2018-2029 Quillayute Spit Repair and

Clallam County, Washington

FINDING OF NO SIGNIFICANT IMPACT (FONSI)

AND

CLEAN WATER ACT SECTION 404 STATEMENT OF FINDINGS

1. **Name of Waterway:** Quillayute River Estuary.

2. **Background:** The Seattle District, U.S. Army Corps of Engineers (Corps) is undertaking the following project under the Rivers and Harbors Act of 3 July 1930 (House Document 290, 71st Congress, 2nd session) and modified by the Rivers and Harbors Acts of 2 March 1945 (79th Congress, 1st Session) and 3 September 1954 (83rd Congress, 2nd Session). The need for measures to prevent a breach in the Quillayute Spit has been recognized as essential to the functionality of the Federal navigation project since the project was originally authorized in 1930. Maintenance and stabilization of the Quillayute Spit to serve the required protective purpose has progressed over the intervening years to the point that it is now an acknowledged Federal responsibility to design, operate, and maintain a revetment.

The purpose of the Quillayute Spit is to protect the Quillayute Federal Navigation project from direct exposure to ocean waves, which would impair the use of the federally authorized small boat basin and navigation channel as well as search and rescue use by the local Coast Guard station. Maintenance of the Quillayute Spit is needed because high river flows and ocean waves can damage the spit and lead to overtopping or a breach, which exposes the local Coast Guard station, La Push, and Quileute Reservation to extreme ocean conditions that pose a risk to lives and property. The USCG Quillayute Station is the only vessel response point between Neah Bay and Grays Harbor and is therefore an important location for timely response to endangered mariners nearby in the Pacific Ocean. The marina at La Push offers a livelihood for approximately 325 Tribal members and 50 non-Tribal citizens including USCG personnel. The primary commercial activity is fishing and fish processing, which generates approximately $4,000,000 in annual income.

3. **Action:** The Corps will repair the entire Quillayute Spit between Stations 10+00 and 30+00 over a 10-year period (2018 to February 2029) and perform supplemental beach nourishment at the toe of the spit. Work would be accomplished 24 September through 28 February of any year. It is likely that repairs would be done in 200- to 300-foot sections focusing on the most damaged areas approximately every 1-2 years, depending on funding. This would require up to 10 individual construction events to complete the repair. In order to access the repair areas, a 25-foot wide haul road with up to 10,000 tons of 3- to 9-inch quarry spalls placed during each episode would be built

on the crest of the Quillayute Spit out to the area being repaired. Between Stations 10+00 and 30+00, the Quillayute Spit needs repairs that consist of reworking the existing armor stone with machinery stationed on the structure to create a core layer and capping it with new 10- to 20-ton armor stone. Placing core stone 1-3 feet in diameter may be necessary in areas without sufficient existing material. The project requires some existing armor stone to be reworked down to an elevation of +0 feet MLLW before being tied into existing stone, but it is likely much of the existing armor stone would only need to be reworked down to +5 feet MLLW due to the presence of existing stone that has sloughed down the slope of the spit from ocean wave action. Repairs to the spit would remain within the 1974 design footprint. Work will be timed during low tides for repairs in the intertidal zone to avoid in-water work to the extent possible due to the safety risk to workers and to avoid environmental impacts. Work does not extend below +0 feet MLLW, but some waves may incidentally enter the work zone due to the dynamic nature of the area. The total volume of repair material would be up to approximately 80,000 tons of 10- to 20-ton armor stone and up to approximately 20,000 tons of core stone 1-3 feet in diameter.

Supplemental beach nourishment will be placed at Site B along the toe of the Quillayute Spit approximately every four years. Dredged material is already placed in Site B during maintenance dredging; however, the volume is insufficient so there is a sediment deficit on the ocean-ward side of the spit and wave action continues to damage areas along the entire Quillayute Spit, eroding material from the toe of the riprap. The ocean-ward side of the spit is steep and highly reflective armor stone, which contributes to erosion of the beach in front of the Quillayute Spit. The Corps is proposing to place 3- to 12-inch rounded river cobbles along on the ocean-ward side of the spit within the existing beach nourishment Site B to supplement the placement of dredged material. This material is similar to the Quillayute River bedload that is found on the riverward side of the spit. Site B is approximately 3,000 feet long and 75 feet wide, with an area of approximately 6 acres. The Corps would expect to place up to 100,000 CY within Site B approximately every four years. To avoid burying cobble under armor rock, cobble will only be placed over segments where armor has already been replaced/repaired or that are undamaged. In the event that armor repair is needed at a segment that has cobble, the cobble will be moved to the side before placing the armor rock and then placed back over the armor.

4. Coordination: The Federal action is described in the Final Environmental Assessment (EA): Quillayute Spit Repairs and Maintenance 2018-2029, dated August 2018.

a. Letters of Comment and Responses: The Draft EA, the contents of which are consistent with a Clean Water Act (CWA) Section 404 Public Notice, underwent a public comment period from 05 July 2018 to 04 August 2018.

b. Federal Agencies: The U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service (NMFS), the U.S. Department of the Interior, and the U.S. Fish and Wildlife Service (USFWS) are

responsible for the Endangered Species Act of 1973 (ESA) listed species in Clallam County. The Corps determined that the proposed repairs and maintenance will have no effect on any ESA-listed species or designated critical habitat. The Corps prepared documentation of this determination. The Corps determined that repairs and maintenance will have no adverse effect on Essential Fish Habitat (EFH) for Pacific Coast Salmon, Pacific Coast Groundfish, and Coastal Pelagic Species; it is not necessary to submit a determination of "no adverse effect" to NMFS.

The Corps requested a 401 Water Quality Certification from the Environmental Protection Agency (EPA) and will comply with applicable conditions associated with the discharge of dredged or fill material into the waters of the U.S. The Corps received a 401 Water Quality Certification 16 August 2018.

c. State and Local Agencies: The Corps has determined that the project is consistent to the maximum extent practicable with the enforceable policies of the approved Washington State Coastal Zone Management Program, in particular the Shoreline Management Plans Clallam County, and, therefore, is in compliance with the Coastal Zone Management Act (CZMA). The Corps prepared a Coastal Zone Management Consistency Determination for maintenance dredging and submitted it to Ecology on 29 June 2018. The Corps received a Coastal Zone Management Consistency Concurrence from Ecology 21 August 2018.

Section 106 of the National Historic Preservation Act (16 USC 470) requires Federal agencies to take into account the effects of proposed federal undertakings on historic properties included or eligible for the National Register of Historic Places. The implementing regulations for Section 106 (36 C.F.R. § 800) require Federal agencies to consult with various parties, including the Advisory Council on Historic Preservation, the State Historic Preservation Office (SHPO), and Indian Tribes, to identify and evaluate historic properties, and to assess and resolve effects to historic properties.

The Corps consulted with the Washington SHPO and Quileute Tribe (Tribe) for this undertaking. Based on the results of literature and records review, the continual erosion and replacement of the materials of which the spit is comprised, and the absence of known or recorded historic properties within the area of potential effect (APE), the Corps found that no historic properties would be affected by the undertaking.

d. Treaty Tribes: The Corps has ongoing coordination with the Tribe on matters involving the repair and maintenance of the Quillayute Spit to maintain navigability of the channel and access to ocean fisheries. Additionally, the Corps has consulted with tribal biologists regarding avoiding impacts to tribal fisheries resources.

5. Environmental Effects and Impacts:

a. Summary of Effects: The Final EA for the Quillayute Spit Repair and Maintenance 2018-2029, dated August 2018, describes the effects of the proposed project. Unavoidable adverse effects include the loss of benthic invertebrates at the

repair site and Site B, where the supplemental beach nourishment will occur. Minor and temporary water quality impacts through turbidity are expected, as well as some emissions of air pollutants and greenhouse gases. However, these effects will be temporary and localized and are not expected to be significant.

b. Compliance with Applicable Environmental Laws: The environmental laws listed below are applicable to the proposed action. An evaluation of environmental impacts under each of these regimes, as well as compliance with each of these laws, is documented in the Draft EA.

- National Environmental Policy Act: The Corps has prepared an EA that underwent public review prior to finalization.

- ESA: The Corps has determined that the action will have "no effect" on ESA listed species due to timing restrictions, working in the dry to the maximum extent, and species not being present in the action area. USFWS and NMFS does not provide concurrence for determinations of "no effect".

- Marine Mammal Protection Act: The Corps has determined that the project would not disturb any marine mammal to the extent of causing significant disruption to behavioral patterns, and that it is thus not necessary to pursue an incidental harassment authorization under the MMPA.

- Magnuson-Stevens Fishery Conservation and Management Act: The Corps determined that repairs and maintenance of the Quillayute Spit will have no adverse effect on EFH for Pacific Coast Salmon, Pacific Coast Groundfish, and Coastal Pelagic Species; NMFS does not provide concurrence for determinations of "no adverse effect."

- CWA Sections 404 and 401: The Corps prepared a Section 404(b)(1) Evaluation to demonstrate substantive compliance with Section 404 of the CWA and 40 CFR 230 (Appendix B of the Final EA). The Corps requested and received a Water Quality Certification under section 401 of the CWA from EPA.

- Coastal Zone Management Act: The Corps determined under the CZMA that the project will be consistent to the maximum extent practicable with the enforceable policies of the approved Washington Coastal Zone Management Program using the Clallam County Shoreline Master Plan (SMP) and submitted the determination to Ecology for review and received concurrence from Ecology

- National Historic Preservation Act: The Corps consulted with the Washington SHPO and Tribe for this undertaking. Based on the results of literature and records review, the continual erosion and replacement of the materials of which the spit is comprised, and the absence of known or recorded historic properties within the area of potential effect (APE), the Corps found that no historic properties would be affected by the undertaking.

- Clean Air Act: Maintenance dredging and disposal activities under this project will result in an increase in emissions that is clearly *de minimis* that would not constitute a measurable effect among the impacts of climate change and sea level rise and is therefore not considered a significant impact.

- Native American Tribal Treaty Rights: The Tribe has a reservation and federally adjudicated off-reservation hunting and gathering rights. Repair and maintenance activities would not change access to Usual and Accustomed fishing, shell fishing, or collecting areas, nor would the proposed action reduce the abundance of any harvested species.

- Migratory Bird Treaty Act and Executive Order 13186 Migratory Bird Habitat Protection: Maintenance dredging and disposal activities would not have any direct and deliberate negative effects to migratory birds. There would be no adverse effect on habitat and the project would only have minor and temporary effects to a small number of individual birds that may be present in the project area. No permit application for "take" of migratory birds is thus required. These birds are assumed to be habituated to the noise and activity of the Quillayute River estuary.

- Executive Order 13175 Consultation and Coordination with Indian Tribal Governments: The Corps has engaged in regular and meaningful consultation and collaboration with the federally recognized tribe in the project area, the Quileute Tribe. Letters were sent to the federally recognized Tribe to solicit their input prior to releasing the draft EA for public review.

- Executive Order 12898 Environmental Justice: Repair and maintenance of the Quillayute Spit is not expected to result in any disproportionate adverse environmental effects or impacts on the health of tribal members, or other minority/low-income populations.

- Executive Order 11990 Protection of Wetlands: Repairs and maintenance of the Quillayute Spit with supplemental beach nourishment at the toe of the spit would have no effect to any tidal wetlands, as dredging would maintain existing conditions and the placement sites are sufficiently distant so as not to influence any wetlands.

5. Determination:

a. Alternatives: The Corps considered three alternatives in the draft EA for the Quillayute Spit Repair and Maintenance Project: (1) no action, (2) repairs to the Quillayute Spit over 10 years (3) the preferred alternative of repairs to the Quillayute Spit with supplemental beach nourishment approximately every four years.

