ENVIRONMENTAL ASSESSMENT

Humboldt Bay Entrance Channel Jetties

FY2020 & FY2021 Repairs and Reconstruction

December 2019

U.S Army Corps of Engineers
San Francisco District
Planning Branch, Environmental Section

This page intentionally left blank.

Contents

Appendices

Tables

Figures

Acronyms

ACHP.....Advisory Council on Historic Preservation
AHPA .....Archaeological and Historic Preservation Act
APE .....Area of Potential Effects
AQMD .....Air Quality Management District
BCOES .....Bid ability, Constructability, Operability, Environmental, Sustainability
BLM.....Bureau of Land Management
BMPs.....Best Management Practices
CAA .....Clean Air Act
CC.....California Coastal
CCA.....California Coastal Act of 1976, as amended
CCC.....California Coastal Commission
CCMP .....California Coastal Management Program
CD .....Consistency Determination
CDFW .....California Department of Fish and Wildlife
C.F.R.....Code of Federal Regulations
CH .....Critical Habitat
CWA .....Clean Water Act
CZMA.....Coastal Zone Management Act of 1972, as amended
DOT.....Department of Transportation
DQC .....District Quality Control
EA.....Environmental Assessment
EFH .....Essential Fish Habitat
EPP.....Environmental Protection Plan
ESA.....Endangered Species Act
ESU.....Evolutionary Significant Unit
FMP.....Fishery Management Plan
FONSI .....Finding of No Significant Impact
FY .....Fiscal Year
IPaC.....Information for Planning and Consultation
MLLW.....Mean Lower-Low Water
mph.....miles per hour
MSA .....Magnuson-Stevens Conservation and Management Act
n/a.....not applicable

NAAQS.....National Ambient Air Quality Standards
NC .....Northern California
NCRWQCB .....North Coast Regional Water Quality Control Board
NEPA .....National Environmental Policy Act
NHPA .....National Historic Preservation Act
NMFS.....National Marine Fisheries Service
NOAA.....National Oceanic and Atmospheric Administration
NRHP.....National Register of Historic Places
NTP .....Notice to Proceed
NWP-3 .....Nationwide Permit 3 — Maintenance
O&M .....Operations and Maintenance
SDPS.....Southern Distinct Population Segment
SHPO .....State Historic Preservation Officer
SIP .....State Implementation Plan
SONCC .....Southern Oregon/ Northern California Coast
SPN .....San Francisco District
T&E .....Threatened and Endangered Species under the ESA
THPO.....Tribal Historic Preservation Officer
TMP.....Traffic Management Plan
USACE.....United States Army Corps of Engineers, San Francisco District
U.S.C. .....United States Code
USCG .....United States Coast Guard
USEPA .....United States Environmental Protection Agency
WDR.....Waste Discharge Requirements
WQC .....Water Quality Certification

This page intentionally left blank.

1 Introduction

This document, written in compliance with the National Environmental Policy Act (NEPA) of 1969 (42 U.S.C. § 4321 *et seq.*), as amended. The U.S. Army Corps of Engineers (USACE) has an applicable Categorical Exclusion covering routine operation and maintenance actions including repair, rehabilitation, and replacement of existing structures at completed USACE projects (33 C.F.R. 230.9(b)). However, the USACE has prepared this Environmental Assessment (EA) with associated Finding of No Significant Impact (FONSI) [under Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the NEPA (40 C.F.R. §§ 1500-1508), and Planning Regulations (Engineering Regulation (ER) 200-2-2] to evaluate and assess the significance of potential environmental effects involving air quality, noise, recreation, historic and cultural resources, and endangered species, among others.

This EA presents an evaluation of the potential impacts (direct, indirect, and cumulative) to the human environment resulting from proposed fiscal year (FY) 2020 and 2021 repairs to the North and South Jetties at the entrance to Humboldt Bay, California. For the purposes of this analysis, potential areas of impact include the complete footprint of the jetty repairs, including all areas touched by the transport of rock from the quarry of origin.

1.1 Authority and Funding

Authority for repair and reconstruction of the Entrance Channel Jetties at Humboldt Bay and Harbor is provided by the Rivers and Harbors Acts of 1910, 1930, 1935, and 1968. Project funding is classified as Operations and Maintenance (O&M) work.

Appropriations for the planning, design, and initial construction work in FY2020, largely covering the North Jetty, are from the Harbor Maintenance Trust Fund. It is anticipated that subsequent appropriations will be forthcoming in FY2021 as well, so as to fund work on the South Jetty and complete the project. It is to be understood that actions cited in this EA as taking place in FY2021 are contingent upon receipt of this funding. If it is not forthcoming, construction work will be delayed into subsequent years.

1.2 Purpose and Need for Action

Storms, with their severe wave action and unusual high tides have, over the years, visibly removed quantities of structural stone and degraded the concrete structure of the Humboldt Bay Entrance Channel Jetties. A condition survey was conducted during the summer of 2018 that describes and quantifies the amount of missing structural stone and the degree of concrete degradation. This survey describes in detail the types of actions that are needed to prevent further degradation, and where these different actions are needed (Appendix B, C). This would be the first major repair and reconstruction of the jetties since the 1970s.

The ***purpose*** of the proposed project is to restore the jetties to their design dimensions in order to preserve safe navigation of the Humboldt Bay Entrance Channel. The proposed actions involve resetting pre-existing stones, placing newly-quarried stones, and pouring a

new concrete cap where needed. The ***need*** for these actions is to stabilize the jetties in order to prevent further degradation from storm surges and severe wave activity.

1.3 Location and Physical Setting

Humboldt Bay, a sprawling coastal estuary in Northern California (Humboldt County), is about 225 nautical miles north of San Francisco and 64 nautical miles south of Crescent City. The entrance to the bay is protected by two slightly convergent, rubble-mound jetties (Figure 1). The distance between the two straight portions ranges from 2,288' at their base to 2,090' between their heads. Two long sand spits divided by a narrow inlet separate Humboldt Bay from the ocean. The North and South Spits consist of beach and dune habitat with scattered pine trees, shrubs and grasses. The North Jetty extends out beyond the North Spit into the Pacific Ocean by some 2200', whereas the South Jetty extends some 3,300' beyond the South Spit. The full length of the jetties is approximately 8000 feet, with the North Jetty curved northward like a backwards letter "J," and the South Jetty angled down towards the south.

The width of the bay varies from 0.5 miles to about 4 miles, whereas the length is about 14 miles. The Entrance Channel, which provides ingress and egress for deep-draft vessels serving Humboldt Harbor and Bay environs, is periodically maintenance dredged to a congressionally-authorized depth of 48 feet (plus two feet of allowable overdepth). The Entrance Channel, situated between the two jetties, lies closer to the South Jetty (Figure 1).

1.4 Existing Conditions

The Humboldt Bay region climate consists of moderate temperatures and considerable precipitation. Typically, the region experiences mild, moist winters and cool, dry, foggy summers. Mean monthly air temperatures along the coast vary about 10^{o} (^{o}F) from summer to winter; ocean temperatures typically are between 52 and 56^{o}F. Rainfall generally occurs every month of the year with light amounts of rain typified during the summer months.

As winter approaches, the Pacific High begins to weaken and shift to the south, allowing polar storms to pass through the region. Severe storms, heavy winds and squalls occur frequently along the coast during the winter season as a result. As such, the Humboldt Bay jetties are regularly pounded by the severe wave conditions spawned by these storms. The Pacific Northwest, and particularly the Humboldt Bay environs, experiences the most extreme wave climate, by an order of magnitude, of any place in the continental United States.

The following excerpt, from a 19th-century U.S. Army Corps of Engineers navigation report, describes typical sea conditions at the entrance to Humboldt Bay during the winter months:

> *"It has been reported by masters of vessels that no such heavy seas have been encountered elsewhere in the world, unless perhaps south of the Cape of Good Hope or Cape Horn. Waves have been seen to break in 8 or 10 fathoms of water. It was originally believed that no jetties or such construction could possibly withstand the forces brought to bear by waves during storms, so that the improvement was undertaken with great misgiving."*

A vivid description of the enormous waves encountered by navigators and those engaged in attempting to provide a stable entrance to Humboldt Bay through the construction, repair and maintenance of jetties. Indeed, the Humboldt Jetties are two of the oldest manmade structures on the Pacific coast subjected to extreme wave attack (Magoon *et al.*, 1976).

In the absence of significant freshwater inflow, the predominant driving forces in Humboldt Bay are the tides. Circulation within the Bay is almost entirely tidally dominated, and the hydrography of the Bay is normally unstratified marine water. The intertidal and subtidal portions of the North and South Jetties support green, red, and brown algae communities. The only wildlife to be regularly associated with the jetties are sea birds who have been known to occasionally roost there.

The jetties, which protect the Entrance Channel, yield numerous benefits. For example, the channel was originally deepened to 25' in 1896, and over the years the depth has been gradually increased to today's 48' (plus two feet of allowable overdepth). Additionally, the United States Coast Guard (USCG) maintains a search and rescue station on the North Spit.

Economic benefits from the jetties include boons to the lumber industry, various export/ import businesses, waterborne commerce, and opportunities for recreational endeavors such as deep sea fishing and surfing. As such, the region's economic stability has depended upon continued maintenance and design improvements to the Humboldt Bay jetties.

Figure 1. Map showing location and footprint (inset) of the proposed project.

1.5 Brief Construction History

Prior to construction of the jetties, efforts to enter Humboldt Bay were very dangerous. In the period between 1853 and 1880, 81 people were killed while their vessels were navigated unsuccessfully across the large sand bar which obstructed the harbor's entrance. Local concerns were not only for safety, but also for enriched commerce (U.S. Congress 1879). From 1877 to 1884, William Ayres, editor to the Eureka newspaper, expended considerable effort to gain the attention of Congress and the Army Corps of Engineers to realize his vision of Eureka and Humboldt Bay as the commercial center of Northern California. He suggested a jetty system be built similar to that constructed on the Mississippi River a few years before (Pritchard 1987).

The lobbying efforts of local citizens, led unofficially by Ayres, culminated in the passage of the Rivers and Harbors Act of 1881, which led to the construction of a channel, and the construction of a jetty 6000 feet long extending northwesterly from the South Spit. Construction began on the South Jetty in 1889; work on the North Jetty began in 1891. By late 1891, the South Jetty was about 4000 feet long and the North Jetty was 1500 feet long.

The jetties were constructed by dumping rock from rail cars on trestles. The rock of the jetties was composed of pieces up to 8 tons in weight. They were allowed to assume their own slope as dumped from the cars. The heavy seas would flatten this slope and lower the top. More rock would then be added to raise it. This process needed to be repeated several times (HAER Draft 1987).

In July 1915, a trestle was built on the North Jetty and the jetty was reconstructed with a 1050-ton concrete monolith added to its seaward end. With this reconstruction, the jetty was finished with a concrete slab, 20 feet wide and 2 feet thick, in which the railroad ties for the crane and rock car tracks were embedded. Between 1925 and 1927, parapet walls and concrete caps were added to the crests of both jetties and mass concrete was poured on channel-side slopes to stabilize armor stone. By 1939, the North and South Jetties were completed to their full lengths, with the elevation of the crest at the seaward ends varying from about 12 to 19 feet MLLW.

Between the 1920s and the 1980s, the jetties were under almost continuous repair or modification. For example, the South Jetty was breached in 1950 between stations 85+63 and 86+35, particularly on their sea side. The side slope was patched by mass concrete to conform to existing adjacent slopes to elevation +18 MLLW. Under a continuous repair contract, a breach in the South Jetty the following year was repaired with 950 cubic yards of mass concrete plus twelve 100-ton concrete blocks.

Notably, during the early 1970s, thousands of 42-ton, 15' x 15' x 15' concrete tetrapods ("dolosse") were placed on the seaward jetty heads, which had been almost completely destroyed by storms (Hagwood 1981). Since the dolosse were placed (1971-73), however, only routine, relatively small-scale maintenance has been carried out on the jetties.

In 1977, the North and South Jetties were officially recognized by USACE as California Historical Civil Engineering Landmarks (USACE 1991). Milestones and other highlights of major repairs and jetty improvements over the last century and a half are listed in Table 1.

Table 1. Highlights: Milestones & Major Improvements of the Humboldt Bay Jetties.

Year	***Description****
1853	First marker buoys for bay.
1856	Light tower completed on North Spit.
1881	Brush and plank jetties constructed—destroyed in winter.
1881	First USACE project authorized; Eureka Channel first dredged.
1884	South Jetty authorized.
1888	Dual jetties authorized.
1889	South Jetty construction started (brush and stone construction).
1891	North Jetty construction started.
1896	Bar Channel deepened to -25 ft. MLLW, and widened to 100 ft.
1900	Initial jetty construction completed; 8,000 ft. long, 5-10 ft. above MLLW.
1911-17	Jetties damaged and repaired; raised from 10 ft. to height of 18 ft. MLLW.
1915	Trestle built; 1050-ton concrete monolith added to N. Jetty seaward end.
1925-27	Parapet walls and concrete caps added to both jetties.
1939	Dual rubble-mound jetties completed.
1954	Entrance Channel deepening completed to -40 ft. MLLW.
1959	Engineering and design study; repair on North and South Jetty.
1960-63	Repair damage of winter of 1957-58.
1964-65	Extreme winter storm damage to jetties (100-ton blocks washed away).
1966-67	Repair and maintenance on North and South Jetty.
1969	Jetty repair study and model conducted by ERDC in Vicksburg, MS.
1971-73	Dolosse placed on jetties; heads had been completely destroyed.
1977	USACE lists jetties as California Historical Civil Engineering Landmarks.

**After Tables 2 and 3 of Costa and Glatzel, 2002.*

2 Alternatives

2.1 Introduction

In this section, several alternatives regarding the proposed construction work are laid out. The first alternative considered is No Action (§2.2). Next, various action alternatives are described, with the text split between Activities Common to All Action Alternatives (§2.3), and then a listing of evaluated Action Alternatives (§2.4). Finally, at the end is a very brief section on Alternatives Considered but Not Evaluated further (§2.5).

2.2 No Action Alternative

Under the No Federal Action alternative, the federal government would not repair any segments of the damaged breakwaters. Degradation and significant damage to the jetties is expected to increase gradually over time, especially as they experience severe storms and high-energy wave events during the winter months. Eventually, without proper maintenance, failure of one or both jetties is likely to occur, thereby exposing adjacent sandy beaches and dune habitat to the forces of nature. Furthermore, navigability and safety for deep draft and other commercial and recreational fishing vessels entering and leaving the Entrance Channel would be directly impacted, and businesses and industries dependent upon waterborne commerce would be indirectly adversely affected.

2.3 Activities Common to All Action Alternatives

2.3.1 Repair Types

Repair and reconstruction of the North and South jetties will be limited to those portions below the jetty heads not covered with 42-ton concrete dolosse (measuring 15 x 15 x15 feet). The repair work can be categorized into three types of action as described below, and as illustrated in Figures 2A, 2B, and 2C. Locations of the different repair types are graphically detailed in Appendix B, and the priority for their replacement (largely based upon the urgency of repairs needed) is graphically detailed in Appendix C.

Repair Type 1— Jetty section maintains its structural integrity. Type 1 repairs involve restoring the concrete cap and parapet wall where it is severely damaged, and replacement of underlying small stones that are missing beneath the cap. Severe wave action over the years has resulted in cracking and loss of existing pieces of the cap, ranging from small, blow-hole size pieces to large scale slumping and failure of immense sections of concrete. Huge cavities in the jetty can develop where underlying stones are exposed and gouged out by storm waves (Figures 2A, 3, 4). The reconstructed cap will be composed entirely of concrete strengthened with glass and steel fibers; it will have no separate steel bar reinforcement.

Repair Type 1 estimated length along the North Jetty: 2,075 feet
Repair Type 1 estimated length along the South Jetty: 675 feet

Repair Type 2— Jetty section maintains its structural integrity. Type 2 repairs involve resetting stones, and as needed, replacement of displaced stones on the jetty slope with newly -quarried rock to restore side slopes to their pre-existing design dimensions (Figures 2B, 5).

Repair Type 2 estimated length along the North Jetty: 3,125 feet
Repair Type 2 estimated length along the South Jetty: 3,375 feet

Repair Type 3— Jetty section has lost its structural integrity (Figures 2C, 6). Type 3 repairs involve removing entire portions of jetty, and then reconstructing them, stone by stone, with both existing stones and newly quarried stones. During reconstruction, rock will be carefully placed by crane into stable, interlocking positions such that the reconstructed jetty will attain its pre-existing design dimensions. Upon completion of Type 3 repairs, a new concrete cap (with glass and steel fiber reinforcement), plus parapet wall will be recreated.

Repair Type 3 estimated length along the North Jetty: 600 feet
Repair Type 3 estimated length along the South Jetty: 600 feet

2.3.2 Repairs & Reconstruction—Background Information

The proposed work is classified as maintenance repair and reconstruction, and as such, the design of the jetties will not be altered. This work will involve procurement of both large boulders, measuring 6-10 feet across, and of smaller stone measuring 6-24 inches across.

The work will entail the following actions: a) mobilizing construction equipment to the site and demobilizing same equipment at the conclusion of the project; b) rearranging existing stones on the jetty slope as needed; c) importing newly-quarried stone and rebuilding the jetty where stone is either missing or where the structural integrity has been compromised by storms and severe wave action; d) removing the concrete cap walkway and parapet wall where damaged or severely degraded, and rebuilding these structures on top of the jetty.

It is anticipated that construction equipment will entail two large cranes capable of hoisting 25-ton boulders, together with trucks and ancillary equipment capable of pouring concrete, and trucks carrying newly-quarried stone as needed. The large crane and trucks will be positioned either on the jetties themselves, or inboard (land) side of the jetties. For each jetty, a contractor's limits of work and "staging area" for the storage of stone and construction equipment will be located nearby. These staging areas, and the haul roads that feed into them, will consist of sandy substrate largely devoid of vegetative growth (Figures 9-11). At the end of construction, the contractor will be required to repair any damage to the transportation routes and staging areas utilized for the project to ensure these areas are left in existing or better condition.

For the two jetties, the property directly impacted by the proposed action is exclusively owned by USACE, and therefore real estate permitting is not expected to be at issue. On the other hand, land on the North and South Spits that is contiguous with the jetties is owned by various government agencies (e.g. USCG, USACE, State of California), but it is all managed by the Bureau of Land Management (BLM). Therefore, prior to beginning construction, USACE will obtain Temporary Use Permits from the BLM giving USACE permission for use of the roads and staging areas associated with the proposed action. The USACE has initiated coordination with the BLM Arcata office and they intend to complete a Categorical Exclusion then issue a Temporary Use Permit with concurrence from the U.S. Coast Guard for the North Jetty and one with concurrence from the State of California for the South Jetty

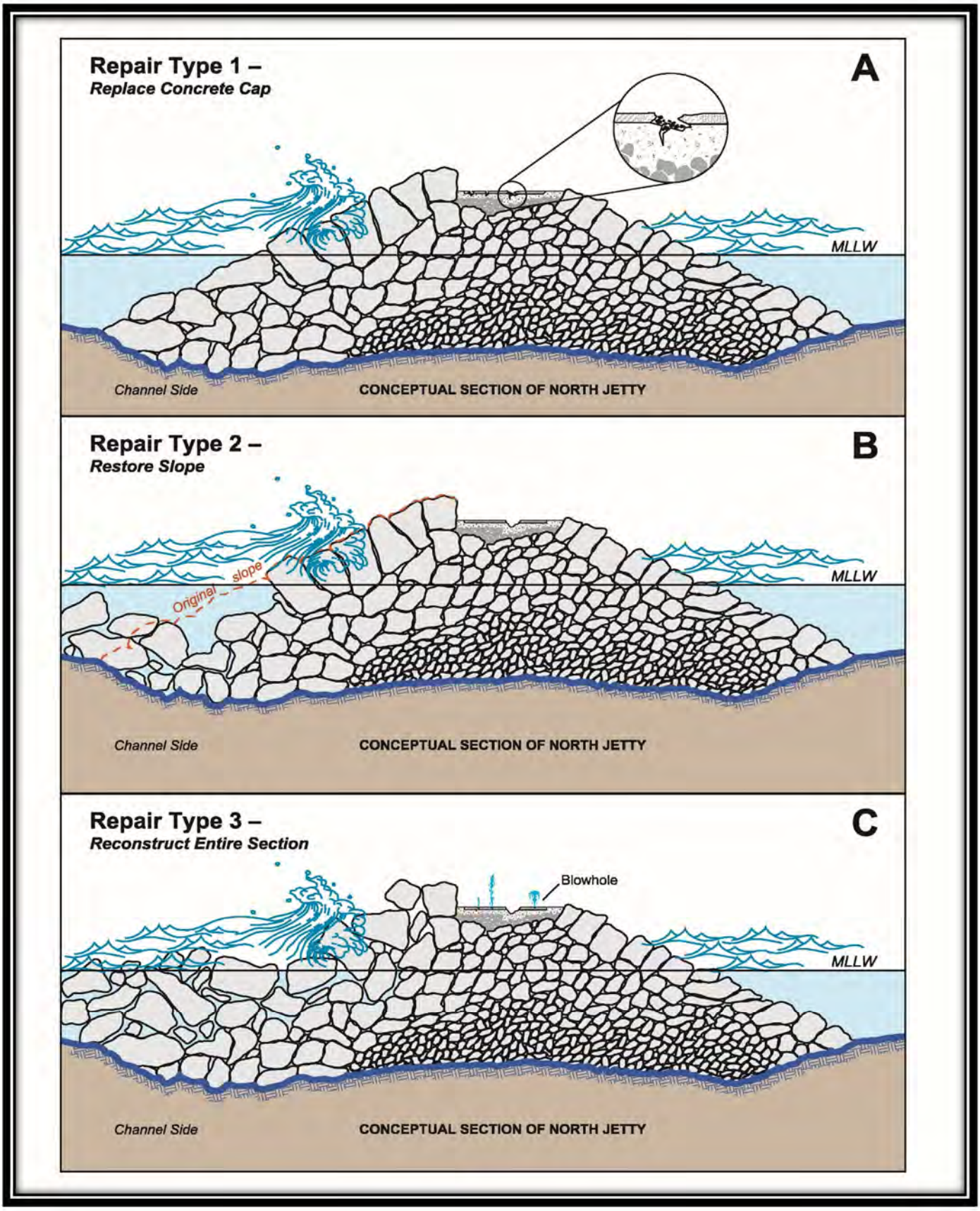


Figure 2. Conceptual depictions of the three types of jetty repair.

Figure 3. Photo of concrete cap in need of repair (Type 1).

Figure 4. Photo of concrete cap in need of repair (Type 1).

Figure 5. Photo of jetty slope in need of repair (Type 2).

Figure 6. Photo of entire jetty cross-section in need of repair (Type 3).

2.3.3 North Jetty Repair—Detailed Information

Repair of the North Jetty is scheduled for 2020. Due to the wave climate in the Entrance Channel, construction will take place approximately between the months of March and October.

The required stone class is 15-20 ton boulders (10'-12' across). Rock for the North Jetty will be sourced either from the Mountain Gate Quarry, in Redding, California (bulk specific gravity = 2.662) or the Liscom Hill Quarry, in Willow Creek, CA (bulk specific gravity = 2.89). USACE is testing rock quality to ensure that it meets technical criteria for jetty construction; physical-testing results and quarry inspection will be completed by October 2019. It is anticipated that the mode of transportation for the quarry rock will be by truck. The maximum travel distance from the Mountain Gate quarry is 190 miles; the travel distance from the Liscom Hill Quarry is 25 miles.

In the event the stones are transported by barge to the project site, a barge will dock and unload the rock at Fairhaven Pier. Once the stones are offloaded, they will be loaded onto trucks and transported on New Navy Base Road to the proposed staging area.

The proposed North Jetty staging area is shown in Figure 9 (Top) and is approximately 4.17 acres; it will be the primary location to store stones and construction equipment. The proposed North Jetty construction limits of work, haul roads, and staging area are shown in Figure 11 (Top). As construction progresses, construction equipment could be stored on top of the existing jetty or on the landward sand dunes where there is little to no existing vegetative growth (the average distance between the jetty and existing vegetation is 120 feet). The landward construction limits of work and especially the staging area are expected to be inaccessible to the public during the construction season for safety reasons. These areas are likely be demarked with orange construction fencing and/or signage by the contractor to identify areas that the public should not enter during construction. The parking area north of the staging area will remain open to the public during construction, however, detour signs will be used to redirect the public away from the staging area or areas off limit that are near the jetty. While not expected, should construction on the North Jetty require two seasons, the majority of the staging area and limits to work would be removed – allowing full public access outside of the construction season - and then re-established at the beginning of the next construction season. In such a case, a small portion of the staging area may need to remain in place to hold rocks that have been delivered. The USACE will place signage with USACE and/or contractor contact information at the site of active construction for the public to utilize should any issues need reporting.

Depending upon available funding and the degree of jetty degradation, the priority level of repairing various sections of the jetty has been mapped out (Appendix B) and prioritized as follows: Priority 1—1,600 feet, Priority 2—1,325 feet, Priority 3—875 feet. There is no correlation between priority level and the category of repair type.

2.3.4 South Jetty Repair—Detailed Information

Repair of the South Jetty is scheduled for 2021. Due to the wave climate in the Entrance Channel, construction will take place approximately between the months of March and October.

The required stone class is 15-20 ton boulders (10'-12' across). Rock for the South Jetty will be sourced either from the Mountain Gate Quarry, in Redding, California (bulk specific gravity = 2.662) or the Liscom Hill Quarry, in Willow Creek, CA (bulk specific gravity = 2.89). USACE is testing rock quality to ensure that it meets technical criteria for jetty construction; physical-testing results and quarry inspection will be completed by October 2019. It is anticipated that the mode of transportation for the quarry rock will be by truck along Table Bluff Road/South Jetty Road. The maximum travel distance from the Mountain Gate quarry is 181 miles; the travel distance from the Liscom Hill Quarry is 38 miles.

The proposed South Jetty staging areas cover approximately 0.76 acres and are shown in Figure 9 (bottom) and Figure 10; these will be the primary locations to store stones and construction equipment. As construction progresses, construction equipment could be stored on top of the existing jetty or on the landward sand dunes where there is little to no existing vegetative growth (the average distance between the jetty and existing vegetation is 40 feet). The proposed South Jetty construction limits of work, haul roads, and staging areas are shown in Figure 11 (Bottom). The landward construction limits of work and especially the staging areas are expected to be inaccessible to the public during the construction season for safety reasons. Thus, the parking area and restroom facility near the South Jetty will likely be closed to the public during construction. Detour signs, orange construction fencing, and/or other signage may be used by the contractor to identify staging area or areas off limit that are near the jetty that the public should not enter during construction and to redirect the public. . While not expected, should construction on the South Jetty require two seasons, the staging area and limits to work would be removed – allowing full public access outside of the construction season - and then re-established at the beginning of the next construction season. In such a case, a small portion of the staging area may need to remain in place to hold rocks that have been delivered. The USACE will place signage with USACE and/or contractor contact information at the site of active construction for the public to utilize should any issues need reporting.

Depending upon available funding and the degree of jetty degradation, the priority level of repairing various sections of the jetty has been mapped out (Appendix B) and prioritized as follows: Priority 1—525 feet, Priority 2—725 feet, Priority 3—2,475 feet. There is no correlation between priority level and the category of repair type.

2.3.5 Bringing Rock In by Water

In the event that trucks cannot use Table Bluff Road/South Jetty Road, trucks will be redirected to the Fields Landing Boat Yard to transport the stones by barge to the project site. The barge will transport the stones across the bay to the South Jetty. Because there are no offloading docks in the area, the construction contractor would need to identify a system for offloading stones. No pile driving, or dredging of material, or permanent fill shall be allowed as part of setting up or executing any system of offloading stones. The contractor would also

be required to remain within the limits of work for the South Jetty as delineated in Figure 11 (Bottom).

One potential approach would be for a barge, filled with 15-20 ton boulders, or with heavy construction equipment (cranes), to land directly on the beach immediately adjacent to the bay-ward end of the South Jetty. The stones, or equipment, would then be off-loaded, and then transported with a loader to the staging area. With this scenario, it's possible that a small amount of sediment will need to be moved. This action would not involve dredging and subsequent disposal. Instead, sediment removal would involve side-casting (pushing sediment to the side) to create a shallow area, or "notch," that the barge would be able to slide into. After completion of the project, the side-casted sediment would be left to naturally return.

2.4 Action Alternatives

2.4.1 Alternative 1—Rock Trucked In From Distant Quarry Source

Under Alternative 1, rock would be trucked in from a distant quarry source. The most likely possibility is the quarry known as Mountain Gate in Redding, California. This quarry contains limestone (bulk sp. gr. = 2.662) that has been petrographically described and tested. The limestone would be blasted into 15-20 ton size boulders (8' to 10' diameter) and temporarily stored at the quarry until it is ready to be transported by truck to the jetty staging areas. Due to their weight, it is expected that the stone would be hauled one-stone per truck trip, or over two construction seasons, approximately 2,000 total truck trips (or roughly 1000 trips per jetty). The travel distance to the North Jetty staging area from Mountain Gate is 190 miles (Figure 7 Top); the distance to the South Jetty staging area is 181 miles (Figure 7 Bottom).

For the South Jetty, if trucks can't get past the bridge crossing or any sharp turns leading to the area along South Jetty Road, the stones will be redirected to Fields Landing boat yard, loaded into a barge, barged over to the unloading area near the bayside end of the south jetty, and then transported to the staging area. On-site equipment (including two heavy-duty cranes and cement trucks operating from the land) would reset existing rock, replace lost rock with new stones from Mountain Gate, and pour a new concrete cap, as needed, to restore the jetty to its design dimensions.

2.4.2 Alternative 2—Rock Trucked In From Nearby Quarry Source

Under Alternative 2, rock would be trucked in from a nearby quarry source. The most likely possibility is the quarry known as Liscom Hill in Willow Creek, California. This quarry contains "greenstone" (bulk sp. gr. = 2.89) that has been petrographically described and tested. The greenstone would be blasted into 15-20 ton size boulders (8'to10' diameter) and temporarily stored at the quarry until it is ready to be transported by truck to the jetty staging areas. Due to their weight, it is expected that the stone would be hauled one-stone per truck trip, or over two construction seasons, approximately 2,000 total truck trips (or roughly 1000 trips per jetty). The travel distance to the North Jetty staging area from Liscom Hill is 25 miles (Figure 8 Top); the distance to the South Jetty staging area is 38 miles (Figure 8 Bottom).

For the South Jetty, if trucks can't get past the bridge crossing or any sharp turns leading to the area along South Jetty Road, the stones will be redirected to Fields Landing boat yard, loaded into a barge, barged over to the unloading area, and then transported to the staging area. On-site equipment (including two heavy-duty cranes and cement trucks operating from the land) would reset existing rock, replace lost rock with new stones from Liscom Hill, and pour a new concrete cap, as needed, to restore the jetty to its design dimensions.

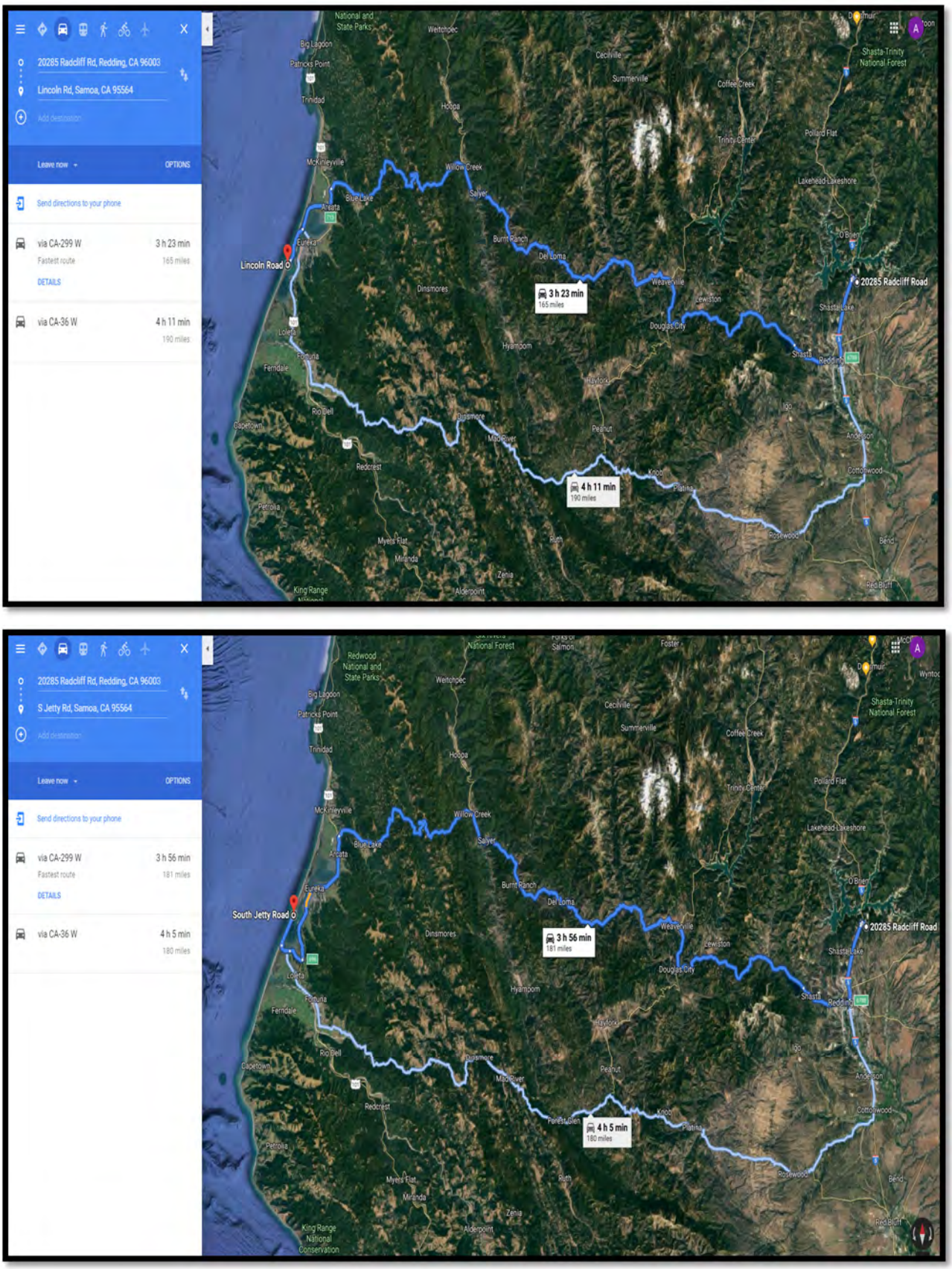


Figure 7. Alternative 1 travel routes to the North Jetty (top) and the South Jetty (bottom).

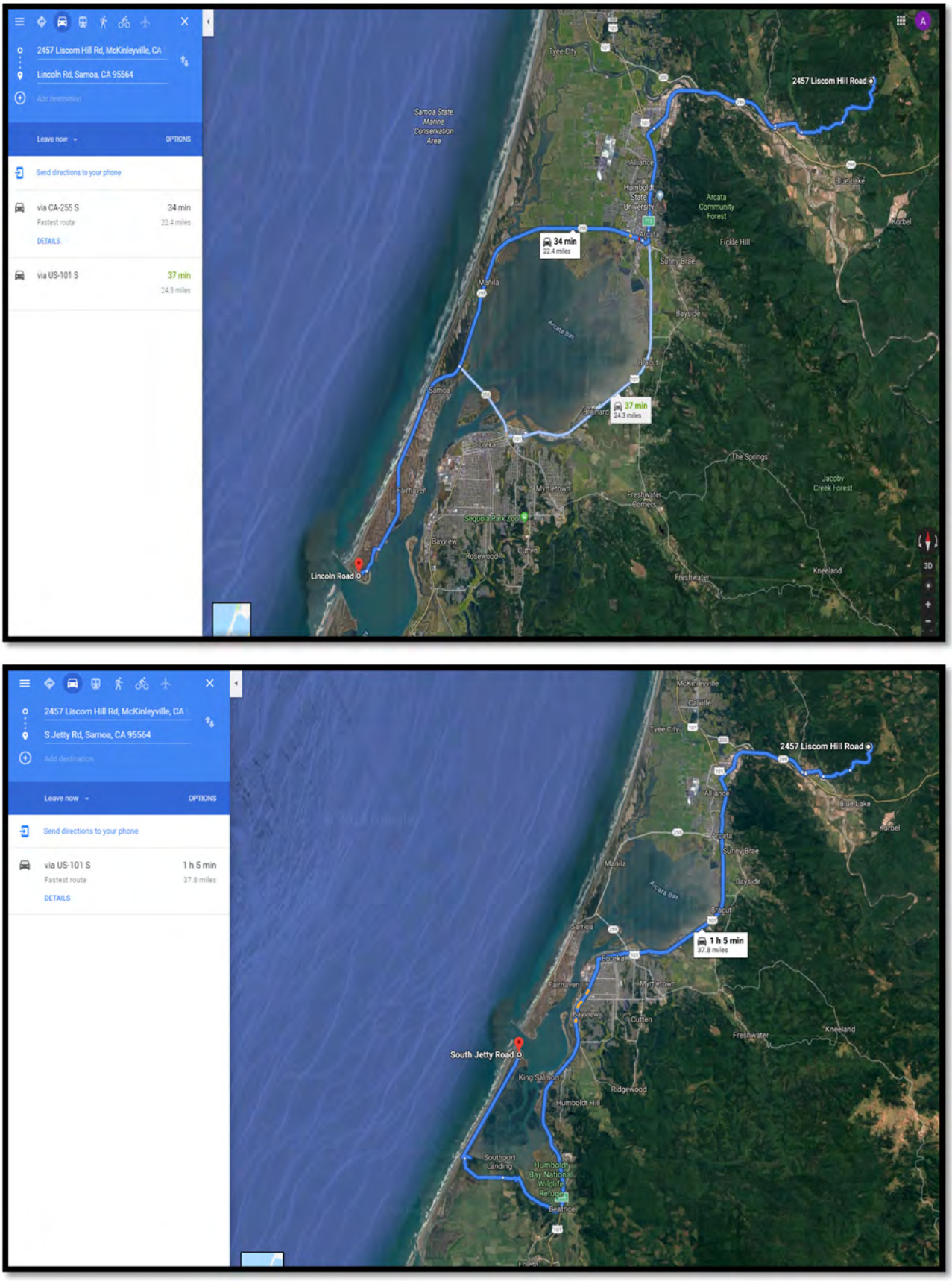


Figure 8. Alternative 2 travel routes to the North Jetty (top) and the South Jetty (bottom).

Figure 9. Proposed North Jetty (top) and South Jetty (bottom) haul road and staging area existing condition.

Figure 10. Stockpiles of stones, large (left) and small (right), from an earlier South Jetty repair, at the second staging area for the South Jetty.

Figure 11. Aerial overview of proposed Limits of work & staging areas for the North and South Jetties.

2.4.3 Alternative 3—Some Combination of Alternative 1 and Alternative 2

With this alternative, some combination of trucking in newly-quarried stone from a distant quarry source (Alternative 1) and trucking in stone from a nearby quarry source (Alternative 2) is used. At the contractor's discretion, the combination might be split equally between the North and South Jetties, or in some mixed proportion between the two jetties. If this alternative is used, the fact that construction work on the jetties will take place over multiple fiscal years may partially determine the actual mix.

2.4.4 Alternative 4—Barging In Newly-Quarried Rock

Under this scenario, rock would be barged in from some distant quarry source. Catalina Island, in southern California, is considered the most distant possible quarry source, and is therefore used as a baseline to calculate worst-case air emissions (610 nautical miles distant).

Barge capacity is 2,000 tons per load (equal to 100 to 130 stones of requisite size). The barge would come from the ocean and would use the existing navigation channel (Bar and Entrance Channel) to enter Humboldt Bay. For the North Jetty, the barge would access Fairhaven Pier and the stones would then be transported individually by truck to the staging area; for the South Jetty, the stones can be delivered directly by barge to the project area and then unloaded (see § 2.3.5). Heavy equipment (especially the cranes) could be barged in as well. Precautionary measures that are agreed to during consultation with the resource agencies would be incorporated into the final plans and specs.

2.5 Alternatives Briefly Considered, but Not Evaluated

Alternatives briefly considered, but not evaluated, include barging in rock from quarries in central Oregon and Canada, as well as quarries further south of Catalina Island. For these quarry possibilities, barging in adequate supplies of suitably large rock was considered technically feasible but cost prohibitive. Moreover, air quality impacts would increase with bringing stone from further and further away. Further study of these alternatives was not pursued because USACE has already evaluated four action alternatives that are considered to be environmentally preferable and logistically and economically more feasible.

3 Environmental Compliance

3.1 National Environmental Policy Act (42 U.S.C. § 1451 *et seq.)*

In compliance with NEPA (1969), the USACE is required to identify all direct, indirect, and cumulative impacts to the human environment that could be caused by the repair of the Humboldt Bay Jetties. For projects, or changes to old projects, with potentially significant impacts, NEPA compliance is usually documented in an Environmental Impact Statement. For projects with less than significant impacts, EAs usually document NEPA compliance and a Finding of No Significant Impact (FONSI) is then completed.

This EA was prepared in accordance with NEPA and the USACE's guidelines for implementing NEPA (33 CFR part 230). The draft EA was circulated for review and comment for a 30-day period from October 18 to November 16, 2019. The comments received, and USACE's responses, are listed in Appendix K. In this final EA, the text from the draft EA has been revised, updated, or supplemented, where applicable, to reflect the comments and the USACE responses. Additionally, the text has been updated to reflect the completion of other required environmental compliance.

3.2 Endangered Species Act (16 U.S.C. §1531 *et seq.*)

The Endangered Species Act of 1973 (ESA) provides protection for federally threatened and endangered species. The United States Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS) each determine which species need protection and maintain a list of threatened, endangered, and candidate species (T&E). Additionally, these agencies each designate species-specific areas of critical habitat.

The USACE has coordinated with the USFWS and NMFS regarding the potential effects of the proposed action on threatened and endangered species and designated critical habitat. The agencies concurred that informal consultation was appropriate for this project. On September 20, 2019, the USACE submitted a Biological Assessment (BA) to USFWS (Appendix H) and a BA/ Essential Fish Habitat (EFH) Assessment to NMFS (Appendix I). The ESA effects analyses provided to the USFWS and NMFS is briefly summarized in Table 2, and for several species, is detailed in the paragraphs below. The EFH assessment for various fishery management plans (FMP) is discussed under the Magnuson-Stevens Conservation and Management Act section below.

The USACE determined that the proposed action may affect but is not likely to adversely affect species listed as threatened or endangered under the ESA, or their designated critical habitats. The NMFS concurred with the USACE ESA determination via letter dated October 24, 2019 (Appendix I) and the USFWS concurred via letter dated November 5, 2019 (Appendix H).

Summarized in Table 2 is a listing of the federal ESA-listed species of concern and designated critical habitats (updated June 3, 2019) potentially occurring within and in the proximity of the proposed action area. Figure 14 shows the areas examined by USACE using the Information for Planning and Consultation (IPaC) database, a tool developed by USFWS

for identifying federally-listed threatened or endangered species in a particular area. This tool was utilized along with additional sources on endangered species under NMFS purview to generate the list of species compiled in Table 2. Documentation is provided in Appendix F. Additional detail regarding the potential for effects to certain species listed in table 2 is included in the paragraphs below

Pacific Coast Population of Western Snowy Plover

The snowy plover prefers open, flat, sandy nesting sites. Nests have been found on the South Spit (land designated as snowy plover critical habitat) and also in the vicinity of the South Jetty. Largely because of greater human activity, the plover does not appear to nest along the North Spit and there is no critical habitat for the species designated in the vicinity of the North Jetty. Nesting areas for the snowy plover along the South Spit are generally located along the western-most shoreline and extending 800 ft east.

Along the South Spit, the narrow confines of the jetty approach road is not considered problematic with regard to plover nests, but as one moves away from the road, the plover becomes susceptible to disturbance by off-road vehicles and people. The plover nesting season occurs from approximately March 1 through September 14 but can extend to September 30 (Susie Tharratt, USFWS, pers. comm. 6/5/2019) during which time the plover can make several nesting attempts. As this nesting season timing conflicts with the proposed jetty repair work window, noise or other disturbance associated with the proposed action could affect plovers during their breeding season.

For the North Jetty repair and reconstruction activities, the USACE has determined there would be no affect to Snowy Plovers or their critical habitat due to the lack of any critical habitat or Snowy plovers occurring in the vicinity of the North Jetty.

For the South Jetty repair and reconstruction, the USACE has determined the proposed activities are likely to affect, but not adversely affect, the Snowy Plover and its critical habitat nor jeopardize the continued existence of the species. The USACE is proposing to enforce the following avoidance measures for construction activities in the South Jetty area in order to avoid and minimize any adverse effects to Snowy Plover and its critical habitat:

- ✓ A qualified biologist will be onsite at all times during construction activities and will perform snowy plover nesting surveys within 600 ft of construction.
- ✓ Construction equipment shall have no access to the beach directly adjacent to the South Jetty seaward slope from the shoreline and extending 1,200 ft inland.
- ✓ If snowy plover nests are located within 600 ft of construction, all construction equipment will remain at least 300 ft away and maintain a speed up to 5 mph. If construction equipment cannot maintain a 300 foot distance away from the snowy plover, the contractor may continue construction under the direction of the qualified biologist.
- ✓ Placement of signage, fencing, and other preventative measures are required and should be erected at least 300 ft away from the nearest nest. Any new signs, fencing, etc. shall incorporate best management practices to minimize predation around the snowy plover. Under the supervision of the qualified biologist, additional inspections, minor

maintenance, research, and/or monitoring activities could be performed within 300 ft of the nest during the snowy plover breeding season.

