based on current emissions; expected regulatory implementation; and other technological, social, economic, and behavioral patterns. Prior BAU emissions estimates assisted CARB in demonstrating progress toward meeting the 2020 goal of 431 $MMTCO_2e$. The 2030 BAU reference scenario was modeled for the 2017 Scoping Plan, representing forecasted state GHG emissions with existing policies and programs but without additional action beyond that to reduce GHGs. This modeling indicates that California is expected to achieve the 2020 target but that a significant increase in the rate of GHG reductions is needed to meet the State's long-term targets (CARB 2019b).

As discussed in Section 3.3, *Air Quality*, the NCUAQMD is responsible for air quality planning within the NCAB. The NCUAQMD has not published CEQA GHG thresholds. In 2011, the NCUAQMD adopted Rule 111, Federal Permitting Requirements for Sources of GHGs, to establish a limit above which federal Title V permitting applies and to establish federally enforceable limits on the potential to emit GHGs for stationary sources. However, unlike their Best Available Control Technology (BACT) emission rates for criteria pollutants established under Rule 110 (see Table 3.3-2 in Section 3.3, *Air Quality*), the NCUAQMD specifically states that these limits are applicable only to stationary sources and should not be used as a threshold of significance (NCUAQMD 2020).

There is no adopted climate action plan for Humboldt County. Humboldt County is in the process of developing a regional plan with local agencies. The climate action plan would explore locally oriented strategies to reduce emissions from vehicle travel, livestock, electricity consumption, and other sources of GHGs (Humboldt County 2020b).

3.9.3 Impact Analysis

The impact analysis includes construction emissions generated by all terrestrial activity and marine vessels operating within 24 nm offshore. While this distance goes beyond the area typically analyzed in CEQA documents (3 nm), CSLC staff has conservatively elected to analyze emissions to 24 nm for consistency with the State's GHG inventory and reduction planning framework (CARB 2017).

The cable owner is responsible for repair and maintenance of the cable. No routine maintenance is planned for the submerged cable network. Monthly inspection trips and routine testing of emergency generators for the terrestrial cable network would be conducted by the local cable provider. These activities are not part of the proposed Project and are part of a separate CEQA analysis. Accordingly, Project operations on land are not discussed further.

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

Less than Significant with Mitigation.

<u>All Project Components</u>

As discussed in Section 3.3, *Air Quality*, construction of the proposed Project would require both terrestrial (e.g., conduit installation) and marine activities. Off-road equipment, on-road vehicles, and marine vessels would emit CO_2, CH_4, and N_2O. Emissions were estimated using the methods described in Appendix B and are summarized in Table 3.9-3. During Phase 1, the majority (53 percent) of emissions would be generated by activities within State waters, with most of those emissions originating from marine vessels within 3 nm offshore (67 percent) and on-road vehicle miles traveled (VMT) (18 percent). The remaining emissions within State waters would be generated by off-road equipment (14 percent).

During Phases 2 through 4, the majority (70 percent) of emissions would be generated by activities outside State waters (i.e., marine vessels operating between 3 and 24 nm offshore). Emissions from marine vessels within 3 nm offshore are expected to generate about 26 percent of total GHGs. Emissions from off-road equipment and on-road vehicles during these later phases would be minor (about 3 percent of total phase emissions).

Table 3.9-3. Estimated Construction Greenhouse Gas Emissions (metric tons)

Phase	Carbon Dioxide (CO_2)	Methane (CH_4)	Nitrous Oxide (N_2O)	Carbon Dioxide Equivalent (CO_2e)
Phase 1				
Off-road equipment	61	<1	<1	61
On-road vehicles	76	<1	<1	79
Marine within 3 nautical miles (nm)	286	<1	<1	290
Marine between 3 and 24 nm	379	<1	<1	384
Phase 2				
Off-road equipment	2	<1	<1	2
On-road vehicles	16	<1	<1	17
Marine within 3 nm	141	<1	<1	143
Marine between 3 and 24 nm	379	<1	<1	384
Phase 3				
Off-road equipment	2	<1	<1	2
On-road vehicles	16	<1	<1	16
Marine within 3 nm	141	<1	<1	143
Marine between 3 and 24 nm	379	<1	<1	384
Phase 4				
Off-road equipment	2	<1	<1	2
On-road vehicles	15	<1	<1	16
Marine within 3 nm	141	<1	<1	143
Marine between 3 and 24 nm	379	<1	<1	384
Total	**2,413**	**<1**	**<1**	**2,451**

For this analysis, because construction is the primary emission source associated with the Project, the CSLC has conservatively determined that any substantial increase in construction-related GHG emissions above net zero would result in a significant impact.

Construction of the Project would generate 2,451 metric tons CO_2e (Table 3.9-3). These emissions would occur only during the brief construction period. However, they would result in a net increase in GHG emissions. This is a potentially significant impact. The CSLC would require the Applicant to implement **MM GHG-1** to completely offset GHG emissions during construction to net zero (2,451 metric tons CO_2e). With implementation of MM GHG-1, the impact would be less than significant.

MM GHG-1: Purchase GHG Carbon Offsets for Construction Emissions. The Applicant shall purchase all offsets prior to groundbreaking and provide copies of the offset retirement verification to the CSLC. The Applicant shall purchase carbon offsets equivalent to the Project's projected GHG emissions (2,451 metric tons CO_2e) to achieve a net zero increase in GHG emissions during the construction phase for emissions within 24 nm (even though only required for within 3 nm) of the California coast.

A *carbon offset* is a credit derived from the reduction of GHG emissions through a separate reduction project, often in a different location from the emission source. To be acceptable for an emissions reduction credit, the carbon offset must be real, permanent, quantifiable, verifiable, enforceable, and additional (per the definition in California Health and Safety Code Sections 38562[d][1] and [2]). Several existing voluntary offset exchanges have been validated by the CARB, including the California Action Reserve Voluntary Offset Registry, American Carbon Registry, and Verified Carbon Standard.

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

Less than Significant Impact.

All Project Components

AB 32 and SB 32 are the State'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 B-55-18[32]).

AB 32 codifies the State's GHG emissions reduction targets for 2020. The CARB adopted the 2008 Scoping Plan and 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 BAU 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

[32] Executive Order B-55-18 identifies a statewide reduction target of carbon neutrality by 2045.

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 monthly employee trip 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. The Project does not entail any features or elements that would obstruct implementation of these State programs. Short-term construction emissions would be offset to net zero through implementing **MM GHG-1**. Therefore, the Project would not conflict with achieving the State's adopted GHG reduction goals under AB 32 and SB 32, or its long-term emissions reduction trajectory. This impact is considered less than significant.

3.9.4 Mitigation Summary

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

- MM GHG-1: Purchase GHG Carbon Offsets for Construction Emissions

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 0.25 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 for people residing or working in the project area?	☐	☐	☐	☒
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?	☐	☐	☐	☒

3.10.1 Environmental Setting

3.10.1.1 Project Location and Surroundings

The Project area is located on the Samoa Peninsula between the unincorporated Humboldt County communities of Samoa and Fairhaven. The closest school to the Project site (1.4 miles), Peninsula Union Elementary School, is located at 909 Vance Avenue in Samoa. The closest airport is the public use Samoa Field Airport, approximately 1.6 miles south of the cable landing site. Fire suppression services in the Project vicinity are provided by the Samoa Peninsula Fire Protection District. Law enforcement services are provided by the Humboldt County Sheriff's Office. The California Highway Patrol is responsible for enforcing traffic laws on roadways within the unincorporated areas and on state highways throughout the County.

3.10.1.2 Online Review

The California Environmental Protection Agency's Cortese List Data Resources website was searched on June 11, 2020. No listings on the Samoa Peninsula pertaining to the Project area were found during the online review of the California Department of Toxic Substances Control Envirostor database (DTSC 2020a). The SWRCB Geotracker site did not identify any active cleanup sites on the Samoa Peninsula (SWRCB 2020a). No sites in Humboldt County were identified on the SWRCB's Sites Identified with Waste Constituents above Hazardous Waste Levels Outside the Waste Management Unit (SWRCB 2020b). Additionally, no sites in Humboldt County are on 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, identified by the California Department of Toxic Substances Control (DTSC 2020b).

The former Samoa Pulp Mill, just east of the cable landing site, is listed on the SWRCB's Cease and Desist Orders and Cleanup and Abatement Orders list (SWRCB 2020c). The Samoa Pulp Mill site was developed in 1964 as a bleached kraft pulp mill by Georgia-Pacific. In 1994, Louisiana-Pacific converted the pulp mill into a chlorine-free operation. Louisiana-Pacific sold the mill in 2001. Several companies have operated the mill after 2001; the most recent company was Evergreen Pulp Incorporated. The mill shut down in October 2008 and has not operated since. Freshwater Pulp Company owned the site beginning in February 2009 and was involved with decommissioning or demolition of various areas of the mill. In August 2013, Freshwater Pulp Company transferred ownership to the Humboldt Bay Harbor Recreation and Conservation District (SHN 2019; EPA 2016b).

In September 2014, EPA completed the removal action of approximately 2.7 million gallons of spent pulping liquors that previously were stored in multiple onsite aboveground storage tanks (SHN 2019; EPA 2016b). Removal of residual sludge from the aboveground storage tanks was completed in June 2016 (SHN 2019; EPA 2016b). As part of the Remedial Action Plan, groundwater testing continues, with no additional cleanup actions reported since 2016 (SWRCB 2020d).

A landfill associated with the former Samoa Pulp Mill is within 100 feet of Project boundaries. The site is described as consisting of 98 percent wood ash, and less than 1 percent each of slaker grits (unreacted lime nodules), pulp rejects, wood chips, and construction debris. According to the Final Closure and Postclosure Maintenance Plan for the mill dated March 1998, the Samoa Ash Disposal Site is a Class III landfill (i.e., a landfill that accepts only non-hazardous waste) operating since 1973. Approximately 100 cubic yards per day of wood ash from the mill's power boiler was disposed at the site through 1991. However, there is no record of what was dumped at the site before 1973.

3.10.2 Regulatory Setting

The term *hazardous material* is defined by the State of California, Health and Safety Code, Chapter 6.95, section 25501(o) as "any material that, because of quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment." Federal and state laws and regulations pertaining to hazards and hazardous materials that are relevant to the Project are identified in Appendix A. No policies from the Humboldt County LCP are applicable to the Project (Humboldt County 2014).

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 0.25 mile of an existing or proposed school?

(a to c) Less than Significant with Mitigation.

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. The closest school is Peninsula Union Elementary School at 909 Vance Avenue in Samoa, which is 1.4 miles away from any Project-related activities (Figure 3.1-1). No aspect of the Project would affect the school.

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 former Samoa Pulp Mill is within 100 feet of Project boundaries. Therefore, it is possible that site workers, the public, and the environment could be inadvertently exposed to accumulated landfill gases generated by buried waste during Project construction (i.e., vault and trenches) causing significant health and safety hazards. Implementation of **MM HAZ-1**, which includes specifying measures for reducing landfill gases during

construction and requiring soil and waste management during construction would reduce the potential for exposure to hazards and hazardous materials to a less than significant level.

Project work vehicles would be refueled offsite. The HDD machine 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 ~~construction starts~~, the Applicant shall submit Spill Contingency and Hazardous Materials Management Plans for onshore and offshore operations to the CSLC for review and approval. Prior to construction, the Applicant shall develop and implement the following Plans: ~~se plans that shall include, but not be limited to, procedures to be implemented, specific designation of the onsite person who will be responsible for implementing the Plans, onsite spill response materials/ tools/equipment, and spill notification protocol and procedures~~.

Worker Health and Safety Plan (WHSP)

At least 30 days prior to the start of construction of the Project, the Applicant shall submit to the CSLC a final Worker Health and Safety Plan that has been reviewed and approved by the Humboldt County Division of Environmental Health that addresses measures to minimize risks from landfill gases and potential worker exposure to hazardous materials associated with construction activities at the cable landing site and within 1,000 feet of the Samoa Ash Landfill. The WHSP shall be prepared by a qualified geologist or engineer.

A. The WHSP shall include, at a minimum, measures to:

i. Address the potential for the presence and migration of landfill gases during construction

ii. Minimize risks of exposure by construction workers to anticipated hazardous materials (e.g., wood ash), to potential unanticipated waste types (e.g., municipal solid waste), and to potential landfill gas accumulation post-construction by operational and maintenance personnel

iii. Assure Project stability and structural integrity associated with any incompetent waste fill material that may be present

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

Soil and Waste Excavation and Management Plan (SWEMP)

At least 30 days prior to the start of construction of the Project, the Applicant shall submit to the CSLC a final SWEMP that has been reviewed and approved by the Humboldt County Division of Environmental Health. The SWEMP shall address soil and waste management for construction activities at the cable landing site (within 1,000 feet of the Samoa Ash Landfill). The SWEMP shall be prepared by a qualified geologist or engineer.

C. The SWEMP shall include, at a minimum, the following:

i. 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

ii. Procedures for managing unanticipated waste types (i.e., municipal solid waste) that may be encountered during construction

iii. BMPs 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

iv. Provisions for characterizing and testing soil, groundwater, and waste material in accordance with California Department of Toxic Substances Control (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 (PAHs), dioxins/furans, organochlorine pesticides (OCPs), and California Administrative Metals (CAM-17) heavy metals

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

D. The Applicant shall undertake development in accordance with the approved final SWEMP. Any proposed changes to the approved final SWEMP shall be reported to the CSLC and Humboldt County Division of Environmental Health. No changes to the approved final SWEMP shall occur without written approval from the CSLC and Humboldt County Division of Environmental Health.

Spill Contingency and Hazardous Materials Terrestrial Plan (SCHMTP)

~~A.Terrestrial Work:~~ 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 onsite. The SCHMTP could be prepared separately or the elements of the SCHMTP could be included in the Solid Waste Excavation and Management Plan (SWEMP).

The terrestrial SCHMTP~~Plan~~ will identify the actions and notifications to occur if contaminated soil is encountered during onshore excavation. The Applicant shall notify the County of Humboldt Division 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 the Applicant, have determined the next steps.

The terrestrial SCHMTP~~Plans~~ will identify, at a minimum, implementing the following 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 fueling of equipment 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 number) to be notified of potential hazardous material spills, 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.

Spill Contingency and Hazardous Materials Offshore Plan (SCHMOP)

~~B.Offshore Work:~~ For offshore activities involving work vessels, the primary work vessel (dive support vessel) will be required to carry onboard a minimum 400 feet of sorbent boom, 5 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 offshore plan

SCHMOP ~~Plans~~ shall provide for the immediate call out of additional spill containment and clean-up resources in the event of an incident that exceeds the rapid clean-up capability of the onsite work force. These offshore measures may be provided as part of a separate offshore plan (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**. **MM BIO-3** would require equipment staging and fueling areas to be delineated before construction begins 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 BIO-5** and **BIO-7**).

During operations, no aspect of the Project would 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 June 11, 2020, 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. One site, the Samoa Pulp Mill, is listed as a cleanup program under the SWRCB (SWRCB 2020c). Remediation activities in 2014 removed hazardous materials, and subsequent monitoring has not indicated any further actions. The cable landing site is not located on a site with known hazardous materials. Therefore, impacts associated with hazardous materials sites would be less than significant. **MM HAZ-1** identifies actions to be taken if previously unidentified, potentially hazardous materials are encountered during Project construction.

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 closest airport to the Project site is the public use Samoa Field Airport, approximately 1.6 miles south of the cable landing site. The Samoa Field Airport (formerly called the Eureka Municipal Airport) is owned and operated by the City of Eureka. *The Airport Land Use Compatibility Plan: Humboldt County Airports* does not contain specific policies or compatibility zones for the Samoa Field Airport. 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. No impact would occur.

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

No Impact.

All Project Components

The cable landing site would be located on the east side of New Navy Base Road and on the west side of Vance Avenue, in an unoccupied area of the Harbor District within APN 401-112-021 (Figure 1-1). Emergency access along local roadways would be maintained during Project construction, staging, and access activities. Proposed construction activities would occur at the Project site and would not block roads or emergency evacuation routes. The Project would not impair implementation of, or physically interfere with, the *County of Humboldt Emergency Operations Plan* (Humboldt County Sheriff's Office, Office of Emergency Services 2015) because the Project would not alter existing conditions for emergency response either during or after construction. Therefore, no impact would result.

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 4201–4204 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. The Project site is on the Samoa Peninsula between the unincorporated communities of Samoa and Fairhaven, which is in a Local Responsibility Area. Fire suppression services in the Project vicinity are provided by the Samoa Peninsula Fire Protection District; however, a reorganization was approved (by the Humboldt County Local Agency Formation Commission Resolution No. 17-08 [LAFCo 2017]) to reorganize the Samoa Peninsula Fire Protection District into the

Peninsula Community Services District (PCSD). All of the terrestrial Project activity would take place within APN 401-112-021 west of Vance Avenue (Figure 2-1). This area west of Vance Avenue is undeveloped. According to Humboldt County's Web GIS, the Project area is within a Moderate fire hazard severity zone (Humboldt County 2020a). The Project would not require construction crews to traverse wildlands. The Project would not require the use of ignition sources, except for operation of 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 impacts related to hazards and hazardous materials to a less than significant level:

- MM HAZ-1: Develop and Implement Spill Contingency and Hazardous Materials Management Plans
- MM BIO-1: Provide Environmental Awareness Training
- MM BIO-3: Delineate Work Limits to Protect Sensitive Biological Resources
- MM BIO-5: Prepare and Implement an Inadvertent Return Contingency Plan
- MM BIO-7: Implement Best Management Practices for Horizontal Directional Drilling Activities

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 offsite;	☐	☒	☐	☐
ii) Substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or offsite;	☐	☒	☐	☐
iii) Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☐	☐	☐	☒
iv) Impede or redirect flood flows?	☐	☐	☐	☒
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☐	☒
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☐	☒

3.11.1 Environmental Setting

3.11.1.1 Surface Waters

Terrestrial Components

The surface water resources near the terrestrial Project components include the Pacific Ocean to the west and Humboldt Bay to the east (Figure 1-2). Surface drainage is conveyed by ditches. The entire Project area is within the Eureka Plain watershed (Figure 3.11-1). The watershed encompasses Humboldt Bay and the watersheds that drain into Humboldt Bay—primary among them, Jacoby, Freshwater, and Salmon Creeks and Elk River.

The entirety of Humboldt Bay is listed as an impaired water body in the Eureka Plain Hydrologic Unit. Pollutants affecting Humboldt Bay include dioxin toxic equivalents and polychlorinated biphenyls (NCRWQCB 2017) from lumber mill sites in past decades.

Marine Components

Offshore, water transport along the northern portions of the California coast primarily is driven by the California Current. The California Current generally is characterized as a broad, shallow, slow-moving southward current. During winter, the California Current occasionally is displaced by the northward-moving Davidson Current. The nearshore manifestations of the California Current can vary in both speed and direction as winds, tides, and surf conditions can dramatically alter local conditions.

Along the northern coast, northwest winds may blow briefly at any time of year. These winds push the surface waters offshore, allowing cold, nutrient-rich water to rise from the depths, a process called *upwelling*. Upwelling in the California Current is influenced by seasonal changes in the intensity of northwesterly winds. The upwelling season is most pronounced in spring and summer, when northwesterly winds are at their highest of the year. Upwelling is reduced in fall and winter, when winds relax and are more variable (Education Development Center 2017). The discussion above is about normal seasonal upwelling. The Section 5.2, *Commercial and Recreational Fishing,* discusses upwelling specific to commercial and recreational fishing.

3.11.1.2 Groundwater

The near-sea-level ground elevation and influence of tidal waters on the Samoa Peninsula result in a shallow groundwater table, susceptible to further rise in conjunction with fluctuations of sea level (Figure 3.11-1). Groundwater is present at a relatively shallow depth throughout the Project area. Subsurface investigations have encountered groundwater typically within about 10 feet of sea level. Therefore, in low elevation areas south of Samoa, groundwater is expected to occur within the upper 5 to 10 feet of the ground surface. (GHD 2019).

3.11.1.3 Flooding

According to the Federal Emergency Management Agency (FEMA) National Flood Insurance Program flood insurance rate map for Humboldt County, the cable landing site is outside the 100-year and 500-year flood zones (Humboldt County 2020a). The lands west of New Navy Base Road are within the 100-year flood zone. Figure 3.11-1 shows the FEMA flood zones in the Project area.

3.11.1.4 Tsunami Inundation

The Project area is located in a low-lying coastal setting directly onshore of an active subduction zone (Cascadia Subduction Zone) capable of generating very large magnitude earthquakes (Figure 3.8-1). Earthquakes along subduction zones historically have been one of the principal sources of tsunami generation. Significant geologic evidence along the coast of much of the Pacific Northwest documents the occurrence and effects of past tsunamis. In addition, there is local geologic evidence of past tsunamis, in the form of clean sand layers (interpreted as a tsunami deposit) that bury coastal wetlands surrounding Humboldt Bay (GHD 2019).

Much of the low-lying Samoa Peninsula is subject to tsunami inundation and is at substantial risk in the event of a large, locally generated tsunami event. Other than isolated high dunes northwest of the town of Samoa, the entire Samoa Peninsula typically is modeled as being subject to inundation during moderate to large tsunami events. A tsunami that inundates the Samoa Peninsula would result in catastrophic conditions over the entire Project area. The arrival time of a near-source tsunami generally is understood to be short, due to the small site-to-source distance. On the Samoa Peninsula, tsunami signs indicate where one is “entering” or “leaving” a tsunami inundation area and point to an established “Tsunami Evacuation Zone”, which is inland approximately 1.5 miles from the Project site and varies in distance along the coast (GHD 2019).

3.11.2 Regulatory Setting

Appendix A contains the federal and state laws and regulations pertaining to hydrology and water quality relevant to the Project. At the local level, the County’s Humboldt Bay Area Plan (HBAP) of the LCP discusses the potential for concerns related to water quality, flooding, and erosion. As stated within the HBAP, sections marked *** contain relevant Coastal Act policies that also have been enacted as County policy. The pertinent section follows:

Section 3.17 (Hazards) states in part:

> *** 30253. New Development shall:
>
> 1. Minimize risks to life and property in areas of high geologic, flood and fire hazard.
> 2. Assure stability and structural integrity, and neither create nor contribute significantly to erosion, geologic instability, or destruction of the site or surrounding areas. The tsunami hazard policy in the Humboldt Bay Area Plan was amended in 2012 to prohibit new habitable living space below the predicted tsunami run-up elevation calculated at maximum tide plus a minimum of three (3) feet to account for future sea level rise and one foot of freeboard

space, as well as other measures to reduce tsunami hazard (Section 3.17[B][3)].

Section 3.17 (Hazards, Development Policies) states in part:

3. Tsunamis–New development below the level of the 100 year tsunami run-up elevation described in Tsunami Predictions for the West Coast of the Continental United States (Technical Report H-78-26 by the Corps of Engineers) shall be limited to public access, boating, public recreation facilities, agriculture, wildlife management, habitat restoration, and ocean intakes, outfalls, and pipelines, and dredge spoils disposal. New subdivisions or development projects which could result in one or more additional dwelling units within a potential tsunami run-up area shall require submission of a tsunami vulnerability report which provides a site-specific prediction of tsunami run-up elevation resultant from a local Cascadia subduction zone major earthquake.

4. Flood Plains–No critical facilities should be permitted to locate within the 100 year flood plain. Utility lines may cross hazard zones if there is no reasonable alternative and provisions are made to mitigate the hazard. Non-critical facilities should be permitted in the 100 year flood plain only if adequate flood control measures, such as control works, compact fill, etc., that would result in a site being beyond or above the 100 year flood extend, are provided. Further, the County will continue to review development in light of and impose conditions consistent with the National Flood Insurance Program.

Section 3.30(B) (Natural Resources Protection Policies and Standards, Development Policies) states in part:

8. Coastal Streams, Riparian Vegetation And Marine Resources

*** 30231. The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of waste water discharges and entrainment, controlling runoff, preventing depletion of ground water supplies and substantial interference with surface waterflow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.

