
Draft Initial Study

Initial Study and Mitigated Negative Declaration

for the

Fisherman's Channel Dredging and Beneficial Reuse Pilot Project

Submitted to
Humboldt Bay Harbor, Recreation and Conservation District

Prepared for
Pacific Gas and Electric Company

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Acronyms and Abbreviations

°C	degrees Celsius
°F	degrees Fahrenheit
AB	Assembly Bill
ac	acre
AE	Agriculture Exclusive
BMP	best management practice
CAAQS	California Ambient Air Quality Standards
CARB	California Air Resources Board
CCA	California Coastal Act
CCC	California Coastal Commission
CDFW	California Department of Fish and Wildlife
CDP	Coastal Development Permit
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CO	carbon monoxide
CO ₂	carbon dioxide
CO ₂ e	carbon dioxide equivalent
COC	constituents of concern
CR	Commercial Recreation
CRPR	California Rare Plant Rank
DPS	Distinct Population Segment
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
ESU	Evolutionary Significant Unit
ft	feet
FSC	Federal species of concern
FT	Federally threatened
fps	feet per second
GHG	greenhouse gas
Harbor District	Humboldt Bay Harbor, Recreation, and Conservation District
HBHRCD	Humboldt Bay Harbor, Recreation, and Conservation District
HBGS	Humboldt Bay Generating Station
HBPP	Humboldt Bay Power Plant
NBNWR	Humboldt Bay National Wildlife Refuge
ISFSI	Independent Spent Fuel Storage Installation

ISM	Incremental Sampling Methodology
m	meters
MCL	Maximum Contaminant Levels
mi	miles
MLLW	mean lower low water
MND	Mitigated Negative Declaration
NAAQS	National Ambient Air Quality Standards
NCRA	North Coast Rail Authority
NCUAQMD	North Coast Unified Air Quality Management District
NCRWQCB	North Coast Regional Water Quality Control Board
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
PAH	polycyclic aromatic hydrocarbons
NO ₂	nitrogen dioxide
PG&E	Pacific Gas and Electric Company
PM ₁₀	particulate matter with aerodynamic diameter less than or equal to 10 microns
PM _{2.5}	particulate matter with aerodynamic diameter less than or equal to 2.5 microns
ppm	parts per million
Refuge	Humboldt Bay National Wildlife Refuge
RSL	Response Screening Level
RWQCB	Regional Water Quality Control Board
SAP	Sampling and Analysis Plan
SE	State Endangered
SO ₂	sulfur dioxide
SQIRTs	Screening Quick Reference Tables
SSC	Species of Special Concern
ST	State Threatened
SWPPP	stormwater pollution prevention plan
TAC	toxic air contaminants
THPO	Tribal Historic Preservation Officer
US 101	U.S. Highway 101
USACE	U.S. Army Corps of Engineers
USEPA	United States Environmental Protection Agency
USFWS	US Fish and Wildlife Service
USGS	U.S. Geological Survey
WSTWRP	White Slough Tidal Wetlands Restoration Project
yd ³	cubic yard

Project Information

1. Project Title:

Fisherman's Channel Dredging and Beneficial Reuse Pilot Project

2. Lead Agency Name and Address:

Humboldt Bay Harbor, Recreation and Conservation District (Harbor District)
601 Startare Drive
Eureka, CA 95502-1030
707-443-0801

Contact Person and Phone Number:

Adam Wagschal, Deputy Director, Harbor District
(707) 443-0801

3. Project Location:

The Fisherman's Channel dredging site is approximately 2.5 miles southwest of Eureka, California (see Figures 1-1 and 1-2 [figures appear at the end of the section in which they are first referenced]). The Fisherman's Channel is owned by the Harbor District. The project area is located in Sections 7, 8, 17 and 18 of Township 4 North, Range 1 West, of the Fields Landing, California, U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle.

The White Slough beneficial reuse site (Figure 1-3) is located on the Humboldt Bay National Wildlife Refuge approximately 5 miles south of Eureka in Section 29 of Township 4 North, Range 1 West, of the Fields Landing quadrangle.

The Fields Landing eelgrass mitigation site (Figure 1-3) is located in Fields Landing California in Section 19 of Township 4 North, Range 1 West, of the Fields Landing, California, USGS quadrangle.

4. General Plan Designation:

The General Plan designation for the Fisherman's Channel dredging site is Resource Dependent / Industrial Coastal Dependent (MR/MC).

The General Plan designation for the White Slough beneficial reuse site is Agriculture Exclusive (AE).

The General Plan designations for the dredge slurry pipeline alignment, which will extend from Fisherman's Channel to White Slough, are Resource Dependent/Commercial Recreation (MR/CR), Natural Resources (NR), Industrial / Coastal Dependent (MC), and (Railroad).

The General Plan designations for the Fields Landing eelgrass mitigation site are Industrial/Coastal Dependent (MC) and Natural Resources (NR).

5. Zoning:

The zoning districts for the Fisherman's Channel dredging site are Commercial Recreation (CR) with Coastal Resource Dependent (C), Flood Hazard (F), and Coastal Wetland (W) combining districts.

The zoning districts for the White Slough beneficial reuse site are Agriculture Exclusive, minimum lot size 60 acres (AE/60) with Coastal Wetland (W), Design Review (D), Flood Hazard (F), Streams and Riparian Corridor Protection (R), and Transitional Agricultural Lands (T) combining districts.

The zoning districts for the dredge slurry pipeline alignment are Commercial Recreation (CR) with Coastal Resource Dependent (C), Coastal Wetlands (W) and Flood Hazard Areas (F) combining districts, Natural Resources (NR) with Coastal Wetlands (W) combining district, Industrial Coastal Dependent (MC), Industrial Coastal Dependent (MC) with Natural Resource (NR) and Coastal Wetland (W) combining districts, (Railroad), and Agriculture Exclusive, minimum lot size 60 acres (AE/60) with Coastal Wetland (W), Design Review (D), Flood Hazard (F), Streams and Riparian Corridor Protection (R), and Transitional Agricultural Lands (T) combining districts.

The zoning districts for the Fields Landing eelgrass mitigation site are Industrial Coastal Dependent (MC) and Industrial Coastal Dependent (MC) with Natural Resource (NR) and Coastal Wetland (W) combining districts.

6. Description of Project:

Currently, Fisherman's Channel is inaccessible to larger vessels at a lower low tide due to a bar that has formed at the channel entrance. Dredging the mouth of Fisherman's Channel and the main channel are proposed to take place as one project to facilitate improved navigation in the channel and beneficial reuse of dredged sediment at the White Slough receiving site. This project involves four components:

- Dredging of the Fisherman's Channel.
- Transfer of dredge sediment through a pipeline to the White Slough Unit of the Humboldt Bay National Wildlife Refuge (Refuge).
- Placement and dewatering of the dredge material at the White Slough Unit. The Refuge White Slough Tidal Wetlands Restoration Project is fully permitted, including the deposition of sediments for beneficial reuse. Once the sediments are placed at White Slough and dewatered, the Refuge will determine and implement their disposition for ecosystem restoration.
- Eelgrass habitat restoration mitigation program at Fields Landing that involves removal of abandoned pier pilings and gravels to create suitable habitat conditions for eelgrass colonization.

For a detailed project description, see Section 2, Project Description and Appendix A, Site Plans.

7. Surrounding Land Uses and Setting:

The dredge pipeline passes through industrial land and along a railroad line surrounded by wetlands.

The White Slough beneficial reuse area is located within the Refuge. Humboldt Bay is located to the north and west. Marshlands of the Refuge are located to the south and U.S. Highway 101 and upland areas beyond are to the east.

The Fields Landing restoration project is adjacent to a property owned by the Harbor District, which consists of a boat yard and open space.

8. Other Public Agencies Whose Approval Is Required (for example, permits, financing approval, or participation agreement):

Participating agencies and their required authorizations will include the following:

TABLE 1-1

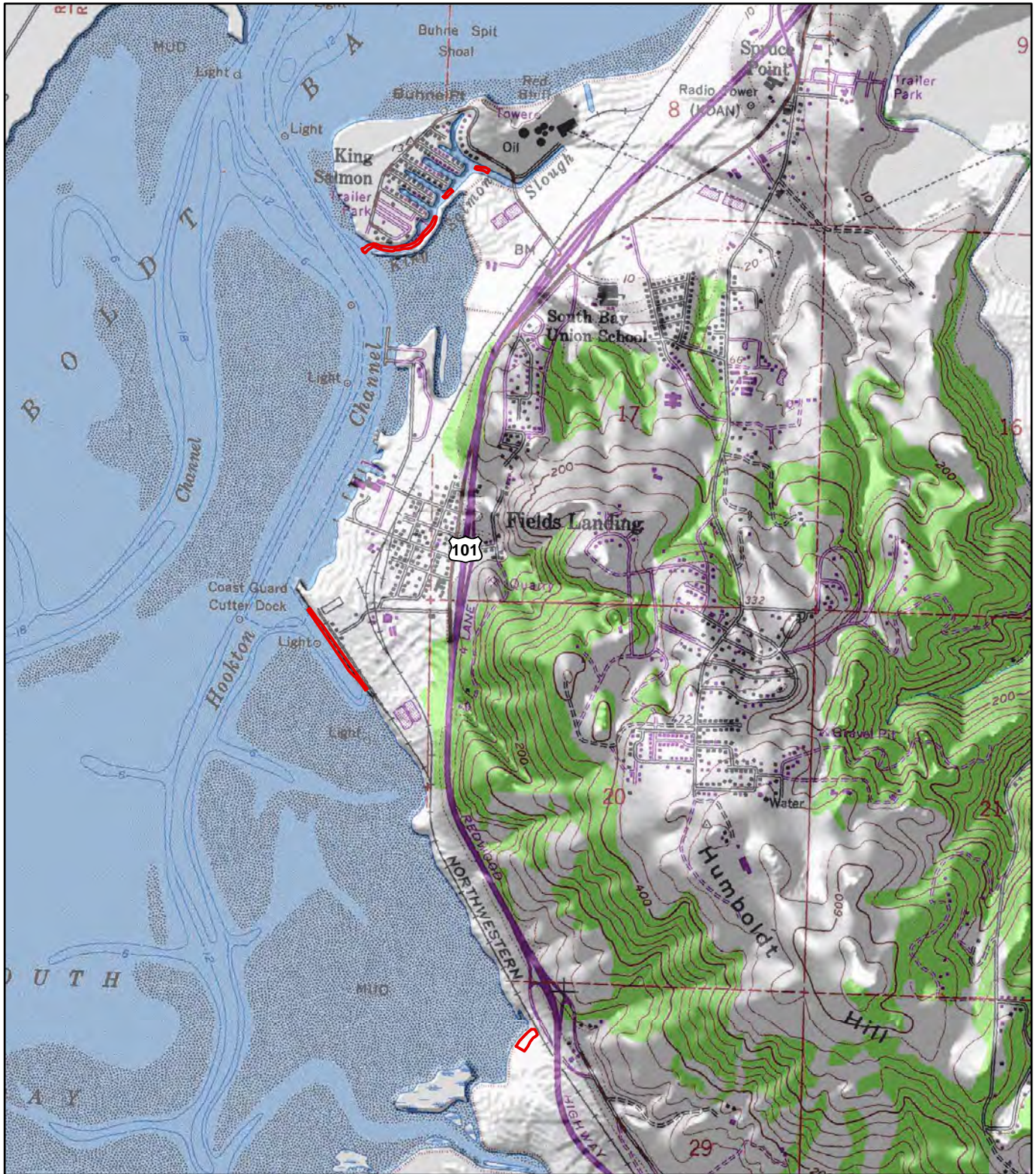
Summary of Anticipated Approvals and Permits

Agency	Permit/Approval	Notes
Humboldt Bay Harbor, Recreation, and Conservation District (Harbor District)	Harbor District Permit	Lead agency for California Environmental Quality Act compliance.

TABLE 1-1
Summary of Anticipated Approvals and Permits

Agency	Permit/Approval	Notes
California Coastal Commission (CCC)	Coastal Development Permit	CCC serves as the primary state-level permitting agency in the Coastal Zone within Retained Jurisdiction Areas.
U.S. Army Corps of Engineers (USACE)	Rivers and Harbors Act Section 10 Dredging permit	Dredging in Waters of the US*
North Coastal Regional Water Quality Control Board	Section 401 Water Quality Certification, construction storm water permit	Required for wastewater discharges to surface water or land.
National Marine Fisheries Service (NMFS)	Endangered Species Act Incidental Take Authorization	USACE will consult with this agency to determine whether or not a permit to 'take' listed anadromous or marine species is needed
NMFS	Essential Fish Habitat Assessment	USACE will consult with this agency to determine whether or not the project will adversely affect Essential Fish Habitat
U.S. Fish and Wildlife Service (USFWS)	Endangered Species Act Incidental Take Authorization	USACE will consult with this agency to determine whether or not a permit to 'take' the endangered tidewater goby is needed.
California Department of Fish and Wildlife (CDFW)	California Endangered Species Act Incidental Take Permit	For potential incidental take of longfin smelt (<i>Spirinchus thaleichthys</i>)
Humboldt County Building Department	Conditional Use Permit and Coastal Development permit under the Local Coastal Plan (cooperative permit with CCC in their retained jurisdiction)	To install slurry pipeline in the AE or NR zoning district.
Humboldt Bay National Wildlife Refuge (Refuge)	Memorandum of Agreement	Agreement between the USFWS and Harbor District for cooperative beneficial reuse of sediments at the White Slough Unit
North Coast Rail Authority (NCRA)	Encroachment permit	Access to railroad right-of-way for slurry pipeline route.

*Note: Deposition of dredged sediments at the Refuge is covered by the Refuge's Clean Water Act Section 404 permit for the Refuge's White Slough Tidal Wetlands Restoration Project.



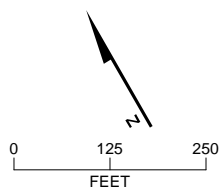
LEGEND
 PROJECT AREA



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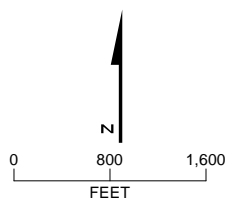
**FIGURE 1-1
 Location Map**

*Fisherman's Channel Dredging and
 Beneficial Reuse Pilot Project
 Humboldt Bay Harbor, Recreation and
 Conservation District, Eureka, California*



LEGEND
Fisherman's Channel Dredge Area
 -6 MLLW Dredge Area
 -8 MLLW Dredge Area

FIGURE 1-2
Fisherman's Channel Dredge Site
 Fisherman's Channel Dredging and
 Beneficial Reuse Pilot Project
 Humboldt Bay Harbor, Recreation and
 Conservation District, Eureka, California



LEGEND

PROJECT AREA

SLURRY PIPELINE ROUTE

FIGURE 1-3
Slurry Pipeline Route to White Slough
 Fisherman's Channel Dredging and
 Beneficial Reuse Pilot Project
 Humboldt Bay Harbor, Recreation and
 Conservation District, Eureka, California

Project Description

Maintenance dredging in Humboldt Bay is vital to maintaining safe and navigable access. The Harbor District participates in dredging outside of the federally dredged channels within the Bay. The Harbor District manages several Humboldt Bay channels that connect communities, support commercial fishing, enhance recreational access, and provide access to docks.

The Harbor District is the proponent for the proposed Fisherman's Channel Dredging and Beneficial Reuse Pilot Project in Humboldt Bay, California. Fisherman's Channel is located in King Salmon, California, approximately three miles south of the City of Eureka along Humboldt Bay (Figure 1-1). Fisherman's Channel is currently inaccessible to larger vessels at lower low tide due to a sandbar that has formed at the channel entrance. The areas to be dredged are shown in Figure 1-2.