- ✓ To the maximum extent practicable, all construction equipment mufflers will be directed away from areas of critical habitat to reduce noise disturbance.
- ✓ Haul routes from the staging area to the South Jetty will remain within the construction limits of work at all times.
- ✓ Equipment in the staging areas stored during non-construction hours will face away from critical habitat areas and have booms lowered at an angle to prevent predation around critical habitat areas.
- ✓ The contractor is not allowed to have animals (cats, dogs, etc.) onsite.
- ✓ No garbage or litter will be stored on or within the construction footprint.
- ✓ A qualified biologist will hold an environmental education program for all workers on Snowy Plover prior to starting construction activities.
- ✓ To the maximum extent practicable, critical habitat will be avoided.

Beach Layia

The BLM personnel voiced concern regarding impacts to Beach Layia, an endangered plant species, potentially inhabiting the vicinity of the proposed landing area for barges at the South Jetty (should barging of rock be necessary). The USACE discussed the potential for the proposed activities to impact this species with USFWS and determined the proposed activities would not affect the species. Beach Layia occurs outside the limits of work of the proposed action and therefore is not expected to be directly disturbed by the action. However, prior to releasing the construction solicitation, USACE will consult with the BLM's botanist to identify appropriate best management practices to include in the construction specifications to avoid disturbance to special-status plant species (such as beach layia, pink sand verbena, manyleaf gilia), if the barge landing area at the South Spit is deemed necessary by the construction contractor.

Tidewater Goby

The Northern tidewater goby is native to coastal lagoons and brackish bays near the mouths of freshwater streams along the northern California coast. Its critical habitat in the South Bay (Humboldt Bay National Wildlife Refuge), designated by USFWS, is within 3 miles of the project footprint. However, the species is not expected to occur in the vicinity of the jetty project action area nor is there any critical habitat in the vicinity of the jetties. The USACE has determined the Tidewater Goby would not be affected by the proposed action.

Salmonids and Green Sturgeon

For the threatened or endangered Southern Oregon/Northern California Coast (SONCC) coho salmon, California Coastal (CC) Chinook salmon, Northern California (NC) steelhead, the Southern Distinct Population Segment (SDPS) of North American green sturgeon, USACE has determined that the proposed action may effect, but is not likely to adversely

affect these species, or their respective designated critical habitats. These species occur in open, Pacific Ocean waters and may transit in the vicinity of the jetties. In-water work associated with the proposed action would be performed entirely by cranes stationed on land and consist only of relocating existing boulders from the channel bottom to the jetty, or of placing new boulders from the landward side onto the jetties. Boulder placement would be slow and deliberate. Due to the very small, temporary, and localized in-water construction activities juveniles as well as adults of these species would be expected to be motile enough to avoid direct disturbance. Noise would be limited to localized chain-on-rock or rock-on-rock contact and would be temporary. Localized disturbance or crushing of benthic food organisms may occur but this would be very small relative to the overall length and area of benthic habitat along the jetties. The following measures will be implemented to avoid and minimize impacts to these species and their critical habitats:

- ✓ Standard best-management practices will be applied to protect species and their habitat(s) from pollution because of fuels, oils, lubricants, and other harmful materials. Equipment that is used during the course of a proposed project will be fueled and serviced in a manner that will not affect federally-protected species in the action area or their habitats;
- ✓ A Spill Prevention Control and Countermeasure (SPCC) plan will be prepared to address the emergency cleanup of any hazardous material and will be available on site. The SPCC plan will incorporate SPCC, hazardous waste, stormwater and other emergency planning requirements;
- ✓ Well-maintained equipment will be used to perform the work, and, except in the case of a failure or breakdown, equipment maintenance will be performed off site. Equipment will be inspected daily by the operator for leaks or spills. If leaks or spills are encountered, the source of the leak will be identified, leaked material will be cleaned up, and the cleaning materials will be collected and properly disposed of;
- ✓ Fueling of marine-based equipment will occur at designated safe locations adjacent to the proposed project. Spills will be cleaned up immediately using spill-response equipment;
- ✓ Project proponents will exercise reasonable precaution to protect listed species and EFH-protected species and their habitat(s) from pollutants and other deleterious materials.

Orca Whale

In a rare sighting, a pod of seven Orca killer whales were recently spotted swimming in Humboldt Bay, near the county boat ramp on the North Spit, by the 1910 day-cruise boat M/V Madaket on May 31, 2019. Even though they are considered endangered under ESA, these animals are found almost exclusively offshore in Pacific Ocean waters. Given that the work (other than potentially barging in stones) would be confined to terrestrial areas and that this species is unlikely to occur in the Bay in general, USACE has determined the proposed action would not affect the species. Other marine mammals that are more commonly found around the Humboldt Bay Jetties include harbor porpoises and California sea lions (Wear 2019). None of these animals are listed as threatened or endangered under ESA.

Table 2. ESA listed species, designated critical habitat, and impacts assessment (as of June 3, 2019).

Common Name^,^	***Scientific Name***	***Federal Status***	***Potential to be Affected by Proposed Action†***
BIRDS			
Marbled murrelet	*Brachyramphus marmoratus*	Threatened	***No effect.*** Uncommon winter resident in action area.
Northern spotted owl	*Strix occidentalis courina*	Threatened	***No effect.*** Inhabits old growth forests, which are not present in action area.
Short-tailed albatross	*Diomedea albatrus*	Endangered	***No effect.*** Rare in California and not known to nest in the United States.
Western snowy plover (Pacific Coast Population)	*Charadrius nivosus nivosus*	Threatened	***Not likely to adversely affect.*** Can nest on beaches along South Spit adjacent to jetty; will consult with USFWS on determination.
Yellow-billed cuckoo	*Coccyzus americanus occidentalis*	Threatened	***No effect.*** Inhabits wooded areas with dense cover that is not present in action area.
FISH			
Tidewater goby	*Eucyclogobius newberryi*	Endangered	***No effect.*** Inhabits brackish bays near freshwater streams. Its habitat is several miles away from project footprint.
SONCC Coho ESU	*Oncorhynchus kisutch*	Threatened	***Not likely to adversely affect.*** Inhabits open Pacific Ocean waters.
CC Chinook Salmon	*Oncorhynchus tshawytscha*	Threatened	***Not likely to adversely affect.*** Inhabits open Pacific Ocean waters.
NC Steelhead DPS	*Oncorhynchus mykiss*	Threatened	***Not likely to adversely affect.*** Inhabits open Pacific Ocean waters.
SDPS Green Sturgeon	*Acipenser medirostris*	Threatened	***Not likely to adversely affect.*** Inhabits open Pacific Ocean waters.

FLOWERING PLANTS			
Beach Layia	*Layia carnosa*	Endangered	***No effect.*** May inhabit areas adjacent to potential South Spit barge landing area;.
Menzies' Wallflower	*Erysimum menziesii*	Endangered	***No effect.*** Inhabits upland areas outside of action area.
Western Lily	*Lilium occidentale*	Endangered	***No effect.*** Inhabits wetland areas outside of action area.
MAMMALS			
Fisher	*Pekania pennanti*	Proposed Threatened	***No effect.*** Inhabits upland areas outside of action area.
Orcas	*Orcinus orca*	Data inadequate	***No effect.*** Rarely seen in Humboldt Bay (most recent sighting was May 31, 2019); they are almost exclusively found offshore.
Blue Whale	*Balaenoptera musculus*	Endangered	***No effect.*** Inhabits open Pacific Ocean waters.
Fin Whale	*Balaenoptera physalus*	Endangered	***No effect.*** Inhabits open Pacific Ocean waters.
Humpback Whale	*Megaptera* novaeangliae	Endangered	***No effect.*** Inhabits open Pacific Ocean waters.
Southern Resident Killer Whale	*Orcinus orca*	Endangered	***No effect.*** Inhabits open Pacific Ocean waters.
North Pacific Right Whale	*Eubalaena japonica*	Endangered	***No effect.*** Inhabits open Pacific Ocean waters.
Sei Whale	*Balaenoptera borealis*	Endangered	***No effect.*** Inhabits open Pacific Ocean waters.
Sperm Whale	*Physeter macrocephalus*	Endangered	***No effect.*** Inhabits open Pacific Ocean waters.
REPTILES			
Green Sea Turtle	*Chelonia mydas*	Threatened	***No effect.*** Inhabits areas outside of action area.
East Pacific Green Sea Turtle	*Chelonia mydas*	Threatened	***No effect.*** Inhabits open Pacific Ocean waters.

Olive Ridley Sea Turtle	*Lepidochelys olivacea*	Threatened/ Endangered	***No effect.*** Inhabits open Pacific Ocean waters.
Leatherback Sea Turtle	*Dermochelys coriacea*	Endangered	***No effect.*** Inhabits open Pacific Ocean waters.
CRITICAL HABITAT (CH) AND ESSENTIAL FISH HABITAT (EFH)			
Tidewater Goby	n/a	Final (CH)	***No effect.*** Critical habitat is several miles away from project footprint.
SONCC Coho ESU	n/a	Final (CH)	***Not likely to adversely affect.***
CC Chinook Salmon	n/a	Final (CH)	***Not likely to adversely affect.***
NC Steelhead DPS	n/a	Final (CH)	***Not likely to adversely affect.***
SDPS Green Sturgeon	n/a	Final (CH)	***Not likely to adversely affect.***
Pacific Coast Salmon FMP	n/a	Final (EFH)	***No effect.***
Groundfish FMP	n/a	Final (EFH)	***May affect.*** Construction may affect this EFH.
Coastal Pelagics FMP	n/a	Final (EFH)	***No effect.***
Western Snowy Plover	n/a	Final (CH)	***Not likely to adversely affect***. Critical habitat designated on beaches along South Spit adjacent to jetty.

† Not likely to adversely affect = May affect, but not likely to adversely affect.

^ Black font = USFWS entry; ^ Blue font = NMFS entry.

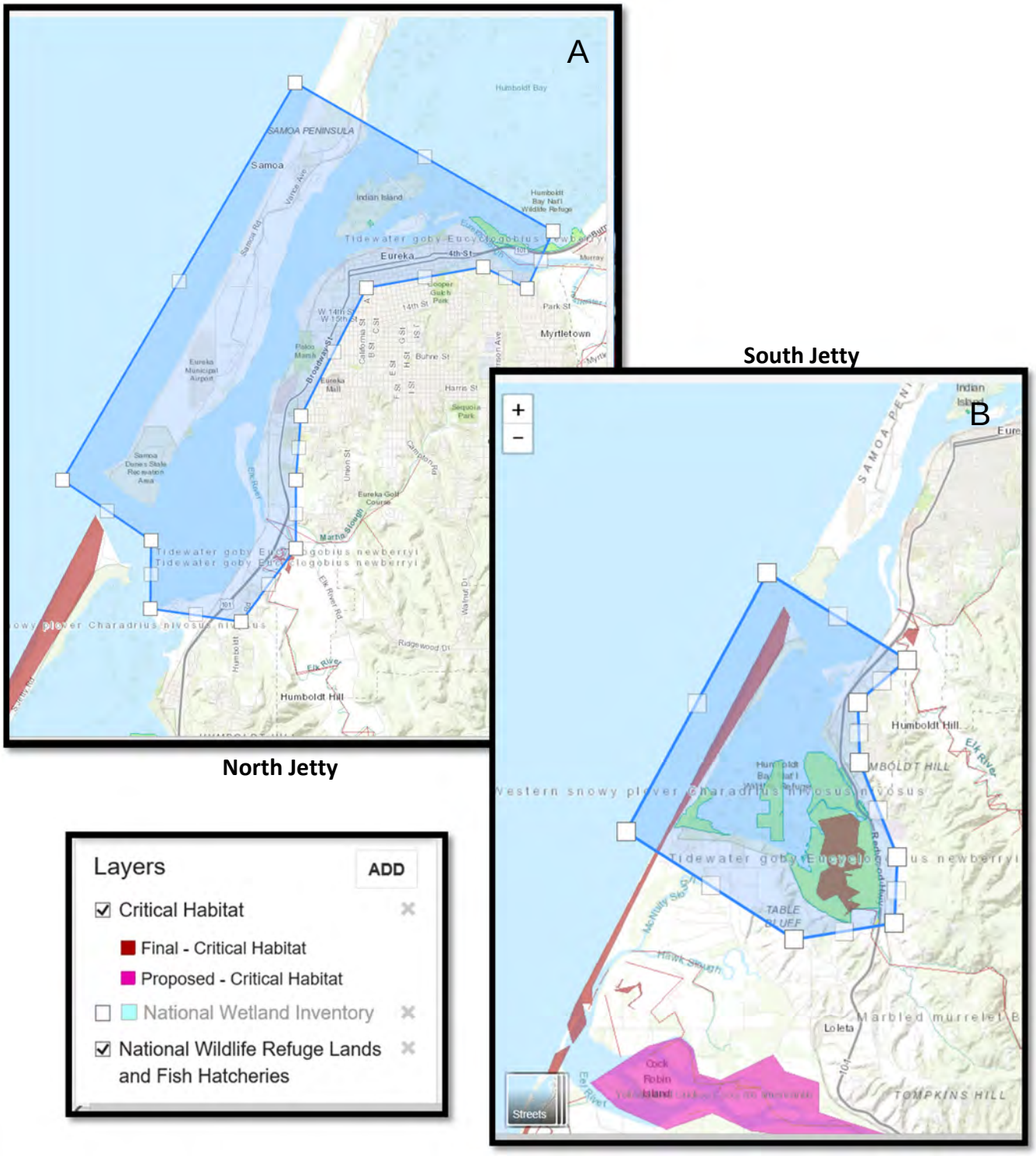


Figure 12. IPaC areas examined for listed threatened or endangered species (updated June 3, 2019).

3.3 Magnuson-Stevens Fishery Conservation and Management Act and Essential Fish Habitat (16 U.S.C. § 1802 *et seq*.)

The 1996 amendments to the Magnuson-Stevens Conservation and Management Act (MSA) set forth a number of new mandates for the NMFS, regional fishery management councils, and other federal agencies to identify and protect important commercially fished marine and anadromous fish habitat. The concept is similar to critical habitat under the Endangered Species Act. The measures that are recommended by NMFS are advisory for other agencies as opposed to mandatory.

The EFH mandates of the MSA represent an effort to integrate fisheries management and habitat management by stressing the ecological relationships between fishery resources and the environments upon which they depend. The MSA defines EFH as those waters and substrates that are necessary for fish spawning, breeding, feeding, or growth to maturity. Waters refer to aquatic areas and their associated physical, chemical, and biological properties that are used by fish, and may include areas historically used by fish. Substrates refers to sediment, hard bottom, or structures underlying the waters, and associated biological communities. Necessary refers to the habitat to support a sustainable fishery and the management of the species' contribution to a healthy ecosystem. Spawning, breeding, feeding, or growth to maturity refers to the full life cycle of a species.

USACE has determined that the proposed action may adversely affect Pacific Groundfish EFH in the action area through localized disturbance and increases in turbidity, especially near the benthos, and possible crushing events of prey organisms. These effects will be temporary and localized to the jetty, and there is a possible positive impact to areas for eelgrass to colonize once the project is complete. USACE has determined the proposed action would not affect EFH covered under the Pacific Coast Salmon FMP or Coastal Pelagic Species FMP due to the very small and localized disturbances to habitat in the water column.

On September 20, 2019, the USACE has submitted an EFH assessment to NMFS for this project (Appendix I). The NMFS concurred with the USACE EFH determination via letter dated October 24, 2019 (Appendix I) but stated they expected "the potential improvements to compensate for mortalities or injuries to managed individuals" and that they had no additional EFH conservation recommendations to suggest.

3.4 Coastal Zone Management Act (16 U.S.C. § 1451 *et seq*.)

The Coastal Zone Management Act of 1972 (CZMA) requires that federal activities in the coastal zone must be consistent with requirements established by the coastal management boards of the states in which the activities take place. For California, these requirements are based on the California Coastal Act of 1976. The USACE's determinations of consistency of the proposed project with provisions of the California Coastal Act are presented in Appendix E.

The USACE obtained a Negative Determination from the California Coastal Commission (CCC) (ND-0025-19), demonstrating consistency with the California Coastal Zone Management program pursuant to CZMA, on September 4, 2019 (Appendix E).

3.5 Clean Air Act (42 U.S.C. § 7401 *et seq*.)

The Clean Air Act (CAA) protects and enhances the quality of the air resources within the U.S., and protects public health from both long and short-term exposure to air contaminants. Under the CAA, the US Environmental Protection Agency (EPA) established a set of ambient air quality standards. In California, the California Air Resources Board established additional standards that are, in some cases, more stringent than those set by USEPA. As in all states, California has prepared, and is the primary enforcing authority for, a State Implementation Plan (SIP), which is a blueprint for achieving and maintaining the national and state ambient air quality standards.

Section 118(a) of the CAA provides that all federal agencies are subject to all state and local laws, regulations, and standards for air pollution control if the state and local laws are at least as stringent as those at the federal level, and provided that they have not been set aside by federal courts. Section 176(c) of the CAA provides that no federal agency shall engage in any activity that does not conform to a USEPA-approved SIP. Those requirements must be met by obtaining all necessary permits and approvals from state and local agencies prior to the start of project work.

The work for this project is to take place principally within the North Coast Unified Air Quality Management District (AQMD) which is listed as "attainment" or "unclassified" for all the federal and state ambient air quality standards with the exception of the state 24-hour particulate (PM_{10}) standard in Humboldt County only. In the case of alternatives that source stones from the quarry in Redding, CA, emissions must meet the standards for Shasta County AQMD which is listed as "attainment" or "unclassified" for all the federal and state ambient air quality standards with the exception of ozone which is in non-attainment according to the California standard. Alternatives that source stones from Catalina Island must meet the standards for the South Coast AQMD which has established daily significance thresholds. The South Coast AQMD daily significance thresholds are also used for ensuring de minimis thresholds are not exceeded for other air quality management districts, since South Coast AQMD is the only AQMD in California that has published daily significance thresholds and previously have been found to be acceptable by other AQMDs.

The 1990 CAA amendments require federal agencies proposing projects to complete an analysis to determine whether the project conforms to the approved SIP. The USEPA promulgated final guidelines on preparation of the conformity analysis in 1993. The USEPA’s final rule does not require a conformity analysis for proposed projects that are in attainment areas for national ambient air quality standards.

The footprint of the construction work for the project is within the jurisdiction of the North Coast Unified AQMD, but also includes Shasta County AQMD for alternatives 1 and 3 which source stones from Redding CA, and the South Coast AQMD for alternative 4 which sources stones from Catalina Island. In order to ensure emissions do not exceed thresholds for any air quality management district, emissions from the worst case scenario (i.e. the longest truck route) for each alternative were calculated and proportionally attributed to each district according to where the work would be performed, allowing for a comparison to each districts exceedance thresholds. Therefore, each activity within each air quality management

district was quantified for emissions, which can span multiple districts for 1 alternative. Calculations for this analysis are shown in Appendix D, and the effects analysis is presented in section 4, below. Based on this analysis, USACE has determined that under all action alternatives, temporary short-and long-term air impacts will be below de minimis levels. The proposed project has thus been determined to conform with Section 176(c)(1) of the Clean Air Act.

3.6 Clean Water Act (33 U.S.C. §1251 *et seq.*)

Discharges into waters of the U.S., which includes placement of rock below the high water line for this project, are covered by the Clean Water Act of 1972 (CWA). Such activities must comply with section 401 of the CWA of 1977, as amended, by receiving a water quality certification (WQC), or a waiver from Waste Discharge Requirements (WDRs). Regulatory control of water quality is delegated to local Regional Water Quality Control Boards, which, for this project is covered by their North Coast office (NCRWQCB).

USACE received a waiver (# R1-2017-0039) on August 29, 2019 (Appendix F), from the NCRWQCB, pursuant to section 401 of the Clean Water Act, for water quality coverage under existing Waste Discharge Requirements. Despite this, there are several water quality concerns relating to concrete pouring and certain rock placement that will require Best Management Practices (BMPs) be implemented during construction. These BMPs include covering wet concrete with sheet plastic to keep the cement dry, using a quick-dry cement sealant, and having a cement dust control plan in place.

Under Section 404 of the Clean Water Act, USACE is given authority to regulate the discharge of dredged and fill material into waters of the United States, including wetlands. For common activities USACE holds nationwide permits which can be attributed to projects that meet the requirements of the permit without the need for a separate individual permit to be issued. As the proposed project is for maintenance, "Nationwide Permit 3 – Maintenance" (NWP-3) will be used to satisfy Section 404(b)(1). NWP-3 includes the repair, rehabilitation, or replacement of any previously authorized, currently serviceable structure or fill, provided that the structure or fill is not to be put to uses differing from those uses specified or contemplated for it in the original permit or most recently authorized modification. The USACE prepared a 404 analysis to confirm the consistency of the proposed action with NWP-3 which is included as Appendix G.

3.7 Marine Mammal Protection Act (16 U.S.C. § 1361 *et seq.*)

The Marine Mammal Protection Act of 1972 provides protection for marine mammals. Harbor seals, sea lions and sea otters are the most likely marine mammals that might be encountered in the proposed action area. Because the jetties present these animals with relatively steep vertical relief, it is unlikely that they would haul-out on the jetty rocks. Instead, they would haul-out on buoys in the Entrance Channel or other Bay channels, or be found on nearby beaches. Their high visibility make them easy to spot, and with their great mobility they would easily avoid areas of construction work. Consequently, marine mammals are not expected to be affected by this project.

3.8 National Historic Preservation Act (16 U.S.C. § 469 *et seq.*)

The National Historic Preservation Act of 1966 (NHPA) set forth national policy for recognizing and protecting historic properties. It established the National Register of Historic Places (NRHP), and created a State Historic Preservation Officer (SHPO) in each state and the Advisory Council on Historic Preservation (ACHP) of the Executive Branch. Under Section 106 of the act, federal agencies are required to take into account the effects of their undertakings on historic properties and provide the SHPO, Native American tribes, and interested parties an opportunity to comment on those undertakings.

The implementing regulations of Section 106 published by the ACHP, "Protection of Historic Properties," are found in 36 C.F.R. Part 800. The goal of the Section 106 review process is to identify historic properties that may be impacted by the undertaking, and seek ways to avoid the adverse effects, or when necessary, develop treatment measures (i.e., mitigation measures) to reduce the level of adverse effect. When an agency determines there is an adverse effect on historic properties, the ACHP is contacted to request comment. Historic properties are defined in federal law as those properties that are listed in, or meet the criteria for listing in, the NRHP. The criteria for determining National Register eligibility are found in 36 C.F.R. Part 60. Generally, cultural resources that exhibit information important to prehistory or history, and possess various aspects of integrity, would be eligible for inclusion in the NRHP as historic properties. Amendments to the Act (1986 and 1992) have strengthened the provisions for Native American consultation and their participation in the Section 106 review process.

Humboldt Bay has been designated as the Humboldt Harbor Historical District (California State Landmark No. 882). Although the North and South Spits are considered archaeologically sensitive areas (USACE 1991), no archaeological sites have been reported from the southern tip of the North Spit and the northern tip of the South Spit. The North and South Jetties, themselves, being over 100 years old, qualify for inclusion in the NRHP and the Historic American Engineering Record. In 1977, the two jetties were declared California Historic Civil Engineering Landmarks (Costa and Glatzel 2002).

The USACE has consulted with tribes that have ethnographic, ancestral, and cultural ties to the project area. Three Wiyot tribes expressed interests and concerns about potential effects to historic properties. The USACE invited their comments and recommendations regarding potential adverse effects to historic properties near the project APE. A meeting was held in September 2019 with three federated Wiyot Tribal Historic Preservation Officers. As a result of that meeting, the project action area was refined and reduced to avoid adverse effects to traditional cultural properties and culturally significant plant species. A follow up meeting and email exchange regarding the revised action area were held in October and it was agreed the revised action area for the south jetty would avoid significant effects to these resources.

The USACE has determined that the jetties are eligible for the NRHP but that, pursuant to 36 CFR § 800.5 (b)(1), no historic properties would be adversely affected by any of the proposed action alternatives. To avoid any adverse effect to historic properties or cultural resources, the following measures will be implemented:

- ✓ No work shall occur outside the jetties pre-designated construction and staging areas.

- ✓ Interested tribes will be informed by USACE prior to the beginning of construction and tribal monitors will be allowed to observe construction activities when requested.

- ✓ Cultural resources, including buried or isolated archaeological sites, endangered plants, are non-renewable and sensitive; it is possible that they exist obscured from view by blowing sand, wind and rain, intense waves, or beneath vegetation. There is always the remote possibility that previously unknown cultural resources may be encountered. Therefore, the following precautionary measures will be implemented: If cultural resources are encountered at any time all construction shall be temporarily stopped at that location (including a reasonable distance around the site) and redirected to another area away from the discovery and a qualified cultural resources specialist retained to evaluate the find. This evaluation would follow Federal standards and guidelines. Additional site investigation would be required in addition to consultation with participating agencies. If historic properties were identified, then discovery procedures pursuant to 36 CFR 800.13 would be conducted and mitigation of adverse effects in consultation with participating agencies would be carried out in addition to site specific treatment during construction.

The USACE provided a letter to the State Historic Preservation Office (SHPO) on October 18, 2019 documenting the area of potential effects (APE) and the USACE determination of no adverse effect to historic properties. On November 22, 2019 the SHPO provided a response letter and did not object to the determination of no adverse effect to historic properties associated with the proposed action. The consultation letter and SHPO response are included as Appendix J.

The USACE has met federal requirements for consultation under the NHPA and is not obligated or required to comply with California Assembly Bill (AB) 52 (Gatto; Stats. 2014, ch. 532) which is related to tribal cultural resources and the California Environmental Quality Act (CEQA). However, the consultations undertaken by USACE with interested tribes may suffice to functionally comply with AB 52.

3.9 Archaeological and Historic Preservation Act (16 U.S.C. § 469 *et seq*.)

The Archaeological and Historic Preservation Act of 1974 (AHPA) provides for the preservation of historic and archaeological data that might otherwise be lost or destroyed because of any federal construction project. The AHPA authorizes the lead federal agency of a project, or the Secretary of the Interior, to undertake recovery or preservation of such data. Federal project funds, up to one percent of the project cost, may be used, or the lead agency may request the Secretary of the Interior to conduct the desired measures. In the event that significant cultural resources are encountered during the proposed construction activities, and they are determined to be historic or pre-historic properties, treatment measures to recover important data could be authorized under the AHPA.

3.10 Migratory Bird Treaty Act (16 U.S.C. § 703–712 et seq.)

The Migratory Bird Treaty Act (MBTA) of 1918, as amended, implements various treaties and conventions between the United States and other countries, including Canada, Japan, Mexico, and Russia, for the protection of migratory birds (16 USC 703–712). Under the Act, taking, killing, or possessing migratory birds, or their eggs or nests, is unlawful. California is noted for its high diversity of bird species given the state's position within the Pacific Flyway, other migratory corridors, climate, topographic and vegetative diversity, and proximity to varied habitat zones including the Pacific Ocean. The jetties themselves are not known not provide high quality habitat for sensitive life stages (such as nesting) of migratory birds. However, seabirds and other migratory birds may use the jetties or surrounding spits and open ocean for foraging and temporary stopovers. Potential impacts to migratory birds have been evaluated in this EA and determined to be less than significant.

4 Affected Environment and Environmental Consequences

4.1 Affected Environment

The affected environment, for purposes of this EA analysis, are areas of the Humboldt Bay Entrance Channel and the North and South Jetties that will be repaired and/or reconstructed; in addition, the affected environment includes any areas potentially affected by the transport or storage of construction equipment, or of newly-quarried rock. In the text, "effects" and "impacts" are used interchangeably, and affected environment is also referred to as the "project footprint."

4.2 Environmental Consequences

4.2.1 Physical/Chemical Characteristics and Potential Impacts

(X) Substrate: The substrate adjacent to the project footprint consists of sandy beaches and dunes; beneath the rock jetties are intertidal and subtidal communities of green, red, and brown algae, as well as other invertebrates. Transporting by truck newly-quarried rock to project sites (Alternatives 1-3), placing this stone and/or resetting pre-existing stone on the jetties, and pouring a new concrete cap could result in minor and temporary effects to the substrate. Rock brought in by barge (Alternative 4) could, in theory, result in erosion of the sandy beaches where stone is off-loaded. For all action alternatives, resetting rocks might locally disturb algal and other invertebrate communities on stones in the water, though, the impacts would be minor and temporary.

(X) Currents, circulation or drainage patterns: The ocean system near the jetties is wave-dominated, with no particular current or circulation patterns. Transporting by truck newly-quarried rock to project sites (Alternatives 1-3), placing this stone and/or resetting pre-existing stone on the jetties, and pouring a new concrete cap will not, in any way, disturb currents, circulation or drainage patterns. Rock brought in by barge (Alternative 4) will likewise have no impact on these particular characteristics. Most repairs will be done above the MLLW tide line. For all action alternatives, the effects of the repairs will be to restore the damaged jetties to their original design dimensions, with no adverse impacts.

(X) Suspended particulates and turbidity: Water everywhere inside the Entrance Channel, and therefore around the jetties, is like ocean water, largely clear of suspended particulates and turbidity. Transporting by truck (Alternatives 1-3), or barge (Alternative 4), newly-quarried rock to project sites, placing this stone and/or resetting pre-existing stone on the jetties, and pouring a new concrete cap will not result in increased turbidity because much of the repair work will be done dry, above the MLLW tide line, and only clean stones will be placed. Those repairs that require stones to be fished out of the water to be reset on the existing jetty will be done with the utmost care, one stone at a time, so as to create minimal turbidity. Any turbidity created would be minor and very temporary, ceasing after the movement or placement of an individual stone. Among the BMPs, there will be a dust control plan to control air-borne dust from entering waterbodies and causing turbidity, and if there is minor dredging or side-casting of sediment, turbidity will also be minor and temporary. With proposed avoidance measures, for all action alternatives, effects are insignificant and temporary.

(X) Water quality (temperature, salinity, and other parameters): Water everywhere inside the Entrance Channel, and therefore around the jetties, is consistent with ocean water—in terms of temperature, salinity, and other parameters. Transporting by truck (Alternatives 1-3), or barge (Alternative 4), newly-quarried rock to project sites, placing this stone and/or resetting pre-existing stone on the jetties, and pouring a new concrete cap will not violate any clean water standards. The construction contractor will be required to prepare and adhere to an Environmental Protection Plan (EPP) including a spill prevention plan and storm water pollution prevention plan to prevent discharge to waterbodies and protect water quality. The EPP will be required to include BMPs for the handling of cement and hazardous chemicals, and for responding to spills of hazardous materials during construction. For all action alternatives, impacts to water quality would be insignificant and temporary.

( ) Flood control functions: Not applicable.

(X) Storm, wave and erosion buffers: The jetties are subject to near constant "hammering" from severe wave action, particularly during winter months when storms frequently form. Transporting by truck (Alternatives 1-3), or barge (Alternative 4), newly-quarried rock to project sites, placing this stone and/or resetting pre-existing stone on the jetties, and pouring a new concrete cap will allow for the repair and reconstruction of existing stone structures. The purpose and need of the project is to bring the jetties back to their original design dimensions and, if necessary, to restore structural integrity, thereby enabling the jetties to protect (buffer) the channel and surrounding lands from future storms and severe wave action. For all action alternatives, the project will improve the long-term buffering capability of the jetties, with no adverse impacts.

It should be noted that because the purpose of the proposed project is to restore the jetties to their design dimensions as part of the maintenance of existing USACE structures, modifying the design of the jetties is not considered in this EA. While the jetties currently buffer the channel and surrounding areas from large wave action, sea-level change over time may modify the magnitude of wave action in the area. Such changing conditions may

necessitate future study of whether the existing design will continue to meet its intended purpose.

(X) Erosion and accretion patterns: Lands adjacent to the jetties, characterized by sandy beach and dunes, exhibit no discernible erosion or accretion patterns, separate from their interaction with the nearby Pacific Ocean. Transporting by truck (Alternatives 1-3), or barge (Alternative 4), newly-quarried rock to project sites, placing this stone and/or resetting pre-existing stone on the jetties, and pouring a new concrete cap will not impact erosion (except to slightly diminish loss of sand to the Entrance Channel), or alter accretion patterns. This is because the jetties are not being modified, but instead are being restored to their original design dimensions. To avoid impacting the substrate, the contractor will be instructed to carefully avoid working around any vegetated dune areas, and sensitive areas will be fenced off. For all action alternatives, effects are insignificant and temporary.

( ) Aquifer recharge: Not applicable.

( ) Baseflow: Not applicable.

4.2.2 Biological Characteristics and Potential Impacts

(X) Special aquatic sites (wetlands, mudflats, coral reefs, pool and riffle areas, vegetated shallows, sanctuaries and refuges, as defined in 40 C.F.R. 40-45): Intertidal and subtidal portions of the two jetties support green, red, and brown algae communities, along with invertebrates that grow on underwater rocks. No other special aquatic sites (as defined) fall within the project footprint. Transporting by truck (Alternatives 1-3), or barge (Alternative 4), newly-quarried rock to project sites, placing this stone and/or resetting pre-existing stone on the jetties, and pouring a new concrete cap could slightly disturb the algal communities, which would then quickly regenerate. For all action alternatives, effects are insignificant and temporary.

(X) Habitat for fish and other aquatic organisms: Because of the high energy ocean/ wave environment on the channel side of the jetties, there is little in the way of habitat for fish and other aquatic organisms. Transporting by truck (Alternatives 1-3), or barge (Alternative 4), newly-quarried rock to project sites, placing this stone and/or resetting pre-existing stone on the jetties, and pouring a new concrete cap will not significantly impact fish habitat and other aquatic organisms because most of the repairs will be done dry, well above the MLLW tide line. For repairs done in water, it is reasonable to assume that fish, or marine mammals, being highly mobile, would avoid areas of active construction, and that subtidal algal and immobile invertebrate communities which are disturbed by the construction would quickly regenerate. The impact avoidance measures described in Section 3 for listed fish species will be implemented and will also protect habitat for fish and aquatic organisms.

If quarried rock is transported to the project by barge, the barge vessels could inadvertently transport non-native aquatic species to the project area via hull biofouling and lead to the introduction and proliferation of marine invasive species. In order to mitigate for this potential impact, should the construction contractor choose to transport rock by barge, they

will be required to inspect marine vessels' hulls and other regularly wetted portions of vessels for biofouling and aquatic invasive species prior to transporting any stone to the site in any one construction season in which that vessel is to be used. If biofouling covers over 15% of the wetted surfaces of the vessel, it is considered extensively fouled and shall be cleaned prior to being used to transport rock to the site. Contractors will be directed to the California Aquatic Invasive Species Management Plan to identify aquatic invasive species and related management information and will be required to provide written certification to the government that vessel hulls are not extensively fouled or have been cleaned.

Considering the proposed mitigation measure for barging and the fact that most repair work will occur in the dry, for all action alternatives, the effects aquatic habitats and organisms are expected to be temporary and insignificant.

(X) Terrestrial Wildlife habitat (breeding, cover, food, travel, and general): The jetties serve as foraging and temporary stopover area for various seabirds, providing food from invertebrates that grow on underwater stones. Migratory birds may also stopover in the vicinity of the jetties and utilize areas along the north and south spit for resting or foraging. Small mammals such as squirrels, raccoons, opossum, and various rodents may also forage and traverse in these areas.

Transporting by truck (Alternatives 1-3), or barge (Alternative 4), newly-quarried rock to project sites, placing this stone and/or resetting pre-existing stone on the jetties, and pouring a new concrete cap, is not expected to significantly disturb bird or other wildlife habitat given the existing heavy use of the north and south spit for recreation and the vessel traffic transiting in and out of the jetties under existing conditions. During construction, only a small area, where the repairs are being done, and that gradually moves across the jetties, would not be available to seabirds or for other small mammals. Construction operations associated with the proposed action may also result in minor displacement of foraging birds or small mammals from equipment operation/noise. However, this effect would be temporary and given the availability of similar or higher-quality foraging and resting habitat along the spits and in open water in the project vicinity, the impact would be less than significant. Given the significant quantity of nearby habitat available and the temporary nature of the proposed action these effects to migratory birds and other terrestrial wildlife would be minor and temporary. For all action alternatives, impacts are expected to be less than significant.

(X) Endangered or threatened species: See ESA compliance (section 3.2 of this document), for more detail on T&E species and USACE determinations. Designated critical habitat (potential nesting areas) for and occurrence of the snowy plover occurs on the South Spit (Figure 14) adjacent to the project footprint (a nesting pair has been spotted within 250' of the jetty). Other federally-listed species including, beach layia, salmonids, and green sturgeon may occur in the vicinity of the project action areas (as described in section 3.2). USACE has proposed appropriate avoidance/minimization measures for applicable species and determined that the proposed project will thus have no effect or may affect, but is not likely to adversely affect federally listed species (see section 3.2). The USFWS and NMFS have concurred with this determination. Thus, for all action alternatives, effects to

endangered or threatened species are expected to be less than significant with the proposed avoidance measures.

(X) Biological availability of possible contaminants in dredged or fill material: The fill material currently making up the jetties is clean rock, or concrete with embedded wooden railroad ties and steel rail. This fill is completely free of contaminants. Transporting by truck (Alternatives 1-3), or barge (Alternative 4), newly-quarried rock to project sites, placing this stone and/or resetting pre-existing stone on the jetties, and pouring a new concrete cap will not introduce any contaminants, biologically available or otherwise, into Humboldt Bay waters, because the new rock that is placed will be completely clean. For all action alternatives, effects are non-existent.

4.2.3 Human Use Characteristics and Potential Impacts

( ) Existing and potential water supplies; water conservation: Not applicable.

(X) Recreational or commercial fisheries: Recreational and commercial fishing is an important part of the Humboldt Bay economy. Transporting by truck (Alternatives 1-3), or barge (Alternative 4), newly-quarried rock to project sites, placing this stone and/or resetting pre-existing stone on the jetties, and pouring a new concrete cap will result in temporary dislocations during the construction phase, in that for safety reasons, areas of and adjacent to the jetties will be closed to the public including anglers who may utilize areas surrounding the jetties for fishing. However, this will be a temporary inconvenience, and is necessary for public safety. The USACE provided a copy of the draft EA to California Department of Fish and Wildlife, and will notify them well in advance of Jetty closure so they can communicate the closure to anglers and others.. The USACE will also prepare and issue a press release, notifying the public of the specific timing of construction and extent of closures at the project area prior to the initiation of construction for their awareness.

As documented in the letter of support received for the project from the Humboldt Area Saltwater Anglers (Appendix K), when the jetties are restored to their original design dimensions, they will aid local commercial and recreational fishing vessels, dive and whale watching charters, and local businesses that support these activities by improving the safety of the bar entrance and providing further protection from storms and severe wave action. For all action alternatives, the adverse effects will be temporary, and less than significant and the beneficial effects to safety will be long term.

(X) Other water-related recreation: The jetties y make safe other recreational pursuits such as sailing, kayaking, and surfing. The Surfrider Foundation estimates that approximately 20 surfers per day on average drive out to the North Jetty and surf, with up to approximately 100 surfers on certain days (Appendix K). They note that where people surf and where surfers enter and exit the water depends on the sand bar locations, tides, swell, and wind.

Under all action alternatives, there may be some recreational impacts associated with less parking and diminished accessibility due to the location of the staging areas and limits of

construction. Given the potential for active construction including the use of heavy construction equipment along the majority of the jetty's length to place large stones on the water side and to pour concrete, public access within the limits of work for construction (yellow line in figure 11), including the beach immediately adjacent to the jetties and the structures themselves, will be limited given concerns for the safety of the public and to prevent damage to repairs as they are being performed. The extent and timing of the access limitation within the limits of work for construction will be dictated by the construction contractor. For the north jetty, the staging area is proposed to occupy a portion of the public parking area. However, the staging area at the North Jetty will not fully block access, the area immediately north of the staging area outlined in Figure 11 will remain open to the public. On the South Jetty the parking area and restroom facility adjacent to the jetty will likely be closed to the public during the construction season. There is a small dirt pull off at the end of the construction limits of work just prior to the split of the South Jetty access road that vehicles could use for parking purposes instead. Moreover, the construction limits and staging areas are expected to be utilized only during the construction season (approximately March-October). Should construction at one jetty or the other require more than one season, the limits and staging area for that jetty, and the associated equipment stored there, would be removed and then be re-established the following season, opening the full area to public access outside of the construction season.

The expected maximum potential impact to recreation, would be full closure of the area within the limits of work for the entire duration of construction on a Jetty (e.g. north or south). However, The USACE will inform the construction contractor of the recreational uses of the areas around the jetties so that if possible, they can develop a construction plan that minimizes impacts to recreation when/where safe and feasible. Throughout construction, recreationalists will have water access outside of the limits of work for construction via which the water can be accessed for recreation.

Transporting by truck (Alternatives 1-3) newly-quarried rock to project sites will be conducted from the land side so impacts to other on water-recreation are expected to be minimal. Transporting newly quarried rock by barge (Alternative 4), could have temporary impacts to waterborne recreation due to additional vessel traffic. However, given the high existing level of vessel traffic in and out of the jetties and around the Bay for commercial vessel operations associated with the port, this additional vessel traffic would be expected to have a less than significant impact. Under all action alternatives, placing this stone and/or resetting pre-existing stone on the jetties, and pouring a new concrete cap would be conducted from land so impacts to waterborne recreation would be minimized. Effects to water-related recreation would be a temporary and cease with the completion of the repairs.

When the jetties are restored to their original design dimensions, they will provide further protection from storms and severe wave action, thereby having the beneficial effect of making recreation safer. Moreover, as part of the construction activities, USACE will replace signs around the jetties that warn the public of the safety risk of large waves. Replacing the existing degraded signage will also improve public safety around the jetties. The USACE will also prepare and issue a press release, notifying the public of the specific timing of construction and extent of closures at the project area prior to the initiation of

construction for their awareness. For all action alternatives, the effects to water-related recreation would be temporary and less than significant during construction, and long-term and beneficial post construction.

(X) Aesthetics of the aquatic ecosystem: The Humboldt Bay surroundings, including the jetties, consists of picturesque vistas in almost all directions. Transporting by truck (Alternatives 1-3), or barge (Alternative 4), newly-quarried rock to project sites, placing this stone and/or resetting pre-existing stone on the jetties, and pouring a new concrete cap will result in jetties that are restored to their original design dimensions. Much of the proposed construction activity would be visible from nearby beaches or sand dunes, and by boats in the immediate vicinity, where it would likely serve as an interesting, albeit temporary, change of scenery. For all action alternatives, there is no significant impact to aesthetics.

( ) Parks, national and historic monuments, national seashores, etc.: Not applicable.

(X) Traffic/transportation patterns: The network of roads between the possible quarries (Mountain Gate and Liscom Hill) and Humboldt Bay are largely rural, and therefore less likely to congest due to the additional burden of trucking in rock to the jetty project sites. Specifically, transporting by truck newly-quarried rock to project sites (Alternatives 1-3) would entail some 2000 individual truck trips (about 1000 trips per jetty) over the two construction seasons (FY20 and FY21). The construction contractor will be required to prepare a traffic management plan (TMP), including use of flaggers and synchronized departure times if applicable, to avoid serious traffic congestion and protect public safety.

To prepare the TMP, the contractor will be required to conduct a pre-work site visit and document the existing environmental conditions and features to be protected including in and around work areas, staging areas, and transport routes as well as determine appropriate usage parameters (e.g. whether the width of the roads is sufficient to accommodate two passing trucks, etc.). This preconstruction survey will require the contractor submit a deliverable that includes photo documentation as well as a written report of existing conditions and areas to be avoided within the limits of work, staging areas, and along transportation routes. The government and contractor will mutually deem the report accurate and complete before construction proceeds. At the end of construction, the contractor will be required to repair any damage to the roads and ensure the roads are left in existing or better condition.

To the extent that Alternatives 1-3 can be kept consistent with existing traffic flow patterns and intensity, impacts should be minor and temporary. Rock brought in by barge (Alternative 4) would mostly avoid use of roads so impacts would be even less than expected under Alternatives 1-3. Under all alternatives, impacts would be less than significant given the implementation of the TMP and the requirement to return roads to existing condition.

Vessel transportation and traffic are discussed in the “Navigation and Safety” section below.

(X) Energy consumption or generation: In absolute terms, this project requires substantial energy consumption (e.g. fuel usage) in transporting by truck (Alternatives 1-3), or barge (Alternative 4), newly-quarried rock to project sites, placing this stone and/or resetting pre-existing stone on the jetties, and pouring a new concrete cap. Conversely, the project, once operational, would not generate or consume energy. However, when the proposed action is looked at regionally, the amount of energy consumption is quite small. Transport of stone by barge (Alternative 4) would likely be slightly more energy efficient than transport by truck (Alternatives 1-3). For all action alternatives, the effects of energy consumption are insignificant and would occur only during construction activities.

(X) Navigation and Safety: Humboldt Bay is the only deep water bay between San Francisco, California and Coos Bay, Oregon, and therefore, as a port, it handles a large volume of commerce coming through the Bar and Entrance Channel, between the two jetties. Due to its importance, Humboldt Bay has a United States Coast Guard (USCG) search and rescue air station located near the North Jetty. Transporting by truck (Alternatives 1-3), or barge (Alternative 4), newly-quarried rock to project sites, placing this stone and/or resetting pre-existing stone on the jetties, and pouring a new concrete cap will result in jetties that have been repaired and restored to their original design dimensions. This will make navigation through the Bar and Entrance Channel safer than the no-action alternative which will result in jetties that eventually become severely degraded. Under Alternatives 1-3, rock would be transported primarily by truck. Should barging of rock be necessary under Alternatives 1-3 or as in Alternative 4, additional vessel traffic would occur in Humboldt Bay and around the jetties. However, given the high existing level of vessel traffic in and out of the Entrance Channel and around the Bay for commercial vessel operations associated with the port, this additional vessel traffic would be expected to be a less than significant increase. The barge vessels would follow standard vessel safety and navigation communication procedures. Under all alternatives, construction activities will be conducted from the land side, and as such, will not impede any boat traffic. For all action alternatives, the impacts to navigation and safety are less than significant and temporary.

(X) Air quality: The construction contractor will be required to prepare an EPP as part of the construction effort and this would include a dust control plan to prevent excessive air-borne dust. The emissions associated with the proposed action alternatives are evaluated below and have been determined to be below applicable de minius thresholds.