The Corps rejected Alternative 1 because it would not meet the project purpose and need. Alternative 2 meets the purpose and need; however, the incremental difference

between Alternatives 2 and 3 is so minimal that they can be considered equivalent in terms of environmental impacts. Alternative 3 would have the added benefit of reducing erosion at the toe of the spit so it is likely fewer and less frequent repairs would be required and in-water work window restrictions, timing restrictions, and other mitigation measures would avoid or minimize effects to the environment. Alternative 2 was not selected due to the opportunity to reduce the number and frequency of repairs to the Quillayute Spit. Alternative 3 meets the practicability, environmental acceptability, and engineering requirements consistency components of the Federal standard, and is the alternative that most fully implements the Federal standard.

b. Individual and Cumulative Environmental Effects: The proposed episodes of maintenance dredging and placement would cause a temporary effect to biological functions, but would maintain a Federally authorized structure. In consideration of past developments still in existence in the Quillayute River estuary, and the limited amount of anticipated future alterations within the estuary itself, the proposed repairs and maintenance of the Quillayute Spit with associated supplemental beach nourishment is not a significant addition to cumulative impacts to the Quillayute River. The short-term disruption of repairs and maintenance is outweighed by the projected long-term benefit of strengthening the Quillayute Spit and providing supplemental beach nourishment to help reinforce against erosive forces and avoiding further introduction of non-native rock material into the natural beach environment. The Corps therefore concludes that there would be no significant contribution to cumulative effects associated with the proposed repairs and maintenance.

c. Conditions in the Water Quality Certification: The Corps requested a water quality certification from EPA and obtained Certification prior to promulgating the FONSI. The Corps will comply with applicable conditions in the certification associated with the discharge of dredged material into the waters of the U.S. All construction work will be limited to September 24 through February 28 to avoid impacts to salmonids and forage fish at vulnerable life stages, and to avoid nesting or fledging marbled murrelet.

d. Conditions in the CZMA General Consistency Concurrence: The Corps determined that this project is consistent to the maximum extent practicable with the enforceable policies of the approved Washington coastal management program and obtained concurrence from Ecology prior to signing the FONSI.

7. Summary of Impacts and Compliance: Impacts of the work will be minor and temporary and will have a small spatial scale compared to the similar habitat area of the entire estuary and adjacent ocean beaches. It has been determined that this project will have no effect to species listed under the ESA. Repairs and maintenance during the approved in-water work windows will avoid and minimize impacts to fish and their prey. No in-water work will occur. Estimated disturbance to marine mammals does not rise to the level that requires an authorization under the Marine Mammal Protection Act. The Corps prepared a 404(b)(1) analysis and received a Water Quality Certification from EPA; this project complies with Sections 401 and 404 of the CWA. The Corps prepared a consistency determination under the CZMA and received concurrence from Ecology.

The project complies with the National Historic Preservation Act and the Corps is coordinating the work with the SHPO and the Tribe.

8. District Engineer's Findings and Conclusions: I have evaluated the repair and maintenance activity in light of the public interest factors prescribed in 33 CFR 336.1(c). The following factors were evaluated as considerations potentially impacting the quality of the human environment in the accompanying EA and coastal zone consistency evaluation: navigation and the Federal standard, water quality, coastal zone consistency, wetlands, endangered species, historic resources, scenic values, recreational values, fish and wildlife, and application of non-Federal land use policies. No additional impacts to state/regional/local land use classifications, determinations, and/or policies are anticipated as the project will maintain an authorized feature of a Federally authorized navigation channel that are already used for vessel transit and the protection of a marina. In accordance with 33 CFR 337.1(a)(14) and 325.3(c)(1), the following additional relevant factors were also considered: conservation, economics, shoreline erosion and accretion, safety, and property ownership.

The selected alternative represents the least costly alternative, constituting the discharge of dredged or fill material into waters of the U.S. in the least costly manner and at the least costly and most practicable location, is consistent with sound engineering practices, and meets the environmental standards established by the CWA Section 404(b)(1) evaluation process. Execution of the selected alternative, following considerations of all applicable evaluation factors, is in the public interest.

Furthermore, based on the attached EA, I have determined that the selected action will not have significant effects on the quality of the human environment and does not require preparation of an environmental impact statement.

03 SEP 18
Date

Mark A. Geraldi
Colonel, Corps of Engineers
District Commander

Final Environmental Assessment
and Clean Water Act Section 404 Public Interest Review
Quillayute Spit Repair and Maintenance 2018-2029
Clallam County, Washington

US Army Corps
of Engineers®
Seattle District

August 2018

Environmental Assessment and Public Interest Review

Quillayute Spit Repair and Maintenance 2018-2029

Responsible Agency: The responsible agency for this navigation project is the U.S. Army Corps of Engineers, Seattle District.

Abstract:

In accordance with the National Environmental Policy Act (NEPA), this Environmental Assessment (EA) evaluates the impacts of the proposed repair and maintenance of the Federal navigation structure from 2018 through 2029 at the mouth of the Quillayute River near La Push, Washington. In accordance with Section 404 of the Clean Water Act, this integrated document also evaluates whether it is in the public interest to undertake the Federal action. La Push is located on the northwest coast of the Olympic Peninsula, in Clallam County, Washington, and is the site of a U.S. Coast Guard Station, the Quileute Tribe, and their marina. High winds, ocean swells, and waves combined with high tides and storms damage the Quillayute Spit, which then requires repair so that the Federal navigation channel, USCG, and City of La Push remain protected. This document provides analysis of two action alternatives compared to taking no action. The Quillayute Spit would be maintained to original design dimensions. The proposed repair and maintenance activities along the Quillayute Spit are from Station 10+00 to 30+00. The total estimated volume of repair material would be up to approximately 80,000 tons of 10- to 20-ton armor stone, up to approximately 20,000 tons of core stone 1-3 feet in diameter, and up to 100,000 cubic yards of 3- to 12-inch diameter river rounded cobble for supplemental beach nourishment. Cobble material for supplemental beach nourishment would be placed on the ocean side of Quillayute Spit in Site B. The duration of the work would be approximately 60 days per episode if only repairs to the Quillayute Spit were conducted, with a 90-day duration approximately every four years if supplemental beach nourishment is placed. Disruptions may occur due to weather. The repair and maintenance interval is expected to be about every one to two years depending on damage as indicated by physical surveys and depending on availability of funds, among other factors. Repair and maintenance are planned to occur over a 10-year period beginning 2018 and ending in early 2029 to include the full duration of the fish work window that closes 28 February each year. The difference between the two action alternatives is whether only repairs to the Quillayute Spit should be performed, or if it is preferable to add supplemental beach nourishment of cobble material to reduce the erosion and undermining at the toe of the Quillayute Spit that eventually leads to damage to the structure.

Based on analysis in this EA, the USACE has determined the proposed project would not constitute a major Federal action significantly affecting the quality of the human environment and has prepared a Finding of No Significant Impact and Clean Water Act Section 404 Statement of Findings (FONSI). The Draft EA and Draft FONSI were available for a 30-day public review July 5, 2018 through August 4, 2018.

This document, “Quillayute Spit Repair and Maintenance 2018-2029,” is available online: http://www.nws.usace.army.mil/Missions/Environmental/Environmental-Documents/

August 2018

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1 Proposal for Federal Action

Under the Council on Environmental Quality regulations, 40 CFR § 1500.1(c) and 40 CFR § 1508.9(a)(1), implementing the National Environmental Policy Act (NEPA) of 1969 (as amended), the purpose of an Environmental Assessment (EA) is to "provide sufficient evidence and analysis for determining whether to prepare an environmental impact statement or a finding of no significant impact" on actions authorized, funded, or carried out by the Federal government, and to assist agency officials to make decisions that are based on understanding of "environmental consequences, and take actions that protect, restore, and enhance the environment." This EA evaluates potential impacts of repairs approximately every 1 – 2 years to the Quillayute Spit, with supplemental beach nourishment approximately every four years. Pending funding availability, the U.S. Army Corps of Engineers (USACE) would perform repairs to the spit periodically over a 10-year period, 2018-2029.

This document also integrates a review of factors underlying a determination of whether executing the project would be in the public interest, pursuant to Clean Water Act Section 404 and rules and regulations published as 33 CFR Part 335, "Operation and Maintenance of Army Corps of Engineers Civil Works Projects Involving the Discharge of Dredged or Fill Material into Waters of the U.S. or Ocean Waters"; 33 CFR Part 336, "Factors to be Considered in Evaluation of Army Corps of Engineers Dredging Projects Involving the Discharge of Dredged Material into Waters of the U.S. and Ocean Waters"; 33 CFR Part 337, "Practice and Procedure"; and 33 CFR Part 338, "Other Corps Activities Involving the Discharge of Dredged Material or Fill into Waters of the U.S."

The Quillayute Spit is located at the town of La Push in Clallam County, Washington. The channel and boat basin are protected from rough ocean conditions by the Quillayute Spit, which provides a harbor of refuge along the Washington Coast between Neah Bay and Grays Harbor. When storms and wave action damage the Quillayute Spit and overtopping or a breach occurs, it presents a safety hazard to vessels that moor in the marina or transit the navigation channel. Repairs and supplemental beach nourishment would occur between September 24 and February 28 of each scheduled repair and/or supplemental beach nourishment event.

1.1 Project Location

The town of La Push, Washington is wholly within the Quileute Tribe's reservation land on the northwest coast of the Olympic Peninsula in Clallam County, Washington (T28N, R15W, Section 28). The Quillayute River navigation channel provides access for U.S. Coast Guard (USCG) vessels to reach the Pacific Ocean for rescue missions and provides access to the Quileute Tribe's marina (Figure 1). The Quillayute River extends 5.6 river miles west from the confluence of the Bogachiel and Sol Duc Rivers, which drain a portion of the northwest slope of the Olympic Mountains in Clallam County, Washington. The Quillayute is joined by the Dickey River at Mora, flows a mile westward where an armored spit turns the river south, and flows another mile southward before entering the Pacific Ocean at La Push. The mouth of the river lies among rocky islands and sea stacks.

The area of analysis includes the Quillayute Spit surrounded by a quarter mile buffer. This area includes the marina and waterfront area of La Push and Rialto Beach, which is within the Olympic National Park.

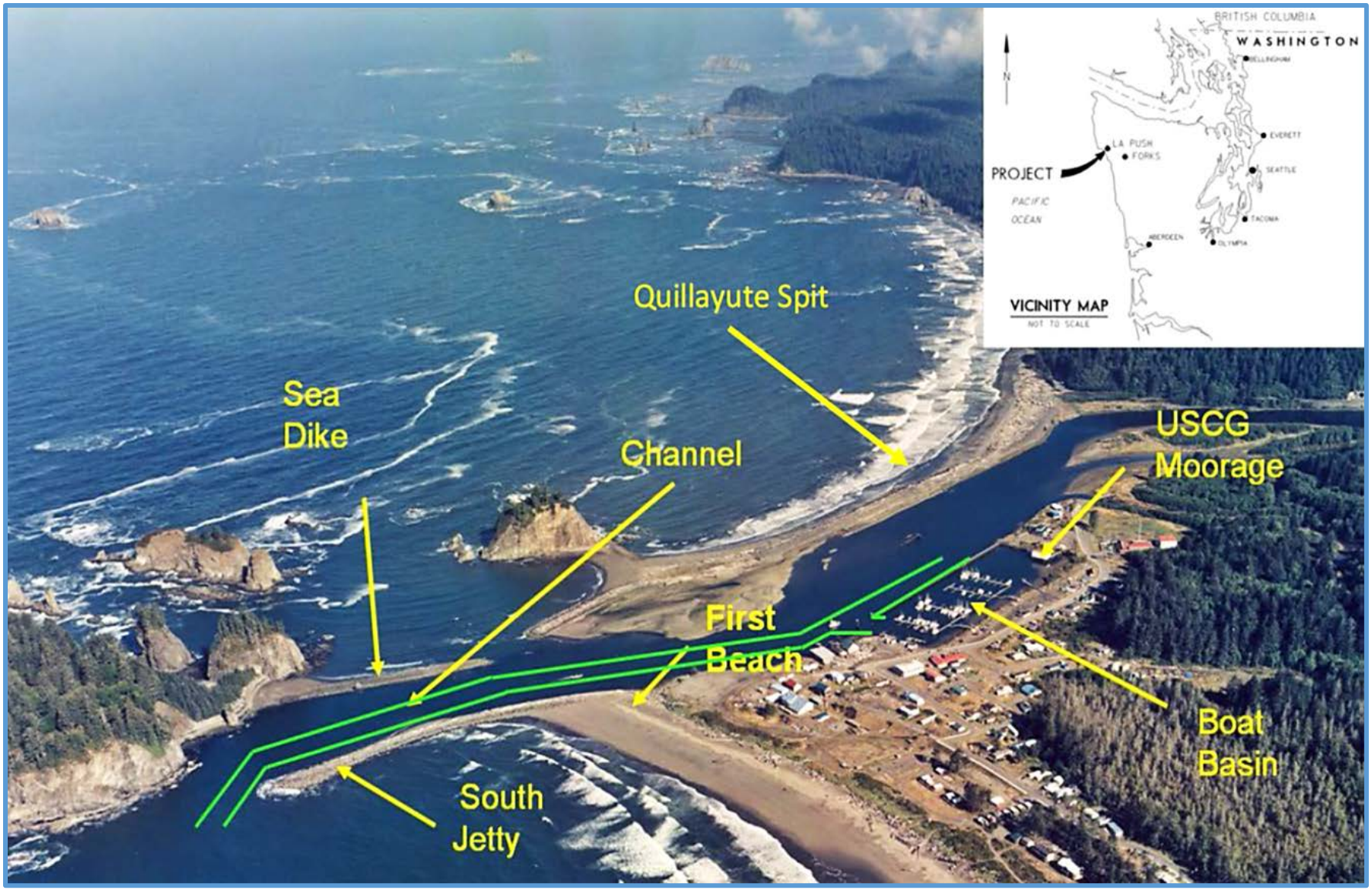

Figure 1. Federally authorized navigation features at La Push, Washington. Repairs and maintenance are proposed for the Quillayute Spit.