Dredging the mouth and main channel of Fisherman's Channel will facilitate improved navigation in the channel and beneficial reuse of dredged sediment at the Refuge White Slough Unit receiving site. The sediment is needed at the White Slough site to restore historic elevations that supported tidal salt marsh habitat and will be conveyed to White Slough via a temporary slurry pipeline connecting Fisherman's Channel with White Slough that runs mostly along roadways and an abandoned railroad line.

The project also includes, as a mitigation measure for the dredging project's effects on eelgrass habitat, an eelgrass restoration component. New eelgrass habitat will be created by removal of dilapidated former pier pilings and cobbles and gravel substrate near the Harbor District's Fields Landing Boat Yard.

Dredging activities for the King Salmon residential canals that connect with the Fisherman's Channel are not part of this project because the feasibility, funding, and timeline for dredging the residential canals are unknown at this time.

2.1 Project Purpose and Scope

This project is configured as a pilot project for future dredging and beneficial reuse projects in Humboldt Bay. It provides an opportunity to use the Harbor District's recently acquired and retrofitted dredge to remove accumulated sediments from Fishermen's Channel and beneficially reuse the sediments for salt marsh restoration at the Refuge. Lessons learned from completion of this project will inform future dredging and beneficial reuse projects within Humboldt Bay.

2.1.1 Project Objectives

Project objectives:

- Dredge the Fisherman's Channel to restore safe and consistent boat navigation at all tidal heights
- Provide dredged material to the White Sough Unit of the Refuge for beneficial reuse by the USFWS for salt marsh restoration
- Carryout a pilot project for future dredging operations to provide regulatory agencies with information that will facilitate future dredge and beneficial reuse design, permitting, and implementation elsewhere in Humboldt Bay
- Conduct water quality monitoring that will guide future dredging operations elsewhere within Humboldt Bay
- Implement and monitor success of eelgrass (*Zostera marina*) and longfin smelt (*Spirinchus thaleichthys*) habitat restoration that will serve as mitigation for potential project impacts

- Establish an acceptable standard protocol for sediment sampling methods and analysis for future dredging to focus on Constituents of Concern (COC) and possibly reduce redundancy in sampling suites
- Provide Harbor District staff with dredging and beneficial reuse experience particularly to address boat navigation, habitat restoration and sea level rise issues within Humboldt Bay
- Inform a Humboldt Bay Sediment Master Plan

2.1.2 Background

Fisherman's Channel and the King Salmon Residential Canals were created in 1947 by dredging in an existing sand spit extending south of Buhne Hill. In 1952, PG&E purchased the property that is now the Humboldt Bay Power Plant (HBPP) and constructed a cooling water intake canal as an extension of the Fisherman's Channel. PG&E also took ownership of the Fisherman's Channel at that time.

The Fisherman's Channel was historically maintained by PG&E through routine maintenance dredging. The last maintenance dredging was done in 1982, removing 21,000 cubic yards of sediment. The intake canal is no longer used by PG&E since the HBPP ceased operations in 2010. The new Humboldt Bay Generating Station (HBGS), which replaced HBPP's electrical generation, does not require water from the intake canal for cooling. Since the last dredging event, sediment has accumulated in Fisherman's Channel, hindering navigation.

2.2 Project Elements

This project involves four major components, which are discussed in turn below:

- Dredging of the Fisherman's Channel
- Transfer of dredge sediment through a slurry pipeline to the White Slough Unit of the Refuge for beneficial reuse
- Placement and dewatering of the dredge material at White Slough
- Eelgrass habitat restoration mitigation program at Fields Landing involving removal of dilapidated former pier pilings and cobbles and gravels to create suitable habitat for eelgrass colonization, and shoreline stabilization after piling and cobble removal

2.2.1 Fisherman's Channel Dredging

This section describes the Fisherman's Channel Dredging site, discusses a sampling and analysis program carried out to determine the suitability of the dredged materials for beneficial reuse at White Slough, and the dredging equipment and process.

2.2.1.1 Fisherman's Channel Dredging Site

Fisherman's Channel is located in King Salmon, California, approximately 2.5 miles south of the City of Eureka along Humboldt Bay (Figure 1-1). Access from the residential docks in King Salmon to Humboldt Bay is by way of Fisherman's Channel. It is approximately 2,625 feet from the Fisherman's Channel entrance to the eastern King Salmon Avenue Bridge where the channel transitions to the intake canal leading to the former HBPP. Side canals extend from the northwest side of the main channel to allow access to resident's docks and properties. Fisherman's Channel and the residential canals are subject to the tides. The community of King Salmon, for the most part defined by the residential canals, supports a mixture of residential, light commercial, and industrial development.

The Fisherman's Channel entrance is adjacent to Fields Landing Channel in Humboldt Bay. The entrance is protected by a rock breakwater to the north and a wooden breakwater to the south. Missing, damaged and deteriorated materials on the wooden breakwater were recently repaired/replaced by the Harbor District.

The *Gill's by the Bay* restaurant dock facility is located inside the northern bank of the channel entrance. There are numerous private dock facilities along the northwestern bank of the channel (Figure 2-1). The southeastern bank is a narrow vegetated levee/breakwater. The main channel provides access to the residential canals.

The residential canals are lined with private dock facilities and surrounded by houses. The residential canals may be dredged as a separate future project whereby the King Salmon community may be the project proponent. Schedule, funding for implementation, and design details are unknown at this time and, therefore, it is not part of the proposed project.

2.2.1.2 Sampling and Analysis for Beneficial Reuse

In preparation for planned maintenance dredging of Fisherman's Channel, the sediment proposed for dredging was sampled and analytically tested, according to a final approved *Workplan for Sediment Sampling and Analysis (SAP) Prior to Dredging* (GHD 2012). The purpose of the sampling was to determine whether contaminants are present in the material to be dredged, in order to determine compatibility with the proposed White Slough receiving site.

The sampling and analysis methods originally proposed and submitted for regulatory agency approval are detailed in the 2012 Workplan. The sediment sampling results were summarized and discussed in the *Report of Findings Sediment Sampling and Analysis Fisherman's Channel* (GHD 2013). Additional sediment sampling and analysis was performed between September 21 and September 28, 2015 to implement the Incremental Sampling Methodology (ISM), at the request of the NCRWQCB.

Sediment quality/composition results from the Fisherman's Channel were compared to baseline conditions documented utilizing ISM at the Refuge White Slough receiving site. Per consultation with the NCRWQCB, a *Workplan for Fisherman's Channel Dredge Sediment Sampling for Beneficial Reuse* was prepared (GHD 2015). Sampling was conducted as follows:

Thirty (30) soil samples from the dredge area with three replicates per the ISM protocol, analyzed for total constituents listed in the Workplan. (A subsample of sediment collected from ISM was submitted for benthic testing lab analysis).

Sampling Results

The Report of Findings of the 2015 Workplan presents laboratory results and statistical analysis of the ISM sampling program. Soil sediment results were compared to White Slough ISM baseline conditions as well as to United States Environmental Protection Agency (USEPA) Maximum Contaminant Levels (MCLs), or residential Regional Screening Levels (RSLs). Results were compared to National Oceanic and Atmospheric Administration (NOAA) Screening Quick Reference Tables (SQiRTs) for marine sediments to document evaluation of potential risks from contaminated sediment and provide a basis for determining the need to also conduct benthic organism testing.

The 2015 Report of Findings concludes that the proposed Fisherman's Channel dredge sediments are suitable for beneficial reuse at the White Slough restoration area. This finding is based on statistical comparison of Fisherman's Channel ISM sediment sampling results with White Slough baseline concentrations and benthic acute toxicity testing. A summary of sediment characterization, based on the ISM sampling follows; and is discussed in detail in the Report of Findings.

- Benthic analysis indicates that the Fisherman's Channel sediment samples are not acutely toxic to amphipods or polychaetes.
- Laboratory analysis of ISM samples indicates that the following constituent concentrations either are above the USEPA Residential RSLs: arsenic, cobalt, vanadium and that the following have the potential to be above RSLs (where laboratory reporting limits were not achievable to match the respective RSLs):

- Toxaphene samples were non-detect. Laboratory detection limit was 0.66 milligram per kilogram (mg/kg) which is above the residential RSL of 0.49 mg/kg.
- Benzo(a)pyrene and dibenz(a,h)anthracene samples were non-detect. Laboratory detection limits of 0.058 mg/kg and 0.061 mg/kg were above the residential RSLs of 0.0016 mg/kg for benzo(a)pyrene and 0.016 mg/kg for dibenz(a,h)anthracene.
- PCB-1221, PCB-1232, PCB-1242, PCB-1248, PCB-1254, and PCB-1260 samples were non-detect. Laboratory detection limits of 0.32 mg/kg and 0.33 mg/kg were above the residential RSLs for PCBs which range from 0.12 mg/kg (PCB-1254) to 0.23 mg/kg (PCB-1242 and PCB-1248).
- Of the above constituents, the value for Benzo(a)pyrene exceeds the White Slough baseline; however, benthic analysis confirmed that this constituent does not pose acute toxicity to benthic organisms.
- Leachability analysis for metals and polyaromatic hydrocarbons (PAHs) indicates concentrations below the NCRWQCB Water Quality Objectives (WQOs) for Bays and Estuaries with the following exceptions:
 - Arsenic (FC-Replicates 1, 2, and 3)
 - PAHs- benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k) fluoranthene, chrysene, and dibenz(a,h)anthracene
- Due to the low potential human exposure to soil or sediment containing dioxins, PAHs, PCBs, arsenic, cobalt, and vanadium from the reuse of Fisherman's Channel sediments for wetland restoration at White Slough, inhalation, ingestion, and direct contact exposure to recreational users is not likely.
- Constituent concentrations that exceeded the Residential RSLs for the 2015 Fisherman's Channel ISM samples were similar to those reported for the 2013 samples collected from the channel.
- Statistical analysis of White Slough and Fisherman's Channel concentrations identified one constituent (cobalt) where Fisherman's Channel concentrations were higher than White Slough concentrations, and the 95UCL results indicated that the Fisherman's Channel data were above the applicable water quality standard. In each of the other constituents, concentrations reported in White Slough replicates were either higher than, or no different from, those observed in Fisherman's Channel replicates, or were below the water quality standards considered. The Fisherman's Channel value of 11 parts per million (ppm) for cobalt is slightly higher than the values ranging between 7.8 ppm and 8.6 ppm reported for White Slough.

Suitability for Beneficial Reuse

On December 2, 2015, NCRWQCB Staff conveyed that from their regulatory perspective, the sediment characterized is suitable for beneficial reuse at the White Slough Unit at the Refuge on Humboldt Bay. This finding was based on the NCRWCB's review of the ISM Report of Findings for Fisherman's Channel sediment sampling and analysis results. Specifically, NCRWQCB Staff (e-mail from Gil Falcone) indicated:

In accordance with Attachment 1 of the Humboldt Bay National Wildlife Refuge – White Slough Restoration Project 401 Water Quality Certification, our analysis of the Report of Findings identified constituent levels that are slightly elevated higher than the baseline of ISM sampled soils at White slough include: Metals (Barium, Cadmium and Cobalt), PCP, and a number of PAHs. All of the elevated constituents were additionally analyzed to ascertain what, if any soluble concentrations might leach out of the sediment if placed at White Slough and potentially impact Bay and Estuary Waters. Analysis of the results of the Di-WET test for these constituents show that none are expected to be elevated above Water Quality Objectives for Bays and Estuaries. Though Dioxin levels of some congeners within the sediments found at Fisherman's' Channel were slightly different populations than those at White Slough, of critical interest 2,3,7,8 TCDD TEQ was nearly identical at both sites and not likely mobile. Further, the sediment exposure toxicity test results showed no significant acute toxicity to benthic marine organisms representative of sensitive ecological receptor

species for what will become salt marsh habitat. This satisfies an important narrative Water Quality Objective to maintain water free of toxic substances in concentrations that are toxic to human, plant, animal or aquatic life.

The White Slough receiving site will become primarily waters of the US, so in this situation it is of most importance to the Regional Water Board to look at these results with respect to White Slough receiving site constituent levels, Bay and Estuary Water Quality Objectives, constituent mobility and toxicity rather than RSLs.

2.2.1.3 Dredging Process

Hydraulic dredging is the most appropriate method for the Fisherman's Channel sediment removal, based upon site-specific characteristics that include substrate type, water quality, site bathymetry, tidal influences, dredging depth, desired dredging rate (i.e., cubic yards per hour), disposal method, disposal site location, and levels of COC.

The project dredging plan is to remove two sediment shoals—one located just outside and one located just inside the mouth of Fisherman's Channel—and additional areas within the main channel. The two shoals at the entrance are proposed to be dredged to -8 feet MLLW because sediments have accumulated at that location more rapidly than in other areas of Fisherman's Channel. The main channel dredge depth will be to the slightly higher depth of -6 feet MLLW, which will minimize impacts to eelgrass, provide bottom depths conducive to recolonization by eelgrass, and reduce dredge sediment volume while providing an adequate depth for boat movement. Eelgrass impacts and mitigation are summarized below and discussed in detail in Appendix B, the Eelgrass Mitigation Plan. Based on survey data from 2012 and accounting for additional material that has accumulated in the channel since then, it is anticipated that a total of approximately 4,150 cubic yards of sediment will be removed from Fisherman's Channel.

The Harbor District's hydraulic dredge *Nehalem* (Figure 2-2) uses a cutter head attached to a 12-inch hydraulic pipeline. A cutter head is a mechanical device that has rotating blades or teeth to break up or loosen the bottom material so that it can be suctioned through the dredge. Cutter head-pipeline dredges work best in areas where the cutter head is buried in the sediment. The dredge has onboard pumps that suction material through the intake pipe, and push it out to the discharge pipeline. Because cutter head-pipeline dredges pump directly to pipeline, they can operate continuously and more efficiently than other types of dredges and can complete the dredging operation in a shorter period of time. This minimizes disruption to the marine environment.

The Harbor District dredge, its support boat, *Barfly*, and sediment transport pipes, will be moved into position from their location at the Fields Landing Boat Yard. The dredge will be anchored near the channel entrance, where the cutter head will be lowered into position for dredging. The dredge will move along the length of the channel to complete the main channel dredging.

2.2.2 Dredge Slurry Pipeline

Sediment from the dredging of Fisherman's Channel will be pumped through a pipe that will transport the sediment slurry approximately 2.3 miles to the White Slough North Basin beneficial reuse area, partly along an abandoned railroad right-of-way (Figures 1-3 and 2-3). Dredged material will be transported from the *Nehalem* through a 12-inch-diameter pipe made of durable plastic material (styrene-rubber 17). The pipe will be floated above the water surface for approximately 0.2 miles (the floats are 2'x 4'x 8' plywood boxes with Styrofoam interiors). Approximately 10 floats will be attached to the pipeline and anchored in the bay using five 11"x 24"x 40" anchors (two floats per anchor). The pipeline will come onto land over an existing dock and then extend 0.75 miles along the side of an existing private roadway and cross Railroad Avenue before reaching the Fields Landing Boat Yard. At the Boat Yard, a 12-inch Thomas Simplicity booster pump will be placed in the line. From the Boat Yard, the pipe will extend another 0.5 miles along an old roadway

on Harbor District property and then 0.7 miles along an abandoned railroad track (Figure 2-3) to the White Slough receiving site. Some removal of vegetation along the railroad right-of-way will be necessary to allow pipeline passage.