Alternative 1. Air emissions estimates and assumptions are included in Appendix D. Results are shown below in Table 3 and Table 4 for Alternative 1. This alternative sources stones from within the Shasta County AQMD and transports them via truck to the jetty to use for construction. Air quality impacts associated with Alternative 1 are not anticipated to exceed daily South Coast AQMD emissions thresholds or the General Conformity thresholds.

Table 3. Air Emissions from Alternative 1 North Jetty construction that are within the North Coast Unified AQMD, including project construction and transport of stones by truck.

Table 3. Air Emissions from Jetty Construction and Transport of Stones by Truck within North Coast AQMD						
	ROG	**CO**	**NOx**	**SOx**	**PM10**	**PM2.5**
Peak Daily Emissions (lbs/day)	13.066	65.681	98.762	0.268	4.610	3.995
SCAQMD Daily Significance Thresholds (lbs/day)	**75**	**550**	**100**	**150**	**150**	**55**
Total Project Emissions (Tons)	0.980	4.926	7.407	0.020	0.346	0.300
SCAQMD Yearly Significance Thresholds (Tons/yr)	**100**	**100**	**100**	**100**	**100**	**100**

Table 4. Air Emissions from Alternative 1 that are within the Shasta County AQMD, includes only transport of stones.

Table 4. Air Emissions from Transport of Stones by Truck within Shasta AQMD						
	ROG	**CO**	**NOx**	**SOx**	**PM10**	**PM2.5**
Peak Daily Emissions (lbs/day)	0.950	4.467	10.974	0.032	0.555	0.443
SCAQMD Daily Significance Thresholds (lbs/day)	**75**	**550**	**100**	**150**	**150**	**55**
Total Project Emissions (Tons)	0.071	0.335	0.823	0.002	0.042	0.033
SCAQMD Yearly Significance Thresholds (Tons/yr)	**100**	**100**	**100**	**100**	**100**	**100**

Alternative 2. Air emissions estimates and assumptions are included in Appendix D. Results are shown in Table 5. This alternative uses all the same methodologies for construction as Alternative 1 but has a smaller distance for transporting stones from the quarry and only takes place within the Shasta County Air Quality Management District. Air quality impacts associated with Alternative 2 are not anticipated to exceed daily South Coast AQMD emissions thresholds or the General Conformity thresholds.

Table 5. Air Emissions from Alternative 2 that are within North Coast Unified AQMD, includes construction and transport of stones.

Table 5. Air Emissions from Jetty Construction and Transport of Stones by Truck within North Coast AQMD						
	ROG	**CO**	**NOx**	**SOx**	**PM10**	**PM2.5**
Peak Daily Emissions (lbs/day)	11.928	60.332	85.621	0.230	3.946	3.464
SCAQMD Daily Significance Thresholds (lbs/day)	**75**	**550**	**100**	**150**	**150**	**55**
Total Project Emissions (Tons)	0.895	4.525	6.422	0.017	0.296	0.260
SCAQMD Yearly Significance Thresholds (Tons/yr)	**100**	**100**	**100**	**100**	**100**	**100**

Alternative 3. Air emissions estimates and assumptions are included in Appendix D. Results are shown below in Table 6 and Table 7 for Alternative 3. This alternative sources stones from quarries located in both Shasta and Humboldt Counties, and is a hybrid of Alternatives 1 and 2 with contractor discretion for how many to source from each quarry depending on market drivers. Emissions for this alternative were calculated assuming that half the stones would be from the quarry located in Shasta County and the other half from

the quarry located in Humboldt County. Air quality impacts associated with Alternative 3 are not anticipated to exceed daily South Coast AQMD emissions thresholds or the General Conformity thresholds.

Table 6. Air Emissions from Alternative 3 that are within the North Coast Unified AQMD, including project construction and transport of stones.

Table 6. Air Emissions from Jetty Construction and Transport of Stones by Truck Within North Coast AQMD						
	ROG	**CO**	**NOx**	**SOx**	**PM10**	**PM2.5**
Peak Daily Emissions (lbs/day)	12.476	62.908	91.948	0.248	4.266	3.720
SCAQMD Daily Significance Thresholds (lbs/day)	**75**	**550**	**100**	**150**	**150**	**55**
Total Project Emissions (Tons)	0.936	4.718	6.896	0.019	0.320	0.279
SCAQMD Yearly Significance Thresholds (Tons/yr)	**100**	**100**	**100**	**100**	**100**	**100**

Table 7. Air Emissions from Alternative 3 that are within the Shasta County AQMD, includes only transport of stones.

Table 7. Air Emissions from Transport of Stones by Truck Within Shasta AQMD						
	ROG	**CO**	**NOx**	**SOx**	**PM10**	**PM2.5**
Peak Daily Emissions (lbs/day)	0.457	2.151	5.284	0.015	0.267	0.213
SCAQMD Daily Significance Thresholds (lbs/day)	**75**	**550**	**100**	**150**	**150**	**55**
Total Project Emissions (Tons)	0.034	0.161	0.396	0.001	0.020	0.016
SCAQMD Yearly Significance Thresholds (Tons/yr)	**100**	**100**	**100**	**100**	**100**	**100**

Alternative 4. Air emissions estimates and assumptions are included in Appendix D. Results are shown in Table 8 - 10. Stones would be loaded onto a barge at Catalina Island and then transported to Humboldt Jetty and offloaded then placed to build the jetty. Emissions associated with road repairs were found to exceed the daily threshold for NOx emissions when combined with those from the barge and tug boats. Therefore, in order to ensure that the South Coast AQMD Daily Threshold for NOx is not exceeded, road repairs will not happen simultaneously while the barge and tug boat are making a delivery of stones to the jetty or at any time they are within the North Coast Unified AQMD. Air quality impacts associated with Alternative 4 are not anticipated to exceed daily South Coast AQMD emissions thresholds or the General Conformity thresholds.

Table 8. Air Emissions for Alternative 4, South Coast AQMD- Barging from Catalina Island to Sea.

Table 8. Air Emissions from Transport of Stones by Barge from Catalina Island to Sea						
	ROG	**CO**	**NOx**	**SOx**	**PM10**	**PM2.5**
Peak Daily Emissions (lbs/day)	0.357	6.169	7.252	1.775	0.431	0.418
SCAQMD Daily Significance Thresholds (lbs/day)	**75**	**550**	**100**	**150**	**150**	**55**
Total Project Emissions (Tons)	0.003	0.046	0.054	0.013	0.003	0.003
SCAQMD Yearly Significance Thresholds (Tons/yr)	**100**	**100**	**100**	**100**	**100**	**100**

Table 9. Air Emissions for Alternative 4, North Coast Unified AQMD- Barging from Sea to Humboldt Jetty, construction included.

	Table 9. Air Emissions from Jetty Construction and Transport of Stones from Ocean to Jetty					
	ROG	**CO**	**NOx**	**SOx**	**PM10**	**PM2.5**
Peak Daily Emissions (lbs/day)	5.661	41.431	56.211	7.179	2.748	2.572
SCAQMD Daily Significance Thresholds (lbs/day)	**75**	**550**	**100**	**150**	**150**	**55**
Total Project Emissions (Tons)	0.425	3.107	4.216	0.538	0.206	0.193
SCAQMD Yearly Significance Thresholds (Tons/yr)	**100**	**100**	**100**	**100**	**100**	**100**

Table 10. Air Emissions for Alternative 4, North Coast Unified AQMD- South Jetty Access Road Repairs.

	Table 10. Air Emissions from South Jetty Access Road Repairs					
	ROG	**CO**	**NOx**	**SOx**	**PM10**	**PM2.5**
Peak Daily Emissions (lbs/day)	8.488	44.288	57.517	0.147	2.816	2.496
SCAQMD Daily Significance Thresholds (lbs/day)	**75**	**550**	**100**	**150**	**150**	**55**
Total Project Emissions (Tons)	0.637	3.322	4.314	0.011	0.211	0.187
SCAQMD Yearly Significance Thresholds (Tons/yr)	**100**	**100**	**100**	**100**	**100**	**100**

Air Quality Conformity Determination: Under all action alternatives, temporary short- and long-term air impacts will be below de minimis levels with the proposed minimization measures where applicable. The proposed project has been determined to conform with Section 176(c)(1) of the Clean Air Act.

(X) Noise: Humboldt Bay is an ocean environment with ambient noise mostly created by crashing waves. With a height of 2m, crashing waves can create noise with a sound pressure level of 78 dB (Bolin and Abom 2010); similar to that of metropolitan, urbanized areas which can be as high as 80 dB (DOT 2017). Noise from the project would mainly be associated with the transport and placing of newly-quarried rock (Alternatives 1-3), and resetting of old rock, with most construction equipment generating a pressure level of 85 dB at 50 ft from the source, comparable to the ambient noise level of 78 dB for 2 m crashing waves. Noise from construction activities would diminish with increasing distance from those activities. Trucks would be equipped with mufflers that meet state or local standards for noise suppression to minimize any effects from noise. Transporting new rock from the staging area and placing it on the jetty would create noise similar to background noise levels. Transportation by barge (Alternative 4) to the site would not be discernible due to distance and background noise levels. Snowy plover habitat is located near the South Jetty. With a distance of 600 feet from construction equipment, as per a standard buffer used for construction projects, effects to snowy plovers would be less than significant and only take place during construction of the jetty. Table 11 below shows

typical construction noises and how they diminish with distance. The action alternatives would therefore entail temporary and less than significant impacts from noise.

Table 11. Noise Levels Generated by Typical Construction Equipment

Equipment	Sound Pressure Level "Noise Level" at 50 ft (dB)	Sound Pressure Level "Noise Level" at 300 ft (dB)	Sound Pressure Level "Noise Level" at 600 ft (dB)	Typical Duty Cycle
Auger Drill Rig	85	69	63	20%
Backhoe	80	64	58	40%
Compactor (ground)	80	64	58	20%
Concrete Mixer Truck	85	69	63	40%
Concrete Pump	82	66	60	20%
Crane (mobile or stationary)	85	69	63	20%
Dozer	85	69	63	40%
Dump Truck	84	68	62	40%
Excavator	85	69	63	40%
Front End Loader	80	64	58	40%
Generator (25 KVA or less)	70	54	48	50%
Generator (more than 25 KVA)	82	66	60	0%
Grader	85	69	63	40%
Pumps	77	61	55	50%
Scraper	85	69	63	40%
Tractor	84	68	62	40%

KVA = kilivolt amps
Source: FHWA

Calculation of Sound Pressure Level (dB):

$$SPL_2 = SPL_1 - 10LOG(r_2/r_1)$$

Where:

SPL_2 = sound pressure level (dB) at distance r_2

SPL_1 = sound pressure level (dB) at distance r_1

r_2 = distance from source

r_1 = distance from source

$r_1 < r_2$

(X) Historic properties: The North and South Humboldt Jetties, being more than 100 years old, and largely maintaining their "historic integrity," meet the Federal criteria for NRHP eligibility. Cultural resources, that might be present within the project footprint, can be defined as the remains of previous human activity that either are archeological (*e.g.*, artifacts found on or within the ground) or historical (*e.g.*, standing architectural features, structures, or shipwrecks) in nature. Transporting by truck (Alternatives 1-3), or barge (Alternative 4), newly-quarried rock to project sites, placing this stone and/or resetting pre-existing stone on the jetties, and pouring a new concrete cap will result in repaired jetties that are restored to their original design dimensions. The USACE is has consulted with the SHPO and the Wiyot tribes as described in Section 3.8. The USACE will implement the

avoidance measures described in Section 3.8 and has determined that there will be no adverse effect to historic properties within the APE (Appendix J).

( ) **Land use classification:** Not applicable.

(X) **Economics:** The Humboldt Bay region has a population of about 130,000. There is a local perception that the economy is in decline, but there are signs of growth in employment in sectors such as manufacturing and construction. The jetty repair project will contribute to the economy by adding construction jobs and by facilitating more waterborne commerce. Transporting by truck (Alternatives 1-3), or barge (Alternative 4), newly-quarried rock to project sites, placing this stone and/or resetting pre-existing stone on the jetties, and pouring a new concrete cap will likely result in several dozen temporary jobs being created during the FY20 and FY21 construction seasons. Repairing the jetties, such that they are restored to their original design dimensions, will enhance the navigability and safety of the Entrance Channel for all vessels, including fishing boats. This will strengthen businesses dependent upon waterborne commerce. Economic trends will be improved compared to the no-action alternative of severely degraded jetties, and for all action alternatives, short- and long-term impacts would be positive.

( ) **Prime and unique farmland (7 C.F.R. Part 658):** Not applicable.

( ) **Food and fiber production:** Not applicable.

( ) **Mineral needs:** Not applicable.

(X) **Consideration of private property:** After careful analysis by USACE real estate, it has been determined that the project footprint consists almost exclusively of federal- and state-owned lands that are collectively managed by the Bureau of Land Management (BLM). Transporting by truck (Alternatives 1-3), or barge (Alternative 4), newly-quarried rock to project sites, placing this stone and/or resetting pre-existing stone on the jetties, and pouring a new concrete cap will result in repaired jetties that are restored to their original design dimensions. For all action alternatives, the proposed repair work should not impinge upon the property rights of any private land owner, and in the highly unlikely event that a private property owner is found to be affected by the proposed project, consultations with that owner(s) will be initiated as soon as possible. The effects, therefore, are both insignificant and temporary.

(X) **Environmental Justice:** US Census Data from Humboldt County reports a poverty rate of 19.7% with no communities living in the immediate vicinity of the project area (i.e. at or immediately adjacent to the jetties). The proposed action is the repair of an existing structure, and is not expected to result in any change in the portion of the county population that is considered low income, nor is it expected to significantly alter economic, occupational, social, historic, or occupational conditions. If anything, the proposed action could provide environmental justice benefits in the region by ensuring navigation safety for water-dependent small businesses operating in the area. Tribal communities with cultural interests have been consulted as a part of the NHPA compliance process for the proposed

project to ensure that effects to cultural resources are avoided or minimized (see section 3.8).

( ) Other: Not applicable.

4.2.4 Summary of Secondary and Cumulative Effects

CEQ regulations implementing NEPA define "cumulative impact" as follows:

> *"Cumulative impact is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor, but collectively significant actions, taking place over a period of time. [40 C.F.R. 1508.7]*

For purposes of this analysis, significant cumulative impacts will occur in circumstances where impacts related to implementation of an alternative results in a significant impact when added to the environmental impacts of other past, present, or reasonably foreseeable future actions. As there are only two relevant projects in the region (repair and reconstruction of the Humboldt Bay Jetties, and the annual maintenance dredging of the Humboldt Bay Bar and Entrance Channel), both of which tend to work together synergistically, the USACE has concluded that their cumulative impacts, together with reasonably foreseeable future actions in the vicinity of the project footprint, will not significantly affect the quality of the existing natural or built environments.

5 Interested Parties

The USACE coordinated with the following federal, state, and local agencies, as well as other non-governmental stakeholders:

5.1 Federal Agencies

- Bureau of Land Management (Arcata Office)
- NOAA—National Marine Fisheries Service
- United States Coast Guard
- United States Environmental Protection Agency, Region 9
- United States Fish and Wildlife Service

5.2 State Agencies

- California Coastal Commission
- California Department of Fish and Wildlife
- California State Historic Preservation Office
- North Coast Regional Water Quality Control Board
- California State Lands Commission

5.3 Local Agencies

- North Coast Unified Air Quality Management District

5.4 Native American Tribes

- The Wiyot Tribe
- Blue Lake Rancheria
- Bear River Band of Rohnerville Rancheria

6 Determination

The proposed action would involve transporting by truck (Alternatives 1-3), or barge (Alternative 4), newly-quarried rock to the Humboldt Bay Entrance Channel jetties, and placing this rock and/or resetting pre-existing rock, and pouring a new concrete cap, as needed, in the process of repairing or reconstructing the jetties. Based on the analysis in this EA, it is expected that this proposed action, including any of the four action alternatives, will not have a significant impact on the quality of the human environment.

Factors considered in this analysis were rock quality, water quality, biological resources (including ESA- and EFH-protected species), air quality, noise, cultural resources, recreation, navigation, and transportation, among other factors. The USACE has determined preparation of an Environmental Impact Statement is not required.

7 Literature Cited

Bolin and Åbom 2010, *Air-borne sound generated by sea waves*, Journal of the Acoustic Society of America, 2010 May; 127(5):2771-9. Doi: 10.1121/1.3327815. PubMed PMID: 21117726.

Costa and Glatzel 2002, *Humboldt Bay, California, Entrance Channel, Report 1: Data Review*, ERDC Report No. CR-02-1, 29 pgs., September 2002.

Department of Transportation (DOT), *Bureau of Transportation Statistics, National Transportation Noise Map*, March 31, 2017, https://www.bts.gov/newsroom/national-transportation-noise-map. Accessed August 13, 2019.

HAER Draft 1987, Historic American Engineering Record, *Humboldt Bay Jetties*, 15 pgs., 1987.

Hagwood, Joseph 1981, *Engineers at the Golden Gate: A History of the San Francisco District U.S. Army Corps of Engineers, 1866-1980*, 453 pgs.

Magoon, Sloan and Shimizu 1976, *Design and Construction of Humboldt Jetties, 1880 to 1975*, Coastal Engineering—1976, pp. 2474–98.

Pritchard, Susan 1987, The Shifting Sands of Humboldt Bar, Master's Thesis, Department of History, University of California, Santa Barbara, 1987.

USACE 1991, *Environmental Assessment of the Fiscal Year Maintenance and Repair of the Humboldt Harbor and Bay North and South Jetties*, 12 pgs., February 1991.

U.S. Congress, House of Representatives 1879, *Certain Harbors in California*, Exec. Doc. No. 22, 45th Cong., 3 sess., pp. 10, 13.

Wear, Kimberly 2019, *Updated: Orcas Spotted in Humboldt Bay (with Video)*, North Coast Journal web posting, Volume XXX, Issue 22, Friday, May 31, 2019.

8 Preparers & Reviewers

Prepared by:

Mark Wiechmann, Ph.D.
Environmental Manager
Planning Branch, Environmental Section
San Francisco District

David Mesa
Coastal Engineer
Engineering Branch, Coastal Section
Los Angeles District

Jason Emmons
Environmental Manager
Planning Branch, Environmental Section
San Francisco District

Kathleen Ungvarsky
Environmental Manager
Planning Branch, Environmental Section
San Francisco District

Stephen Willis
Environmental Manager
Planning Branch, Environmental Section
San Francisco District

Reviewed (DQC, BCOES) by:

Tessa Beach, Ph.D.
Chief, Environmental Section
San Francisco District

Chris Eng
Navigation Technical Specialist
Planning Branch, Environmental Section
San Francisco District

Appendix A *(Finding of No Significant Impact)*

FINDING OF NO SIGNIFICANT IMPACT (FONSI)

Humboldt Bay Jetties: FY2020 & FY2021 Repairs and Reconstruction

Humboldt County, California

The U.S. Army Corps of Engineers, San Francisco District (Corps) has conducted an environmental analysis in accordance with the National Environmental Policy Act of 1969, as amended. The Environmental Assessment (EA), *FY2020 & FY2021 Humboldt Jetty Repair and Reconstruction*, dated December 2019, addresses the need to perform various jetty maintenance activities to provide for continued safe and reliable navigation in Humboldt Bay Harbor, Humboldt County, California.

The EA, incorporated herein by reference, evaluated several maintenance alternatives that would, over two construction seasons (tentatively FY20 and FY21), accomplish repair and reconstruction of the jetties. The recommended plan is the "proposed action," and consists of:

- Transporting by truck, or barge, newly-quarried rock to the Humboldt Bay Entrance Channel, placing this rock and/or resetting pre-existing rock back onto the existing jetties, and pouring a new concrete cap and parapet wall, as needed;
- Sourcing newly-quarried rock will be sourced from a quarry (ies) that has been petrographically described and tested for key physical attributes, including specific gravity, and wet/dry and freeze/thaw durability.

In addition to a "no action" plan, an action alternative (with four sub-alternatives) was considered, which collectively comprise the "proposed action" plan. Three of these action alternatives involve trucking newly-quarried rock to the construction sites. Specifically, Alternative 1 involves trucking rock in from a distant quarry source; Alternative 2 involves trucking rock in from a nearby quarry source; and Alternative 3 involves some combination of Alternatives 1 and 2 spread over the two construction seasons. A fourth alternative involves barging in the newly-quarried rock from some distant quarry source. In this scenario, heavy equipment could be barged in as well.

Factors considered in this analysis included rock quality, water quality, biological resources (including ESA- and EFH-protected species), air quality, noise, recreation, cultural resources, navigation safety, and traffic considerations, among others. Based on the information obtained during the preparation of this EA, it is expected that any of the four action alternatives considered as part of the proposed action will not have a significant impact on the quality of the human environment. Consequently, preparation of an Environmental Impact Statement is not required.

For the action alternative (including the sub-alternatives of different rock delivery methods), potential effects were evaluated, as appropriate. A summary impacts assessment of the potential effects of the proposed action is listed in Table 1:

Table 1: Summary of Potential Effects of the Recommended Plan

	Insignificant effects	Insignificant effects as a result of mitigation measures*	Resource unaffected by action
Aesthetics	☒	☐	☐
Air quality	☒	☐	☐
Aquatic resources/wetlands	☒	☐	☐
Fish and wildlife habitat	☒	☐	☐
Threatened/Endangered species/critical habitat	☐	☒	☐
Historic properties	☐	☒	☐
Other cultural resources	☐	☒	☐
Hazardous, toxic & radioactive waste	☐	☐	☒
Hydrology	☒	☐	☐
Navigation	☒	☐	☐
Noise levels	☒	☐	☐
Socio-economics	☒	☐	☐
Environmental justice	☐	☐	☒
Geology, Soils, Seismicity	☒	☐	☐
Water quality	☒	☐	☐
Recreation	☒	☐	☐

All practicable and appropriate means to avoid or minimize adverse environmental effects were analyzed and incorporated into the recommended plan. Best management practices (BMPs) and avoidance or minimization measures as detailed in the EA, will be implemented, as appropriate, to minimize these impacts.

No compensatory mitigation is required as part of the recommended plan.

A 30-day public and agency review of the draft EA and FONSI occured and between October 18, 2019 and November 16, 2019. Comments submitted were reviewed and responded to. Where applicable, text was updated in the EA incorporate the comments. The comments received and the USACE responses are documented in Appendix K.

ENVIRONMENTAL AND CULTURAL COMPLIANCE REQUIREMENTS:

ENDANGERED SPECIES ACT (ESA)

Pursuant to section 7 of the Endangered Species Act of 1973, as amended, the U.S. Army Corps of Engineers (USACE), in informal consultation with the U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS), determined that the recommended plan may affect, but is

not likely to adversely affect, the following federally listed species, or their designated critical habitat, within the project footprint:

- Snowy Plover
- Southern Oregon/Northern California Coast (SONCC) coho salmon
- California Coastal chinook salmon
- Northern California steelhead
- Southern DPS of North American green sturgeon

A Biological Assessment documenting this determination was submitted to USFWS on September 20, 2019 (Appendix H), and a BA/Essential Fish Habitat assessment was submitted to NMFS also on September 20, 2019 (Appendix I). The NMFS concurred with the USACE ESA determination via letter dated October 24, 2019 (Appendix I) and the USFWS concurred via letter dated November 5, 2019 (Appendix H). .

MAGNUSON-STEVENS FISHERY CONSERVATION AND MANAGEMENT ACT

Pursuant to the Magnuson-Stevens Fishery Conservation and Management Act, as amended by the Sustainable Fisheries Act of 1996 (Public Law 104-267), the USACE determined that the recommended plan may adversely affect essential fish habitat (EFH) for the fisheries present in the project area. The USACE prepared an EFH assessment and submitted it to NMFS on September 20, 2019 (Appendix I). The NMFS concurred with the USACE EFH determination via letter dated October 24, 2019 (Appendix I). They stated they expected "the potential improvements to compensate for mortalities or injuries to managed individuals" and that they had no additional EFH conservation recommendations to suggest.

NATIONAL HISTORIC PRESERVATION ACT

USACE has consulted with the Wiyot Tribal Historic Preservation Officers and the SHPO on cultural resources in and adjacent to the Area of Potential Effects (APE). No historic properties are expected to be adversely affected by the proposed project. In the unlikely event that an inadvertent discovery occurs, mitigation of adverse effects will be resolved in consultation with the SHPO, THPO, and Wiyot Tribes. Pursuant to Section 106 of the National Historic Preservation Act of 1966, as amended, the USACE has determined that the recommended plan will have no adverse effect on historic properties. A consultation letter was sent to the SHPO on October 18, 2019 requesting concurrence with this determination (Appendix J). The SHPO responded On November 22, 2019 and concurred with the USACE determination (Appendix J). .

CLEAN WATER ACT SECTION 404(B)(1) COMPLIANCE

Pursuant to the Clean Water Act of 1972, as amended, the discharge of dredged or fill material associated with the recommended plan has been found to be compliant with section 404(b)(1) guidelines (40 CFR § 230) through use of nationwide permit #3 (NWP-3; see Appendix G).

CLEAN WATER ACT SECTION 401 COMPLIANCE

USACE received a waiver (# R1-2017-0039) on August 29, 2019 (Appendix F), from the North Coast Regional Water Quality Control Board (NCRWQCB). Pursuant to section 401 of the Clean Water Act, this waiver is for water quality coverage under existing Waste Discharge Requirements

COASTAL ZONE MANAGEMENT ACT

USACE obtained a Negative Determination (ND-0025-19) from the California Coastal Commission (CCC), demonstrating consistency with the California Coastal Zone Management program pursuant to the Coastal Zone Management Act of 1972, on September 4, 2019 (see Appendix E).

DETERMINATION AND STATEMENT OF FINDING:

All applicable environmental laws have been considered, and coordination with appropriate state and federal agencies and officials has been completed.

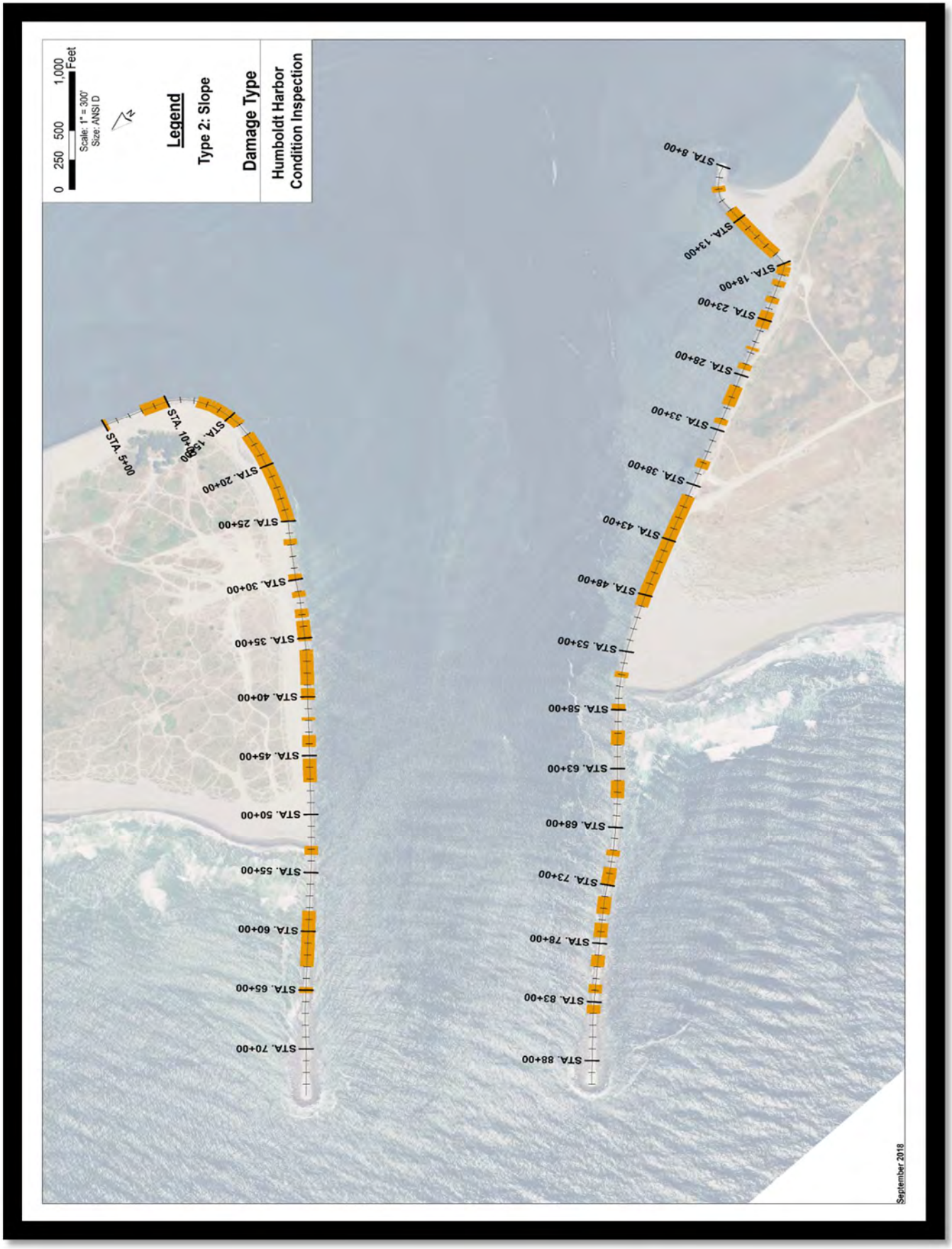
Technical, environmental, and economic criteria used in the formulation of alternative plans were those specified in the Water Resources Council's 1983 *Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies*. All applicable laws, executive orders, regulations, and local government plans were considered in evaluation of alternatives. Based on this report, the reviews by other Federal, State and local agencies, Tribes, input of the public, and the review by my staff, it is my determination that the recommended plan would not cause significant adverse effects on the quality of the human environment; therefore, preparation of an Environmental Impact Statement is not required.

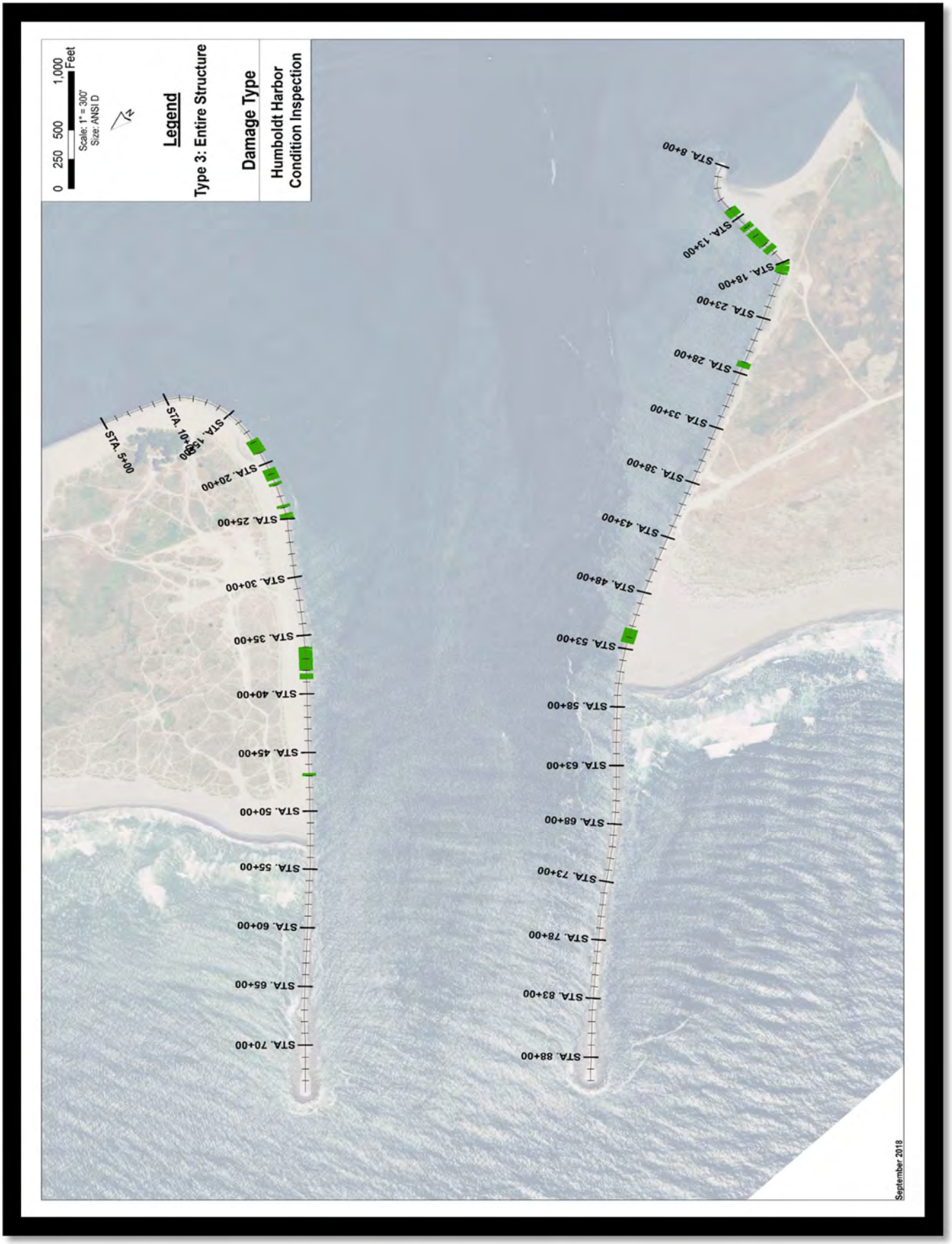
12/10/2019
Date

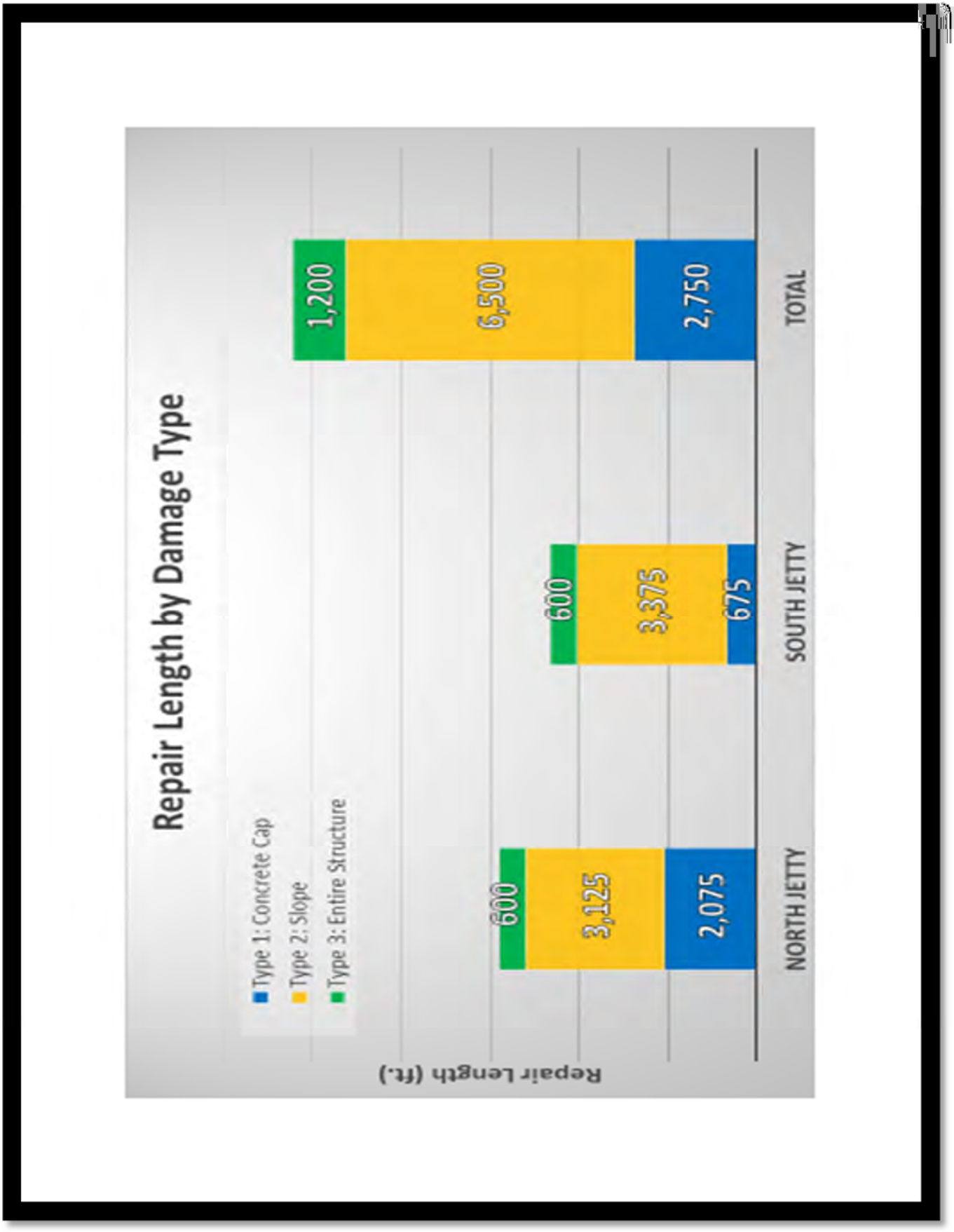
John D. Cunningham
Lieutenant Colonel, U.S. Army
District Commander and Engineer

Appendix B *(Jetty Repair Types—Preliminary Locations)*

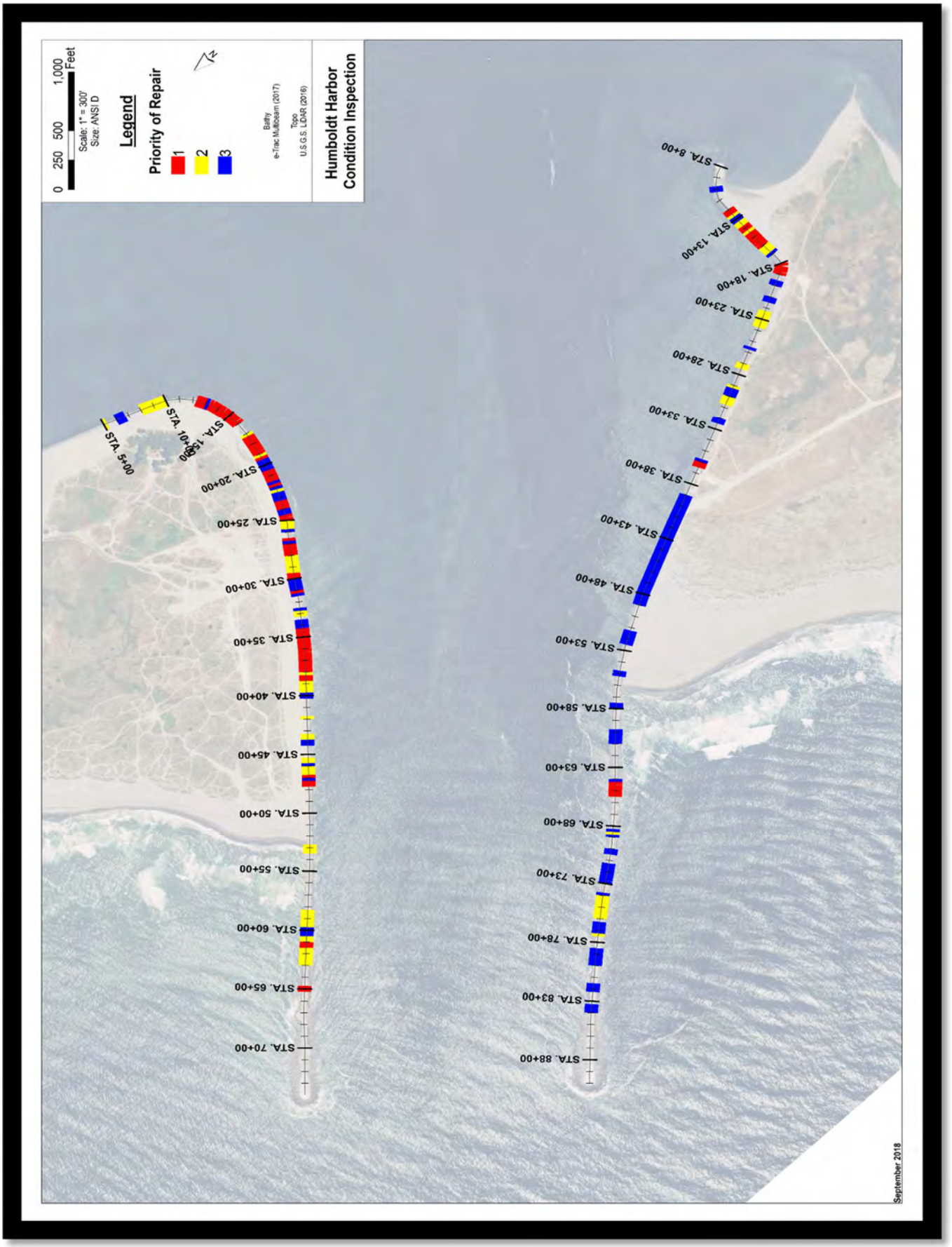

Damage Type
Humboldt Harbor
Condition Inspection
Legend
Type 1: Concrete Cap
0 250 500 1,000 Feet
Scale: 1" = 300'
Size: ANSI D
N
STA. 5+00
STA. 10+00
STA. 15+00
STA. 20+00
STA. 25+00
STA. 30+00
STA. 35+00
STA. 40+00
STA. 45+00
STA. 50+00
STA. 55+00
STA. 60+00
STA. 65+00
STA. 70+00
STA. 8+00
STA. 13+00
STA. 18+00
STA. 23+00
STA. 28+00
STA. 33+00
STA. 38+00
STA. 43+00
STA. 48+00
STA. 53+00
STA. 58+00
STA. 63+00
STA. 68+00
STA. 73+00
STA. 78+00
STA. 83+00
STA. 88+00
September 2018

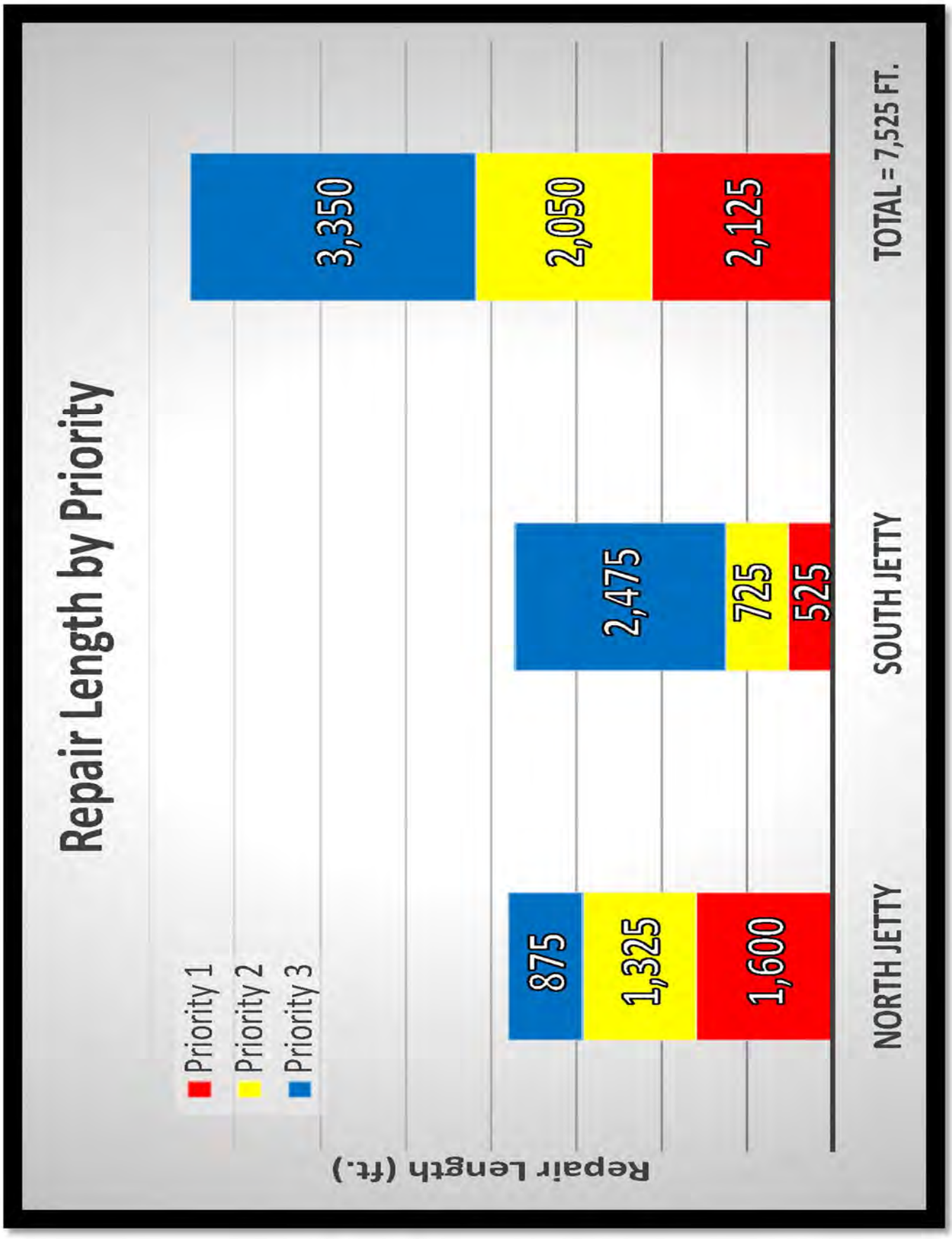

Humboldt Harbor
Condition Inspection
Damage Type
Type 2: Slope
Legend
Scale: 1" = 300'
Size: ANSI D
0 250 500 1,000 Feet
STA. 5+00
STA. 10+00
STA. 15+00
STA. 20+00
STA. 25+00
STA. 30+00
STA. 35+00
STA. 40+00
STA. 45+00
STA. 50+00
STA. 55+00
STA. 60+00
STA. 65+00
STA. 70+00
STA. 8+00
STA. 13+00
STA. 18+00
STA. 23+00
STA. 28+00
STA. 33+00
STA. 38+00
STA. 43+00
STA. 48+00
STA. 53+00
STA. 58+00
STA. 63+00
STA. 68+00
STA. 73+00
STA. 78+00
STA. 83+00
STA. 88+00
September 2018


Humboldt Harbor
Condition Inspection
Damage Type
Type 3: Entire Structure
Legend
Scale: 1" = 300'
Size: ANSI D
0 250 500 1,000 Feet
N
STA. 5+00
STA. 10+00
STA. 15+00
STA. 20+00
STA. 25+00
STA. 30+00
STA. 35+00
STA. 40+00
STA. 45+00
STA. 50+00
STA. 55+00
STA. 60+00
STA. 65+00
STA. 70+00
STA. 8+00
STA. 13+00
STA. 18+00
STA. 23+00
STA. 28+00
STA. 33+00
STA. 38+00
STA. 43+00
STA. 48+00
STA. 53+00
STA. 58+00
STA. 63+00
STA. 68+00
STA. 73+00
STA. 78+00
STA. 83+00
STA. 88+00
September 2018


Repair Length by Damage Type
Type 1: Concrete Cap
Type 2: Slope
Type 3: Entire Structure
Repair Length (ft.)
600
3,125
2,075
600
3,375
675
1,200
6,500
2,750
NORTH JETTY
SOUTH JETTY
TOTAL

Appendix C *(Jetty Repair Priorities—Preliminary Assessment)*


Humboldt Harbor
Condition Inspection
Legend
Priority of Repair
1
2
3
0 250 500 1,000 Feet
Scale: 1" = 300'
Size: ANSI D
Bathy
e-Trac Multibeam (2017)
Topo
U.S.G.S. LIDAR (2016)
STA. 5+00
STA. 10+00
STA. 15+00
STA. 20+00
STA. 25+00
STA. 30+00
STA. 35+00
STA. 40+00
STA. 45+00
STA. 50+00
STA. 55+00
STA. 60+00
STA. 65+00
STA. 70+00
STA. 8+00
STA. 13+00
STA. 18+00
STA. 23+00
STA. 28+00
STA. 33+00
STA. 38+00
STA. 43+00
STA. 48+00
STA. 53+00
STA. 58+00
STA. 63+00
STA. 68+00
STA. 73+00
STA. 78+00
STA. 83+00
STA. 88+00
September 2018


Repair Length by Priority
Priority 1
Priority 2
Priority 3
Repair Length (ft.)
875
1,325
1,600
2,475
725
525
3,350
2,050
2,125
NORTH JETTY
SOUTH JETTY
TOTAL = 7,525 FT.