1.2 Authority

The Quillayute River Navigation Channel project and maintenance dredging by the Department of the Army was authorized by the Rivers and Harbors Act of 3 July 1930 (House Document 290, 71st Congress, 2nd session) and modified by the Rivers and Harbors Acts of 2 March 1945 (79th Congress, 1st Session) and 3 September 1954 (83rd Congress, 2nd Session). The Quillayute Spit is a component of the Federal navigation project.

Navigation Features

The navigation project was constructed in 1932; Federal maintenance began in 1949 and has continued to the present. The purpose of the continuing maintenance of the various project features is to protect the navigational channel and the infrastructure and property of the community of La Push. The current project features were developed in 1962. Authorized features of the Federal navigation project include the following (Figure 1):

1. A small boat basin 1,070 feet long, 313 feet wide, and -10 feet below mean lower low water (MLLW), with a 1,500-foot timber training wall (which directs river flow) constructed to elevation +16 feet MLLW plus an authorized overdepth of two feet along the west side to reduce shoaling inside the boat basin, and a timber seawall at the downstream end to protect against ocean waves;
2. A rubble mound jetty 1,400 feet long at the east side of the river mouth at +15 feet MLLW;
3. A rubble mound dike 1,050 feet long, +8 feet MLLW, along the west side of the river between Quillayute Spit and James Island;
4. A navigation channel varying from 75 to 275 feet wide and -10 feet MLLW with an entrance channel southeast of James Island and extending 3,500 feet upstream ending with a settling basin alongside the marina's training wall.
5. A revetment along the naturally formed Quillayute Spit, currently 4,100 feet long with an elevation of up to +27 feet MLLW at the crest.

The Quillayute Spit is believed to have formed by deposition of bedload material from the Quillayute River (Schuldt 1971). Originally, the Quillayute River probably discharged into the ocean near the present root of the spit and subsequently moved south to its present natural location; in 1876, this process was repeated when the mouth of the river (at its present location) was closed by a log jam during a flood, causing the river to breach the spit near its root and form a new outlet (Schuldt 1971). This outlet moved south along the spit through natural forces, eventually returning to its present location in 1911 (Schuldt 1971).

The need for measures to prevent a breach in the Quillayute Spit has been recognized as essential to the functionality of the Federal navigation project since the project was originally authorized in 1930. Maintenance and stabilization of the Quillayute Spit to serve the required protective purpose has progressed over the intervening years to the point that it is now an acknowledged Federal responsibility to design, operate, and maintain a revetment. Maintenance of the Quillayute Spit began in the 1950s during which time the USACE built bulkheads, cabled drift logs together into large woody debris structures and placed dredged material onto the ocean side of the spit. The USACE formally accepted maintenance responsibilities for the spit in 1957. Between 1963 and 1971, approximately 50,000 CY of dredged material

were placed annually on the ocean side of the spit. In 1971, 300,000 CY of dredged material were placed on the spit. As a part of the 1971 dredged material placement, a monitoring study was undertaken to determine the rate of erosion and direction of material movement along the spit. This study determined the annual erosion rate of approximately 100,000 CY per year along the spit with the loss of material divided between offshore losses and northward movement along the spit. The study also determined that a cobble berm would be the most effective method to slow the erosion rate on the spit and in 1976 approximately 50,000 CY of 10- to 1,000-ton quarry rock and cobbles and 50,000 CY of dredged material were placed along 1,700 ft of the spit up to an elevation of +27 ft MLLW. The design for the cobble berm included the placement 50,000 CY of beach nourishment material per year along the spit to account for sediment lost offshore and to the north. Erosion of the spit continued and in 1979 an additional 90,000 tons of rock was placed along the spit.

A 1980 Reconnaissance Report (USACE 1980) evaluated the performance of the rock and cobble berm and found it ineffective at slowing the erosion rates to the desired level and recommended a major rehabilitation of the upper spit with construction of a revetment made up of 5-10 ton armor stone up to an elevation of +27 feet MLLW. Before the major rehabilitation was performed the spit breached again in 1981 between Stations 28+80 and 32+80 and as a result the recommended major rehabilitation from the reconnaissance report was constructed to repair the spit from Stations 17+00 to 40+80 with 5-10 ton armor stone. The structure breached again in 1996 near the landward terminus (approximately Station 5+00) and an emergency breach closure was constructed between Stations 0+00 to 18+50 with 10-15 ton armor stone. All of these repairs assumed the ongoing placement of 50,000 CY per year of material dredged from the navigation channel and placed on the Quillayute Spit as beach nourishment.

Between 1981 and 2018 the USACE has dredged approximately 980,000 CY of material from the navigation channel and marina and placed it on the ocean-ward side of the spit as beach nourishment. The average annual placement volume has been about 26,000 CY per year, which is about half of the 50,000 CY per year identified in the project design as necessary to compensate for sediment loss from in front of the Quillayute Spit. As a result, based on sediment placed since 1981, there is a sediment deficit of approximately 870,000 CY on the ocean-ward side of the spit. This has resulted in the lowering of the beach in front of the Quillayute Spit, which increases erosion on the toe of the spit and side slope failures along the ocean-ward face of the spit. Annual inspections identified one such side slope failure during the summer of 2016 between Stations 17+00 to 20+00 that was repaired as an emergency repair in November 2016.

1.3 Purpose and Need

The purpose of the action is to restore and maintain the function of the Quillayute Spit protecting the Quillayute Federal Navigation project from direct exposure to ocean waves, which would impair the use of the federally authorized small boat basin and navigation channel as well as search and rescue use by the local Coast Guard station. Maintenance of the Quillayute Spit is needed because high river flows and ocean waves can damage the spit and lead to overtopping or a breach, which exposes the local Coast Guard station, La Push, and Quileute Reservation to extreme ocean conditions that pose a risk to lives and property. The USCG Quillayute Station is the only vessel response point between Neah Bay and Grays Harbor and is therefore an important location for timely response to endangered mariners nearby in the

Pacific Ocean. The marina at La Push offers a livelihood for approximately 325 Tribal members and 50 non-Tribal citizens including USCG personnel. The primary commercial activity is fishing and fish processing, which generates approximately $4,000,000 in annual income. The project features, including the Quillayute Spit, require maintenance to support the navigation activities of this small community.

2 Proposed Action and Alternatives

The USACE has formulated, evaluated, and screened alternatives for determining the action that maximizes net benefits and minimizes costs. Alternatives were developed in consideration of project area problems and opportunities as well as objectives and constraints. This chapter describes the range of alternatives selected for detailed analysis.

2.1 Alternative 1 – No Action

The No-Action Alternative is analyzed as the future without-project conditions for comparison with the action alternatives. Under this alternative, the USACE would not perform regular repairs to the Quillayute Spit but maintenance dredging and beach nourishment of the Spit with dredged material would continue. The Quillayute Spit would remain in its current configuration of existing repairs, damage, and previous haul road remnants. However, if the integrity of the revetment were threatened, then the USACE or other Federal or non-Federal agencies may act under emergency authorities to preserve the revetment system and, to the extent possible, maintain protection of life and property behind the revetment. Responding to damages during an emergency event, however, would be temporary, less certain of success, potentially more expensive, and could be less protective of environmental and cultural resources. A response would also take time to activate and execute, so there is a risk that it would not prevent revetment failure.

If the USACE takes no action to maintain the Quillayute Spit, accumulated damage could lead to overtopping or a breach. This could impair the use of the federally authorized small boat basin and navigation channel as well as search and rescue use by the local Coast Guard station. La Push harbor and the City of La Push would be exposed to ocean waves without an intact Quillayute Spit. This would pose a risk to the USCG's ability to carry out rescue missions, and to recreational boaters and commercial fishermen who transit the channel and access the marina. Allowing the Quillayute Spit to become damaged and eventually overtopped by waves or breached would have significant economic effects to the Quileute Tribe at the town of La Push, and the USCG has stated that they would likely have to close this station if safe passage is not possible. This alternative would not meet the project purpose and need, but is carried forward for evaluation purposes.

2.2 Alternative 2 –Repairs to the Quillayute Spit Over 10 Years

This alternative consists of permanent repairs to the entire structure between Stations 10+00 and 30+00 over a 10-year period (Figure 2). It is likely that repairs would be done in 200- to 300-foot sections focusing on the most damaged areas approximately every 1-2 years, depending on funding. This would require up to 10 individual construction events to complete the repair. It is unlikely that a full repair of the entire structure would be funded in a single year, but repairs to the greatest extent possible would be conducted in any given year depending on funding and ability to adhere to work windows.

In order to access the repair areas, a 25-foot wide haul road would be built on the existing armored crest of the Quillayute Spit out to the area being repaired. During the November 2016 emergency repair, a portion of this haul road was constructed on top of the spit from station 0+00 to station 20+00. As of January 2018, approximately 50% of this road remains usable with the remainder either covered by logs or over washed. Logs on top of the haul road would be moved to the riverward slope of the spit to allow vehicle access and prevent sudden movement of logs into the construction area by ocean waves, which presents a safety concern. Ocean waves routinely push logs up to the crest of the spit towards the riverward slope. No logs would be removed from the environment. The construction of a haul road on the crest would require up to 10,000 tons of 3- to 9-inch quarry spalls per repair.

After a haul road is cleared or built to the repair area, repairs to the spit would typically proceed from the farthest offshore location on the spit toward land so the road can be incorporated under the spit repair as core material instead of leaving an unarmored area on the crest (Figure 3). After repairs are complete (about every 1-2 years), logs would be placed in the way of the roadway to prevent vehicle access to the Quillayute Spit along the remaining portions of the haul road not incorporated into the approximately 200- to 300-foot repair area. Pedestrian access along the spit close to the parking lot may be easier for a short time after construction due to recent haul road creation, but access generally becomes more difficult farther along the length of the spit due to the accumulation of large wood, time since a haul road has been constructed, and the presence of large armor stone in the repaired areas, which would increase over time. Overtopping by waves and subsequent movement of large wood onto the spit would eventually be reduced as repairs are made with large armor stone; however, the nature of the repair materials (i.e., large armor stone that is difficult to walk over) would discourage access to the crest of the spit. Eventually (after about 10 years), the entire spit would be repaired with large armor stone and no haul road would remain. Beachgoers who want to walk along the entire length of the spit would likely prefer to walk down along the beach at low tide where there are fewer obstacles. Access along the length of the spit via the beach at low tide has been and will always be a potential route for pedestrians to the end of the spit.