A 5-foot buffer on either side of the pipeline will be subject to vegetation control as needed to provide access for installation and maintenance during dredging activities. Placement of the pipe will involve fusing two to three 40-foot pipe sections together, placing them along the alignment, and clamping these longer pipeline sections together. Workers will use trucks, a bobcat and necessary fusing equipment to install and connect the pipeline from the dredge to the receiving site. A winch may be used to pull the pipeline into place where access is limited due to dense vegetation. A portion of the receiving cell will be designated for equipment staging at White Slough. Mobilization will take approximately seven to ten days.

2.2.3 White Slough Beneficial Reuse Site

Dredged materials from Fisherman's Channel will be placed for beneficial reuse in the White Slough Unit, which is located in the south-eastern region of Humboldt Bay within the Refuge. The dredged material will be used as part of the White Slough Tidal Wetlands Restoration Project (WSTWRP), which will restore tidal salt marsh in an area that consists of diked former salt marsh. These diked baylands have compacted by as much as three feet due to the oxidation of organics from the former salt marsh soil during a former period of dewatering and agricultural use. The restoration plan involves the placement by the Refuge of fill to raise the elevation of the diked wetlands by more than three feet, and then re-establishing full tidal inundation to enable the passive re-establishment of salt marsh vegetation. Tidal channels will also be maintained or created within the restoration area to restore tidal flow. The WSTWRP specifically identifies dredged materials as one of several fill material sources that are appropriate for use in the restoration of salt marsh, as long as contaminate levels meet the standards set by the NCRWQCB for White Slough. As described above, Fisherman's Channel sediments have been sampled and analyzed per NCRWQCB protocols and found to meet the criteria for reuse at White Slough. The WSTWRP is a project of the USFWS Refuge and the restoration activities, including the addition of fill from external projects such as the Fisherman's Channel Dredging Project, have been authorized in the USFWS permits for the project.

The White Slough Unit is composed of three sub-units. The proposed use of Fisherman's Channel dredged materials will take place in the western sub-unit, the site of the tidal wetlands restoration project. This sub-unit has been physically sub-divided into three basins, and the Refuge will place the Fisherman's Channel dredged materials in the North Basin. The North Basin is approximately 8.4 acres in size and is adjacent to Humboldt Bay (Figure 2-4). An actively eroding earthen dike that ranges in elevation from 8.0 to 9.5 feet separates the North Basin from the Bay. As illustrated in Figure 2-5, the White Slough Unit is in need of sediments to raise the elevation of the area to protect tidal wetlands from levee failure and future sea level rise. The dredging and beneficial reuse project will help to meet this objective.

The Refuge has constructed a "tidal ridge" inland from the diked shoreline to ensure that, should the perimeter dike breach, the remainder of the Basin will not be prematurely tidally inundated. It ranges in elevation from 8 to 9 feet and is currently being used for vehicular access. A naturally occurring upland area forms the northeastern boundary of the North Basin. The North Basin has the remnants of an in-board ditch and former slough channel that drain the Basin to the south. A tide gate drains the Basin to the Bay.

The restoration plan for the North Basin will involve placing fill to design elevations to support salt marsh vegetation while retaining existing drainage channels, reducing the elevation of the perimeter dike to 8 feet, removing the tide gate, and breaching the dike to restore full tidal flow to the Basin (see Appendix A for engineering drawings of the beneficial reuse/restoration area). The Basin will contain both salt marsh habitat and an inter-tidal channel network. The restoration of salt marsh habitat will provide benefits for fish and wildlife, flood protection, and shoreline protection for U.S. Highway 101, as well as allowing for increased carbon sequestration in restored salt marshes. Placement of the dredged material in the north

Basin as a sub-layer that will be covered by other imported soils will help facilitate meeting one of the Project's objectives.

The area in the North Basin that will be used to deposit sediment is approximately 2.5 acres. Daily dredging operations will produce approximately 1,400 cubic yards of slurry sediment material per hour. At 6 hours of operation per day, 8,400 cubic yards of sediment slurry will be transported to White Slough per day, which will result in 840 cubic yards of dredged sediment per day. At this discharge rate the depth of the slurry could reach 2.1 feet.

When dredged material is initially placed in the North Basin, it will occupy approximately 2.5 acre-feet because of the high water content. The settling process will occur over time by percolation and evaporation, with the sediment eventually consolidating as it dries. The dredged sediment containment area will be sized so as to contain both the original volume of sediment to be dredged and water transported during dredging and placement. The size of the containment will be sufficient to cause the sediment to form a shallow sheet of dried sediment. The existing ground in the area naturally slopes to the south and water from the dredged material will flow south towards a constructed containment berm approximately 4.5 feet tall. The location and orientation of the containment berm and silt fences will avoid existing drainage channels in the North Basin.

As the slurry flows to the west and south, the partially permeable containment berm will retain sediment in suspension while allowing water to percolate through. The berm will be constructed of #3 rock (1-inch to 2.5-inches in diameter) and will be approximately 240 feet long and 4 feet in height (360 cubic yards of rock). The berm will be located to avoid existing wetted channels in the North Basin. A 25-foot section near the center of the berm will be lined with a permeable filter fabric, through which the water will pass. The remainder of the berm facing the deposition area (215 linear feet) will be lined and impermeable. Gravels in the containment berm will be beneficially reused as base layer for future sediment deposition at the Refuge after the project is complete.

A series of six wire-backed silt fences west of the berm will further filter the water before it reaches the existing drainage channels in the North Basin that drain via a tide gate to the Bay (See Appendix A). The silt fences will be of increasingly finer mesh further from the berm, and will be arrayed in a series, 15 feet apart, downslope of the berm, to gradually filter the discharge from the deposition area. The filtered slurry water will drain through vegetated areas and discharge to the Bay via a tide gate. Turbidity will be monitored periodically to ensure sufficient sediment removal. If necessary, additional silt fences will be installed.

The dredged material will be deposited in the receiving site through a grizzly screen to remove debris and refuse. The grizzly screens will be made of inclined metal bars spaced 2-3 inches apart. The slurry will pour onto the top of the rack and debris will slide down to the bottom for collection. The debris will be collected by hand and placed in a bin for proper disposal. Temporary orange construction fencing may be placed around the perimeter of the receiving site to exclude public access.

A series of pipes and couplings will be used to create a section of articulated pipe that will increase the angle of movement. The flexible couplings will allow the pipe to be relocated side to side approximately 60 degrees. The relocation of the terminal end of the pipe will be performed using an excavator or other appropriate piece of earthwork equipment. Relocation of the slurry pipe will allow dredging material to be deposited more uniformly. Any excess sediment buildup in the area of the pipe outfall will be leveled using a bulldozer or excavator. If necessary, the pipe outfall area will be dressed with rock slope protection to reduce scouring from the dredge sediments. The water and sediment slurry will be distributed evenly across the receiving site due to the high water content of the slurry mix (90:10 ratio approximately). Water placed in the North Basin will percolate into the ground, evaporate, or discharge through a 24-inch-diameter tide gate to the Bay.

Monitoring will be conducted during the dredging, transport, placement, and dewatering operations and the dredging rate adjusted, as needed, to ensure an effective rate of placement and dewatering at the reuse site. Based on preliminary filtration estimates, a majority of the water will infiltrate through the constructed berm and silt fences overnight, prior to the next day's dredging.

A Bobcat or dozer may be used to spread out material once it has dewatered a sufficient amount. Dredging the channel entrance and main channel will take approximately two weeks (14 days). The silt fences will be removed at the end of the project.

2.2.4 Eelgrass Habitat Restoration

Portions of the Fisherman's Channel have been colonized by eelgrass, which is a "Habitat Area of Particular Concern" under the Magnuson-Stevens Fishery Conservation and Management Act and a "species of special biological significance" pursuant to the California Coastal Act. Eelgrass serves as rearing habitat for estuarine species, including listed species such as longfin smelt. Dredging will disrupt eelgrass habitat and so the project's impacts to eelgrass will require mitigation.

2.2.4.1 Overview

Dredging activities for this project will result in the temporary loss of 1.2 acres of eelgrass habitat in the Fisherman's Channel. The eelgrass mitigation program described in detail in Appendix B will restore approximately 1.44 acres of eelgrass habitat at the HBHRCD's Fields Landing Boat Yard property (mitigation ratio of 1.2:1). The project's eelgrass mitigation plan involves the removal of dilapidated former pier pilings and cobble and gravel fill material at the site of an abandoned saw mill located adjacent to the HBHRCD's property in Fields Landing, about a mile south-southwest of Fisherman's Channel. With the removal of the pilings and substrate, eelgrass will naturally recolonize this area. The eelgrass mitigation program will thus increase the quality and quantity of rearing habitat for listed estuarine species, including longfin smelt. These habitat improvements will result in higher quality rearing conditions, more cover from predators, and increased survival rates over the current condition. Increased survival rates will help with the recovery of populations of this species. The increased habitat area and survival rates will fully mitigate for the very low risk of take associated with the project.

The eelgrass restoration area is the site of a former dock that was part of a saw mill located on the HBHRCD's Fields Landing property. The saw mill and the top deck of the dock have been removed, leaving the pilings in the bay and approximately 2 to 3 ft of eroded gravel/cobble fill that was deposited on top of the native clay soil layer along the shoreline. The eelgrass restoration program involves removing approximately 500 dilapidated pilings and excavating approximately 4,600 yd³ of gravel/cobble fill over a 1.44-acre area in the vicinity of the Fields Landing Boat Yard (Figure 2-6). The pilings and gravel/cobble fill on the site limit the available growing space for eelgrass and the pilings limit the amount of sunlight available to the eelgrass that is currently growing at the edge of the mitigation area. Removing the closely-spaced pilings and gravel/cobble will increase the available habitat for eelgrass and improve growing conditions for the existing eelgrass. Removing the pilings, which have likely been treated with creosote, will also remove a source of potential water quality contamination from Humboldt Bay.

2.2.4.2 Piling Removal Methods

To remove the pilings, a vibratory hammer will be mounted on a land-based crane that will operate from the shoreline, per USEPA (2007) guidelines. The operation requires using the vibratory hammer to break the skin friction bond between the piling and adjacent sediments to facilitate removal. Once the piling has been pulled out, it will be placed in a contained storage site on the Fields Landing property prior to disposal at a landfill that is licensed to handle possible creosote-contaminated waste. Piling removal will take place at low tide and a turbidity curtain will be placed outside the pilings, both of which will minimize the production and dispersal of turbid water.

If the entire piling cannot be removed with the vibratory hammer (i.e., the piling breaks off or is already broken), then it will be cut below the mud line using a pneumatic underwater chainsaw or shears. Pilings that are exposed at low tide and not within eelgrass beds may be excavated 1 to 2 ft below the sediment surface and cutoff with a hydraulic saw or shears. The pilings will be cut off at the mud line if the mud line is subtidal, to minimize disturbance of the sediment, and pilings in intertidal areas will be cut off at least one foot below the mud line where the work can be accomplished during periods of low tide.

2.2.4.3 Gravel and Cobble Substrate Removal Methods

Once the pilings are removed, an excavator will remove approximately 1,400 linear feet of cobble and gravel fill to create conditions favorable to eelgrass colonization. The excavation area is between the pilings to be removed and the shore. This area is currently covered with gravel/cobble fill that has eroded from adjacent uplands and covered the original clay and bay mud layers. This fill material was originally used to create the base for a former sawmill operation. The excavation area will be lowered in a two-step process to reach an elevation of -1.0 to 0 ft MLLW to create the conditions suitable for natural eelgrass recolonization. Excavation will occur during low tidal cycles to eliminate potential excavation-related direct impacts on coho salmon and longfin smelt.

An estimated 4,600 cubic yards of material will be removed using an excavator positioned on the top of the bank. The sediment will be placed in a truck and moved to a different part of the HBHRCD Fields Landing property for storage or some other use on the site. Potential uses may include improvements to the existing road, shoreline stabilization, and/or leveling of non-wetland areas on the property. Erosion control BMPs will be implemented to minimize movement of sediment and/or water into wetlands and waters of the state.

The excavator will then be used to remove the bay mud/clay to elevations conducive for eelgrass recolonization. Sediment removed during this step will be stockpiled on the Fields Landing site while waiting final disposition. Potential future uses may include beneficial reuse at the White Slough Unit of the Refuge. Erosion control BMPs will be installed at the site to minimize movement of sediment and/or water into wetlands and waters of the state.

2.2.4.4 Shoreline Stabilization

The shoreline in the restoration area will require stabilization following removal of the pilings, cobbles, and gravel to reduce wave-induced erosion that may otherwise increase due to lowering of the current wave slope. The following three alternatives are under consideration for shoreline stabilization. The proposed stabilization method will be chosen after additional engineering and biological analyses:

- Installation of rock riprap along the exposed shoreline
- Placement of a plastic sheet pile wall along the shoreline
- Excavation to create a new shoreline edge approximately 15 to 20 ft back from the current bank edge

2.2.5 Project Implementation

2.2.5.1 Staging, Laydown, and Storage Areas

Staging and laydown areas will be located at the Harbor District Boat Yard and vacant lot in Fields Landing, and in and adjacent to the deposition area. Actual sequencing of construction will be determined by the construction contractor and the laydown area chosen will be determined at the time of construction planning. Wetlands and native vegetation will be avoided.

2.2.5.2 Workforce

The project is expected to require a maximum of 10 people onsite daily during construction. Work shifts will generally be eight hours per day, five days per week. Nighttime activities are not planned or anticipated.

2.2.5.3 Demobilization

Demobilization and cleanup will include flushing the pipeline with clean water, collecting the floats, decoupling the pipe sections, and moving the dredge and piping back to the Fields Landing Boat Yard. Demobilization of the pipeline will take approximately seven days. The infiltration berm at the receiving site will be dismantled and the rock buried, spread out, or used onsite. Rock will not be hauled offsite.

2.2.5.4 Project Schedule

Following site preparation activities, construction is currently planned to occur between July and October of 2016. Actual construction schedules will be determined by the construction contractor at the time of construction planning and could be different. The project will begin by implementing the pier piling and gravel removal elements of the eelgrass restoration program and then proceed with dredging and beneficial reuse of dredge sediments.

2.3 Avoidance and Minimization Measures/BMPs

Environmental impact avoidance and minimization measures have been designed to limit the risk of project-related impacts:

Fisherman's Channel Dredging

- Minimize impacts on eelgrass to the extent possible by reducing the original -8 ft MLLW dredge footprint that encompassed the entire bottom of Fisherman's Channel to the current plan's -6 ft MLLW and a narrow footprint. Only the mouth of Fisherman's Channel will have a -8 ft MLLW dredge depth. That change in dredging depth and width resulted in a reduction of the direct impacts on eelgrass from 1.1 ha (2.8 ac) to 0.48 ha (1.2 ac).
- In water work is scheduled to be implemented between July 1 and October 1 when no salmonids (or other anadromous fish) are expected to be present within Fisherman's Channel, thereby avoiding impacts on these species.
- Dredge pump will be primed close to the bottom of the channel to reduce potential for longfin smelt entrainment.
- Monitoring the cutter head location so that it maintains contact with the bay floor
- No dredging will occur along the side slopes outside of the designated dredge footprint, which will facilitate the retention of eelgrass in Fisherman's Channel, which will provide a source for recolonization of the dredged area.
- During dredging, a sediment curtain and/or debris boom will be placed around the site to minimize spread of turbidity and debris.

Slurry Pipeline

- Bird nesting surveys will be conducted for any activities (i.e. vegetation removal along pipeline route) that may disturb nests during the breeding season.
- Wetlands will be identified and flagged by a qualified biologist and avoided.