Appendix D *(Air Quality Calculations)*

Alternative 1

Trucking stones across North Coast AQMD, including construction work

Emission Source Data							Emission Factors for Construction Equipment (lbs/hr)						Daily Emissions from Construction Activities (lbs/day)					
Construction Activity/Equipment Type	Power Rating (Hp)	Load Factor	# Active	Hourly Hp-Hrs	Hrs per Day [1]	Miles Per Day	ROG	CO	NOx	SOx	PM10	PM2.5	ROG	CO	NOx	SOx	PM10	PM2.5
3/4 Ton Pickup Truck	385	0.38	1	146	4	10	0.001	0.009	0.009	0.000	0.000	0.000	0.005	0.033	0.034	0.000	0.001	0.001
Crane (40 Ton)	365	0.29	1	106	10	N/A	0.109	0.384	0.705	0.002	0.026	0.023	0.315	1.113	2.044	0.005	0.075	0.066
Crane (80 Ton)	275	0.29	1	80	10	N/A	0.070	0.244	0.495	0.001	0.017	0.015	0.204	2.440	4.949	0.013	0.170	0.152
Loader, (18.30 CY Bucket, 4x4)	808	0.37	3	897	10	N/A	0.130	0.502	0.803	0.002	0.029	0.026	1.446	5.568	8.915	0.026	0.323	0.288
Loader, (4 CY Bucket, 4x4)	211	0.37	2	156	10	N/A	0.081	0.344	0.443	0.002	0.015	0.013	0.601	2.549	3.276	0.014	0.112	0.099
Semi Truck (75,000 LB Cap)	400	0.38	27	4104	4	130	0.001	0.006	0.014	0.000	0.001	0.001	1.604	7.542	18.528	0.054	0.936	0.748
Concrete Truck (8 cy)	235	0.38	2	179	10	36	0.001	0.006	0.014	0.000	0.001	0.001	0.033	0.155	0.380	0.001	0.019	0.015
Generator	65	0.42	1	27	10	N/A	0.038	0.216	0.220	0.000	0.011	0.009	0.159	0.908	0.923	0.002	0.045	0.040
Dump Truck (10 wheel)	400	0.38	11	1672	10	38	0.001	0.006	0.014	0.000	0.001	0.001	0.191	0.898	2.206	0.006	0.112	0.089
Tractor (Crawler/Dozer)	165	0.37	2	122	10	N/A	0.151	0.812	0.996	0.001	0.056	0.050	1.117	6.012	7.372	0.011	0.415	0.370
Roller (Static/Self-Propelled)	85	0.38	2	65	10	N/A	0.058	0.387	0.380	0.001	0.027	0.024	0.438	7.747	7.598	0.014	0.540	0.481
Water Truck (3000 gal)	320	0.38	1	122	10	N/A	0.149	0.545	0.748	0.003	0.027	0.024	0.566	2.070	2.843	0.010	0.104	0.092
Grader	200	0.41	1	82	10	N/A	0.100	0.368	0.670	0.002	0.023	0.020	0.410	1.510	2.747	0.008	0.094	0.084
Roller Compactor (6 Ton)	85	0.38	2	65	10	N/A	0.058	0.387	0.380	0.001	0.027	0.024	1.152	7.747	7.598	0.014	0.540	0.481
Asphalt Truck	224	0.38	10	851	10	N/A	0.093	0.351	0.504	0.002	0.017	0.015	3.524	13.355	19.161	0.071	0.658	0.585
Asphalt Pulverizer (8')	100	0.30	1	30	10	N/A	0.057	0.403	0.404	0.001	0.027	0.024	0.171	1.208	1.211	0.002	0.081	0.072
Dump Truck (10 wheel)	400	0.38	11	1672	10	38	0.001	0.006	0.014	0.000	0.001	0.001	0.191	0.898	2.206	0.006	0.112	0.089
Dozer D8	310	0.40	1	124	10	N/A	0.229	0.928	1.687	0.003	0.067	0.060	0.916	3.711	6.747	0.010	0.269	0.240
Worker vehicles	NA	NA	9	NA	4	N/A	0.001	0.006	0.001	0.000	0.000	0.000	0.024	0.221	0.022	0.000	0.003	0.002
												Peak Daily Emissions (lbs/day)	**13.07**	**65.68**	**98.76**	**0.27**	**4.61**	**3.99**
												SCAQMD Daily Significance Thresholds (lbs/day)	**75**	**550**	**100**	**150**	**150**	**55**
												Total Project Emissions (Tons)	**0.980**	**4.926**	**7.407**	**0.020**	**0.346**	**0.300**
												SCAQMD Yearly Significance Thresholds (Tons/yr)	**100**	**100**	**100**	**100**	**100**	**100**

Alternative 1

Trucking stones across Shasta AQMD

Emission Source Data							Emission Factors for Construction Equipment (lbs/hr)						Daily Emissions from Construction Activities (lbs/day)					
Construction Activity/Equipment Type	Power Rating (Hp)	Load Factor	# Active	Hourly Hp-Hrs	Hrs per Day [1]	Miles Per Day	ROG	CO	NOx	SOx	PM10	PM2.5	ROG	CO	NOx	SOx	PM10	PM2.5
Semi Truck (75,000 LB Cap)	400	0.38	27	4104	2	77	0.001	0.006	0.014	0.000	0.001	0.001	0.950	4.467	10.974	0.032	0.555	0.443
												Peak Daily Emissions (lbs/day)	**0.95**	**4.47**	**10.97**	**0.03**	**0.55**	**0.44**
												SCAQMD Daily Significance Thresholds (lbs/day)	**75**	**550**	**100**	**150**	**150**	**55**
												Total Project Emissions (Tons)	**0.071**	**0.335**	**0.823**	**0.002**	**0.042**	**0.033**
												SCAQMD Yearly Significance Thresholds (Tons/yr)	**100**	**100**	**100**	**100**	**100**	**100**

Alternative 2

Trucking stones across North Coast AQMD, including construction work

Emission Source Data							Emission Factors for Construction Equipment (lbs/hr)						Daily Emissions from Construction Activities (lbs/day)					
Construction Activity/Equipment Type	**Power Rating (Hp)**	**Load Factor**	**# Active**	**Hourly Hp-Hrs**	**Hrs per Day [1]**	**Miles Per Day**	**ROG**	**CO**	**NOx**	**SOx**	**PM10**	**PM2.5**	**ROG**	**CO**	**NOx**	**SOx**	**PM10**	**PM2.5**
3/4 Ton Pickup Truck	385	0.38	1	146	4	10	0.001	0.009	0.009	0.000	0.000	0.000	0.005	0.033	0.034	0.000	0.001	0.001
Crane (40 Ton)	365	0.29	1	106	10	N/A	0.109	0.384	0.705	0.002	0.026	0.023	0.315	1.113	2.044	0.005	0.075	0.066
Crane (80 Ton)	275	0.29	1	80	10	N/A	0.070	0.244	0.495	0.001	0.017	0.015	0.204	2.440	4.949	0.013	0.170	0.152
Loader, (18.30 CY Bucket, 4x4)	808	0.37	3	897	10	N/A	0.130	0.502	0.803	0.002	0.029	0.026	1.446	5.568	8.915	0.026	0.323	0.288
Loader, (4 CY Bucket, 4x4)	211	0.37	2	156	10	N/A	0.081	0.344	0.443	0.002	0.015	0.013	0.601	2.549	3.276	0.014	0.112	0.099
Semi Truck (75,000 LB Cap)	400	0.38	27	4104	4	37.8	0.001	0.006	0.014	0.000	0.001	0.001	0.466	2.193	5.387	0.016	0.272	0.218
Concrete Truck (8 cy)	235	0.38	2	179	10	36	0.001	0.006	0.014	0.000	0.001	0.001	0.033	0.155	0.380	0.001	0.019	0.015
Generator	65	0.42	1	27	10	N/A	0.038	0.216	0.220	0.000	0.011	0.009	0.159	0.908	0.923	0.002	0.045	0.040
Dump Truck (10 wheel)	400	0.38	11	1672	10	38	0.001	0.006	0.014	0.000	0.001	0.001	0.191	0.898	2.206	0.006	0.112	0.089
Tractor (Crawler/Dozer)	165	0.37	2	122	10	N/A	0.151	0.812	0.996	0.001	0.056	0.050	1.117	6.012	7.372	0.011	0.415	0.370
Roller (Static/Self-Propelled)	85	0.38	2	65	10	N/A	0.058	0.387	0.380	0.001	0.027	0.024	0.438	7.747	7.598	0.014	0.540	0.481
Water Truck (3000 gal)	320	0.38	1	122	10	N/A	0.149	0.545	0.748	0.003	0.027	0.024	0.566	2.070	2.843	0.010	0.104	0.092
Grader	200	0.41	1	82	10	N/A	0.100	0.368	0.670	0.002	0.023	0.020	0.410	1.510	2.747	0.008	0.094	0.084
Roller Compactor (6 Ton)	85	0.38	2	65	10	N/A	0.058	0.387	0.380	0.001	0.027	0.024	1.152	7.747	7.598	0.014	0.540	0.481
Asphalt Truck	224	0.38	10	851	10	N/A	0.093	0.351	0.504	0.002	0.017	0.015	3.524	13.355	19.161	0.071	0.658	0.585
Asphalt Pulverizer (8')	100	0.30	1	30	10	N/A	0.057	0.403	0.404	0.001	0.027	0.024	0.171	1.208	1.211	0.002	0.081	0.072
Dump Truck (10 wheel)	400	0.38	11	1672	10	38	0.001	0.006	0.014	0.000	0.001	0.001	0.191	0.898	2.206	0.006	0.112	0.089
Dozer D8	310	0.40	1	124	10	N/A	0.229	0.928	1.687	0.003	0.067	0.060	0.916	3.711	6.747	0.010	0.269	0.240
Worker vehicles	NA	NA	9	NA	4	N/A	0.001	0.006	0.001	0.000	0.000	0.000	0.024	0.221	0.022	0.000	0.003	0.002
						Peak Daily Emissions (lbs/day)							**11.93**	**60.33**	**85.62**	**0.23**	**3.95**	**3.46**
						SCAQMD Daily Significance Thresholds (lbs/day)							**75**	**550**	**100**	**150**	**150**	**55**
						Total Project Emissions (Tons)							**0.895**	**4.525**	**6.422**	**0.017**	**0.296**	**0.260**
						SCAQMD Yearly Significance Thresholds (Tons/yr)							**100**	**100**	**100**	**100**	**100**	**100**

Alternative 3

Trucking stones across North Coast AQMD, including construction work

Emission Source Data							Emission Factors for Construction Equipment (lbs/hr)						Daily Emissions from Construction Activities (lbs/day)					
Construction Activity/Equipment Type	Power Rating (Hp)	Load Factor	# Active	Hourly Hp-Hrs	Hrs per Day [1]	Miles Per Day	ROG	CO	NOx	SOx	PM10	PM2.5	ROG	CO	NOx	SOx	PM10	PM2.5
3/4 Ton Pickup Truck	385	0.38	1	146	4	10	0.001	0.009	0.009	0.000	0.000	0.000	0.005	0.033	0.034	0.000	0.001	0.001
Crane (40 Ton)	365	0.29	1	106	10	N/A	0.109	0.384	0.705	0.002	0.026	0.023	0.315	1.113	2.044	0.005	0.075	0.066
Crane (80 Ton)	275	0.29	1	80	10	N/A	0.070	0.244	0.495	0.001	0.017	0.015	0.204	2.440	4.949	0.013	0.170	0.152
Loader, (18.30 CY Bucket, 4x4)	808	0.37	3	897	10	N/A	0.130	0.502	0.803	0.002	0.029	0.026	1.446	5.568	8.915	0.026	0.323	0.288
Loader, (4 CY Bucket, 4x4)	211	0.37	2	156	10	N/A	0.081	0.344	0.443	0.002	0.015	0.013	0.601	2.549	3.276	0.014	0.112	0.099
Semi Truck (75,000 LB Cap)	400	0.38	14	2128	4	37.8	0.001	0.006	0.014	0.000	0.001	0.001	0.242	1.137	2.793	0.008	0.141	0.113
Semi Truck (75,000 LB Cap)	400	0.38	13	1976	4	130	0.001	0.006	0.014	0.000	0.001	0.001	0.772	3.631	8.921	0.026	0.451	0.360
Concrete Truck (8 cy)	235	0.38	2	179	10	36	0.001	0.006	0.014	0.000	0.001	0.001	0.033	0.155	0.380	0.001	0.019	0.015
Generator	65	0.42	1	27	10	N/A	0.038	0.216	0.220	0.000	0.011	0.009	0.159	0.908	0.923	0.002	0.045	0.040
Dump Truck (10 wheel)	400	0.38	11	1672	10	38	0.001	0.006	0.014	0.000	0.001	0.001	0.191	0.898	2.206	0.006	0.112	0.089
Tractor (Crawler/Dozer)	165	0.37	2	122	10	N/A	0.151	0.812	0.996	0.001	0.056	0.050	1.117	6.012	7.372	0.011	0.415	0.370
Roller (Static/Self-Propelled)	85	0.38	2	65	10	N/A	0.058	0.387	0.380	0.001	0.027	0.024	0.438	7.747	7.598	0.014	0.540	0.481
Water Truck (3000 gal)	320	0.38	1	122	10	N/A	0.149	0.545	0.748	0.003	0.027	0.024	0.566	2.070	2.843	0.010	0.104	0.092
Grader	200	0.41	1	82	10	N/A	0.100	0.368	0.670	0.002	0.023	0.020	0.410	1.510	2.747	0.008	0.094	0.084
Roller Compactor (6 Ton)	85	0.38	2	65	10	N/A	0.058	0.387	0.380	0.001	0.027	0.024	1.152	7.747	7.598	0.014	0.540	0.481
Asphalt Truck	224	0.38	10	851	10	N/A	0.093	0.351	0.504	0.002	0.017	0.015	3.524	13.355	19.161	0.071	0.658	0.585
Asphalt Pulverizer (8')	100	0.30	1	30	10	N/A	0.057	0.403	0.404	0.001	0.027	0.024	0.171	1.208	1.211	0.002	0.081	0.072
Dump Truck (10 wheel)	400	0.38	11	1672	10	38	0.001	0.006	0.014	0.000	0.001	0.001	0.191	0.898	2.206	0.006	0.112	0.089
Dozer D8	310	0.40	1	124	10	N/A	0.229	0.928	1.687	0.003	0.067	0.060	0.916	3.711	6.747	0.010	0.269	0.240
Worker vehicles	NA	NA	9	NA	4	N/A	0.001	0.006	0.001	0.000	0.000	0.000	0.024	0.221	0.022	0.000	0.003	0.002
												Peak Daily Emissions (lbs/day)	**12.48**	**62.91**	**91.95**	**0.25**	**4.27**	**3.72**
												SCAQMD Daily Significance Thresholds (lbs/day)	**75**	**550**	**100**	**150**	**150**	**55**
												Total Project Emissions (Tons)	**0.936**	**4.718**	**6.896**	**0.019**	**0.320**	**0.279**
												SCAQMD Yearly Significance Thresholds (Tons/yr)	**100**	**100**	**100**	**100**	**100**	**100**

Alternative 3

Trucking stones from quarry out of Shasta AQMD

Emission Source Data							Emission Factors for Construction Equipment (lbs/hr)						Daily Emissions from Construction Activities (lbs/day)					
Construction Activity/Equipment Type	Power Rating (Hp)	Load Factor	# Active	Hourly Hp-Hrs	Hrs per Day [1]	Miles Per Day	ROG	CO	NOx	SOx	PM10	PM2.5	ROG	CO	NOx	SOx	PM10	PM2.5
Semi Truck (75,000 LB Cap)	400	0.38	13	1976	2	77	0.001	0.006	0.014	0.000	0.001	0.001	0.457	2.151	5.284	0.015	0.267	0.213
												Peak Daily Emissions (lbs/day)	**0.46**	**2.15**	**5.28**	**0.02**	**0.27**	**0.21**
												SCAQMD Daily Significance Thresholds (lbs/day)	**75**	**550**	**100**	**150**	**150**	**55**
												Total Project Emissions (Tons)	**0.034**	**0.161**	**0.396**	**0.001**	**0.020**	**0.016**
												SCAQMD Yearly Significance Thresholds (Tons/yr)	**100**	**100**	**100**	**100**	**100**	**100**

Alternative 4

Barging stones from ocean into North Coast AQMD, including construction work

Emission Source Data							Emission Factors for Construction Equipment (lbs/hr)						Daily Emissions from Construction Activities (lbs/day)					
Construction Activity/Equipment Type	Power Rating (Hp)	Load Factor	# Active	Hourly Hp-Hrs	Hrs per Day [1]	Miles Per Day	ROG	CO	NOx	SOx	PM10	PM2.5	ROG	CO	NOx	SOx	PM10	PM2.5
3/4 Ton Pickup Truck	385	0.38	1	146	4	10	0.001	0.009	0.009	0.000	0.000	0.000	0.005	0.033	0.034	0.000	0.001	0.001
Crane (40 Ton)	365	0.29	2	212	10	N/A	0.109	0.384	0.705	0.002	0.026	0.023	0.631	2.226	4.087	0.010	0.149	0.133
Crane (80 Ton)	275	0.29	1	80	10	N/A	0.070	0.244	0.495	0.001	0.017	0.015	0.204	0.707	1.435	0.004	0.049	0.044
Loader, (18.30 CY Bucket, 4x4)	808	0.37	5	1495	10	N/A	0.130	0.502	0.803	0.002	0.029	0.026	2.409	9.279	14.859	0.043	0.539	0.479
Loader, (4 CY Bucket, 4x4)	211	0.37	2	156	10	N/A	0.081	0.344	0.443	0.002	0.015	0.013	0.601	2.549	3.276	0.014	0.112	0.099
Concrete Truck (8 cy)	235	0.38	2	179	10	36	0.001	0.006	0.014	0.000	0.001	0.001	0.033	0.155	0.380	0.001	0.019	0.015
Generator	65	0.42	1	27	10	N/A	0.038	0.216	0.220	0.000	0.011	0.009	0.159	0.908	0.923	0.002	0.045	0.040
Barge	1,790	0.68	1	1217	4	N/A	0.440	5.000	7.940	0.010	0.230	0.210	0.972	16.239	17.535	0.022	0.508	0.493
Tug boat	3,000	0.31	1	930	4	N/A	0.270	5.000	6.800	1.300	0.720	0.641	0.456	8.437	11.474	7.076	1.215	1.178
Dump Truck (10 wheel)	400	0.38	11	1672	10	38	0.001	0.006	0.014	0.000	0.001	0.001	0.191	0.898	2.206	0.006	0.112	0.089
Worker vehicles	NA	NA	9	NA	4	N/A	0.001	0.006	0.001	0.000	0.000	0.000	0.024	0.221	0.022	0.000	0.003	0.002
												Peak Daily Emissions (lbs/day)	**5.66**	**41.43**	**56.21**	**7.18**	**2.75**	**2.57**
												SCAQMD Daily Significance Thresholds (lbs/day)	**75**	**550**	**100**	**150**	**150**	**55**
												Total Project Emissions (Tons)	**0.425**	**3.107**	**4.216**	**0.538**	**0.206**	**0.193**
												SCAQMD Yearly Significance Thresholds (Tons/yr)	**100**	**100**	**100**	**100**	**100**	**100**

Alternative 4

Barging stones out of SCAQMD to ocean

Emission Source Data							Emission Factors for Construction Equipment (lbs/hr)						Daily Emissions from Construction Activities (lbs/day)					
Construction Activity/Equipment Type	Power Rating (Hp)	Load Factor	# Active	Hourly Hp-Hrs	Hrs per Day [1]	Miles Per Day	ROG	CO	NOx	SOx	PM10	PM2.5	ROG	CO	NOx	SOx	PM10	PM2.5
Tug boat	3000	0.31	1	930	1	N/A	0.270	5.000	6.800	1.300	0.720	0.641	0.114	2.109	2.869	1.769	0.304	0.295
Barge	1790	0.68	1	1217.2	1	N/A	0.440	5.000	7.940	0.010	0.230	0.210	0.243	4.060	4.384	0.006	0.127	0.123
												Peak Daily Emissions (lbs/day)	**0.36**	**6.17**	**7.25**	**1.77**	**0.43**	**0.42**
												SCAQMD Daily Significance Thresholds (lbs/day)	**75**	**550**	**100**	**150**	**150**	**55**
												Total Project Emissions (Tons)	**0.003**	**0.046**	**0.054**	**0.013**	**0.003**	**0.003**
												SCAQMD Yearly Significance Thresholds (Tons/yr)	**100**	**100**	**100**	**100**	**100**	**100**

Alternative 4
Access Road Repairs

Emission Source Data							Emission Factors for Construction Equipment (lbs/hr)						Daily Emissions from Construction Activities (lbs/day)					
Construction Activity/Equipment Type	Power Rating (Hp)	Load Factor	# Active	Hourly Hp-Hrs	Hrs per Day [1]	Miles Per Day	ROG	CO	NOx	SOx	PM10	PM2.5	ROG	CO	NOx	SOx	PM10	PM2.5
3/4 Ton Pickup Truck	385	0.38	1	146	4	10	0.001	0.009	0.009	0.000	0.000	0.000	0.005	0.033	0.034	0.000	0.001	0.001
Tractor (Crawler/Dozer)	165	0.37	2	122	10	N/A	0.151	0.812	0.996	0.001	0.056	0.050	1.117	6.012	7.372	0.011	0.415	0.370
Roller (Static/Self-Propelled)	85	0.38	2	65	10	N/A	0.058	0.387	0.380	0.001	0.027	0.024	0.438	7.747	7.598	0.014	0.540	0.481
Water Truck (3000 gal)	320	0.38	1	122	10	N/A	0.149	0.545	0.748	0.003	0.027	0.024	0.566	2.070	2.843	0.010	0.104	0.092
Grader	200	0.41	1	82	10	N/A	0.100	0.368	0.670	0.002	0.023	0.020	0.410	1.510	2.747	0.008	0.094	0.084
Roller Compactor (6 Ton)	85	0.38	2	65	10	N/A	0.058	0.387	0.380	0.001	0.027	0.024	1.152	7.747	7.598	0.014	0.540	0.481
Asphalt Truck	224	0.38	10	851	10	N/A	0.093	0.351	0.504	0.002	0.017	0.015	3.524	13.355	19.161	0.071	0.658	0.585
Asphalt Pulverizer (8')	100	0.30	1	30	10	N/A	0.057	0.403	0.404	0.001	0.027	0.024	0.171	1.208	1.211	0.002	0.081	0.072
Dump Truck (10 wheel)	400	0.38	11	1672	10	38	0.001	0.006	0.014	0.000	0.001	0.001	0.191	0.898	2.206	0.006	0.112	0.089
Dozer D8	310	0.40	1	124	10	N/A	0.229	0.928	1.687	0.003	0.067	0.060	0.916	3.711	6.747	0.010	0.269	0.240
Worker vehicles	NA	NA	9	NA	4	N/A	0.001	0.006	0.001	0.000	0.000	0.000	0.024	0.221	0.022	0.000	0.003	0.002
												Peak Daily Emissions (lbs/day)	**8.49**	**44.29**	**57.52**	**0.15**	**2.82**	**2.50**
												SCAQMD Daily Significance Thresholds (lbs/day)	**75**	**550**	**100**	**150**	**150**	**55**
												Total Project Emissions (Tons)	**0.637**	**3.322**	**4.314**	**0.011**	**0.211**	**0.187**
												SCAQMD Yearly Significance Thresholds (Tons/yr)	**100**	**100**	**100**	**100**	**100**	**100**

Assumptions
Heavy Equipment emissions factors taken from EMFAC2007 Offroads
Worker vehicles and delivery truck emissions factors taken from
Assume 9 workers per shift with a daily roundtrip average of 4 hours of
Semi trucks will spend 4 hours within the NCAQMD during deliveries, 1
Tug boat and barge emissions=N*(EF*LF*Activity*HP)/2204.6 g/lb
Load Factors taken from ARB ISOR Appendix D: OSM and Summary of
Worker vehicles emissions=N*HoursPerDay*EF
PM2.5=PM10*0.97 for tug and crew boats
PM2.5=PM10*0.89 for offroad heavy equipment
150 maximum number of work days

$DE = \text{EF} \times Time \times LFwt$

Where:
DE = Daily emissions in pounds per day
EF = Engine **emission factor** in pounds per hour by power rating
Time = Daily **operating time** in hours
LFwt = Time weighted engine **load factor** (fraction of full load), based on different engine operating modes

Appendix E *(Coastal Zone Management Act Compliance)*

STATE OF CALIFORNIA -- NATURAL RESOURCES AGENCY GAVIN NEWSOM, *Governor*

CALIFORNIA COASTAL COMMISSION
45 FREMONT STREET, SUITE 2000
SAN FRANCISCO, CA 94105-2219
VOICE AND TDD (415) 904-5200

September 4, 2019

Tessa Beach, Chief
Environmental Sections
U.S. Army Corps of Engineers
450 Golden Gate Ave.
San Francisco, CA 94102

Attn: Mark Wiechmann

Re: **ND-0025-19** U.S. Army Corps of Engineers, Humboldt Bay Entrance Channel Jetty Repairs, Humboldt Co.

Dear Dr. Beach:

The U.S. Army Corps of Engineers has submitted the above-referenced negative determination for repairs to deteriorated portions of the north and south jetties at the Humboldt Bay Entrance Channel. The repairs are necessary to maintain navigability into and out of the bay, and the harsh wave climate has damaged the jetties. The repairs would be limited to jetty areas not covered with 42-ton dolosse.

The repairs include replacing large armor stones/boulders (up to 10 ft. across for the largest boulders, weighing up to 25 tons per boulder), which would be trucked in from inland quarries, to staging areas near the jetties. The repair work involves mobilizing and demobilizing equipment, including two large cranes, rearranging existing jetty slope stones as needed, rebuilding areas where rocks or concrete are missing or where structural integrity has been compromised, and restoring the concrete cap walkway and parapet wall on top of the jetties.

Construction on the north jetty is scheduled to occur between March and October 2020, with construction on the south jetty to occur during the same period in 2021. If needed (due to truck impassibility along the existing roads to the south jetty), a barge crossing from Fields Landing Boar Yard will be used to transport stones to the south jetty staging area.

The project will benefit navigation and coastal boating uses. The staging areas are graded and devoid of vegetation. The staging areas will be fenced; however the public parking areas adjacent to the staging areas will remain open to the public, with signs as appropriate to direct the public around the fenced areas. Fencing will be removed upon completion. Water quality will be protected using Best Management Practices during concrete pouring and stone placement. Scenic views will not be adversely affected. Cultural resources will not be affected, and the Corps is consulting with the Wiyot Tribe.

Under the federal consistency regulations, a negative determination can be submitted for an activity "which is the same as or similar to activities for which consistency determinations have been prepared in the past." The Commission and staff have concurred with a number of previous Army Corps consistency and negative determinations for repairs to the north and south jetties (CD-007-91, CD-015-86, CD-068-84, CD-037-84, CD-034-83, and CD-022-83). The Commission staff **agrees** with the Corps that this project is similar to the previously-authorized Humboldt Bay Jetty repairs and would not adversely affect coastal resources. We therefore **concur** with your negative determination made pursuant to 15 CFR 930.35 of the NOAA implementing regulations. Please feel free to contact Mark Delaplaine at (415) 904-5289 if you have any questions regarding this matter.

Sincerely,

Mark D.

(for) JOHN AINSWORTH
Executive Director

cc: Arcata District

USACE Determination of Consistency with the California Coastal Act

9 Consistency with Provisions of the California Coastal Act

9.1 Article 1, General *(Sections 30000 – 30200)*

Maintenance repairs are specifically permitted under the Coastal Act, Section 30233 (Diking, Filling or Dredging). Filling with stone, to repair and/or reconstruct existing rock jetties used to protect navigation channels, is permitted in Section 30233(a)(2) where there is no feasible less-environmentally damaging alternative, and where feasible mitigation measures are provided to minimize adverse environmental effects. Therefore, the project is consistent with the allowable use, alternatives, and mitigation tests contained in the fill policy of Section 30233.

9.2 Article 2, Public Access *(Sections 30210 – 30214)*

Article 2 of the CCA requires that development shall not interfere with the public's right of access to the sea.

Minor impacts to public access may occur during dredging operations. To ensure public safety, the areas around machinery and dredging operations will not be accessible to the general public. This restriction is temporary in nature and not expected to result in any long-term adverse impacts on public access. In the long term, filling of the federal jetties to facilitate their repair and reconstruction would benefit public access and navigation within the Humboldt Bay Harbor.

9.3 Article 3, Recreation *(Sections 30220 – 30224)*

Article 3 of the CCA in general requires:

- Coastal areas suited for recreational activities shall be protected for such uses and place priority on development of recreational or visitor-serving uses rather than residential uses;
- Upland areas necessary to support coastal recreation uses shall be reserved for such uses; and
- Recreational boating use of coastal waters shall be encouraged.

Areas immediately adjacent to machinery and dredging operations will not be accessible to the public during this relatively short dredging episode. This restriction is temporary in nature, and not expected to result in any long-term adverse impacts on recreation. In the long term, filling of the federal jetties to facilitate their repair and reconstruction would benefit access to boating and other recreational uses within the Humboldt Bay Harbor.

9.4 Article 4, Marine Environment *(Sections 30230 – 30237)*

Article 4, Sections 30230 and 30231 of the CCA, requires that marine resources be maintained, enhanced, and where feasible, restored, and that special protection be given to areas and species of special biological or economic significance. It further requires that uses of marine environments be such that habitat function, biological productivity, healthy species populations, and fishing and recreational interests of coastal waters are maintained for long-term commercial, recreational, scientific, and educational purposes.

As noted under Article 1, dredging to maintain existing depths, or to restore previously dredged depths in navigational channels is permitted in Section 30233(a)(2) where there is no feasible less-environmentally damaging alternative, and where feasible mitigation measures are provided to minimize adverse environmental effects.

9.5 Article 5, Land Resources *(Sections 30240 – 30244)*

Article 5 contains the heart of the CCA as it applies to protecting fish and wildlife habitat and species. This article requires that environmentally sensitive habitat areas be protected against any significant disruption of habitat values, and further that only uses dependent upon these resources be allowed to utilize them. This article extends this protection to prime agricultural lands, lands suitable for agricultural use, archaeological and paleontological resources, as well as productive soils and timberlands.

In concert with this article, nearby dunes and sensitive plant habitat will be monitored continuously during repair and reconstruction activities as a mitigation measure. Specifically, in order to avoid potential impacts to critical habitat for the Snowy Plover, a proposed monitoring plan that involves having a full-time biologist on site to monitor construction activities, plus the placement of exclusionary fencing to ensure that potential habitat is not disturbed.

With proper on-site management, the project is not anticipated to result in adverse impacts to land resources. Additionally, the monitoring program, when implemented, will provide a wealth of data that should be useful in planning future jetty repair episodes.

9.6 Article 6, Development *(Sections 30250 – 30255)*

Article 6 applies to new residential, commercial, or industrial development and requires that new development be contiguous with, or in close proximity to, existing developed areas. It requires that scenic and visual qualities of coastal areas be considered as a resource of public importance, and be protected during the process of development. Additionally, it maintains that new development shall not impede access to coastal resources, minimize risks to life and property, and be serviceable by public works.

The proposed maintenance dredging is not a development project and, therefore, Article 6 does not apply to this project.

9.7 Article 7, Industrial Development *(Sections 30260 – 30265)*

Article 7 states that the CCC has permitting authority over all offshore oil and gas development within the three-mile jurisdiction and onshore facilities within the coastal zone. Further, it encourages coastal-dependent industrial facilities to be located or expanded within existing sites.

The proposed maintenance dredging does not involve industrial development; as such, Article 7 does not apply to this project.

Appendix F *(Clean Water Act Section 401 Compliance)*

August 29, 2019

Mr. Mark Wiechmann
US Army Corps of Engineers, San Francisco District
450 Golden Gate Ave.
San Francisco, CA 94102
Mark.J.Wiechmann@usace.army.mil

Dear Mr. Wiechmann:

Subject: Notice of Applicability (NOA) for Coverage under the *Conditional Waiver of Waste Discharge Requirements for Specific Categories of Low Threat Discharge in the North Coast Region* R1-2017-0039

File: Humboldt Bay Entrance Channel Jetties Repair Project
WDID 1B190126WNHU, ECM PIN CW-860558

On August 19, 2019, the North Coast Regional Water Quality Control Board (Regional Water Board) received a Notice of Intent (NOI) application from Mr. Mark Wiechmann, U.S. Army Corps of Engineers (Applicant), for the Humboldt Bay Entrance Channel Jetties Repair Project (Project). Due to the site-specific nature of the impacts associated with the proposed project, the Regional Water Board has determined that the Project shall obtain coverage under, and comply with the terms of the Regional Water Board Resolution R1-2017-0039, *Conditional Waiver of Waste Discharge Requirements for Specific Categories of Low Threat Discharge in the North Coast Region* (Conditional Waiver).

The Project is located within the Eureka Plain Hydrologic Unit 110.00. The Project impacts the Pacific Ocean and Humboldt Bay, waters of the U.S. and state, and is located along the north and south jetty at the mouth of Humboldt Bay, Eureka, Humboldt County. The coordinates of the project are approximately latitude 40.76302°N and longitude 124.230801°W.

Due to the wave climate in the entrance channel, work may take place between March 15th and October 15th depending on funding and weather conditions. The North Jetty Repair will take place in 2020 and the South Jetty Repair will take place in 2021 depending on weather conditions and logistics.

Regional Water Board staff has determined that the Project, as described in the NOI, will not have a significant effect on the environment and is exempt from CEQA review and meets the eligibility requirements for coverage under the Conditional Waiver. The U.S. Army Corps of Engineers proposes to conduct the repair of their facility and does not issue itself a federal permit pursuant under section 404 of the Clean Water Act (CWA) to conduct these activities, hence, this does not trigger the Regional Water Board to issue a CWA section 401 water quality certification.

The proposed work is classified as maintenance repair and reconstruction, and as such, the design of the jetties will not be altered. This work will involve procurement of both large boulders, measuring 6-10 feet across, and of smaller stone measuring 6-24 inches across.

The work will entail the following actions: a) mobilizing construction equipment to the site and demobilizing same equipment at the conclusion of the project; b) rearranging existing stones on the jetty slope as needed; c) importing newly-quarried stone and rebuilding the jetty where stone is either missing or where the structural integrity has been compromised by storms and severe wave action; d) removing the concrete cap walkway and parapet wall where damaged or severely degraded, and rebuilding these structures on top of the jetty.

It is anticipated that construction equipment will entail two large cranes capable of hoisting 25-ton boulders, together with trucks and ancillary equipment capable of pouring concrete, and trucks carrying newly-quarried stone as needed. The large crane and trucks will be positioned either on the jetties themselves, or inboard (land) side of the jetties. For each jetty, a contractor's work area (staging area) for the storage of stone and construction equipment will be located nearby. These staging areas, and the haul roads that feed into them, will consist of sandy substrate largely devoid of vegetative growth.

Repair and reconstruction of the North and South jetties will be limited to those portions below the jetty heads not covered with 42-ton concrete dolosse (measuring 15 x 15 x15 feet). Repair work can be categorized into three types of action as described below, and as illustrated in Figure 2 at the end of this document.

Repair Type 1: Jetty section maintains its structural integrity. Type 1 repairs involve restoring the concrete cap and parapet wall where it is severely damaged, and replacement of underlying small stones that are missing beneath the cap. Severe wave action over the years has resulted in cracking and loss of existing pieces of the cap, ranging from small, blow-hole size pieces to large scale slumping and failure of

immense sections of concrete. Huge cavities in the jetty can develop where underlying stones are exposed and gouged out by storm waves (Figure 2). The reconstructed cap will be composed entirely of concrete; it will have no steel reinforcement.

Repair Type 2: Jetty section maintains its structural integrity. Type 2 repairs involve resetting stones, and as needed, replacement of displaced stones on the jetty slope with newly quarried rock to restore side slopes to their pre-existing design dimensions (Figure 2).

Repair Type 3: Jetty section has lost its structural integrity (Figure 2). Type 3 repairs involve removing entire portions of jetty, and then reconstructing them, stone by stone, with both existing stones and newly quarried stones. During reconstruction, rock will be carefully placed by crane into stable, interlocking positions such that the reconstructed jetty will attain its pre-existing design dimensions. Upon completion of Type 3 repairs, a new concrete cap, plus parapet wall will be recreated.

The Project will temporarily impact approximately 3,125 linear feet of the existing north jetty and 3,325 linear feet of the existing south jetty within the Humboldt Bay entrance channel, within waters of the state, but proposes no new impacts. The Project shall be constructed and maintained as described within the NOI materials including the submitted *Best Management Practices and Assurances*. The Applicant shall implement the Project in accordance with terms and conditions of the Conditional Waiver.

Receiving Water:	Pacific Ocean, Humboldt Bay, Eureka Plain Hydrologic Unit No. 110.00
Permanent Impact Area:	none
Temporary Impact Area:	North Jetty: 3,125 linear feet South Jetty: 3,375 linear feet
Latitude/Longitude:	40.76302°N / 124.230801°W

Applicants shall submit a Notice of Completion (NOC) within 45 days of completion of the Project showing that it was constructed in accordance with the project description The NOC should include the file name listed above, including WDID No. and ECM PIN, and be submitted to Northcoast@waterboards.ca.gov. Please familiarize yourself with all the requirements of the Conditional Waiver. Regional Water Board staff may request a site visit to confirm status of Project and compliance with this Conditional Waiver.

This authorization for any dredge and fill activities expires on August 29, 2024. Conditions and monitoring requirements outlined in this certification are not subject to the expiration date outlined above, and remain in full effect and are enforceable.

Regional Water Board staff has determined that the proposed activities may proceed under the Conditional Waiver.

Please call Brandon Stevens at (707) 576-2377 or Gil Falcone at (707) 576-2830 if you have any questions.

Sincerely,

Jonathan Warmerdam
On Behalf Of

Digitally signed by Jonathan Warmerdam
Date: 2019.08.29 08:53:20 -07'00'

Matthias St. John
Executive Officer

190829_BDS_mc_USACE_HumboldtBayJetty__CatWaiver_NOA

cc: State Water Resources Control Board, Stateboard401@waterboards.ca.gov
Ms. Jennifer Siu, EPA Region 9, Siu.Jennifer@epa.gov

Figure 1 – Project Location

Humboldt Bay Entrance Channel Jetties: FY2020 & FY2021 Repairs & Reconstruction

Figure 1 Map showing location and footprint (inset) of the proposed project.

4

Figure 2 – Depiction of three varying repair types

Humboldt Bay Entrance Channel Jetties: FY2020 & FY2021 Repairs & Reconstruction

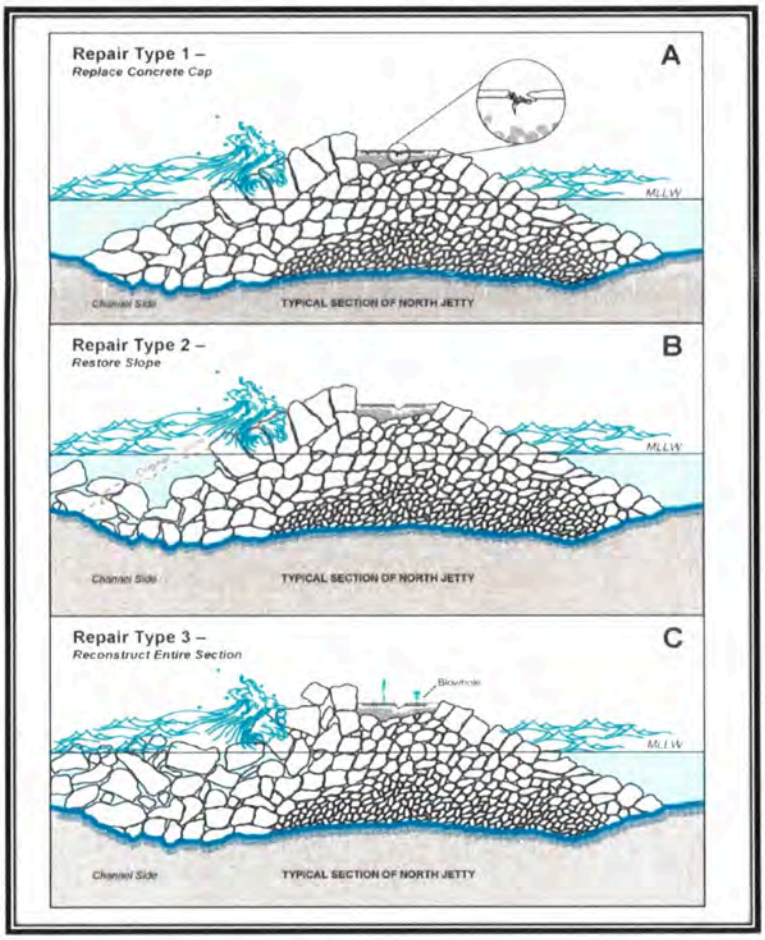


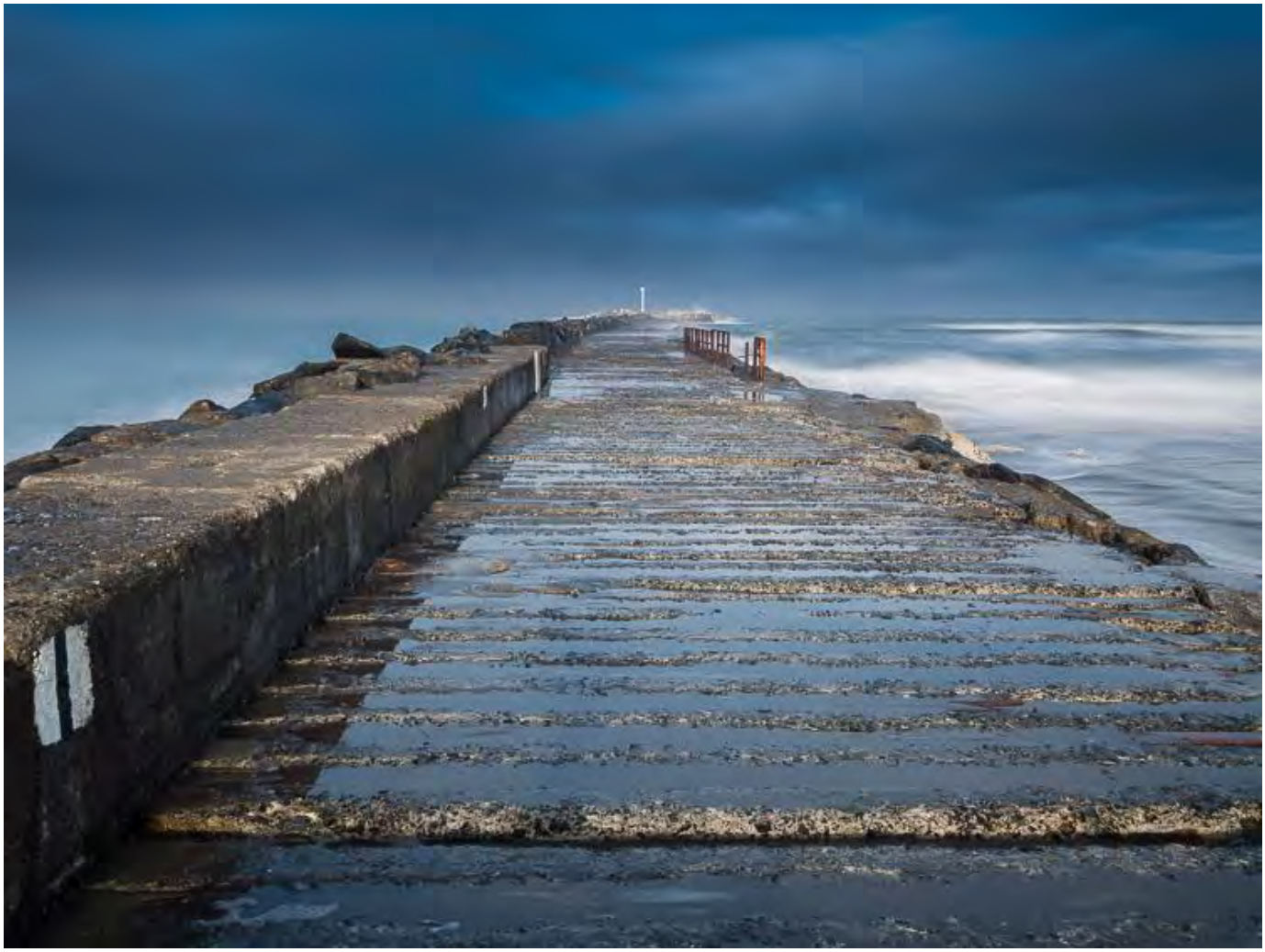
Figure 2 Depictions of the three types of jetty repair

9

Appendix G *(Clean Water Act Section 404 Compliance)*

Clean Water Act Section 404 & Rivers and Harbors Act Section 10 Nation Wide Permit (NWP) #3 Conformity Evaluation

Humboldt Jetty Repair Project



October 2019

U.S Army Corps of Engineers
San Francisco District
Planning Branch, Environmental Section

This page intentionally left blank

Contents

Table of Figures

Acronyms & Abbreviations

BLM.....Bureau of Land Management
cf .....Cubic feet
CFR… .....Code of Federal Regulations
cy.....Cubic yards
EA .....Environmental Assessment
FR……Federal Regulation
FY .....Fiscal Year
HTL…….High Tide Line
MHW……..Mean High Water
n/a.....not applicable
NEPA .....National Environmental Policy Act
NOAA .....National Oceanic and Atmospheric Administration
NWP-3 .....Nation Wide Permit #3
O&M.....Operations and Maintenance
USACE .....United States Army Corps of Engineers, San Francisco District
U.S.C.....United States Code
USCG.....United States Coast Guard
USEPA.....United States Environmental Protection Agency
WDR .....Waste Discharge Requirements
WQC .....Water Quality Certification

Introduction

Section 404 of the Clean Water Act (33 USC §1344) regulates the discharge of dredge or fill material into waters of the United States. A permit from USACE is generally required prior to discharging dredged or fill material into waters of the United States. Waters of the United States are defined in Title 33 CFR Part 328.3(a) and include territorial seas, waters effected by the ebb and flow of the tide, and a range of freshwater wet environments such as lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds. The USACE may authorize activities through three basic types of permits: standard permits, general permits, or letters of permission. For proposed actions to be undertaken by USACE, the agency does not issue itself a permit but includes in the NEPA document prepared for the action a discussion of section 404 consistency and either a 404(b)(1) analysis or a statement of conformity in using a Nation Wide Permit (NWP).