Figure 3.11-1. FEMA Flood Zones and Groundwater Basin

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.

All Project Components

Construction activities associated with the proposed Project include ground-disturbing activities such as HDD, backfilling, and minor grading. Ground-disturbing activities and runoff from work areas could cause soil erosion and sedimentation, reducing water quality in adjacent wetlands (Figure 3.4-2). Potential impacts on water quality are related to sediment and sediment-bound pollutants that may be mobilized into drainage structures or other waterbodies. 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. Contaminants from construction vehicles and equipment and sediment from soil erosion could increase the pollutant load in runoff being transported to receiving waters. **MM BIO-5** (preparing and implementing an Inadvertent Return Contingency Plan) and **MM BIO-7** (implementing BMPs for HDD activities) 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.

Measures for hazardous materials management, such as identification of appropriate fueling and maintenance areas for equipment, are provided in **MM HAZ-1** (develop and implement Spill Contingency and Hazardous Materials Management Plans). 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.

Excavation for the landing pipes would be 35 feet (minimum) below the beach. Shallow groundwater is likely to occur in the subsurface of the landing pipes where HDD would be conducted. Construction dewatering in areas of shallow groundwater may be required during excavation activities, which could result in 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 North Coast Regional Water Quality Control Board and comply with the Board's requirements related to the quality of water

and discharges. The 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 State Water Resources Control Board (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 North Coast Region* are met; or (2) hauled offsite 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 release of material 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 BIO-5** and **MM BIO-7**.

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 BIO-5** and **MM BIO-7**.

All Project activities would be subject to existing regulatory requirements. Because land disturbance would be over 1 acre, a SWPPP with erosion control BMPs would be prepared, and a Notice of Intent would be submitted to support the NPDES. 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 North Coast Region* (NCRWQCB 2018), to act in accordance with related regulatory agencies guidelines, and to meet the goals and objectives of the 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.

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.

All Project Components

The Project area is within the Eureka Plain groundwater basin (Figure 3.11-1). The Project would add minimal areas of additional impervious surface (i.e., the cast-iron covers of the LVs at the cable landing site). Recharge in the area would continue to occur through infiltration of precipitation. There is no intention to use surface water or groundwater for construction activities or Project operation, 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 onsite- or offsite.

ii) Substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or offsite.

Less than Significant with Mitigation.

All Project Components

During construction, existing drainage patterns could be altered temporarily through minor grading (Figures 3.1-2a through 3.1-2d), potentially resulting in temporary erosion. BMPs would be implemented through the SWPPP, in addition to implementing **MM BIO-5**, **MM BIO-7**, and **MM HAZ-1**.

Minimal additional impervious surface would be added as part of the Project (i.e., the cast-iron covers of the LVs at the cable landing site). The Project site would remain similar to its existing configuration, and the Project would not substantially alter the existing drainage pattern. Most construction activities and the primary staging area would occur on the cable landing site east of New Navy Base Road and west of Vance Avenue on APN 401-112-021.

An additional already paved secondary staging area would be used in a nearby location, not yet determined. Once the landing pipes are installed, the bore pit would be expanded to allow for installation of the LVs. Topsoil from the expanded bore pit would be stockpiled during LV installation and used to restore the cable landing site.

In addition, standard erosion and sediment control measures and other construction SWPPP BMPs would be implemented. 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.

All Project Components

During construction, the drainage pattern of the cable landing site 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 communication cables below ground. The Project would not 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. The Project would not impede or redirect flood flows. The site would be stabilized and restored immediately following construction activities. 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

The Project site is not located in a seiche zone. The cable landing site is outside the 100-year and 500-year flood zones; however, the lands west of New Navy Base Road are within the 100-year flood zone (Figure 3.11-1) (Humboldt County 2020a). The entire Samoa Peninsula is within the tsunami zone (Humboldt County 2020a). The four LVs could be inundated because of a tsunami; however, the LVs would not store pollutants. Therefore, if Project components were inundated, pollutants would not be released, and no impact would occur.

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 discharge of pollutants 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 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 North Coast Region* (NCRWQCB 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. In addition, implementing the appropriate Humboldt County LCP policies involves protection of groundwater recharge areas and groundwater resources, as required by a sustainable groundwater management plan.

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 a less than significant level:

- MM BIO-3: Delineate Work Limits to Protect Sensitive Biological Resources
- MM BIO-5: Prepare and Implement an Inadvertent Return Contingency Plan
- MM BIO-7: Implement Best Management Practices for Horizontal Directional Drilling Activities
- MM HAZ-1: Develop and Implement Spill Contingency and Hazardous Materials Management Plans

3.12 LAND USE AND PLANNING

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

3.12.1 Environmental Setting

The Samoa Peninsula is a sparsely populated narrow coastal landform known as a "spit" that forms a barrier between the Pacific Ocean to the west and Humboldt Bay to the east. Connected to the mainland on the northern end, it is accessible from the City of Arcata, which is located at the north end of Humboldt Bay (Figure 1-1). On the south, the spit is open to the navigation channel that allows access from the Pacific Ocean to Humboldt Bay. Existing land uses in the Project vicinity are a mixture of industrial and undeveloped land. Residential uses generally are concentrated in the unincorporated communities of Samoa, Finntown, and Fairhaven, which predominately have single-family residences with some multi-family developments. Large industrial uses exist between the residential areas.

The Project alignment and facilities would be within the following County zoning districts: Industrial General (MG), Industrial/Coastal Dependent/Archaeological Resource Area Outside Shelter Cove (MC/A), Natural Resources/Coastal Wetlands, Beach and Dune Areas (NR/W, B).

Samoa Beach is the long strand of beach on the ocean side of the Samoa Peninsula. Access to Samoa Beach can be found in multiple locations along New Navy Base Road in the Project vicinity. The Samoa Dunes Recreation Area is a sandy off-highway vehicle play area located on the south end of the North Jetty at the entrance to Humboldt Bay.

The cable landing site would be located on a private Harbor District parcel (APN 401-112-021), on undeveloped land. The land east of Vance Avenue, on the same parcel, is the site of the former pulp mill. Lands to the north and south are undeveloped or industrial, with the Pacific Ocean to the west and Humboldt Bay to the east.

Each of the landing pipes would be installed from each of the LVs and would extend offshore into the Pacific Ocean. Land above the landing pipes on the terrestrial portion is undeveloped.

3.12.2 Regulatory Setting

Appendix A contains the federal and state laws and regulations pertaining to land use and planning relevant to the Project. At the local level, the Project area is under the jurisdiction of the County's LCP. No LCP policies are specifically applicable to the Project with respect to land use and planning.

3.12.3 Impact Analysis

a) Physically divide an established community?

No Impact.

All Project Components

The cable landing site, primary staging area, LVs, and landing pipes would be on undeveloped land on the Samoa Peninsula between the unincorporated communities of Samoa and Fairhaven. The Project would not physically divide a 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?

No Impact.

All Project Components

The Project would install communication cables below ground and under the ocean. The cable landing site 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.

3.12.4 Mitigation Summary

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

3.13 MINERAL RESOURCES

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

3.13.1 Environmental Setting

No mineral resource areas of value to the region or residents of the state, or of local importance are present near the Project (Division of Mine Reclamation 2016). The closest active quarry (stone) is the Halvorsen Quarry located northeast of the City of Eureka.

3.13.2 Regulatory Setting

Appendix A contains federal and state laws and regulations pertaining to mineral resources relevant to the Project. At the local level, the Project area is under the jurisdiction of the County's LCP. No LCP policies are specifically applicable to the Project with respect to mineral resources.

3.13.3 Impact Analysis

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

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

(a and b) No Impact.

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.

3.13.4 Mitigation Summary

The Project would have no impacts on mineral resources of regional, state, or local importance; therefore, no mitigation is required.

3.14 NOISE

NOISE - Would the Project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation**	**Less Than Significant Impact**	**No Impact**
a) Generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☒	☐	☐
b) Generate excessive ground-borne vibration or ground-borne noise levels?	☐	☐	☒	☐
c) 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 reside or where the presence of 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 where quiet is an important part of the environment also can be considered sensitive to noise. Some commercial areas may be considered noise sensitive as well, such as outdoor restaurant seating areas.

As shown in Figure 3.1-1 no noise-sensitive land uses are in the vicinity of the Project. The closest residence to the cable landing site is approximately 0.5 mile southeast on Fay Street and Bay Street. People recreating on Samoa Beach would be approximately 0.2 mile west of the cable landing site. There are no health care facilities or lodging in the Project area. The closest school is Peninsula Union Elementary School at 909 Vance Avenue in Samoa, which is 1.4 miles away from any Project-related activities.

Although Samoa Beach is a recreational area, it is not considered noise sensitive. This recreational area is frequently used by all-terrain vehicles on the beach. Because the ambient noise environment at the beach area currently is characterized by noise from relatively loud vehicles, in addition to the constant sound of waves breaking on the beach, it is not considered a noise-sensitive land use.

3.14.1.1 Existing Ambient Noise Levels

The ambient noise environment in the Project area and in the vicinity is characteristic of a rural environment (e.g., minimal local traffic and aircraft overflights, and industrial noise sources). Vehicle traffic on local roadways such as New Navy Base Road and Vance Avenue; all-terrain vehicles on the beach; and aircraft overflight noise are the dominant noise sources in the area. 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. Section 3.4, *Biological Resources*, addresses noise associated with offshore work.

3.14.2 Regulatory Setting

Appendix A contains the federal and state laws and regulations pertaining to noise relevant to the Project. At the local level, noise is addressed through the implementation of General Plan policies, including noise and land use compatibility guidelines. General Plan policies provide guidelines for determining whether a noise environment is appropriate for a proposed or planned land use. Humboldt County does not have an adopted noise ordinance.

3.14.2.1 Humboldt County General Plan

The Humboldt County General Plan Noise Element includes a number of policies with regard to noise. The following policies are most applicable to the Project.

- **Policy N-P1. Minimize Noise from Stationary and Mobile Sources.** Minimize stationary noise sources and noise emanating from temporary activities by applying appropriate standards for average and short-term noise levels during permit review and subsequent monitoring.
- **Policy N-P4. Protection from Excessive Noise.** Protect persons from existing or future excessive levels of noise which interfere with sleep, communication, relaxation, health or legally permitted use of property.

The Humboldt County General Plan also provides the following standards applicable to the Project.

- **Short-term Noise Performance Standards (L_{max}).** The following noise standards, unless otherwise specifically indicated, shall apply to all property within their assigned noise zones and such standards shall constitute the maximum permissible noise level within the respective zones (Included in this MND as Short-Term Noise Standards [L_{max}], Table 3.14-1).
- **Exceptions.** The Short-Term Noise levels [included in this MND as Table 3.14-1] shall not apply to uses such as, but not limited to:

1. Portable generator use in areas served by public electricity when electrical service is interrupted during emergencies as determined by the Planning Director.
2. Temporary events in conformance with an approved Conditional Use Permit.
3. Use of chainsaws for cutting firewood and power equipment used for landscape maintenance when accessory to permitted onsite uses.
4. Heavy equipment and power tools used during construction of permitted structures when conforming to the terms of the approved permit.
5. Emergency vehicles.

Table 3.14-1. Humboldt County Short-Term Noise Standards (L_{max})

Zoning Classification	Day (maximum) 6:00 a.m. to 10:00 p.m. dBA	Night (maximum) 10:00 p.m. to 6:00 a.m. dBA
MG, MC, AE, TPZ, TC, AG, FP, FR, MH	80	70
CN, MB, ML, RRA, CG, CR, C-1, C-2, C-3	75	65
RM, R-3, R-4	65	60
RS, R-1, R-2, NR	65	60

Source: Humboldt County 2017
Terms:
MG = Industrial General
MC = Industrial/Coastal Dependent
AE = Agriculture Exclusive
TPZ = Timber Production Zone
AG = Agriculture General
FP = Flood Plain
FR = Forestry Recreation
MH = Heavy Industrial
CN = Neighborhood Commercial
MB = Business Park
ML = Light Industrial
RRA = Rural Residential Agriculture
CG = Commercial General
CR = Commercial Recreation
C-1 = Neighborhood Commercial
C-2 = Community Commercial
C-3 = Industrial Commerce
RM = Residential Multi-Family
R-3 = Residential Multiple Family
R-4 = Apartment Professional
RS = Residential Suburban
R-1 = Residential One-Family
R-2 = Residential Two-Family
NR = Natural Resources

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.

Marine Components

The Project involves the use of marine equipment that would increase the level of noise above existing conditions. Marine-based activities would take place in the ocean, and equipment for laying cable (24 hours per day) would not be used near any human noise-sensitive land uses that could be affected. Thus, marine-based activities would not result in noise impacts on human noise-sensitive land uses. The noise impacts of marine-based activities on aquatic species are discussed in Section 3.4, *Biological Resources*; these impacts would be reduced through implementing a marine mammal monitoring program (**MM BIO-9**). The submerged marine cable network would not generate noise.

Terrestrial Components

Terrestrial construction activities would occur during day-time hours and involve noise-generating equipment (see Appendix B for a list of equipment). The equipment used at the cable landing site would be used on land in an unoccupied parcel owned by the Harbor District. Activities at the cable landing site could occur for up to 63 days, which would be the time that the marine HDD machines would operate and the LVs would be installed. During this time, equipment at the cable landing site would generate noise ranging from 82 to 83 dBA L_{eq}[33] and from 87 to 88 dBA L_{max} at 50 feet. Because the cable landing site is located on land zoned MG, the County's Short-Term Noise Standard restriction of 80 dBA would apply. At 50 feet, the commercial noise limit would be exceeded due to construction noise levels reaching 87–88 dBA L_{max}. Although no noise-sensitive land uses are within 50 feet of where construction equipment would operate, the Land Use/Noise Compatibility Standards of the General Plan could be violated, and this impact would be significant. Construction activity at the cable landing site would comply with **MM NOI-1**, which includes noise-reduction measures to attenuate noise for compliance with the General Plan. Implementing **MM NOI-1** would reduce this impact to a less than significant level.

[33] L_{eq} is the equivalent continuous sound level in decibels, equivalent to the total sound energy measured over a stated period of time; L_{max} is the maximum sound level during a measurement period or a noise event. The A-weighted decibel scale (dBA) measures not only the intensity of a sound but how the human ear responds.

MM NOI-1: Implement Construction Noise Control Measures. The Applicant will ensure that its contractor implements site specific noise attenuation measures to ensure compliance with applicable County noise limits for the duration of the construction period. Noise attenuation measures shall be implemented to keep noise levels below the limits specified in the County's General Plan (Table 13-C Land Use/Noise Compatibility Standards). Noise measures shall include the following and shall be included in the construction specifications:

- Require that all construction equipment powered by gasoline or diesel engines have sound control devices that are at least as effective as those originally provided by the manufacturer and that all equipment be operated and maintained to minimize noise generation.
- Prohibit gasoline or diesel engines from having unmuffled exhaust systems.
- Ensure that equipment and trucks for Project construction use the best available noise control techniques (e.g., improved mufflers, redesigned equipment, intake silencers, ducts, engine enclosures, acoustically attenuating shields or shrouds) wherever feasible.
- Use "quiet" gasoline-powered or electrically powered compressors as well as electric rather than gasoline- or diesel-powered forklifts for small lifting, where feasible.

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

Less than Significant Impact.

All Project Components

Project construction would occur only during day-time hours. While the Project would require temporary use of heavy construction equipment, none of it is considered impact equipment (such as pile drivers), as defined by the Federal Highway Administration (FHWA 2006). Nevertheless, non-impact equipment can generate noticeable ground-borne vibration. Table 3.14-2 shows the ground-borne vibration levels in terms of peak particle velocity (PPV) for equipment that could be used for Project construction activities.

Tables 3.14-3 and 3.14-4 summarize the guidelines developed by Caltrans for damage and annoyance potential from the transient and continuous vibration that usually is associated with construction activity. Activities that typically cause single-impact (transient) or low-rate, repeated impact vibration include drop balls; blasting; and the use of impact pile drivers, "pogo stick" compactors, and crack-and-seat equipment. Activities that typically generate continuous vibration include the use of excavation equipment, static compaction equipment, tracked vehicles, vehicles on a highway, vibratory pile drivers, pile-extraction equipment, and vibratory compaction equipment (Caltrans 2013).

Table 3.14-2. Vibration Source Levels for Construction Equipment

Equipment	PPV at 25 Feet	PPV at 50 Feet	PPV at 75 Feet	PPV at 100 Feet	PPV at 175 Feet
Large bulldozer	0.089	0.0315	0.0171	0.0111	0.0048
Caisson drilling	0.089	0.0315	0.0171	0.0111	0.0048
Loaded truck	0.076	0.0269	0.0146	0.0095	0.0041
Jackhammer	0.035	0.0124	0.0067	0.0044	0.0019
Small bulldozer	0.003	0.0011	0.0006	0.0004	0.0002

Source: Caltrans 2013
Term:
PPV = peak particle velocity

Table 3.14-3. Threshold Criteria Guidelines for Vibration Damage Potential

Structure and Condition	Maximum PPV (inches per second)	
	Transient Sources	Continuous/Frequent Intermittent Sources
Extremely fragile historic buildings, ruins, and ancient monuments	0.12	0.08
Fragile buildings	0.2	0.1
Historic and some old buildings	0.5	0.25
Older residential structures	0.5	0.3
New residential structures	1.0	0.5
Modern industrial/commercial buildings	2.0	0.5

Source: Caltrans 2013
Term:
PPV = peak particle velocity
Note: Transient sources create a single, isolated vibration event (e.g., blasting or drop balls). Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.

Table 3.14-4. Criteria Guidelines for Vibration Annoyance Potential

Human Response	Maximum PPV (inches per second)	
	Transient Sources	Continuous/Frequent Intermittent Sources
Barely perceptible	0.04	0.01
Distinctly perceptible	0.25	0.04
Strongly perceptible	0.9	0.10
Severe	2.0	0.4

Source: Caltrans 2013
Term:
PPV = peak particle velocity
Note: Transient sources create a single, isolated vibration event (e.g., blasting or drop balls). Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.

At 25 feet, which is typically the closest distance from construction activities to a residence, when construction occurs in the road right-of-way, the vibration levels generated by construction equipment would be approximately 0.089 inch per second for the equipment with the greatest potential for ground-borne vibration (e.g., a drill rig used to bore under the ground surface). At 25 feet, vibration would be more than distinctly perceptible but less than strongly perceptible, based on the human response values in Table 3.14-4. Beyond 40 feet, ground-borne vibration would attenuate to levels that are less than distinctly perceptible; and at 80 feet and greater, vibration would not be perceptible. Because construction activities are more than 0.5 mile from noise-sensitive land uses (Fay Street and Bay Street), vibration would not be perceptible. The impact is less than significant.

Damage to buildings or structures during construction is not anticipated because no extremely fragile historic buildings, ruins, or ancient monuments are in the Project area. After construction activities are completed, permanent ground-borne vibration would not occur.

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?

No impact.

All Project Components

No private airstrips are in the vicinity of the cable landing site. The closest airport is the public use Samoa Field Airport, approximately 1.6 miles south of the cable landing site. This airport is owned by the City of Eureka and is the only airport located within 2 miles of the Project footprint. Based on the Humboldt County Draft Airport Land Use Compatibility Plan, no Project components are located within a Safety Zone of the Samoa Field Airport (ESA 2020). The Project does not include construction of residences, and aircraft activity at the airport would not be expected to expose workers to excessive noise levels. No impact would be related to excessive aircraft noise from public airports or private airstrips.

3.14.4 Mitigation Summary

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

- MM NOI-1: Implement Construction Noise Control Measures
- MM BIO-9: Prepare and Implement a Marine Wildlife Monitoring and Contingency Plan

3.15 POPULATION AND HOUSING

POPULATION AND HOUSING - Would the Project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation**	**Less Than Significant Impact**	**No Impact**
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

3.15.1 Environmental Setting

The cable landing site is in Census Tract 001300, Block 1206 in Humboldt County, which covers the entire Samoa Peninsula and lands to the north, has an estimated population of 1,377 (California Census 2020).

3.15.2 Regulatory Setting

No federal or state laws relevant to population and housing apply to the Project. Implementing the Project would not involve acquisition of any property or relocation of any existing residents, businesses, or other uses. No housing goals or policies are applicable to the Project area or Project activities.

3.15.3 Impact Analysis

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

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

(a and b) No Impact.

All Project Components

The Project would not directly or indirectly induce population growth or displace anyone. A maximum of 10 people would be working on Project construction at any one time and staying in temporary (rental) housing or hotel amenities.

3.15.4 Mitigation Summary

The Project would not affect population or housing; therefore, 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

Because the cable landing site is in an unincorporated area, the County would provide most of the fire protection services. The Peninsula Community Services District (PCSD), formerly the Samoa Peninsula Fire Protection District, provides fire protection services to the Project area. The PCSD is an all-volunteer district that is based at the station at 1982 Gass Street in the Fairhaven area. A second station in Samoa primarily is used to store equipment. The PCSD has a Chief Officer vehicle and a beach rescue vehicle (both four-wheel drive pickups). These emergency response vehicles are stocked with defibrillators and general medical equipment. (Humboldt County LAFCo 2017).

3.16.1.2 Police Protection

Police protection in all unincorporated areas are provided by the Humboldt County Sheriff's Office. Services include criminal investigation, court services, and corrections. The California Highway Patrol is responsible for enforcing traffic laws on roadways within the unincorporated areas and on State highways throughout the County. Sheriff's deputies in the Patrol Unit are responsible for responding to emergency calls for service, criminal investigations, and crime prevention through neighborhood and beat patrols. The Main Station in Eureka patrols the Samoa Peninsula. The Sheriff's Office also has mutual aid agreements with cities and the California Highway Patrol.

3.16.1.3 Schools

Only one school, the Peninsula Union Elementary School, is located on the Samoa Peninsula. It is located 1.4 miles north of the cable landing site at 909 Vance Avenue in Samoa. This school is the only school within the Peninsula Union School District and had

a student body of approximately 43 students in 2014–2015 and 35 students in 2018–2019 (Education Data Partnership 2020).

3.16.1.4 Parks and Recreation Facilities

Within the Samoa Peninsula, Humboldt County owns and maintains one park and two beach parking areas. The park, the Samoa Boat Ramp and Campground, provides 13 RV sites and 25 tent sites, as well as restroom and shower facilities. The Samoa Dunes Recreation Area, which is adjacent to the Samoa Boat Ramp and Campground, is managed by the Bureau of Land Management. Additionally, Peninsula Union Elementary School's baseball and soccer fields are available for public use. Other private recreation facilities include the Women's Club and grounds on Rideout Avenue (GHD 2019).

3.16.2 Regulatory Setting

Appendix A contains federal and state laws and regulations pertaining to public services relevant to the Project. At the local level, the County's LCP includes goals and policies regarding public services. No public services goals or policies 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? and Other Public Facilities?

No Impact.

<u>All Project Components</u>

The Project is not anticipated to create a significant fire or security hazard, or to 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 LVs. There would be no new permanent residents using the schools, parks, or other public facilities.

3.16.4 Mitigation Summary

The Project would not result in significant impacts on public services; therefore, no mitigation is required.

3.17 RECREATION

RECREATION	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒
Would the project interfere with existing use of offshore recreational boating opportunities?[34]	☐	☒	☐	☐

3.17.1 Environmental Setting

Refer to Section 3.16.1, *Environmental Setting* in the Public Services resource area above for information on recreational facilities and resources in the Project vicinity.

3.17.2 Regulatory Setting

Appendix A contains federal and state laws and regulations pertaining to recreation relevant to the Project. At the local level, no goals, policies, or regulations related to recreation are applicable to the Project.

3.17.3 Impact Analysis

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

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

(a and b) No Impact.