White Slough Beneficial Reuse Area

- A berm and silt fences will be constructed/deployed in the White Slough beneficial reuse area to contain and filter water that will eventually be delivered to the bay during dredge spoils dewatering.
- Trash/debris contained in the dredge slurry will be screened and removed at the receiving site.

Fields Landing Eelgrass Restoration Area

- Wetlands near the pipeline route and Fields Landing eelgrass mitigation area will be identified and flagged by a qualified biologist and avoided.
- Any frogs observed on site will be captured by a qualified biological monitor and relocated into suitable wetland habitat along the east side of the Fields Landing property.
- Special-status plant species will be flagged by a qualified biological monitor for avoidance prior to the initiation of project activities in the Fields Landing area.
- Silt fences and/or straw waddles will be constructed/deployed around the sediment storage and placement locations at the Fields Landing mitigation area.
- During pile removal and excavation a sediment curtain and/or debris boom will be placed around the site to minimize spread of turbidity and debris.

General

- A biological monitor will be present during pipeline deployment and on call during dredging operations.
- Implement a hydrocarbon spill prevention and clean-up plan to minimize the potential for project-related hydrocarbon contamination of bay waters. The dredge and support facilities will contain spill kits.
- Adaptive management measures (i.e., monitoring to determine whether dredging/placement rate needs to be adjusted based on efficacy of dewatering)
- Fugitive dust control measures to prevent generation of dust (due to concentrations of metals) during drying of the sediments.
- Traffic control measures during slurry placement/dewatering.

2.4 References Cited

GHD. 2012. Workplan for Sediment Sampling and Analysis (SAP) Prior to Dredging. Prepared for Pacific Gas and Electric Company.

GHD. 2013. Report of Findings Sediment Sampling and Analysis Fisherman's Channel. Prepared for Pacific Gas and Electric Company.

GHD. 2015. Workplan for Fisherman's Channel Dredge Sediment Sampling for Beneficial Reuse. Prepared for Pacific Gas and Electric Company.

USEPA (U.S. Environmental Protection Agency). 2007. Best Management Practices for pile removal and disposal. www.nws.usace.army.mil/.../forms/...Piling_Removal_BMP's_3_01_07.pdf



Figure 2-1. Fisherman's Channel, looking southwest towards entrance



Figure 2-2. Dredge *Nehalem*

Fisherman's Channel Dredging and
Beneficial Reuse Pilot Project

ch2m.



Figure 2-3. Slurry pipeline route along railroad right-of-way



Figure 2-4. Beneficial Reuse Site, Humboldt Bay National Wildlife Refuge, White Slough Unit

Fisherman's Channel Dredging and
Beneficial Reuse Pilot Project

ch2m.



Figure 2-5. White Slough and Humboldt Bay at King Tide



Figure 2-6. Field's Landing eelgrass restoration site

Fisherman's Channel Dredging and
Beneficial Reuse Pilot Project

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SECTION 3

Statement of Findings and Determination

The Harbor District requires this Initial Study to evaluate the potential impacts of implementing the proposed project. Project-specific mitigation measures have been developed to fully mitigate potential impacts to a less than significant level. The proposed project has been designed to avoid or mitigate any potentially significant environmental effects identified; therefore, the preparation of an environmental impact report is not required.

In light of the whole record, there is no substantial evidence that the proposed project would have a significant effect on the environment. If substantial changes alter the character or impacts of the proposed project, an additional environmental impact determination would be necessary. The proposed project will include measures to mitigate impacts on the Biological Resources to a less than significant level.

Pursuant to Section 21082.1 of the California Environmental Quality Act (CEQA), the Harbor District has independently reviewed and analyzed the Initial Study (IS) and Mitigated Negative Declaration (MND) for the proposed project and finds that these documents reflect the independent judgment of the Harbor District. As lead agency, the Harbor District confirms that the recommended mitigation measures detailed in these documents are feasible and would be implemented as stated in the MND.

Date of Draft Report: _____

Date of Final Report: _____

A handwritten signature in black ink that reads "George Williamson". The signature is written in a cursive style with a long horizontal stroke at the end.

Approved by Harbor District:

George Williamson, District Planner

SECTION 4

Environmental Impacts Analysis and Checklist

4.1 Environmental Factors Potentially Affected

The environmental factors checked below would be potentially affected by the proposed project, involving at least one impact that is a “Potentially Significant Impact,” as indicated by the checklist on the following pages.

- | | | |
|--|---|---|
| <input type="checkbox"/> Aesthetics | <input type="checkbox"/> Agriculture and Forestry Resources | <input type="checkbox"/> Air Quality |
| <input checked="" type="checkbox"/> Biological Resources | <input type="checkbox"/> Cultural Resources | <input type="checkbox"/> Geology and Soils |
| <input type="checkbox"/> Greenhouse Gas Emissions | <input type="checkbox"/> Hazards and Hazardous Materials | <input type="checkbox"/> Hydrology and Water Quality |
| <input type="checkbox"/> Land Use/Planning | <input type="checkbox"/> Mineral Resources | <input type="checkbox"/> Noise |
| <input type="checkbox"/> Population/Housing | <input type="checkbox"/> Public Services | <input type="checkbox"/> Recreation |
| <input type="checkbox"/> Transportation and Traffic | <input type="checkbox"/> Utilities/Service Systems | <input type="checkbox"/> Mandatory Findings of Significance |

DETERMINATION: (To be completed by the lead agency)

On the basis of this initial evaluation:

- ☐ 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 proposed 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 MIGHT have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
- ☐ I find that the proposed project MIGHT have a “Potentially Significant Impact” or “Potentially Significant Unless Mitigated” impact on the environment, but at least one effect (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and (2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

- ☐ I find that although the proposed project could have a significant effect on the environment, because potentially significant effects (1) have been analyzed adequately in an earlier ENVIRONMENTAL IMPACT REPORT or NEGATIVE DECLARATION pursuant to applicable standards, and (2) have been avoided or mitigated pursuant to that earlier ENVIRONMENTAL IMPACT REPORT or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed on the proposed project, nothing further is required.



George Williamson, District Planner

4.2 Evaluation of Environmental Impacts

1. A brief explanation is required for all answers except “No Impact” answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A “No Impact” answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (for example, the project falls outside a fault rupture zone). A “No Impact” answer should be explained where it is based on project-specific factors as well as general standards (for example, the project will not expose sensitive receptors to pollutants, according to a project-specific screening analysis).
2. Answers must take into account of the whole action involved, including offsite as well as onsite, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.
3. After the lead agency has determined that a particular physical impact might occur, then the checklist answers must indicate whether the impact is “Potentially Significant,” “Less than Significant with Mitigation,” or “Less than Significant.” “Potentially Significant Impact” is appropriate if there is substantial evidence that an effect might be significant. If there are one or more “Potentially Significant Impact” entries when the determination is made, an environmental impact report is required.
4. “Negative Declaration: Less than Significant with Mitigation Incorporated” applies where the incorporation of mitigation measures has reduced an effect from “Potentially Significant Impact” to a “Less than Significant Impact.” The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level.
5. Earlier analyses may be used where, pursuant to the tiering, program environmental impact report, or other CEQA process, an effect has been adequately analyzed in an earlier environmental impact report or negative declaration (Section 15063(c)(3)(D)). In this case, a brief discussion should identify the following:
 - a) Earlier Analysis Used. Identify and state where they are available for review.
 - b) Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards,

and state whether such effects were addressed by mitigation measures based on the earlier analysis.

- c) Mitigation Measures. For effects that are “Less than Significant with Mitigation Incorporation,” describe the mitigation measures that were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.
6. Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (for example, general plans and zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.
7. Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.
8. This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project’s environmental effects in whatever format is selected.
9. The explanation of each issue should identify the following:
 - a) The significance criteria or threshold, if any, used to evaluate each question
 - b) The mitigation measure identified, if any, to reduce the impact to less than significant

4.3 Initial Study/Environmental Impacts Checklist

I. Aesthetics				
Would the proposed project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Impact	No Impact
(a) Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(c) Substantially degrade the existing visual character or quality of the site and its surroundings?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(d) Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Discussion:

- a. Permanent project effects at the Fisherman’s Channel will be under water hence not visible. Newly deposited soil will be visible at White Slough to hikers, but will rapidly revegetate or become part of a

natural, tidal ecosystem. The dredge equipment and piping will temporarily be visible. Soil and gravel stockpiles from the Fields Landing eelgrass restoration element of the project will be visible at the Harbor District Fields Landing site, but will not block scenic views or be dominant in the viewshed. The shoreline protection system will change the appearance of the existing shoreline but not in an adverse way. These impacts are minor and not significant.

b. The proposed project site is not located adjacent to a state-designated scenic highway.

c. The proposed project will not degrade the visual quality of the Fisherman's Channel because all of the permanent effects will take place under water and will not be seen from the surface. The addition of the mixture of dredge sediments and water to the White Slough beneficial reuse area would be visible, but not out of keeping with this Bay margin, salt marsh area and, in any case, the area will be restored to a natural state, partly as a result of the project. The slurry pipeline will be visible to recreational and other viewers but this impact will be temporary and insignificant. The soil and gravel stockpiles at Fields Landing will not block scenic views or be dominant in the viewshed. Installation of the shoreline protection system will not significantly degrade the visual character of the Fields Landing Boat Yard area. This impact will not be significant.

d. Nighttime operations are not planned or anticipated. However, in the event that schedule or operational issues necessitate nighttime operations, construction lighting will be focused inward and downward to the extent allowed by NRC safety requirements and construction safety to minimize aesthetics impacts. The impact will be temporary and less than significant.

Coastal Resources Assessment:

The following section of the California Coastal Act (CCA) pertains to visual and aesthetic resources:

- **Section 30251 - Scenic and Visual Qualities.** The scenic and visual qualities of coastal areas shall be considered and protected as a resource of public importance.

The project's effects on scenic resources of the coastal zone, as discussed above, will be temporary and insignificant.

Cumulative:

No substantial cumulative impacts on aesthetics are anticipated with this project.

Mitigation:

No mitigation will be required.

II. Agriculture and Forestry Resources

Would the proposed project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Impact	No Impact
(a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to nonagricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(d) Result in the loss of forest land or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(e) Involve other changes in the existing environment which, because of their location or nature, could result in conversion of Farmland, to nonagricultural use or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion:

a, b, c, d, e. The project would not affect any farmland. The White Slough beneficial reuse area is zoned Agriculture Exclusive and was formerly farmed but is not currently farmed and is undergoing restoration to wetlands and natural habitat, which is a permitted use in this zoning district.

The area within and surrounding the proposed project does not hold any forest land (as defined by Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104 (g)).

Coastal Resources Assessment:

The project will be consistent with the provisions of the CCA having to do with preservation of agricultural land and timberland resources (CCA Sections 30421 through 30423) as it will not involve the alteration or change of use of agricultural or timber lands.

Cumulative:

No cumulative impacts on agriculture and forestry resources are anticipated with this project.

Mitigation:

No mitigation will be required.

III. Air Quality

Would the proposed project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Impact	No Impact
(a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone [O ₃] precursors)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(d) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(e) Create objectionable odors affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Discussion:

a. The proposed project would not obstruct the implementation of any applicable air quality plans. In 1995, the North Coast Unified Air Quality Management District (NCUAQMD) provided a study identifying the major contributors of PM₁₀. In this study, it was determined that diesel exhaust and wind-blown dust contributed to less than 1% of the collected air samples in Eureka, CA that exceeded the California Ambient Air Quality Standard (CAAQS). Although the project will result in a minor, short-term increase in air emissions, due to the operation of diesel motors and pumps, the resulting impacts will be less than significant and occur temporarily during the dredging, beneficial reuse, and eelgrass restoration phases of the project. Once the dredging is completed, the project will not cause additional air emissions.

b. The proposed project will not violate any air quality standard or contribute significantly to an existing or projected air quality violation.

Table 4-1 lists the attainment status for the NCUAQMD for both the National Ambient Air Quality Standards (NAAQS) and CAAQS.

TABLE 4-1
State and Federal Air Quality Designations for the Project Area

Pollutant	State Designation	Federal Designation
Ozone	Attainment	Unclassified/Attainment
CO	Attainment	Unclassified/Attainment
NO ₂	Attainment	Unclassified/Attainment
SO ₂	Attainment	Unclassified

TABLE 4-1

State and Federal Air Quality Designations for the Project Area

Pollutant	State Designation	Federal Designation
PM10	Nonattainment	Unclassified
PM2.5	Attainment	Unclassified/Attainment
Lead, Hydrogen Sulfide, and Sulfates	Attainment, Attainment, Attainment	Unclassified, No Federal Standard, No Federal Standard

Source: CARB, 2013

The potential air quality impacts associated with the proposed project will be due to construction air emissions in the form of tailpipe exhaust of the dredge and pump equipment and worker commute vehicles. These emissions will be temporary, lasting temporarily for the few weeks of the dredging, beneficial reuse, and ecosystem restoration phases of the project. The local increase in emissions resulting from the project during this time will be negligible and no significant impacts will result.

c. The proposed project will not result in a cumulatively significant net increase of PM10 under an applicable NAAQS or CAAQS during the implementation of the dredging program and there will be no air quality impacts once the dredging program is complete.

d. The proposed project will not expose sensitive receptors to significant pollutant concentrations. As previously discussed, project construction emissions will be temporary and will not expose nearby receptors to a significant amount of criteria pollutants. Exhaust emissions from equipment, such as diesel particulate matter, contain toxic air contaminants (TAC) and have potential cancer and non-cancer chronic health effects. However, given the temporary nature of construction, TAC emissions are expected to be minimal. Considering the low emissions from the project construction and the further pollutant dispersion and diversion, the proposed project will not expose sensitive receptors to substantial concentrations of TACs causing adverse health impacts. Therefore, the proposed project will have a less-than-significant impact on sensitive receptors during project implementation. No impacts are anticipated after dredging and ecosystem restoration are complete.

e. The use of diesel equipment during project implementation may generate minor odors near the equipment. Adequate dispersion of odors from construction-related activities will occur. Project operation will not emit odorous compounds. Therefore, the proposed project is unlikely to be a source of objectionable odors that would affect a substantial number of people.

Cumulative:

Given the small amount of emissions anticipated for the proposed project and that the project will only temporarily increase air emissions, the project, combined with other reasonably foreseeable projects, would not create a significant cumulative impact on air quality.

Mitigation:

No mitigation will be required.

IV. Biological Resources

Would the proposed project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporation	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 CDFW or USFWS?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(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 CDFW or USFWS?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(d) Interfere substantially with the movement of any native resident, migratory fish, or wildlife species; with established native resident or migratory wildlife corridors; or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion:

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 CDFW or USFWS?

Biological field reviews were conducted at the project site on:

- August 26 to 29, 2011 - Eelgrass survey of Fisherman's Channel and Residential fingers
- March 1, 2013 - Special-status species habitat assessment

- August 12, 2014 - Eelgrass survey of mouth of Fisherman's Channel; rare plant survey along banks of Fisherman's Channel
- January 22, 2015 - Special-status species habitat assessment
- May 21, 2015 and June 4, 2015 - Special-status plant survey at Fields Landing site

The following summarizes information developed during the field reviews and special-status plant surveys. Vegetation assessed at each project area was classified to the native alliance or group (e.g., annual grassland) according to *A Manual of California Vegetation*, second edition (Sawyer et al. 2009). These include herbaceous (e.g., *Salicornia pacifica*, *Deschampsia cespitosa*, *Eleocharis macrostachya*), shrub (e.g., *Baccharis pilularis*, *Salix hookeriana*), and forest alliances (e.g., *Picea sitchensis*) that are defined in detail in Appendix C, Biological Resources Evaluation.