The 404 evaluation is presented herein for the Humboldt Jetty Repair Project. Additional details regarding the proposed action and associated effects are described throughout the body of the 2019 Environmental Assessment (EA).

1 Project Description

1.1 Location

The Humboldt Jetty is located within the Pacific Ocean along the Northern California Coast, within Humboldt County approximately 2.4 miles south of the town of Fairhaven, and 2.7 miles west of Bayview which is located on the opposite side of Humboldt Bay. Humboldt Bay lies just inside the jetty channel and is bordered by the US 101 freeway on its east side. The jetty is situated between sandy beaches to the south and north with access roads from the south and north which lie between the beach and Humboldt Bay; terminating close to the jetty on each side. A map of the project area can be seen below in Figure 1.

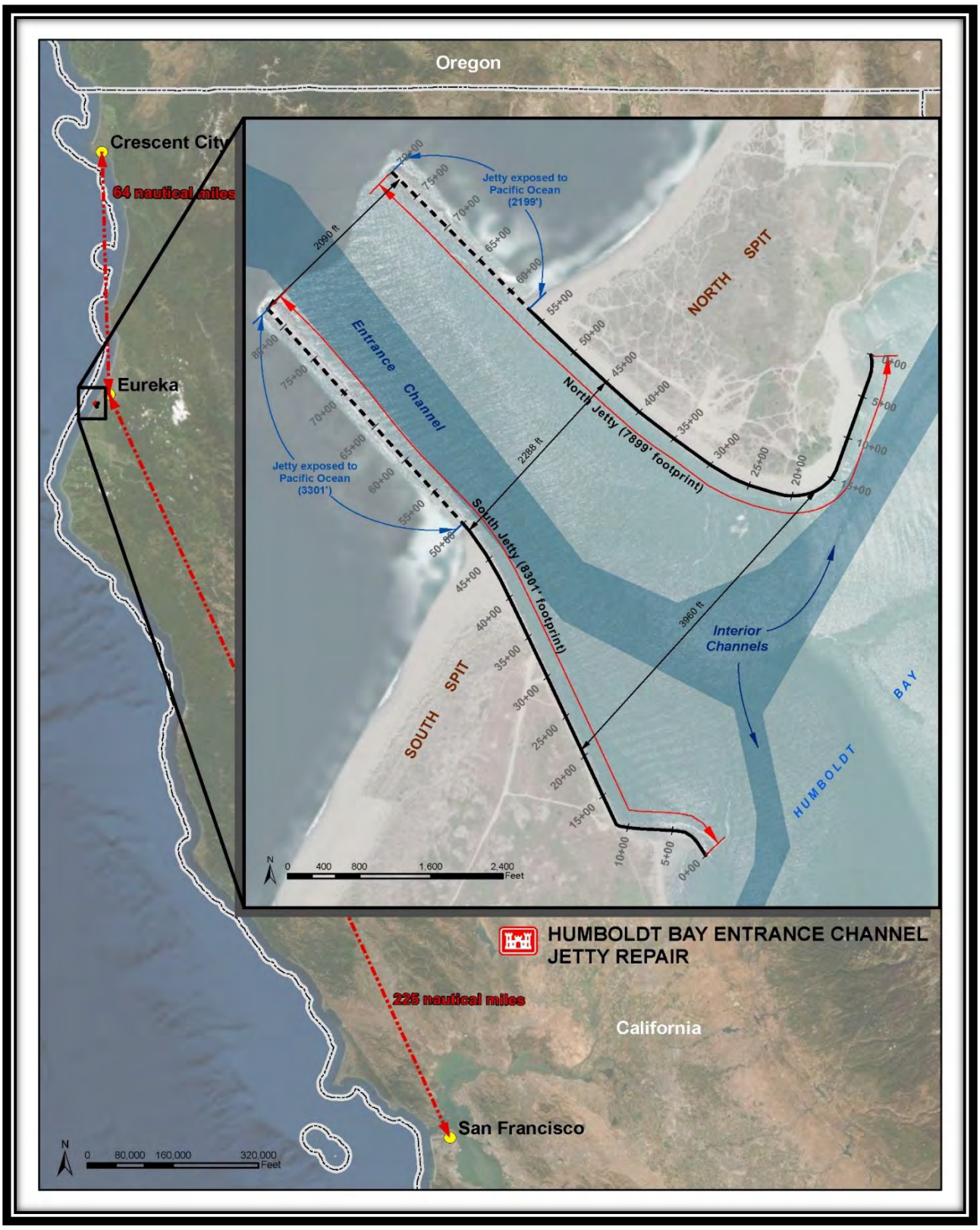


Figure 1. Map of the Project Area with HTL and OHWM

1.2 General Description and Alternatives

The overall project objective is to repair the jetty back to a working condition, which has been degraded over time from constant wave action and storms. The effect of the degradation is that the stones, which were placed to build up the jetty, have been broken or have collapsed into the water below. This degradation results in a loss of height and effectiveness; which if not repaired will eventually result in unsafe conditions for the passage of vessels into and out of Humboldt Bay. All project alternatives would have the same impact to waters of the United States, as they only differ in the source and transport of the stones used to rebuild the jetty. The repair of the jetty may require the following:

- Rearranging existing stones to build the jetty slope
- Placement of new stones
- Capping with concrete

1.2.1 Authority and Appropriations

Authority for repair and reconstruction of the Entrance Channel Jetties at Humboldt Bay and Harbor is provided by the Rivers and Harbors Acts of 1910, 1930, 1935, and 1968. Project funding is classified as Operations and Maintenance (O&M) work.

Appropriations for the planning, design, and initial construction work in FY2020, largely covering the North Jetty, are from the Harbor Maintenance Trust Fund. It is anticipated that subsequent appropriations will be forthcoming in FY2021 as well, so as to fund work on the South Jetty and complete the project. It is to be understood that actions cited in the EA as taking place in FY2021 are contingent upon receipt of this funding. If it is not forthcoming, construction work will be delayed into subsequent years.

1.3 Alternatives

The alternatives evaluated to repair the jetties are discussed in Section 2 of the EA including No Action (§2.2) and various action alternatives (§2.3 and §2.4). A brief summary of the alternatives is included below. Please refer to the EA for more detail.

1.3.1 No Action Alternative

Under the No Federal Action alternative, the federal government would not repair any segments of the damaged breakwaters. Degradation and significant damage to the jetties is expected to increase gradually over time. Navigability and safety for deep draft and other commercial and recreational fishing vessels entering and leaving the Entrance Channel would be directly impacted, and businesses and industries dependent upon waterborne commerce would be indirectly adversely affected.

1.3.2 Action Alternatives

Repair Activities Common to All Action Alternatives

Repair and reconstruction of the North and South jetties will be limited to those portions below the jetty heads not covered with 42-ton concrete dolosse (measuring 15 x 15 x15 feet). The repair work can be categorized into three types of action as described below, and as illustrated in Figures 2A, 2B, and 2C.

Repair Type 1— Jetty section maintains its structural integrity. Type 1 repairs involve restoring the concrete cap and parapet wall where it is severely damaged, and replacement of underlying small stones that are missing beneath the cap. Severe wave action over the years has resulted in cracking and loss of existing pieces of the cap, ranging from small, blow-hole size pieces to large scale slumping and failure of immense sections of concrete. Huge cavities in the jetty can develop where underlying stones are exposed and gouged out by storm waves. The reconstructed cap will be composed entirely of concrete strengthened with glass and steel fibers; it will have no separate steel bar reinforcement.

Repair Type 1 estimated length along the North Jetty: 2,075 feet
Repair Type 1 estimated length along the South Jetty: 675 feet

Repair Type 2— Jetty section maintains its structural integrity. Type 2 repairs involve resetting stones, and as needed, replacement of displaced stones on the jetty slope with newly -quarried rock to restore side slopes to their pre-existing design dimensions.

Repair Type 2 estimated length along the North Jetty: 3,125 feet
Repair Type 2 estimated length along the South Jetty: 3,375 feet

Repair Type 3— Jetty section has lost its structural integrity. Type 3 repairs involve removing entire portions of jetty, and then reconstructing them, stone by stone, with both existing stones and newly quarried stones. During reconstruction, rock will be carefully placed by crane into stable, interlocking positions such that the reconstructed jetty will attain its pre-existing design dimensions. Upon completion of Type 3 repairs, a new concrete cap (with glass and steel fiber reinforcement), plus parapet wall will be recreated.

Repair Type 3 estimated length along the North Jetty: 600 feet
Repair Type 3 estimated length along the South Jetty: 600 feet

Construction Activities Common to All Action Alternatives

The proposed work is classified as maintenance repair and reconstruction, and as such, the design of the jetties will not be altered. This work will involve procurement of both large boulders, measuring 6-10 feet across, and of smaller stone measuring 6-24 inches across.

The work will entail the following actions: a) mobilizing construction equipment to the site and demobilizing same equipment at the conclusion of the project; b) rearranging existing stones on the jetty slope as needed; c) importing newly-quarried stone and rebuilding the jetty where stone is either missing or where the structural integrity has been compromised by storms and severe wave action; d) removing the concrete cap walkway and parapet wall where damaged or severely degraded, and rebuilding these structures on top of the jetty.

It is anticipated that construction equipment will entail two large cranes capable of hoisting 25-ton boulders, together with trucks and ancillary equipment capable of pouring concrete, and trucks carrying newly-quarried stone as needed. The large crane and trucks will be positioned either on the jetties themselves, or inboard (land) side of the jetties. For each jetty, a contractor's work area ("staging area") for the storage of stone and construction equipment will be located nearby.

Construction of the North Jetty is scheduled for 2020. Construction of the South Jetty is scheduled for 2021. Due to the wave climate in the Entrance Channel, construction in each year will take place approximately between the months of March and October.

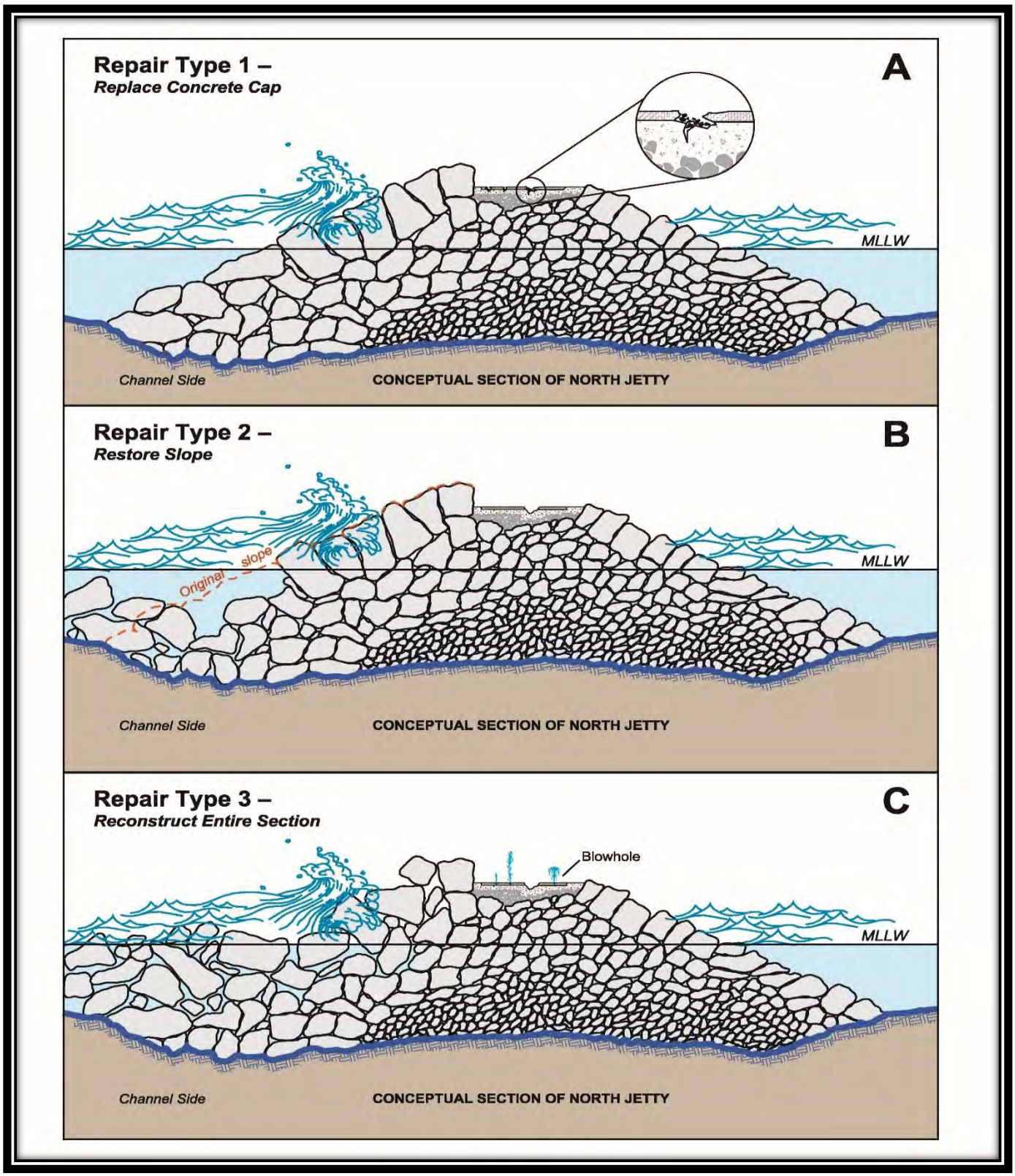


Figure 2. Conceptual depictions of the three types of jetty repair.

Different Action Alternatives

Alternative 1—Rock Trucked In From Distant Quarry Source
Under Alternative 1, rock would be trucked in from a distant quarry source. The most likely possibility is the quarry known as Mountain Gate in Redding, California. For the South Jetty, if trucking along Bluff Road/South Jetty Road is infeasible, trucks will be redirected to the Fields Landing Boat Yard to transport the stones by barge to the project site. The barge will transport the stones across the bay to the South Jetty.

Alternative 2—Rock Trucked In From Nearby Quarry Source
Under Alternative 2, rock would be trucked in from a nearby quarry source. The most likely possibility is the quarry known as Liscom Hill in Willow Creek, California. For the South Jetty, if trucking along Bluff Road/South Jetty Road is infeasible, trucks will be redirected to the Fields Landing Boat Yard to transport the stones by barge to the project site. The barge will transport the stones across the bay to the South Jetty.

Alternative 3—Some Combination of Alternative 1 and Alternative 2
With this alternative, some combination of trucking in newly-quarried stone from a distant quarry source (Alternative 1) and trucking in stone from a nearby quarry source (Alternative 2) is used. At the contractor's discretion, the combination might be split equally between the North and South Jetties, or in some mixed proportion between the two jetties.

Alternative 4—Barging In Newly-Quarried Rock
Under this scenario, rock would be barged in from some distant quarry source. Catalina Island, in southern California, is considered the most distant possible quarry source.

Under all scenarios involving barging, because there are no offloading docks in the area of the South Jetty, the construction contractor would need to identify a system for offloading stones. No pile driving or dredging of material, or permanent fill shall be allowed as part of setting up or executing any system of offloading stones. One potential approach would be for a barge, filled with 15-20 ton boulders, or with heavy construction equipment (cranes), to land directly on the beach. The stones, or equipment, would then be off-loaded, and then transported with a loader to the staging area. With this scenario, it's possible that a small amount of sediment will need to be moved. This action would not involve dredging and subsequent disposal. Instead, sediment removal would involve side-casting (pushing sediment to the side) to create a shallow area, or "notch," that the barge would be able to slide into. After completion of the project, the side-casted sediment would be left to naturally return.

2 Evaluation of the Project: Conformity for NWP 3

2.1 Definition of Waters of the United States and Waters of the United States within the Project Area

In 40 CFR 230.3(s), it states that Waters of the United States includes all territorial seas, and all waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide. The project location also takes place in navigable waters as defined in 33CFR329.4; where navigable waters of the United States are those waters that are subject to the ebb and flow of the tide and/or are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce.

In order to determine the Waters of the United States that could be effected by the proposed action and the action alternatives on the study area the Mean High Water (MHW) elevation and High Tide Line (HTL) were used to determine how much of the Humboldt Jetty structure lies within these jurisdictional waters as they correspond to Section 10 of the Rivers and Harbors Act and section 404 of the Clean Water Act, respectively. The High Tide Line was found by reviewing tide data from the previous year and finding that 9.46 ft NAVD88 was the maximum tide elevation (NOAA 2019). The MHW elevation at the jetty was determined using gauge data and found to be 6.48 ft NAVD88, see figure 1 above (NOAA 2019). Most of the Humboldt Jetty structure has an elevation of approximately 10 ft NAVD88 where construction would take place. Due to the close proximity in elevation of the jetty, the HTL and MHW elevation, the jetty is functionally entirely within waters that coincide with Section 404 of the Clean Water Act and partially within waters that coincide with the Rivers and Harbors Act. The area of Waters of the US occupied by the jetty is approximately 24.7 acres for the North Jetty and 31.6 acres for the South Jetty. Construction will not take place over the entire area of the jetty; 55,320 sf will be repaired for the North Jetty while 79,180 sf will be repaired for the South Jetty. Under all alternatives, the footprint of the jetty would not be changed from the previously authorized area, therefore the project will not result in any loss of area to Waters of the United States.

2.2 Fill Material

Fill material will consist of stones sourced from California quarries that meet technical criteria for jetty construction, specifically that each stone has a high enough value for bulk specific gravity. Approximately 2000 stones will be needed; each stone is expected to weigh between 15 to 20 tons each and measure some 10 to 12 feet across. Stones used for repairing the jetty will not impact water chemistry or cause any change in water quality, and will be clean upon placement. The volume of new material to be replaced into the waters of the United States (consistent with the jetties' design) will be 1,530 cubic yards (cy) of concrete and 177,300 cubic

feet (cy) of stone for the North Jetty, and 350 cy of concrete and 492,000 cf of stone for the South Jetty. No material would be dredged from the project.

2.3 Nationwide Permit 3: Maintenance

Nationwide Permits are issued by USACE for various activities, which can be used to satisfy Section 404 of the Clean Water Act if a project 1) satisfies the requirements for a particular nationwide permit and 2) meets the general conditions for using a nationwide permit. As such, it was found that the Humboldt Jetty Repair Project meets the requirements for Nationwide Permit 3 (Maintenance) as reissued in 2017 under 82 FR 1860, which states: "The repair, rehabilitation, or replacement of any previously authorized, currently serviceable structure or fill, or of any currently serviceable structure or fill authorized by 33 CFR 330.3, provided that the structure or fill is not to be put to uses differing from those uses specified or contemplated for it in the original permit or the most recently authorized modification." The plans and specifications for the Humboldt Jetty Repair Project were reviewed and confirmed that they meet the general conditions for nationwide permits, which have been tabulated in Table 1.

Table 1. Table of General Conditions with Project Adherence Determination and Justification.

General Condition	Project Adheres to Condition (Y/N) or N/A	Relevant Section of the Environmental Assessment for Justification of Meeting the Condition
1. Navigation	Y	4.2.3
2. Aquatic Life Movements	Y	4.2.2
3. Spawning Areas	Y	4.2.2
4. Migratory Bird Breeding Areas	N/A	-
5. Shellfish Beds	N/A	-
6. Suitable Material	Y	2.3.3 & 2.3.4
7. Water Supply Intakes	Y	1.4
8. Adverse Effects from Impoundments	N/A	-
9. Management of Water Flows	Y	2.4
10. Fills Within 100-Year Floodplains	N/A	-
11. Equipment	N/A	-
12. Soil Erosion and Sediment Controls	Y	2.4
13. Removal of Temporary Fills	Y	2.4
14. Proper Maintenance	Y	1.5
15. Single and Complete Project	Y	2.4
16. Wild and Scenic Rivers	N/A	-
17. Tribal Rights	Y	4.2.3

General Condition	Project Adheres to Condition (Y/N) or N/A	Relevant Section of the Environmental Assessment for Justification of Meeting the Condition
18. Endangered Species	Y	4.2.2
19. Migratory Birds and Bald and Golden Eagles	Y	4.2.2
20. Historic Properties	N/A	-
21. Discovery of Previously Unknown Remains and Artifacts	Y	4.2.3
22. Designated Critical Resource Waters	N/A	-
23. Mitigation	Y	4.2.4
24. Safety of Impoundment Structures	N/A	-
25. Water Quality	Y	4.2.1
26. Coastal Zone Management	Y	Appendix E
27. Regional and Case-by-Case Conditions	Y	Appendix E
28. Use of Multiple Nationwide Permits	N/A	-
29. Transfer of Nationwide Permit Verifications	N/A	-
30. Compliance Certification	Y	To be completed by USACE at terminus of project
31. Activities Affecting structures or Works Built by the United States	Y	To be completed by USACE before beginning construction
32. Pre-Construction Notification	Y	USACE does not issue itself a pre-construction notification

2.4 Effects to Waters of the United States and Statement of Conformity

Parts of the proposed action would occur in Waters of the United States. Due to the construction activities of moving and placing stones, sediments will be stirred which will increase the turbidity and produce temporary effects to those Waters of the United States in which the project is located and in the immediate surrounding waters. These effects are considered temporary because the proposed action will increase turbidity for a short duration after stones are moved and placed. Based on the above criteria in section 2.3, the project was found to conform to the requirements for Nationwide Permit 3 (Maintenance). The project also meets the general conditions for nationwide permits, which for all alternatives, no more than minimal individual and cumulative effects are expected.

Literature Cited

NOAA (National Oceanic and Atmospheric Administration) 2019. Tides and Currents Data: Tides and Water Levels for 9418767 North Spit, CA. Accessed 10 September 2019. https://tidesandcurrents.noaa.gov/reports.html?id=9418767

NOAA (National Oceanic and Atmospheric Administration) 2019. National Geodetic Survey: Tidal Elevation for 9418767 North Spit, CA. Accessed 10 September 2019. https://www.ngs.noaa.gov/Tidal_Elevation/diagram.xhtml?PID=LV0361&EPOCH=1983-2001

Appendix H *(Endangered Species Act Compliance - USFWS)*

United States Department of the Interior
U.S. FISH AND WILDLIFE SERVICE
Ecological Services
Arcata Fish and Wildlife Office
1655 Heindon Road
Arcata, California 95521
Phone: 707-822-7201 Fax: 707-822-8411

In Reply, Refer to:
AFWO-20B004-20I0031

Dr. Tessa E. Beach
Chief, Environmental Sections
U.S. Army Corps of Engineers, San Francisco District
450 Golden Gate Avenue, Floor 4
San Francisco, California 94102

Subject: Informal Consultation for the Humboldt Bay Entrance Channel Jetties Project, Humboldt County, California

Dear Dr. Beach:

We have reviewed your request, dated September 20, 2019 and received September 23, 2019, for informal consultation with the U.S. Fish and Wildlife Service (Service) for the Humboldt Bay Entrance Channel Jetties Project (Project), at Humboldt Bay, Humboldt County, California. This response is prepared in accordance with Section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*; Act) and its implementing regulations (50 CFR § 402). As the lead Federal action agency for the project, the U.S. Army Corps of Engineers (Corps), San Francisco District is seeking concurrence that the proposed project "may affect, but is not likely to adversely affect," the federally threatened western snowy plover (i.e., the Pacific coast breeding population of *Charadrius nivosus nivosus*) and its designated Critical Habitat.

This letter transmits the Service's concurrence with Corps' "may affect, but not likely to adversely affect" determination for the western snowy plover and its Critical Habitat.

Project Description

The Corps proposes to repair and reconstruct both of the Humboldt Bay entrance channel jetties (North Jetty and South Jetty) over a period of three years beginning in 2020 and finishing by the end of 2022. Humboldt Bay is a large coastal estuary in Humboldt County, situated approximately 225 nautical miles (nm) of San Francisco and 64 nm south of Crescent City in Humboldt County, California. The jetties are two linear rock-filled projections into the Pacific Ocean, which provide vessels predictable and relatively safe passage coming into entrance and inner bays and ports near the towns of Eureka and Arcata. Severe wave action over the years has resulted in cracking and loss of existing pieces and subsequent loss of structural integrity in some portions of the jetties. Work is planned to occur between March and October, when wave and

swell height is minimal. The Project is classified as maintenance repair and reconstruction, and as such, the design of the jetties will not be altered. The required stone class to be used is 15-20 ton sized boulders, roughly 10-12 feet (ft) across in width.

Work would entail the following actions: a) mobilizing construction equipment to the site and demobilizing same equipment at the conclusion of the project; b) rearranging existing stones on the jetty slope as needed; c) importing newly-quarried stone and rebuilding the jetty where stone is either missing or where the structural integrity has been compromised by storms and severe wave action; and d) removing the concrete cap walkway and parapet wall where damaged or severely degraded, and rebuilding these structures on top of the jetty. It is anticipated that construction equipment would entail a large crane, capable of hoisting 25-ton boulders, together with trucks and ancillary equipment capable of pouring concrete, and trucks carrying newly quarried stone as needed. The large crane and trucks would be positioned either on the jetties themselves, or on the inboard (land) side of the jetties.

Concurrence

The Service concurs with Corps' determination that the proposed construction activities "may affect, but are not likely to adversely affect" the federally threatened western snowy plover and its critical habitat. The Service concurs with this determination based on information provided during email correspondences with Corps' environmental services staff, review of recent nesting and other species occurrence records for the project vicinity, and information provided in the Corps' biological assessment (BA; Corp in litt. 2019b; Corps in litt. 2019e).

Roosting (wintering) western snowy plovers typically aggregate in flocks of 5-15 individuals during the nonbreeding season (October–February) at the Mike Thompson Wildlife Area, South Spit Humboldt Bay (henceforth "South Spit"; Irwin 2014). During March–September, western snowy plovers typically nest and forage along upper foredunes, wrack lines, and wave slopes immediately adjacent to South Spit's habitat restoration areas, approximately 0.5 miles south from the area of construction proposed for the South Jetty (Irwin 2016; Feucht et al. 2019, p. 10). No access to these sensitive areas will be allowed to construction vehicles, workers, or pets during construction-related activities. No work will occur in the Critical Habitat.

The beach directly adjacent to the South Jetty seaward slope from the shoreline and extending 1,200 ft inland has been identified as a temporary construction easement (TCE), and is an area along the open sandy beach which does not provide much of the organic debris and conditions to support invertebrates that are food sources for western snowy plovers, nor does it have open unvegetated viewscapes and low levels of disturbance suitable for western snowy plovers during incubation and rearing of young. It is unlikely that plovers will actively use this area during construction activities once commenced, or may utilize other suitable areas outside the project footprint (e.g. HRAs) while noise and visual disturbances by construction is ongoing.

The proposed project would avoid adverse effects to western snowy plover by implementation of a restricted access corridor adjacent to the inboard side of the South Jetty, nesting bird surveys before and during construction and establishment of appropriate buffers as needed, a trained

observer and worker education program designed to avoid construction related impacts to snowy plovers, and appropriate work windows to avoid wintering plovers which frequently roost within noise and visual disturbance distances of the construction area. No work will occur in the Critical Habitat and Critical Habitat will not be altered.

Noise from the project from placement of rock is anticipated (Corps, in litt. 2019b) but is largely equivalent to the ambient noise of crashing waves—85 decibels (dB) at 50 feet (ft) (15.25 meters, m) from the source as when compared to ambient noise level of 78 dB for 6.5 ft (2 m) crashing waves and is considered insignificant and discountable. Staging and haul routes for the storage of stone and construction equipment will be along approved, corridors and existing disturbed areas located outside of sensitive and/or critical habitats (Corps, in litt. 2019d).

Conservation measures provided in the BA (see pages 17-19) would avoid and minimize the possibility of adverse effects to listed species or its Critical Habitat. Because conservation measures are pledged in the Project description by the action agency, their implementation is required under the terms of this consultation. They are provided in Appendix A (herein) for clarity and convenience.

Conclusion

This concludes informal consultation on the actions described in your September 20, 2019, biological assessment for the Humboldt Bay Entrance Channel Jetties Project in Humboldt County. However, obligations under Section 7 of the Act, as amended, should be reconsidered if: (1) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not previously considered; (2) this action is subsequently modified in a manner that was not considered; (3) a new species is listed or critical habitat designated that may be affected by the action; or (4) you are unable to implement all of the measures described herein.

If you have any questions regarding this letter, please contact Ms. Susie Tharratt of my staff at the above letterhead address, susie_tharratt@fws.gov, or by phone (707) 822-7201.

Sincerely,

Jennifer L. Norris

Jennifer L. Norris
Deputy Field Supervisor

CC:
U. S. Army Corps of Engineers, Eureka, CA (Attn.: L. Kasey Sirkin)
Bureau of Land Management, Arcata, CA (Attn/s.: Jesse Irwin, Wildlife Biologist and Jennifer Wheeler, Botanist)

REFERENCES CITED

Feucht E.J, M.A. Colwell, and K.M. Raby. 2019. Final Report: 2019 Snowy Plover Activity on South Spit, Humboldt Bay. Humboldt State University, Arcata CA. 10pp.

Irwin, J. 2014. 2013 South Spit Snowy Plover Breeding Season Report. Bureau of Land Management, Arcata Field Office, Arcata CA. 11pp.

Irwin, J. 2016. 2016 South Spit Snowy Plover Breeding Season Report. Bureau of Land Management, Arcata Field Office, Arcata CA. 8pp.

IN LITTERIS

[Corps] U.S. Army Corps of Engineers. 2019a. Section 7 informal consultation request letter (Letter) for The Humboldt Bay Entrance Channel Jetties Repair Project. U.S. Army Corps of Engineers, San Francisco District.

[Corps] U.S. Army Corps of Engineers. 2019b. Biological Assessment for the Humboldt Bay Entrance Chanel Jetties FY2020 &FY2021 Repairs and Reconstruction, dated September 20, 2019. Prepared by: Stephen M. Willis, Senior Biological Science Environmental Manager, United States Army Corps of Engineers, San Francisco District. Submitted with Letter requesting to initiate Informal Consultation. 20 pp.

[Corps] U.S. Army Corps of Engineers. 2019c. Electronic mail from Stephen M. Willis., U.S. Army Corps of Engineers to Susie Tharratt, U.S. Fish and Wildlife Service, regarding avoidance and minimization (conservation) measures for The Humboldt Bay Entrance Channel Jetties Repair and Reconstruction Project. Dated September 25, 2019.

[Corps] U.S. Army Corps of Engineers. 2019d. Draft Environmental Assessment, Humboldt Bay Entrance Channel Jetties - FY2020 & FY2021 Repairs and Reconstruction. Dated October 2019 and accessed on October 24, 2019. Available at: https://www.spn.usace.army.mil/Missions/Environmental

[Service] U.S. Fish and Wildlife Service. 2019e. Electronic mail from Laurel Goldsmith, U.S. Fish and Wildlife Service to Stephen M. Willis, U.S. Army Corps of Engineers, regarding Humboldt Bay Entrance Channel Jetties draft EA comments and additional protective measures for beach layia for The Humboldt Bay Entrance Channel Jetties repair and maintenance project. Dated October 25, 2019.

Appendix A

Conservation Measures for the Western Snowy Plover – Humboldt Bay Entrance Channel Jetties Project, 2020-2022

1. Construction equipment shall have no access to the beach directly adjacent to the South Jetty seaward slope from the shoreline and extending 1,200 ft inland. The designated vehicle access corridor (i.e., TCE), begins near Station 44+00 and extends to west to the beachline (e.g. approximately near Station 56+00). A combination of exclusionary fencing and/or signage will be placed near Station 44+00.
2. The designated restricted vehicle access corridor will not be permanently altered by the proposed project. No widening or alteration of the corridor near western snowy plover's critical habitat will occur. If sand berms are created along the sides of the corridor during construction operations, the corridor will be restored to pre-project conditions in order to facilitate western snowy plover movement between inland and beach areas;
3. If construction-related activities occur during the breeding season, preconstruction surveys by a skilled ornithologist or Service-approved biological monitor[1] for breeding western snowy plovers will be conducted within 15 days prior to initiation of any construction-related activities;
4. A Service-approved (qualified) biologist familiar with the species will conduct pre-construction western snowy plover survey(s) prior to the onset of construction activities in all appropriate habitat areas within 600 feet (185 m) of limits of work. If no active plover nests or recent scrapes (evidence of nesting attempt) are found to occur within 328 feet (100 m) of the area of disturbance, project activities may proceed.
    a. If an active plover nest is detected during the pre-construction survey, either work will be suspended until the young have fledged/beginning of the nonbreeding season or the following conditions will apply:
        i. An exclusionary buffer will be established around the nest(s). The buffer distance will be determined during coordination with the Service's Arcata Fish and Wildlife Office (FWS-Arcata Office), considering several factors: presence of natural buffers (vegetation/topography), nest height, location of foraging territory, nature and proximity of the proposed activities, and baseline levels of noise and human activity. The buffer may range from 100 feet to over 1,000 feet in width, AND
        ii. If an exclusion zone is established, a Service-approved biologist will monitor the nest during construction for signs of adverse effects including distress/disturbance. If adverse effects are detected, then the Service-approved biologist will have the authority to stop all construction activities approximate to the nest and coordinate with the FWS-Arcata Office to determine whether additional protection measures can avoid or minimize effects on the western snowy plover. Construction may resume only with approval from the FWS-Arcata Office, OR
5. The biological monitor will be present during all construction-related activities to ensure disturbance-free buffer zones are observed;

6. A survey of breeding western snowy plover will be conducted at a minimum of two times per week during construction and once at pre-construction and post-construction. The survey post-construction will be conducted within 7 days after all equipment and materials are removed from the site. Monitoring reports will be provided to the Service on a weekly basis;
7. Only approved haul routes from the staging area to the jetty will be utilized within the construction limits of work. No off-road travel, or new temporary roads will be constructed;
8. Care will be taken not to enter into the designated western snowy plover protection areas and nearby sensitive dune and foredune communities during construction;
9. Preventive measures will be taken so as not to create additional perches for avian predators. During non-construction hours, equipment taller than 20 feet stored within the staging areas will face away (bayside) from western snowy plover's Critical Habitat area and have booms lowered at an angle that will not provide visibility to the western snowy plover's Critical Habitat by avian predators;
10. Contractors and work crews shall not be allowed to have pets onsite at any time;
11. Garbage will be collected daily from the worksite, and care will be taken not to leave garbage or litter within the construction footprint;
12. The biological monitor will present a western snowy plover awareness-training program prior to construction activity for all construction staff. This program will describe the following information:
    a) The behavior of the western snowy plover and its distribution and habitat on South Spit,
    b) Threats to western snowy plovers,
    c) The detrimental effects of feeding wildlife,
    d) The penalties for disobeying restrictions,
    e) A map showing the zone and proper best management practices for minimizing beach impact,
    f) The proper procedure to address injured or dead western snowy plovers, and contact information of the biological monitor, Corps' construction personnel, or the Corps' environmental compliance point of contact;
13. Best Management Practices will be implemented for oil and fuel handling, and an onsite spill-response plan will be required on-site and implemented if necessary.

---

[1] The Service-approved biological monitor for this measure will have at least 30 hours of documented experience with locating and observing western snowy plovers, and a minimum of 20 hours of documented field experience involving focused nest monitoring including capture and handling, egg floating, exclosure construction and/or chick banding of western snowy plovers. Qualifications and resumes will be submitted to the FWS at least 30 days prior to onset of construction each March for approval (2020-2022).

USACE Biological Assessment

g

Humboldt Bay Entrance Channel Jetties

FY2020 & FY2021 Repairs and Reconstruction

Biological Assessment

2020 – 2022

1.0 Introduction

The United States Army Corps of Engineers (USACE) proposes to repair and reconstruct The Humboldt Bay entrance channel jetties in fiscal years 2020 through 2022. The USACE has prepared this biological assessment to comply with section 7 of the federal Endangered Species Act (ESA; 16 U.S.C. §§ 1531 *et seq*.). Humboldt Bay, a sprawling coastal estuary in Humboldt County, Northern California, is about 225 nautical miles north of San Francisco and 64 nautical miles south of Crescent City, California (Figure 1).

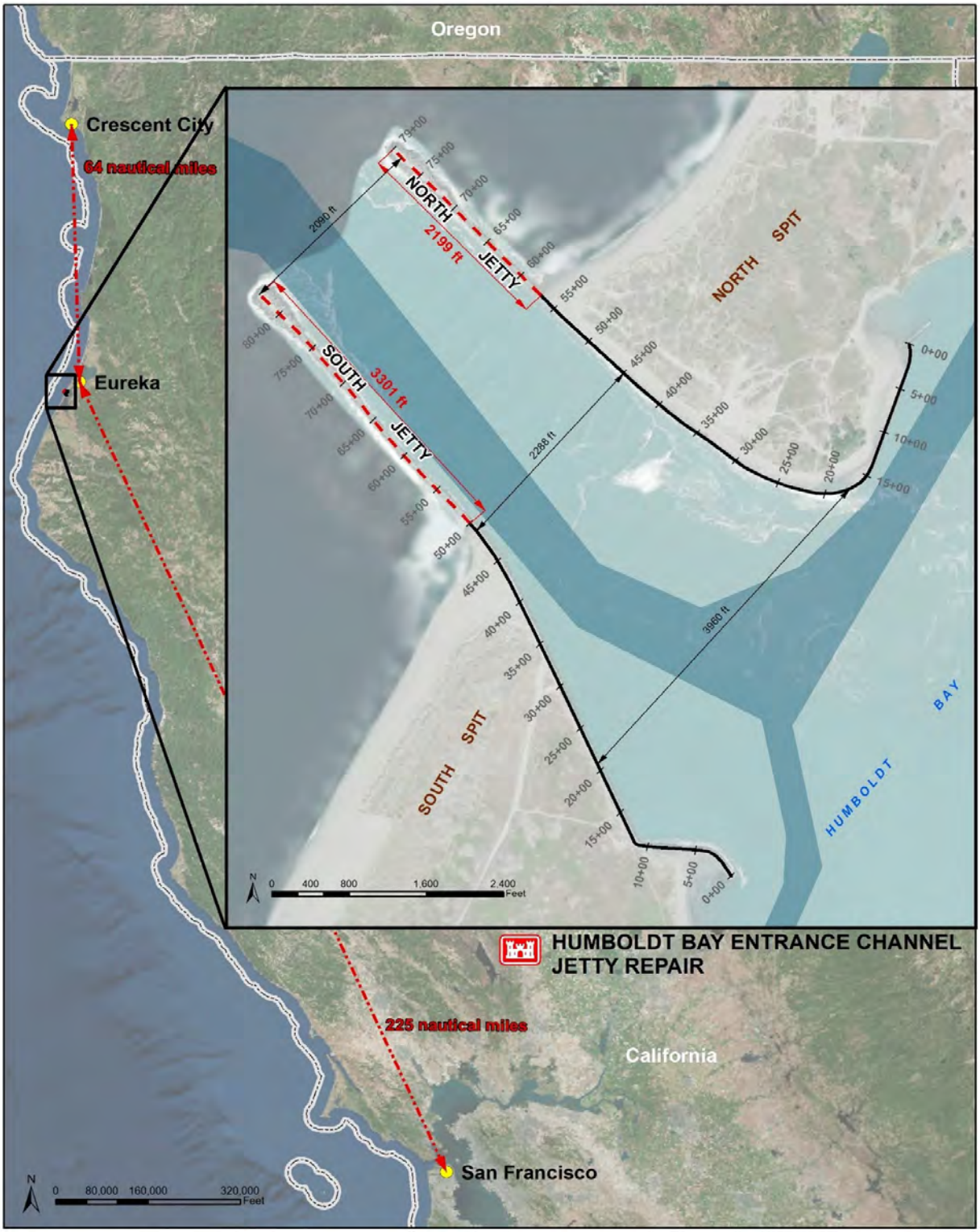


Figure 1: Humboldt Bay Entrance

2.0 Project Description

The proposed work is classified as maintenance repair and reconstruction, and as such, the design of the jetties will not be altered.

The work will entail the following actions: a) mobilizing construction equipment to the site and demobilizing same equipment at the conclusion of the project; b) rearranging existing stones on the jetty slope as needed; c) importing newly-quarried stone and rebuilding the jetty where stone is either missing or where the structural integrity has been compromised by storms and severe wave action; d) removing the concrete cap walkway and parapet wall where damaged or severely degraded, and rebuilding these structures on top of the jetty.

It is anticipated that construction equipment will entail a large crane, capable of hoisting 25-ton boulders, together with trucks and ancillary equipment capable of pouring concrete, and trucks carrying newly-quarried stone as needed. The large crane and trucks will be positioned either on the jetties themselves, or inboard (land) side of the jetties. For each jetty, a contractor's work area ("staging area") for the storage of stone and construction equipment will be located nearby. These staging areas will be landward sand dunes largely void of vegetative growth (Figures 9, 10, 11).

For the two jetties, the property directly impacted by the proposed action is exclusively owned by USACE, and therefore permitting will not be an issue. On the other hand, land on the North and South Spits that is contiguous with the jetties is owned by various government agencies (e.g. USCG, USACE, State of California), but it is all managed by the Bureau of Land Management (BLM). Therefore, prior to beginning construction, USACE will obtain a "Special-Use" permit from the BLM before proceeding.

North Jetty Repair—Detailed Information

Construction of the North Jetty is scheduled for 2020. Due to the wave climate in the Entrance Channel, construction will take place between the months of March and October.

The required stone class is 15-20 ton boulders (10'-12' across). Rock for the North Jetty will be sourced either from the Mountain Gate Quarry, in Redding, California (bulk specific gravity = 2.662) or the Liscom Hill Quarry, in Willow Creek, CA (bulk specific gravity = 2.89). USACE is testing rock quality to ensure that it meets technical criteria for jetty construction; physical-testing results and quarry inspection will be completed by mid-August 2019. It is anticipated that the mode of transportation for the quarry rock will be by truck. The maximum travel distance from the Mountain Gate quarry is 190 miles; the travel distance from the Liscom Hill Quarry is 25 miles.

In the event the stones are transported by barge to the project site, a barge will dock and unload the rock at Fairhaven Pier. Once the stones are offloaded, they will be loaded onto trucks and transported on New Navy Base Road to the staging area. This would be the last part of the trip from the source quarry and there are no expected impacts from this action.

The North Jetty staging area is 4.17 acres; it will be the primary location to store stones and construction equipment. As construction progresses, construction equipment could be stored on top of the existing jetty or on the landward sand dunes where there is no existing vegetative growth (the average distance between the jetty and existing vegetation is 120 feet). The staging area will have a perimeter fence to keep the public from entering. The parking area north of the staging area

will remain open to the public during construction, however, detour signs will be used to redirect the public away from the staging area or areas off limit that are near the jetty.