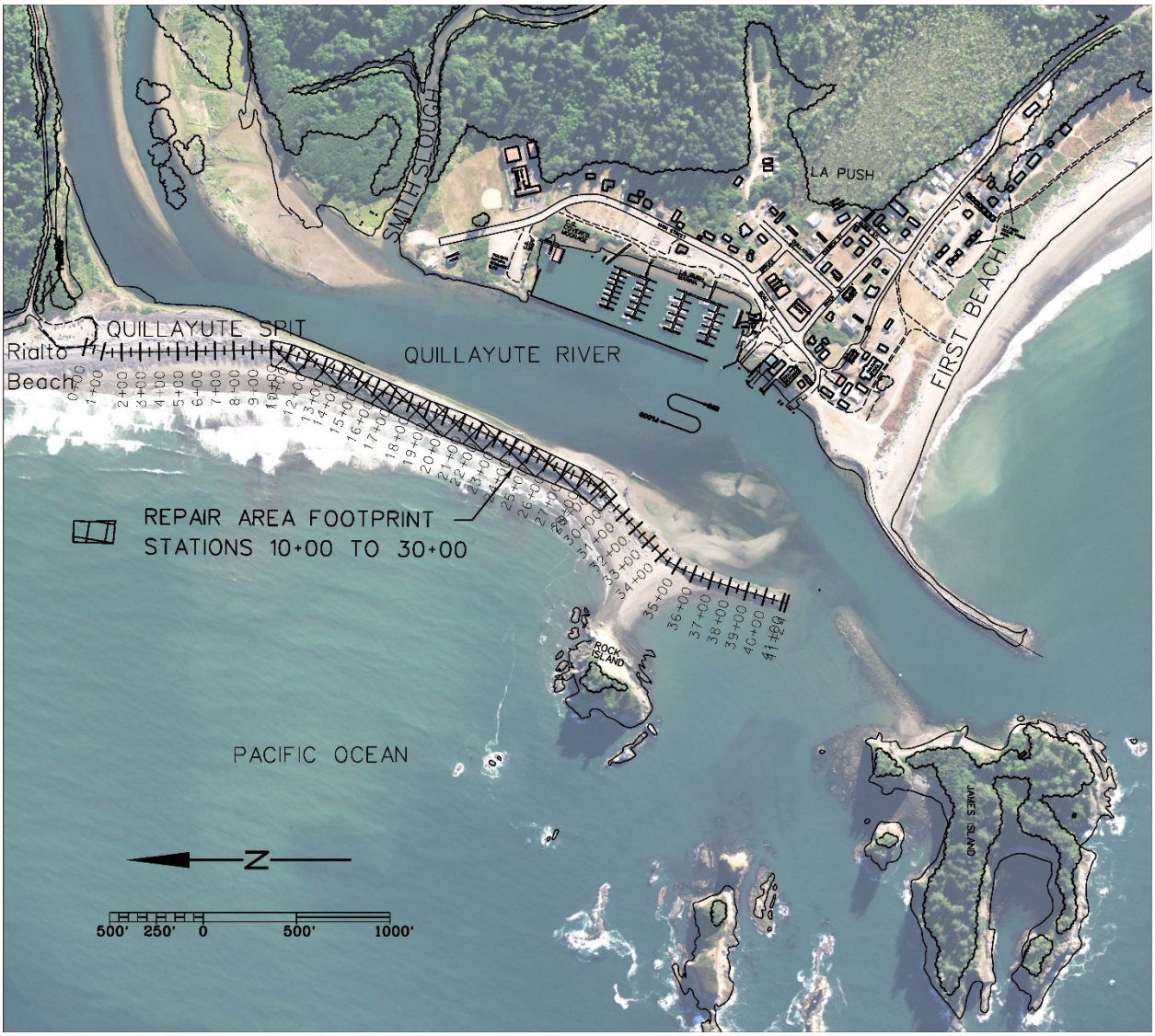

Figure 2. Repair area footprint of the Quillayute Spit from Station 10+00 to 30+00.

Figure 3. Examples of typical repair activities: working along the road (top), bringing out individual rocks due to their large size (middle), and positioning rocks by excavator (bottom).

Currently, the Quillayute Spit needs repairs between Stations 10+00 and 30+00 except for those repaired in 2016; these areas would be tied into future repairs. The majority of repairs are located on the ocean-ward side. Repairs to the spit as described in this Alternative would remain entirely within the 1974 design footprint (USACE 1974). This would be accomplished by reworking the existing armor stone on the structure to create a core layer and capping it with new 10- to 20-ton armor stone (Figure 3). Placing new core stone 1-3 feet in diameter may be necessary in areas without sufficient existing material. The project requires some existing armor stone to be reworked down to an elevation of +0 feet MLLW before being tied into existing stone, but it is likely much of the existing armor stone would only need to be reworked down to +5 feet MLLW due to the presence of existing stone that has sloughed down the slope of the spit from ocean wave action. Work will be done during low tides for repairs in the intertidal zone during the work window of September 24 through February 28 to avoid or minimize in-water work to the extent possible due to the dangers posed to workers and interference with construction by wave action. Work does not extend below +0 feet MLLW but some waves may incidentally enter the work zone. Figure 4 is a typical section of the Quillayute Spit showing the existing revetment, location of new armor stone, and typical dimensions. The total volume of repair material would be up to approximately 80,000 tons of 10- to 20-ton armor stone and up to approximately 20,000 tons of core stone 1-3 feet in diameter.

Several pieces of heavy machinery would be used throughout the repairs; a general description of the typical number and types of machinery for this type of repair follows but may be adjusted slightly based on repair needs and available equipment. Repair material would be obtained from a local quarry and may be stockpiled in the staging area in the Rialto Beach visitor parking lot just north of the Quillayute Spit where it could then be transported out to the repair area. Material for repairs would most likely be transported by truck and trailer to the staging area. Work would be done during low tides for the construction of the revetment in the intertidal zone to avoid or minimize in-water work to the extent possible; work does not extend below +0 feet MLLW but some waves may incidentally enter the work zone. A bulldozer would be used to grade the haul road. All machinery would stay within the repair area footprint.

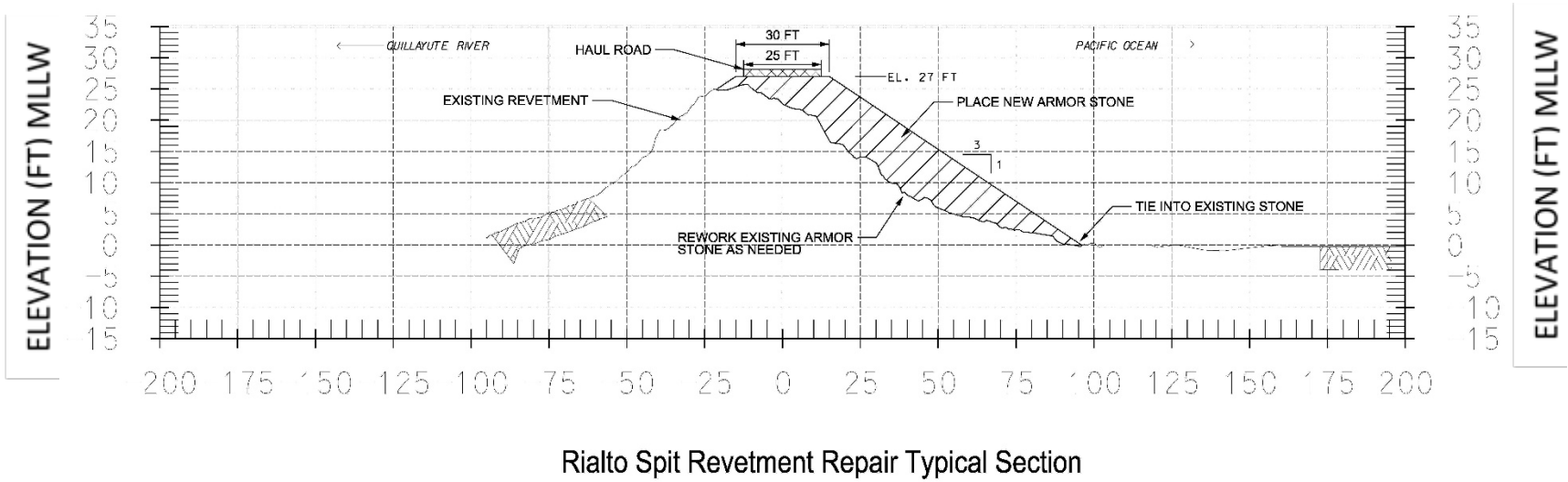

Figure 4. Typical section of the Quillayute Spit (also called Rialto Spit Revetment) repair. The drawing shows the existing revetment, repair areas where new stone will be placed, location of the temporary haul road, and where it ties into existing stone at the base relative to mean lower low water (MLLW).

2.3 Alternative 3 –Repairs Over 10 Years with Periodic Supplemental Beach Nourishment (Agency Preferred Alternative)

All repair actions for Alternative 3 would be identical to those described in Alternative 2, with one addition: supplemental beach nourishment with cobble material on the ocean-ward side of the Quillayute Spit. This addition is considered supplemental because dredged material is retained within the system by placement on the ocean side of the Quillayute Spit in Site B as beach nourishment to simulate the natural sediment transport processes that have been interrupted due to the armoring of Quillayute Spit and construction of jetties. The beneficial use of dredged materials reduces future maintenance needs of the navigation features that protect the waterfront developments; however, maintenance dredging of the Quillayute River navigation channel only provides an average annual placement volume of about 26,000 CY per year, which is about half of the 50,000 CY per year identified in the project design as necessary to compensate for sediment loss from the front of the Quillayute Spit. Therefore, there is a sediment deficit of approximately 870,000 CY on the ocean-ward side of the spit and wave action continues to damage areas along the entire Quillayute Spit, eroding material from the toe of the riprap. The ocean-ward side of the spit is steep and highly reflective armor stone, which contributes to erosion of the beach in front of the Quillayute Spit.

The USACE is proposing to place 3- to 12-inch rounded river cobbles along on the ocean-ward side of the spit at Site B to supplement the placement of dredged material that occurs during routine maintenance dredging. Site B is approximately 3,000 feet long and 75 feet wide, with an area of approximately 6 acres (Figure 5).

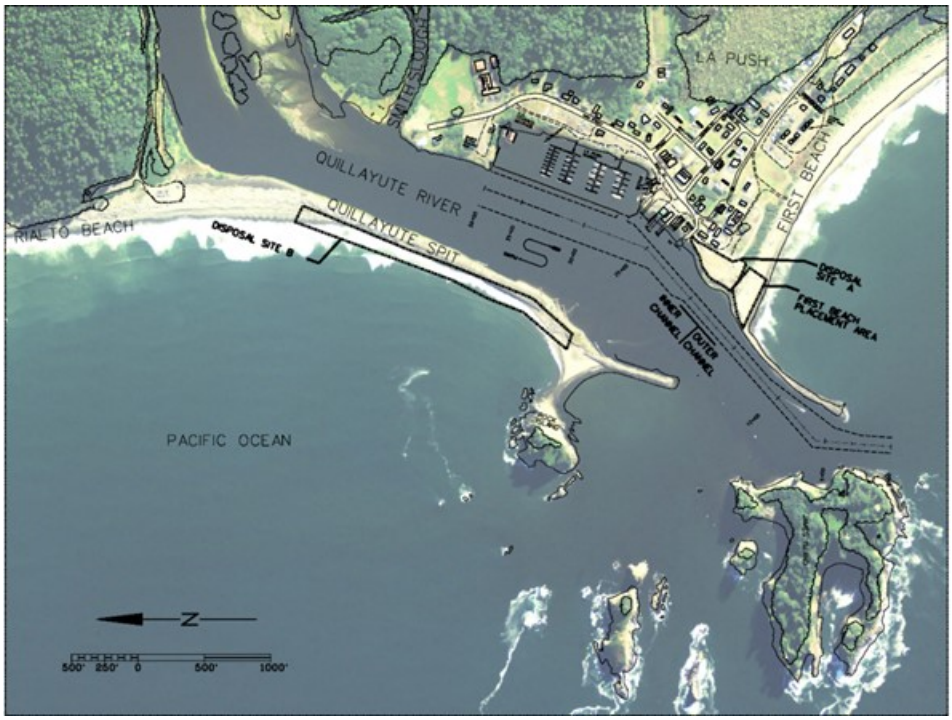

Figure 5. The proposed location for supplemental beach nourishment is at Site B along the length of the Quillayute Spit.

The USACE would expect to place up to 100,000 CY within Site B approximately every four years. The Quillayute Spit was initially composed entirely of bedload material from the Quillayute River which ranged from coarse sand to 12-inch diameter cobbles. Following the development of the Federal navigation project with modification and armoring of the spit, bedload material from the Quillayute River could no longer accrete on the Quillayute Spit. Beach nourishment became necessary because sediment from downdrift beaches also cannot reach the spit due to the lack of longshore transport of material and the location of offshore islands. The sediment supply to the Quillayute Spit is effectively cut off except for dredged material placed in Site B during navigation channel maintenance dredging. Material placed from maintenance dredging is primarily sands and gravels due to the hydraulic dredging method that transports limited cobble-size material. However, this finer material is quickly eroded away by the longshore current due to its small size. Cobbles would remain in the placement site for longer to prevent erosion.