Special-status Plant Species

Two special-status plants, Point Reyes bird's-beak (*Chloropyron maritimum* ssp. *palustre*) and sea-watch (*Angelica lucida*) were located during the targeted special-status surveys conducted in the Fisherman's Channel and Fields Landing survey areas. Based on botanical surveys conducted in previous years a population of Humboldt Bay owl's-clover (*Castilleja ambigua* var. *humboldtiensis*) is known to exist at the Point Reyes bird's-beak population site (V. Dains, Botanist, pers. comm., 10 October 2012).

***Chloropyron maritimum* subsp. *palustre* (Point Reyes bird's-beak).** Point Reyes bird's-beak is a hemi-parasitic annual herb in the Orobanchaceae (broomrape) family that has a California Rare Plant Rank (CRPR) of 1B.2 (i.e., plants rare, threatened, or endangered in California and elsewhere; fairly threatened in California). In California, it is limited to the north and central coast, in Humboldt, Marin, and Sonoma counties, from 0 to 33 ft elevation (Baldwin et al. 2012). Point Reyes bird's-beak occurs in coastal salt marshes and swamps and blooms from June through October (CNPS 2015). Plant associates in the survey area include *Distichlis spicata* (salt grass), *Salicornia pacifica* (Pacific pickleweed), *Cuscuta pacifica* var. *pacifica* (goldenthead dodder), and *Spartina densiflora* (dense-flowered cordgrass), a Cal-IPC listed high-alert weed (i.e., species that have severe ecological impacts on physical processes, plant and animal communities and vegetation structure; may have the potential to spread much further). Over 200 individuals were documented within the salt marsh located between King Salmon Avenue and Fisherman's Channel, adjacent to the proposed project's dredging area. The dredging and pipeline route will not extend into areas that contain this plant species. Therefore, the proposed project will have no impact on Point Reyes bird's-beak.

***Angelica lucida* (sea-watch).** Sea-watch is a native perennial herb in the Apiaceae (carrot) family that has a CRPR of 4.2 (i.e., plants of limited distribution; moderately threatened in California) (CNPS 2015). It is limited to the north coast of California in Humboldt, Mendocino, and Del Norte counties from 0 to 164 ft elevation (Baldwin et al. 2012). Sea-watch typically occurs in coastal bluff scrub, coastal dunes, coastal scrub, and coastal salt marshes and blooms from May to September (CNPS 2015). In the survey area, plants commonly associated with sea-watch include *Rubus ursinus* (California blackberry), *Baccharis pilularis* (coyote brush), *Symphyotrichum chilense* (seaside aster), *Anthoxanthum odoratum* (sweet vernal grass), *Achillea millefolium* (common yarrow), and *Juncus lescurei* (San Francisco rush). Overall, 130 individuals of sea-watch were observed in the Fields Landing and Fisherman's Channel survey areas. Approximately 20 individuals of sea-watch were documented within the upland coyote brush scrub alliance adjacent to the Fisherman's Channel dredging area. An estimated 110 individuals of sea-watch were documented south of the Fields Landing Mitigation Area, a majority of which were noted along the high tide line of Humboldt Bay (~100 individuals). An additional 10 individuals were found nearby in a gated section at the base of a levee berm. Both occurrences were located at the south end of Frontage Road. A single plant was observed along the shoreline of the eelgrass mitigation area. This plant species is located outside of the dredging footprint and will not be affected by that activity. This species will be avoided to the extent possible in the pipeline route and eelgrass mitigation area.

Special-status Fish Species

Special-status fish species with potential to occur within the project area include North American green sturgeon, Northern and Southern Distinct Population Segments [DPS]) (*Acipenser medirostris*), tidewater goby (*Eucyclogobius newberryi*), longfin smelt (*Spirnichus thaleichthys*), coastal cutthroat trout (*Oncorhynchus clarki clarki*), coho salmon (southern Oregon/northern California Evolutionary Significant Unit [ESU]) (*Oncorhynchus kisutch*), Chinook salmon (California coastal ESU) (*Oncorhynchus tshawytscha*), and steelhead (Northern California DPS) (*Oncorhynchus mykiss*).

There is high potential for northern red-legged frog (*Rana aurora*) to occur in the project area. Bird species with the potential to occur in the project area include marbled murrelet (*Brachyramphus marmoratus*), bald eagle (*Haliaeetus leucocephalus*), and western snowy plover (*Charadrius alexandrinus nivosus*). Pallid bat (*Antrozous pallidus*) has low potential to occur in the project area.

Table 4-2 summarizes special-status species potentially occurring in the project area. A complete list of special-status species reported in the project area USGS quadrangle or adjacent quadrangles is provided in Appendix C.

TABLE 4-2

Special-status Fish and Wildlife Species and Species of Special Concern Potentially Occurring in the Project Vicinity

Common Name (<i>Scientific Name</i>)	Status	Impact Evaluation
Southern DPS green sturgeon (<i>Acipenser medirostris</i>)	FT/SSC	Possible – Known to occur in North Humboldt Bay (area of the bay north of the harbor entrance). Unlikely, but possible that sub-adults and adults may forage in Fisherman's Channel and in the vicinity of the Fields Landing eelgrass mitigation site during the summer and early fall.
Northern DPS green sturgeon (<i>Acipenser medirostris</i>)	FSC	Possible – Known to occur in the North Humboldt Bay (area of the bay north of the harbor entrance). Unlikely, but possible that sub-adults and adults may forage in Fisherman's Channel and in the vicinity of the Fields Landing eelgrass mitigation site during the summer and early fall.
tidewater goby (<i>Eucyclogobius newberryi</i>)	FE/SSC	None – Does not occur in Fisherman's Channel, Fields Landing Mitigation Area, or White Slough disposal/beneficial reuse area. However, this species is present adjacent to, but in an area that is hydrologically disconnected from the White Slough beneficial reuse area.
longfin smelt (<i>Spirnichus thaleichthys</i>)	ST	Possible –Habitat for juveniles, yearlings, and adults is present in Fisherman's Channel. Spawning habitat occurs in freshwater streams and is not present in the Project Area. Species is documented throughout Humboldt Bay (CDFW, 2013).
coho salmon (SONCC ESU) (<i>Oncorhynchus kisutch</i>)	FT/ST	Possible – Foraging and rearing habitat for juveniles and adults is present Fisherman's Channel. Species is known to occur in Elk River, about 1.5 miles from the project area. Would not be present during project activities.
Chinook salmon (California coastal ESU) (<i>Oncorhynchus tshawytscha</i>)	FT	Possible – Foraging and rearing habitat for juveniles and adults is present in Fisherman's Channel. Species is known to occur in Elk River, about 1.5 miles from the project area. Would not be present during project activities.
steelhead (Northern California DPS) (<i>Oncorhynchus mykiss</i>)	FT/SSC	Possible – Foraging and rearing habitat for juveniles and adults is present in Fisherman's Channel. Species is known to occur in Elk River, about 1.5 miles from the project area. Would not be present during project activities.

TABLE 4-2

Special-status Fish and Wildlife Species and Species of Special Concern Potentially Occurring in the Project Vicinity

Common Name (<i>Scientific Name</i>)	Status	Impact Evaluation
northern red-legged frog (<i>Rana aurora</i>)	SSC	Possible – Habitat is present and individuals have been observed in the Fields Landing area. Habitat is not suitable in Fisherman's Channel.
bald eagle (<i>Haliaeetus leucocephalus</i>)	SE	Possible – Foraging habitat present in the bay adjacent to the project area. Closest documented nesting location is about 4 miles from project area.
marbled murrelet (<i>Brachyramphus marmoratus</i>)	FT/SE	Possible – No suitable foraging or nesting habitat within the general area of the proposed project area; however, a flight migration corridor is present in the area based on occurrences documenting multiple individuals flying out of Humboldt Bay to the ocean.
western snowy plover (<i>Charadrius alexandrinus nivosus</i>)	FT/SSC	Possible – No nesting or foraging habitat is present in the proposed project area; however, nesting may occur on nearby sandy beaches adjacent to the north and south Humboldt Bay spits.

FSC= Federal Species of Concern

FT = Federally Threatened

SE = State Endangered

SSC = Species of Special Concern

ST = State Threatened

Northern and Southern DPS green sturgeon. The northern DPS green sturgeon is a federal species of concern. The southern DPS green sturgeon was listed as threatened in 2006. The green sturgeon is long-lived and can reach lengths of up to 7 feet. The green sturgeon is a primitive fish and is a benthic feeder that feeds on small fish, clams, shrimp, and oligochaetes. It is found in estuaries, lower reaches of large rivers, and salt or brackish water off river mouths. Spawning takes place in large rivers where eggs are broadcast-spawned and externally fertilized in relatively fast water flows at depths greater than 9 feet. The eggs are adhesive and will cling to bottom substrate; silt is known to prevent adherence. Female green sturgeon can produce 60,000 to 140,000 eggs. Larvae and juveniles will inhabit rivers for up to 3 years. Green sturgeon are known to inhabit North Humboldt Bay (area of the bay north of the harbor entrance). The southern DPS green sturgeon enter Humboldt Bay during the summer and early fall to forage. Northern DPS green sturgeon are year-round residents except when migrating to spawning grounds in the Klamath, Rogue, or other large rivers. The potential for entrainment into the dredge during operations is the primary impact of concern relating to sturgeon. Entrainment can occur when a fish gets too close to the dredge cutter head and becomes caught in the water being pumped into the intake. However, the northern and southern DPS green sturgeon are highly mobile with sustained swim speeds of 1.5 to 2 feet per second (fps). This swim speed would enable sturgeon to avoid entrainment into the cutter head, which has a suction velocity of about 0.8 fps at a distance of 1.5 feet from the opening. The relatively isolated nature of the dredging area, ability of the species to move away from disturbance, and short operation period would result in no impacts on northern and southern DPS green sturgeon.

Tidewater goby. The tidewater goby is listed as endangered under the federal Endangered Species Act (ESA) and is a California species of special concern. Tidewater goby are a small, short-lived, estuarine/lagoon-adapted species that may infrequently disperse via marine habitat, but with no dependency on marine habitat for its life cycle. Unlike other California gobies, the tidewater goby is able to complete its entire life cycle in fresh or brackish water. Tidewater gobies are thought to reproduce year-round, although spawning peaks are known to occur. Reproduction and spawning typically occur during spring and summer in slack, shallow waters of seasonally disconnected or tidally muted lagoons, estuaries,

and sloughs. The female deposits eggs into the burrow, which the male guards until larvae emerge in 9 to 10 days.

The preferred juvenile/adult habitat is also slack, shallow water in seasonally disconnected or tidally muted lagoons, estuaries, and sloughs. Tidewater goby appear to prefer shallow depths (less than 1 meter [3.3 feet]) near emergent vegetation, possibly to avoid predation by wading birds and piscivorous fish. Substrate preference is sand, mud, gravel, and silt. The diet consists mostly of small crustaceans (such as, mysid shrimp, ostracods, and amphipods), aquatic insects (such as chironomid and other dipteran larvae), and molluscs, which are gleaned from bottom substrates.

The distribution of the tidewater goby around Humboldt Bay includes tributaries to Arcata Bay (Arcata Marsh, Mad River Slough, Freshwater Slough, Jacoby Creek, Wood Creek, Liscom Slough, McDaniel Slough, and Gannon Slough) and tributaries to Humboldt Bay (Elk River and Salmon Creek). Tidewater gobies have also been captured in Martin Slough, a tributary to lower Elk River. Surveys conducted in 2007 within Buhne Slough, adjacent to Fisherman's Channel did not document presence of tidewater goby. Three individuals were identified by CDFW in 2015 in the White Slough area, but outside of the proposed project area.

The proposed project activities will have no effect on tidewater gobies.

Longfin smelt. The state of California listed the longfin smelt as threatened under the California Endangered Species Act (ESA) in 2009. Adult and juvenile longfin smelt can be found in the open waters of estuaries, mostly in the middle or at the bottom of the water column. This species can inhabit salinities ranging from nearly pure salt water to completely fresh water, though most prefer salinities of 15 to 30 parts per thousand. Spawning occurs in fresh water during the winter months (February through April) over sandy or gravel substrate. Most smelt die after spawning, but a few (mostly females) may live another year. The eggs are adhesive and hatch in 40 days when water temperatures are 7 degrees Celsius (°C) (44°F). Newly hatched larvae are 5 to 8 millimeters (0.2 to 0.3 inch) long. Larvae can be moved downstream to estuaries by high flows, but may also spend considerable time in fresh water. Metamorphosis into the juvenile form probably begins 30 to 60 days after hatching, depending on temperature. Longfin smelt were historically very common in Humboldt Bay, but have experienced a significant decrease in population since the 1970s. The reasons for the decline in Humboldt Bay are unknown.

Longfin smelt larvae would not be present in the area during the late summer and fall. Juvenile and adult longfin smelt would have a relatively low likelihood of presence during operations.

The potential for entrainment into the dredge during operations is the primary impact of concern relating to longfin smelt. Entrainment can occur when a fish gets too close to the dredge cutter head and becomes caught in the water being pumped into the intake. A smelt has a swim speed between 1.0–1.6 feet per second. The 12-in cutter head suction pipe has an intake velocity of about 0.8 feet per second at a distance of 1.6 feet from the opening. Therefore, a smelt would need to be closer than 1.6 feet from the cutter head and not be disturbed by the turbidity and disturbance in order to be entrained. Juvenile and adult longfin smelt will be able to avoid becoming entrained in the dredge because they can outswim the suction approach velocities and will likely leave the area of disturbance.

A take estimate for longfin smelt was developed by using two different methods, both of which ignored the fish's swimming speed. Both methods utilize the entrainment rates and take estimates contained in Gold et al. (2011) and ERDC (2013) that were based on hopper dredging, which has a significantly higher entrainment rate than the cutter head dredge used for the proposed project. These take estimates were then compared to cutter head dredge monitoring data collected in the San Francisco Bay region. The potential take of longfin smelt was conservatively estimated to be less than one fish for the proposed project. Please see the Biological Resource Evaluation in Appendix C for detailed assessments of entrainment potential and take.

The proposed eelgrass mitigation program described in Appendix B is intended, in part, to mitigate for dredging-related impacts on special-status species and will significantly increase the quality and quantity of rearing habitat for these species, including longfin smelt. Implementation of the eelgrass mitigation program will result in higher quality rearing conditions, greater amount of cover from predators, and ultimately increased survival rates over the current condition. Increased survival rates will help with the recovery of populations of this species.

With implementation of the eelgrass mitigation program (Appendix B), impacts on this species will be fully mitigated and therefore less than significant with mitigation. Because of the potential to harm individual longfin smelt by entrainment into the dredge, the Harbor District will seek coverage under Section 2081 of the California Fish and Game Code for incidental take of this species from the California Department of Fish and Wildlife.

Coho salmon. SONCC coho salmon was listed under the federal ESA as threatened in 1997 and under the California ESA in 2005. Critical habitat was designated in 1999 between the Mattole River in California and the Elk River in Oregon, inclusive. Critical habitat includes all accessible waters of estuarine areas. Coho salmon adults typically begin to migrate upstream from October through late December. Spawning occurs mainly from November through January, with fry emerging from the gravel in the spring, approximately three to four months after spawning. Juveniles may spend one to two years rearing in fresh water, or emigrate to an estuary shortly after emerging from spawning gravels. Emigration from streams to the estuary and ocean generally takes place from February through June, with the peak period being the end of April through May. Downstream migration to the ocean starts around March when the coho are about 1 year old. The migration peaks around mid-May and continues until mid-June. Coho spend 2 years at sea before migrating back to their natal streams to spawn. Coho salmon smolts are known to occur in Humboldt Bay prior to entering the ocean.