Figure 2: Staging area for North Jetty

South Jetty Repair—Detailed Information

Construction of the South Jetty is scheduled for 2021. Due to the wave climate in the Entrance Channel, construction will take place between the months of March and October.

The required stone class is 15-20 ton boulders (10'-12' across). Rock for the South Jetty will be sourced from the same locations as described in the North Jetty repair. It is anticipated that the mode of transportation for the quarry rock will be by truck along Table Bluff Road/South Jetty Road. The maximum travel distance from the Mountain Gate quarry is 181 miles; the travel distance from the Liscom Hill Quarry is 38 miles.

The South Jetty staging area is 0.76 acres; it will be the primary location to store stones and construction equipment for the South Jetty portion of the project. As construction progresses, construction equipment could be stored on top of the existing jetty or on the landward sand dunes where there is no existing vegetative growth (the average distance between the jetty and existing vegetation is 40 feet). The staging area will have a perimeter fence to keep the public from entering. The parking area and restroom facility west of the staging area will remain open to the

public during construction, however, detour signs will be used to redirect the public away from the staging area or areas off limit that are near the jetty.

Depending upon available funding and the degree of jetty degradation, the priority level of repairing various sections of the jetty has been mapped out and prioritized as follows: Priority 1—525 feet, Priority 2—725 feet, Priority 3—2,475 feet. There is no correlation between priority level and the category of repair type.

Figure 3: Staging area South Jetty

Repair Types

Repair and reconstruction of the North and South jetties will be limited to those portions below the jetty heads not covered with 42-ton concrete dolosse (measuring 15 x 15 x15 feet). The repair work can be categorized into three types of action as described below, and as illustrated in Figure 4.

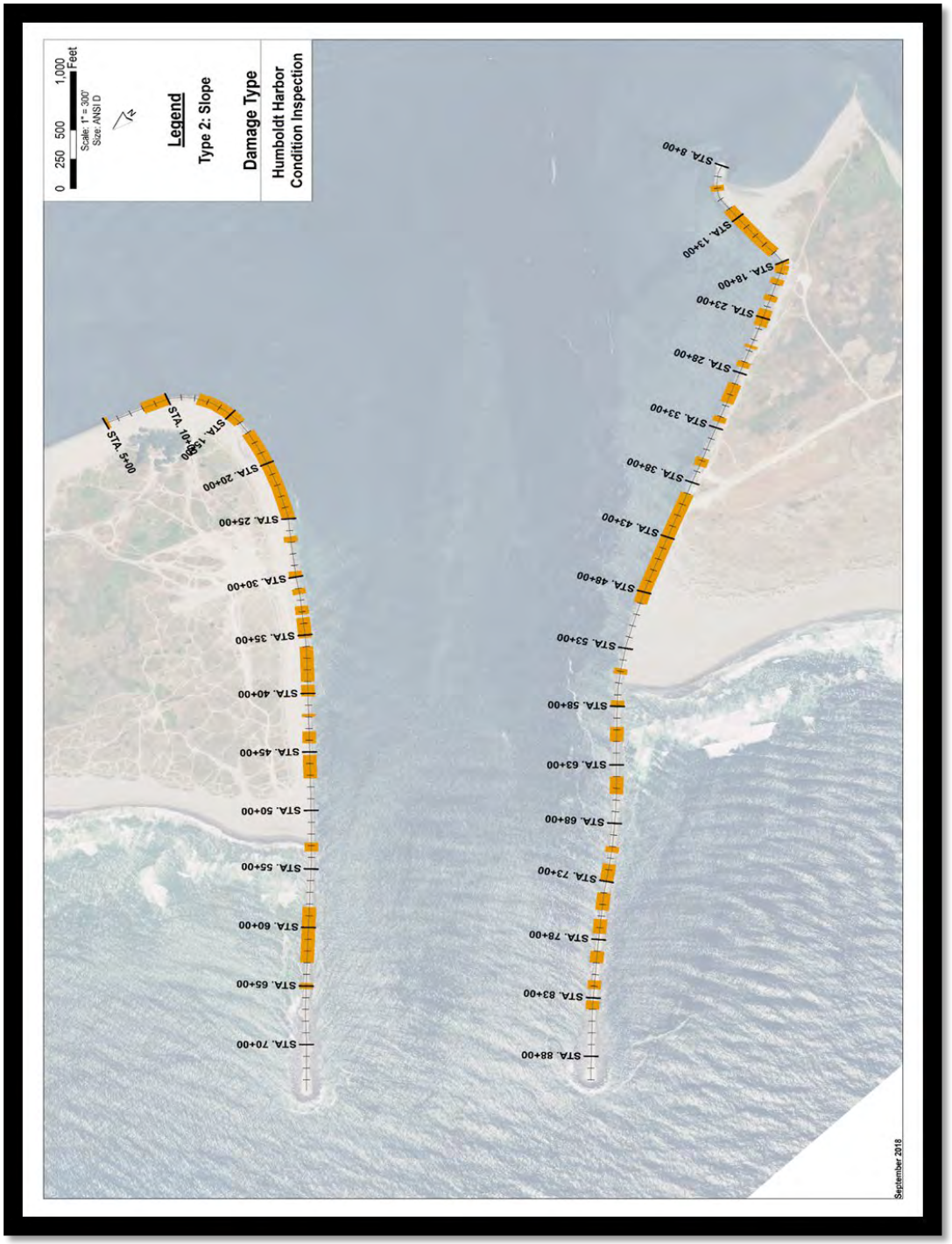
Repair Type 1— Jetty section maintains its structural integrity. Type 1 repairs involve restoring the concrete cap and parapet wall where it is severely damaged, and replacement of underlying small stones that are missing beneath the cap. Severe wave action over the years has resulted in cracking and loss of existing pieces of the cap, ranging from small, blow-hole size pieces to large scale

slumping and failure of immense sections of concrete. Huge cavities in the jetty can develop where underlying stones are exposed and gouged out by storm waves. The reconstructed cap will be composed entirely of concrete; it will have no steel reinforcement.

Repair Type 2— Jetty section maintains its structural integrity. Type 2 repairs involve resetting stones, and as needed, replacement of displaced stones on the jetty slope with newly quarried rock to restore side slopes to their pre-existing design dimensions.

Repair Type 3— Jetty section has lost its structural integrity. Type 3 repairs involve removing entire portions of jetty, and then reconstructing them, stone by stone, with both existing stones and newly quarried stones. During reconstruction, rock will be carefully placed by crane into stable, interlocking positions such that the reconstructed jetty will attain its pre-existing design dimensions. Upon completion of Type 3 repairs, a new concrete cap.


Humboldt Harbor
Condition Inspection
Damage Type
Type 1: Concrete Cap
Legend
Scale: 1" = 300'
Size: ANSI D
0 250 500 1,000 Feet
STA. 5+00
STA. 8+00
STA. 13+00
STA. 18+00
STA. 23+00
STA. 28+00
STA. 33+00
STA. 38+00
STA. 43+00
STA. 48+00
STA. 53+00
STA. 58+00
STA. 63+00
STA. 68+00
STA. 73+00
STA. 78+00
STA. 83+00
STA. 88+00
September, 2018


Damage Type
Humboldt Harbor
Condition Inspection
Legend
Type 2: Slope
0 250 500 1,000 Feet
Scale: 1" = 300'
Size: ANSI D
N
STA. 5+00
STA. 10+00
STA. 15+00
STA. 20+00
STA. 25+00
STA. 30+00
STA. 35+00
STA. 40+00
STA. 45+00
STA. 50+00
STA. 55+00
STA. 60+00
STA. 65+00
STA. 70+00
STA. 8+00
STA. 13+00
STA. 18+00
STA. 23+00
STA. 28+00
STA. 33+00
STA. 38+00
STA. 43+00
STA. 48+00
STA. 53+00
STA. 58+00
STA. 63+00
STA. 68+00
STA. 73+00
STA. 78+00
STA. 83+00
STA. 88+00
September 2018

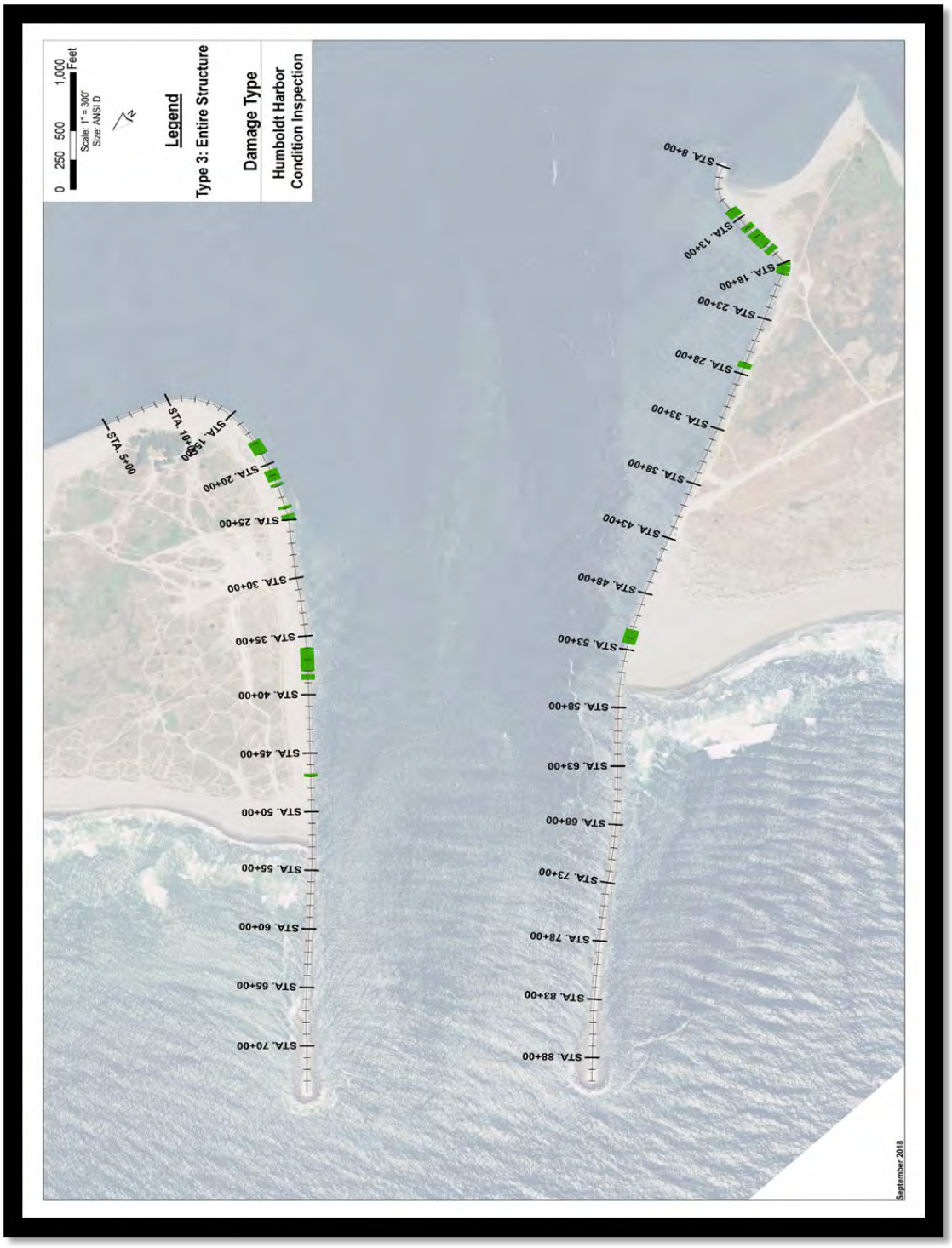


Figure 4: Repair type and locations

3.0 Action Area

The action area is defined as "all areas to be directly or indirectly affected by the Federal action and not merely the immediate area involved in the action" (50 C.F.R. § 402.02). For the proposed action, the action area includes repair and reconstruction of the North and South jetties limited to those

portions below the jetty heads not covered with 42-ton concrete dolosse (measuring 15 x 15 x15 feet). There will be 2 staging areas for the project. One adjacent to the North Jetty and one adjacent to the South Jetty (Figure 2 and Figure 3). Rock for the Jetty repairs will be sourced either from the Mountain Gate Quarry, in Redding, California (bulk specific gravity = 2.662) or the Liscom Hill Quarry, in Willow Creek, CA and would be hauled on existing roads to the project from these quaries.

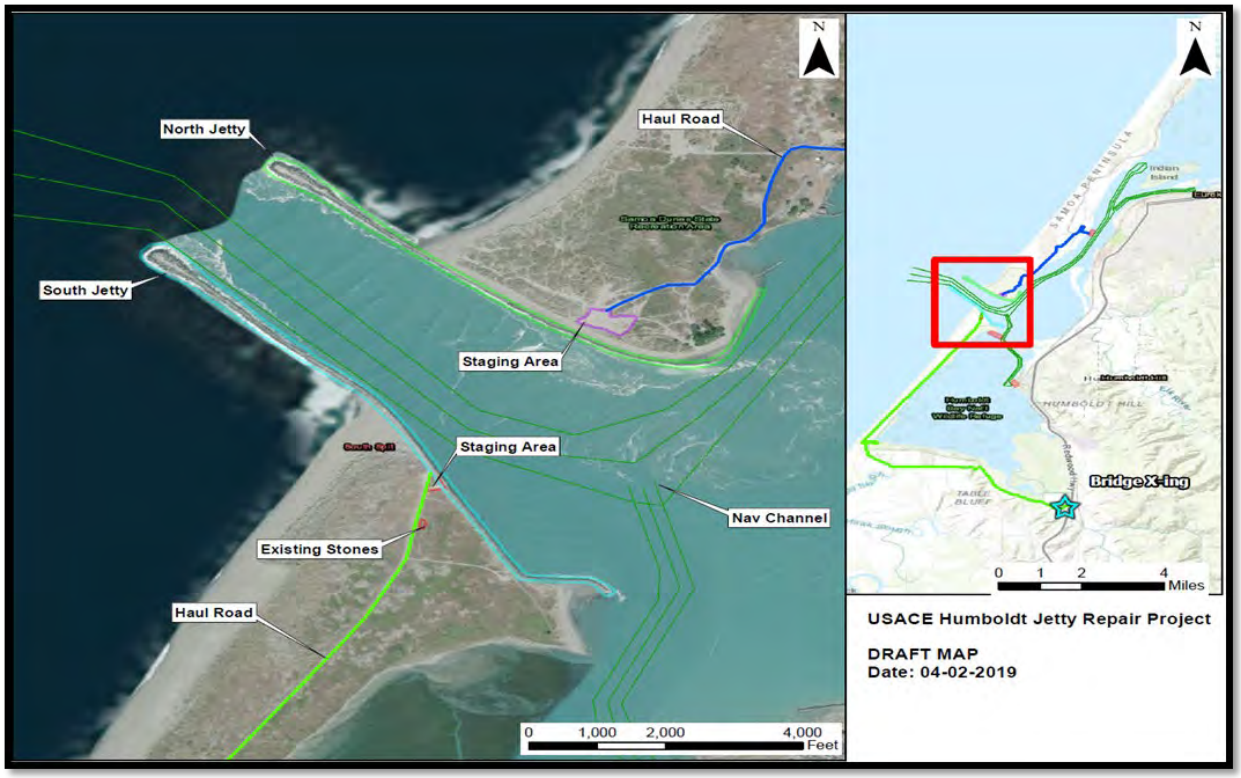


Figure 5. Location of haul roads and staging areas.

4.0 USFWS Listed Species and Critical Habitat

On August 6, 2018, an official species list was generated using the USFWS' Information for Planning and Consulting (IPaC) website (Appendix A). The species list identified 11 threatened or endangered species that may be present in the action area. However, based on the project location, discussions with USFWS have indicated that only the threatened Western snowy plover (*Charadrius nivosus nivosus*) has the potential to be affected by the proposed action; this species is discussed below. Additionally, critical habitat for this species is present in the action area for the South Jetty repair.

Western snowy plover (*Charadrius nivosus nivosus*)

The Pacific coast population of the western snowy plover was listed as threatened on March 5, 1993(Federal Register (FR); 58 FR 12864). On June 19, 2012, U.S. Fish and Wildlife Service (USFWS) published a final rule of critical habitat along the coasts of California, Oregon, and Washington(77 FR 36728). A final recovery plan was released in 2007 (USFWS 2007). The western snowy plover is a small shorebird, about 6 inches long, with a thin dark bill, pale brown to gray upper parts, white or buff colored belly, and darker patches on its shoulders and head, white

forehead and supercilium (eyebrow line). Snowy plovers also have black patches above their white forehead and behind the eye. Juvenile and basic (winter) plumages are similar to adult, but the black patches are absent. Some breeding males, especially in the southern portion of the species' range, may exhibit a rusty or tawny cap. Their dark gray to black legs are a useful characteristic when comparing them to other plover species (Page et al. 1995).

General Distribution

The western snowy plover nests along the Pacific Coast from Damon Point, Washington to Bahia Magdalena, Baja California, Mexico (USFWS 2007). Snowy plovers that nest at inland areas are not considered part of the Pacific coast population, although interior-nesting plovers will winter along the Pacific coasts. Window surveys along the Pacific Coast indicate that the numbers of breeding snowy plovers have ranged from a low of 976 in 2000 to a high of 1,904 in 2004; in 2006 1,723 plovers were counted along the Pacific Coast (USFWS 2007).

Habitat and Biology

The Snowy Plover is a small pale shorebird that nests on beaches and salt pannes in western North America. Snowy plovers nest on barren to sparsely vegetated beaches, salt flats, dredge spoils, levees, river bars, and salt evaporation ponds (Page et al. 1995). Many snowy plovers nest and overwinter in these same areas. Snowy plovers choose to nest on low, barren to sparsely vegetated dry salt ponds as well as on levees and islands, and at pond edges (Page et al. 2000); they preferentially use light-colored substrates such as salt flats and shell fragments and wood debris to provide crypsis. Nesting areas are located near water, where prey (usually brine flies and other insects) are abundant. In some areas, snowy plovers nest within dry salt ponds; in other areas where ponds typically hold some water through the summer, nests are located primarily on levees and pond edges. Often, nests are located near disruptive objects such as rocks or surface irregularities, and may be constructed in depressions created by footprints and vehicles. Nests consist of a depression scratched into the substrate sometimes lined with shell fragments, salt crystals, plant debris, fish bones, exoskeletons, and pebbles or similar local materials (Page et al. 1995, 2000).

The snowy plover breeding season for the distinct population segment in coastal California (Pacific Coast Western Snowy Plover), from early courtship to fledging of late-season hatchlings, is approximately 1 March to 30 September in northern California. The Snowy Plover is semi-aggregating wading bird and typically is somewhat site-faithful, but may move among adjacent breeding and wintering areas and breeding where conditions remain suitable.

Snowy plovers consume flies, beetles, crabs, polychaete worms, amphipods, sand hoppers, moths, grasshoppers, small crustaceans, mollusks, and plant seeds (Page et al. 1995). They forage by pursuing their prey on foot, picking from the surface or probing in sand and loose soils, and will charge dense aggregations of flies, snapping their bill at those flushed (Purdue 1976, Page et al. 1995

Some snowy plovers remain in their coastal breeding areas year-round while other individuals are migratory.

Threats

Degradation and use of habitat for human activities has been largely responsible for the decline in the snowy plover breeding population (Page et al. 1995). Other important threats to the snowy plover are mammalian and avian predators, and human disturbance (Page et al. 1995). Human disturbance (including disturbance from domestic dogs) can lead to nest abandonment or direct trampling of eggs or chicks. In addition, because young chicks are dependent on adults for protection, human disturbance resulting in the separation of chicks from adults can lead to the death of the chicks. Precocial chicks feed themselves but require the protection of an adult for brooding and evasion of predators (Page et al. 1995). Additional pressures include oiling, entanglement in fishing line, striking objects, and shooting.

Avian predators, particularly corvids (crows and ravens), are increasingly becoming an issue for snowy plover reproductive success. American crows and common ravens are adept at finding snowy plover nests and preying on eggs. Corvid numbers are increasing throughout California, at least partially in response to increased availability of food from anthropogenic sources, such as garbage dumps (Boarman and Heinrich 1999, Verbeek and Caffrey 2002). Other avian predators, including loggerhead shrikes (Lanius ludovicianus), American kestrels (Falco sparverius), and northern harriers have been documented taking snowy plover chicks, and in some areas, have dramatically reduced fledging success.

Western Snowy Plover Critical Habitat

Critical habitat for the Pacific coast population of the western snowy plover was most recently designated in 2012 (USFWS 2012b). This revised designation establishes approximately 24,527 ac in Washington, Oregon, and California; approximately 6,077 ac in four units in Washington, 2,112 ac in nine units in Oregon, and 16,337 ac in 45 units in California. The USFWS based these designations on four primary constituent elements, including sandy beaches, dune systems immediately inland of an active beach face, salt flats, mud flats, seasonally exposed gravel bars, dredge spoil sites, artificial salt ponds and adjoining levees with:

1. Areas that are below heavily vegetated areas or developed areas and above the daily high tides;

2. Shoreline habitat areas for feeding, with no or very sparse vegetation, that are between the annual low tide or low-water flow and annul high tide or high-water flow, subject to inundation but not constantly under water, that support small invertebrates such as crabs, worms, flies, beetles, sand hoppers, clams, and ostracods (i.e., essential food sources);

3. Surf or water deposited organic debris such as seaweed or driftwood located on open substrates such as those mentioned above (essential to support small invertebrates for food and to provide shelter from predators and weather for reproduction), and provide cover or shelter from predators and weather and assists in avoidance of detection for nests, chicks, and incubating adults; and

4. Minimal disturbance from presence of humans, pets, vehicles, or human-attracted predators, which provide relatively undisturbed areas for individuals and population growth and for normal behavior.

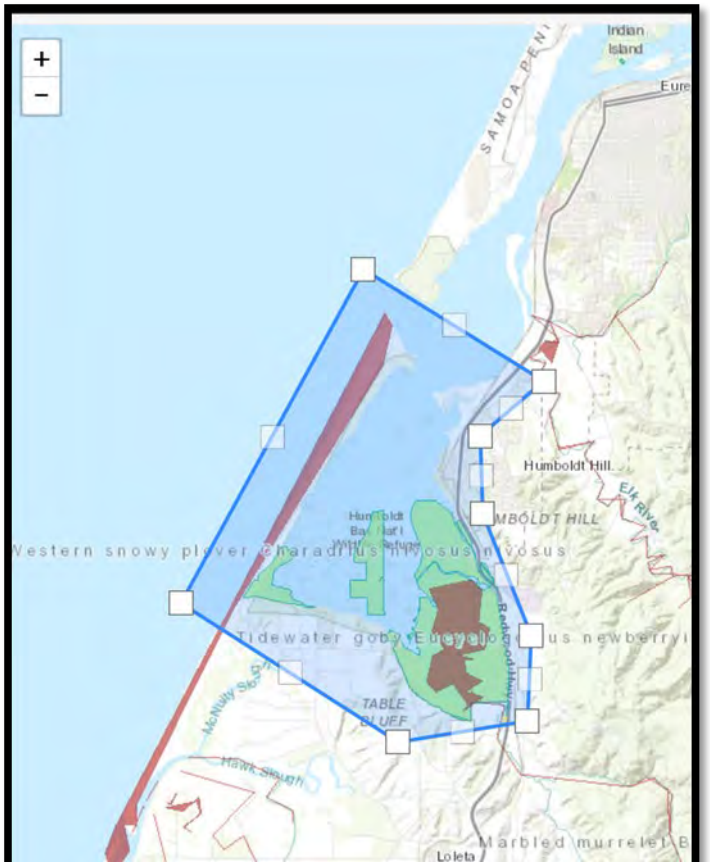


Figure 6: Critical habitat (colored Orange) Snowy Plover in relation to the project

5.0 Effects of the Action

Western snowy plovers are reported to roost nearby, and nest about 0.5 mile south of the proposed project area. Western snowy plovers have been reported from the immediate beach area of the South Jetty during winter roosting periods, and in 2016-2018 during the nesting season (BLM map 2019).

The proposed Project may pose disturbance from construction traffic and noise in the western snowy plover habitat. In addition, increased access and presence of construction crews may generate enhanced public attraction and trash. Trash attracts plover predators such as corvids (Lau 2015). Increased predation in this area may affect plover breeding success and recruitment locally. Disturbance due to repeated loud noise or the extended presence and movement of people, jetty boulders, and heavy equipment near suitable snowy plover during breeding and wintering periods may alter the bird's behavior in ways that can result in take: risk of direct mortality, reduction in nesting success through nest abandonment, decreased nest attendance during brood rearing, or decreased foraging and roosting opportunities. Such alterations may result in temporary habitat loss (modification) due to plover avoidance of these areas that have otherwise suitable habitat but high levels of repeated noise and visual disturbance; abandonment of nests, eggs, or young by nesting pairs; a reduction in foraging efficiency if high-quality foraging areas are impacted; and increased movement or flushing, or altered activity patterns, that reduce energy reserves and increase predation risk. If plovers are permanently displaced from this adjacent South Spit HRA, a area of high nesting success and productivity, they may experience increased levels of predation and decreased reproductive success in beach-facing habitats further south.

There is the potential for direct impact to young through being crushed by construction equipment moving through the area.

Artifical perches could be created by maintenace of inactive construction equipment adajcent to sensitive habitat areas, and along any rigid fencing used by the project. This could increase predation risk by providing increase activity for predator bird species.

Surveys before and during construction would be conducted for signs of nesting snowy plovers (eggs, chicks, adults, and scrapes), and appropriate buffers distances (i.e., 330 ft during construction activities) would be implemented and checked regularly to ensure adequate separation between Project activities and breeding and/or wintering snowy plovers.

Noise: Humboldt Bay is an ocean environment with ambient noise mostly created by crashing waves. With a height of 2m, crashing waves can create noise with a sound pressure level of 78 dB (Bolin 2010); similar to that of metropolitan, urbanized areas which can be as high as 80 dB (DOT 2017). Noise from the project would mainly be associated with the transport, placing of new rock, and resetting of old rock, with most construction equipment generating a pressure level of 85 dB at 50 ft from the source, comparable to the ambient noise level of 78 dB for 2 m crashing waves. Trucks would be equipped with mufflers that meet state or local standards for noise suppression to minimize any effects from noise. Transporting rock from the staging area and placing it on the jetty would create noise similar to background noise levels. Transportation by barge to the site would not be discernible due to distance and background noise levels. Snowy Plover habitat is located near the jetty. With a distance of 600 feet or 300 feet from construction equipment, sound pressure levels are estimated to range between 48 – 77 dB which is below the 92 dB harassment threshold used for prior consultations for Snowy Plover (USFWS 2012). Effects to Snowy Plovers due to incidental harassment would therefore be less than significant and only take place during construction of the jetty. Therefore, the agency preferred plan would entail less than significant impacts from noise.

Equipment	Sound Pressure Level "Noise Level" at 50 ft (dB)	Sound Pressure Level "Noise Level" at 300 ft (dB)	Sound Pressure Level "Noise Level" at 600 ft (dB)	Typical Duty Cycle
Auger Drill Rig	85	69	63	20%
Backhoe	80	64	58	40%
Compactor (ground)	80	64	58	20%
Concrete Mixer Truck	85	69	63	40%
Concrete Pump	82	66	60	20%
Crane (mobile or stationary)	85	69	63	20%
Dozer	85	69	63	40%
Dump Truck	84	68	62	40%
Excavator	85	69	63	40%
Front End Loader	80	64	58	40%
Generator (25 KVA or less)	70	54	48	50%
Generator (more than 25 KVA)	82	66	60	0%
Grader	85	69	63	40%
Pumps	77	61	55	50%
Scraper	85	69	63	40%
Tractor	84	68	62	40%

KVA = kilivolt amps

Source: FHWA

Calculation of Sound Pressure Level (dB):

$$SPL_2 = SPL_1 - 10LOG(r_2/r_1)$$

Where:

SPL_2 = sound pressure level (dB) at distance r_2

SPL_1 = sound pressure level (dB) at distance r_1

r_2 = distance from source

r_1 = distance from source

$r_1 < r_2$

Figure 7: Site overview of limits of vehicle access and haul route.

6.0 Determination of Effects

For the North Jetty repair and reconstruction, it is a no effect determination based on the lack of habitat and the likelihood of the Snowy Plover not being present due to high level of ATV use and heavy pedestrian disturbance.

The South Jetty repair and reconstruction is likely to affect, but not adversely affect the Snowy Plover and its critical habitat or jeopardize the continued existence of the species. The following avoidance and minimization measures will be included into the plans and specifications for the project for the South Jetty and reconstruction:

1. Heavy equipment and work vehicles shall not access at any time the beach directly south of the seaward end of the designated vehicle access corridor on top of the jetty and extending 1,200 ft inland (to the southeast), along the NW to SE existing access road ;. The designated vehicle access corridor begins near Station 44+00 and extends to west to the beachline (e.g. approximately near Station 56+00). A combination of exclusionary fencing and/or signage will be placed near Station 44+00.
2. The designated vehicle access corridor will not be permanently altered by the proposed project. No widening or alteration of the corridor near designated Western Snowy Plover critical habitat will occur. If sand berms are created along the sides of the corridor during

construction operations, the corridor will be restored to pre-project conditions in order to facilitate Western Snowy Plover movement between inland and beach areas;

3. If construction-related activities occur during the breeding season, preconstruction surveys by a skilled ornithologist or U.S. Fish and Wildlife Service (Service) approved biological monitor for breeding Western Snowy Plovers will be conducted within 15 days prior to any construction-related activities, in all appropriate habitat areas within 600 feet of limits of work;
4. If breeding Western Snowy Plovers are not detected, a biological monitor will be present at the commencement of and during all construction related activities along and adjacent to the designated vehicle access corridor to ensure that no Western Snowy Plovers have begun breeding during all preconstruction and construction activities;
5. If breeding Western Snowy Plover are detected, disturbance-free buffer zones will be established ranging from a minimum of 300 feet to 600 feet from any nests, as determined by the biological monitor in coordination with the Service, Bureau of Land Management (BLM), and California Department of Fish and Wildlife (CDFW). The disturbance-free buffer zone will be observed during the breeding season (March 1 to September 30), unless otherwise informed by the Service, access to the designated vehicle access corridor will remain open. In addition, the biological monitor will be present during all construction related activities to ensure disturbance-free buffer zones are observed;
6. A survey of breeding Western Snowy Plovers will be conducted at a minimum of two times per week during construction and once at pre-construction and post-construction. The survey post-construction will be conducted within 7 days after all equipment and materials are removed from the site. Monitoring reports will be provided to the Service on a weekly basis;
7. All construction equipment mufflers will be directed away from areas of critical habitat to reduce noise disturbance to the maximum extent practicable;
8. Only approved haul routes from the staging area to the jetty will be utilized within the construction limits of work. No off-road travel, or new temporary roads will be constructed.
9. Care will be taken not to enter into the designated Western Snowy Plover protection areas and nearby dune communities during construction;
10. Preventive measures will be taken so as not to create additional perches for avian predators. During non-construction hours, equipment taller than 20 feet stored within the staging areas will face away (bayside) from Western Snowy Plover critical habitat area and have booms lowered at an angle that will not provide visibility to the Western Snowy Plover critical habitat by avian predators;
11. Contractors and work crews shall not be allowed to have pets onsite at any time.
12. Garbage will be collected daily from the worksite, and care will be taken not to leave garbage or litter within the construction footprint;
13. The biological monitor will present a Western Snowy Plover awareness-training program prior to construction activity for all construction staff. This program will describe the following information:
    a) The behavior of the Western Snowy Plover and its distribution and habitat on South Spit,
    b) Threats to Western Snowy Plover,
    c) The detrimental effects of feeding wildlife,
    d) The penalties for disobeying restrictions,
    e) A map showing the zone and proper best management practices for minimizing beach impact,

f) The proper procedure to address injured or dead Western Snowy Plovers, and contact information of the biological monitor, USACE construction personnel, and USACE environmental POC.

14. Best Management Practices will be implemented for oil and fuel handling, and an onsite spill-response plan will be required on-site and implemented if necessary;

7.0 Prepares and Reviewers

Preparer:

- Stephen M. Willis, Senior Biological Science Environmental Manager, United States Army Corps of Engineers, San Francisco District

Reviewers:

- Eric F. Jolliffe, Senior Biological Science Environmental Manager, United States Army Corps of Engineers, San Francisco District
- Dr. Tessa E. Beach, Chief, Environmental Sections, United States Army Corps of Engineers, San Francisco District

Literature Cited

Boarman, W.I. and B. Heinrich. 1999. Common raven (Corvus corax). In A. Poole, editor. The birds of North America online. Issue No. 476. Cornell Lab of Ornithology, Ithaca, NY. Accessed 4 September 2012. http://bna.birds.cornell.edu/bna/species/476.

Bolin K, Åbom M. Air-borne sound generated by sea waves. J Acoust Soc Am. 2010 May;127(5):2771-9. doi: 10.1121/1.3327815. PubMed PMID: 21117726.

Department of Transportation (DOT). Bureau of Transportation Statistics, National Transportation Noise Map. 31MAR2017. https://www.bts.gov/newsroom/national-transportation-noise-map. Accessed 13AUG2019.

Page, G.W, C.M. Hickey, and L.E. Stenzel. 2000. Western snowy plover. In P. Olofson, editor. Baylands ecosystem species and community profiles: Life histories and environmental requirements of key plants, fish and wildlife. p 281-283. Prepared by the San Francisco Bay Area Wetlands Ecosystem Goals Project. San Francisco Bay Regional Water Quality Control Board, Oakland, CA.

Page, G.W, L.E. Stenzel, J.C. Warriner, and P.W.C. Paton. 1995. Snowy plover (Charadrius alexandrinus). In A. Pool and F. Gill, editors. The birds of North America. No. 154. The Academy of Natural Sciences, Philadelphia, PA and American Ornithologists' Union, Washington, DC.

Purdue, J.R. 1976. Adaptations of the snowy plover on the Great Salt Plains, Oklahoma. Southwestern Naturalist 21:347-357.

(USFWS). Concurrence Letter for Northwest Aviation Operations, 160th Special Operations Aviation Regiment. 16 February 2012. No. 13410-2011-I-0365. https://www.lewis-mcchord.army.mil/publicworks/docs/envir/EIA/SOAR/06-024USFWSconcurrence.pdf. Accessed 19 August 2019

[USFWS] United States Fish and Wildlife Service. 2007. Snowy plover recovery plan, dated September 24, 2007. Prepared by the United States Fish and Wildlife Service, Sacramento, CA.

[USFWS] United States Fish and Wildlife Service. 2019. Snowy plover fact sheet, dated February 5, 2019. https://www.fws.gov/arcata/es/birds/wsp/plover.html

Verbeek, N.A. and C. Caffrey. 2002. American crow (Corvus brachyrhynchos). In A. Poole, editor. The birds of North America online. Issue No. 647. Cornell Lab of Ornithology, Ithaca, NY. Accessed 6 September 2012. http://bna.birds.cornell.edu/bna/species/647.

Appendix I *(Endangered Species / Essential Fish Habitat Compliance)*

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
West Coast Region
1655 Heindon Road
Arcata, California 95521-4573

October 24, 2019 **Refer to NMFS No:** WCRO-2019-03207
November 5, 2019

Dr. Tessa E. Beach
Chief, Environmental Sections
U.S. Department of the Army
San Francisco District, Corps of Engineers
450 Golden Gate Avenue
San Francisco, California 94102

Re: Endangered Species Act Section 7(a)(2) Concurrence Letter and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Response for the Humboldt Bay Entrance Channel Jetties Repair and Reconstruction Project, located in Eureka, Humboldt County, California

Dear Dr. Beach:

On September 30, 2019, NOAA's National Marine Fisheries Service (NMFS) received your request for written concurrence that the United States Army Corps of Engineers' (Corps) proposed Humboldt Bay Entrance Channel Jetties Repair and Reconstruction Project (Project) pursuant to Section 10 of the Rivers and Harbors Act of 1899, as amended (33 U.S.C. § 403 et seq.) is not likely to adversely affect (NLAA) species listed as threatened or endangered or critical habitats designated under the Endangered Species Act (ESA). NMFS issued the original letter of concurrence on October 24, 2019. On November 5, 2019, NMFS corrected a typographical error and changed the address and recipient of the letter. These changes do not implicate the reinitiation of consultation triggers, and this corrected letter now replaces the original letter, which is no longer in effect. This response to your request was prepared by NMFS pursuant to section 7(a)(2) of the ESA, implementing regulations at 50 CFR 402, and agency guidance for preparation of letters of concurrence.

NMFS also reviewed the proposed action for potential effects on essential fish habitat (EFH) designated under the Magnuson-Stevens Fishery Conservation and Management Act (MSA), including conservation measures and any determination you made regarding the potential effects of the action. This review was pursuant to section 305(b) of the MSA, implementing regulations at 50 CFR 600.920, and agency guidance for use of the ESA consultation process to complete EFH consultation.

This letter underwent pre-dissemination review using standards for utility, integrity, and objectivity in compliance with applicable guidelines issued under the Data Quality Act (section 515 of the Treasury and General Government Appropriations Act for Fiscal Year 2001, Public Law 106-554). A complete record of this consultation is on file at the Northern California Office in Arcata, California.

Proposed Action and Action Area

Severe wave action over the years has resulted in cracking and loss of existing pieces and subsequent loss of structural integrity in some portions of the jetties. The concrete cap covering jetty stones has been damaged and has led to slumping and failure of entire sections of concrete, leading to large gaps in the jetties. The Corps proposes to repair and reconstruct both of the Humboldt Bay entrance channel jetties (north jetty and south jetty) over a period of three years beginning in 2020 and finishing by the end of 2022. Work is planned to occur between March and October, when wave and swell height is minimal. The Project is classified as maintenance repair and reconstruction, and as such, the design of the jetties will not be altered. The required stone class to be used is 15-20 ton sized boulders, roughly 10-12 feet across in width.

Work would entail the following actions: a) mobilizing construction equipment to the site and demobilizing same equipment at the conclusion of the project; b) rearranging existing stones on the jetty slope as needed; c) importing newly-quarried stone and rebuilding the jetty where stone is either missing or where the structural integrity has been compromised by storms and severe wave action; d) removing the concrete cap walkway and parapet wall where damaged or severely degraded, and rebuilding these structures on top of the jetty. It is anticipated that construction equipment would entail a large crane, capable of hoisting 25-ton boulders, together with trucks and ancillary equipment capable of pouring concrete, and trucks carrying newly-quarried stone as needed. The large crane and trucks would be positioned either on the jetties themselves, or on the inboard (land) side of the jetties.

The Corps proposes to authorize the following measures as part of the proposed action:

- Boulder and stone placement will be slow and deliberate
- In-water work would be performed entirely by crane, and consist only of relocating existing boulders from the channel bottom to the jetty, or placing boulders from the landward side of the jetties
- All concrete cap construction would occur only along the upper portions of the jetty
- Work will be conducted from March to October
- Turbidity is expected to minimal, extending no more than 25 feet from work sites
- Staging areas will occur on the landward side of the jetties
- Relocating boulders may improve habitat for eelgrass to recolonize
- Equipment will be inspected daily and fueling and maintenance will occur in a manner that protects against discharges into waterways
- Spill prevention and stormwater measures will be prepared and available on site

The action area includes the reconstruction footprint along most of the length of both the north and south jetties, including a 25 foot area surrounding each work site where turbidity is expected when sediments may be disturbed by the placement and positioning of boulders.

Action Agency's Effects Determination

Available information indicates the following listed species (Evolutionarily Significant Units (ESU) or Distinct Population Segments [DPS]) under the jurisdiction of NMFS may be affected by the proposed project:

Southern Oregon/Northern California Coast (SONCC) coho salmon ESU

(*Oncorhyncus kisutch*)
Threatened (70 FR 37160; June 28, 2005)
Critical habitat (64 FR 24049; May 5, 1999);

California Coastal (CC) Chinook salmon ESU
(*O. tshawytscha*)
Threatened (70 FR 37160; June 28, 2005)
Critical habitat (70 FR 52488; September 2, 2005);

Northern California (NC) steelhead DPS
(*O. mykiss*)
Threatened (71 FR 834; January 5, 2006)
Critical habitat (70 FR 52488; September 2, 2005);

North American green sturgeon Southern DPS
(*Acipenser medirostris*)
Threatened (71 FR 17757; April 7, 2006)
Critical habitat (74 FR 52300; October 9, 2009).

The Corps determined the Project may affect, but is not likely to adversely affect SONCC coho salmon, CC Chinook salmon, NC steelhead, and Southern DPS green sturgeon and their designated critical habitats. The Corps rationale for their determination includes each work site being very small (a single crane placing stones) with only temporary and localized activities. The Corps also suspects that the work window will avoid most adult life stages and that juvenile life stages would be mobile and able to avoid being affected. The Corps also determined the Project may adversely affect EFH for species managed under the Pacific Coast Groundfish Fishery Management Plan.

SONCC Coho Salmon, CC Chinook, and NC Steelhead Life History and Use of Humboldt Bay

SONCC Coho Salmon Life History

Coho salmon have a generally simple 3-year life history. The adults typically migrate from the ocean and into Humboldt Bay towards their freshwater spawning grounds in late summer and fall, and spawn by mid-winter. Adults die after spawning. The eggs are buried in nests, called redds, in the rivers and streams where the adults spawn. The eggs incubate in the gravel until fish hatch and emerge from the gravel the following spring as fry. These 0+ age fish typically rear in freshwater for about 15 months before migrating to the ocean. The juveniles go through a physiological change during the transition from fresh to salt water called smoltification. Coho salmon typically rear in the ocean for two growing seasons, returning to their natal streams as 3-year old fish to renew the cycle.

Recent studies have identified the importance of the greater transition zone, or ecotone, between fresh and brackish water to juvenile salmonids (Miller and Sadro 2003). Wallace et al. (2015) defined this stream-estuary ecotone to include the area of low gradient stream extending from stream entrance to the wide valley floor, through the upper limit of tidal influence downstream to the area where the channel becomes bordered by tidal mudflats (including fringing marsh habitats, side channels, and off channel ponds). Sampling by California Department of Fish and Wildlife (CDFW) suggest that 0+ age coho salmon from Freshwater Creek (a tributary to Humboldt Bay) primarily rear in the stream-estuary ecotone during the spring and summer and then migrate back into Freshwater Creek to over-winter before emigrating to the ocean the following year as age 1+ smolts

(Wallace and Allen 2007). An estimated 40% of coho salmon smolts originated from the stream-estuary ecotone of Freshwater Creek in 2007 and 2008 (Ricker and Anderson 2011).

CC Chinook Salmon Life History

The CC Chinook salmon ESU are typically fall spawners, returning to Humboldt Bay before entering their natal streams in the early fall. The adults tend to spawn in the mainstem or larger tributaries of rivers. As with the other anadromous salmon, the eggs are deposited in redds for incubation. When the 0+ age fish emerge from the gravel in the spring, they typically migrate to saltwater shortly after emergence. Therefore, Chinook salmon typically enter the estuary as smaller fish compared to coho salmon. Chinook salmon are typically present in the stream-estuary ecotone from early May to early September, with peak abundance in June/July (Wallace and Allen 2007). Similar to coho salmon, prey resources during out-migration is critical to Chinook salmon survival as they grow and move out to the open ocean. A study by MacFarlane (2010) indicated that juvenile Chinook salmon require less prey in the estuary, equivalent to one northern anchovy (*Engraulis mordax*) per day, compared to a range of one to four anchovies needed per day in the ocean.

NC Steelhead Life History

Steelhead exhibit the most complex suite of life history strategies of any salmonid species. They have both anadromous and resident freshwater life histories that can be expressed by individuals in the same watershed. The anadromous fish generally return to freshwater to spawn as 4 or 5 year old adults. Unlike other Pacific salmon, steelhead can survive spawning and return to the ocean only to return to spawn in a future year. It is rare for steelhead to survive more than two spawning cycles. Steelhead typically spawn between December and May. Like other Pacific salmon, the steelhead female deposits her eggs in a redd for incubation. The 0+ age fish emerge from the gravel to begin their freshwater life stage and can rear in their natal stream for 1 to 4 years before migrating to the ocean.

Steelhead have a similar life history as noted above for coho salmon, in the sense that they rear in freshwater for an extended period before migrating to saltwater. As such, they enter the estuary as larger fish (mean size of about 170 to 180 mm or 6.5 to 7.0 inches) and are, therefore, more oriented to deeper water channels in contrast to Chinook salmon that typically enter the estuary as 0+ fish. The CDFW data indicate that steelhead smolts generally migrate downstream toward the estuary between March 1 and July 1 each year, although they have been observed as late as September (Ricker et al. 2014). The peak of the outmigration timing varies from year to year within this range, and generally falls between early April and mid-May. CDFW estimated 80% to 90% of steelhead trout smolts originated from the stream-estuary ecotone of Freshwater Creek in 2007 and 2008 (Wallace et al. 2015).

Salmonid Use of Humboldt Bay

Salmonids use eelgrass habitats for cover and feeding while they migrate to the marine environment, or while they rear seasonally in Humboldt Bay before returning upstream to overwinter (Wallace et al. 2015). Salmonids occurring in estuaries are highly mobile and in Humboldt Bay, low numbers of fish are spread over a large area, which can complicate scientific observations or captures intended to understand their habitat preferences (Garwood et al. 2013 and Pinnix et al. 2005). Phillips (1984)

suggested Chinook salmon were “transient” users of eelgrass for feeding or cover. Murphy et al. (2000) did not observe a significant association of juvenile salmon with eelgrass. Garwood et al. (2013) studied fish assemblages in an eelgrass bed in Humboldt Bay by conducting monthly sampling over a period of several years and only captured one listed salmonid (NC steelhead) during the multi-year study. Pinnix et al. (2005) sampled over a 2-year period using fyke nets, shrimp trawls, beach seines, purse seines, cast nets, and minnow traps. Pinnix et al. (2005) identified a diverse and abundant fish community using the mudflats, oyster culture, and eelgrass meadows in Humboldt Bay, including a total of 49 species from 22 families of fishes. However, over the two years of sampling, no salmonid species were captured in any of the six different types of sampling gear.