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

All Project Components

No recreational facilities or residential units would be used or built. No access to any terrestrial recreational sites would be hindered. Construction workers staying in the area during non-working days could occasionally use the area's recreational facilities.

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

Less than Significant with Mitigation.

No aspect of the Project would affect the recreational activities of Samoa Beach because none of the Project components would be within the tidal zone or along the beach (Figure 2-1). Offshore recreational activities (e.g., pleasure boating, recreational fishing, surfing and kayaking) in the immediate offshore area may be affected for a short period during cable-laying activities. The affected area would be minimal, and users would have advance 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/) shall be submitted to USCG describing all offshore activities. A copy of the published notice shall be provided immediately to CSLC. The notice shall include:

- Type of operation (i.e., dredging, 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 (operation or repair), 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

Although the Project would not affect recreational facilities, implementation of the following mitigation measure would reduce the potential for Project-related impacts on offshore 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 Project is on the Samoa Peninsula in unincorporated Humboldt County (Figure 1-2). Humboldt County generally is served by a multimodal transportation system comprised of a highway system, county roads, local roads, bicycle and pedestrian facilities, rail system, and airport facilities. New Navy Base Road is the primary roadway extending from State Route 255 (Samoa Boulevard) south along the Samoa Peninsula. New Navy Base Road turns into State Route 255 just north of Samoa, which falls under the jurisdiction of Caltrans. State Route 255 heads north then east to Arcata and southeast to Eureka from Samoa. The County identified New Navy Base Road as a Regionally Significant Street and Roadway (arterial) as part of the 2008 Regional Transportation Plan (GHD 2019).

County roadways within the Project area that may be encroached upon during construction include portions of Vance Avenue, New Navy Base Road, and Bay Street. Each of these County roads are two-way roads with one travel lane in each direction.

Level of service (LOS) is a ranking used for traffic flow. LOS ranges from A to F, with A indicating very good free-flowing traffic operations and F indicating stop-and-go conditions. Intersections within the Project area were identified as operating at a LOS C (worst case like during commute times or the weekends) or better in 2006 (County of Humboldt 2006).

Pedestrian and Bicycle Facilities

Because roadways in the Project area do not include sidewalks, pedestrians must walk along the roadway shoulder or in the road right-of-way. As specified in the Humboldt County Regional Transportation Plan, all streets, roadways, and highways in Humboldt County are open to bicycle use (HCAOG 2018). Humboldt County's bikeways 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 Project site is the public use Samoa Field Airport, approximately 1.6 miles south of the cable landing site. The Samoa Field Airport (formerly called the Eureka Municipal Airport) is owned and operated by the City of Eureka.

3.18.1.2 Offshore Transportation

Humboldt Bay is east of the Project site and includes marina vessel launching facilities. Shipping lanes along the California coast are generally 4 to 20 nm offshore. Members of the Western States Petroleum Association voluntarily keep laden vessels (i.e., vessels loaded with cargo) a minimum of 50 nm from the shoreline (Oil & Gas Journal 1992).

3.18.2 Regulatory Setting

Appendix A contains federal and state laws and regulations pertaining to transportation relevant to the Project. The County does not include any policies or programs within the LCP associated with short-term construction projects.

3.18.3 Impact Analysis

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

No Impact.

<u>All Project Components</u>

The Project would not need to block any roads or change traffic volume on area roadways, including Vance Avenue, New Navy Base Road and Bay Street; therefore, the Project would not conflict with 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 2018a).

Transportation of workers, materials, and equipment 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 Humboldt County noise standards for construction. Installing landing pipes and cable pulling would require up to 48 hours of continuous work to pull the cable from offshore to the landing pipe that would bring the cable into the LV. The Applicant would obtain an encroachment permit from the County.

Most traffic related to terrestrial activities would travel along New Navy Base Road/Vance Avenue. Approximately 30 tractor-trailer loads of construction equipment and materials would be delivered directly to both staging areas when starting construction. In addition, one fuel truck would make a daily delivery of fuel. There would be about three deliveries of materials and supplies weekly. 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, 5 tractor-trailer trips per day, and 1 fuel and miscellaneous delivery trip per day. This would total 16 trips per day during construction, primarily on New Navy Base Road/Vance Avenue. 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 peak trips that would occur in any one day is significantly below the number identified in the Technical Advisory's guidance (OPR 2018a).

Marine Components

Cable laying and plowing, as described in detail in Section 2, *Project Description*, could interfere with local marine vessel traffic, including commercial and recreational fishing operations (Section 5.2, *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 (**APM-2**), which would be included with the Contractor Work Plan. The Applicant would file an advanced local notice (**MM REC-1**)

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 **APM-2** and **MM REC-1** would minimize potentially significant impacts on marine vessel traffic to less than significant levels.

APM-2: Marine Anchor Plan. At least 30 days before starting construction, the Applicant will submit a Marine Anchor Plan to CSLC staff for review 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 ocean bottom. Please note that anchor dragging along ocean bottom is not allowed.
- Coordinates of all dropped anchor points during construction shall be recorded and included on the post-construction ocean 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)?

d) Result in inadequate emergency access?

(c and d) No Impact.

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 (Figure 2-1). Traffic would be controlled and coordinated with the County if needed. 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 2-1). No impact on emergency access to the Project area or adjoining properties is anticipated.

3.18.4 Mitigation Summary

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

- MM REC-1: Advanced Local Notice to Mariners
- APM-2: Marine Anchor Plan

3.19 UTILITIES AND SERVICE SYSTEMS

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

3.19.1 Environmental Setting

The Humboldt Bay Municipal Water District provides wholesale and retail water services to the Samoa Peninsula. The water district maintains two separate pipeline systems delivering treated drinking water and untreated raw water (for irrigation purposes) to its customers in the area. The Project would not use any water for operations. The only central sewer treatment system on the Samoa Peninsula is within the town of Samoa. The remaining areas are served by individual septic tanks and leachfield systems. The Samoa Peninsula is made up of typically well-drained soils (coarse sands) and topographic features that do not require addressing runoff issues. No formal storm systems, other than a few drainage ditches on some of the industrial properties, are located between the railroad tracks and Humboldt Bay.

Solid waste and recyclables pickup within the Samoa Peninsula are collected by Recology, which also has a recycling plant on the Samoa Peninsula. The County, through Humboldt Waste Management Authority, has been trucking its solid waste approximately 175 miles to two out-of-county landfills. One-third of this waste is shipped to the Dry Creek Landfill near Medford, Oregon under a long-term contract. The remaining two-thirds of

solid waste is hauled to the Anderson landfill located near Redding, California. Dry Creek Landfill's projected operational life exceeds 100 years under any scenario. The Anderson Landfill is located at 18703 Cambridge Road in Anderson, California. The landowner is Waste Management of California, Inc., a subsidiary of Waste Management, Inc. The landfill's maximum permitted throughput is 1,850 tons per day. The remaining capacity is 11,914,025 cubic yards. The estimated closure date is 2055. Together, these two landfills would allow the County to meet its landfill disposal needs over the next 20 years (GHD 2019).

Electricity and natural gas are provided to the Samoa Peninsula by PG&E. Residences in the Project vicinity do not currently have natural gas service. Many homes instead have propane tanks, which are serviced by AmeriGas (GHD 2019).

3.19.2 Regulatory Setting

Appendix A contains the federal and state laws and regulations pertaining to utilities and service systems relevant to the Project. The County does not include any policies or programs within the LCP associated with short-term construction projects and telecommunications.

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?

(a to c) No Impact.

All Project Components

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.

Water would be used during construction for the boring machine, dust suppression, and drinking water. Project activities would occur at onshore staging or 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 onsite for the duration of Project activities. 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 system in the town of Samoa.

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.

All Project Components

Waste generated by the Project would include general construction waste, ocean floor debris (e.g., discarded fishing gear recovered during the pre-lay grapnel run), spent drilling fluids and cuttings, and trash from workers. All such materials would be taken to a local transfer station that receives waste for export to an approved landfill. Both the Dry Creek and Anderson landfills have adequate capacity to accommodate the Project and all other users in the County (GHD 2019). 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. Solid waste would be transported to an approved transfer station, with a final destination at either the Dry Creek or Anderson landfills or diverted to recycling facilities. The impact would be less than significant.

3.19.4 Mitigation Summary

The Project would not result in significant impacts on utilities or service systems; therefore, 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 Project site is on the Samoa Peninsula between the unincorporated communities of Samoa and Fairhaven, which is in a Local Responsibility Area for fire suppression. Fire suppression services in the Project vicinity are provided by the PCSD, formerly the Samoa Peninsula Fire Protection District. All of the terrestrial Project activity would take place within APN 401-112-021, west of Vance Avenue (Figure 2-1). This area west of Vance Avenue is undeveloped. According to Humboldt County's Web GIS, the Project area is within a Moderate fire hazard severity zone (Humboldt County 2020a).

3.20.2 Regulatory Setting

Appendix A contains the relevant federal and state laws and regulations pertaining to wildfire relevant to the Project. The County does not include any policies or programs within the LCP associated with short-term construction projects and wildfire.

3.20.3 Impact Analysis

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

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

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

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

(a to d) No Impact.

All Project Components

The Project would not affect issues related to wildfire because it includes buried cable infrastructure. and equipment located inside a buried vault. The Project area is not classified as a high or very high fire hazard severity zone (Humboldt County 2020a). 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.

3.20.4 Mitigation Summary

The Project does not have the potential to affect adopted emergency response or evacuation plans, or to exacerbate wildfire risks; therefore, no mitigation is required.

3.21 MANDATORY FINDINGS OF SIGNIFICANCE

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

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

3.21.1 Impact Analysis

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

Less than Significant with Mitigation.

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-12**, **MM HAZ-1**, **APM-1,** and **APM-3**—in addition to construction BMPs, 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**, **MM CUL-3**, **MM CUL-4**, **CUL-5**, and **MM CUL-6/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 with Mitigation.

All Project Components

No past, current, or reasonably foreseeable project on the Samoa Peninsula could be individually limited but cumulatively considerable with the addition of the proposed Project. The local telecommunications company project has a separate and independent utility from the Project analyzed in this MND and requires a separate CEQA analysis. No aspect of that project and the proposed Project would contribute to a cumulative effect. As provided in this MND, the Project has the potential to significantly affect the following environmental disciplines: Biological Resources, Cultural Resources, Cultural Resources – Tribal, Greenhouse Gas Emissions, Hazards and Hazardous Materials, Hydrology and Water Quality, Noise, Recreation, and Transportation. However, mitigation measures have been identified that would reduce these impacts to a level of 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 with mitigation as proposed throughout this MND.

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) and Public Services (Section 3.16), the Project would not affect resources used or enjoyed by the public, residents, or others in the Project area. The Project would not affect Agriculture or 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), Recreation (Section 3.17), Utilities and Service Systems (Section 3.20), Commercial and Recreational Fishing (Section 5.2), or Environmental Justice (Section 5.3).

Potential Project-related effects on public safety and well-being are discussed in sections on Cultural Resources (Section 3.5, **MM CUL 1/TCR-1**, **MM CUL-2/TCR-2, MM CUL-3**, **MM CUL-4**, **MM CUL-5**, and **MM CUL-6/TCR-3**); Cultural Resources – Tribal (Section 3.6, **MM CUL-1/TCR-1**, **MM CUL-2/TCR-2**, and **MM CUL-6/TCR-3**); Geology, Soils, and Paleontology (Section 3.8); Greenhouse Gas Emissions (Section 3.9, **MM GHG-1**); Hazards and Hazardous Materials (Section 3.10**, MM HAZ-1**, **MM BIO-1**, **MM BIO-3**, **MM BIO-5,** and **MM BIO-7**); Hydrology and Water Quality (Section 3.11, **MM BIO-5, MM BIO-7,** and **MM HAZ-1**); Noise (Section 3.14, **MM NOI-1** and **MM BIO-9**); Recreation (Section 3.17, **MM REC-1**); Transportation (Section 3.18, **MM REC-1**); Utilities and Service Systems (Section 3.19); Wildfire (Section 3.20); and Commercial and Recreational Fishing (Section 5.2, **APM-1** through **APM-3** and **MM REC-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.

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4.0 MITIGATION MONITORING PROGRAM

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

The Project authorizes RTI Infrastructure, Inc. (Applicant or RTI) to build infrastructure in terrestrial and marine areas in and offshore south of the unincorporated community of Samoa in Humboldt County to connect a total of four fiber optic cables (cables) coming from Asia (e.g., Singapore, Taiwan, and Japan) and Australia.

4.1 PURPOSE

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

4.2 ENFORCEMENT AND COMPLIANCE

The CSLC is responsible for enforcing this MMP. The Applicant is responsible for successful implementation of and compliance with the MMs and Applicant Proposed Measures (APMs) identified in this MMP. The term Applicant, in this context, includes all field personnel and contractors working for the Applicant.

4.3 MONITORING

CSLC staff may delegate duties and responsibilities for monitoring to other environmental monitors or consultants, as necessary. The CSLC or its designee shall ensure that qualified environmental monitors are assigned to the Project.

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

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

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

Workforce Personnel. Implementation of the MMP requires the full cooperation of Project personnel and supervisors. Many of the MMs require action from site supervisors and their crews. Any relevant mitigation procedures shall be written into contracts between the Applicant and any contractors to facilitate successful implementation.

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

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

4.4 MITIGATION MONITORING TABLE

This section presents the mitigation monitoring table (Table 4-1) for Biological Resources; Cultural Resources; Cultural Resources–Tribal; Greenhouse Gas Emissions; Hazards and Hazardous Materials; Hydrology and Water Quality; Noise; Recreation; and Transportation. In addition, Applicant Proposed Measures (**APM-1**, **APM-2**, and **APM-3**) for Biological Resources and Commercial and Recreational Fisheries are included in the table. All other environmental disciplines were found to have less than significant or no impacts; therefore, they are not included in the table. The table lists the following information by column:

- Potential Impact
- Mitigation Measure (full text of the measure)
- Location (where impact occurs and where MM should be applied)
- Monitoring/Reporting Action (action to be taken by monitor or lead agency)
- Effectiveness Criteria (how the agency can determine whether the measure is effective)
- Responsible Party (entity responsible to ensure MM compliance)
- Timing (e.g., before, during, or after construction; during operation)

Table 4-1. Mitigation Monitoring Program

Potential Impact	Mitigation Measure (MM)	Location	Monitoring/ Reporting Action	Effectiveness Criteria	Responsible Party	Timing
Biological Resources						
Impacts on Special-Status Species and Habitats	**MM BIO-1: Provide Worker Environmental Awareness Training.** The Applicant shall provide an environmental awareness training before starting construction 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 and cultural monitors (approved by CSLC staff) to help the trainees understand the following: • Surrounding common and special-status species and their habitats • Applicable regulatory requirements • MMs designed to avoid or minimize impacts on sensitive resource areas The training materials shall be developed and approved by the 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 environmental monitor shall be the main contact for reporting any special-status species observed in or near the Project area by any employee or	Terrestrial and marine Project areas	Training materials approved by CSLC staff 30 days before construction starts Onsite monitor to submit list of trained personnel and training materials to CSLC within 30 days after construction starts and after construction is completed	Implementing MM will educate construction workers regarding special-status species and habitat	Applicant and CSLC	Before, during, and after construction

Table 4-1. Mitigation Monitoring Program

Potential Impact	Mitigation Measure (MM)	Location	Monitoring/ Reporting Action	Effectiveness Criteria	Responsible Party	Timing
	contractor. The Applicant shall provide the contact information for the lead environmental monitor and the biological monitors to onsite construction workers, USFWS, CDFW, and CSLC staff before construction starts.					
Impacts on Special-Status Species and Habitats (cont.)	**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 onsite to survey the work area for special-status species and nesting birds (as applicable) prior to 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. The biological monitor shall be onsite full-time during the initial equipment mobilization and site preparation (including fence installation) and during the final demobilization phase of construction at the cable landing site. In addition, the monitor will make weekly site visits during Project construction for all work on the cable landing site. While on site, if the biological monitor observes special-status species on the Project site, the biological monitor shall have the authority to stop all work, and the Applicant shall contact the appropriate agency, (i.e., CDFW or USFWS and	Terrestrial and marine Project areas	Onsite monitor to verify Submit daily monitoring report for work within CSLC's jurisdiction and weekly report for work outside CSLC's jurisdiction	Implementing MM will reduce the potential for impacts on special-status species and habitat	Applicant and CSLC	Before and during construction

Table 4-1. Mitigation Monitoring Program

Potential Impact	Mitigation Measure (MM)	Location	Monitoring/ Reporting Action	Effectiveness Criteria	Responsible Party	Timing
	CSLC 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 lead environmental monitor for the Project would be contacted immediately to determine the appropriate course of action. Construction monitoring reports for marine work under CSLC's jurisdiction shall be submitted daily, and for terrestrial work outside of the CSLC's jurisdiction shall be submitted weekly.					
Impacts on Special-Status Species and Habitats (cont.)	**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 station work area shall be staked and flagged by the biological monitor (**MM BIO-2**). The special-status plant (dark-eyed gilia) located along the southern edge of the cable landing site work area will be protected with orange construction barrier fencings. The location of the staking and flagging and barrier fencing will be documented in the daily monitoring log and provided to CSLC prior to the start of construction. These demarcated areas shall be inspected daily throughout construction to ensure that they are visible for construction personnel.	Terrestrial Project area	Onsite monitor to document in the monitoring log	Implementing MM will reduce the potential for impacts on special-status species and habitat	Applicant and CSLC	Before and during construction

Table 4-1. Mitigation Monitoring Program

Potential Impact	Mitigation Measure (MM)	Location	Monitoring/ Reporting Action	Effectiveness Criteria	Responsible Party	Timing
Impacts on Sensitive Biological Resources	**MM BIO-4: Install Covers or Some Kind of Escape Ramps in Open Trenches.** To prevent accidental entrapment of wildlife species during construction, all excavated holes that will be left open overnight shall have a cover or some kind of soil ramp installed, allowing wildlife an opportunity to exit. If escape ramps are installed, construction inspector/ biological monitor shall inspect excavations before starting construction each day to confirm that no wildlife species are entrapped or to remove wildlife species that are unable to escape on their own. Any wildlife handling will be conducted under the biological monitor's applicable collection permit or as authorized by the appropriate wildlife agency. If a biological monitor is not onsite, a local biologist (with appropriate permits) would be called out to remove any species.	Terrestrial Project area	Onsite construction inspector/monitor to inspect daily before starting construction	Implementing MM will reduce the potential for impacts on special-status species and habitat	Applicant and CSLC	During construction
Impacts from Horizontal Directional Drilling (HDD) Activities	**MM BIO-5: 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) for the HDD shall be submitted to CSLC staff for review and approval at least 30 days before starting construction in terrestrial and marine areas. The plan shall include the following: • Measures to stop work, maintain appropriate control materials onsite, contain and remove drilling mud	Terrestrial and marine Project areas	Submit report to the CSLC 30 days before starting construction Onshore or offshore biological monitor to identify signs of an inadvertent release of drilling fluids	Implementing MM will reduce the potential for impacts on special-status species and habitat	Applicant and CSLC	Before and during construction

Table 4-1. Mitigation Monitoring Program

Potential Impact	Mitigation Measure (MM)	Location	Monitoring/ Reporting Action	Effectiveness Criteria	Responsible Party	Timing
	before demobilization, prevent further migration of drilling mud into the waterbody, and notify all applicable authorities. • Control measures of constructing a dugout/ settling basin at the bore exit site to contain drilling mud to prevent sediment and other deleterious substances from entering waterbodies. • Onshore and offshore biological monitors shall monitor the onshore and offshore to identify signs of an inadvertent release of drilling fluids. • An abandonment contingency plan in case the HDD operations are forced to be suspended and a partially completed bore hole abandoned. • Complete list of the agencies (with telephone number) to be notified, 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.					
Impacts on Nesting Birds	**MM BIO-6: Conduct Pre-Construction Nesting Bird Surveys and Implement Avoidance Measures.** If construction occurs during the nesting season (typically from February 1 to September 1), the following conditions (designed to protect both special-status and non–special-status birds) shall be implemented: • Areas within the BSA: No more than 1 week before starting Project-related	Terrestrial Project area	If construction occurs during nesting season, conduct surveys 1 week before start of construction Onsite monitor to verify;	Implementing MM will reduce the potential for impacts on nesting birds	Applicant and CSLC	Before and during construction

Table 4-1. Mitigation Monitoring Program

Potential Impact	Mitigation Measure (MM)	Location	Monitoring/ Reporting Action	Effectiveness Criteria	Responsible Party	Timing
	construction, a biological monitor, approved by CSLC staff, shall survey the Project areas within the BSA to look for nesting activity. • Areas outside the terrestrial BSA: Areas outside the BSA (but within the line-of-sight from active construction) would be surveyed using binoculars and accessing the site. • If no active nests are detected during these surveys, no additional measures are required. • If an active nest is found, an appropriate avoidance buffer (based on the species as explained below) shall be established around the 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 will 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. No disturbances shall occur within the protective buffer(s) until all young birds have		coordination with USFWS/ CDFW			

Table 4-1. Mitigation Monitoring Program

Potential Impact	Mitigation Measure (MM)	Location	Monitoring/ Reporting Action	Effectiveness Criteria	Responsible Party	Timing
	fledged, as confirmed by the biological monitor. • A biological monitor shall be retained by the Applicant (**MM BIO-2**) and shall be onsite everyday if construction activities happen during bird nesting season and a nest is identified within the buffer area.					
Impacts from Horizontal Directional Drilling Activities	**MM BIO-7: Implement Best Management Practices for Horizontal Directional Drilling Activities.** When using the large HDD equipment to install landing pipes, the following shall be submitted to CSLC staff for review and approval at least 60 days prior to construction of Phase 1 as defined in the MND: • Engineering design drawings for construction certified by a California-registered Civil/Structural Engineer. • A site-specific geotechnical report certified (stamped, signed, and dated) by a California-registered Geotechnical Engineer, including boring logs and any geotechnical recommendations (including, but not limited to, identification of reasonably foreseeable risks during HDD installation and proposed risk mitigations) for safe HDD installation. • If HDD is under CSLC jurisdiction, a minimum depth of 35 feet is required unless a shallower depth is recommended by a California-registered Geotechnical Engineer.	Marine Project area	Submit engineering design drawings and geotechnical report to CSLC at least 60 days prior to construction of Phase 1 as defined in the MND On-site monitor to verify BMPs during construction	Implementing MM will reduce the potential for impacts on marine wildlife and water quality associated with HDD activities	Applicant and CSLC	Before and during construction

Table 4-1. Mitigation Monitoring Program

Potential Impact	Mitigation Measure (MM)	Location	Monitoring/ Reporting Action	Effectiveness Criteria	Responsible Party	Timing
	• The Applicant shall incorporate any BMPs identified in the reports or reviews into the HDD plans in order to minimize potential impacts on marine wildlife and water quality.					
Impacts on Marine Wildlife	**MM BIO-8: Cable Entanglements and Gear Retrieval.** If fishers snag a cable and lose or cut gear or if the Applicant snags fishing gear, the Applicant shall use all feasible measures 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, the Applicant 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, the Applicant shall submit to CSLC staff a report describing the following: • Nature and location of the entanglement (with a map). • Method used for removing the entangled gear or object, or the method used for minimizing harm to wildlife if gear retrieval proves infeasible.	Marine Project are	Retrieval within 42 days of discovery Submit recovery report to CSLC within 14 days of completing the recovery operation	Implementing MM will reduce the potential for impacts on marine species	Applicant and CSLC	Before, during, and after construction
Impacts on Marine Mammals and Sea Turtles	**MM BIO-9: Prepare and Implement a Marine Wildlife Monitoring and Contingency Plan.** The Applicant shall prepare and implement a Marine Wildlife Monitoring and Contingency Plan (MWMCP) for installing or repairing cables with the following elements, procedures, and response actions:	Marine Project area	Submit the MWMCP to CSLC and CCC for review and approval at least 60 days before starting marine	Implementing MM will reduce the potential for impacts on marine species	Applicant and CSLC	Before and during construction, and during maintenance or repairs