By design, the cobbles would move within the footprint of Site B and their configuration would change shape seasonally. It is expected that the cobble would primarily move in the offshore direction as opposed to the longshore direction (i.e., along the beach) creating a steeper and coarser beach in front of the revetment. Waves must act at an angle to the beach in order to create a longshore current and longshore transport. Due to the orientation of the spit and the location of James and Rock Island, waves primarily come in parallel to the beach with only a small fraction of the wave energy acting in the longshore direction. As a result most of the erosion on the Quillayute Spit is due to material being lost in the offshore direction rather than being transported in the longshore direction as would occur in a more open coast situation. The longshore current generated by the waves along the spit is strong enough to move sand-sized particles (e.g., dredged material) but not strong enough to move a significant amount of cobble sized material. This is one of the main reasons it would be beneficial to place cobbles in Site B. The supplemental beach nourishment cobbles are expected to remain in place for approximately 3-5 years before moving offshore, in contrast to the dredged material that is eroded away by the longshore current soon after placement. Dredged material would still be placed in Site B during maintenance dredging of the navigation channel because it is beneficial to retain the sandy material in the environment.

Supplemental beach nourishment would act as a “dynamic revetment” in front of the Quillayute Spit. The dynamic revetment absorbs wave energy and prevents erosion in front of the spit that lowers the beach and allows undermining of the toe. This type of design is based on natural cobble berms. Cobble berms can absorb a large amount of wave energy, reduce wave runup, and reflect some waves to break and lower the energy of incoming waves rather than reflectingthem to the beach in front of the berm and contributing to erosion (Johnson et al. 2014). To avoid burying cobble under armor rock, cobble will only be placed over segments where armor has already been replaced/repaired or that are undamaged. In the event that armor repair is needed at a segment that has cobble, the cobble will be moved to the side before placing the armor rock. The cobble will then be placed back over the armor. Supplemental beach nourishment with cobbles was previously proposed in 1974 to prevent lowering of the beach in front of the spit that may lead to undermining and breaching (USACE 1974). The Quillayute Spit was initially formed by cobbles that were part of the Quillayute River bedload and later modified with large

armor stone. Cobble material can still be found on the riverward side of the spit and is more closely representative of historic material that would have been present around the Quillayute Spit.

Material for supplemental beach nourishment would be obtained from a river quarry so the rounded river cobbles would be of similar composition to bedload material in the Quillayute River. Trucks of cobble material would likely be emptied directly onto the repair section and shaped by other machinery (e.g., dozer or excavator). Cobbles of 3- to 12-inch diameter are similar to the bedload material of the Quillayute River, and can be seen on the riverward slope of the spit during low tide. After initial placement along Site B, the focus for each placement event would be those areas identified in need of nourishment. Technical input from USACE coastal engineers and analysis of the latest site conditions will factor into the initial supplemental beach nourishment and subsequent placement along Site B.

As with the armor placement under Alternative 2, supplemental beach nourishment would also be conducted between September 24 and February 28 of any year in which work is conducted. The in-water work window cannot be extended into the springtime due to the presence of sensitive fish species and the fisheries activities that increase traffic around the marina. While determining the level of risk to surf smelt from beginning supplemental beach nourishment at Site B on September 24, WDFW standards were consulted as a frame of reference; WDFW allows material placement during forage fish spawning as long as the placement is farther than 2,080 feet (one mile is 5,280 feet) from a documented spawning bed (B. Burkle, pers. comm. 2017), as is the case for this proposed action.

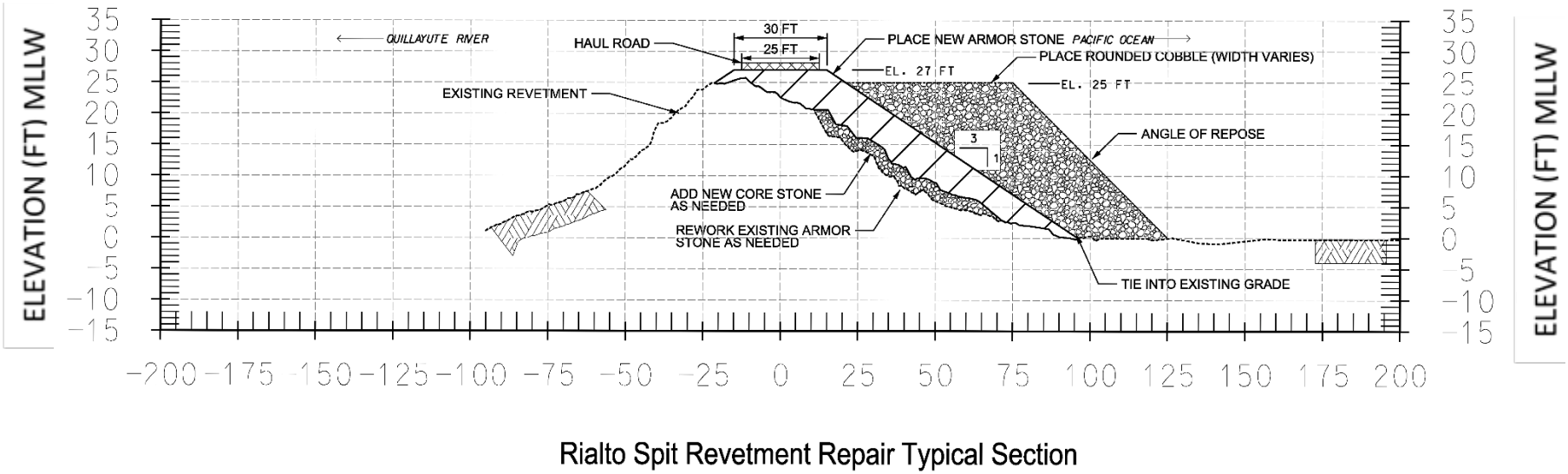

Figure 5. Typical cobble placement for supplemental beach nourishment along Quillayute Spit relative to mean lower low water (MLLW).

The NEPA requires each Federal action agency to identify the preferred alternative. Based on analysis of costs, feasibility, application of the Federal standard, and effects to environmental resources detailed in this document, Alternative 3 is the agency preferred alternative.

3 Affected Environment and Effects of the Alternatives

This section provides information on the existing conditions of the project area and issues relevant to the decision process for selecting the preferred alternative. Existing conditions are the physical, chemical, biological, and socioeconomic characteristics of the project area. Factors for selecting the preferred alternative include considering which of the alternatives would be the least costly, environmentally acceptable, consistent with engineering practices, and meets the purpose and need of the project.

3.1 Hydraulics and Geomorphology

The Quillayute River drainage basin occupies the northwest corner of the Olympic Mountain Range and experiences 120-140 inches of rainfall per year. The basin is composed of old sandstones and conglomerates, and a broad upland surface that is underlain by Pleistocene marine sands, silts, and gravels, and mantled by glacial outwash. Because of these sources of material, as well as a history of timber harvest in the central basin, the river transports a moderate bedload of variously sized sediment depending on seasonal discharges. A single storm event of higher river stages can deliver significant quantities of gravel and sand to the estuary. The Quillayute River enters the Pacific Ocean at La Push among rocky islands and sea stacks. Low tide exposes mixed sand and gravel bars in the estuary. The coastal beach zone on the ocean side of Quillayute jetty consists of cobble, gravel, and sand distributed into strata along the beach; large drift logs dominate the beach within the storm tide zone. Large ocean swells overtop the jetty during some winter storms.

Many of the natural features of the estuary have been stabilized to protect developments at La Push from damage by high river flows and ocean waves. The intertidal estuarine areas at the mouth of the Quillayute River have a mostly diked or riprapped shoreline, including the stabilized Quillayute Spit, the sea dike at James Island, and the South Jetty. The result is a channelized river with a large amount of non-native riprap in the aquatic ecosystem, which prevents some of the natural processes at this location. From aerial photographs taken after establishment of the navigation channel, it is evident that there has been a gradual evolution of the channel planform upstream of the navigation channel and it is reasonable to assume that a portion of this change is attributable to the existence of the spit and navigation channel. The development of a large meander bend upstream of the confluence of the Dickey River with the Quileute River is one of the indicators that the lengthening of the river and associated changes in channel gradient have affected the baseline upstream hydrodynamics. Stabilization of the Quillayute Spit has interrupted the sediment transport process in the littoral drift cell that feeds Rialto Beach to the north causing substantial erosion over the past two decades. Waves reflect off the Quillayute Spit and contribute to erosion and lowering of the beach in front of the spit.

Following the development of the Federal navigation project with modification and armoring of the spit, supplemental beach nourishment became necessary because sediment from downdrift beaches cannot reach the spit due to the lack of longshore transport of material and the location of the islands. The

sediment supply to the Quillayute Spit is effectively cut off except for dredged material placed in Site B during navigation channel maintenance dredging. Material placed from maintenance dredging is primarily sands and gravels due to the hydraulic dredging method that is unable to transport cobble size material. However, this material is quickly eroded away by the longshore current due to its small size.

Sediment is retained within the system by placement of dredged material on the ocean side of the Quillayute Spit in Site B to simulate the natural sediment transport processes that have been interrupted due to the armoring of Quillayute Spit and construction of jetties. The beneficial use of dredged materials reduces future maintenance needs of the navigation features that protect the waterfront developments; however, maintenance dredging of the Quillayute River navigation channel only provides an average annual placement volume of about 26,000 CY per year, which is about half of the 50,000 CY per year identified in the project design as necessary to compensate for sediment loss from the front of the Quillayute Spit. Therefore, there is a sediment deficit of approximately 870,000 CY on the ocean-ward side of the spit and wave action continues to damage areas along the entire Quillayute Spit, eroding material from the toe of the riprap. The ocean-ward side of the spit is steep and highly reflective armor stone, which contributes to erosion of the beach in front of the Quillayute Spit.

3.1.1 Alternative 1 – No-Action

Under the No-Action alternative, the condition of the Quillayute Spit would continue to degrade and would eventually lead to overtopping by waves and breaching, and emergency repairs may be necessary. Emergency repairs would maintain the structure as it exists, in which waves reflect onto the beach in front of the spit and undermine the toe, which damages the structure. A breach would allow waves and sediment to enter the navigation channel behind the spit, and shoaling of marine sediment may increase in the navigation channel. The current patterns in the channel would change and become more difficult to navigate among strong ocean waves. Continued shoaling would result in less water depth throughout the channel and, along with hazardous conditions, could render the channel between the harbor and the ocean no longer navigable. Hydraulics and geomorphology would remain the same as present conditions around the spit.

3.1.2 Alternative 2 –Repairs to the Quillayute Spit Over 10 Years

This alternative results in repairs to the Quillayute Spit from Station 10+00 to 30+00. Repairs to the Quillayute Spit would maintain the modified estuary as it is to provide safe and reliable access through the navigation channel to the marina. The hard armoring of the Quillayute Spit reflects wave energy toward the ocean. Due to insufficient beach nourishment from naturally occurring sediment and dredged material, the beach in front of the Quillayute Spit would continue to erode and undermine the spit, which increases the chance of damages to the spit that would require repairs in the future. Hydraulics and geomorphology would remain the same as present conditions around the spit.

3.1.3 Alternative 3 –Repairs Over 10 Years with Periodic Supplemental Beach Nourishment

Alternative 3 would allow for supplemental beach nourishment of up to 100,000 CY of 3- to 12-inch cobbles at Site B approximately every four years in addition to repairs to the Quillayute Spit described in Alternative 2. Site B is not part of the 1974 Quillayute Spit design, but is previously disturbed and is currently used as a beach nourishment site. Supplemental beach nourishment at Site B would help to protect the Quillayute Spit from erosion at the toe of the riprap, and would retain sediment to maintain

the beach environment at the base of the Quillayute Spit compared to the No-Action Alternative and Alternative 2. The effect of Alternative 3 to hydraulics and geomorphology of the estuary and navigation features would be to absorb offshore wave energy at the spit rather than reflect it.

In years that cobble is placed, this supplemental beach nourishment would act as a "dynamic revetment" in front of the Quillayute Spit to absorb wave energy and prevent erosion in front of the spit that lowers the beach and allows undermining of the toe. This type of design is based on natural cobble berms that can absorb a large amount of wave energy, reduce wave runup, or reflect waves into incoming waves to break and lower the energy of incoming waves rather than reflecting it to the beach in front of the berm and contributing to erosion (Johnson et al. 2014).