A recent study related to 1+ age coho salmon smolts in Humboldt Bay, California, by Pinnix et al. (2013) used acoustic transmitters surgically implanted into the out-migrating smolts. Coho salmon smolts spent more time in the stream- estuary ecotone compared to the intertidal habitat of Humboldt Bay. During their residency in Humboldt Bay, coho smolts primarily used deep channels and channel margins and were present in the estuary an average of 10 to 12 days. They were also detected near floating eelgrass mats adjacent to the channels, but not over eelgrass beds. Most listed salmonids are expected to be present in the deeper subtidal channels in the entrance to Humbodlt Bay, and avoiding the margins where the jetties are located.

Southern DPS Green Sturgeon Life History and Use of Humboldt Bay

Southern DPS green sturgeon inhabit estuaries along the west coast during the summer and fall months (Moser and Lindley 2007) and are known to use the North Humboldt Bay heavily (Goldsworthy et. al. 2016, Pinnix 2008). Juvenile Southern DPS green sturgeon rear in their natal streams in California’s Central Valley, so only sub-adult and adult SDPS green sturgeon are present in Humboldt Bay and are the only life stages of SDPS green sturgeon that could be exposed to the effects of the Project. Sub-adults range from 65-150 cm total length from first ocean entry to size at sexual maturity. Sexually mature adults range from 150-250 cm total length.

The action area is predominantly located along the fringes or margins of the entrance channel, where a hardened jetty transitions into mudflat. Most SDPS green sturgeon are expected to reside in the high use area of North Bay, as described by Goldsworthy et al. 2016 and Pinnix et al. 2008), and are expected to be in transit when in or near the action area. Most SDPS are expected to be in the subtidal channels in the entrance to Humboldt Bay.

Consultation History

On September 30, 2019, NMFS received an initiation package from the Corps to initiate informal consultation and requested NMFS concurrence that the Project, as proposed, is not likely to adversely affect SONCC coho salmon, CC Chinook salmon, NC steelhead, SDPS green sturgeon or their designated critical habitats. The Corps also determined the Project would not have an adverse effect on species managed under the Pacific Coast Groundfish Fishery Management Plan (FMP).

On October 7, 2019, NMFS requested clarification from the Corps via email, to clarify the Corps file number, duration of the permit, and expected distance of the effects of the action. On October 7, 2019, the Corps responded via email clarifying that there are no file numbers for Corps actions, the

duration of the permit would be from 2020 to 2022; and that turbidity is expected to travel 25 feet from the work sites. On October 7, 2019, NMFS initiated informal consultation.

ENDANGERED SPECIES ACT

Effects of the Action

Under the ESA, "effects of the action" means the direct and indirect effects of an action on the listed species or critical habitat, together with the effects of other activities that are interrelated or interdependent with that action (50 CFR 402.02). The applicable standard to find that a proposed action is not likely to adversely affect listed species or critical habitat is that all of the effects of the action are expected to be discountable, insignificant, or completely beneficial. Beneficial effects are contemporaneous positive effects without any adverse effects to the species or critical habitat. Insignificant effects relate to the size of the impact and should never reach the scale where take occurs. Discountable effects are those extremely unlikely to occur.

The primary potential effects of the Project upon listed individuals includes a temporary increase in turbidity and the potential for individuals to be crushed or killed during reconstruction and placement of the boulders. The jetties consist of predominantly boulders and concrete and are within a shallow and high energy wave environment. Listed species are expected to avoid the shallow and hardened banks (jetties) along the margins of the entrance channel. Turbidity is expected to extend as far as 25 feet from the active work areas, which remains within the areas listed species are expected to avoid. Thus, individuals will not be exposed to the effects of the action and all effects to individuals are discountable.

The primary potential effects of the Project on critical habitat include a temporary increase in turbidity, and an improvement to intertidal habitats where boulders will be removed and repositioned on the jetty. The temporary and minor increase in turbidity and suspended sediments is not expected to have any effect on the quantity or quality of designated critical habitats. Removing boulders from intertidal mud flats will benefit critical habitat by enabling the recolonization by eelgrass or other epi benthic or infaunal prey organisms. Therefore, NMFS believes the effects of the Project are insignificant to designated critical habitats.

Conclusion

Based on this analysis, NMFS concurs with the Corps that the proposed action may affect, but is not likely to adversely affect SONCC coho salmon, CC Chinook salmon, NC steelhead, and Southern DPS green sturgeon or their designated critical habitats.

Reinitiation of Consultation

Reinitiation of consultation is required and shall be requested by [*name of action agency*] or by NMFS, where discretionary Federal involvement or control over the action has been retained or is authorized by law and (1) new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered; (2) the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this concurrence letter; or if (3) a new species is listed or critical habitat designated that may be affected by the identified action (50 CFR 402.16). This concludes the ESA portion of this consultation.

MAGNUSON-STEVENS FISHERY CONSERVATION AND MANAGEMENT ACT

Under the MSA, this consultation is intended to promote the protection, conservation and enhancement of EFH as necessary to support sustainable fisheries and the managed species' contribution to a healthy ecosystem. For the purposes of the MSA, EFH means "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity", and includes the associated physical, chemical, and biological properties that are used by fish (50 CFR 600.10), and "adverse effect" means any impact which reduces either the quality or quantity of EFH (50 CFR 600.910(a)). Adverse effects may include direct, indirect, site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions.

This analysis is based, in part, on the EFH assessment provided by the Corps and descriptions of EFH for Pacific Coast Groundfish (PFMC 2014), Coastal Pelagic Species (PFMC 1998), and Pacific Coast Salmon (PFMC 1999) contained in the FMPs developed by the Pacific Fishery Management Council and approved by the Secretary of Commerce. The Pacific Coast Groundfish EFH includes all waters from the mean high water line, and the upriver extent of saltwater intrusion in river mouths, along the coasts of Washington, Oregon, and California seaward to the boundary of the EEZ (PFMC 2014). The east-west geographic boundary of Coastal Pelagic EFH is defined to be all marine and estuarine waters from the shoreline along the coasts of California, Oregon, and Washington offshore to the limits of the EEZ and above the thermocline where sea surface temperatures range between 10ºC and 26ºC. The southern extent of EFH for Coastal Pelagics is the United States-Mexico maritime boundary. The northern boundary of the range of Coastal Pelagics is the position of the 10ºC isotherm, which varies both seasonally and annually (PFMC 1998). In estuarine and marine areas, Pacific Coast Salmon EFH extends from the nearshore and tidal submerged environments within state territorial waters out to the full extent (200 miles) of the U.S. Exclusive Economic Zone (EEZ) offshore of Washington, Oregon, and California north of Point Conception to the Canadian border (PFMC 1999). Thus, the proposed Project occurs within EFH for various Federally-managed species in the Pacific Coast Salmon, Pacific Groundfish, and Coastal Pelagics FMPs.

Adverse Effects on Essential Fish Habitat

NMFS determined the proposed action would adversely affect EFH for Pacific Coast Groundfish, Coastal Pelagic Species, and Pacific Coast Salmon Fishery Management Plans as follows:

- Temporarily degraded water quality within the action area due to the generation of suspended sediment
- Boulder and stone placement may crush, injure, or kill individuals

Adverse Effects to Water Quality

Elevated SSCs in Humboldt Bay and the Pacific Ocean are a relatively frequent occurrence. SSC levels can naturally increase due to wave action on shallow mudflats, storm runoff being delivered from local tributaries, algae blooms, and turbid water from the Eel River entering on incoming tides. It is common for SSCs in Humboldt Bay to range from 40 to 100 milligrams per liter or more during the year (Swanson et al. 2012). Significant increases in turbidity usually begin to occur in September or October with the onset of the wet season, and peak between December and February (Swanson et al. 2012).

Adverse Effects to Individuals from Crushing

During construction while boulders are repositioned or placed along the jetties below the water's surface, any individuals present within the structure of the jetty itself may be crushed, injured, or killed by the boulders. NMFS expects several different species managed under the Pacific Coast Groundfish FMP to be crushed and killed during construction.

The relocation of boulders from the intertidal mud flats adjacent to the jetty back to the jetty will improve potential habitat for eelgrass as well as for epi-benthic or infaunal organisms. NMFS expects the potential improvements to compensate for mortalities or injuries to managed individuals. The Corps must reinitiate EFH consultation with NMFS if the proposed action is substantially revised in a way that may adversely affect EFH, or if new information becomes available that affects the basis for NMFS' EFH determinations (50 CFR 600. 920(l)). This concludes the MSA portion of this consultation. NMFS has no EFH conservation recommendations to suggest.

Please direct questions regarding this letter to Matt Goldsworthy at (707) 825-1621 or via email at Matt.Goldsworthy@noaa.gov.

Sincerely,

Jeffrey Jahn
South Coast Branch Chief

cc: Copy to ARN File # 151422WCR2019AR00222

REFERENCES

Garwood, R., T.J. Mulligan, and E Bjorkstedt. 2013. Ichthyological Assemblage and Variation in a Northern California Zostera marina Eelgrass Bed. Northwestern Naturalist 94(1):35-50.

Goldsworthy, M., B. Pinnix, M. Barker, L. Perkins, A, David, and J. Jahn. 2016. Green Sturgeon Feeding Observations in Humboldt Bay, California. Field Note from August 19, 2016. National Marine Fisheries Service, United States Fish and Wildlife Service, Arcata, California.

MacFarlane, R.B. 2010. Energy dynamics and growth of Chinook salmon (Oncorhynchus tshawytscha) from the Central Valley of California during the estuarine phase and first ocean year. Canadian Journal of Fisheries and Aquatic Sciences 67(10):1549-1565.

Miller, B.A. and S. Sadro. 2003. Residence time and seasonal movements of juvenile coho salmon in the ecotone and lower estuary of Winchester Creek, South Slough, Oregon. Transactions of the American Fisheries Society 132(3):546-559.

Moser, M., and S. Lindley. 2007. Use of Washington estuaries by subadult and adult green sturgeon. Environmental Biology of Fishes DOI 10 1007/sl0641-006-9028-1.

Murphy, M.L., S.W. Johnson, and D.J. Csepp. 2000. A comparison of fish assemblages in eelgrass and adjacent subtidal habitats near Craig, Alaska. Alaska Fish Research Bulletin. 7:11-21.

NMFS (National Marine Fisheries Service). 1999. Designated critical habitat; central California Coast and Southern Oregon/Northern California Coast coho salmon. Federal Register 64: 24049-24062.

NMFS. 2005. Endangered and threatened species; designation of critical habitat for seven evolutionarily significant units of Pacific salmon and steelhead in California. Federal Register 70: 52,488-52,627.

NMFS. 2006. Endangered and threatened species; designation of critical habitat for southern Distinct Population Segment of North American green sturgeon. Federal Register 71: 17,757–17,766.

PFMC (Pacific Fishery Management Council). 1998. The Coastal Pelagic Species Fishery Management Plan Amendment 8 (December 1998). Pacific Fishery Management Council, Portland, Oregon.

PFMC. 1999. Amendment 14 to the Pacific Coast Salmon Plan — Appendix A, Description and Identification of Essential Fish Habitat, Adverse Impacts and Recommended Conservation Measures for Salmon (August 1999). Pacific Fishery Management Council, Portland, Oregon.

PFMC. 2014. Pacific Coast Groundfish Fishery Management Plan for the California, Oregon, and Washington Groundfish Fishery. Pacific Fishery Management Council, Portland OR.

Phillips, R.C. 1984. The ecology of eelgrass meadows in the Pacific Northwest: A community profile. U.S. Fish and Wildlife Service. FWS/OBS-84/24.

Pinnix, W. D., P.A. Nelson, G. Stutzer, and K. Wright. 2008. Residence time and habitat use of coho salmon in Humboldt Bay, California: an acoustic telemetry study. U.S. Fish and Wildlife Service, Arcata Fish and Wildlife Office, Arcata, California.

Pinnix, W. D., T. A. Shaw, K. C. Acker and N. J. Hetrick. 2005. Fish communities in eelgrass, oyster culture, and mudflat habitats of North Humboldt Bay, California Final Report. U. S. Fish and Wildlife Service, Arcata Fish and Wildlife Office, Arcata Fisheries Program Technical Report Number TR2005-02, Arcata, California.

Pinnix, W. D., P. A. Nelson, G. Stutzer, and K. A. Wright. 2013. Residence time and habitat use of coho n in Humboldt Bay, California: An acoustic telemetry study. Environmental Biology of Fish 96:315-323.

Ricker, S.J. and C.W. Anderson. 2011. Freshwater Creek Salmonid Life Cycle Monitoring Station. Annual Report. California Department of Fish and Game, Anadromous Fisheries Resource Assessment and Monitoring Program, Arcata, California.

Ricker, S.J., D. Ward, C.W. Anderson, and M. Reneski. 2014. Results of Freshwater Creek salmonid life cycle monitoring station 2010-2013. California Department of Fish and Wildlife, Anadromous Fisheries Resource Assessment and Monitoring Program, Fisheries Restoration Grant P0910513.

Swanson, C., A. McGuire, and M. Hurst. 2012. Investigation into the temporal variation of suspended solids in Humboldt Bay. Humboldt State University, Arcata, California.

Wallace, M., Ricker, S., Garwood, J., Frimodig, A., and S. Allen. 2015. Importance of the stream-estuary ecotone to juvenile coho salmon in Humboldt Bay, California. California Fish and Game 101(4):241-266; 2015.

Wallace, M. and S. Allen. 2007. Juvenile salmonid use of the tidal portions of selected tributaries to Humboldt Bay, California. California Department of Fish and Wildlife, Fisheries Restoration Grants Program Grant P0410504.

USACE Biological Assessment / Essential Fish Habitat Assessment

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, SAN FRANCISCO
CORPS OF ENGINEERS
450 Golden Gate Avenue
SAN FRANCISCO, CALIFORNIA 94102

REPLY TO
ATTENTION OF
Environmental Planning Branch

Julianne Polanco
State Historic Preservation Officer
Office of Historic Preservation
P.O. Box 942896
Sacramento, California 94296-0001

Subject: U.S. Army Corps of Engineers, Operations and Maintenance Humboldt Bay Jetty Repair, Humboldt County, California.

Dear Ms. Polanco,

The U.S. Army Corps of Engineers San Francisco District (USACE) is consulting with you pursuant to section 106 (16 U.S.C. 470) the National Historic Preservation Act (NHPA) of 1966, as amended for the Operations and Maintenance of the "Humboldt Bay Jetty Repair Project in Humboldt County, California." We have also consulted with Tribal Historic Preservation Offices of The Wiyot Tribe, Blue Lake Rancheria, and the Bear River Band of the Rohnerville Rancheria. This consultation letter provides USACE's establishment of an undertaking. We are seeking your views on (1) our delineation of the Area of Potential Effects (APE) and (2) the level of effort to identify eligible or listed historic properties within the APE, as well as (3) concurrence with our finding of no historic properties affected pursuant to 36 CFR § 800.4 (d)(1).

We have developed a draft Environmental Assessment (EA) to comply with the National Environmental Policy Act (NEPA) and we are coordinating the NHPA and NEPA to simplify the compliance process and improve efficiency (36 CFR § 800.3(b)). The Humboldt Jetty Repair's Project Delivery Team (PDT) is releasing the draft EA for a public comment period that extends from October 18, 2019 to November 16, 2019 (30 days). The EA describes the environmental setting and provides an effects analysis in accordance with NEPA. The public, Native American tribes, local agencies, and interested consulting parties have been notified of the availability of the draft EA. Comments will be accepted and addressed pursuant to section 106 (36 CFR § 800.2(d)) and USACE 33 CFR § Part 230 (Corps procedures for implementing NEPA).

The Humboldt Jetties were previously determined eligible for the NRHP under criterion a) association with the opening of the West, industrial development of the hydraulic rail car, industrial expansion of the timber and mining industries; and criterion c) for their significant and distinguishable construction. We have determined that the jetties are also eligible under criterion b) for their association with the USACE engineer Orville Magoon who designed the jetties and used 5,000 42-short-ton dolosse around the jetties heads. The history of the Jetties is discussed in the Historic Properties Survey Report (Enclosure 5).

Location and Description of the Undertaking

The USACE's Operations and Maintenance program is restoring the entrance jetties to Humboldt Bay to their original design dimensions and restoring safe navigation to and from Humboldt Bay.

Humboldt Bay is a sprawling Northern California coastal estuary 225 nautical miles North of San Francisco, 64 nautical miles South of Crescent City and in close proximity to the city of Eureka in Humboldt County, California (Enclosure 1).

The proposed project would repair the jetty structures to their original engineered design; reusing as many displaced armoring stones as possible or replacing them with newly quarried stones (from a certified quarry) to refurbish damaged grades, then replacing the concrete covering to fill in the gaps and restore the engineered integrity. The new stone will be barged or trucked to the project staging areas and transported to the jetty restoration sites using a crane, loader, backhoe or dump trucks to refit the jetties interior structure, slopes, and concrete cap where needed.

There is no proposed ground-disturbance occurring at or near any of the identified sites on either the North or South Spits. Equipment will be delivered to the jetties and construction will take place from the top of jetty. Minimal surface disturbance will occur in areas directly adjacent to the jetties where large toppled stones will be lifted back onto the slopes. Equipment may work picking up loose stones from 150 feet from the edge of the jetty to reach large ejected stones. Small rubble stones will remain in place and holes will be filled with newly quarried stone. Armoring stones will be lifted into place by a crane.

Area of Potential Effects

The Area of Potential Effect (APE) is determined through mission authorization, reviews of project plans, estimations of maximum potential for ground disturbance, topographic and geographical constraints, etc. The Humboldt Bay Entrance Channel is separated by two long spits of sand approximately 2000 feet at entrance and 3000 feet at their widest that divide North Jetty and South Jetty from Humboldt Bay. The jetties are attached to the Spit at the entrance to Humboldt Bay. The North Jetty is 7,899 feet and curved northward like a backwards letter "J". The South Jetty is 8,301 feet long and angled down towards the South.

Pursuant to 36 CFR 800.2(a)(1) USACE has determined the APE for the Humboldt Bay Jetty Repair Project would include the entire length, width and depth of the North and South Jetties including a horizontal APE of 150 feet north and south and staging areas on the North and South Spits. The APE is delineated and labeled in Enclosure 2.

Both Jetties are 20 feet wide at the top, 40 feet wide at the base, and 25 feet deep with outside slopes 2 to 1, and inner slopes 5 to 1. The Jetties Heads are raised and covered by 100 ton concrete blocks and surrounded by 4,000 dolos. In all approximately 8,000 dolos were created and carried by crane and spread over the jetty heads. The North and South Spits consist of beach and dune habitat among scattered pine trees, shrubs, and grasses. The staging areas were selected during jetty reconstruction in 1987. The USACE conducted surveys of the staging areas in

1980's and no evidence of cultural resources, was identified (Purcell 1980, Learner 1987). Some of the staging locations currently hold excess or unused stone that will be utilized during future reconstruction.

The project will occur entirely on lands owned or leased by USACE and lands managed by Bureau of Land Management (BLM). The BLM manages the lands on the Spits for State and Federal agencies including the access roads (e.g. U. S. Coast Guard, National Oceanographic and Atmospheric Administration the State of California). The BLM is a consulting party with USACE for this project. USACE is coordinating with BLM to obtain a "Special-Use" permit to access the jetties.

Native American and Agency Consultation

The Corps is consulting with three federally recognized Native American tribes. In May 2019, the USACE District Archaeologist Kathleen Ungvarsky requested a review of the Sacred Lands File from the Native American Heritage Commission (NAHC). The NAHC reported no sacred lands within the study's APE (Enclosure 4). Pursuant to 36 CFR 800.2 USACE requested a list of tribes that have ethnographic, ancestral, and cultural ties to the project area. The NAHC provided a list of tribes and three Wiyot tribes expressed interests and concerns about potential effects to historic properties. The USACE invited their comments and recommendations regarding potential adverse effects to historic properties near the project APE. The most current consultation occurred September 13, 2019 via web conference with three federated Wiyot Tribal Historic Preservation Officers. As a result of that meeting, the APE was refined and reduced to avoid adverse effects to traditional cultural properties. A copy of our correspondence is provided for your information (Enclosure 4).

The BLM is the local land manager on the North and South Spits. USACE invited their participation in consultation and they have provided information about sensitive locations for State and local resources within adjacent to the project APE.

Records Search and Identification of Historic Properties

In May 2019, the California Historical Resources Information System (CHRIS) Records Search was completed by staff archaeologists at the Northwest Information Center (NWIC) located at Sonoma State University (file number 18-2169 Humboldt Harbor Jetties Project). The records search included inventory of ethnographic reports, historic maps, site records, survey reports and GIS data covering a large portion of the Humboldt Bay. We supplemented the CHRIS records search with USACE North Branch (Humboldt Harbor) project reports, local Humboldt Bay and Eureka historical resources from the Humboldt County Public Records located in the Eureka Public Library Humboldt History Room, and Humboldt State University Humboldt Archives in Arcata, California. The local resources provided ethnographic records, maritime historical reports, mining and redwood timber booms, shipping and expansion of railroad transportation.

The records search identified 9 resources within the APE and an additional 17 resources within a 0.5-mile study area. The APE includes a 300-foot study area from the North and South Jetty center line (150 feet in each direction north and south) and the staging areas on the North and

South Spits. The sites within the proposed APE are listed below (Table 1) and are further discussed (Enclosure 5). A copy of this CHRIS search request and results is provided in Enclosure 3.

Table 1. Cultural Resources Identified within the APE

Primary Resource	Trinomial Number	Site Type, Name, Location w/in APE	Human Remains	NRHP Eligibility
P-12-000072	CA-HUM-14	Historic - Native American Site "Loud 14" North Spit. Temporary camp. Covered by sand, possibly submerged or beneath USCG.	Yes – removed or reburied	Eligible. Not relocated
P-12-000073	CA-HUM-15	Historic – Native American Site "Loud 15"	Yes	Not relocated
P-12-000137	CA-HUM-79	Historic - Native American Site "Loud 79"	Yes	Not relocated
P-12-000168	CA-HUM-111	Historic – Native American Site "Loud 111"	Yes	Not located
P-12-000169	CA-HUM-112	Historic – Native American Burial and Settlement "Loud 112" Adjacent to the APE.	Yes removed Noted local lootings.	Eligible
P-12-003441	CA-HUM-1609	Prehistoric - Bay Harbor Shell Midden and temp camp HUM 1620. Covered by sand possibly submerged.	No	If located must be evaluated
P-12-003461	CA-HUM-1620	Historic - Wiyot Cemetery North Jetty	Yes	Eligible. Not relocated
P-12-003476	N/A	Historic - Humboldt Bay Life-Saving Station Adjacent to APE.	No	Listed and eligible 79000477
P-12-003477	N/A	Historic – 1976 Registered Historic Landmark No. 882	No	Eligible

Field-Survey

The survey included characterization of the Humboldt Bay's historic properties. Based on the proposed project, a walk-over survey, with a limited access to sub-surface survey was planned with an intensive survey for re-identification and description of specific historic properties within the APE to refine a developed historic context based on the presence or absence of expected property types, to estimate the distribution of historic properties in an area.

The USACE Archaeologist, Kathleen Ungvarsky, conducted a systematic pedestrian survey on both North and South Spits during low tide. Ethnographic reports by Llewellyn Loud, 1918 and Albert Elsasser 1978, dealt with the ethnogeography and archeology of the Wiyot territory, were studied to gain an overview of Humboldt Bay archeology (Loud, 1918; Elsasser 1978). Prior to going into the field, the archeological base maps and site records maintained at CHRIS were examined to ascertain the locations of previously recorded archeological sites in the project study area.

The field survey involved a strategy of pedestrian transects approximately 5 meters (15 feet) apart from the center of the South Jetty for the width of the South Spit and from the center of the North Jetty for the width of the North Spit. All surfaces were inspected within the APE of 150

feet of the Jetty without modification of the vegetation. Investigation under woody ground cover was closely inspected for evidence of cultural material and potential occupation. No cultural material was identified.

Most of the sites were covered with drifting sand. Loud's notes state in his 1918 visit to Humboldt Bay area that "*aboriginal populations inhabiting the spit were living in little camps in advance of encroaching sand*"(Loud, 1918). Because of this condition archaeological sites would not remain visible on the surface for long once abandoned, and unless buried cultural material was exposed ternporari1y. In view of Loud's, documentation it must be assumed that the site is present beneath the surface. Loud reports site 14 as a seasonal camp used for clam roasting and that camps on the spit were relocated from time. Doubtless many villages have been established in the past along the shore between Samoa and Mad River slough only to be later rendered uninhabitable by encroaching wind and sand. The location of site CA-HUM-14 is outside the APE and within the sandy dunes adjacent to the southern end of the North Jetty. Further consultation with the BLM's Arcata office has located CA-HUM-14 offshore and possibly submerged within the channel thus degrading any potential remnants.

The site of Humboldt 112 is reported to be adjacent to the APE. Loud excavated the site in 1918 and noted looting of burial sites. During subsequent surveys the site could not be re-located. In 1986 the USACE district archaeologist conducted a field survey and concluded no impacts to historic properties. Your office concurred with the findings in 1987. In 2019 USACE performed cultural resources survey for the current repair project the district archaeologist noted scattered shell present near probable historic features although the survey was limited to the surface. No archaeological sites were identified.

Based on our application of the Criteria for Evaluation pursuant to 36 CFR Part 60.4, five historic properties were reported to be in the APE. We were not able to locate four of the reported sites. The sites are thought to be obscured by drifting sand, destroyed or submerged. Additional information is provided in enclosure 5.

The Humboldt Jetties are within the APE. National Register Eligibility was completed for the Jetties in 1977 although the report could not be relocated. Previous correspondence with your office regarding the Jetties is enclosed for your review (Enclosure 3).

The Jetties are a contributing element to the California State Humboldt Bay Historic Landmark District No. 822.

Humboldt Jetties National Register Evaluation

From the first construction in the 1890s through the placement of the dolosse eighty years later, the project has been an engineering experiment in what a local newspaper referred to in 1949 as the "ceaseless, never-ending battle" of Man's "fight against the sea." As such they deserve to be properly recorded. These jetties also qualify for inclusion on that in 1976 they were declared a California Historic Civil Engineering Landmark by the 'San Francisco Branch of the American Society of Civil Engineers. Though modified through destructive natural forces and frequent

repairs, they possess integrity of location, design, materials, workmanship, feeling, setting and association. The joint product of the political will of local businesspeople and engineering ingenuity of the Army Corps of Engineers, these jetties have been instrumental in providing for the economic and social growth of the city of Eureka and of the entire area served by the bay region. This was especially true before the arrival of railroad transportation in 1914. As a harbor of refuge, Humboldt Bay belied its early lack of promise and represents the most significant harbor between San Francisco and the Columbia River. The professional careers of several USACE San Francisco District Army engineers, particularly the pioneer George Mendell, and the business career of John C. Bull, Jr., are intimately associated with the jetties. In form they embody a typical engineering type, made distinctive by adaptation to extreme local conditions.

Pursuant to section 106 of the NHPA the USACE made a good faith effort to identify historic properties under its ownership that may be eligible for inclusion in the NRHP, the USACE sponsored records searches and archeological, historic and structural studies of the Humboldt Jetties (Brandt 1979; Pursell 1981; USACE 1987, 1991). On the basis of these studies, the jetties met the eligibility requirements for the National Register and the evaluation was concurred on by your office in 1981 (Enclosure 4).

Finding of No Adverse Effects

In 1981, Dr. Carroll Purcell found the jetties eligible for listing in the NRHP and recommended their addition to the Historic American Engineering Record (Pursell 1981). The Jetties have been repaired numerous times. The integrity is not completely preserved for both jetties.

Railroad ties and pilings are still present in certain sections of the jetty and in major sections of the concrete cap (Pursell 1981). Many of the significant physical features contributing to the construction of the jetties is severely degraded or in poor condition. The deterioration of the wooden ties and the intense wave activity have resulted in collapse of the concrete leaving deep cavities within the concrete cap.

USACE is proposing no subsurface disturbance. Construction will be confined to the Jetties APE. Staging of material, equipment parking, and or placing materials will not occur at any location outside of the designated staging and construction areas. No dredging is proposed for the jetty repair project.

The proposed undertaking will not "*alter characteristics of the property that may qualify the property for inclusion in the National Register*" of Historic Places (36 CFR 800.4). The USACE has determined the repair project will, therefore, have a finding of no adverse effects to Historic Properties pursuant to 36 CFR 800.4(d)(1).

Management Recommendations and Avoidance Measures

There are isolated cultural resources potentially eligible for the National Register located in or adjacent to the project APE. The following avoidance measures will be followed to avoid any adverse effects to historic properties.

- No work is proposed outside the jetties APE and the predesignated construction and staging areas.
- Interested tribes will be informed by USACE prior to the beginning of construction and tribal monitors will be allowed to observe construction activities when requested.
- Cultural resources including buried or isolated archaeological sites, endangered plants, are non-renewable and sensitive; it is possible that they exist obscured from view by blowing sand, wind and rain, intense waves, or beneath vegetation. There is always the remote possibility that previously unknown cultural resources may be encountered. Therefore, the following precautionary measures are relevant to the proposed work:
    - If cultural resources are encountered at any time all construction shall be temporarily stopped at that location (including a reasonable distance around the site) and redirected to another area away from the discovery and a qualified cultural resources specialist retained to evaluate the find. This evaluation would follow Federal standards and guidelines (NHPA, Advisory Council on Historic Preservation [ACHP], Secretary of the Interior Guidelines, NRHP, and other applicable legislation). Additional site investigation would be required in addition to consultation with participating agencies. If historic properties were identified, then discovery procedures pursuant to 36 CFR 800.13 would be conducted and mitigation of adverse effects in consultation with participating agencies would be carried out in addition to site specific treatment during construction.

Conclusion

The USACE has determined that historic properties, eligible for listing in the NRHP are identified within the project APE. However, the USACE has determined that historic properties will not be adversely effected by the proposed project.

At this time, we are requesting your comments and concurrence pursuant to 36 CFR § 800.4 and 800.6 for our APE, efforts to identify eligible or listed historic properties, and our determination of no adverse effect towards historic properties. Thank you for your consideration of this project. If you have any questions or comments, please contact Kathleen Ungvarsky, Archaeologist, at (415) 503-6661 or by email kathleen.ungvarsky@usace.army.mil.

Sincerely,

Tessa Beach

Tessa Eve Beach, Ph.D.
Chief, Environmental

Enclosures
1. Project Map
2. APE Map
3. Records Search
4. Consultation Correspondence
5. Historic Property Survey and Photographs

Appendix J *(National Historic Preservation Act Compliance)*

State of California • Natural Resources Agency Gavin Newsom, *Governor*

DEPARTMENT OF PARKS AND RECREATION Lisa Ann L. Mangat, *Director*
OFFICE OF HISTORIC PRESERVATION

Julianne Polanco, State Historic Preservation Officer
1725 23rd Street, Suite 100, Sacramento, CA 95816-7100
Telephone: (916) 445-7000 FAX: (916) 445-7053
calshpo.ohp@parks.ca.gov www.ohp.parks.ca.gov

November 22, 2019 In reply refer to: COE_2019_1028_002

VIA ELECTRONIC MAIL

Ms. Tessa Eve Beach, Ph.D.
Chief, Environmental
Army Corps of Engineers, San Francisco District
450 Golden Gate Ave, 4th Floor, Suite 0134
P.O. Pox 36152
San Francisco, CA 94102

RE: Section 106 consultation for the Humboldt Bay Jetty Repair, Humboldt County

Dear Dr. Beach,

The U.S. Army Corps of Engineers (COE) is initiating consultation with the State Historic Preservation Officer (SHPO) to comply with Section 106 of the National Historic Preservation Act of 1966 (as amended) and its implementing regulation at 36 CFR Part 800. The COE is seeking comments on their determination of eligibility and finding of effect for the above-referenced undertaking.

The COE is considering a project to restore the entrance jetties to Humboldt Bay to their original design dimensions and restoring safe navigation to and from Humboldt Bay. The project will involve refurbishing damaged grades with quarried stones that are then covered with concrete to restore engineered integrity. The COE has defined the Area of Potential Effects (APE) as the entire length, width, and depth of the North and South Jetties, including staging areas on the north and south spits.

Efforts to identify historic properties that may be affected by the undertaking included a records search, pedestrian survey, and Native American consultation. Archival research indicated the project area had been previously surveyed in 1918 with archaeological sites being identified, but the current effort was unable to identify any archaeological sites within the project APE.

Native American consultation included contacting the Native American Heritage Commission (NAHC) and requesting a record search of their sacred land file which was negative. The COE sent letters to the tribal entities identified by the NAHC as having ancestral ties to the project area. The COE reports they have consulted with the three Wiyot Tribal Historic Preservation Officers, resulting in refining the APE to avoid effects to traditional cultural properties.

The Humboldt Jetties were previously determined eligible for the National Register of Historic Places (NRHP) under criteria A and C. Additionally, the jetties are a contributing element to Humboldt Bay California State Historic Landmark District No. 822, and a Historic Civil Engineering Landmark recognized by the San Francisco Branch of the American Society of Civil Engineers. In the current submittal, the COE is requesting SHPO concurrence that the jetties also meet NRHP criterion B due to association with the USACE engineer Oliver Magoon who designed the jetties. After review, the SHPO is **unable to concur** in this determination because there is no substantive analysis explaining how the jetties clearly represent Oliver Magoon's significant contributions to the field of engineering. Generally, properties that are an important example of an individual's skill as an engineer should be evaluated under criterion C rather than B. Going forward, I recommend the COE review the National Register Bulletin 32 when considering eligibility under criterion B (available at https://www.nps.gov/subjects/nationalregister/upload/NRB32-Complete.pdf).

The COE has concluded that the work will not alter any of the characteristics that would qualify the jetties for eligibility and therefore has made a finding of *no adverse effect* for the proposed undertaking. Pursuant to 36 CFR 800.5(b), I do not object to a finding of *no adverse effect*.

Be advised that under certain circumstances, such as unanticipated discovery or a change in project description, the COE may have additional future responsibilities for this undertaking under 36 CFR Part 800. If you require further information, please contact Anmarie Medin at (916) 445-7023 or Anmarie.Medin@parks.ca.gov.

Sincerely,

Julianne Polanco
State Historic Preservation Officer

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, SAN FRANCISCO
CORPS OF ENGINEERS
450 Golden Gate Avenue
SAN FRANCISCO, CALIFORNIA 94102

REPLY TO
ATTENTION OF
Environmental Planning Branch

Julianne Polanco
State Historic Preservation Officer
Office of Historic Preservation
P.O. Box 942896
Sacramento, California 94296-0001

Subject: U.S. Army Corps of Engineers, Operations and Maintenance Humboldt Bay Jetty Repair, Humboldt County, California.

Dear Ms. Polanco,

The U.S. Army Corps of Engineers San Francisco District (USACE) is consulting with you pursuant to section 106 (16 U.S.C. 470) the National Historic Preservation Act (NHPA) of 1966, as amended for the Operations and Maintenance of the "Humboldt Bay Jetty Repair Project in Humboldt County, California." We have also consulted with Tribal Historic Preservation Offices of The Wiyot Tribe, Blue Lake Rancheria, and the Bear River Band of the Rohnerville Rancheria. This consultation letter provides USACE's establishment of an undertaking. We are seeking your views on (1) our delineation of the Area of Potential Effects (APE) and (2) the level of effort to identify eligible or listed historic properties within the APE, as well as (3) concurrence with our finding of no historic properties affected pursuant to 36 CFR § 800.4 (d)(1).

We have developed a draft Environmental Assessment (EA) to comply with the National Environmental Policy Act (NEPA) and we are coordinating the NHPA and NEPA to simplify the compliance process and improve efficiency (36 CFR § 800.3(b)). The Humboldt Jetty Repair's Project Delivery Team (PDT) is releasing the draft EA for a public comment period that extends from October 18, 2019 to November 16, 2019 (30 days). The EA describes the environmental setting and provides an effects analysis in accordance with NEPA. The public, Native American tribes, local agencies, and interested consulting parties have been notified of the availability of the draft EA. Comments will be accepted and addressed pursuant to section 106 (36 CFR § 800.2(d)) and USACE 33 CFR § Part 230 (Corps procedures for implementing NEPA).

The Humboldt Jetties were previously determined eligible for the NRHP under criterion a) association with the opening of the West, industrial development of the hydraulic rail car, industrial expansion of the timber and mining industries; and criterion c) for their significant and distinguishable construction. We have determined that the jetties are also eligible under criterion b) for their association with the USACE engineer Orville Magoon who designed the jetties and used 5,000 42-short-ton dolosse around the jetties heads. The history of the Jetties is discussed in the Historic Properties Survey Report (Enclosure 5).

Location and Description of the Undertaking

The USACE's Operations and Maintenance program is restoring the entrance jetties to Humboldt Bay to their original design dimensions and restoring safe navigation to and from Humboldt Bay.

Humboldt Bay is a sprawling Northern California coastal estuary 225 nautical miles North of San Francisco, 64 nautical miles South of Crescent City and in close proximity to the city of Eureka in Humboldt County, California (Enclosure 1).

The proposed project would repair the jetty structures to their original engineered design; reusing as many displaced armoring stones as possible or replacing them with newly quarried stones (from a certified quarry) to refurbish damaged grades, then replacing the concrete covering to fill in the gaps and restore the engineered integrity. The new stone will be barged or trucked to the project staging areas and transported to the jetty restoration sites using a crane, loader, backhoe or dump trucks to refit the jetties interior structure, slopes, and concrete cap where needed.

There is no proposed ground-disturbance occurring at or near any of the identified sites on either the North or South Spits. Equipment will be delivered to the jetties and construction will take place from the top of jetty. Minimal surface disturbance will occur in areas directly adjacent to the jetties where large toppled stones will be lifted back onto the slopes. Equipment may work picking up loose stones from 150 feet from the edge of the jetty to reach large ejected stones. Small rubble stones will remain in place and holes will be filled with newly quarried stone. Armoring stones will be lifted into place by a crane.

Area of Potential Effects

The Area of Potential Effect (APE) is determined through mission authorization, reviews of project plans, estimations of maximum potential for ground disturbance, topographic and geographical constraints, etc. The Humboldt Bay Entrance Channel is separated by two long spits of sand approximately 2000 feet at entrance and 3000 feet at their widest that divide North Jetty and South Jetty from Humboldt Bay. The jetties are attached to the Spit at the entrance to Humboldt Bay. The North Jetty is 7,899 feet and curved northward like a backwards letter "J". The South Jetty is 8,301 feet long and angled down towards the South.

Pursuant to 36 CFR 800.2(a)(1) USACE has determined the APE for the Humboldt Bay Jetty Repair Project would include the entire length, width and depth of the North and South Jetties including a horizontal APE of 150 feet north and south and staging areas on the North and South Spits. The APE is delineated and labeled in Enclosure 2.

Both Jetties are 20 feet wide at the top, 40 feet wide at the base, and 25 feet deep with outside slopes 2 to 1, and inner slopes 5 to 1. The Jetties Heads are raised and covered by 100 ton concrete blocks and surrounded by 4,000 dolos. In all approximately 8,000 dolos were created and carried by crane and spread over the jetty heads. The North and South Spits consist of beach and dune habitat among scattered pine trees, shrubs, and grasses. The staging areas were selected during jetty reconstruction in 1987. The USACE conducted surveys of the staging areas in

1980's and no evidence of cultural resources, was identified (Purcell 1980, Learner 1987). Some of the staging locations currently hold excess or unused stone that will be utilized during future reconstruction.

The project will occur entirely on lands owned or leased by USACE and lands managed by Bureau of Land Management (BLM). The BLM manages the lands on the Spits for State and Federal agencies including the access roads (e.g. U. S. Coast Guard, National Oceanographic and Atmospheric Administration the State of California). The BLM is a consulting party with USACE for this project. USACE is coordinating with BLM to obtain a "Special-Use" permit to access the jetties.

Native American and Agency Consultation

The Corps is consulting with three federally recognized Native American tribes. In May 2019, the USACE District Archaeologist Kathleen Ungvarsky requested a review of the Sacred Lands File from the Native American Heritage Commission (NAHC). The NAHC reported no sacred lands within the study's APE (Enclosure 4). Pursuant to 36 CFR 800.2 USACE requested a list of tribes that have ethnographic, ancestral, and cultural ties to the project area. The NAHC provided a list of tribes and three Wiyot tribes expressed interests and concerns about potential effects to historic properties. The USACE invited their comments and recommendations regarding potential adverse effects to historic properties near the project APE. The most current consultation occurred September 13, 2019 via web conference with three federated Wiyot Tribal Historic Preservation Officers. As a result of that meeting, the APE was refined and reduced to avoid adverse effects to traditional cultural properties. A copy of our correspondence is provided for your information (Enclosure 4).

The BLM is the local land manager on the North and South Spits. USACE invited their participation in consultation and they have provided information about sensitive locations for State and local resources within adjacent to the project APE.

Records Search and Identification of Historic Properties

In May 2019, the California Historical Resources Information System (CHRIS) Records Search was completed by staff archaeologists at the Northwest Information Center (NWIC) located at Sonoma State University (file number 18-2169 Humboldt Harbor Jetties Project). The records search included inventory of ethnographic reports, historic maps, site records, survey reports and GIS data covering a large portion of the Humboldt Bay. We supplemented the CHRIS records search with USACE North Branch (Humboldt Harbor) project reports, local Humboldt Bay and Eureka historical resources from the Humboldt County Public Records located in the Eureka Public Library Humboldt History Room, and Humboldt State University Humboldt Archives in Arcata, California. The local resources provided ethnographic records, maritime historical reports, mining and redwood timber booms, shipping and expansion of railroad transportation.

The records search identified 9 resources within the APE and an additional 17 resources within a 0.5-mile study area. The APE includes a 300-foot study area from the North and South Jetty center line (150 feet in each direction north and south) and the staging areas on the North and

South Spits. The sites within the proposed APE are listed below (Table 1) and are further discussed (Enclosure 5). A copy of this CHRIS search request and results is provided in Enclosure 3.

Table 1. Cultural Resources Identified within the APE

Primary Resource	Trinomial Number	Site Type, Name, Location w/in APE	Human Remains	NRHP Eligibility
P-12-000072	CA-HUM-14	Historic - Native American Site "Loud 14" North Spit. Temporary camp. Covered by sand, possibly submerged or beneath USCG.	Yes – removed or reburied	Eligible. Not relocated
P-12-000073	CA-HUM-15	Historic – Native American Site "Loud 15"	Yes	Not relocated
P-12-000137	CA-HUM-79	Historic - Native American Site "Loud 79"	Yes	Not relocated
P-12-000168	CA-HUM-111	Historic – Native American Site "Loud 111"	Yes	Not located
P-12-000169	CA-HUM-112	Historic – Native American Burial and Settlement "Loud 112" Adjacent to the APE.	Yes removed Noted local lootings.	Eligible
P-12-003441	CA-HUM-1609	Prehistoric - Bay Harbor Shell Midden and temp camp HUM 1620. Covered by sand possibly submerged.	No	If located must be evaluated
P-12-003461	CA-HUM-1620	Historic - Wiyot Cemetery North Jetty	Yes	Eligible. Not relocated
P-12-003476	N/A	Historic - Humboldt Bay Life-Saving Station Adjacent to APE.	No	Listed and eligible 79000477
P-12-003477	N/A	Historic – 1976 Registered Historic Landmark No. 882	No	Eligible

Field-Survey

The survey included characterization of the Humboldt Bay's historic properties. Based on the proposed project, a walk-over survey, with a limited access to sub-surface survey was planned with an intensive survey for re-identification and description of specific historic properties within the APE to refine a developed historic context based on the presence or absence of expected property types, to estimate the distribution of historic properties in an area.

The USACE Archaeologist, Kathleen Ungvarsky, conducted a systematic pedestrian survey on both North and South Spits during low tide. Ethnographic reports by Llewellyn Loud, 1918 and Albert Elsasser 1978, dealt with the ethnogeography and archeology of the Wiyot territory, were studied to gain an overview of Humboldt Bay archeology (Loud, 1918; Elsasser 1978). Prior to going into the field, the archeological base maps and site records maintained at CHRIS were examined to ascertain the locations of previously recorded archeological sites in the project study area.

The field survey involved a strategy of pedestrian transects approximately 5 meters (15 feet) apart from the center of the South Jetty for the width of the South Spit and from the center of the North Jetty for the width of the North Spit. All surfaces were inspected within the APE of 150

feet of the Jetty without modification of the vegetation. Investigation under woody ground cover was closely inspected for evidence of cultural material and potential occupation. No cultural material was identified.

Most of the sites were covered with drifting sand. Loud's notes state in his 1918 visit to Humboldt Bay area that "*aboriginal populations inhabiting the spit were living in little camps in advance of encroaching sand*"(Loud, 1918). Because of this condition archaeological sites would not remain visible on the surface for long once abandoned, and unless buried cultural material was exposed ternporari1y. In view of Loud's, documentation it must be assumed that the site is present beneath the surface. Loud reports site 14 as a seasonal camp used for clam roasting and that camps on the spit were relocated from time. Doubtless many villages have been established in the past along the shore between Samoa and Mad River slough only to be later rendered uninhabitable by encroaching wind and sand. The location of site CA-HUM-14 is outside the APE and within the sandy dunes adjacent to the southern end of the North Jetty. Further consultation with the BLM's Arcata office has located CA-HUM-14 offshore and possibly submerged within the channel thus degrading any potential remnants.

The site of Humboldt 112 is reported to be adjacent to the APE. Loud excavated the site in 1918 and noted looting of burial sites. During subsequent surveys the site could not be re-located. In 1986 the USACE district archaeologist conducted a field survey and concluded no impacts to historic properties. Your office concurred with the findings in 1987. In 2019 USACE performed cultural resources survey for the current repair project the district archaeologist noted scattered shell present near probable historic features although the survey was limited to the surface. No archaeological sites were identified.

Based on our application of the Criteria for Evaluation pursuant to 36 CFR Part 60.4, five historic properties were reported to be in the APE. We were not able to locate four of the reported sites. The sites are thought to be obscured by drifting sand, destroyed or submerged. Additional information is provided in enclosure 5.