Table 4-1. Mitigation Monitoring Program

Potential Impact	Mitigation Measure (MM)	Location	Monitoring/ Reporting Action	Effectiveness Criteria	Responsible Party	Timing
	• Awareness training for Project vessel crew that includes identification of common marine wildlife and avoidance procedures included in the MWMCP for Project activities. • Have two qualified shipboard marine mammal observers onboard all cable installation vessels during cable installation activities. The MWMCP shall establish the qualifications of and required equipment for the observers. • In consultation with NMFS, establish a safety work zone around all Project work vessels that defines the distance from each work vessel that marine mammals and sea turtles may approach before all operations must stop until the marine mammal or sea turtle has moved beyond. • Project-specific control measures for Project vessels (including support vessels) and actions to be undertaken when marine wildlife is present, such as reduced vessel speeds or suspended operations. • Reporting requirements and procedures for wildlife sightings and contacts made to be reported in the post-installation reports. The MWMCP shall identify the resource agencies to be contacted in case of marine wildlife incidents and to receive reports at the conclusion of Project installation. • The MWMCP shall be submitted to the CSLC and CCC for review and		installation activities			

Table 4-1. Mitigation Monitoring Program

Potential Impact	Mitigation Measure (MM)	Location	Monitoring/ Reporting Action	Effectiveness Criteria	Responsible Party	Timing
	approval at least 60 days before starting marine installation activities.					
Impacts on Hard Substrate Habitat Area	**MM BIO-10: Minimize Crossing of Hard Bottom Substrate.** At least 30 days before starting construction of Phase I, a pre-construction ocean floor survey shall be conducted and provided to CSLC covering the proposed cable lease area and the temporary construction corridor (including construction vessels anchoring areas and depicting ocean floor contours, all significant bottom features, hard bottom areas, sensitive habitats, the presence of any existing wellheads, pipelines, and other existing utilities) to identify any hard bottom habitat, eelgrass, kelp, existing utilities (including but not limited to pipelines), and power cables. The proposed cable routes and anchoring locations shall be set to avoid hard bottom habitat (to the extent feasible), eelgrass, kelp, existing utilities (including but not limited to pipelines), and power cables, as identified in the ocean floor survey.	Marine Project area	Conduct pre-construction ocean floor survey and submit results (with maps) to CSLC at least 30 days before starting construction of Phase I.	Implementing MM will reduce the potential for impacts on hard bottom habitat areas and associated marine biological resources	Applicant and CSLC	Before starting marine construction
Impacts on Hard Substrate Organisms	**MM BIO-11: Contribute Compensation to Hard Substrate Mitigation Fund.** The following would be proposed if slow-growing hard substrate organisms are damaged: • CCC compensation fees (based on past projects) will be required to fund the U.C. Davis Wildlife Health Center's California Lost Fishing Gear Recovery Project or other conservation	Marine Project area	Applicant will provide documentation to CSLC and CCC for (1) assessment and methods used to calculate total compensation fee; and (2)	Compensation fees will help reduce impacts on hard substrate habitat and associated marine biological resources	Applicant	After Project construction and after determination based on final burial report

Table 4-1. Mitigation Monitoring Program

Potential Impact	Mitigation Measure (MM)	Location	Monitoring/ Reporting Action	Effectiveness Criteria	Responsible Party	Timing
	programs for impacts on high-relief hard substrate affected by the Project. The amount of the hardbottom mitigation fee shall be calculated by applying a 3:1 mitigation ratio to the total square footage of affected hard bottom and multiplying that square footage by a compensation rate of $14.30 per square foot. • A final determination of the amount of high-relief hard substrate affected (used to calculate the total compensation fee) will be based on a review of the final burial report from the cable installation. The total assessment and methods used to calculate this figure will be provided to the CSLC and CCC for review and approval. Both the CSLC and CCC also will be provided documentation of the total amount of mitigation paid and the activities for which the funds will be used.		total amount of mitigation paid and the activities for which the funds will be used.			
Impacts on Marine Native Species	**MM BIO-12: Control of Marine Invasive Species.** The Applicant shall ensure that the underwater surfaces of all Project vessels are clear of biofouling organisms prior to arrival 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 CSLC's ballast management regulations, and Biofouling Removal and Hull Husbandry Reporting Forms shall be submitted to CSLC staff as required by	Marine Project area	Onsite monitor to verify	Implementing MM will reduce the potential for impacts on marine native species	Applicant and CSLC	During construction

Table 4-1. Mitigation Monitoring Program

Potential Impact	Mitigation Measure (MM)	Location	Monitoring/ Reporting Action	Effectiveness Criteria	Responsible Party	Timing
	regulation. No exchange of ballast water for Project vessels shall occur in waters shallower than the 5,904-foot isobath.					
Cultural Resources						
Disturbance of Shipwrecks; Archaeological Sites; Historic, Cultural, or Tribal Cultural Resources	**MM CUL-1/TCR-1: Discovery of Previously Unknown Cultural or Tribal Cultural Resources.** In the event that potential cultural or tribal cultural resources are discovered during Project implementation, all earth-disturbing work within 50 feet of the find shall be temporarily suspended or redirected until a qualified archaeologist retained by the Applicant can adequately assess the find and determine whether the resource requires further study. In the event that a cultural or tribal cultural resource discovery is potentially significant, the Applicant; CSLC; and any local, state, or federal agency with approval or permitting authority over the Project that has requested/required notification shall be notified within 48 hours. For all discoveries known or likely to be associated with Native American heritage (pre-contact sites and select post-contact historic-period sites), the THPOs for the Bear River Band of Rohnerville Rancherí a, Blue Lake Rancherí a, and Wiyot Tribe shall be contacted immediately by the CSLC to evaluate the discovery and, in consultation with the Applicant and a qualified archaeologist, develop a treatment plan in any instance where significant impacts cannot be avoided. The treatment plan shall be	Terrestrial Project area	Qualified archaeologist, notification of permitting agencies, treatment plan if needed	Implementing MM will reduce potential impacts on archaeological resources	Applicant and CSLC	Prior to and throughout construction

Table 4-1. Mitigation Monitoring Program

Potential Impact	Mitigation Measure (MM)	Location	Monitoring/ Reporting Action	Effectiveness Criteria	Responsible Party	Timing
	submitted to the CSLC staff and any participating tribe for review and approval prior to its implementation, and additional work in the vicinity of the discovery shall not proceed until the plan is in place. The location of any such finds must be kept confidential, and measures shall 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 Pub. Resources Code section 21084.3 subdivision (b), if feasible, unless other measures are mutually agreed to by the lead archaeologist and culturally affiliated tribes that would be as or more effective. Title to all shipwrecks, archaeological sites, and historic or 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 shipwrecks, archaeological, historical, and tribal cultural resources recovered on State lands under CSLC jurisdiction must be approved by the CSLC.					

Table 4-1. Mitigation Monitoring Program

Potential Impact	Mitigation Measure (MM)	Location	Monitoring/ Reporting Action	Effectiveness Criteria	Responsible Party	Timing
Potential Impacts on Previously Unknown Terrestrial Archaeological Resources	**MM CUL-2/TCR-2: Cultural Resources Contractor Awareness Training.** Prior to beginning construction, the Applicant shall retain a qualified archaeologist to prepare a Cultural Resources Contractor Awareness Training subject to CSLC approval. The training shall be given to all construction personnel prior to working on the Project, and the training shall include, but not be limited to, the following: • Guidance on identification of potential cultural resources that may be encountered. • The probability of exposing cultural resources. • Clear direction on procedures if a find is encountered. The archeologist shall provide construction personnel with an orientation on the requirements of the treatment plan, including the probability of exposing cultural resources, guidance on recognizing such resources, and direction on procedures if a find is encountered.	Terrestrial Project area	Qualified archaeologist, training for all construction personnel prior to working on the Project, including identification and handling of previously unknown cultural resources	Implementing MM will reduce potential impacts on archaeological resources	Applicant and CSLC	Prior to construction
Disturbance of marine archaeological resources	**MM CUL-3: Conduct a Pre-Construction Offshore Archaeological Resources Survey.** Using the results of an acoustic survey (e.g., a CHIRP [compressed high-intensity radiated pulse] system survey) for evidence of erosion/incision of natural channels, the nature of internal channel-fill reflectors and the overall geometry of the seabed, paleochannels, and the surrounding areas shall be analyzed for their potential	Marine Project area	Qualified archaeologist, Marine Archaeological Resources Assessment Report, if needed	Implementing MM will reduce potential impacts on marine archaeological resources	Applicant and CSLC	Before construction

Table 4-1. Mitigation Monitoring Program

Potential Impact	Mitigation Measure (MM)	Location	Monitoring/ Reporting Action	Effectiveness Criteria	Responsible Party	Timing
	to contain intact remains of the past landscape with prehistoric archaeological deposits. The analysis shall include core sampling in various areas, including but not limited to, paleochannels to verify the seismic data analysis. Based on the CHIRP survey and coring data, a Marine Archaeological Resources Assessment Report shall be produced by a qualified maritime archaeologist and reviewed by the CCC or the SHPO and the CSLC to document effects on potentially historic properties.					
Disturbance of Marine Archaeological Resources (Offshore Historic Shipwrecks)	**MM CUL-4: Conduct a Pre-Construction Offshore Historic Shipwreck Survey.** A qualified maritime archaeologist, in consultation with the CSLC, shall conduct an archaeological survey of the proposed cable routes. The archaeological survey and analysis shall be conducted following current CSLC, BOEM, and USACE (San Francisco and Sacramento Districts) standard specifications for underwater/marine remote sensing archaeological surveys (*Guidelines for Providing Geological and Geophysical, Hazards, and Archaeological Information* pursuant to 30 CFR part 585). The archaeological analysis shall identify and analyze all magnetic and side-scan sonar anomalies that occur in each cable corridor, defined by a lateral distance of 0.5 km on each side of the proposed cable route. This analysis shall not be limited to side-scan and magnetometer	Marine Project area	Qualified maritime archaeologist	Implementing MM will reduce potential impacts on marine archaeological resources	Applicant and CSLC	Before construction

Table 4-1. Mitigation Monitoring Program

Potential Impact	Mitigation Measure (MM)	Location	Monitoring/ Reporting Action	Effectiveness Criteria	Responsible Party	Timing
	data and may include shallow acoustic (subbottom) data as well as autonomous underwater vehicle and multibeam data that may have a bearing on identification of anomalies representative of potential historic properties. The analysis shall include evaluation to the extent possible of the potential significance of each anomaly that cannot be avoided within the cable corridor. If sufficient data are not available to identify the anomaly and make a recommendation of potential significance, the resource(s) shall be considered as potentially eligible for listing in the NRHP and CRHR and treated as a historic property. If any cultural resources are discovered as the result of the marine remote sensing archaeological survey, the proposed cable route or installation procedures shall be modified to avoid the potentially historic property. BOEM administratively treats identified submerged potentially historic properties as eligible for inclusion in the NRHP under Criterion D and requires project proponents to avoid them unless the proponent chooses to conduct additional investigations to confirm or refute their qualifying characteristics. BOEM typically determines a buffer (e.g., 50 meters) from the center point of any given find beyond which the project must be moved, in order to ensure that adverse effects on the potential historic property will be avoided during construction.					

Table 4-1. Mitigation Monitoring Program

Potential Impact	Mitigation Measure (MM)	Location	Monitoring/ Reporting Action	Effectiveness Criteria	Responsible Party	Timing
Disturbance of Marine Archaeological Resources	**MM CUL-5: Prepare and Implement an Avoidance Plan for Marine Archaeological Resources.** An avoidance plan shall be developed and implemented to avoid all documented resources from the Marine Archaeological Resources Assessment Report and the Offshore Historic Shipwreck Survey Report, address discoveries of as yet unidentified resources encountered during the planned marine survey and construction, and provide mitigation monitoring if deemed necessary during construction to ensure compliance.	Marine Project area	Qualified maritime archaeologist	Implementing MM will reduce potential impacts on marine archaeological resources	Applicant and CSLC	Before and throughout construction
Disturbance of Human Remains	**MM CUL-6/TCR-3: Unanticipated Discovery of Human Remains.** If human remains are encountered, all provisions provided in California Health and Safety Code section 7050.5 and Pub. Resources Code section 5097.98 shall be followed. Work shall stop within 100 feet of the discovery, and both the archaeologist retained by the Applicant 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 (see at http://www.nahc.ca.gov/profguide.html) 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.	Terrestrial Project area	Contact archaeologist and CSLC within 24 hours; archaeologist consults with County Coroner	Implementing MM will reduce potential impacts on human remains	Applicant and CSLC	Throughout construction

Table 4-1. Mitigation Monitoring Program

Potential Impact	Mitigation Measure (MM)	Location	Monitoring/ Reporting Action	Effectiveness Criteria	Responsible Party	Timing
Cultural Resources – Tribal						
	Implement **MM CUL-1/TCR-1: Discovery of Previously Unknown Cultural or Tribal Cultural Resources** (see above) Implement **MM CUL-2/TCR-2: Cultural Resources Contractor Awareness Training** (see above) Implement **MM CUL-6/TCR-3: Unanticipated Discovery of Human Remains** (see above)					
Greenhouse Gas Emissions						
Greenhouse Gas Emissions during Construction	**MM GHG-1: Purchase GHG Carbon Offsets for Construction Emissions.** The Applicant shall purchase all offsets prior to groundbreaking and provide copies of the offset retirement verification to the CSLC. The Applicant shall purchase carbon offsets equivalent to the Project's projected GHG emissions (2,451 metric tons CO2e) to achieve a net zero increase in GHG emissions during the construction phase for emissions within 24 nm (even though only required for within 3 nm) of the California coast. A carbon offset is a credit derived from the reduction of GHG emissions through a separate reduction project, often in a different location from the emission source. To be acceptable for an emissions reduction credit, the carbon offset must be real, permanent, quantifiable, verifiable, enforceable, and additional (per the definition in California Health and Safety Code sections 38562[d][1] and [2]). Several existing voluntary offset exchanges have been validated by the CARB, including the California Action Reserve Voluntary Offset Registry, American Carbon Registry, and Verified Carbon Standard.	Within 24 nm off the California coast	Applicant will provide verification of offset purchase to the CSLC prior to ground-breaking	Purchase of carbon offsets will reduce GHG emissions impacts	Applicant	Before construction

Table 4-1. Mitigation Monitoring Program

Potential Impact	Mitigation Measure (MM)	Location	Monitoring/ Reporting Action	Effectiveness Criteria	Responsible Party	Timing
Hazards and Hazardous Materials						
Accidental Release of Hazardous Materials	**MM HAZ-1 Develop and Implement Spill Contingency and Hazardous Materials Management Plans.** At least 30 days before start of construction of the Project ~~construction starts~~, the Applicant shall submit Spill Contingency and Hazardous Materials Management Plans for onshore and offshore operations to the CSLC for review and approval. Prior to construction, the Applicant shall develop and implement the following Plans: ~~se plans that shall include, but not be limited to, procedures to be implemented, specific designation of the onsite person who will be responsible for implementing the Plans, onsite spill response materials/ tools/equipment, and spill notification protocol and procedures~~. **Worker Health and Safety Plan (WHSP)** At least 30 days prior to the start of construction of the Project, the Applicant shall submit to the CSLC a final Worker Health and Safety Plan that has been reviewed and approved by the Humboldt County Division of Environmental Health that addresses measures to minimize risks from landfill gases and potential worker exposure to hazardous materials associated with construction activities at the cable landing site and within 1,000 feet of the Samoa Ash Landfill. The	Terrestrial and marine Project areas	Submit Plans to CSLC 30 days prior to construction of the offshore and onshore Project components	Implementing MM will reduce potential for release of hazardous materials into the environment	Applicant	Before and during construction

Table 4-1. Mitigation Monitoring Program

Potential Impact	Mitigation Measure (MM)	Location	Monitoring/ Reporting Action	Effectiveness Criteria	Responsible Party	Timing
	WHSP shall be prepared by a qualified geologist or engineer. A. The WHSP shall include, at a minimum, measures to: i. Address the potential for the presence and migration of landfill gases during construction ii. Minimize risks of exposure by construction workers to anticipated hazardous materials (e.g., wood ash), to potential unanticipated waste types (e.g., municipal solid waste), and to potential landfill gas accumulation post-construction by operational and maintenance personnel iii. Assure Project stability and structural integrity associated with any incompetent waste fill material that may be present. B. The Applicant shall undertake development in accordance with the approved final WHSP. Any proposed changes to the approved final WHSP shall be reported to the CSLC and Humboldt County Division of Environmental Health. No changes to the approved final WHSP shall occur without written approval from the CSLC and Humboldt County Division of Environmental Health.					

Table 4-1. Mitigation Monitoring Program

Potential Impact	Mitigation Measure (MM)	Location	Monitoring/ Reporting Action	Effectiveness Criteria	Responsible Party	Timing
	Soil and Waste Excavation and Management Plan (SWEMP) At least 30 days prior to the start of construction of the Project, the Applicant shall submit to the CSLC a final SWEMP that has been reviewed and approved by the Humboldt County Division of Environmental Health. The SWEMP shall address soil and waste management for construction activities at the cable landing site (within 1,000 feet of the Samoa Ash Landfill). The SWEMP shall be prepared by a qualified geologist or engineer. C. The SWEMP shall include, at a minimum, the following: i. 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 ii. Procedures for managing unanticipated waste types (i.e., municipal solid waste) that may be encountered during construction iii. BMPs 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					

Table 4-1. Mitigation Monitoring Program

Potential Impact	Mitigation Measure (MM)	Location	Monitoring/ Reporting Action	Effectiveness Criteria	Responsible Party	Timing
	iv. Provisions for characterizing and testing soil, groundwater, and waste material in accordance with California Department of Toxic Substances Control (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 (PAHs), dioxins/furans, organochlorine pesticides (OCPs), and California Administrative Metals (CAM-17) heavy metals v. Provisions for proper waste disposal at authorized facilities capable of receiving the waste(s) D. The Applicant shall undertake development in accordance with the approved final SWEMP. Any proposed changes to the approved final SWEMP shall be reported to the CSLC and Humboldt County Division of Environmental Health. No changes to the approved final SWEMP shall occur without written approval from the CSLC and Humboldt County Division of Environmental Health.					

Table 4-1. Mitigation Monitoring Program

Potential Impact	Mitigation Measure (MM)	Location	Monitoring/ Reporting Action	Effectiveness Criteria	Responsible Party	Timing
	Spill Contingency and Hazardous Materials Terrestrial Plan (SCHMTP) ~~A.Terrestrial Work:~~ 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 onsite. The SCHMTP could be prepared separately or the elements of the SCHMTP could be included in the Solid Waste Excavation and Management Plan (SWEMP). The terrestrial SCHMTP~~Plan~~ will identify the actions and notifications to occur if contaminated soil is encountered during onshore excavation. The Applicant shall notify the County of Humboldt Division 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 the Applicant, have determined the next steps. The terrestrial SCHMTP~~Plans~~ will identify, at a minimum, implementing the following BMPs related to using hazardous substances: • Follow manufacturer's recommendations on use, storage, and disposal of chemical products used in construction.					

Table 4-1. Mitigation Monitoring Program

Potential Impact	Mitigation Measure (MM)	Location	Monitoring/ Reporting Action	Effectiveness Criteria	Responsible Party	Timing
	• Avoid overtopping construction equipment fuel gas tanks. • During routine maintenance of construction equipment, properly contain and remove grease and oils. • Conduct all fueling of equipment 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 number) to be notified of potential hazardous material spills, 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. **Spill Contingency and Hazardous Materials Offshore Plan (SCHMOP)** ~~B.Offshore Work:~~ For offshore activities involving work vessels, the primary work vessel (dive support vessel) will be required to carry onboard a minimum 400 feet of sorbent boom, 5 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 offshore plan SCHMOP ~~Plans~~ shall provide for the immediate call out of additional spill containment and					

Table 4-1. Mitigation Monitoring Program

Potential Impact	Mitigation Measure (MM)	Location	Monitoring/ Reporting Action	Effectiveness Criteria	Responsible Party	Timing
	clean-up resources in the event of an incident that exceeds the rapid clean-up capability of the onsite work force. These offshore measures may be provided as part of a separate offshore plan (SCHMOP) or combined with the terrestrial plan (SCHMTP) as described above.					
	Implement **MM BIO-1: Provide Environmental Awareness Training** (see above) Implement **MM BIO-3: Delineate Work Limits to Protect Sensitive Biological Resources** (see above) Implement **MM BIO-5: Prepare and Implement an Inadvertent Return Contingency Plan** (see above)					
Hydrology and Water Quality						
Violation of Water Quality Standards	Implement **MM BIO-3: Delineate Work Limits to Protect Sensitive Biological Resources** (see above) Implement **MM BIO-5: Prepare and Implement an Inadvertent Return Contingency Plan** (see above) Implement **MM HAZ-1: Develop and Implement Spill Contingency and Hazardous Materials Management Plans** (see above)					
Noise						
Construction Noise	**MM NOI-1: Implement Construction Noise Control Measures.** The Applicant will ensure that its contractor implements site specific noise attenuation measures to ensure compliance with applicable County noise limits for the duration of the construction period. Noise attenuation	Terrestrial Project area	Contract specifications	Implementing MM will reduce construction noise impacts on sensitive receptors	Applicant	During construction
	measures shall be implemented to keep noise levels below the limits specified in the County's General Plan (Table 13-C Land Use/Noise Compatibility Standards). Noise measures shall include the following and shall be included in the construction specifications:					

Table 4-1. Mitigation Monitoring Program

Potential Impact	Mitigation Measure (MM)	Location	Monitoring/ Reporting Action	Effectiveness Criteria	Responsible Party	Timing
	• Require that all construction equipment powered by gasoline or diesel engines have sound control devices that are at least as effective as those originally provided by the manufacturer and that all equipment be operated and maintained to minimize noise generation. • Prohibit gasoline or diesel engines from having unmuffled exhaust systems. • Ensure that equipment and trucks for Project construction use the best available noise control techniques (e.g., improved mufflers, redesigned equipment, intake silencers, ducts, engine enclosures, acoustically attenuating shields or shrouds) wherever feasible. • Use "quiet" gasoline powered or electrically powered compressors as well as electric rather than gasoline or diesel powered forklifts for small lifting, where feasible.					
	Implement **MM BIO-9: Prepare and Implement a Marine Wildlife Monitoring and Contingency Plan** (see above)					

Table 4-1. Mitigation Monitoring Program

Potential Impact	Mitigation Measure (MM)	Location	Monitoring/ Reporting Action	Effectiveness Criteria	Responsible Party	Timing
Recreation						
Impacts on Offshore Recreational Activities	**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/) shall be submitted to the USCG describing all offshore operations. A copy of the published notice shall be provided immediately to the CSLC. The notice shall include: • Type of operation (i.e., dredging, 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 (operation or repair), 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.	Marine Project area	Local Notice to Mariners submitted to USCG at least 15 days before (1) start of the HDD operation, and (2) start of offshore cable laying activity. Copy of published notice submitted to CSLC immediately	Implementing MM will reduce Project impacts on offshore recreation	Applicant and CSLC	Before and after construction

Table 4-1. Mitigation Monitoring Program

Potential Impact	Mitigation Measure (MM)	Location	Monitoring/ Reporting Action	Effectiveness Criteria	Responsible Party	Timing
Transportation						
Interference with Local Marine Vessel Traffic	Implement **MM REC-1: Advanced Local Notice to Mariners** (see above) Implement **APM-2: Marine Anchor Plan** (see below)					
Commercial and Recreational Fishing						
Disruption of Commercial Fishing	**APM-1: Fishing Agreement.** The Applicant is actively involved in a Fishing Agreement with the regional commercial fishing cable liaison committee. This agreement, in part, establishes the following: • A cable/fishing liaison committee that manages the interactions between the fishers and the cable companies. • Policies for how the fishers will work around the cables and what to do if they think their fishing gear is hung up on a cable or similar issue. • Methods of gear replacement and costs claims in the unlikely event that fishing gear is entangled in cable owned by the Applicant. • Design and installation procedures to minimize impacts on fishing activities, such as: ° Burying cable where possible. ° Allowing fishing representatives to review marine survey data and participate in cable alignment selection. • Communication and notification procedures. • Contributions to fishing improvement funds.	Marine Project area	Provide Fishing Agreement to CSLC prior to construction	Implementing this APM will reduce the potential for gear entanglement, cable unburial, and uncompensated loss of gear	Applicant	During construction and maintenance