By design, the cobble configuration would change shape seasonally and move within the footprint of Site B by the action of offshore waves. It is expected that the cobble would primarily move in the offshore direction with some movement in the longshore direction to the north (i.e., along the beach). Waves must act at an angle to the beach in order to create a longshore current and longshore transport. Due to the orientation of the spit and the location of James and Rock Island, waves primarily come in parallel to the beach with only a small fraction of the wave energy acting in the longshore direction. As a result, most of the erosion on the Quillayute Spit is due to material being lost in the offshore direction rather than being transported in the longshore direction as would occur in a more open coast situation. The longshore current generated by the waves along the spit is strong enough to move sand size particles (e.g., dredged material) but not strong enough to move a substantial amount of cobble-sized material. This is one of the main reasons it would be beneficial to place cobbles in Site B. The supplemental beach nourishment cobbles are expected to remain in place for approximately 3-5 years before moving offshore, in contrast to the dredged material that is eroded away by the longshore current soon after placement.

Dredged material from maintenance dredging would still be placed in Site B during maintenance dredging of the navigation channel. It is beneficial to retain the dredged material in the environment for habitat due to the overall reduced sediment input. Supplemental beach nourishment with cobbles would help absorb more wave energy to reduce erosion at the toe of the spit than dredged material placement can along the Quillayute Spit. Placement and movement of cobbles would not prevent the longshore current from moving dredged material along the coast to nourish beaches and maintain surf smelt spawning habitat. This alternative alters the hydraulics and geomorphology of the area immediately in front of the Quillayute Spit, but would not have a measurable change or significant effects to hydraulics or geomorphology of the surrounding area, which includes Rialto Beach and the Olympic National Park, or the overall Pacific Coast.

3.2 Sediments

Sediments at the river mouth are smooth gravel and cobble decreasing in size to sand near the shore. The grain size distribution in the boat basin of the marina is primarily sandy silt while the channel is nearly all sand with some gravel. The outer channel material that exits past the end of the Quillayute Spit is mostly gravel and cobbles as large as 6 inches in diameter. As part of maintenance dredging and disposal, the sediment of the boat basin and navigation channel is characterized. The latest characterization occurred in 2017 and included a grain size analysis that found predominantly (79%) gravel (> 0.2 cm in diameter)

with some sand (23%) and other sediment fractions in the outer channel of the Quillayute River (DMMP 2018).

3.2.1 Alternative 1 – No-Action

The No-Action Alternative would not alter the sediments in the nearshore zone of Quillayute Spit. The sediment coming down the Quillayute River would continue to be routed through the navigation channel, be removed with maintenance dredging, and dredged material would be placed in Site B or on First Beach to the south of the mouth of the river. Emergency repairs would continue to replace or add armor stone to the Quillayute Spit, some of which may slough down into the nearshore zone; this material is already present in the nearshore zone. The No-Action alternative would perpetuate this condition.

3.2.2 Alternative 2 –Repairs to the Quillayute Spit Over 10 Years

This alternative would repair the Quillayute Spit. In contrast to emergency repairs, these longer-lasting repairs would limit the amount of additional armor stone that may slough into the nearshore zone. Repairs are limited to the footprint of the spit and would not directly affect the sediment on the beach in front of the spit. However, waves would continue to reflect off of the Quillayute Spit onto the beach, which erodes the sediment in the offshore direction. Placement of dredged material in Site B would continue under Alternative 2, and would continue to erode away from wave action in the longshore direction. Sediment would remain the same as present conditions around the spit under Alternative 2.

3.2.3 Alternative 3 –Repairs Over 10 Years with Periodic Beach Nourishment

The effects of this alternative to sediments in the Quillayute River estuary and beach placement sites would be to reduce the erosion at the toe of the spit, which would prevent damage to the spit where armor stone sloughs down into the nearshore zone. Coarse-grained material plays a critical role in protecting the spit and sea dike structures from wave damage and erosion (Schuldt 1974). In years that cobble is placed, the Supplemental beach nourishment with 3- to 12-inch diameter rounded river cobbles would be similar to the cobble composition that is found on the riverward side of the spit, and 100,000 CY of this material approximately every four years would represent a small proportion of the total amount of sediment moved by tides and waves in this dynamic area. This alternative would not create a measurable or significant change in the sediment composition of the Quillayute River estuary or local beaches.

Allan and Hart (2009) evaluated the movement of a dynamic cobble revetment at Cape Lookout State Park in Oregon. The dynamic revetment is similar in size and material composition (2-8” cobbles) to the proposed dynamic revetment and is exposed to a similar wave climate. Monitoring of the cobble revetment showed an average longshore transport distance of 100-500 feet per year with a maximum of 1,000 feet per year. It is expected that the material placed for the dynamic revetment at Site B would exhibit similar transport characteristics with material slowly migrating to the north over time providing sediment to the beach north of the spit. Cobble material placed in Site B is not expected to move south along the spit due a lack of wave energy from sheltering effects of the offshore islands.

They also found that dynamic cobble berms generally reach a stable slope of around 1 on 5. Monitoring of the cobble revetment showed cross shore movement of cobble up to 100 feet due to wave action.

Based on these results and the elevation of the proposed dynamic revetment it is expected that the material remain within 300-400 feet of the toe of the cobble placement.

In general, the existing substrate in this area is a mix of sand, gravel, and cobbles which changes composition in response to wave action through the year. The beach is coarser with more exposed cobbles and gravels during the winter time, and sandier and flatter due to onshore sediment movement by smaller waves in the summer time. Historically, sand, gravel, and cobbles have been placed seaward of the revetment in the proposed dynamic revetment location during dredging operations and the material has spread out longshore and cross-shore with no visible change in substrate composition.

3.3 Water Quality

The Washington State Department of Ecology (Ecology) classified the fresh/estuarine waters of the Quillayute River and the coastal marine waters as extraordinary (WAC 173-201A-210), suitable for primary contact recreational uses, and suitable for shellfish harvest, wildlife habitat, harvesting, commerce and navigation, boating, and aesthetics. The 303(d) list contains Washington waters that are impaired or threatened. Impairment categories range from Category 1 (meets tested standards for clean waters) to Category 5 (polluted waters that require a water improvement project; Ecology 2018a). No part of the 5.6-mile Quillayute River is on the 303(d) list for any water quality parameters; however, First Beach (to the south of the Quillayute Spit) is listed as Category 2 (waters of concern) for bacteria and the Dickey River, a tributary to the Quillayute, is listed as Category 5 for temperature (Ecology 2018a). Just over one mile north of the project area, Ellen Creek is listed as Category 2 for pH (Ecology 2018a). The project area is not on the 303(d) list for dissolved oxygen (DO) because it does not reach levels sufficiently low enough to cause aquatic organisms harm (below 4 mg/L); flushing from tidal currents keeps the water oxygenated. The frequent flushing of tidewater from the Pacific Ocean controls water temperatures in the project area. Aside from logging and a road network in the sub-basins of the upper watershed tributaries to the Quillayute that can cause increased temperature and sedimentation, there is little other disturbance that might affect water quality. There is no heavy industrialization within the community nor upstream of the project site.

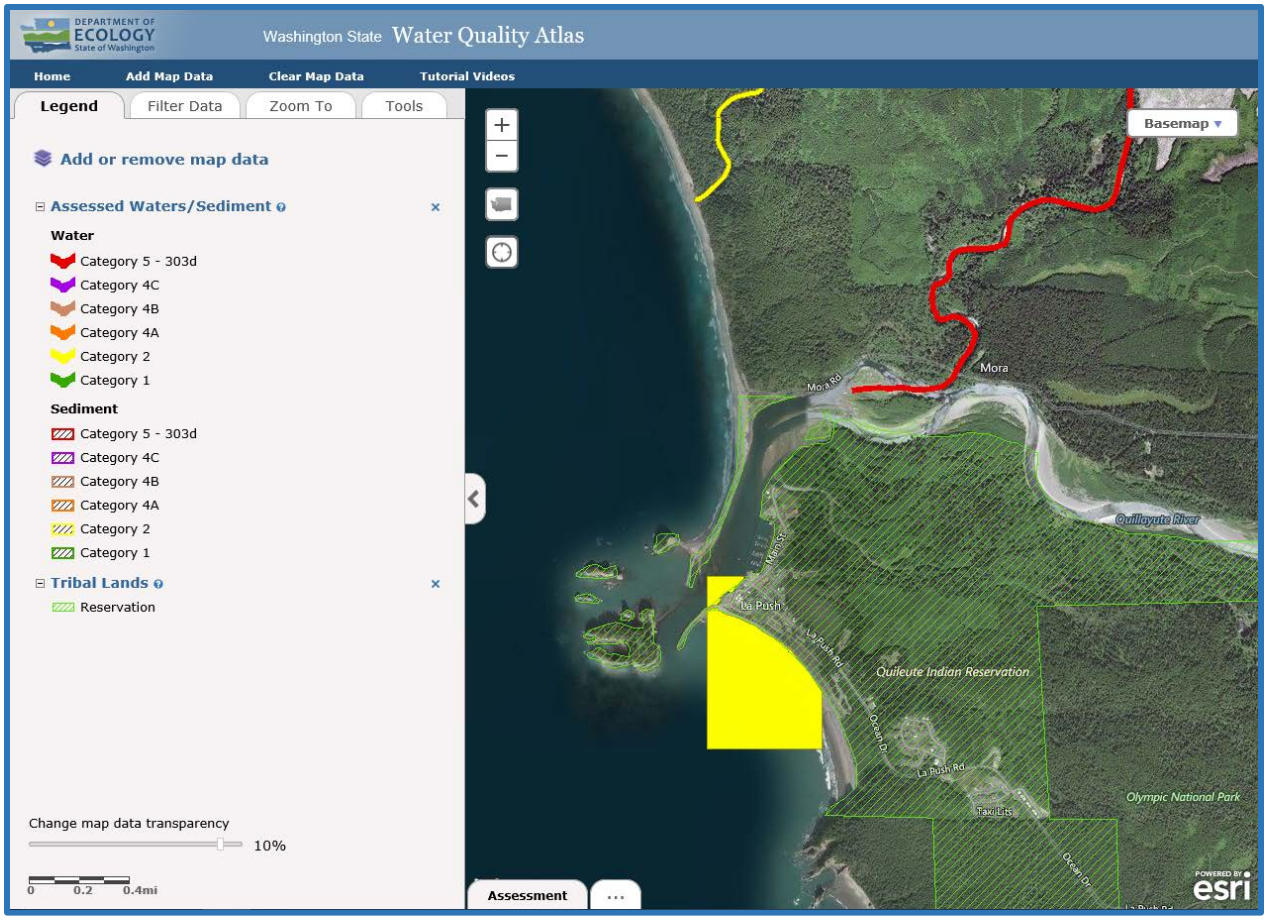

Figure 6. Water Quality Assessment Map for the Quillayute River and coastal waters. Impairment categories range from Category 1 (meets tested standards for clean waters) to Category 5 (polluted waters that require a water improvement project; Ecology 2018a).

3.3.1 Alternative 1 – No-Action

This alternative would allow storm damage and erosion to accumulate so that eventually waves could overtop the revetment and a breach could form. Repairs would be limited to emergency actions, which are typically conducted in the tidal zone during low tide to avoid or minimize in-water work to the extent possible; work does not extend below +0 ft MLLW but some waves may incidentally enter the work zone due to the dynamic nature of the area. A small amount of turbidity may be generated after repair areas are inundated by a high tide, but it would be minor due to tidal exchange. The No-Action Alternative would have a discountable effect to water quality in the Quillayute estuary and along the Quillayute Spit.

3.3.2 Alternative 2 –Repairs to the Quillayute Spit Over 10 Years

Temporary water quality impacts may be associated with this project. Rehabilitation of the revetment will occur within the tidal zone, with rock placement conducted below MLLW during low tide. Rocks would be brought in along the crest of the spit then placed individually within the footprint of the structure. No release of contaminants is expected due to the size and clean nature of the substrate and construction materials. Temporary, minor, localized turbidity impacts could occur during construction due to the rock placement areas that are inundated by tides twice per day. These water quality

characteristics are of low concern for the aquatic biota in the project area because most mobile organisms that could be affected by turbidity would be able to avoid or escape the immediate area of turbidity without measurable harm. These effects would occur for a short time during high tide for the duration of the construction and would be quickly diluted by tidal action and waves. Compared to the vast amount of sediment moved by ocean waves and tides in this dynamic area, the amount of turbidity generated during tidal inundation of the construction area is expected to be discountable. Given the amount of tidal exchange in the project area and low likelihood for substantial amounts of suspended sediments to be generated, it is unlikely that water quality would have measurable changes due to rock placement and would therefore not cause harm to aquatic organisms.