The life history patterns of coho salmon indicate that they will not be present in the proposed project area during dredging operations that occur between July 1 and October 1. Therefore, no impacts on coho salmon is expected.

Chinook salmon. California coastal Chinook salmon was listed under the federal ESA as threatened in 1999 with critical habitat designated in 2005 south of the Klamath River (exclusive) and north of the Russian River (inclusive). Humboldt Bay has been designated as critical habitat up to the extent of inundation at the highest high tide. Chinook salmon in the California coastal ESU exhibit life history characteristics of the fall-run ecotype. Adult fall-run Chinook generally enter estuaries from July to September, remaining in these areas until they become nearly sexually mature before moving upstream as flows increase in the fall. In California, most adult fall-run Chinook enter streams from August through November, with peak arrival usually occurring in October and November, and spawn from early October through December. Egg incubation generally lasts between 40 to 90 days at water temperatures of 6 to 12°C (42.8 to 53.6°F), and the alevins remain in the gravel for two to three weeks before emerging from the gravel. Fall Chinook salmon fry usually begin outmigration in February or March and continue into late-July. Chinook spend two or more years at sea before migrating back to their natal streams to spawn. Chinook salmon smolts are known to use Humboldt Bay prior to entering the ocean.

The life history patterns of Chinook salmon indicate that they will not be present in the proposed project area during dredging operations that occur between July 1 and October 1. Therefore, no impacts on Chinook salmon are expected.

Steelhead. Northern California steelhead was listed under the federal ESA as threatened in 2000 with critical habitat designated in 2005. Designated critical habitat for northern California steelhead extends from Redwood Creek (Humboldt County) to the Gualala River in Mendocino County. Humboldt Bay has been designated as critical habitat up to the extent of inundation at the highest high tide. Adult winter

steelhead generally begin their spawning migration in October with the peak in December through February. Steelhead spawning occurs in mainstems, tributaries, and intermittent streams. The number of days required for steelhead eggs to hatch is inversely proportional to water temperature and varies from about 19 days at 16°C (60°F) to about 80 days at 6°C (42°F). Fry typically emerge from the gravel two to three weeks after hatching. Upon emerging from the gravel, fry rear in edgewater habitats and move gradually into pools and riffles as they grow larger. In winter, they become inactive and hide in any available cover, including woody debris and the interstitial spaces between cobbles and boulders. Juvenile steelhead rear in fresh water for two to three years prior to migrating downstream to the estuary and ocean. Steelhead spend between six months and three years at sea before returning to their natal streams to spawn. Unlike salmon, steelhead are capable of repeat spawning. Steelhead smolts are known to occur in Humboldt Bay prior to entering the ocean.

The life history patterns of steelhead indicate that they would not be present in the proposed project area during dredging operations that occur between July 1 and October 1. Therefore, no impacts on steelhead are expected.

Special-status Amphibian Species

Northern red-legged frog. Northern red-legged frogs are a state species of special concern and are known to occur along the California coast from Mendocino County north to southwestern British Columbia, at elevations from sea level to 1,160 meters (0 to 3,800 feet). Breeding (oviposition) for northern red-legged frogs generally occurs in late winter through early spring, typically when water temperatures exceed 6 to 7°C (43 to 46°F). Females deposit approximately 500 to 800 eggs in a large mass, attached to herbaceous vegetation in low or no-flow areas. Eggs hatch in the spring (March through April), and tadpoles metamorphose in June or July. The majority of northern red-legged frog males begin breeding after 2 years of age, and females begin breeding after 3 years of age. Adults may move large distances (300 meters [greater than 1,000 feet]) from breeding ponds in riparian areas. Northern red-legged frogs use a variety of habitats throughout their various life stages. Aquatic sites such as coastal lagoons, pools, marshes, ponds, or backwater areas are used for breeding, and upland habitats such as open grasslands with seeps and springs may be used for over-summering and foraging. Habitat for northern red-legged frogs does not exist in the dredging area. Suitable habitat in the form of temporary shallow puddles is present on the uplands at the Fields Landing eelgrass mitigation area. Work associated with the eelgrass mitigation plan will be implemented from July 1 to October 1, which is outside of the breeding through metamorphosis period for this species. In addition, the shallow puddles on the Fields Landing site will be dry by the mid-summer/early fall period, which significantly reduces their habitat value for red-legged frogs. However, the project will implement frog rescue and relocation measures that will reduce impacts on this species to less than significant with mitigation.

Special-status Bird Species

Bald eagle. The bald eagle was initially listed as endangered by the state of California in 1970 and the listing was reaffirmed in 1980. This species was previously listed as threatened under the federal ESA, but has been since delisted and considered “recovered.” The range of this raptor is wholly within North America, including Alaska, Canada, the lower 48 states, and northwest Mexico. Bald eagles in winter may be found throughout most of California at lakes, reservoirs, rivers, and some rangelands and coastal wetlands. Breeding habitats are mainly in mountain and foothill forests and woodlands near reservoirs, lakes, and rivers. Most breeding territories are in northern California, but the eagles also nest in scattered locations in the central and southern Sierra Nevada range and foothills, in several locations from the central Coast Range to inland southern California, and on Santa Catalina Island. Normally, the eagles build their large stick nests in the upper canopy of the tallest trees in the area. In most of California, the breeding season lasts from about January through July or August. One or two eggs (occasionally three) are laid in late winter or early spring, and incubation lasts about 35 days. Chicks fledge when they are 11 or 12 weeks old. Bald

eagles prey on a variety of small animals, usually fish or waterfowl; and they eat carrion, including salmon, deer, and cattle. Foraging habitat for bald eagles is present in the bay outside Fisherman's Channel. The closest documented nesting location is about 6 kilometers (4 miles) from the project area. The proposed project is expected to have no impact on this species.

Marbled murrelet. The marbled murrelet was listed as threatened under the federal ESA in 1992. Critical habitat was designated in 1996 and a recovery plan was produced in 1997. Marbled murrelets are small seabirds that range along the Pacific Coast of North America, and breed from central California (Santa Cruz County) north to southern Alaska and west to the Aleutian Archipelago. In California, suitable marbled murrelet nesting habitat currently exists in two disjunct areas separated by about 480 km (300 mi): along the North Coast in Del Norte and Humboldt counties, and along the central coast in San Mateo and Santa Cruz counties. Marbled murrelets feed closer to shore than other members of the alcid family, usually within 3.2 km (2 mi) of shore, and may also be found in bays, lagoons, and coves. They often preferentially forage either near kelp beds or at the mouths of streams. During the summer, most marbled murrelets on the west coast are found within 5 km (3 mi) of shore in water less than 60 m (197 ft) deep. Although marbled murrelets feed and rest on the water, they nest in stands of old-growth coniferous forest located within 81 km (50 mi) of the coast. There is no suitable breeding habitat for marbled murrelets in the project area. However, they could use the waters offshore for foraging and may fly over the area during their daily movements between nesting and foraging areas. The proposed project is expected to have no impact on this species.

Western snowy plover. The western snowy plover was federally listed as threatened in 1993 due to loss of nesting habitat and declines in breeding populations. A recovery plan was published in 2007. This small shorebird historically ranged from southern Washington south to the southern tip of Baja California, Mexico. Snowy plovers can still be found throughout their range, although available habitat is much more fragmented. The western snowy plover is a year-round resident of California that migrates through the coastal zone of California and breeds on selected sandy beaches. The nesting season extends from as early as the first week of March through late September, and nestlings hatch from early April through mid-August. Western snowy plovers use beaches in Humboldt County for foraging during migration and for nesting. In recent years, nesting has occurred at the following locations in Humboldt County: Gold Bluffs Beach, Big Lagoon, Clam Beach, South Spit, Eel River Wildlife Area, Centerville Beach, and gravel bars on the lower Eel River. Snowy plovers may utilize the shoreline of Humboldt Bay for foraging. The proposed project is expected to have no impact on this species.

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 CDFW or USFWS?

Sensitive Natural Communities

Three sensitive natural communities, Sitka spruce forest, northern coastal salt marsh and eelgrass, were documented in the Fisherman's Channel and Fields Landing survey areas. These communities are best defined by the *Salicornia pacifica* herbaceous alliance and the *Picea sitchensis* forest alliance identified throughout the survey areas.

***Salicornia pacifica* herbaceous alliance (pickleweed mats).** *Salicornia pacifica* (Pacific pickleweed) is a native perennial herb in the Chenopodiaceae family. This alliance consists of the northern coastal salt marsh, a CNDDDB listed sensitive natural community. It is categorized by highly productive, herbaceous, salt-tolerant hydrophytes which form a low-lying, moderate to dense ground cover (Holland 1986). This alliance has an intermittent to continuous herbaceous layer predominantly composed of Pacific pickleweed with moderate cover by *Distichlis spicata* (salt grass), *Juncus* spp. (various rushes), and *Atriplex prostrata* (fat-hen). Additional herbaceous species with low cover include *Spergularia macrotheca* (sticky sandspurry), *Triglochin maritima* (seaside arrowgrass), and *Deschampsia cespitosa* (tufted hair grass). Shrubs of

Baccharis pilularis (coyote brush), and *Morella californica* (wax myrtle) are occasionally scattered throughout this alliance. Nonnative invasive *Spartina densiflora* (dense-flowered cordgrass) has been observed with moderate to high presence in this alliance. The pickleweed mats alliance occurs along the edges of the Fisherman's Channel, portions of the Residential Canals, as well as around the Humboldt Bay high tide line and along tidally influenced drainages in the Fields Landing Mitigation Area. The proposed project dredging activities will have no impact on this species. This species does occur in the Fields Landing eelgrass mitigation area although the ground it inhabits is not expected to be disturbed. However, a qualified biological monitor will flag any areas containing this plant for avoidance. Therefore, with mitigation, the proposed project will have a less than significant impact on the *Salicornia pacifica* herbaceous alliance.

***Picea sitchensis* forest alliance (Sitka spruce forest).** *Picea sitchensis* (Sitka spruce) is a native evergreen conifer in the Pinaceae family. It occurs in coastal forests, is an early colonizer of disturbed soils, and is a late-seral species in coastal forests (Sawyer et al. 2009). Sitka spruce forest occurs on bottomlands, upland steep slopes, seaward bluffs, and ravines near the ocean (Sawyer et al. 2009) and is a CNDDDB listed sensitive natural community. Sitka spruce is dominant in the tree canopy of this alliance which also includes red alder. The tree canopy is continuous with a sparse to moderate shrub layer of various blackberries, coastal willow, cascara, wax myrtle, twinberry, and *Garrya elliptica* (elliptic silk tassel). Herbaceous cover is abundant with various ferns, western sword fern and *Dryopteris expansa* (spreading wood fern), as well as tufted hair grass, common cow parsnip, California figwort, *Iris douglasiana* (Douglas iris), and various *Equisetum* spp. (various horsetail). This alliance was identified along the upland portions of levees in the Fisherman's Channel Dredging Area. This sensitive natural community does not occur within the proposed project footprint. Therefore, there will be no impact on this natural community.

***Zostera marina* beds (Eelgrass beds).** Eelgrass habitat has been identified as a "Habitat Area of Particular Concern" as a subset of Essential Fish Habitat pursuant to the Magnuson-Stevens Fishery Conservation and Management Act. This designation is due to eelgrass' importance as a nursery area for commercial fish species. Eelgrass has also been identified by CCC as a "species of special biological significance" and, therefore, requires special protection pursuant to the California Coastal Act. Eelgrass provides a variety of essential ecosystem functions, including primary production, predation refuge, nursery functions, physical structure, and nutrient cycling.

The dredging footprint will cover about 1.62 acres by removing approximately 4,150 cubic yards of sediment from the Fisherman's Channel. Eelgrass is present in portions of the proposed dredging area. The project will directly affect about 0.23 acres of eelgrass near the entrance of the channel, which will be dredged to a depth of -8 ft below Mean Lower Low Water (MLLW). This area experiences a high rate of sediment deposition and will therefore be subject to relatively frequent (10 year intervals) maintenance dredging. The remainder of Fisherman's Channel will be dredged in three separate locations down to -6 ft MLLW (Figure 1-2). About 0.97 acres of eelgrass will be directly affected in this area, which due to a low rate of sediment deposition, will not be subject to dredging more frequently than every 25-plus years. This low frequency of dredging and shallow dredge floor will allow eelgrass to grow back once the channel maintenance project is completed. Eelgrass located within a 5-foot buffer along each side of the dredging footprint, may suffer indirect affects due to turbidity generated by dredging. However, this is expected to clear in a few tidal cycles once the dredging is completed.

The direct impacts on 1.2 acres eelgrass habitat will be mitigated by removing approximately 500 dilapidated pilings, excavating cobble and gravel substrate fill, and lowering shoreline elevations at the HBHRCD's Fields Landing Boat Yard property. The eelgrass restoration program will improve and/or create 1.44 acres of eelgrass habitat, for a ratio of 1.2:1 (see Appendix B, Eelgrass Mitigation Plan). In addition, eelgrass will be able to revegetate at the entrance to Fisherman's Channel relatively rapidly once about 1 ft of sediment deposition has occurred. The remainder of the channel that was dredged to -6 ft MLLW will

likely revegetate in two to three years, since there are untouched source stocks immediately adjacent to the dredge footprint. Therefore, with mitigation, the Project will have a less than significant impact on sensitive natural communities.

c. Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

Preliminary wetland delineations were conducted in the proposed project area on 10 February 2015 and 21 May 2015 (see Appendix C). Several small emergent wetlands are located on the former sawmill site that is adjacent to the eelgrass mitigation area at Fields Landing. This area will be traversed by the dredge pipeline. The pipeline will be positioned to avoid any wetlands, which will likely be dry by the time the proposed project begins. In addition, any sediment excavated during implementation of the eelgrass mitigation plan will be stockpiled on the Fields Landing property in locations that avoid wetlands. Erosion and sediment delivery to wetlands from the stockpiles will be controlled through application of appropriate best management practices (e.g. silt fences, straw wattles, etc.). The proposed project will not have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act. There will be no loss of area of Waters of the U.S. as a result of the proposed project.

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

The project will include short-term disturbance of Fisherman's Channel during dredging activities. The dredging will cause an increase in turbidity and noise levels that may result in fish leaving the immediate affected area. However, turbidity and noise levels will not reach the level where significant impacts on special-status fish species are realized. Although the dredging of Fisherman's Channel will temporarily affect nursery habitat, the eelgrass mitigation program will increase the amount of nursery habitat for estuarine species over what currently exists in south Humboldt Bay. Eelgrass mitigation activities may result in disturbance (noise, vibration, and turbidity) that could cause special-status species to temporarily move away from the immediate area. However, these species may reoccupy the Fields Landing area during breaks in, and upon completion of, project activities. In addition, project activities around the Field Landing eelgrass mitigation site may adversely affect an existing wetland that is seasonally occupied by northern red-legged frogs. However, the wetland will be dry during the operations period and northern red-legged frogs would have already metamorphosed and left the area. Therefore, with mitigation, the proposed project will have a less than significant impact on movement of native species, migratory corridors, and nursery habitat.

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

The proposed project will be fully permitted and in compliance with local policies and ordinances protecting biological resources. One Sitka spruce (<12 in [30 cm] diameter at breast height growing in the middle of the railroad right of way near White Slough may need to be removed in order to place the dredge pipeline. This tree is isolated and its removal will be in compliance with the NCRA's permitted vegetation management plan. Therefore, the proposed project will not 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?