Table 4-1. Mitigation Monitoring Program

Potential Impact	Mitigation Measure (MM)	Location	Monitoring/ Reporting Action	Effectiveness Criteria	Responsible Party	Timing
Impacts on ocean bottom from marine anchoring	**APM-2: Marine Anchor Plan.** At least 30 days before starting construction, the Applicant will submit a Marine Anchor Plan to CSLC staff for review 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 ocean bottom. Please note that anchor dragging along ocean bottom is not allowed. • Coordinates of all dropped anchor points during construction shall be recorded and included on the post construction ocean floor survey map.	Marine anchoring areas only	Provide plan to CSLC 30 days before starting construction	Implementing this APM will ensure safety for anchoring operations	Applicant; Applicant's contractor	Before and during construction
Entanglement of marine species from exposed cable	**APM-3: Cable Burial Surveys.** The Applicant will conduct initial and periodic post-lay surveys of all installed cables between the mean-high tide line to where Project operations extend into federal waters and out to the 5,904-foot depth contour to verify that the cable was and remains buried as initially planned, or to the maximum extent feasible as determined by the initial post-lay assessment. These surveys will assess and report to the CSLC and the CCC the following: • The depth of burial achieved along the cable route.	Marine Project area	Conduct post-lay survey within 60 days of cable installation and every 5 years after, or until Applicant can demonstrate after subsequent burial survey that cable remains buried; distribute	Implementing this APM will avoid exposure of cable and potential for entanglement	Applicant and CSLC	After construction

Table 4-1. Mitigation Monitoring Program

Potential Impact	Mitigation Measure (MM)	Location	Monitoring/ Reporting Action	Effectiveness Criteria	Responsible Party	Timing
	• Any areas of cable suspension greater than 3.3 feet from the ocean floor and an explanation of why the cable could not be re-routed to avoid suspension. • The consistency of cable installation with the Project description. These post-lay surveys and assessments will be conducted as follows: • Within 60 days of cable installation. • Every 5 years after cable installation or until such time that the Applicant can demonstrate following one or more post-lay burial surveys that the cable remains buried. • After any incident or activity, including but not limited to, potential commercial fishing gear snags, a severe earthquake in the vicinity of the cable, or an extreme storm event that could cause excessive ocean floor scouring and result in cable exposure to the ocean floor surface. Should the cable become unburied in any location where it should have been buried or had been previously buried, the Applicant shall ensure that the cable is reburied to the initial cable burial depth at that location. A survey/burial report will be prepared and distributed to responsible State agencies following each survey.		survey/burial report to responsible State agencies following each survey			

Table 4-1. Mitigation Monitoring Program

Potential Impact	Mitigation Measure (MM)	Location	Monitoring/ Reporting Action	Effectiveness Criteria	Responsible Party	Timing
	Implement **MM REC-1: Advanced Local Notice to Mariners** (see above)					

Terms:

APM = Applicant Proposed Measure
Applicant = RTI Infrastructure, Inc.
AUV = autonomous underwater vehicle
BMP = best management practice
BOEM = Bureau of Ocean Energy Management
BSA = biological study area
CARB = California Air Resources Board
CCC = California Coastal Commission
CDFW = California Department of Fish and Wildlife
CFR = Code of Federal Regulations
CO_2e = CO_2 equivalent
CRHR = California Register of Historic Resources
CSLC = California State Lands Commission
dB = decibel(s)
ESHA = environmentally sensitive habitat area
GHG = greenhouse gas
HDD = horizontal directional drilling
nm = nautical mile(s)
NMFS = National Marine Fisheries Service
NRHP = National Register of Historic Places
SHPO = State Historic Preservation Officer
THPO = Tribal Historic Preservation Officer
USACE = U.S. Army Corps of Engineers
USCG = U.S. Coast Guard
USFWS = U.S. Fish and Wildlife Service

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5.0 OTHER STATE LANDS COMMISSION CONSIDERATIONS

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

- Climate change and sea-level rise
- Commercial and recreational fishing
- Environmental justice

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

5.1 CLIMATE CHANGE AND SEA-LEVEL RISE

Sea-level rise as a function of global climate change is not expected to affect the Project because none of the permanent infrastructure is proposed in areas subject to coastal flooding (greater than a 1 percent chance, annually) or increased erosion with anticipated sea-level rise (Humboldt County 2020a). The marine component of the Project would be buried approximately 3.3 feet beneath the ocean floor in State waters starting at approximately 3,600 feet offshore and ending at approximately 32 miles offshore. The offshore Project components would not be impacted by sea-level rise. The fiber optic cables (cables) between the cable landing site and where the landing pipes emerge would be drilled deep (approximately 35 feet below the beach) and thus would not be subject to increased erosion over time (Figure 1-2). The following discussion provides background information on climate change and sea-level rise in the Project area.

Climate change and sea-level rise accelerate and exacerbate natural coastal processes, such as the intensity and frequency of storms, erosion and sediment transport, currents, wave action, and ocean chemistry. Sea-level rise is driven by the melting of polar ice caps and land ice, as well as thermal expansion of sea water. Accelerating rates of sea-level rise are attributed to increasing global temperatures associated with climate change. Estimates of projected sea-level rise vary regionally and are a function of different greenhouse gas emissions scenarios, rates of ice melt, and local vertical land movement.

The California Ocean Protection Council (OPC) 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. CSLC staff evaluated the "high emissions," "medium-high risk aversion" scenario to apply a conservative approach based on both current emission trajectories and the lease location. The North Spit tide gauge, which is approximately 3 miles south of the cable landing site was used for the projected sea-level rise scenario

and indicates a current extreme high tide (1% interval) of 10.2 feet (NAVD 88) (Northern Hydrology & Engineering 2015). Based on the 2018 OPC guidance projections for the North Spit gauge, the Project area could see 1.0 foot of sea-level rise by 2030, 1.6 feet by 2040, 2.3 feet by 2050, and 7.6 feet by 2100 (OPC 2018). Since the cable landing site is at an elevation of 23 feet (NAVD 88), it is well above the current extreme (1%) high tide plus the sea level rise projections for 2100 for the "high" emissions"/"medium-high risk aversion scenario", which would be 17.8 feet (NAVD 88). 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—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. The combination of these conditions likely will result in increased wave run up, storm surge, and flooding in coastal and near-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 potentially could erode more quickly than before. However, rivers and creeks also are predicted to experience flashier[35] 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.

Weather systems and extreme storms also can uncover dangerous coastal hazards on shorelines; however, there are no known coastal hazards in the Project area. When funding is available, CSLC 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 located 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. The preceding discussion of climate change and sea-level rise is intended to provide the local/regional overview and context that CSLC staff considered pursuant to this Executive Order; additionally, it will facilitate CSLC's consideration of the Project.

[35] The flashiness of a stream reflects how quickly flow in a river or stream increases and decreases during a storm.

5.2 COMMERCIAL AND RECREATIONAL FISHING

5.2.1 Environmental Setting

The marine biological study area (MSA) (Figure 3.4-3) extends westward into the Pacific Ocean and south of the Samoa State Marine Conservation Area, as discussed in Section 3.4.2, *Marine Components*. The specific notes listed before Figure 3.4-3 further explain the content displayed on the figure that also could be relevant for a reader interested in the commercial and recreational fishing analysis. The MSA extends offshore to the 5,904-foot depth contour from the mean high-tide line and comprises the coastal waters and intertidal and subtidal habitats located offshore of the cable landing site. It also extends approximately 1,650 feet (about 0.5 mile) up-coast and down-coast of the proposed cable routes. The analysis of ocean floor habitats and associated marine taxa presented in Section 3.4.2, *Marine Components* and presented in more detail in Appendix C covers the water depth range of 0–600 feet. For fish and marine mammals, the analysis extends out to the 5,904-foot water depth.

Within the California territorial seas (3 nautical miles [nm] from shore), the seafloor habitat is exclusively soft substrate, shifting from coarse sand to silty-clays with increasing water depth (Appendix C). Soft substrate continues along the proposed cable routes to water depths of approximately 1,600 feet, where isolated hard substrate features appear (Figure 3.4-3). As illustrated in Figure 3.4-3, the hard substrate areas identified by the National Oceanic and Atmospheric Administration (NOAA) as potential habitat areas of particular concern (HAPCs) occur within the MSA. The precise aerial extent of these mappings is uncertain because of the inherent limitations of the data collection protocols used to generate the map layer. Prior to installation, a specific cable route would be surveyed at a higher resolution to verify and avoid hard substrate habitat. As stated in Section 2, *Project Description*, the Project would avoid hard substrate habitat areas to the greatest extent feasible. As illustrated in Figure 3.4-3, the southernmost proposed and surveyed cable route skirts an area identified by NOAA as potential HAPC hard bottom substrate. Careful review of the cable route survey data (EGS 2020) indicates that the proposed cable alignment skirts an area of hard substrate to the south but avoids potential hard substrate outcropping and remains in soft substrate habitat.

~~Fish assemblages along the northern California Coast are not completely well known or studied, although their distribution is influenced by a variety of oceanic conditions, including water depth, substrate type, ocean currents, and temperature. Management of commercial fisheries along the northern California Coast area falls under four different fishery management plans (FMPs) for four designated essential fish habitats (EFHs) (AMS 2020):~~

- ~~Pacific Coast Groundfish FMP~~
- ~~Coastal Pelagic Species FMP~~

- ~~Pacific Coast Salmon FMP~~
- ~~Highly Migratory Species FMP.~~

Four fishery management plans (FMPs) are responsible for overseeing commercial fisheries operating along the Northern California Coast. NMFS has adopted FMPs for Groundfish, Salmon, Coastal Pelagic Species and Highly Migratory Species. California has adopted FMPs to govern the Market Squid fishery and nearshore waters of the State. The Dungeness crab fishery is also managed by CDFW under the Risk Assessment and Mitigation Program (RAMP), as of the 2019-2020 commercial season to limit potential impact on migrating and resident marine mammals. Catch limits for the Pacific halibut fishery are established under the International Pacific Halibut Commission and the Pacific Fishery Management Council's Halibut Catch Sharing Plan.

The 1996 amendments to the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) define EFH as "those waters and substrates necessary to fish for spawning, breeding, feeding, or growth to maturity."

5.2.1.1 Commercial Fishing

From 2013 to 2018, over 90 fish species were commercially landed at Eureka (Table 6.2 in Appendix C). Of these 90 species, 12 accounted for over 90 percent of the landings by tonnage. Those taxa that accounted individually for more than 0.7 percent[36] of the total landings between 2013 and 2018 included Dungeness crab (*Metacarcinus magister*), ocean pink shrimp (*Pandalus jordani*), Dover sole (*M. pacificus*), market squid (*Doryteuthis opalescens*), sablefish (*Anoplopoma fimbria*), Petrale sole (*E. jordani*), hagfish (*Myxini*), longnose skate (*Raja rhina*), longspine thornyhead (*S. altivelis*), night smelt (*Spirinchus starksi*), shortspine thornyhead (*Sebastolobus alascanus*), and albacore tuna (*Thunnus alalonga*). Commercial fishing methods used to land these species include bottom trawling, mid-water trawling or purse seining, trolling, and trapping. Although accounting for less than 1 percent of the total landed tonnage in the Eureka area, Chinook salmon (*Oncorhynchus tshawytscha*) remains a high-value and important recreational and commercial fishery for the region (AMS 2020).

5.2.1.2 Recreational Fishing

Recreational fishing that primarily was conducted from rocky shores and breakwalls, armored shorelines, sandy beaches, docks, private boats, and commercial party boats landed approximately 100 fish taxa between 2013 and 2018. Only 19 of these taxa

[36] The statement is that 12 of 90 taxa accounted for 90% of the landings. These 12 taxa individually accounted for 0.7% or more of the catch. Essentially, the remaining 78 taxa collectively accounted for less than 10% of the total landings over a 5-year period; individually, each taxon accounted for less than 0.7 % of the total catch. Essentially the statement is clarifying that, although a lot of fish and invertebrate taxa are caught, only a few species represent the commercial fisheries economics of the region.

accounted for more than 90 percent of the landings in tonnage or in individual numbers of fish landed. The dominant fish taxa caught by recreational fishers included lingcod (*Ophiodon elongatus*); assorted rockfishes, including blue rockfish (*Sebastes mystinus*), vermillion rockfish (*S. miniatus*), yellowtail rockfish (*S. flavidus*), Quilback rockfish (*S. maliger*), copper rockfish (*S. caurinus*), brown rockfish (*S. auriculatus*), black rockfish (*S. malanops*), olive rockfish (*S. serranoides*), China rockfish (*S. goodei*), and canary rockfish (*S. pinniger)*; cabezon (*Scorpaenichthys marmoratus*); Dungeness crab; Pacific halibut (*Paralichthys californicus*); Pacific sanddab (*Citharichtys sordidus*), and Petrale sole. Other fish species sought after by recreational fishers that do not account for large quantities of fish landed include albacore and surf smelt (*Hypomesus pretiosus)* (Table 6.3 in Appendix C).

5.2.1.3 Fishing Season, Capture Method, and Preferred Habitat

Table 5-1 provides detailed information on the fishing season, capture method, and preferred habitat for the more commonly landed commercial and recreationally fished species in the Eureka area. As illustrated in Table 5-1, the types of commercial and recreational fisheries gear operating in the Eureka area include longline, bottom trawl, midwater trawl, trolling (hook and line), shoreline hook and line, offshore hook and line, and various forms of trapping.

Table 5-1. Fishing Season, Method, and Habitat for Commonly Fished Species off Samoa, California

Species	Fishing Season	Fishing Method (Most Common)	Habitat	Top Species Commercial/ Recreational
Dungeness crab	Recreation opens first Saturday of November and closes July 30. Subject to change based on modifications prescribed by RAMP. Commercial season starts later and often ends in late June. Subject to change as prescribed by RAMP	Round steel mesh trap	Depths approximately from the intertidal zone out to 750 feet; sandy and soft-bottomed ocean floor	Commercial/ recreational

Table 5-1. Fishing Season, Method, and Habitat for Commonly Fished Species off Samoa, California

Species	Fishing Season	Fishing Method (Most Common)	Habitat	Top Species Commercial/ Recreational
Ocean pink shrimp	Open mid-April through late October	Benthic trawl with bycatch reduction device	Depths from 150 to 1,200 feet; aggregate near bottom during day and ascend through water column at night	Commercial
Dover sole	Year-round	~~Limited entry~~ ~~b~~ Bottom trawl and fixed gear	Can reach depths greater than 1,400 feet; ocean floor flatfish	Commercial
Market squid	Year-round	~~Mid water trawls (p~~Purse seine, drum seine, lampara net, brail gear~~)~~	Inshore and offshore pelagic waters; bottom substrate during spawning; nearshore over sandy bottom habitats	Commercial
Pacific halibut	Peak season June–July	Trolling, long-line, hook and line	Offshore 250–350 feet of water	Commercial/Recreational
Sablefish	Year-round; lower catch limits during winter	Baited longlines, baited traps, occasionally bottom trawls	Ocean bottom fish at depths of 650 feet and deeper; some down to 9,800 feet	Commercial
Petrale sole	Year-round	Bottom trawl; limited entry; sometimes incidental take	Bottom fish at depths to 1,370 feet; usually 330 to 500 feet; soft sediments	Commercial
Longnose skate	Year-round	Bottom trawl (often incidental take)	Intertidal to 390 feet; sandy or muddy bottoms or in kelp	Commercial
Longspine thornyhead	Year-round	Bottom trawl, longline	Can range from 663- to 5,795-foot depth; muddy or rocky bottoms	Commercial
Night smelt	January through September	Shore fishing with A-frame dip nets, mid-water trawls	Surf and depths to approximately 400 feet	Commercial

Table 5-1. Fishing Season, Method, and Habitat for Commonly Fished Species off Samoa, California

Species	Fishing Season	Fishing Method (Most Common)	Habitat	Top Species Commercial/ Recreational
Shortspine thornyhead	Year-round	Bottom trawl, longline, pot gear	Ranges from depths of 180 to 1,525 feet	Commercial
Albacore tuna	Year-round; highest availability in July and August	Longline, drift gillnet, pole and line, purse seine, trolling	Pelagic	Commercial
Hagfish	Year-round	Hagfish trapping	Bottom fish in depths ranging between 30 and 3,800 feet, depending on species.	Commercial
Lingcod	Boat-based trawling and trap, divers, and shore-based anglers: year-round; boat-based anglers: May through December	Trawling, trap, and hook and line and trap	Rocky outcrops, rocky jetties and armored shoreline, and kelp; prohibited to take seaward of 180-foot water depth from May through October	Commercial/ recreational
Rockfish	Boat-based: anglers and trawling: May through December	Trawling and hook and line	Rocky outcrops, rocky jetties and armored shoreline, and kelp	Commercial/ recreational
Cabezon	Divers and shore-based anglers: year-round; boat-based anglers, trawling: May through December	Trawling, hook and line, SCUBA spearfishing	Rocky outcrops, rocky jetties and armored shoreline, and kelp	Commercial/ recreational
Barred surfperch	Year-round	Hook and line	Shallow water, sandy-shore areas	Recreational
California halibut	Year-round; trawl fishery	Trolling, hook and line	Live on ocean floor; sandy sediments; from 100 to 330 feet deep	Commercial/ recreational

Table 5-1. Fishing Season, Method, and Habitat for Commonly Fished Species off Samoa, California

Species	Fishing Season	Fishing Method (Most Common)	Habitat	Top Species Commercial/ Recreational
Jacksmelt	Year-round	Hook and line	Prefer shallow water less than 100 feet deep; most common in 5- to 50-foot depths	Recreational
Pacific chub mackerel	Year-round	Hook and line	Pelagic	Recreational
Pacific sanddab	Year-round	Hook and line	Most abundant from 120 to 300 feet deep; sandy substrate	Recreational

Sources: CDFW 2020g, 2020h; FishChoice 2020; Monterey Bay Aquarium Seafood Watch 2020; NOAA 2020; Sea Grant California 2020; Voices of the Bay 2011

5.2.2 Commercial and Recreational Fishing Methods

To better understand the potential for Project-associated activities (described in Section 2, *Project Description*) to affect commercial and recreational fishing activities, it is helpful to understand the different types of fishing gear and methods.

Commercial fishing gear and methods generally can be classified as the following:

- Mobile gear types that contact the ocean floor
- Fixed gear types that contact the ocean floor
- Gear types that do not contact the ocean floor

5.2.1.4 Mobile Gear Types That Contact the Ocean Floor

Mobile fishing gear consists of bottom trawls that are towed by a vessel near, or in contact with, the ocean floor. These nets include heavy equipment that can penetrate 10 to 20 inches (0.8–1.7 feet) into the ocean floor, depending on the substrate density, vessel speed, and method of the trawl operator. Trawl gear is dragged along the ocean floor to harvest benthic-dwelling fishes and invertebrates such as shrimp, crab, and echinoderms (sea cucumbers) that reside near or on the ocean floor.

Bottom trawl gear is optimally designed to skim the ocean floor to avoid significant penetration (no more than 1.7 feet). However, variations in ocean floor depth and substrate density often create an imprecise and variable contact with the seabed. All fishers and interested entities would be notified of the work offshore to install and bury

cables through **MM REC-1** (Advanced Local Notice to Mariners)**.** In locations where target burial of a cable is not possible and the cable is exposed on the ocean floor or shallowly buried, the trawl gear could come into contact with or even snag the cable. The fishers also would be notified of these unburied or shallowly buried cables through **APM-1** (Fishing Agreement).

5.2.1.5 Fixed Gear Types That Contact the Ocean Floor

Fixed fishing gear used in Northern California that are not towed but instead rest on the ocean floor by their own weight or by use of anchors or ballasts include traps for crab, prawn, and some fish species such as sablefish; bottom longlines with hooks; and hagfish pots comprised of perforated, baited 5-gallon buckets set in strings on the seabed with a lightweight anchor or ballast at either end. Recreational fishing gear that falls into this category includes hook and line rigs for bottom fish and assorted traps for crab. Wherever the ocean floor geologic conditions are favorable for cable burial, there is virtually no potential for impact on these types of fixed gear after the cable is installed. During the brief installation period, there may be short-term and localized requests for fishers to shift gear to the north or south of the cable path. Based on the ocean floor mapping data currently available, all cables should be fully buried. The post-burial survey would identify burial depths of the cable. Where burial is not possible, information would be communicated to the fishers through **APM-1** (Fishing Agreement). All fishers and interested entities would be notified of the work offshore through **MM REC-1** (Advanced Local Notice to Mariners).

Bottom longline gear targeting mixed fish species and longline pot gear targeting hagfish or “slime eel” are set on the ocean floor with small weights or anchors at each end of the string of gear. This gear type typically is set along bathymetric contours at varying depths where the target species are found. The depth of seabed penetration of these anchors or weights is negligible, generally less than a few inches, therefore minimizing or eliminating any potential for interaction between the commercial fishing equipment and a buried cable. Because of the “fixed” positioning on the ocean floor, the greatest potential for impact on these fishing gear types would occur during the brief phase of route clearance and cable installation operations. Implementation of **APM-1** and **MM REC-1** would inform interested parties about this proposed work.

Recreational fishers frequently use hook and line fishing gear with heavy weights to place baited hooks on or near the ocean floor, depending on the target species. Recreational fishers also use various sizes and designs of crab pots to harvest crabs and use surf nets for catching night smelt.

5.2.1.6 Gear Types That Do Not Contact the Ocean Floor

Commercial fishing gear types used in Northern California that target mid-water fish species generally are restricted to different types of pelagic trawl or net gear, such as

mid-water or beam trawl nets, purse seines, drum seines, lampara nets, and brail gear. They also may include drift gillnets, trolling hook and line, and hook and line. Recreational fishing gear that falls into this category include hook and line rigs for pelagic fish and trolling gear[37] for salmon and tuna. These gear types are towed or deployed in the water column and have little or no contact with the ocean floor. All of these gear types are mobile but are restricted to the location of the target fish species. Another recreational fishing method commonly used by SCUBA divers is spearfishing, or harvesting by hand, bottom and water column fish or invertebrates such as abalone. This method of recreational fishing generally is restricted to nearshore and shallow-water portions of the coast. Similar to fixed commercial and recreational fishing gear types, the greatest potential for disturbance of these fishing gear types would occur during the brief phase of route clearance and cable installation. Implementation of **APM-1** (Fishing Agreement) and **MM REC-1** (Advanced Local Notice to Mariners) would inform interested parties about this proposed work.

5.2.2 Special-Status Marine Species

As described above in Section 5.2.1, the ocean waters within the MSA offshore Eureka are designated as EFH under four Magnuson-Stevens Act FMPs. An EFH assessment is being prepared and will be submitted to the National Marine Fisheries Service with a biological assessment for the Project.

Under the Magnuson-Stevens Act, NOAA has identified potential HAPCs within the MSA. These HAPCs are restricted to potential hard substrate areas scattered throughout the MSA. As noted in Section 2, *Project Description,* and the discussion above, all proposed or mapped cable routes currently avoid hard substrate habitats. Prior to installation, a specific cable route would be surveyed at a higher resolution to verify and ensure that hard substrate habitat is avoided.

5.2.3 Regulatory Setting

Appendix A contains the federal and state laws and regulations pertaining to biological resources relevant to the Project.