3.3.3 Alternative 3 –Repairs Over 10 Years with Periodic Supplemental Beach Nourishment

In years that cobble is placed the effects of supplemental beach nourishment to water quality parameters in the Quillayute River and beach placement sites would be the same as for Alternative 2 due to the fairly large (3- to 12-inch diameter) cobble size, typically clean nature of rounded river cobbles, and similar placement technique. Temporary and limited amounts of turbidity when the repair area is inundated by high tide are not expected to have a measurable effect to aquatic organisms due to the small repair area relative to available habitat, tidal action and waves, and limited duration.

3.4 Vegetation

The coastal beach zone is a high-energy area consisting of the jetties, dike, and rocky habitat which are mostly devoid of vegetation, but may have some attached micro- and macroalgae. According to the Washington Department of Natural Resources, subtidal kelp forests with chocolate brown kelps and red algae occur offshore from the project area and around James Island (WDNR 2014). Rockweeds and algae grow on the large rock of the South Jetty during spring, summer, and fall months. The beach grass/scrub zone is a narrow zone typically above the line of driftwood; an area of dunegrass has been documented along First Beach. This area primarily hosts dunegrass (*Leymus mollis*), yarrow (*Achillea millefolium*), English plantain (*Plantago lanceolata*), tansy ragwort (*Senecio jacobaea*), and oxeye daisy (*Leucanthemum vulgare*). Other species present include goldenrod (*Solidago* spp.), vetch (*Vicia* spp.), hawksbeard (*Crepis* spp.), and everlasting (*Anaphalis margaritacea*). The scrub zone is thought to be an older successional zone on accreting sandy areas. Common plants there are twinberry (*Lonicera involucrata*), salal (*Gaultheria shallon*), Sitka willow (*Salix sitchensis*), and red alder (*Alnus rubra*).

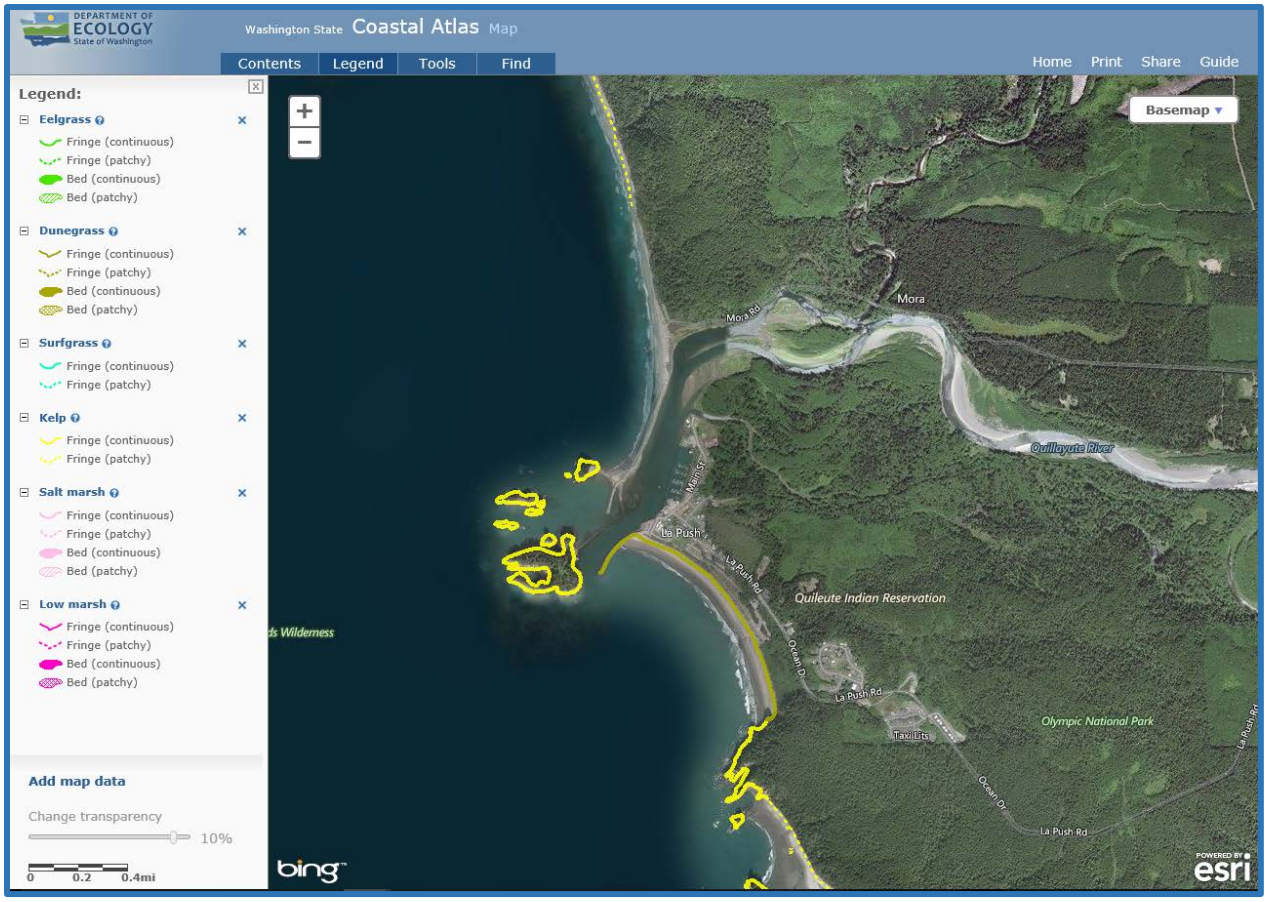

Figure 7. Vegetation map around the Quillayute River estuary from the Washington State Coastal Atlas Map (Ecology 2018b).

The intertidal estuarine areas at the mouth of the Quillayute River have a mostly diked or riprapped shoreline. At low tide, mixed sand and gravel bars become exposed. Further upstream past the marina, sparsely vegetated sand and gravel bars exist in the low water areas and the riverbanks become steep above the mean water line. A few patches of brackish marsh have been observed with typical salt-tolerant plant species. The vegetation on the riverbanks is almost exclusively freshwater species. Emergent marshes occur on intertidal shores of unconsolidated substrate that are colonized by erect, rooted, herbaceous plants. Perennial plants dominate most of the growing season in most years. Emergent marshes tend to form in the mixing region where tidal energy generates flood tide periods with high settling of suspended sediments. The lowest water vegetation is comprised mainly of hairgrass (*Deschampsia caespitosa*), pea (*Lathyrus* spp.), Douglas aster (*Aster subspicatus*), and curly dock (*Rumex crispus*). The high water vegetation zone is comprised principally of common rush (*Juncus effusus*), silverweed (*Argentina egedii*), sedge (*Carex* spp.), and redtop (*Agrostis gigantea*).

The sand flats primarily host forbs and graminoids. The most common species in this area are dune grass, reed canary grass (*Phalaris arundinacea*), silverweed, and thistle (*Cirsium* spp.). Other less abundant species include English plantain and yarrow, while woody species are absent. An area of sedge wet meadow lies just upstream from the project area in the last bend of the river. This is a seasonally saturated freshwater wetland dominated by sedge (*Carex* spp.) and common rush. Woody species are absent.

Both maritime forest and broadleaf mixed forest stand near the project area. The maritime forest is adjacent to local wetlands and the river floodplain, and is comprised of Sitka spruce (*Picea sitchensis*) and red alder with occasional patches of sedges and willows. The broadleaf mixed forest community is dominated by red alder groves with some Sitka spruce, ash (*Fraxinus* spp.), and hemlock (*Tsuga heterophylla*). The understory is dominated by salmonberry (*Rubus spectabilis*), buttercups (*Ranunculus* spp.), and piggyback (*Tolmiea menziesii*), with small invasions of typical non-native plants.

3.4.1 Alternative 1 – No-Action

The No-Action Alternative would have a minimal effect to vegetation in the project area and no effect to tidal wetlands. Emergency repairs are limited to the footprint of the spit and would not enter wetlands or vegetated areas. Repair areas would consist of displaced armor stone that would have already damaged any micro- or macroalgae present on the rocky armoring of the spit and actions to repair the spit would disrupt these plants within the repair area. While a breach in the Quillayute Spit revetment would allow wave energy into the navigation channel that may eventually disrupt plant communities behind the spit or create shallower aquatic habitats within the estuary, the processes that allow tidal wetlands to develop are substantially degraded making low likelihood for wetland creation to occur in the absence of the Quillayute Spit. The vegetation within the damaged area of the Quillayute Spit would likely also be disrupted during repairs, but this would constitute a minimal portion of the existing plant community on the Quillayute Spit and would not be significant to the overall plant population.

3.4.2 Alternative 2 –Repairs to the Quillayute Spit Over 10 Years

Construction would take place entirely within the footprint of the existing Quillayute Spit, where little to no terrestrial vegetation exists. Rocks would be brought in along the crest of the spit then placed individually within the footprint of the structure. Some micro- and macroalgae that is present on rocks of the revetment or substrate may be covered, damaged, or removed during construction and placement of boulders; however, this is a small portion of the overall large amount of rocky habitat available in the area. No other vegetation would experience effects of the revetment repair and maintenance operations. Repairs will most likely take place along 200- to 300-foot segments of the entire 1000-foot repair area at a time along the spit approximately every 1-2 years. This represents a small portion of the overall available rocky habitat and would not result in a detectable effect to the micro- or macroalgae populations in the area.

3.4.3 Alternative 3 –Repairs Over 10 Years with Periodic Supplemental Beach Nourishment

The effects to vegetation from the revetment repair would be the same as for Alternative 2. The coastal zone is a high-energy environment and aquatic plants such as eelgrass are not present in the intertidal zone. Some micro- and macroalgae that is present on rocks of the revetment may be covered or damaged during years that there is supplemental beach nourishment, but the cobbles placed are expected to integrate into the existing rocky intertidal habitat present and are not expected to result in a detectable effect to the vegetation in the area.

3.5 Fish

The Quileute Tribe Fisheries Department conducted an environmental resources survey of the Quillayute River estuary in 1979 and 1980 to assist the USACE in scheduling dredging and other maintenance

activities for impact avoidance and minimization based on timing (Chitwood 1981). Information on fish resources from this study is incorporated below as well as information from more recent sources.

Forage Fish

Forage fish are a critical prey item for many fish and wildlife species. Two distinct sizes of surf smelt (*Hypomesus pretiosus*) have been found in the estuary (60-100 mm and 120-250 mm), possibly representing one-year-old and two to three-year-old age classes, respectively. The majority of the smelt were caught in the lower and mid estuary. The surf smelt are known to spawn on Rialto Beach north of the Quillayute Spit May through September with the peak in July and August (Fradkin 2001). Other forage fish captured during sampling include Pacific herring (*Clupea pallasii*), sand lance (*Ammodytes hexapterus*), and anchovy (*Engraulis mordax*; Chitwood 1981). No Pacific smelt were captured during the Tribe's 1979-80 study and none have been reported since that time. According to WDFW Forage Fish Spawning Data (Figure 8), there are no recorded detections of sand lance or Pacific herring spawning along this reach of the Washington Coast (WDFW 2014).

Timing, location, and beach substrate suitability are the primary parameters of concern for effects of material placement on beach spawning forage fish. Three studies of surf smelt spawning on the Washington Coast, representing 7 sampling years between 1997 and 2014, have included sample sites at or near the proposed placement sites. Fradkin (2001) found greater spawning density at the north end of the Rialto Beach study area, which was approximately 0.5-mile north of the beach placement sites on Quillayute Spit. Timing of spawning in this study was similar to previous observations of the spawning occurring March to September with a peak in July and August. Only one year of the study observed spawning in September, and no winter spawning at this area during a year of relatively abundant spawning activity. ICF (2010) only detected eggs in the gravel in late July and early August even though sampling continued into November, which coincides with previous evidence that peak spawning is in July and August. The location of eggs was north of the end of Site B. This study found that grain size distribution in the study area, which extended along the Quillayute Spit from approximately Sta. 27+00 on the south end to approximately Sta. 10+00 on the north end, is more favorable for surf smelt spawning to the north of Site B. Additionally, the beach profiles transition from unfavorable in placement Site B to favorable for surf smelt just north of the end of Site B. WDFW has conducted a two year forage fish study with sample sites along the entire Washington Coast (Langness et al. 2015). Samples were taken to the north on Rialto Beach, within the project area on the Quillayute Spit, and to the South across the mouth of the Quillayute River at First Beach (Langness et al. 2015). Sampling occurred October 2012 through October 2014 and found no eggs in the substrate of Rialto Beach in the first year, and minimal evidence of spawning in the second year at a location approximately 1.3 miles north of the Quillayute Spit. One egg was identified in gravel at the southeast end of First Beach, to the south of the spit across the mouth of the Quillayute River outside the project area.