The Humboldt Jetties are within the APE. National Register Eligibility was completed for the Jetties in 1977 although the report could not be relocated. Previous correspondence with your office regarding the Jetties is enclosed for your review (Enclosure 3).

The Jetties are a contributing element to the California State Humboldt Bay Historic Landmark District No. 822.

Humboldt Jetties National Register Evaluation

From the first construction in the 1890s through the placement of the dolosse eighty years later, the project has been an engineering experiment in what a local newspaper referred to in 1949 as the "ceaseless, never-ending battle" of Man's "fight against the sea." As such they deserve to be properly recorded. These jetties also qualify for inclusion on that in 1976 they were declared a California Historic Civil Engineering Landmark by the 'San Francisco Branch of the American Society of Civil Engineers. Though modified through destructive natural forces and frequent

repairs, they possess integrity of location, design, materials, workmanship, feeling, setting and association. The joint product of the political will of local businesspeople and engineering ingenuity of the Army Corps of Engineers, these jetties have been instrumental in providing for the economic and social growth of the city of Eureka and of the entire area served by the bay region. This was especially true before the arrival of railroad transportation in 1914. As a harbor of refuge, Humboldt Bay belied its early lack of promise and represents the most significant harbor between San Francisco and the Columbia River. The professional careers of several USACE San Francisco District Army engineers, particularly the pioneer George Mendell, and the business career of John C. Bull, Jr., are intimately associated with the jetties. In form they embody a typical engineering type, made distinctive by adaptation to extreme local conditions.

Pursuant to section 106 of the NHPA the USACE made a good faith effort to identify historic properties under its ownership that may be eligible for inclusion in the NRHP, the USACE sponsored records searches and archeological, historic and structural studies of the Humboldt Jetties (Brandt 1979; Pursell 1981; USACE 1987, 1991). On the basis of these studies, the jetties met the eligibility requirements for the National Register and the evaluation was concurred on by your office in 1981 (Enclosure 4).

Finding of No Adverse Effects

In 1981, Dr. Carroll Purcell found the jetties eligible for listing in the NRHP and recommended their addition to the Historic American Engineering Record (Pursell 1981). The Jetties have been repaired numerous times. The integrity is not completely preserved for both jetties.

Railroad ties and pilings are still present in certain sections of the jetty and in major sections of the concrete cap (Pursell 1981). Many of the significant physical features contributing to the construction of the jetties is severely degraded or in poor condition. The deterioration of the wooden ties and the intense wave activity have resulted in collapse of the concrete leaving deep cavities within the concrete cap.

USACE is proposing no subsurface disturbance. Construction will be confined to the Jetties APE. Staging of material, equipment parking, and or placing materials will not occur at any location outside of the designated staging and construction areas. No dredging is proposed for the jetty repair project.

The proposed undertaking will not "*alter characteristics of the property that may qualify the property for inclusion in the National Register*" of Historic Places (36 CFR 800.4). The USACE has determined the repair project will, therefore, have a finding of no adverse effects to Historic Properties pursuant to 36 CFR 800.4(d)(1).

Management Recommendations and Avoidance Measures

There are isolated cultural resources potentially eligible for the National Register located in or adjacent to the project APE. The following avoidance measures will be followed to avoid any adverse effects to historic properties.

- No work is proposed outside the jetties APE and the predesignated construction and staging areas.
- Interested tribes will be informed by USACE prior to the beginning of construction and tribal monitors will be allowed to observe construction activities when requested.
- Cultural resources including buried or isolated archaeological sites, endangered plants, are non-renewable and sensitive; it is possible that they exist obscured from view by blowing sand, wind and rain, intense waves, or beneath vegetation. There is always the remote possibility that previously unknown cultural resources may be encountered. Therefore, the following precautionary measures are relevant to the proposed work:
    - If cultural resources are encountered at any time all construction shall be temporarily stopped at that location (including a reasonable distance around the site) and redirected to another area away from the discovery and a qualified cultural resources specialist retained to evaluate the find. This evaluation would follow Federal standards and guidelines (NHPA, Advisory Council on Historic Preservation [ACHP], Secretary of the Interior Guidelines, NRHP, and other applicable legislation). Additional site investigation would be required in addition to consultation with participating agencies. If historic properties were identified, then discovery procedures pursuant to 36 CFR 800.13 would be conducted and mitigation of adverse effects in consultation with participating agencies would be carried out in addition to site specific treatment during construction.

Conclusion

The USACE has determined that historic properties, eligible for listing in the NRHP are identified within the project APE. However, the USACE has determined that historic properties will not be adversely effected by the proposed project.

At this time, we are requesting your comments and concurrence pursuant to 36 CFR § 800.4 and 800.6 for our APE, efforts to identify eligible or listed historic properties, and our determination of no adverse effect towards historic properties. Thank you for your consideration of this project. If you have any questions or comments, please contact Kathleen Ungvarsky, Archaeologist, at (415) 503-6661 or by email kathleen.ungvarsky@usace.army.mil.

Sincerely,

Tessa Beach

Tessa Eve Beach, Ph.D.
Chief, Environmental

Enclosures
1. Project Map
2. APE Map
3. Records Search
4. Consultation Correspondence
5. Historic Property Survey and Photographs

Appendix K *(Public Comments & Responses)*

Comments Received on the Draft EA and USACE Responses

(Full comment letters are attached below after the comment response section)

Surfrider Foundation Comments

1.

Surfers generally access the harbor entrance over an approximate 1,000 foot section of the North Jetty from the access road paved parking lot (near station 35+00) to near station 50+00 (Figures 1 and 2). Where people surf and where surfers enter and exit the water in the harbor entrance depends on the sand bar locations, tides, swell, and wind. Nearly all surfers exit just inside the "J" bend of the north jetty between stations 21+00 and 15+00 (Figures 1 and 2). Therefore, we find the USACE's single line description that the entire north jetty will be closed during construction from March through October woefully unacceptable and likely to cause conflict and safety issues. On page 37, the USACE lists some of the basic construction activities and states that these activities "…will result in the temporary dislocations (of recreationists) during the construction phase, in that for safety reasons, the entire area of the jetties will be closed to the public…" Is this an accurate statement? Generally, large-scale projects are staged for efficiency and cost ie, work and equipment progresses along the jetty over time.

Response: *The fact that the limits of work for construction on the North Jetty are likely to be closed for the duration of construction is discussed in section 2.3.3 (North Jetty Repair – Detailed Information) and section 4.2.3 (subsections on "Recreational and commercial fisheries" and "Other water-related recreation"). Given the potential for active construction including the use of heavy construction equipment along the majority of the jetty's length to place large stones on the water side and to pour concrete, public access within the limits of work for construction (yellow line in figure 11), including the beach immediately adjacent to the interior north jetty and the structure itself, will be limited given concerns for the safety of the public and to prevent damage to repairs as they are being performed. The extent and timing of the access limitation within the limits of work for construction will be dictated by the construction contractor. The EA evaluates the expected maximum potential impact to recreation, which would be full closure of the area within the limits of work for the entire duration of construction on that jetty. However, USACE will inform the construction contractor of the recreational uses of the area around the jetty, including surfing, so that if possible, they can develop a construction plan that minimizes impacts to recreation when/where safe and feasible. Throughout construction, surfers will have water access outside of the limits of construction such as the small cove to the north east of the limits of work, and then could paddle to the surf zone. Work is expected to occur from the landward side of the jetty, so the actual areas on the water between the jetty structures that are used for surfing should not be impacted during construction.*

USACE has added language to the Final EA in section 4.2.3 in "Other Water-related Recreation" noting that the construction contractor will be informed of the recreational uses of the area around the jetties so that they can develop a construction plan that minimizes impacts to recreation when/where safe and feasible.

2.

Obviously, the potential effects to the surf community were not truly considered given this was within the commercial and recreational fisheries "effects" section. However, the summary dismissal of access to the harbor entrance from March through October, "…this will be a temporary inconvenience…," is not an adequate effects assessment. Nor does the Environmental Assessment adequately address the level of usage by surfers.

Response: *Effects to surfers and other waterborne recreation were considered in section 4.2.3 "Other Water-related Recreation." Based on Surfrider's comments, USACE has added language to this section of the final EA regarding the level of surfing that occurs at the North Jetty in particular. As noted in the response to item 1 above, the EA evaluates the expected maximum potential impact to recreation, which would be full closure of the area within the limits of work for the entire duration of construction on the North jetty (March to October in the year of construction). Should this expected maximum potential closure occur, this would be a temporary impact in that it would not impede access within the limits of work permanently, but for approximately seven months. Additionally, during the period of closure, surfers and other recreationalists would have water access anywhere outside of the limits of construction zone to enter the water and the actual areas on the water between the jetty structures that are used for surfing should not be impacted during construction. Also, at least one road to each of the outer and inner jetty beaches on the north spit will remain open during construction. As noted in the response to item 1 above, USACE will inform the construction contractor of the recreational uses of the area around the jetty, including surfing, so that if possible, they can develop a construction plan that minimizes impacts to recreation when/where safe and feasible. However, should the expected maximum potential closure occur, the impact to water-related recreation would be temporary and less than significant during construction given the availability of other nearby access points to enter the water in the immediate vicinity.*

3.

Given that there has always been and will be good surfing conditions during this construction window, the potential for direct conflicts and serious safety issues between surfers entering and exiting the harbor entrance and folks attempting to maintain a compete closure. Therefore, we ask the USACE to consider staging construction along the north jetty to allow access throughout the construction period. Surfers can adjust to closing 25-50% of the north jetty length at any given time. This appears very reasonable given all large-scale construction projects require careful planning and a phased approach. We see no reason why construction cannot be phased in a manner that closes portions of the north jetty at any given time. Any costs of moving fencing, signage, and equipment could be made up for in not expending for fencing, signage, etc. for the entire jetty.

Response: *Given the potential for active construction including the use of heavy construction equipment along the majority of the jetty's length to place large stones on the water side and to pour concrete, public access within the limits of work for construction (yellow line in figure 11), including the beach immediately adjacent to the interior north jetty and the structure itself, will be limited given concerns for the safety of the public and to prevent damage to repairs as they are being performed. The extent and timing of the access limitation within the limits of work for construction will be dictated by the construction contractor. The EA evaluates the expected maximum potential impact to recreation, which would be full closure of the area within the limits of work for the entire duration of construction on that jetty. However, USACE will inform the construction contractor of the recreational uses of the area around the jetty, including surfing, so*

that if possible, they can develop a construction plan that minimizes impacts to recreation when/where safe and feasible. Additionally, given that three separate types of repairs across the length of the jetty are necessary, dictating that the construction contractor must phase construction could result in the inability of the contractor to complete the construction in one season, which would lengthen the amount of time there would be some level of impact to recreation and all other resources affected by the proposed action overall.

As noted in item BLM 4 below, the USACE will prepare and issue a press release, notifying the public of the specific timing of construction and extent of closures at the project area prior to the initiation of construction.

State Lands Commission (SLC) Comments

1. *CEQA Equivalency*:

… For the Draft EA, Commission staff has been unable to verify that the USACE has [given appropriate] notice [section 15087 of State CEQA Guidelines]; therefore, prior to the USACE approval of the Project, and before the Commission can use the EA to consider approval of a lease or permit for the Project, the EA will need to be noticed and circulated in accordance with CEQA requirements.

Response: *The USACEs appreciates the State Lands Commission's comment, however, it is an established legal principal "that the owner of land under navigable waters does not have a compensable right as against the United States for use of such submerged land for a navigation purpose…" U.S. v. 422978 Square Feet of Land, 445 F.2d 1180, 1185 (9th Cir. 1971); see Scranton v. Wheeler, 179 U.S. 141 (1900); U.S. v. Chandler-Dunbar, 229 U.S. 53 (1913); Lewis Blue Point Oyster Cultivation Co. v. Briggs, 229 U.S. 82 (1913); U.S. v. Chicago, M., St. P. &P.R.R., 312 U.S. 592 (1941); U.S. v. Commodore Park, 324 U.S. 386 (1945); and U.S. v. Rands, 389 U.S. 121 (1967). Navigable waters are defined as "all places covered by the ebb and flow of the tide to the mean high water (MHW) mark in its unobstructed, natural state." United States. v. Milner, 583 F.3d 1174 (9th Cir. 2009), (quoting Leslie Salt Co. v. Froehlke, 578 F.2d 742, 753 (9th Cir. 1978)). Therefore, the USACE will not be seeking any permission from the State Lands Commission.*

2. *Biological Resources — Invasive Species*:

One of the major stressors in California waterways is introduced species. In the event the stones are transported by barge to the Project site, the Draft EA should consider the Project's potential to encourage the establishment or proliferation of aquatic invasive species (AIS) such as *Caulerpa*, or other nonindigenous, invasive species. For example, vessels brought in from long stays at distant projects may transport new species to the Project area via hull biofouling. Marine and aquatic organisms attach to and accumulate on the hull and other submerged parts of a vessel. If the analysis in the Draft EA finds potentially significant AIS and plant impacts, possible mitigation could include contracting vessels from nearby, or requiring contractors to perform a certain degree of hull and vehicle-cleaning. The CDFW's Invasive Species Program could assist with this analysis as well as with the development of appropriate mitigation (information at https://www.wildlife.ca.gov/Conservation/Invasives).

Response: *We have added language to Section 4.2.2 (Subsection titled "Habitat for fish and other aquatic organisms") that discusses the potential for barge transport of material to contribute to the establishment of aquatic invasive species and proposes an appropriate best management practice designed to minimize this potential to a less than significant level. The language is as follows:*

> *If quarried rock is transported to the project by barge, the barge vessels could inadvertently transport non-native aquatic species to the project area via hull biofouling and lead to the introduction and proliferation of marine invasive species. In order to mitigate for this potential impact, should the construction contractor choose to transport rock by barge, they will be required to inspect marine vessels' hulls and other regularly wetted portions of vessels for biofouling and aquatic invasive species prior to transporting any stone to the site in any one construction season in which that vessel is to be used. If biofouling covers over 15% of the wetted surfaces of the vessel, it is considered extensively fouled and shall be cleaned prior to being used to transport rock to the site. Contractors will be directed to the California Aquatic Invasive Species Management Plan to identify aquatic invasive species and related management information and will be required to provide written certification to the government that vessel hulls are not extensively fouled or have been cleaned.*

The conclusion of the effects analysis remains the same, that any effects to aquatic biological resources are expected to be temporary and insignificant.

3. Sea-Level Rise and Climate Change:

A tremendous amount of State-owned lands and resources under the Commission's jurisdiction will be impacted by rising sea levels. With this in mind, the USACE should consider discussing in the EA how the channel jetties might be affected by sea-level rise and whether "resilient" designs have been incorporated. Attention should be given to sea-level rise projections to ensure the structures' designs are sufficient to ensure function, safety, and protection of the environment over the expected life of the structures.

Response: *As stated in section 1.2 of the EA, "the purpose of the proposed project is to restore the jetties to their design dimensions" as part of the maintenance of these existing USACE structures. Authority for USACE repair and reconstruction of the Entrance Channel Jetties at Humboldt Bay and Harbor is provided by the Rivers and Harbors Acts of 1910, 1930, 1935, and 1968. Project funding is classified as Operations and Maintenance (O&M) funding. Because the purpose and authorization for the proposed action is repair, new designs are not being considered. The design dimensions (width, height, length, and grade of the jetties) will be restored to what was originally in place. The repair of the jetties is intended to prevent further degradation from storm surges and severe wave activity under design conditions.*

USACE has added the following language to the "Strom, wave, and erosion buffers" section of the EA: "It should be noted that because the purpose of the proposed project is to restore the jetties to their design dimensions as part of the maintenance of existing USACE structures, modifying the design of the jetties is not considered in this EA. While the jetties currently buffer the channel and surrounding areas from large wave action, sea level change may modify the

magnitude of wave action in the area over time. Such changing conditions may necessitate future study of whether the existing design will continue to meet its intended purpose."

4. *Environmental Justice*:

In December 2018, the Commission adopted an Environmental Justice Policy and Implementation Plan and is committed to applying this Environmental Justice Policy to all [of] its operations, programs, and policies. Page 44 of the EA states that a discussion of Environmental Justice is "Not Applicable." However, because the north and south spit areas of Humboldt Bay have a CalEnviroScreen (https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-30) score of approximately 50%, an analysis of potential impacts associated with Environmental Justice should be presented in the Draft EA. This analysis should include any minority and low-income communities situated near the proposed Project footprint or those that directly depend on it for social, economic, cultural, historic, occupational, recreational, or other needs deemed significant by those communities.

Response: *The following language has been added to section the EA to address environmental justice effects (in section 4.2.3.; subsection on "Environmental Justice"):*

US Census Data from Humboldt County reports a poverty rate of 19.7% with no communities living in the immediate vicinity of the project area (i.e. at or immediately adjacent to the jetties). The proposed action is the repair of an existing structure, and is not expected to result in any change in the portion of the county population that is considered low income, nor is it expected to significantly alter economic, occupational, social, historic, or occupational conditions. If anything, the proposed action could provide environmental justice benefits in the region by ensuring navigation safety for water-dependent small businesses operating in the area. Tribal communities with cultural interests have been consulted as a part of the NHPA compliance process for the proposed project to ensure that effects to cultural resources are avoided or minimized (see section 3.8).

5. *Tribal Cultural Resources*:

The EA, inclusive of the USACE letter to the State Historic Preservation Officer (Appendix J, undated) state that the USACE has consulted with Tribes that have ethnographic, ancestral, and cultural ties to the Project area, and met with three Wiyot Tribes that expressed interests and concerns about potential effects to historic properties. As a result of that meeting, the Project area was refined and reduced to avoid adverse effects to traditional cultural properties. These documents also state that interested Tribes will be informed by the USACE prior to the beginning of construction, and [that] Tribal monitors will be allowed to observe construction activities when requested.

Although the USACE has met federal requirements, and is not obligated or required to comply with AB 52 (Gatto; Stats. 2014, ch. 532), which applies to all CEQA projects initiated after July 1, 2015, the Commission will be required to comply with AB 52 should a lease application be submitted. Although it appears that the USACE has demonstrated compliance with AB 52, Commission staff request that the USACE clearly state that the USACE (although not required to do so) has complied with AB 52 to streamline environmental review for the required lease.

Response: *Please see response to comment item 1 from the State Lands Commission (above), for USACE's determination regarding a lease from the State Lands Commission. Additionally,, a determination as to whether the tribal consultations carried out by USACE for the proposed*

action comply with California Environmental Quality Act (CEQA) requirements such as those of AB 52 must be made by a CEQA lead agency, not a federal agency such as USACE. However, USACE has added the following language to Section 3.8 of the EA: "The USACE has met federal requirements for consultation under the NHPA and is not obligated or required to comply with California Assembly Bill (AB) 52 (Gatto; Stats. 2014, ch. 532) which is related to tribal cultural resources and the California Environmental Quality Act (CEQA). However, the consultations undertaken by USACE with interested tribes may suffice to functionally comply with AB 52."

Bureau of Land Management (BLM) Comments

1.
Arcata Field Office will be completing a Categorical Exclusion once the USACE's EA is completed so that a Temporary Use permit can be issued by the BLM with concurrence from the U.S. Coast Guard, giving the Corps permission to use the roads and staging area for the North Jetty. The same will be issued for the South Jetty but with concurrence from the State of California.

Response: *Noted. The following language has been added to section 2.3.2 of the EA "Therefore, prior to beginning construction, USACE will obtain Temporary Use Permits from the BLM giving USACE permission for use of the roads and staging areas associated with the proposed action. The USACE has initiated coordination with the BLM Arcata office and they intend to complete a Categorical Exclusion then issue a Temporary Use Permit with concurrence from the U.S. Coast Guard for the North Jetty and one with concurrence from the State of California for the South Jetty."*

2.
A specific mechanism for a pre-condition assessment of routes and staging areas should be described in the EA, so that any damage incurred during the construction process can be properly dealt with once construction is complete.

Response: *As stated in section 4.2.3 ("Transportation and Traffic" subsection), "the contractor will be required to conduct a pre-work site visit and document the existing road conditions as well as determine appropriate usage parameters (e.g. whether the width of the roads is sufficient to accommodate two passing trucks, etc.). At the end of construction, the contractor will be required to repair any damage to the roads and ensure the roads are left in existing or better condition." The mechanism for this pre-condition survey is a requirement in the construction specifications stating that the construction contractor shall conduct a preconstruction survey with the government Contracting Officer's Representative and submit a deliverable that includes photo documentation as well as a written report of existing conditions and areas to be avoided within the limits of work, staging areas, and along transportation routes. The government and contractor will mutually deem the report accurate and complete before construction proceeds. Additional language documenting the requirement to restore pre-construction conditions at these sites, and the preconstruction survey have been added to sections 2.3.2 and 4.2.3 ("Transportation and Traffic" subsection).*

3.
"Closed" vs. "Fenced" areas should be specified in the EA.

Response: *Given the potential for active construction including the use of heavy construction equipment along the majority of each jetties' length to place large stones on the water side and to pour concrete, public access within the limits of work for construction (yellow line in figure 11), including the beach immediately adjacent to the jetties and the structures themselves, will be limited given concerns for the safety of the public and to prevent damage to repairs as they are being performed. The extent and timing of the access limitation within the limits of work for construction will be dictated by the construction contractor. The EA evaluates the expected maximum potential impact to recreation, which would be full closure of the area within the limits of work for the entire duration of construction on that jetty. These areas are likely be demarked with orange construction fencing and/or signage by the contractor to identify areas that the public should not enter during construction. Language has been added to section 2.3.3 and 2.3.4 of the EA to indicate how closed areas may be demarked.*

4.
There are several "Dangerous Waves" signs, originally installed by the Corps, placed at strategic access points on or near the Jetties. These signs have deteriorated and need to be replaced as soon as possible for public safety reasons.

Response: *As stated on page 38 (section 4.2.3, subsection on "Other water-related recreation"), "USACE will replace signs around the jetties that warn the public of the safety risk of large waves. Replacing the existing degraded signage will also improve public safety around the jetties." The USACE will evaluate the condition of the signage and will make recommendations for replacement or repair of the lost and/or deteriorated public safety signs.*

5.
Removal of wood and metal debris on the beach adjacent to the North Jetty will be coordinated with BLM staff.

Response: *The USACE has coordinated with the BLM Archeologist and based on this coordination, metal or wood debris on the beach adjacent to the North Jetty will be marked in place and avoided.*

6.
We recommend that the Corps develop a press release notifying the public of the timing and extent of closures.

Response: *The USACE will prepare and issue a press release, notifying the public of the timing of construction and extent of closures at the project area. The details (in terms of timing and closure extent) for inclusion in the public notification will be made closer to construction once the contract is awarded and the specific construction and stone delivery methods and timing have been determined.. The USACE will then issue a press release of planned construction. Language has been added to section 4.2.3 of the EA (subsections on "Recreational and commercial fisheries" and "Other water-related recreation") to indicate the press release will be sent out for public awareness.*

7.
We recommend that the Corps place signage near the closed areas, providing the public with information regarding the repairs and closure as well as contact information for the Corps.

Response: *The USACE construction best practices include safety practices such as public notification, clear and visible public signage, directional information, as well as on-site contact or contractor information for the public. Language indicated that signage with USACE and/or contractor contact information will be placed at the site of active construction has been added to sections 2.3.3 and 2.3.4 of the EA.*

Humboldt Area Saltwater Anglers

1.
In addition to the direct effects of deterring local sport fishing activities, an increasingly dangerous bar entrance would adversely affect numerous local fishing, dive and whale watching charters, and the local businesses that support those activities. We have reviewed your project description and fully support your proposed repair and reconstruction project.

Response: *Thank you for your comment and full support of the project. We have noted your support in section 4.2.3 (subsection on Recreational or Commercial Fisheries).*

Comment Letters Received on the Draft EA

Tessa Beach
US Army Corps of Engineers
San Francisco District
Planning Branch, Environmental Section
450 Golden Gate Ave.
San Francisco, CA 94102

November 17, 2019

To Tessa Beach,

Environmental Assessment of Humboldt Bay Channel Entrance Jetties Repairs and Reconstruction

Based on the extremely limited discussion in the EA regarding construction closures for the north jetty (See page 37 of the EA), the Humboldt Chapter of the Surfrider Foundation provides the following comments regarding the potential surfing related access and safety issues along with potential solutions for the US Army Corps of Engineers (USACE) to consider. Surfrider Foundation is dedicated to the protection and enjoyment of the world's ocean, waves and beaches through a powerful activist network. The Humboldt Chapter has nearly 300 members and the Surfrider Foundation has over 50,000 members. The Humboldt Chapter has worked to address access, pollution, and other threats to our local ocean, beaches, and waves through meaningful engagement. For example, we led the campaign and lawsuit to force the Samoa pulp mills to address their outfall pollution to the ocean. Therefore, we ask that the USACE and, if appropriate, the Bureau of Reclamation meet with us to discuss the following comments so we can work together to address the issues we raise. We do not see that "all practicable and appropriate means to avoid or minimize adverse environmental effects were analyzed and incorporated into the recommended plan."

Access to and usage of the harbor entrance and the north jetty areas for surfing

Numerous people surf off the north jetty and within the harbor entrance (Figure 1). The harbor entrance walking access paths and the north jetty dirt road off the BLM access road are highlighted in Figure 1. The north jetty surfing access will not be discussed in detail given that the access road and parking areas will remain open. We appreciate the USACE working with BLM to maintain public access to the north jetty via the back road (brown line in Figure 1). Averaging over the course of a year and making a conservative estimate, at least 20 surfers typically drive out to the north jetty on any given day throughout the year with nearly a hundred on a good surf day. This estimate does not include fishermen, birders, recreation vehicles, Humboldt State University classes, NOAA's Ocean Service, who maintains the north jetty instruments, or the Coast Guard's daily required visual inspection of the harbor entrance.

Hundreds of user days are logged by surfers throughout in the harbor entrance throughout the proposed closure period, especially in March, September, and October. For example, during 2017 and 2018, the easterly portion of the harbor entrance provided waves throughout the entire summer and spring. Dozens of surfers surfed every day there were waves during these two years.

Surfers generally access the harbor entrance over an approximate 1,000 foot section of the North Jetty from the access road paved parking lot (near station 35+00) to near station 50+00 (Figures 1 and 2).

Where people surf and where surfers enter and exit the water in the harbor entrance depends on the sand bar locations, tides, swell, and wind. Nearly all surfers exit just inside the "J" bend of the north jetty between stations 21+00 and 15+00 (Figures 1 and 2). Therefore, we find the USACE's single line description that the entire north jetty will be closed during construction from March through October woefully unacceptable and likely to cause conflict and safety issues. On page 37, the USACE lists some of the basic construction activities and states that these activities "…will result in the temporary dislocations (of recreationists) during the construction phase, in that for safety reasons, the entire area of the jetties will be closed to the public…" Is this an accurate statement? Generally, large-scale projects are staged for efficiency and cost ie, work and equipment progresses along the jetty over time.

Obviously, the potential effects to the surf community were not truly considered given this was within the commercial and recreational fisheries "effects" section. However, the summary dismissal of access to the harbor entrance from March through October, "…this will be a temporary inconvenience…," is not an adequate effects assessment. Nor does the Environmental Assessment adequately address the level of usage by surfers.

Given that there has always been and will be good surfing conditions during this construction window, the potential for direct conflicts and serious safety issues between surfers entering and exiting the harbor entrance and folks attempting to maintain a compete closure. Therefore, we ask the USACE to consider staging construction along the north jetty to allow access throughout the construction period. Surfers can adjust to closing 25-50% of the north jetty length at any given time. This appears very reasonable given all large-scale construction projects require careful planning and a phased approach. We see no reason why construction cannot be phased in a manner that closes portions of the north jetty at any given time. Any costs of moving fencing, signage, and equipment could be made up for in not expending for fencing, signage, etc. for the entire jetty.

To reiterate, the issue with the proposed plan is safe access. Surfers will access the harbor entrance if the surf is good, regardless if the entire north jetty is closed. How this will occur is unknown but it will occur. Being able to surf waves of the quality the harbor entrance is rare along the California coast and highly coveted.

We propose that the Corps include a detailed description of the construction in a phased approach that provides access to the harbor entrance and obituaries during March, September, and October at a minimum. This should be spelled out in the Environmental Assessment.

Thanks for listening to our concerns and addressing the issues we raise. We await your response to how you will address the recreational access issue.

Humboldt Chapter of the Surfrider Foundation

Wes Smith

Wes Smith
Treasurer, Humboldt Chapter
(707) 834-7897
treasurer@humboldt.surfrider.org

Delia Bense-Kang

Delia Bense-Kang
Northern California Campaign Coordinator
Surfrider Foundation
707.497.8866.
dbense-kang@surfrider.org

SURFRIDER FOUNDATION
HUMBOLDT

Figure 1. Map of the harbor entrance displaying surfing areas and the access points Google Earth image.

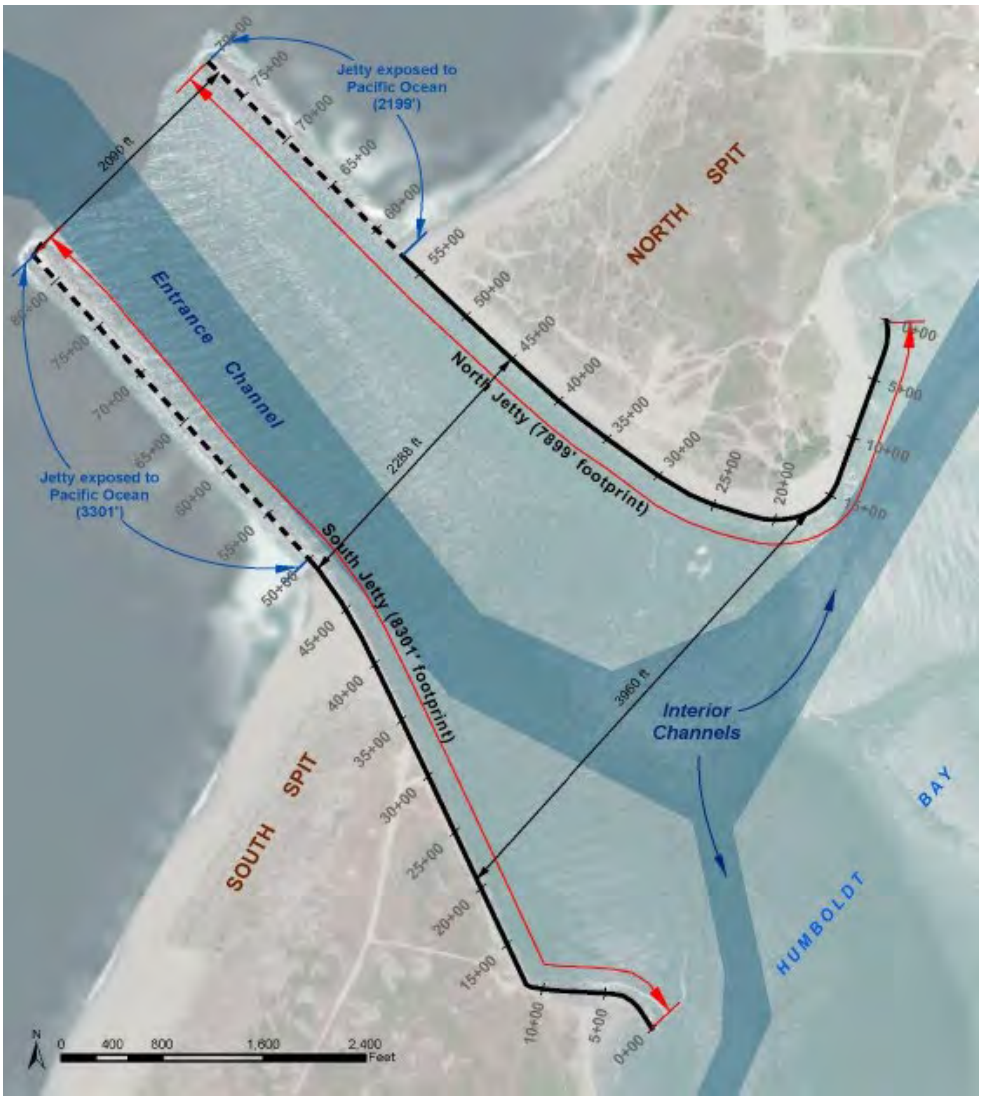


Figure 2. US Army Corps of Engineers map of harbor entrance and jetty stationing.

CALIFORNIA STATE LANDS COMMISSION
100 Howe Avenue, Suite 100-South
Sacramento, CA 95825-8202

JENNIFER LUCCHESI, *Executive Officer*
(916) 574-1800 *Fax* (916) 574-1810
California Relay Service TDD Phone 1-800-735-2929
from Voice Phone 1-800-735-2922

Contact Phone: **(916) 574-1890**

Established in 1938

November 15, 2019

File Ref: Humboldt Jetty Project EA

Dr. Mark J. Wiechmann
U.S. Army Corps of Engineers
San Francisco District
450 Golden Gate
San Francisco, CA 94102

VIA REGULAR & ELECTRONIC MAIL (Mark.J.Wiechmann@usace.army.mil)

Subject: Draft Environmental Assessment (EA) for the Humboldt Bay Entrance Channel Jetties, FY2020 & FY2021 Repairs and Reconstruction

Dear Dr. Wiechmann:

The California State Lands Commission (Commission) staff has reviewed the subject Draft EA for the Humboldt Bay Entrance Channel Jetties Project (Project), which was prepared by the U.S. Army Corps of Engineers, San Francisco District (USACE). The USACE is the lead agency under the National Environmental Policy Act (NEPA) of 1969, (42 U.S.C. 4321 et seq.), as amended. The Commission is a trustee agency for projects that could directly or indirectly affect State sovereign land and their accompanying Public Trust resources or uses. Additionally, because the Project may involve work on State sovereign land, the Commission could act as a responsible agency.

Commission Jurisdiction and Public Trust Lands

As general background, the State of California acquired sovereign ownership of all tidelands and submerged lands and beds of navigable lakes and waterways upon its admission to the United States in 1850. The State holds these lands for the benefit of all people of the State for statewide Public Trust purposes, which include but are not limited to waterborne commerce, navigation, fisheries, water-related recreation, habitat preservation, and open space. On tidal waterways, the State's sovereign fee ownership extends landward to the ordinary high-water mark, which is generally reflected by the mean high tide line, except for areas of fill or artificial accretion or where the boundary has been fixed by agreement or a court. On navigable non-tidal waterways, including lakes, the State holds fee ownership of the bed of the waterway landward to the

ordinary low water mark and a Public Trust easement landward to the ordinary high-water mark, except where the boundary has been fixed by agreement or a court. Such boundaries may not be readily apparent from present day site inspections.
The Project may directly affect lands under the jurisdiction of the Commission, as portions of the rock jetties may extend into State-owned sovereign lands. Based upon review of the draft EA and a preliminary review of our records, it appears a portion of the Project is located on State-owned sovereign land in the Pacific Ocean under the Commission's leasing jurisdiction. The Project is also located on State-owned sovereign land granted by the legislature to the Humboldt Bay Harbor, Recreation and Conservation District pursuant to Chapter 1283, Statutes of 1970, and as amended. Commission staff is currently conducting further review of the Commission's leasing jurisdiction at this location. If the Project requires a lease from the Commission for Project activities on State sovereign lands, the lease would require approval by the Commission at a properly noticed public meeting. For further information regarding leasing requirements please contact Ninette Lee in our Land Management Division (contact information is provided below).

CEQA Equivalency

As a discretionary action of the Commission, lease approval would require the Commission to act as either lead or responsible agency in compliance with the California Environmental Quality Act (CEQA). The State CEQA Guidelines provide a mechanism by which an EA can be used by an approving agency if specified conditions are met (see generally Cal. Code Regs., tit. 14, §§ 15220–15225). With regard to circulation and public review of the document, pursuant to section 15225 of the State CEQA Guidelines, the Commission may use the Draft EA in place of a Mitigated Negative Declaration or an Environmental Impact Report only if the USACE circulates the Draft EA in accordance with CEQA and gives notice of the document's availability as specified in section 15087 of the State CEQA Guidelines.

When the Commission acts as a lead agency under CEQA, it is required to circulate environmental documents through the State Clearinghouse at the Governor's Office of Planning and Research. For the Draft EA, Commission staff has been unable to verify that the USACE gave such notice; therefore, prior to the USACE' approval of the Project and before the Commission can use the EA to consider approval of a lease or permit for the Project, the EA will need to be noticed and circulated in accordance with CEQA requirements. Additional requirements under CEQA are discussed under the *Environmental Review* section. Please contact Cynthia Herzog, Senior Environmental Scientist, at the contact information identified below for further assistance in meeting this requirement.

Project Description

Humboldt Harbor and Bay is located in Eureka, California, which is approximately 280 miles north of San Francisco. Repair and reconstruction of the North and South jetties at the entrance to Humboldt Bay will be limited to those portions below the jetty heads

not covered with 42-ton concrete tetrapods (dolosse, measuring 15 x 15 x15 feet). The repair work can be categorized into three types of action: 1) restoring the concrete cap and parapet wall where damaged, and replacement of underlying small stones that are missing beneath the cap; 2) resetting stones, and as needed, replacement of displaced stones on the jetty slope with newly quarried rock to restore side slopes to their pre-existing design dimensions; and 3) removing entire portions of jetty, and then reconstructing them, stone by stone, with both existing stones and newly quarried stones.

The purpose of the proposed Project is to restore and stabilize the jetties to their design dimensions in order to preserve safe navigation of the Humboldt Bay Entrance Channel and prevent further degradation from storm surges and severe wave activity. The proposed actions involve resetting pre-existing stones, placing newly quarried stones, and pouring a new concrete cap where needed.

Environmental Review

With regard to CEQA's substantive requirements to mitigate or avoid significant effects on the environment, Commission staff has reviewed the Draft EA for compliance with the conditions set forth in CEQA and the State CEQA Guidelines, and has included comments related to these requirements below. Commission staff requests that the USACE consider the following comments to ensure that impacts to Public Trust resources and State sovereign land are adequately analyzed, and compliance with CEQA has been met.

Biological Resources

1. Invasive Species: One of the major stressors in California waterways is introduced species. In the event the stones are transported by barge to the Project site, the Draft EA should consider the Project's potential to encourage the establishment or proliferation of aquatic invasive species (AIS) such as *Caulerpa*, or other nonindigenous, invasive species. For example, vessels brought in from long stays at distant projects may transport new species to the Project area via hull biofouling. Marine and aquatic organisms attach to and accumulate on the hull and other submerged parts of a vessel. If the analysis in the Draft EA finds potentially significant AIS and plant impacts, possible mitigation could include contracting vessels from nearby, or requiring contractors to perform a certain degree of hull and vehicle-cleaning. The CDFW's Invasive Species Program could assist with this analysis as well as with the development of appropriate mitigation (information at https://www.wildlife.ca.gov/Conservation/Invasives).

Sea-Level Rise and Climate Change

2. A tremendous amount of State-owned lands and resources under the Commission's jurisdiction will be impacted by rising sea levels. With this in mind, the USACE should consider discussing in the EA if and how the channel jetties might be affected

by sea-level rise and whether "resilient" designs have been incorporated. Attention should be given to sea-level rise projections to ensure the structures' designs are sufficient to ensure function, safety, and protection of the environment over the expected life of the structures.

Governor Brown issued Executive Order B-30-15 in April 2015, which directs state government to fully implement the Safeguarding Plan and factor in climate change preparedness in planning and decision making. Please note that when considering lease applications, Commission staff will: 1) request information from applicants concerning the potential effects of sea-level rise on their proposed projects; 2) if applicable, require applicants to indicate how they plan to address sea-level rise and what adaptation strategies are planned during the projected life of their projects; and 3) where appropriate, recommend project modifications that would eliminate or reduce potentially adverse impacts from sea-level rise, including adverse impacts on public access. In addition, the State of California released the 2018 Update to the Safeguarding California Plan in January 2018, to provide policy guidance for state decision-makers as part of continuing efforts to prepare for climate risks. The Safeguarding Plan sets forth "actions needed" to safeguard ocean and coastal ecosystems and resources as part of its policy recommendations for state decision-makers.

Environmental Justice

3. In December 2018, the Commission adopted an Environmental Justice Policy and Implementation Plan and is committed to applying this Environmental Justice Policy to all its operations, programs, and policies. Page 44 of the EA states that a discussion of Environmental Justice is "Not Applicable." However, because the north and south spit areas of Humboldt Bay have a CalEnviroScreen (https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-30) score of approximately 50%, an analysis of potential impacts associated with Environmental Justice should be presented in the Draft EA. This analysis should include any minority and low-income communities situated near the proposed Project footprint or those that directly depend on it for social, economic, cultural, historic, occupational, recreational, or other needs deemed significant by those communities.

Tribal Cultural Resources

4. The EA, inclusive of the USACE letter to the State Historic Preservation Officer (Appendix J, undated) state that the USACE has consulted with Tribes that have ethnographic, ancestral, and cultural ties to the Project area, and met with three Wiyot Tribes that expressed interests and concerns about potential effects to historic properties. As a result of that meeting, the Project area was refined and reduced to avoid adverse effects to traditional cultural properties. These documents also state that interested Tribes will be informed by the USACE prior to the beginning of construction and Tribal monitors will be allowed to observe construction activities when requested.

Although the USACE has met federal requirements, and is not obligated or required to comply with AB 52 (Gatto; Stats. 2014, ch. 532), which applies to all CEQA projects initiated after July 1, 2015,[1] the Commission will be required to comply with AB 52 should a lease application be submitted. Although it appears that the USACE has demonstrated compliance with AB 52, Commission staff request that the USACE clearly state that the USACE (although not required to do so) has complied with AB 52 to streamline environmental review for the required lease.

Thank you for the opportunity to comment on the Draft EA for the Project. Commission staff requests that you keep us advised of changes to the Project and approval of the EA. Please refer questions concerning the environmental review to Cynthia Herzog, Senior Environmental Scientist, at (916) 574-1310 or cynthia.herzog@slc.ca.gov. Please contact Ninette Lee, Public Land Manager, at (916) 574-1869 or Ninette.Lee@slc.ca.gov for any specific Commission jurisdictional-related questions.

Sincerely,

Eric Gillies, Acting Chief
Division of Environmental Planning
and Management

cc: Office of Planning and Research
C. Herzog, Commission
N. Lee, Commission

[1] California Public Resources code Sections 21073, 21074, 21080.3.1, 21080.3.2, 21082.3, 21083.09, 21084.2, and 21084.3 were added to CEQA pursuant to AB 52.

United States Department of the Interior
BUREAU OF LAND MANAGEMENT
Arcata Field Office
1695 Heindon Road
Arcata, CA 95521-4573
www.blm.gov/california

In Reply To:
9155 CA330(P)

November 15, 2019

Peter Mull
United States Army Corps of Engineers
San Francisco District
450 Golden Gate Ave 4th floor
San Francisco, CA 94102
(415) 503-6702

Dear Peter Mull:

The Arcata Field Office would like to thank you for your continued coordination on the Humboldt Bay Entrance Channel Jetties Environmental Assessment (EA). We appreciate your communication and responses to our questions and suggestions regarding all aspects of your October 2019 draft EA. In the process of completing the Final Draft EA please consider the following comments:

1. Arcata Field Office will be completing a Categorical Exclusion once the Army Corps of Engineers (Corps) EA is completed so that a Temporary Use Permit can be issued by the BLM with concurrence from the U.S. Coast Guard, giving the Corps permission to use the roads and staging area for the North Jetty. The same will be issued for the South Jetty but with concurrence from the State of California.

2. A specific mechanism for a pre-condition assessment of routes and staging areas should be described in the EA, so that any damage incurred during the construction process can be properly dealt with once construction is complete.

3. "Closed" vs. "Fenced" areas should be specified in the EA.

4. There are several "Dangerous Waves" signs, originally installed by the Corps, placed at strategic access points on or near the Jetties. These signs have deteriorated and need to be replaced as soon as possible for public safety reasons.

5. Removal of wood and metal debris on the beach adjacent to the North Jetty will be coordinated with BLM staff.

6. We recommend that the Corps develop a press release notifying the public of the timing and extent of closures.

7. We recommend that the Corps place signage near the closed areas, providing the public with information regarding the repairs and closure as well as contact information for the Corps.

Thank you for the opportunity to provide comments on the draft EA. If you have further questions or clarification please contact Casey Hague at phone (707) 825-2322 or email chague@blm.gov.

Sincerely,

Molly Brown
Arcata Field Office Manager

Humboldt Area Saltwater Anglers Inc.

P.O. Box 6191, Eureka, CA 95502
Email: hasa6191@gmail.com
FEIN #61-1575751

15 November 2019

Dr. Mark Wiechmann
U.S. Army Corps of Engineers, San Francisco District
450 Golden Gate Avenue
San Francisco, CA 94102

Re: Comments on Humboldt Jetty Repair and Reconstruction Project Environmental Assessment

Dear Dr. Wiechmann:

Thank you for the opportunity to review and comment upon the proposed project as described in your October 2019 overview.

Humboldt Area Saltwater Anglers is a nonprofit organization representing saltwater anglers on the north coast of California. We have been actively representing the interests of sport fishers since 2008. Most of our 300+ members are located in Humboldt County and are familiar with the project location. Each of us transits the bay entrance several times per year in small sport fishing boats. We've noted the accelerating deterioration of the jetties these last few decades. Much of the jetty is not currently safe for pedestrian traffic or shore-based fishing. If repairs are not undertaken in the near future, it may no longer protect the entrance to Humboldt Bay. Even in the best of times, the Humboldt Bay entrance can be dangerous. If the jetty deteriorates to the point that waves are regularly entering from the side, small sport fishing boats would be further endangered.

In addition to the direct effects of deterring local sport fishing activities, an increasingly dangerous bar entrance would adversely affect numerous local fishing, dive and whale watching charters, and the local businesses that support those activities.

We have reviewed your project description and fully support your proposed repair and reconstruction project.

Sincerely,

Scott McBain, President
Humboldt Area Saltwater Anglers, Inc.