5.2.4 Impact Analysis

As shown in Figure 2-5, the four separate landing pipes (approximately 5 to 6 inches in diameter and about approximately 4,600 feet long) would be installed from the landing vault and exit offshore at about 3,600 feet (0.5 nm or 0.6 mile) offshore at a water depth of approximately 40 feet (just beyond the surf zone). The landing pipes would be installed at least 35 feet under the cable landing site and beach using the horizontal directional

[37] **Trolling** is a method of fishing where one or more fishing lines, baited with lures or bait fish, are drawn through the water.

drilling construction method. Therefore, the cables offshore would start where the landing pipes exit at about 40-foot depth (about 0.5 nm). These cables would be buried approximately 3.3 feet under the ocean floor from about 40 feet water depth until the 5,904-foot depth where the deep ocean starts.

An evaluation of the potential impacts of a marine-based project on commercial and recreational fishing must consider 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, as a result of the need to remove and relocate the fixed fishing gear (e.g., crab traps); and lost or damaged fishing equipment that has become entangled and lost/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. All of these impacts have potential financial consequences to commercial and recreational fishers and were assessed in accordance with the following significance criteria developed for Project-related commercial and recreational fishing impacts.

Project activities or installations would:

- 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; or
- Affect 5 percent or more of kelp and aquaculture harvest areas; or
- Cause a loss in harvesting time due to impacts on living marine resources and habitat or cause a loss of equipment or vessel damage, or replacement; or
- Result in a significant loss[38] to EFH or alter the ocean floor in such a manner to reduce the availability of that area to commercial trawling or other commercial gear types.

An evaluation of potential Project impacts based on the above significance criteria follows.

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 Impact.

Potential Conflicts by Space-Time Use. Installation of the marine components of the Project (from mid-July through early to mid-November) and maintenance have the potential to result in short-term restrictions to commercial and recreational fishing

[38] "Significant loss" is generally interpreted to mean that sufficient loss of habitat might occur that alters food web dynamics, biological composition of the fish community in the area, or something similar.

activities in a small, finite area of the coastal waters of the MSA. Restricted access to the offshore landing pipe exit location could occur for several days when preparing for the onshore landing vault to receive the cable coming from Asia or Australia. Restricted access of several hours could occur when occupying a specific area of the ocean surface and ocean floor, while the cable lay ship is installing and burying the cable along the designated cable route. In the former case, the commercial divers and their support boat would be working in a small region of the water column and ocean floor where the landing pipe exits the ocean floor in water depths less than 50 feet. In the latter case, the area of restricted or limited access would be a small area offshore Eureka occupied by the cable lay ship and directly behind the cable lay ship where the cable would be lowered to the ocean floor or around a support ship when a remotely operated vehicle would be required to bury the cable (see Section 2, *Project Description*). These time- and space-limited Project-related activities are not anticipated to result in substantive reductions in fish landings, as work vessels would be in an isolated location for a relatively short period, and comparable coastal water and ocean floor habitat immediately adjacent to the area occupied by Project-related work vessels would be available for fishing. This limited access would be comparable to avoiding another vessel or ship transiting through the area. Consequently, neither of these two activities is expected to prohibit commercial fishers from operating in adjacent areas of the nearshore coastal waters nor to result in any detectable decrease in or impact on commercial landings of fish and invertebrates.

***Potential Conflicts by Individual Fishery Season and Location*.** As noted in Table 5-1, on a fishery-by-fishery basis, nine of the commercially important fish species landed[39] in the Eureka region have year-round fisheries. The three species with specific seasons include Dungeness crab, ocean pink shrimp, and night smelt. Dungeness crab is a fixed-gear fishery, ocean pink shrimp is a bottom trawl net fishery, and night smelt is a trawl or surf net fishery. Consequently, at no time in the year could Project-related construction and installation activities completely avoid any of the three specific fishery seasons because they overlap. At least one of the three fisheries is being harvested at any time of the year.

Ocean Pink Shrimp

Ocean pink shrimp have a season from mid-spring through fall, and planned landing pipe activities most likely would take place in the middle of shrimping season. The landing pipes portion of the cables would not restrict commercial fishing of ocean pink shrimp because the boring and offshore cable landing work would be conducted in water depths less than 50 feet and within State waters (see Section 2, *Project Description*), which is substantially inshore of the ocean pink shrimp fishing grounds and within California banned trawling areas. Thus, this fishery is not expected to be affected by Project horizontal directional drilling (HDD) construction methods and landing pipe activities.

[39] Landings – Commercial fish and shellfish that are harvested and brought to port and sold.

Depending on when actual installation of the cable occurs, potential space-time use conflicts with Project work vessels could occur with commercial ocean pink shrimp fishers trawling farther offshore, as the cable is laid and buried. As discussed above, these potential space-time conflicts would last for hours and would occur over very small geographic areas occupied by and surrounding the cable lay ship. Communication with the ocean pink shrimp commercial fishers through implementation of the Fishing Agreement (**APM-1**) would provide the ocean pink shrimp fleet with the planned schedule of Project activities, allowing them to temporarily avoid fishing in those locations and in adjacent waters during the period of cable installation. Once the cable is installed and the lay vessels depart the area, trawling can continue. Surrounding ocean pink shrimp fishing grounds offshore Eureka would remain available for unrestricted harvesting; therefore, Project cable installation activities are not expected to affect the landing of ocean pink shrimp.

Night Smelt

Like the ocean pink shrimp fishery, the night smelt season extends from January to September. The end of the season would overlap with the beginning of the proposed construction period. Because night smelt primarily are fished at night from the surf or beach, the fishery is not expected to be affected by any Project construction activities since no Project activities are planned to occur on the beach at night. During HDD construction work, the landing pipes would pass under the beach and surf zone. Therefore, Project work would not pose any threat to the fishers' activities from the beach in the surf zone.

Dungeness Crab

The Dungeness crab season in Northern California typically begins on December 1 and runs through June to mid-July. The start of the crabbing season is determined by many factors, including negotiations over market price, crab meat fill content after recovering from molting, toxic domoic acid levels in crab meat, fluctuating whale migration routes that can lead to increased whale mortality from crab buoy line entanglement, and other factors (CDFW 2020f). In 2019 for example, the commercial crab season was delayed until December 31 (Lost Coast Staff 2019). The start of the recreational crabbing season also varies annually. The California Department of Fish and Wildlife currently states that the season is expected to re-open on November 7, 2020 (CDFW 2020g).

As indicated above and discussed in more detail in Section 2, *Project Description*, construction activities for all phases of the proposed Project are planned for summer and fall 2021 (Table 2-1). This time window (from mid-July through early to mid-November) is expected and intended to avoid interaction between Project marine-oriented activities and the commercial Dungeness crabbing season. Additionally, most of the commercial crabbing occurs in depths of 48 to 660 feet (CDFW 2020f), which represents only a small

distance of planned cable routes installed offshore Eureka. Consequently, potential Project-related interference or interaction with commercial crabbers is expected to be minimal to non-existent. Implementation of **APM-1: Fishing Agreement** (requiring communication with and notification to the commercial crabbing industry in 2021) is specifically intended to prevent or avoid space-use conflicts should Project construction and installation delays result in any substantive or unavoidable overlap with the Dungeness crab fishing season. Therefore, no significant impacts on Dungeness crab landings are expected from Project activities.

Chinook Salmon

Chinook salmon, although not a top tonnage landed species, historically has been a high-revenue commercial and recreational fishery (Pomeroy et al. 2011). Like ocean pink shrimp, Dungeness crab, and night smelt, salmon has a specific fishing season. The commercial and recreational season is scheduled annually based on a review of the previous year's spawning escapements, abundance forecasts, management objectives, and other relevant issues. Unfortunately, opportunities for salmon fishing have become more limited over time (Pomeroy et al. 2011). In 2020, the recreational ocean salmon fishery in the area closed on August 10 (CDFW 2020h), and the commercial fishery will not open offshore Eureka. The status of the 2021 commercial salmon fishery remains unknown. Regardless, commercial salmon fishing is a limited-entry fishery in California and a valid fishing license from the California Department of Fish and Wildlife is required. The Fishing Agreement (**APM-1**) requires notification and communication with the fishing community[40] should any space-time use conflicts occur and provides means for fishers to plan trips outside of active construction areas. Therefore, the Project is not expected to significantly reduce any commercial or recreational salmon landings.

Potential Conflicts by Fishing Gear Type. Based on the types of fishing equipment, methods, seasons, and areas used by a particular fishery, fisheries that use bottom contact (either mobile or fixed) have the greatest potential for negative impacts when needed to move gear to accommodate Project-related construction and installation activities. Of the major fisheries in the Eureka MSA, the Dungeness crab and bottom longline fisheries are the principal fisheries that could be most affected by cable installation or maintenance operations nearshore, and the bottom trawling fisheries could be most affected farther offshore. No routine maintenance is planned nor anticipated for the submerged cable network. Marine cables typically operate for at least 25 years. Because of the stability of the ocean bottom environment, regular maintenance is unnecessary (Section 2.5.2, *Emergency Cable Repair* [*Marine*]*)*. As discussed in more detail in Section 2, *Project Description*, maintenance of the cable generally only occurs in the event of a break in the cable. In the event of a break, the cable/cable ends would be

[40] All fishers are covered by the agreement even if they are not on the Fishing Agreement. The fishers on the Fishing Agreement would be the liaisons and provide communication and coordination with all fishers in their area of responsibility.

recovered in the break area, and the cable would be repaired and reburied. If any maintenance is necessary, commercial fishers would be notified of pending vessel locations and movements through the fishers' liaison committee (**APM-1**) and posted U.S. Coast Guard Notice to Mariners (**MM REC-1**).

Project-related installation operations in the shallower nearshore waters require completion of the offshore end of the landing pipes boring and installation and burial of the cable across the shelf. Operations farther offshore are restricted to cable installation and burial. Overall, the time span and restricted geographic footprint of these activities are limited to hours per day and the ocean surface occupied by the cable lay ship and immediately behind the lay vessel. Implementation of **APM-1** (requiring communication with and notification to the commercial crabbing industry in 2021[41] when the cable would be installed) is specifically intended to prevent space-time use conflicts with not only the Dungeness crab fleet but also all longline and other trap fishers. In addition, during the brief cable installation period that may co-occur with the Dungeness crab, other longline, or other fixed-gear fishing seasons, there may be short-term and localized requests for fishers to move previously installed gear to the north or south of the identified cable route to avoid the cable installation zone. The time spent laying and burying the cable in water depths between 48 and 660 feet would be limited to a few days over a 7- to 8-month fishing season. The potential for interaction with bottom longline and other fixed-bottom gear fisheries during this period would be avoided or minimized by using the established commercial fishers' liaison groups (**APM-1**) to keep commercial fishers in and around Eureka apprised of upcoming Project-related activities. Pre-installation notices would be posted through the U.S. Coast Guard-issued Local Notice to Mariners (**MM REC-1**), and interactions with local fishers' associations would be ongoing.

As described above, bottom trawling gear is another fixed-bottom fishing gear type with some potential to be affected by Project marine-oriented activities. Bottom trawling currently is banned in State waters (NOAA 2020), and the landing pipes and related cable installation activities would occur in State waters under 50 feet of water depth (see Section 2, *Project Description*). Therefore, Project HDD and cable landing activities are not expected to affect bottom trawling fisheries at this depth. However, bottom trawling does occur in the offshore coastal waters of the MSA for ocean pink shrimp, Dover sole, Petrale sole, longnose skate, two species of thornyhead, and other less important fish species. Any potential conflict between bottom trawling for these and other species and Project marine activities would occur during installation and burial of the cable. As mentioned previously, the space-time use conflict between commercial fishers using bottom trawls would last only a few hours within any single day and would occur in a specific water column location occupied by the cable lay ship and for a short distance

[41] The agreement specifically states avoiding the 2021 crab fishery season. After that, the disturbance would be significantly reduced since the cable would be installed. After 2021, the agreement would remain in effect for possible entanglements.

behind the vessel. All ocean surface and ocean floor locations surrounding the area temporarily occupied by the cable lay ship would be available for trawling. As with the other fixed-bottom gear fisheries, potential space-time use conflicts with bottom-trawling fishers would be avoided by early, frequent, and effective communication with area commercial fishers through posting pre-installation notices through the local fishing associations (as required by **APM-1**) and through the U.S. Coast Guard-issued Local Notice to Mariners (**MM REC-1**). Therefore, no significant loss in commercial fish landings by bottom trawl fishers is expected to occur because of Project activities.

Potential Conflicts with Recreational Fishers. The fishing season for the recreational fisheries listed in Table 5-1, other than Dungeness crab, are expected to overlap with the Project's marine construction period. Most of the recreational fishing in the region is hook and line (Table 5-1) that is conducted from shore or in charter or private boats. All recreational fishing from shore would not be affected or restricted by the Project marine components. Fishing from charter boats or private vessels could be affected by the same kind of time-space use conflicts potentially occurring with commercial fishers, as discussed above, but to a much lesser extent as recreational anglers typically restrict their fishing to locations close to shore or port. While some species are widely dispersed, such as various flatfish, most recreational fishers focus their efforts on more valuable species such as rockfish, Cabezon, and lingcod—all of which have limited distributions across specific habitats like seamounts, offshore banks and canyons, estuaries, sea grass beds, kelp stands, and rocky reefs. These HAPCs have been identified along the proposed cable installation routes (AMS 2020) and have been avoided to the greatest extent possible. Those that cannot be avoided are located at significant distances from shore and not expected to be frequented by many recreational fishers, given their distance from shore.

Salmon and tuna also support popular recreational fisheries in the Project area (AMS 2020). These species are recreationally harvested with trolling gear or hook and line. These methods are non-bottom contact, making entanglement with buried cable highly unlikely. Space-time use conflicts between cable installation activities and recreational fishers are expected to be similar in nature and severity as those for the commercial fishing enterprises and fisheries discussed above, resulting in temporary displacement of recreational fishers from limited geographic locations for short periods of time. No significant reduction in recreational fishing landings is expected because of the Project.

In summary, the potential for Project related impacts on commercial and recreational fishing that might reduce landings or catch is determined to be less than significant. Implementation of **APM-1** would ensure that potential impacts would remain at a less than significant level.

Would the Project activities or installations affect 5 percent or more of kelp and aquaculture harvest areas?

No Impact.

At present, there are no offshore aquaculture or mariculture operations or kelp harvest areas within the MSA. Oysters are cultured in Humboldt Bay by multiple companies; these operations, by their physical locations within Humboldt Bay and outside the MSA, are not expected to have any interaction with Project activities. A new land-based salmon/steelhead aquaculture operation has been proposed by Nordic Fish Farms at the former Evergreen pulp mill facility (Humboldt Bay Keeper 2020), which is adjacent to the proposed Project landing location (see Section 2, *Project Description*). The Nordic Fish Farms project is in the planning and permitting stage, and the expected timing of construction and initiation of operations would occur after installation of the proposed Project cable landings (Humboldt Bay Keeper 2020). Finally, the offshore cable installation and operations components of the proposed Project are not expected to interfere with operation of the Nordic Fish Farm onshore aquaculture operations. Therefore, the Project is not expected to affect future aquaculture operations.

Would the Project activities or installations cause a loss in harvesting time due to impacts on living marine resources and habitat or cause a loss of equipment or vessel, damage, or replacement?

Less than Significant Impact.

As presented in Section 3.4.2, *Marine Components,* the Project is not expected to significantly affect marine habitats or associated marine biological resources, including commercially important fishes. Burial of the cable to a target depth of 3.3 feet is expected to result in short-term disturbances of soft substrate marine sediments and associated invertebrate fauna, including some potential for short-term and minimal loss of habitat value of the ocean floor overlying the buried cable. Recovery of infauna is expected to occur rapidly, and the surrounding non-disturbed ocean floor habitat would provide more than adequate foraging and life cycle habitat for commercially important fishes (AMS 2020). Although potential hard substrate is present within the MSA, the cable route always is selected to avoid or minimize the distance required to transit this habitat type, due to technical concerns for the safety of the cable and the potential risk any exposed cable may pose to the environment as well as to commercial fishing activities. If hard substrate cannot be avoided, cable placement on mixed- to moderate-relief hard substrate habitat is not expected to result in any long-term or substantive loss of habitat or habitat value within the MSA. This finding has been documented by recent studies investigating cable installation in soft and hard substrates along the Oregon and California coasts and around the world (AMS 2020). In addition, as noted in Section 3.4.2, *Marine Components*, implementation of **MM BIO-10** and **MM BIO-11** is expected (1) to further reduce any potential impacts of Project cables on hard substrate habitat; and (2) to provide financial

compensation for any perceivable impacts that directly pose ecological and fisheries resource impacts on commercial fishers and regional fisheries through the California Lost Fishing Gear Recovery Project.

The United Nations Environment Program International Cable Protection Committee conducted a literature review of recent cable installation impact studies. They concluded that disturbances occurring during the construction period of cable installation activities, when considered in the context of their frequency and extent (geographically) do not cause harmful changes to the marine environment—primarily due to their small size and minimal environmental footprint (Davenport 2012). Based on these study findings, any temporary disturbance of marine habitats resulting from Project cable installation activities offshore Eureka are not expected to result in a substantial loss in fishing time or effort, or to result in significant impacts on marine resources or habitats.

As discussed in detail above, the small footprint of disturbed ocean floor that might occur because of cable installation is insignificant when compared to the comparable undisturbed ocean floor habitat adjacent to and surrounding the cable route that is available for commercial fishing activities. In fact, scientific studies on the impacts of commercial bottom trawling on marine habitat and recovery have shown that these efforts may be more damaging to marine ecosystems than installation and burial of a fiber optic cable, depending on their frequency and longevity of occurrence and the geographic location of the trawling activities (Thrush and Dayton 2002; Sanchez et al. 2000; Lambert et al. 2014; Hixon and Tissot 2007; Engel and Kvitek 1998).

As stated previously, the initial burial of the cable to a depth of 3.3 feet is key to avoiding potential loss of fishing habitat for ocean floor-oriented commercial fisheries as well as possible entanglement and loss of gear. Additionally, given the burial depth of the cable and the water depths through which the cable is routed, the potential for direct contact between the cable and any fishing vessel is essentially non-existent and therefore poses no risk. Ensuring that the cable remains buried is therefore an additional Project concern. As detailed in **APM-3** (see Section 3.4, *Biological Resources*), the Applicant is committed to conducting post-lay surveys immediately following initial installation, every 5 years thereafter until repeated survey data confirm burial, and following a potential cable exposure event. This APM ensures that any cable exposure will be detected and that reburial[42] will occur to prevent the possibility of future fishing gear entanglements.

To reduce potential equipment loss, damage, and entanglement with cable Project infrastructure, the cable would be buried to a depth of 3.3 feet between where the landing pipes exit and to 5,904-foot water depth, where deep water starts (see Section 2, *Project Description*). This burial is required to minimize potential entanglement between the cable

[42] No cable has been exposed in California since 2000. If a cable is exposed, it would be reburied as soon as a vessel is available. In the meantime, fishers would be notified of the issue, and per the agreement, compensation if warranted would be provided.

and commercial and recreational fishing gear, specifically bottom-contact gear such as trawling, longline, and pot or trap equipment. As part of the site-specific geophysical ocean floor mapping for a cable route, potential depth of burial in the nearshore and offshore waters is evaluated. For both cable routes surveyed to date, the potential for burial out to the 5,904-foot depth is excellent. Consequently, gear entanglement with the installed cables is highly unlikely.

Since the 1990s, approximately 32 HDD-based cable landings (landing pipes to pull the cables through) and 23 actual subsea cables have been installed in California, and approximately 14 cable landings and transoceanic cables have been installed in Oregon. Over this roughly 20-year period, there has been only one potential instance of fishing gear entanglement with a cable offshore California. In this case, the fisher was instructed to abandon his gear in lieu of using grappling hooks for recovery and immediately was reimbursed for the loss of his equipment (SBCFLC pers. comm.). Offshore of Oregon, there have been two potential longline fishing gear entanglements that resulted in immediate reimbursement and eight paid claims for entangled bottom trawl gear (Oregon Fishermen's Cable Committee pers. comm.). As a result of improved communication and coordination between the Oregon Fishermen's Cable Committee and Oregon trawlers, there have been no claims for potentially entangled gear since 2009 (Oregon Fishermen's Cable Committee pers. comm.).

In each of these incidents, it is uncertain whether the commercial fishing gear actually was entangled with the buried cable. Because of the proximity of the snagged gear to a buried cable, the coordinating commercial fishers' cable liaison committee defers to an assumption that gear could be entangled, requires the commercial fishers to abandon their gear, and reimburses them for the loss (Oregon Fishermen's Cable Committee pers. comm.; SBCFLC pers. comm.; Central California Joint Cable Fisheries/Fisheries Liaison Committee pers. comm.). Although the potential for fishing gear entanglement with buried cables in Eureka is also very unlikely, establishment and support of local commercial fishers' liaison groups (**APM-1**) strengthens the avoidance of potential entanglements and space-time use conflicts with cable installations or maintenance, provides an efficient mechanism for avoiding potential entanglements or damage to buried cables, and creates a clear and efficient way to reimburse lost or abandoned gear.

The Applicant is actively involved with the regional commercial fishing cable liaison committee (**APM-1**) established for Northern California and specifically the Eureka area, as well as other associations in California and Oregon to enhance communication concerning Project construction and work locations, avoid space-time use conflicts, and establish a process to compensate commercial fishers for lost/abandoned gear near buried cables. The established commercial fishers' cable liaison committees in both California and Oregon represent and support all commercial fishers operating within their area of responsibility (Oregon Fishermen's Cable Committee pers. comm.; SBCFLC pers.

comm.; Central California Joint Cable Fisheries/Fisheries Liaison Committee pers. comm.).

In summary, Project-related marine-oriented activities and the methods and approaches used in their execution are not expected to result in any significant impact on marine resources, sensitive or special-status habitats, or cause a loss of significant quantities of commercial or recreational fishing gear. Should commercial fishing gear become entangled with a buried cable or near a buried cable, mechanisms and procedures are established to compensate the commercial fishers for the lost gear.

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 Impact.

As discussed in greater detail in Section 3.4.2 (*Marine Components*)*,* in Appendix C, and as presented above, cable installation along the northern California coast is expected to result in only short-term impacts on soft substrate and associated biological taxa used for foraging habitat by commercially important fishes. This temporary loss of habitat would be restricted to the few feet of ocean floor where the cable trench is dug, would be refilled after cable placement, and would not affect adjacent ocean floor habitats. Based on recent ocean floor mapping surveys of proposed southern cable routes (EGS 2020) and projected routing of the proposed northern cable routes (Section 3.4.2, *Marine Components*), no hard-bottom habitat is anticipated to be transited. However, if either of the two northern proposed Project cable routes should be required to be installed over hard bottom substrate, as discussed in more detail in Section 3.4.2, *Marine Components,* no significant impact or loss of habitat or forage taxa important to commercial or recreational fishes is expected.

No long-term or permanent loss of habitat for fishes, including EFH, or accessibility to commercial or recreational fishing is anticipated. Proposed cable routes always transit primarily soft substrate habitat where cables would be buried to a 3.3-foot depth to avoid possible entanglements with commercial fishing gear. Implementation of APMs would further ensure minimal Project impact on commercial fishing efforts, grounds, and gear use. Reports from other areas of California and Oregon where commercial fishers' 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.; SBCFLC pers. comm.; Central California Joint Cable Fisheries/Fisheries Liaison Committee pers. comm.). Therefore, the Project is expected to result in a less than significant impact on commercial fishing activities from alterations to EFH or the ocean floor.