There are no adopted Habitat Conservation Plans, Natural Community Conservation Plans, or other approved local, regional, or state habitat conservation plans within or adjacent to the proposed project. Therefore, the proposed project will not conflict with these types of plans.

Coastal Resources Assessment:

Several provisions of the CCA have to do with biological resources, including:

- **Section 30230 - Marine resources; maintenance.** Marine resources shall be maintained, enhanced, and where feasible, restored.

As discussed above, the dredging project will not have a significant effect on marine resources, with the mitigation measures that will be implemented, as described in the Eelgrass Mitigation Plan (Appendix B) and Biological Resources Assessment (Appendix C).

- **Section 30231 - Biological productivity; water quality.** 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 water flow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.

The dredging project will not have a significant effect on the biological productivity of coastal waters and wetlands. Direct impacts on eelgrass from the dredging of Fisherman's Channel will be compensated for by the eelgrass mitigation program (Appendix B). The project will not involve use of groundwater, alter vegetation buffer areas that protect riparian habitats, or alter natural streams. The potential for effects on water quality is discussed in Section IX, Hydrology and Water Quality.

- **Section 30233 - Diking, filling or dredging; continued movement of sediment and nutrients.**(a) The diking, filling, or dredging of open coastal waters, wetlands, estuaries, and lakes shall be permitted in accordance with other applicable provisions of this division... and shall be limited to the following:
...
(6) Restoration purposes.
...
(c) ... diking, filling, or dredging in existing estuaries and wetlands shall maintain or enhance the functional capacity of the wetland or estuary. Any alteration of coastal wetlands identified by the Department of Fish and Game... shall be limited to very minor incidental public facilities, restorative measures, nature study...

The project involves the dredging of coastal waters to benefit coastal recreation uses and tidal ecosystem restoration at the Refuge White Slough tidal wetlands restoration site.

Cumulative:

No cumulative impacts on biological resources are anticipated with this project.

Mitigation:

See Table 5-1 in Section 5.

V. Cultural Resources

Would the proposed project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Impact	No Impact
(a) Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

V. Cultural Resources

Would the proposed project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Impact	No Impact
(b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(d) Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Discussion:

a, b, c. A records search of the project Area of Potential Effects is being conducted by the North Coastal Information Center of the California Historical Resources Information System at the Yurok Tribal Office in Klamath, California. The record search will determine whether or not there are previously recorded cultural resources sites located along the slurry pipeline or near the beneficial reuse or eelgrass mitigation areas. If such properties are located near project features, measures will be implemented to avoid impacting the resources, such as archaeological investigations to confirm/document presence of such resources, and on-site monitoring when project activities are taking place near a cultural resources site to ensure that impacts to cultural resources are avoided. These measures will be taken consistent with the Harbor District policy document *Protocols for Inadvertent Archaeological Discoveries for Ground Disturbing Project Permits, Leases and Franchises Issued by the Humboldt Bay Harbor, Recreation and Conservation District, Humboldt Bay, California*, adopted April 22, 2015 and attached to this Initial Study as Appendix D.

The dredging project will not involve ground disturbance, but rather the removal of accumulated sediments in the water and the removal of abandoned pier pilings and gravels in Humboldt Bay. Transport of the dredged sediment in a slurry will take place through a temporary, above-ground pipeline that will be routed on floats over the water and along roadways and an abandoned railroad right-of-way. Deposition of these sediments will take place in a salt marsh restoration area at the margins of the Humboldt Bay that is unlikely to have prehistoric remains. Gravels will be stockpiled above ground at Fields Landing. For these reasons, the project will not have a significant adverse effect on historic, archaeological, Tribal, or paleontological resources.

d. The project will not involve excavation or ground disturbance on the land and so is unlikely to encounter human remains. However, if human remains or Native American Tribal cultural resources or archaeological sites were inadvertently encountered during construction, Harbor District will comply with California Health and Safety Code 7050.5, and contact the county coroner. If the coroner determines that the find is Native American, the coroner is required to contact the Native American Heritage Commission in Sacramento.

Coastal Resources Assessment:

The following section of the CCA pertains to archaeological and paleontological resources:

- **Section 30244 - Archaeological or paleontological resources.** Where development would adversely impact archaeological or paleontological resources as identified by the State Historic Preservation Officer, reasonable mitigation measures shall be required.

The project will not involve ground disturbance on land and so will be very unlikely to adversely impact archaeological or paleontological resources. Literature search and Native American consultation will be conducted to identify sensitive resources near the pipeline route or stockpile location. If these are located, measures will be put into place to avoid them.

Cumulative:

No cumulative impacts on cultural resources are anticipated with this project.

Mitigation:

The project will implement the following standard Harbor District mitigation measures for cultural resources (see also Appendix D):

- Should an archaeological resource be inadvertently discovered during ground-disturbing activities, the Tribal Historic Preservation Officers (THPO) appointed by the Blue Lake Rancheria, Bear River Band of Rohnerville Rancheria and Wiyot Tribe shall be immediately notified and a qualified archaeologist with local experience retained to consult with the Harbor District, the three THPOs, the Permittee and other applicable regulatory agencies to employ best practices for assessing the significance of the find, developing and implementing a mitigation plan if avoidance is not feasible, and reporting in accordance with the Harbor District's Standard Operating Procedures.
- Should human remains be inadvertently discovered during ground-disturbing activities, work at the discovery locale shall be halted immediately, the Harbor District and County Coroner contacted, and the Harbor District's SOP shall be followed, consistent with state law.

VI. Geology and Soils

Would the proposed project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Impact	No Impact
(a) Expose people or structures to 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.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

VI. Geology and Soils

Would the proposed project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Impact	No Impact
result of the proposed project, and potentially result in on- or offsite 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 risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(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 wastewater?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion:

a. The project site is located in the Coast Ranges Physiographic/Tectonic Province and is within a highly active seismic region that has had numerous earthquakes. The geology of the region around the site is very complex, reflecting geologically rapid processes driven by recent (that is, within the last 10,000 years) tectonics and rapid erosion.

The project involves the dredging of accumulated sediments in a bay channel, the deposition of the sediments for beneficial reuse in a salt marsh restoration area, and the excavation of pilings and gravels, the stock piling of gravels, and installation of a shoreline protection system that are all located far from human habitation, infrastructure, or use areas. It will therefore not expose people to harm risk of loss due the potential for precipitation, tsunami, or earthquake to cause soil erosion, transport of hazardous materials by water or wind. The project will not lead to significant impacts on people or property in terms of exposing them to geological hazards.

b. The project will involve the movement of dredge sediments, pier pilings, and cobbles and gravels from bay channels and deposition of the sediments for beneficial reuse for wetland restoration and gravels for stockpiling. It will not involve excavation of soil that could lead to soil erosion or the loss of topsoil.

c. The project does not involve construction on a geological or soil unit that is unstable and will not cause hazards due to land sliding. There is no excavation of soils associated with the project, only removal and transport of accumulated underwater sediment, pier pilings, and gravels in bay channels and deposition of the sediment for beneficial reuse to restore wetlands and gravel for stockpiling.

d. The project does not involve construction by excavation into land surfaces or soils, so will not be subject to expansive soil hazards.

e. The proposed project will not include the installation of septic systems or sewers.

Coastal Resources Assessment:

The following provision of the CCA has to do with geological hazards:

CCA Section 30253 requires that new development:

...minimize risks to life and property in areas of high geologic, flood, and fire hazard; assure stability and structural integrity; and neither create nor contribute significantly to erosion, geologic instability, or destruction of the site or surrounding area or in any way require the construction of protective devices that will substantially alter natural landforms along bluffs and cliffs.

The dredging project involves removal of a small amount of sediment from the existing channel entrance and main Fisherman's Channel. This sediment has accumulated by settlement and its removal will not cause destabilization of coastal landforms.

Similarly, the removal of abandoned pier pilings and gravels for the eelgrass ecosystem restoration project element will not expose people or property to geologic hazards or cause coastal erosion. Removal of the cobbles and gravel will lower the elevation of the bay bottom adjacent to the Fields Landing shore to accommodate eelgrass growth. This has the potential to change the dynamics of shoreline erosion. As a mitigation measure, the project will involve installation of shoreline protection measures as described in Appendix B.

Cumulative:

No substantial cumulative impacts on geology and soils are anticipated with this project because impacts associated with this resource area will be less than significant.

Mitigation:

No mitigation will be required.

VII. Greenhouse Gas Emissions

Would the proposed project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Impact	No Impact
(a) Generate greenhouse gas (GHG) emissions, either directly or indirectly, that may have a significant impact on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHGs?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Discussion:

a, b. The framework for regulating greenhouse gas (GHG) emissions in California is described under Assembly Bill (AB) 32. In 2006, the California State Legislature signed the Global Warming Solutions Act of 2006, or AB 32. This law requires the California Air Resources Board (CARB) to design and implement emission limits, regulations, and other measures such that statewide GHG emissions are reduced in a technologically feasible and cost-effective manner to 1990 levels by 2020.

The project would cause a short-term increase in GHG emissions due to the operation of internal combustion engines in the dredge and tender craft, pumps, and vehicles needed to transport people and equipment such as the pumps and piping, to and from the project site. The project will take only a few weeks to implement, however, such that impacts will be temporary, negligible and not significant. Once the

dredging is completed, the project will not cause additional emissions. The project will not, therefore, conflict with AB 32 or other GHG plans, policies, or regulations.

Cumulative:

No cumulative impacts in terms of GHG emissions are anticipated with this project.

Mitigation:

No mitigation is required.

VIII. Hazards and Hazardous Materials				
Would the proposed project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporation	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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(c) Emit hazardous emissions, handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(d) Be located on a site that 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(f) For a project located within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(h) Expose people or structures to a significant risk of loss, injury, or death involving wildland	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

VIII. Hazards and Hazardous Materials

Would the proposed project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Impact	No Impact
fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?				

Discussion:

a, b, c, d. Onsite materials that could be considered hazardous include fuels, motor oil, grease, various lubricants, solvents, soldering equipment, and glues. Fuel replenishment would be required daily for most of the heavy equipment. Overall impacts from hazardous materials will not be significant given the level of preparation, control, and regulation that will be used by project staff for these types of materials.

c. There are no known or proposed schools within 0.25 mile of the project site.

d. The proposed project area is not included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5.

e. The proposed project is more than 6 miles from the nearest public airport (Murray Field) and will not result in a hazard to construction workers onsite.

f. There are no known private airstrips near the proposed project.

g. The access route for the proposed project will not involve a use or activity that could interfere with emergency response or emergency evacuation plans for the area.

h. The proposed project would not expose people or structures to a significant risk of loss, injury, or death involving wildland fires.

Coastal Resources Assessment

The following section of the CCA addresses hazardous materials:

- **Section 30232 - Oil and hazardous substance spills.** Protection against the spillage of crude oil, gas, petroleum products, or hazardous substances shall be provided in relation to any development or transportation of such materials. Effective containment and cleanup facilities and procedures shall be provided for accidental spills that do occur.

Project-related equipment, including the dredge and dredge tender used for dredging, the booster pumps used along the pipeline, and any equipment that might be used at White Slough for sediment distribution, and equipment that will be used to remove the pier pilings and gravel at the eelgrass restoration site, will use oil, gasoline, and/or diesel and other hazardous materials. Effective containment and cleanup procedures will be implemented in the event of an accidental spill of such materials. The following are some of the BMPs that will be used to manage hazardous materials and prevent their release to the environment:

- Storage areas will be lined with an impermeable material to prevent the release of fuel, oils, grease, or hydraulic fluids in the event of a spill.
- The pier pilings may have been treated with creosote and will be removed from the marine environment and disposed of in a landfill certified to accept creosote-contaminated materials.
- The storage site will be separated from adjacent surface runoff by containment berms having sufficient dimensions to retain the volume of fluids within the storage area.

Cumulative:

Because of the extensive measures and BMPs that will be used for handling hazardous materials, no cumulative hazards and hazardous materials impacts are anticipated.

Mitigation:

No mitigation will be required.

IX. Hydrology and Water Quality

Would the proposed project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Impact	No Impact
(a) Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge, causing a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on- or offsite?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(e) 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(f) Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map, or other flood hazard delineation map?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(h) Place within a 100-year flood hazard area structures that would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

IX. Hydrology and Water Quality

Would the proposed project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Impact	No Impact
(i) Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(j) Inundation by seiche, tsunami, or mudflow?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion:

a, f. The project will involve the intake of water and dredged sediment through the dredge's cutter head, and the resulting turbid water will remain in an over-water and above-ground pipeline that will convey the dredge slurry to the White Slough beneficial reuse area. The water will percolate through the ground or flow to the Humboldt Bay via existing drainage channels, leaving the dredge sediments for wetland restoration. The dredge and piping system is designed to contain the dredge slurry so that release of turbid water is not expected to occur, given the use of BMPs to control and contain leakage or spillage. The purpose of the project is to place dredged sediments at the White Slough Unit for beneficial reuse and the project will do so under the USFWS's existing Clean Water Act Section 404 permit. The project will also obtain a Water Quality Certification under Section 401 of the Clean Water Act for the dredging project and this permit will include provisions and requirements protective of water quality. With these measures in place, the project will not substantially degrade water quality or violate water quality standards. See the Biological Resources Evaluation (Appendix C) for more detailed information on project-generated suspended sediment and turbidity.

Cobbles, gravel, and other sediment that will be excavated as part of the eelgrass mitigation program will be stockpiled on the uplands at Fields Landing under cover with appropriate erosion controls. These controls will include covering the stockpile with tarp, sandbagging the tarp, and deploying straw wattles around the entire perimeter.

b. The proposed project will not require the use of groundwater wells or require any groundwater pumping; therefore, no impacts on groundwater will occur as a result of the proposed project.

c, d, e. The project will not affect local drainage patterns or alter a stream or river and will not cause erosion or siltation.

g, h. No housing or other buildings will be constructed as part of the proposed project.

i. The proposed project will not expose people or structures to a significant risk of loss, injury, or death involving flooding, nor will the proposed project result in the failure of a levee or dam.

j. The project will not cause mudflow, or expose people or property to hazards resulting from tsunami or seiche.

Coastal Resources Assessment

The following provision of the CCA has to do with hydrology and water quality:

- **Section 30231 Biological productivity; water quality.** 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 water flow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.

The dredging project will involve the removal of deposited sediment from the Fisherman's Channel. The sediment will be removed through the dredge cutter head and piped to the beneficial reuse site at White Slough. There will be minor and temporary impacts related to turbidity at the dredge site. Releases of turbid water in the pipeline will be controlled by monitoring and inspection along the length of the pipeline as dredging takes place. As described in Section 2, the dredge sediment slurry will be deposited into the North Basin of the White Slough Unit, where it will spread out through the basin, depositing sediment to assist in tidal restoration. The slurry water will be filtered through a rock berm and a series of silt fences to remove fine sediment and ensure water quality, before returning to the Bay through the White Slough tide gate.

Also as described in Chapter 2, ISM sampling of the Fisherman's Channel sediments was conducted and analyzed and compared with similar ISM sampling results from the sediments at White Slough to ensure that there will not be a reduction in water quality at White Slough from exposure to sediments from Fisherman's Channel. In their review of the sampling results of the Fisherman's Channel sediments, the NCRWQCB concluded that from a regulatory perspective, the sediment characterized is suitable for beneficial reuse at the White Slough Unit of the Refuge (see Section 2.1.5, above).