5.2.5 Mitigation Summary

Implementation of the following Applicant proposed measures and mitigation measures can be expected to further ensure that any potential Project-related impacts on commercial and recreational fishing remain at a less than significant level:

- APM-1: Fishing Agreement
- APM-3: Cable Burial Surveys
- MM BIO-10: Minimize Crossing of Hard Bottom Substrate
- MM BIO-11: Contribute Compensation to Hard Substrate Mitigation Fund
- MM REC-1: Advanced Local Notice to Mariners

5.3 ENVIRONMENTAL JUSTICE

Environmental justice is defined by California law as "the fair treatment and meaningful involvement of people of all races, cultures, incomes, and national origins, with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies" (Gov. Code, § 65040.12, subd. (e)). This definition is consistent with the Public Trust Doctrine principle that the management of trust lands is for the benefit of all people. CSLC adopted an Environmental Justice Policy in December 2018 (Item 75, December 2018) to ensure that environmental justice is an essential consideration in CSLC's processes, decisions, and programs.[43] Through its policy, the CSLC reaffirms its commitment to an informed and open process in which all people are treated equitably and with dignity, and in which its decisions are tempered by environmental justice considerations. Among other goals, the policy commits the CSLC to, "Strive to minimize additional burdens on and increase benefits to marginalized and disadvantaged communities resulting from a proposed project or lease."

5.3.1 U.S. Census Bureau Statistics

Table 5-2 presents income, employment, and race data for the State, County and local study area in the Project vicinity, based on the most recently available information from the U.S. Census Bureau's 2018 American Community Survey 5-Year Estimates Data Profiles.[44] The local study area is "Census Tract 13," which covers the Samoa Peninsula and lands to the north, in unincorporated Humboldt County. Data at the block and block group for the Project area is not available.

[43] See https://www.slc.ca.gov/envirojustice/.

[44] U.S. Census 2018 American Community Survey estimates come from a sample population but are more current statistics than the most recent full census of 2010. Because they are based on a sample of population, a certain level of variability is associated with the estimates. Supporting documentation on American Community Survey data accuracy and statistical testing can be found on the American Community Survey website here: https://www.census.gov/newsroom/press-kits/2018/acs-5year.html.

5.3.2 Population and Economic Characteristics

From a regional standpoint, the Project area contains below-average income levels ($39,107) compared to Humboldt County ($45,528) and California as a whole ($67,179) (Table 5-2). The median household income in Census Tract 13 ($39,107) is lower than that of Humboldt County and the State, but the percentage of residents living below the poverty level in Census Tract 13 and Humboldt County is lower than in California overall.

By income, 19.5 percent of the 1,377 residents in Census Tract 13, 20.3 percent of residents in Humboldt County, and 15.1 percent of people in California are living below the poverty level (Table 5-2). Therefore, the population of Census Tract 13 does not appear to be disproportionately burdened by poverty compared to the County as a whole.

By race, 73.6 percent of residents in Census Tract 13 identify as "White," and 17.7 percent identify as "Hispanic or Latino" (please note that 2010 U.S. Census data is used for Census Tract 13 because 2018 data is unavailable). About 11.3 percent of the County's population and about 38.8 percent of California's population are Hispanic or Latino (Table 5-2). People who identified as "White Only" make up 83.3 percent of Census Tract 13 population.[45] If the minority population in Census Tract 13 was over 50 percent, further analysis would be appropriate according to the Council on Environmental Quality. No aspect of the Project would disproportionately affect low-income or minority populations.

5.3.3 California Office of Environmental Health Hazard Assessment CalEnviroScreen Results

According to the California Office of Environmental Health Hazard Assessment California Communities Environmental Health Screening Tool (CalEnviroScreen 3.0) data (OEHHA 2018b), the Project site (within Census Tract 13) has a score in the 45th to 50th percentile, meaning that up to 55 percent of all census tracts in California have greater population vulnerability or environmental burdens (Figure 5-1). The existing pollution burden for this tract is in the 32nd percentile, with groundwater threats, hazardous waste, and solid waste as factors with the highest scores. This tract, with a population of 1,479 (according to CalEnviroScreen 3.0), has a population characteristics (vulnerability) score in the 57th percentile, which represents unemployment, housing burden and poverty components that could result in increased pollution vulnerability. In addition, the population is 73 percent white/non-minority and has low scores for public health concerns such as low birth rate and cardiovascular disease (i.e., heart attacks).

[45] Percentages add up to over 100 percent due to survey respondents reporting more than one race

Table 5-2. Environmental Justice Statistics

Subject		California	Humboldt County	Census Tract 13
Income and Population				
Total population		38,982,847	135,768	1,377
Median household income		$67,179	$45,528	$39,107
Percent below the poverty level[a]		15.1	20.3	19.5
Employment by Industry (by percentage)				
Agriculture, forestry, fishing and hunting, mining		2.3	4.8	4.4
Construction		6.1	6.8	4.4
Manufacturing		9.5	4.2	5.5
Wholesale trade		3.0	2.4	0.4
Retail trade		10.8	13.6	4.8
Transportation and warehousing, and utilities		5.0	3.8	3.6
Information		2.9	1.4	2.2
Finance and insurance, and real estate and rental and leasing		6.2	4.2	3.5
Professional, scientific, and management, and administrative and waste management services		13.2	8.8	10.3
Educational services and health care and social assistance		20.9	25.7	33.5
Arts, entertainment, and recreation, and accommodation and food services		10.4	12.7	8.3
Other services, except public administration		5.3	5.0	8.3
Public administration		4.4	6.7	10.9
Race (by percentage)				
Not Hispanic or Latino	White	37.9	80.1	73.6[b]
	Black	5.8	1.2	0.0[b]
	American Indian	0.7	5.0	3.3[b]
	Asian	14.1	3.1	1.2[b]
	Other	13.7	4.3	11.3[b]
Hispanic or Latino		38.8	11.3	17.7[b]

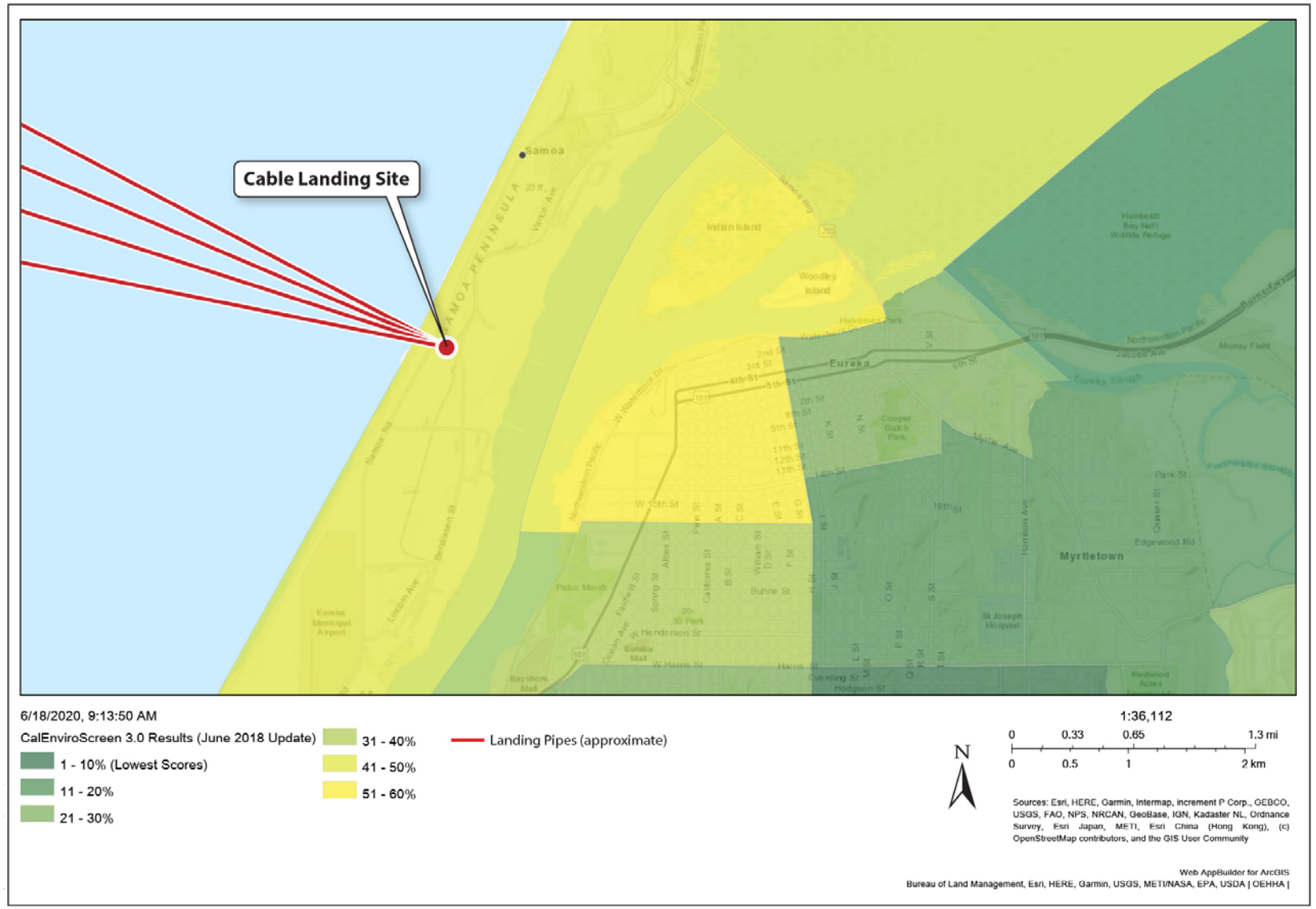
Sources: U.S. Census Bureau 2010, 2018

Notes:

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

[b] Race and Ethnicity data is not available for Census Tract 13 for 2018; therefore, data from the 2010 Census is used.

Figure 5-1. CalEnviroScreen Assessment



5.3.4 Conclusion

Because the percentage of individuals designated as living below the poverty line in the affected community is not disproportionately higher than in the surrounding area, it does not appear that an environmental justice community would be disproportionately affected by this Project. The construction-related Project's impacts on nearby residential communities (Figure 3.1-1) would be temporary and minor, regardless of their socioeconomic makeup. As noted previously, the closest residences are 0.5 mile away.

6.0 MND PREPARATION SOURCES AND REFERENCES

This Mitigated Negative Declaration was prepared by the staff of the California State Lands Commission's Division of Environmental Planning and Management (DEPM), with assistance from ICF. The analysis in the document is based on information identified, acquired, reviewed, and synthesized based on DEPM guidance and recommendations.

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ICF	
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James Alcorn, Senior Environmental Planner	3.1, Aesthetics; 3.2, Agriculture and Forestry Resources; 3.7, Energy; 3.8, Geology, Soils, and Paleontological Resources; 3.10, Hazards and Hazardous Materials; 3.11, Hydrology and Water Quality; 3.12, Land Use and Planning; 3.13, Mineral Resources; 3.15, Population and Housing; 3.16, Public Services; 3.17, Recreation; 3.18, Transportation; 3.19, Utilities and Service Systems; 3.21, Wildfire; 5.2; 5.3, Environmental Justice
Laura Yoon, Senior Air Quality and Climate Change Manager	3.3, Air Quality; 3.8, Greenhouse Gas Emissions
Jordan Mayor, Senior Biologist (Botany)	3.4, Biological Resources –Terrestrial
Steve Yonge, Senior Biologist (Wildlife)	3.4, Biological Resources –Terrestrial
Steve Pappas, Archaeologist	3.5, Cultural Resources; 3.6, Cultural Resources – Tribal
Cory Matsui, Technical Specialist – Noise	3.14, Noise
Joan Lynn, egret, inc. – Editor	All
Applied Marine Sciences	
Jay Johnson, Ocean Scientist	3.4, Biological Resources – Marine 5.2, Commercial and Recreational Fishing

6.3 REFERENCES CITED

Antrim, L., L. Balthis, and C. Cooksey. 2018. Submarine Cables in Olympic Coast National Marine Sanctuary: History, Impact, and Management Lessons. (Marine Sanctuaries Conservation Series ONMS-18-01.) U.S. Department of Commerce, National Oceanic and Atmospheric Administration, Office of National Marine Sanctuaries, Silver Spring, MD. 60 pp.

Applied Marine Sciences (AMS). 2008. Remotely Operated Vehicle (ROV) Biological Characterization Survey of the Asia America Gateway (AAG) S-5 Project Fiber Optic Cable Route Offshore Morro Bay, CA. Prepared for AT&T Corporation. May 2008. 44 pp. plus appendices.

___. 2015. Subtidal Habitats and Associated Macrobenthic and Fish Communities Observed Offshore Coastal California along Fiber Optic Cable Routes. Prepared for ICF International.

___. 2016. Survey Report: Seafloor Habitat and Biological Characterization Assessment of the SEA-US Fiber Optic Cable Route Offshore Hermosa Beach, California by Remotely Operated Vehicle (ROV). Prepared for ICF International. February. 40 pp.

___. 2020 (original 2019). Marine Aquatic Habitats and Biological Resources Offshore Eureka, California. August. Prepared for RTI. Livermore, CA. 56 pp.

Baldwin, B.G., D.H. Goldman, D.J. Keil, R. Patterson, T.J. Rosatti, and D.H. Wilken (eds.). 2012. The Jepson Manual: Vascular Plants of California. Second edition. Berkeley, CA: University of California Press.

Bancroft, Hubert Howe. 1886. History of California. Volumes I–VII. Wallace Hebberd, 1963 and 1970, Santa Barbara. [Originally published by The History Company, San Francisco.]

California Air Resources Board (CARB). 2005. Air Quality Land Use Handbook: A Community Perspective. April.

___. 2008. Climate Change Scoping Plan A Framework for Change. December. Available: https://ww3.arb.ca.gov/cc/scopingplan/document/adopted_scoping_plan.pdf. Accessed: July 14, 2020.

___. 2014. First Update to the Climate Change Scoping Plan, Building on the Framework Pursuant to AB 32. May.

___. 2017. California 2017 Climate Change Scoping Plan. November.

___. 2019a. California Greenhouse Gas Emissions for 2000 to 2017 Trends of Emissions and Other Indicators.

___. 2019b. California Air Resources Board 2017 Scoping Plan—Identified VMT Reductions and Relationship to State Climate Goals. January.

___. 2020a. Carbon Monoxide & Health. Available: https://ww2.arb.ca.gov/resources/carbon-monoxide-and-health. Accessed: July 14, 2020.

___. 2020b. Summary: Diesel Particulate Matter Health Impacts. Available: https://ww2.arb.ca.gov/resources/summary-diesel-particulate-matter-health-impacts. Accessed: July 14, 2020.

___. 2020c. iADAM: Air Quality Data Statistics (Top 4 Summary). Available: https://www.arb.ca.gov/adam/topfour/topfour1.php. Accessed: July 14, 2020.

___. 2020d. Area Designations Maps. Available: http://www.arb.ca.gov/desig/adm/adm.htm. Accessed: July 14, 2020.

___. 2020e. GHG Global Warming Potentials. Available: https://ww2.arb.ca.gov/ghg-gwps. Accessed: July 14, 2020.

___. 2020f. GHG Current California Emission Inventory Data. Available: https://ww2.arb.ca.gov/ghg-inventory-data. Accessed: July 14, 2020.

California Census 2020. 2020. The California Hard-to-Count Interactive Map. Available: https://cacensus2020.maps.arcgis.com/apps/webappviewer/index.html?id=48be59de0ba94a3dacff1c9116df8b37. Accessed: June 16, 2020.

California Coastal Commission. 2003. Designation of ESHA in the Santa Monica Mountains. Memorandum. March 25.

___. 2011. Definition and Delineation of Wetlands in the Coastal Zone. October 5, 2011 Briefing. Available: https://documents.coastal.ca.gov/reports/2011/10/w4-10-2011.pdf. Accessed: October 5, 2017.

___. 2013. Staff Report. Application No.: 1-13-0280. Applicant: Humboldt Bay Municipal Water District. Filed: July 15, 2013.

___. 2018. Coastal Zone Boundary Maps. Available: https://coastal.ca.gov/maps/czb/. Accessed: April 2020.

California Department of Conservation. 2000. A General Location Guide for Ultramafic Rocks in California – Areas More Likely to Contain Naturally Occurring Asbestos. August.

California Department of Conservation. 2019. Land Evaluation and Site Assessment Model. Available: https://www.conservation.ca.gov/dlrp/Pages/qh_lesa.aspx. Accessed: October 28, 2020.

California Department of Fish and Game (CDFG). 2008. Office of Spill Prevention and Response. Introduced Aquatic Species in the Marine and Estuarine Waters of California. Submitted to the California State Legislature as Required by the Coastal Ecosystems Protection Act of 2006.

California Department of Fish and Wildlife (CDFW). 2018. Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities. Available: https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=18959&inline. Accessed: April-June 2020.

___. 2020a. California Natural Community List. Vegetation Classification and Mapping Program. (November 8, 2019 Edition). Prepared by the Wildlife and Habitat Data Analysis Branch. Sacramento, California. Available: https://www.wildlife.ca.gov/Data/VegCAMP/Natural-Communities#natural%20communities%20lists. Accessed: April-July 2020.

___. 2020b. Marine Protect Areas. Available: https://wildlife.ca.gov/Conservation/Marine/MPAs/Network/Northern-California#27029476-samoa-state-marine-conservation-area. Accessed: November 4, 2020.

___. 2020c. Special Animals List. State of California, Natural Resource Agency, California Department of Fish and Wildlife, Biogeographic Data Branch. Sacramento, CA. July.

___. 2020d. Special Vascular Plants, Bryophytes, and Lichens List. State of California, Natural Resource Agency, California Department of Fish and Wildlife, Biogeographic Data Branch. Sacramento, CA. September.

___. 2020e. California Natural Diversity Database—Query for Arcata North, Arcata South, Cannibal Island, Eureka, Fields Landing, McWhinney Creek, and Tyee City USGS 7.5 Minute Quadrangles. RareFind 5, Version 5.2.14. Available: https://apps.wildlife.ca.gov/rarefind/view/RareFind.aspx [subscription required]. Accessed: April 2020.

___. 2020f. Marine Species Portal. Available: https://marinespecies.wildlife.ca.gov/. Accessed: August 24, 2020, for multiple species.

___. 2020g. Current California Recreational Fishing Regulations- 42°00 N. Latitude (Oregon Border) to 40°10 N. Latitude (near Cape Mendocino in Humboldt County). Available: https://wildlife.ca.gov/Fishing/Ocean/Regulations. Accessed: August 19, 2020.

___. 2020h. State of California Department of Fish and Wildlife Initial Statement of Reasons for Regulatory Action (Pre-Publication of Notice Statement). Re: Risk Assessment Mitigation Program: Commercial Dungeness Crab Fishery.

California Department of Toxic Substances Control (DTSC). 2020a. EnviroStor. Available: https://www.envirostor.dtsc.ca.gov/public/. Accessed: June 11, 2020.

___. 2020b. List of hazardous waste facilities subject to corrective action pursuant to Section 25187.5 of the Health and Safety Code. Available: https://calepa.ca.gov/sitecleanup/corteselist/section-65962-5a/. Accessed: June 11, 2020.

California Department of Transportation (Caltrans). 2013. Transportation and Construction Vibration Guidance Manual. Sacramento, CA. September. Available: https://www.placer.ca.gov/DocumentCenter/View/8273/Caltrans-2013-Transportation-and-Construction-Vibration-Guidance-Manual-PDF. Accessed: July 21, 2020.

___. 2015. Technical Guidance for Assessment and Mitigation of the Hydroacoustic Effects of Pile Driving on Fish. (CalTrans Technical Report CTHWANP-RT-15-306.01.01.)

___. 2018. California State Scenic Highway System Map. Available: https://www.arcgis.com/apps/webappviewer/index.html?id=2e921695c43643b1aaf7000dfcc19983. Accessed: June 9, 2020.

California Geological Survey (CGS). 2008. Guidelines for Evaluating and Mitigating Seismic Hazards in California. (CDMG Special Publication 117a.) Sacramento, CA. Available: https://www.conservation.ca.gov/cgs/Documents/SP_117a.pdf. Accessed: June 10, 2020.

California Native Plant Society (CNPS). 2020a. Rare Plant Program. Inventory of Rare and Endangered Plants online edition, v8-02. Sacramento, CA. Available: http://www.rareplants.cnps.org. Accessed: April 2020.

___. 2020b. A Manual of California Vegetation, Online Edition. California Native Plant Society, Sacramento, CA. Available: http://www.cnps.org/cnps/vegetation/. Accessed: April–June 2020.

California State Lands Commission (CSLC). 2016. California State Lands Commission Tribal Consultation Policy. Available: https://www.slc.ca.gov/tribal-consultation/. Accessed: October 28, 2020.

___. 2017. Coastal Hazards and Legacy Wells. Available: https://slc.ca.gov/coastal-hazards-legacy-wells/. Accessed: February 22, 2019.

California State Parks. 2020. Fort Humboldt State Historic Park. Available: https://www.parks.ca.gov/?page_id=665. Accessed: July 8, 2020.

Davenport, T. 2012. Submarine Communications Cables and Law of the Sea: Problems in Law and Practice. *Ocean Development & International Law* 43: 201–242.

Davidson, George. 1891. The Discovery of Humboldt Bay, California. Geographical Society of the Pacific.

Division of Mine Reclamation. 2016. Mines Online. Last revised: unknown. Available: https://maps.conservation.ca.gov/mol/index.html. Accessed: June 16, 2020.

Du, X., W. Peterson, J. Fisher, M. Hunter, and J. Peterson. 2016. Initiation and Development of a Toxic and Persistent Pseudo-Nitzschia Bloom off the Oregon Coast in Spring/Summer 2015. PLoS ONE 11(10): e0163977.

Dugan, J.E., D.M. Hubbard, K.J. Nielson, J. Altstatt, and J. Bursek. 2015. Final Report: Baseline Characterization of Sandy Beach Ecosystems along the South Coast of California. University of California Press.

Dunham, A., J.R. Pegg, W. Colsfeld, S. Davies, I. Murfitt, and J. Boutillier. 2015. Effects of Submarine Power Transmission Cables on a Glass Sponge Reef and Associated Megafaunal Community. *Marine Environmental Research* 107:50–60.

ebird. 2020. Hotspots. Available: https://ebird.org/hotspots. Accessed: September 2, 2020.

Education Data Partnership. 2020. District Summary, Peninsula Union. Available: https://www.ed-data.org/district/Humboldt/Peninsula-Union. Accessed: June 16, 2020.

Education Development Center, Inc. 2017. Oceans of Data Institute. Available: https://oceantracks.org/library/the-north-pacific-ocean/upwelling-and-the-california-current#:~:text=Upwelling%20is%20reduced%20in%20fall,the%20topography%20of%20the%20coastline.&text=The%20occurrence%20of%20El%20Nino,weakens%20coastal%20upwelling%20in%20California. Accessed: September 1, 2020.

EGS. 2020. Preliminary Seafloor Survey Plats for Proposed Cable Route for RTI-Eureka Cable Project. Prepared for NEC Corporation. Prepared by EGS Survey Group. July.

Elsasser, Albert B. 1978. Wiyot. Pp. 155–163 in R.F. Heizer (vol. ed.) and W.C. Sturtevant (gen. ed.), Handbook of North American Indians, Volume 8: California Smithsonian Institution. Washington, D.C.

Engel, J.A. and R. Kvitek. 1998. Effects of Trawling on a Benthic Community in Monterey Bay National Marine Sanctuary. *Conservation Biology* 12:1204–1214.

Erbe, C. 2012. Underwater Passive Acoustic Monitoring and Noise Impacts on Marine 10 Fauna – a Workshop Report. *Acoustics Australia-Technical Notes* 41: 211–217.

ESA. 2020. Draft Humboldt County Airport Land Use Compatibility Plan. Prepared for Humboldt County Airport Land Use Commission. June. Available: https://humboldtgov.org/DocumentCenter/View/87574/Humboldt-County-ALUCP-DRAFT-06-2020. Accessed: July 21, 2020.

Eschker, Erick, Casey O'Neil, and Blair Foulds. 2008. Individual Sectors, Humboldt Economic Index, February. Available: https://econindex.humboldt.edu/sites/default/files/february_08.pdf. Accessed: July 8, 2020.