BMPs will be used to protect water quality and marine life during the removal of the abandoned pier pilings and cobble/gravel substrate and implementation of the shoreline protection measures for the eelgrass restoration component of the project. Removal of the pilings that could have been treated with creosote may improve water quality within the Bay.

Cumulative:

No cumulative impacts on hydrology and water quality are anticipated with this project.

Mitigation:

No mitigation will be required.

X. Land Use and Planning				
Would the proposed project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Impact	No Impact
(a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the proposed project (including, but not limited to, the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

X. Land Use and Planning

Would the proposed project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Impact	No Impact
(c) Conflict with any applicable Habitat Conservation Plan or Natural Community Conservation Plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion:

- a. The proposed project will not have the potential to physically divide the surrounding community.
- b. The proposed project will not conflict with any local land use plan, the Humboldt County General Plan, or the zoning ordinance. Zoning districts are as follows:

- Fisherman's Channel - Commercial Recreation (CR)
- Dredge slurry pipeline alignment - Commercial Recreation (CR), Natural Resources (NR), Industrial Coastal Dependent (MC), Industrial Coastal Dependent (MC), and Agriculture Exclusive (AE)
- White Slough beneficial reuse site - Agriculture Exclusive (AE)
- Fields Landing eelgrass restoration site - Industrial Coastal Dependent (MC) and Industrial Coastal Dependent (MC)

The project-related uses are all principally or conditionally permitted uses. The project will obtain a Conditional Use Permit (CUP) from Humboldt County.

Although Humboldt County has a certified Local Coastal Program, the project site is partly within the retained jurisdiction of the CCC. The dredging and beneficial reuse aspects of the project are both consistent with regulations and policies of the County and CCC.

- c. No habitat conservation or natural community conservation plans apply to the proposed project site.

Coastal Resources Assessment:

Chapter 3, Article 2 of the CCA ensures that development within the CCC's sphere of influence will not interfere with the public's right of access to the sea, and that access will be provided consistent with public safety needs and the need to protect public rights, rights of private property owners, and natural resource areas from overuse. The sections of the CCA pertaining to Public Access are listed below:

- **Section 30211 Development not to interfere with access.** Development shall not interfere with the public's right of access to the sea where acquired through use or legislative authorization, including, but not limited to, the use of dry sand and rocky coastal beaches to the first line of terrestrial vegetation.

The dredging operation will allow for the passage of vessels to Humboldt Bay from King Salmon although the vessels will need to navigate around the dredge. The slurry pipeline will extend between Fields Landing boatyard and White Slough along the railroad and in doing so will not block public access to Humboldt Bay. Over most of the three-mile pipeline distance, the pipeline will be located on private railroad right-of-way or private industrial property and will not block access routes to the bayshore. At one location the pipe will cross a county road, but a berm will be constructed over the pipe to allow for vehicle passage.

- **Section 30212 New development projects.** (a) Public access from the nearest public roadway to the shoreline and along the coast shall be provided in new development projects ...

The dredging project is not a new development project on land. It is a channel maintenance project in the water and so public access will not be required of the project.

Cumulative:

No cumulative impacts on land use and planning are anticipated with this project.

Mitigation:

No mitigation will be required.

XI. Mineral Resources

Would the proposed project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporation	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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion:

a, b. There are neither known mineral resources of value to the region nor known locally important mineral resources located on the Fisherman's Channel or White Slough beneficial reuse sites.

Cumulative:

No cumulative impacts on mineral resources are anticipated with this project.

Mitigation:

No mitigation will be required.

XII. Noise

Would the proposed project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Impact	No Impact
(a) Expose persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(b) Expose persons to or generation of excessive ground-borne vibration or ground-borne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(c) Result in a substantial permanent increase in ambient noise levels in the project vicinity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

XII. Noise				
Would the proposed project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Impact	No Impact
above levels existing without the proposed project?				
(d) Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the proposed project?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion:

a, b, c, d. Project activities will involve operation of dredge and pump motors Monday through Friday from 7:00 a.m. to 5:30 p.m. Before dredging begins, the eelgrass restoration program will involve using excavation equipment to remove abandoned pier pilings and gravel. Although these activities will likely be audible from adjacent roads and recreational trails, the noise will not be discernible from the existing ambient noise of local traffic on U.S. 101. Noise from dredging motors will take place near residential uses in the community of King Salmon, but will not take place during the nighttime and so will not violate the Humboldt County noise standards and ordinances and will not be significant. Similarly, noise from pier piling and gravel removal activities associated with the eelgrass restoration are located about 1,000 feet from the nearest residential uses in the community of Fields Landing, but will not take place during nighttime. Project implementation, in addition, will take only a few weeks and so any effects on local ambient noise levels will be temporary as well as insignificant.

e, f. The proposed project is more than 6 miles from the nearest public airport (Murray Field), and there are no known private airstrips within a 10-mile radius of the project site. Airport operations will not expose people residing or working in the project site to excessive noise levels.

Cumulative:

No substantial cumulative impacts in terms of noise are anticipated with this project.

Mitigation:

No mitigation will be required.

XIII. Population and Housing

Would the proposed project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Impact	No Impact
(a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion:

a. The proposed project will not induce population growth.

b, c. The proposed project will not displace housing or people. No replacement housing will be required.

Cumulative:

No cumulative impacts on population and housing are anticipated with this project.

Mitigation:

No mitigation will be required.

XIV. Public Services

Would the proposed project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Impact	No Impact
(a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the following public services:				
(i) Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(ii) Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(iii) Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

XIV. Public Services

Would the proposed project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Impact	No Impact
(iv) Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(v) Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion:

a (i, ii, iii, iv, v). The proposed project will not require new fire or police protection, schools, parks, or other public facilities; nor will the proposed project alter existing fire or police protection, schools, parks, or other public facilities. No impacts on these public services will result from the proposed project.

a (v). A public trail runs along the shoreline of Humboldt Bay, but extends to the south only as far as King Salmon. Project operations will not restrict access to the coast or coastal trail.

Cumulative:

The project will not create a cumulatively considerable impact on public services.

Mitigation:

No mitigation will be required.

XV. Recreation

Would the proposed project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Impact	No Impact
(a) 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(b) Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion:

a, b. The proposed project would not result in the accelerated deterioration of nearby park facilities, nor would the proposed project require new facilities to be constructed.

In terms of Coastal Resources, Article 3, Chapter 3 of the CCA, establishes the protection and preservation of oceanfront land that is suitable for recreational uses. Specifically, Section 30221 of the CCA states:

Oceanfront land suitable for recreational use shall be protected for recreational use and development unless present and foreseeable future demand for public or commercial

recreational activities that could be accommodated on the property is already adequately provided for in the area.

The dredging project supports this provision of the CCA by improving vessel access from King Salmon to Humboldt Bay through the Fisherman's Channel. Deposition of dredged sediments supports restoration of tidal ecosystem at the Refuge, a goal which is consistent with this provision as well. The slurry pipeline will temporarily be deployed over the three miles between Fisherman's Channel and White Slough. The pipeline is not expected to interfere with coastal recreation in any significant way.

The eelgrass ecosystem restoration element of the project will involve project activity along the Fields Landing shoreline for a brief period of time to remove the pier pilings and implement the shoreline protection system on the Harbor District property at Fields Landing. To protect the safety of the public, access will not be allowed to this construction area during the brief period of the pile removal and shoreline protection system installation. This effect on public recreation will not be significant.

Cumulative:

No cumulative impacts on recreation are anticipated with this project.

Mitigation:

No mitigation will be required.

XVI. Transportation and Traffic

Would the proposed project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Impact	No Impact
(a) Conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including, but not limited to, intersections, streets, highways and freeways, pedestrian and bicycle paths and mass transits?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(b) Conflict with an applicable congestion management program, including, but not limited to, level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location those results in substantial safety risks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(d) Substantially increase hazards due to a design feature (such as sharp curves or	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

XVI. Transportation and Traffic

Would the proposed project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Impact	No Impact
dangerous intersections) or incompatible uses (such as farm equipment)?				
(e) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Discussion:

a, b. The project is located in unincorporated Humboldt County, approximately 4 to 6 miles south of Eureka. The Fisherman's Channel dredging site is accessible via King Salmon Avenue, which intersects with US 101. Construction traffic for the proposed project would use the same entry and exit routes that site workers currently use, and no new access routes will be required. The project will require approximately 10 workers to operate the dredge and tender and manage the pipeline and these will require access to the pipeline along its 2.3-mile length between Fisherman's Channel and White Slough. Access will be required at Fisherman's Channel and in Fields Landing and to the Harbor District's boat repair yard south of Fields Landing. Due to the small number of workers who will commute to the project, the effect on local traffic will be negligible.

c. The proposed project will not result in any changes to air traffic patterns.

d. A small ramp will be constructed over the pipeline to allow vehicle passage at any location where it crosses a road. The proposed project will not alter existing public roadways.

e. A small ramp will be constructed over the pipeline to allow vehicle passage at any location where it crosses a road. The proposed project will have no impact on existing emergency access routes

f. The proposed project will not conflict with existing plans and policies regarding public transit, bicycle, or pedestrian facilities. It will not be necessary for the dredging pipeline, for example, to cross existing pedestrian paths or bicycle trails. At one site the pipe will cross a county road, but a berm will be constructed over the pipe to allow for vehicle passage.

Cumulative:

There will not be a cumulatively considerable increase to traffic as a result of the proposed project.

Mitigation:

No mitigation will be required.

XVII. Tribal Cultural Resources

Would the proposed project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Impact	No Impact
(a) Cause a substantial adverse change in a site, feature, place, object, or landscape with cultural value to California Native American tribes, pursuant to AB52?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(b) Disturb any Native American human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Discussion:

a, b. Consultation with the Wiyot Tribe and Bear River Band of Rohnerville Rancheria under AB52 has not identified sites, features, places, objects, or landscapes with cultural value to California Native American Tribes that would be impacted by the Project. If such properties are located near project features, measures will be implemented such as consulting with the Tribes regarding avoidance or other measures and on-site monitoring when project activities are taking place near a tribal cultural resources site to ensure that impacts are avoided. These measures will be taken consistent with the Harbor District policy document *Protocols for Inadvertent Archaeological Discoveries for Ground Disturbing Project Permits, Leases and Franchises Issued by the Humboldt Bay Harbor, Recreation and Conservation District, Humboldt Bay, California*, adopted April 22, 2015 and attached to this Initial Study as Appendix D.

Cumulative:

No cumulative impacts on tribal cultural resources are anticipated with this project.

Mitigation:

The project will implement the following standard Harbor District mitigation measures for tribal cultural resources (see also Appendix D):

- Should tribal cultural resource be identified during project-related activities, the Tribal Historic Preservation Officers (THPO) appointed by the Blue Lake Rancheria, Bear River Band of Rohnerville Rancheria and Wiyot Tribe shall be immediately notified and the Harbor District, the three THPOs, the Permittee and other applicable regulatory agencies will consult to determine best practices for developing and implementing a mitigation plan if avoidance is not feasible, and reporting in accordance with the Harbor District's Standard Operating Procedures.
- Should human remains be inadvertently discovered during ground-disturbing activities, work at the discovery locale shall be halted immediately, the Harbor District and County Coroner contacted, and the Harbor District's SOP shall be followed, consistent with state law.

XVII. Utilities and Service Systems

Would the proposed project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Impact	No Impact
(a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(b) Require or result in the construction of new water or wastewater treatment facilities, or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(c) Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(d) Have sufficient water supplies available to serve the proposed project from existing entitlements and resources, or are new or expanded entitlements needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(e) Result in a determination by the wastewater treatment provider that serves or may serve the proposed project that it has adequate capacity to serve the project's projected demand in addition to the providers existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(g) Comply with federal, state, and local statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion:

a, b, d, e. No impact on wastewater treatment, water usage, or other utilities and service systems are anticipated with this project.

c. The project will not require the construction of new stormwater drainage facilities.

f, g. The project will not generate solid waste requiring landfill disposal.

Cumulative:

No cumulative impacts on utilities and service systems are anticipated with this project.

Mitigation:

No mitigation will be required.

XVIII. Mandatory Findings of Significance

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

Discussion:

a, b, c. As identified in Sections I through XVI, potential impacts will be less than significant given implementation of proposed mitigation (see Table 5-1 in Section 5).

SECTION 5

Summary of Project Impacts and Mitigation Measures

Table 5-1 lists impacts, identified in Section 4 of this Initial Study as requiring mitigation, and lists the associated mitigation measures required to assure identified impacts are reduced to a less than significant level. Measures presented in Table 5-1 will be implemented during the proposed project.

TABLE 5-1
Summary of Project Impacts and Mitigation Measures

Impact	CEQA Checklist Item Requiring Mitigation	Mitigation	Level of Significance after Mitigation
Biological Resources			
Special-status plant species may be affected by proposed project activities in the Fields Landing area.	IV (a)	Special-status plant species will be flagged by a qualified biological monitor for avoidance prior to the initiation of project activities in the Fields Landing area.	Less than significant
Dredging could result in injury or mortality to fish species due to entrainment into the cutter head and pipeline.	IV (a)	To minimize impacts on fish species due to entrainment into the cutter head dredge the proposed project in-water activities will be limited to the period of July 1 to October 1.	Less than significant
Dredging will affect existing eelgrass beds in Fisherman's Channel.	IV (b)	To fully mitigate for direct impacts on eelgrass in Fisherman's Channel, the HBHRCD will implement a mitigation plan on their Fields Landing property. The plan will encompass 1.44 acres and include pulling approximately 500 dilapidated pilings and excavating the shoreline area to increase the quality and quantity of eelgrass habitat in that area.	Less than significant
The placement of the pipeline at Fields Landing may impact wetlands and northern red-legged frogs that inhabit them.	IV (c, d)	The wetlands will be identified and flagged by a qualified biologist for avoidance if they are still wet by the time of proposed project initiation. Any frogs observed on site will be captured and relocated into suitable wetland habitat along the east side of the Fields Landing property.	Less than significant
Cultural Resources			
The shoreline protection system or pipeline activities may impact previously unrecorded cultural resources or previously recorded resources located near project operations.	V (a-c)	If such properties are located near project features, archaeological investigations to confirm/document presence of such resources, and on-site monitoring when project activities are taking place near a cultural resources site to ensure that impacts to cultural resources are avoided.	Less than significant
Project activities could impact human remains not previously identified	V (d)	Should human remains be inadvertently discovered during ground-disturbing activities, work at the discovery locale shall be halted immediately, the Harbor District and County Coroner contacted, and	Less than significant

TABLE 5-1

Summary of Project Impacts and Mitigation Measures

Impact	CEQA Checklist Item Requiring Mitigation	Mitigation	Level of Significance after Mitigation
		the Harbor District's SOP shall be followed, consistent with state law.	
Tribal Cultural Resources			
The shoreline protection system or pipeline activities may impact previously tribal cultural resources near project operations.	XVII (a)	Should tribal cultural resource be identified during project-related activities, the Tribal Historic Preservation Officers (THPO) appointed by the Blue Lake Rancheria, Bear River Band of Rohnerville Rancheria and Wiyot Tribe shall be immediately notified and the Harbor District, the three THPOs, the Permittee and other applicable regulatory agencies will consult to determine best practices for developing and implementing a mitigation plan if avoidance is not feasible, and reporting in accordance with the Harbor District's Standard Operating Procedures.	Less than significant
Project activities could impact Native American not previously identified.	XVII (b)	Should human remains be inadvertently discovered during ground-disturbing activities, work at the discovery locale shall be halted immediately, the Harbor District and County Coroner contacted, and the Harbor District's SOP shall be followed, consistent with state law.	Less than significant

SECTION 6

References Cited

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