Fabre, J.P. and J.H. Wilson. 1997. Noise Source Level Density due to Surf. II. Duck, NC. *IEEE Journal of Oceanic Engineering 22*(3): 434–444.

Federal Highway Administration (FHWA). 2006. Roadway Construction Noise Model User's Guide. Available: https://www.fhwa.dot.gov/environment/noise/construction_noise/rcnm/rcnm.pdf. Accessed: July 21, 2020.

Fischer, S.J.L. 2014. Seasonal Patterns of Delta15N and Delta18O-NO3- in the Murderkill River Watershed and Estuary, DE. University of Delaware Master's thesis. Available: http://udspace.udel.edu/handle/19716/16862.

FishChoice. 2020. Available: https://fishchoice.com/. Accessed: August 24, 2020, for multiple species.

GHD, Inc. 2012. Environmentally Sensitive Habitat Area (ESHA'S) Mapping and Special-Status Species Surveys. Techite Pipeline Replacement Project. Samoa, California

___. 2019. County of Humboldt Samoa Peninsula Wastewater Project Draft Environmental Impact Report. Prepared for the County of Humboldt. January.

Giesecke, E. 1997. Discovery of Humboldt Bay, California 1806. Paper presented at the California Map Society annual meeting. San Francisco, CA.

Governor's Office of Planning and Research (OPR). 2018a. Technical Advisory on Evaluating Transportation Impacts in CEQA. Available: http://opr.ca.gov/docs/20190122-743_Technical_Advisory.pdf. Accessed: July 14, 2020.

___. 2018b. CEQA and Climate Change Advisory. Discussion Draft. Available: http://opr.ca.gov/docs/20181228-Discussion_Draft_Climate_Change_Adivsory.pdf. Accessed: July 14, 2020.

Grebner, D.M. and K.H. Kim. 2015. Underwater Noise Impacts of Encina 10 Decommissioning, Carlsbad, California, 2015. Greeneridge Sciences Rep. 518-1. Report from Greeneridge Sciences, Inc., Santa Barbara, CA for Padre Associates, Inc., Ventura, CA.

Heezen, B.C. 1957. Whales Entangled in Deep Sea Cables. Deep Sea Research 4: 105–115.

Historic American Buildings Survey. 2020. Carson House, Eureka, Humboldt County, CA. Available: https://www.loc.gov/pictures/item/CA0174/. Accessed: July 8, 2020.

Hixon, M.A. and B.N. Tissot. 2007. Comparison of Trawled vs Untrawled Mud Seafloor Assemblages of Fishes and Macroinvertebrates at Coquille Bank, Oregon. *Journal of Experimental Marine Biology and Ecology* 344:23–34.

Horizon Water and Environment, LLC. 2012. Marine Life Protection Act North Coast Study Region: Final Environmental Impact Report. (SCH 2011092029.) May 2012.

Humboldt Bay Keeper. 2020. Nordic Aquafarms. Available: https://www.humboldtbaykeeper.org/nordic-aquafarms. Accessed: September 21, 2020.

Humboldt County. n. d. Presentation: Three Components of Our CAP. Available: https://humboldtgov.org/DocumentCenter/View/79805/PowerPoint-Presentation?bidId=. Accessed: July 14, 2020.

___. 2014. Humboldt County General Plan Volume II Humboldt Bay Area Plan of the Humboldt County Local Coastal Program. December.

___. 2017. Humboldt County General Plan for the Areas Outside the Coastal Zone. Adopted October 23, 2017.

___. 2019. Samoa Town Master Plan Draft Supplemental Master Environmental Impact Report. July.

___. 2020a. Humboldt County Web GIS. Williamson Ag Preserves. Available: https://webgis.co.humboldt.ca.us/HCEGIS2.0/. Accessed: June 10, 2020.

___. 2020b. Climate Action Plan. Available: https://humboldtgov.org/2464/Climate-Action-Plan. Accessed: July 14, 2020.

Humboldt County Association of Governments (HCAOG). 2018. Humboldt Regional Bicycle Plan Update 2018. Available: http://www.hcaog.net/sites/default/files/final_regional_bike_plan_update_2018.pdf. Accessed: June 16, 2020.

Humboldt County Local Agency Formation Commission (LAFCo). 2017. Agenda Item 8A: Proposed Reorganization of the Samoa Peninsula Fire Protection District to a Community Services District. May 15.

Humboldt County Sheriff's Office, Office of Emergency Services. 2015. County of Humboldt Emergency Operations Plan Humboldt Operational Area. Available: https://humboldtgov.org/DocumentCenter/View/51861/Humboldt-County-Emergency-Operations-Plan-2015. Accessed: June 15, 2020.

Intergovernmental Panel on Climate Change (IPCC). 2007. Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change. S. Solomon, D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Averyt, M. Tignor, and H.L. Miller (eds.). Available: https://www.ipcc.ch/pdf/assessment-report/ar4/wg1/ar4-wg1-frontmatter.pdf. Accessed: August 13, 2018.

___. 2014. Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II, and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, R.K. Pachauri and L.A. Meyer (eds.)]. IPCC, Geneva, Switzerland. Available: http://www.ipcc.ch/report/ar5/syr/. Accessed: July 14, 2020.

Jensen, A.S. and G.K. Silber. 2003. Large Whale Ship Strike Database. U.S. Department of Commerce, NOAA Technical Memorandum (NMFS-OPR.) 37 pp.

Jepson Flora Project. 2020. The Jepson Flora Project – all of the floristic references and data of the Jepson Herbarium. Available: https://ucjeps.berkeley.edu/jepsonflora/. Accessed: April–July 2020.

Kogan I., C.K. Paull, L.A. Kuhnz, E.J. Burton, S. Von Thun, H.G. Greene, and J.P. Barry. 2006. ATOC/Pioneer Seamount Cable after 8 Years on the Seafloor: Observations, Environmental Impact. *Continental Shelf Research* 26:771–787.

Krause, A. 2010. One Hundred and Fifty years of Sediment Manipulation on the Trinity River, CA. 2nd Joint Federal Interagency Conference, Las Vegas, NV. Available: https://acwi.gov/sos/pubs/2ndJFIC/Contents/3D_Krause_3_1_10.pdf, Accessed; December 2, 2020.

Kuhnz, L.A., K. Buck, C. Lovera, P.J. Whaling, and J.P. Barry. 2015. Potential Impacts of the Monterey Accelerated Research System (MARS) Cable on the Seabed and Benthic Faunal Assemblages. Monterey Bay National Marine Sanctuary, California Coastal Commission, and California State Lands Commission: 71.

Laist, D.W. and M. Liffmann1997. Impacts of Marine Debris: Entanglement of Marine Life in Marine Debris Including a Comprehensive List of Species with Entanglement and Ingestion Records. In, J. M. Coe and D.B. Rogers (eds.) Marine Debris – Sources, Impacts and Solutions. Springer-Verlag. New York, NY. Pp. 99–139.

Lambert, G.I., S. Jennings, M.J. Kaiser, T.W. Davies, and J.G. Hiddink. 2014. Quantifying Recovery Rates and Resilience of Seabed Habitats Impacted by Bottom Fish. *Journal of Applied Ecology* 54:1326–1336.

Lichvar, R.W., D.L. Banks, W.N. Kirchner, and N.C. Melvin. 2016. State of California 2016 Wetland Plant List: 2016 wetland ratings. *Phytoneuron* 2016-30:1–17.

Lost Coast Staff. 2019. “Commercial Crab Season Delayed until New Year’s Eve.” Lost Coast Outpost, December 11, 2019. Available: https://lostcoastoutpost.com/. Accessed: August 19, 2020.

Loud, Llewellyn L. 1918. *American Archaeology and Ethnology*. Vol 14, No. 3 pp. 221–436. December 23. Available: https://digitalassets.lib.berkeley.edu/anthpubs/ucb/text/ucp014-004.pdf. Accessed: September 9, 2020.

McCormick, Evelyn. 1989. Little Grains of Sand: A History of the North Peninsula, Samoa, Fairhaven, Manila.

Monterey Bay Aquarium Seafood Watch. 2020. Rockfish Recommendations. Available: https://www.seafoodwatch.org/. Accessed: August 25, 2020.

Moriarty, J.R. and M. Keistman. 1973. Cabrillo's Log 1542–1543, a Voyage of Discovery. In Dr. James R. Moriarty, III (ed.). Cabrillo Gravestone Seminar, Cabrillo National Monument, San Diego, CA.

National Oceanic and Atmospheric Administration (NOAA). 2018. Available: http://www.nmfs.noaa.gov/pr/species/index.htm. Accessed for various species in October 2018.

___. 2020a. Recent Monthly Average Mauna Loa CO2. Available: https://www.esrl.noaa.gov/gmd/ccgg/trends/index.html. Accessed: July 14, 2020.

___. 2020b. Annual Mean Growth Rate for Mauna Loa, Hawaii. Available: https://www.esrl.noaa.gov/gmd/ccgg/trends/gr.html. Accessed: July 14, 2020.

National Oceanic and Atmospheric Administration (NOAA). 2020. Fisheries Observers; Overview of Observed West Coast Fishery Sectors. Available: https://www.fisheries.noaa.gov/west-coast/fisheries-observers/overview-observed-west-coast-fishery-sectors. Accessed: November 9, 2020.

National Oceanic and Atmospheric Administration Fisheries Service (NOAA). 2020. Species Directory. Available: https://www.fisheries.noaa.gov/. Accessed: August 24, 2020, for multiple species.

Natural Resources Conservation Service (NRCS). 2020. Web Soil Survey. Available: https://websoilsurvey.sc.egov.usda.gov. Accessed: June 11, 2020.

Nedwell J., J. Langworthy, and D. Howell. 2003. Assessment of Sub-Sea Acoustic Noise and Vibration from Offshore Wind Turbines and Its Impact on Marine Wildlife; Initial Measurements of Underwater Noise during Construction of Offshore Windfarms, and Comparison with Background Noise. (COWRIE Report No. 544 R 0424.)

Nielsen, K.J., J.E. Dugan, T. Mulligan, D.M. Hubbard, S.F. Craig, R. Laucci, M.E. Wood, D.R. Barrett, H.L. Mulligan, N. Schooler, and M.L. Sorrow. 2017. Final Report: Baseline Characterization of Sandy Beach Ecosystems along the North Coast of California. May 31. 2017.

North Coast Regional Water Quality Control Board (NCRWQCB). 2017. Eureka Plain. Available: https://www.waterboards.ca.gov/northcoast/water_issues/programs/watershed_info/eureka_plain/. Accessed: June 15, 2020.

___. 2018. Water Quality Control Plan for the North Coast Region. Available: https://www.waterboards.ca.gov/northcoast/water_issues/programs/basin_plan/190204/Final%20Basin%20Plan_20180620_lmb.pdf. Accessed: June 15, 2020.

North Coast Unified Air Quality Management District (NCUAQMD). 2015. Regulation I Rule 110—New Source Review (NSR) And Prevention of Significant Deterioration. Available: http://www.ncuaqmd.org/files/rules/reg%201/Rule%20110.pdf. Accessed: August 5, 2020.

___. 2020. Air Quality Planning & CEQA. Available: http://www.ncuaqmd.org/index.php?page=aqplanning.ceqa. Accessed: July 14, 2020.

Northern Hydrology & Engineering. 2015. Humboldt Bay: Sea Level Rise, Hydrodynamic Modelling and Inundation Vulnerability Mapping. Prepared for State Coastal Conservancy and Coastal Ecosystems Institute of Northern California. Final Report. April. Available: https://humboldtbay.org/sites/humboldtbay2.org/files/Final_HBSLR_Modeling_InundationMapping_Report_150406.pdf. Accessed: August 8, 2020.

Ocean Protection Council (OPC). 2018 Update. State of California Sea-Level Rise Guidance. Sacramento, CA. 63 pp. Office of Environmental Health Hazard Assessment (OEHHA). 2018a. California Environmental Protection Agency. Indicators of Climate Change in California. May. Sacramento, CA.

___. 2018b. CalEnviroScreen 3.0. Available: https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-30. Accessed: June 18, 2020.

Office of Historic Preservation (OHP). 2020. Arcata and Mad River Rail Road Company webpage. Available: https://ohp.parks.ca.gov/ListedResources/Detail/842. Accessed: July 8, 2020.

Oil & Gas Journal. 1992. Alaska-California Tanker Route to be at Least 50 Miles Offshore. Available: https://www.ogj.com/articles/print/volume-90/issue-23/in-this-issue/transportation/alaska-california-tanker-route-to-be-at-least-50-miles-offshore.html. Accessed: June 16, 2020.

___. 2019. Where your electricity comes from. Available: https://www.pge.com/pge_global/common/pdfs/your-account/your-bill/understand-your-bill/bill-inserts/2019/1019-Power-Content-Label.pdf. Accessed: July 15, 2020.

Pacific Management Fishery Council (PFMC). 2016. The Fishery Management Plan for U.S. West Coast Commercial and Recreational Salmon Fisheries off the Coast of Washington, Oregon, and California. PFMC, Portland. As Amended through Amendment 19, March.

___. 2017. The Fishery Management Plan for U.S. West Coast Fisheries for Highly Migratory Species. PFMC, Portland. As Amended through Amendment 5, April.

___. 2019a. Pacific Coast Groundfish Fishery Management Plan for the California, Oregon and Washington. PFMC, Portland, OR. As Amended through Amendment 28, August.

___. 2019b. The Coast Pelagic Fishery Management Plan. PFMC, Portland. As Amended through Amendment 16, February.

Pomeroy, C., C.J. Thomson, and M.M. Stevens. 2011. California's North Coast Fishing Communities Historical Perspective and Recent Trends. Eureka Fishing Community Profile. Published by California Sea Grant College Program, Scripps Institute of Oceanography, University of California San Diego. (Publication No. T-072e.) 55 pp.

Redwood Coast Energy Authority (RCEA). 2018. Unsolicited Application for an Outer Continental Shelf Renewable Energy Commercial Lease under 30 CFR 585.230. Submitted to the US. Dept. of the Interior, Bureau of Ocean Energy Management, Pacific Region. September.

Reşitoğlu, Ibrahim. 2018. NOx Pollutants from Diesel Vehicles and Trends in the Control Technologies. Available: https://www.intechopen.com/online-first/nox-pollutants-from-diesel-vehicles-and-trends-in-the-control-technologies. Accessed: March 18, 2019.

Robertson-Bryan. 2006. Suspended Solids and Turbidity Requirements of Freshwater Aquatic Life and Example Relationship between TSS (Mg/L) and Turbidity (NTUs) for a Treated Municipal Effluent. Technical Memorandum.

Samoa Cookhouse Museum. 2020. Samoa Cookhouse Museum website. Available: https://www.samoacookhouse.net/museum. Accessed: July 8, 2020.

Sanchez, P., M. Demestre, M. Ramon, and M.J. Kaiser. 2000. The Impact of Otter Trawling on Mud Communities in the Northwestern Mediterranean. *Journal of Marine Sciences* 57:1352–1358.

Sea Grant California. 2020. California Seafood Profiles. Available: https://caseagrant.ucsd.edu/seafood-profiles. Accessed: August 25, 2020, for multiple species.

Shipley, W.F. 1978. Native Languages in California. Pp. 80–90 in R.F. Heizer (vol. ed.) and W.C. Sturtevant (gen. ed.). Handbook of North American Indians, Volume 8: California. Smithsonian Institution. Washington, D.C.

SHN. 2019. First Quarter 2019 Area of Interest-8 and Area of Interest-9 Groundwater Monitoring Report, Evergreen Pulp Incorporated, One TCF Drive, Samoa, California; Case No. lNHU892. Prepared for Louisiana-Pacific Corporation. Eureka, CA. June 17.

Society of Vertebrate Paleontology Impact Mitigation Guidelines Revision Committee (SVP). 2010. Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources. Available: http://vertpaleo.org/Membership/Member-Ethics/SVP_Impact_Mitigation_Guidelines.aspx. Accessed: June 11, 2020.

State Water Resources Control Board (SWRCB). 2020a. GeoTracker. Available: https://geotracker.waterboards.ca.gov/map/?myaddress=California&from=header&cqid=2356504142. Accessed: June 11, 2020.

___. 2020b. Sites Identified with Waste Constituents above Hazardous Waste Levels Outside the Waste Management Unit. Available: https://calepa.ca.gov/wp-content/uploads/sites/6/2016/10/SiteCleanup-CorteseList-CurrentList.pdf. Accessed: June 11, 2020.

___. 2020c. List of "Active" CDO [Cease and Desist Orders] and CAO [Cleanup and Abatement Orders] from Water Board. Available: https://calepa.ca.gov/sitecleanup/corteselist/. Accessed: June 11, 2020.

___. 2020d. CSM Report for Public Noticing. Evergreen Pulp Incorporated. Available: https://geotracker.waterboards.ca.gov/csm_report?global_id=SL0602377769. Accessed: July 28, 2020.

Thompson, B., J. Dixon, S. Schroeter, and D. Reish. 1993. Benthic Invertebrates. Chapter 8 in: M. Dailey, D. Reish, and J. Anderson (eds.). Ecology of the Southern California Bight. University of California Press, Berkeley, CA.

Thrush, S.F. and P.K. Dayton. 2002. Disturbance of Marine Benthic Habitats by Trawling and Dredging Implications for Marine Biodiversity. *Annual Rev. Ecol. Syst* 33:449–473.

Timber Heritage Association. 2020a. Humboldt County History web page. Available: https://timberheritage.org/humboldt-county-history/. Accessed: July 8, 2020.

___. 2020b. Samoa Shops and Roundhouse Complex. Available: https://timberheritage.org/history-of-the-samoa-shops/. Accessed: August 20, 2020.

___. 2020c. Samoa (West Eureka)". Available: https://timberheritage.org/timber-company-towns/samoa/. Accessed: August 26, 2020.

U.S. Army Corps of Engineers (USACE). 1922. California Eureka Quadrangle Grid Zone "G", 1:62,500 scale map.

U.S. Census Bureau. 2010. American Community Survey Demographic and Housing Estimated. Available: https://data.census.gov/cedsci/table?q=United%20States&g=1400000US06023001300&hidePreview=true&y=2010&t=Race%20and%20Ethnicity&d=DEC%20Summary%20File%201&tid=ACSDP5Y2010.DP05. Accessed: June 18, 2020.

___. 2018. American Community Survey. Available: https://data.census.gov/cedsci/table?q=United%20States&hidePreview=true. Accessed: June 17, 2020.

U.S. Department of Agriculture-Farm Services Agency. 2018. National Agriculture Imagery Program (NAIP) map. Available: https://map.dfg.ca.gov/arcgis/rest/services. Accessed: November 4, 2020.

U.S. Environmental Protection Agency (EPA). 2016a. Health Effects of Ozone in the General Population. Last updated September 12. Available: https://www.epa.gov/ozone-pollution-and-your-patients-health/health-effects-ozone-general-population. Accessed: July 14, 2020.

___. 2016b. Pollution/Situation Report Profile; Samoa Pulp Mill. Available: https://response.epa.gov/site/sitrep_profile.aspx?site_id=8891. Accessed: July 28, 2020.

___. 2019a. Health Effects of Ozone Pollution. Last updated July 30. Available: https://www.epa.gov/ground-level-ozone-pollution/health-effects-ozone-pollution. Accessed: July 14, 2020.

___. 2019b. Sulfur Dioxide Basics. Last updated April 2. Available: https://www.epa.gov/so2-pollution/sulfur-dioxide-basics#what%20is%20so2. Accessed: July 14, 2020.

___. 2020a. Health and Environmental Effects of Particulate Matter (PM). Last updated April 13. Available: https://www.epa.gov/pm-pollution/health-and-environmental-effects-particulate-matter-pm. Accessed: July 14, 2020.

___. 2020b. Greenbook. Last Revised: June 30, 2020. Available: https://www.epa.gov/green-book. Accessed: July 14, 2020.

___. 2020c. Inventory of U.S. Greenhouse Gas Emissions and Sinks. Available: https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks. Accessed: July 14, 2020.

U.S. Fish and Wildlife Service (USFWS). 2007. Recovery Plan for the Pacific Coast Population of the Western Snowy Plover (*Charadrius alexandrinus nivosus*). In two volumes. Sacramento, Ca. xiv + 751 pp.

1 ____. 2020a. Information for Planning and Consultation (IPAC). Arcata Fish and Wildlife
2 Office. Available: http://ecos.fws.gov/ipac. Accessed: April 8, 2020.

3 ____. 2020b. Beach layia (*Layia carnosa*). General Information. Available:
4 https://www.fws.gov/arcata/es/plants/beachLayia/layia.html. Arcata Fish and Wildlife
5 Office.

6 Voices of the Bay. 2011. Fishery Basics – California Fisheries. December. 4 pp.

7 Ward, K., D. Cariveau, E. May, M. Roswell, M. Vaughan, N. Williams, R. Winfree,
8 R. Isaacs, and K. Gill. 2014. Streamlined Bee Monitoring Protocol for Assessing
9 Pollinator Habitat. The Xerces Society for Invertebrate Conservation.

10 Watters, D.L., M.M. Yoklavich, M.S. Love, and D.M. Schroeder. 2010. Assessing Marine
11 Debris in Deep Seafloor Habitats off California. *Marine Pollution Bulletin* 60: 131–
12 138.

13 Weilgart, L. 2012. A Review of Impacts of Seismic Airgun Surveys on Marine Life.
14 Prepared for the Okeanos Foundation. August 2012. Available:
15 https://www.cbd.int/doc/meetings/mar/mcbem-2014-01/other/mcbem-2014-01-
16 11submission-seismic-airgun-en.pdf.

17 Western Regional Climate Center. 2020. Eureka WFO Woodley Island, California
18 (042910). Available: https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca2910. Accessed:
19 July 14, 2020.

20 Williams, R., A.J. Wright, E. Ashe, L.K. Blight, R. Bruintjes, R. Canessa, C.W. Clark,
21 S. Cullis-Suzuki, D.T. Dakin, C. Erbe, P.S. Hammond, N.D. Merchant, P.D. O'Hara,
22 J. Purser, A.N. Radford, S.D. Simpson, L. Thomas, and M.A. Wale. 2015. Impacts
23 of Anthropogenic Noise on Marine Life: Publication Patterns, New Discoveries, and
24 Future Directions in Research and Management. *Ocean and Coastal Management*
25 115:17–24.

26 Wood, M.P. and L. Carter. 2009. Whale Entanglements with Submarine
27 Telecommunication Cables. *IEEE Journal of Oceanic Engineering* 33(4): 445–450.

28 Wiyot Tribe. 2020. History. Available:
29 https://www.wiyot.us/148/Cultural#:~:text=In%20the%20early%201900s%2C%20a,
30 as%20the%20%22Old%20Reservation.%22. Accessed: October 28, 2020.

Xerces Society, Defenders of Wildlife, and Center for Food Safety. 2018. A Petition to the State of California Fish and Game Commission to List the Crotch Bumble Bee (*Bombus crotchii*), Franklin's Bumble Bee (*Bombus franklini*), Suckley Cuckoo Bumble Bee (*Bombus suckleyi)*, and Western Bumble Bee (*Bombus occidentalis occidentalis*) as Endangered under the California Endangered Species Act.

6.3.1 Personal Communications

Brungardt, Chris. Senior Vice President, RTI Infrastructure. June 7, 2019—email message to Laura Yoon of ICF regarding marine vessel operations.

Central California Joint Cable Fisheries/Fisheries Liaison Committee. Telephone conversation between spokesperson for the committee and Jay Johnson, Applied Marine Sciences. September 24, 2020.

Oregon Fishermen's Cable Committee. Telephone conversations between spokesperson for the committee and Jay Johnson, Applied Marine Sciences. September 24 and 28, 2020.

South Bay Cable/Fisheries Liaison Committee, Inc (SBCFLC). Telephone conversation between spokesperson for the committee and Jay Johnson, Applied Marine Sciences. September 23, 2020.