Based on coastal shoreline surveys for beach spawning fish, WDFW has mapped spawning locations. Surf smelt spawning locations are documented to the north and south of the project area; neither site is within the proposed repair area (Figure 8). Sampling efforts have detected a minimal number of eggs in the gravel at each site (Langness et al. 2015).

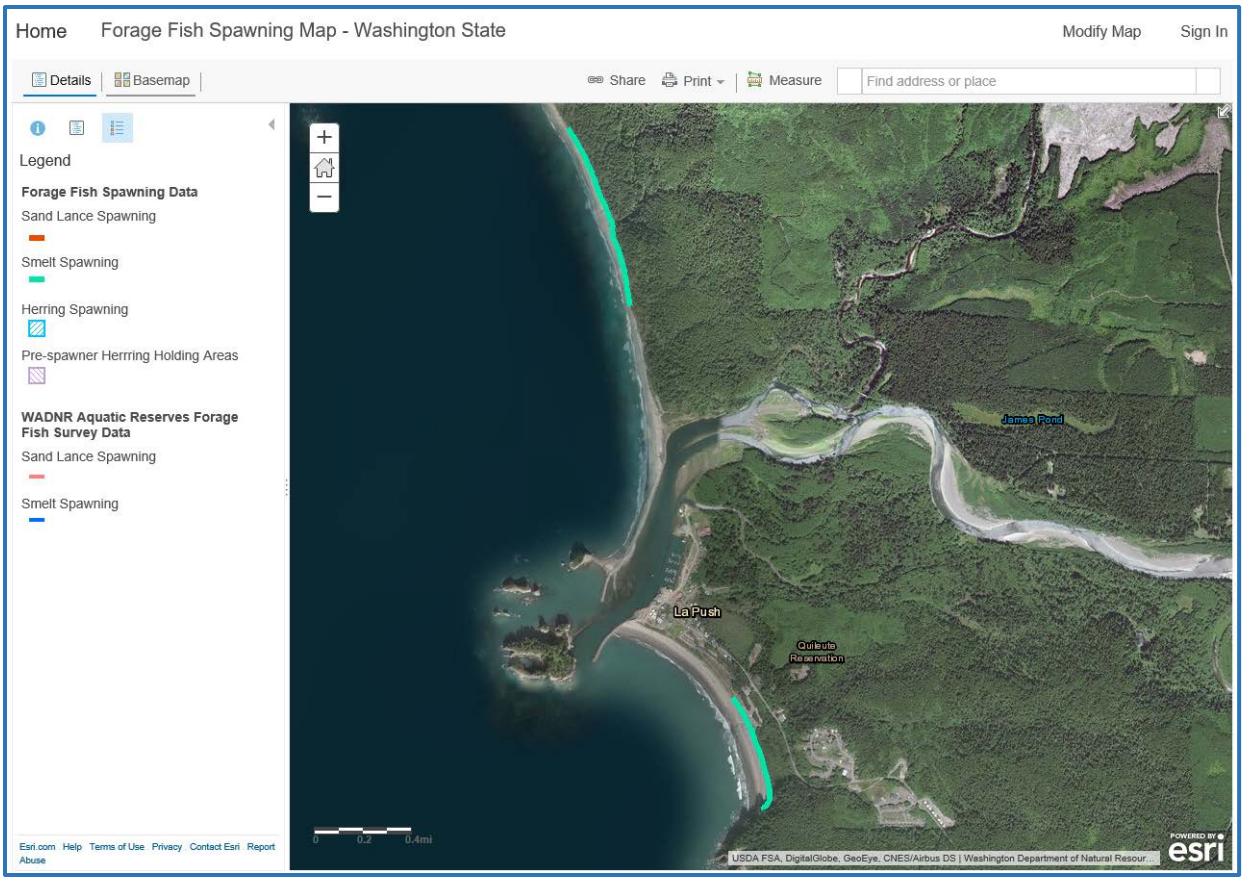

Figure 8. Documented surf smelt spawning locations near La Push, Washington (WDFW 2014).

Salmonids

The Quillayute River watershed and nearby marine environment supports six anadromous salmonid species: Chinook (*Oncorhynchus tshawytscha*), coho (*O. kisutch*), chum (*O. keta*), pink (*O. gorbuscha*), and sockeye (*O. nerka*) and steelhead (*O. mykiss*). Chinook are the most important fishery species for the Quileute Tribe and steelhead are a popular sportfishing target in the river. Fish usage of the estuary and surrounding area occurs throughout the year, although the greatest numbers appear in summer and the least in winter. Continuing outmigration studies have shown that maximum usage of the estuary by young-of-the-year Chinook consistently occurs between April and September; coho predominantly outmigrate between April and August each year. Three hatcheries in the watershed release salmon parr in early March for their river rearing and outmigration stage. No bull trout have been captured in any sampling effort or observed in any studies of the estuary.

Other Pelagic and Demersal Fish

Small numbers of other fish captured during sampling included saddleback gunnels (*Pholis ornata*), starry flounder (*Platichthys stellatus*), sculpins (Scorpaniformes), rockfish (*Sebastes* spp.), perch (Percidae), threespine stickleback (*Gasterosteus aculeatus*), and shad (*Alosa sapidissima*; Chitwood 1981). The rocky habitat along the South Jetty likely hosts reef dwelling fish like rockfish and lingcod (*Ophiodon elongates*).

3.5.1 Alternative 1 – No-Action

The No-Action Alternative would have no negative effects to fish species; however, if the Quillayute Spit remains in place and becomes breached, the dredged material placed in front of the spit would not become part of the littoral cell and sediment input to the surf smelt spawning beach to the north would be limited. Instead, if there is an existing breach in the Quillayute Spit it is likely that sediment would either not be placed along the spit or sediment could flow through a breach with waves into the navigation channel, which does not meet the project purpose. Based on previous breach events, it is assumed there would be significant inflow of sediment into the channel due to tidal flow and waves in the event of a breach, surpassing our ability to dredge. If the breach were left in place the exposure to wave action through the breached shoreline would destroy the marina, eliminating the need for the channel. It is likely a breach repair would take priority over dredging the navigation channel as the existence of the navigation channel is dependent on the existence of the spit. Therefore, if maintenance dredging did not take place there would be no dredged material to place as beach nourishment. It is difficult to speculate on whether eroding beach conditions would continue to support spawning habitat without the input of dredged material beach nourishment from the river. Additionally, emergency repair activities may need to be scheduled during migration times that could disrupt adult or juvenile salmonids.

3.5.2 Alternative 2 –Repairs to the Quillayute Spit Over 10 Years

The proposed action would take place by utilizing low tides to avoid or minimize in-water work to the extent possible for the construction of the revetment in the intertidal zone so little to no construction related impacts to fish communities are expected. Work does not extend below +0 ft MLLW but some waves may incidentally enter the work zone due to the dynamic nature of the area. Rocks would be brought in along the crest of the spit then placed individually within the footprint of the structure. Repairs to the Quillayute Spit in Alternative 2 are not expected to have a significant effect to fish communities due to no in-water work.

3.5.3 Alternative 3 –Repairs Over 10 Years with Periodic Supplemental Beach Nourishment

Alternative 3 includes repairs to the Quillayute Spit along with supplemental beach placement, and effects are expected to be similar to Alternative 2. There would be little to no construction-related impacts since work will be done during low tides to avoid or minimize in-water work to the extent possible; work does not extend below +0 ft MLLW but some waves may incidentally enter the work zone due to the dynamic nature of the area.

Supplemental beach nourishment is analogous to placement of dredged material, with the exception of the expected movement; cobbles would move mainly offshore, not in the longshore direction. In 2010, the USACE considered the results of a surf smelt study conducted in 2009 that looked for impacts of beach placement of dredged material (mainly sand) to the surf smelt population that spawns on Rialto Beach. Results from this study showed no surf smelt eggs present during the timing of proposed material placement on the beach. The beach profile analysis shows the beach is a highly dynamic environment and the substrate shifts significantly through storms as well as seasonally between summer and winter; massive amounts of beach material (gravel and sand) move with each tide cycle and especially in storm events (ICF 2010). Surveys conducted by WDFW and local tribes have contributed information regarding timing and location of surf smelt spawning activity. Two years of coastwide forage fish surveys detected

minimal evidence of forage fish spawning at Rialto Beach and First Beach, and no eggs in the two survey samples along the Quillayute Spit or immediately adjacent to the project area on Rialto Beach (Langness et al. 2015). The location in which two eggs were detected in beach sediments is nearly 1 mile away from dredged material placement Site B. The sample location in which one egg was detected is approximately 1 mile southeast of First Beach, south of the navigation channel and outside the Quillayute Spit repair area. Based the results reported by WDFW (Langness et al. 2015), spawning activity does not appear to be substantial enough to conclude that the repairs during a work window beginning as early as September 24 pose a risk to surf smelt. The effects of supplemental beach nourishment would be the same as placement of dredged material in Site B with the exception of providing sand as spawning material.

The quantity of material placed from the proposed supplemental beach nourishment in addition to maintenance dredging is estimated to be a minor fraction compared to the tons of material transported in this drift cell. The Quillayute River mouth (outer channel) has a high concentration of rock, cobble, and gravel (Anamar and EcoAnalysts 2018). Supplemental beach nourishment material would be 3- to 12-inch rounded river cobble that is similar in size to the Quillayute River bedload material present on the riverward side of the Quillayute Spit. Regular beach nourishment with dredged material would continue, and supplemental beach nourishment of cobbles would not prevent the dredged material from moving in the longshore current to nourish surf smelt spawning beaches. Due to the direction of waves and cobble size, supplemental beach nourishment is not expected to travel in the longshore current; rather, cobbles are expected to remain in Site B for approximately 3-5 years and shift within and eventually out of the site in an offshore (i.e., generally western) direction.

Supplemental beach nourishment at Site B would add rounded river cobble to an area that is unfavorable for surf smelt spawning at the end of the surf smelt spawning season and in an area with little to no documented spawning activity, posing a very low level of risk of disturbance. Surf smelt eggs incubate in gravel for 2 to 4 weeks depending on water temperature and wave action (Penttila 1978). Placement of material, especially fine-grained material, on or near incubating eggs poses a risk of mortality due to smothering. As a frame of reference, for this reason WDFW requires a distance of at least 2,080 feet between hydraulic projects and documented spawning areas based on information Quinn et al. (2015) produced in support of WDFW's Hydraulic Project Approval Program. The proposed placement site is nearly 0.75 miles (3,934 feet) away from documented spawning and is therefore low risk for egg mortality. Additionally, supplemental beach nourishment would place 3- to 12-inch cobble that would not be able to smother eggs like sand would; in addition, the cobble is more likely to move offshore rather than along shore toward known spawning areas. The beach zone along the Quillayute Spit and northward along Rialto Beach is highly dynamic with dramatically shifting sediment as shown in the surveys of beach profiles throughout the 2009 sampling season of July through November (ICF 2010). Hundreds of thousands of cubic yards of material can shift during a single tide cycle. Assuming regular beach nourishment, the quantity of material that may be placed between September 24 and February 28 would be approximately 100,000 CY at Site B approximately every four years. As described in the analysis for Alternative 2, this quantity is a small fraction of all material shifting around in the littoral drift cells in the study area. Because surf smelt spawning is almost a mile away from the placement areas and spawning is nearly complete by early September, the risk of turbidity effects to fish and smothering of eggs from cobble movement is very low and expected to be discountable.

Given the lack of or minimal amount of in-water work (there may be some waves entering the work site), and low level of risk to disrupt spawning surf smelt and egg incubation, impacts to fish communities are expected to be insignificant.

3.6 Wildlife

The USACE conducted wildlife surveys in 2002 focusing on the navigation maintenance project area. Four habitat areas were identified: the revetted/modified beach, the sea stacks with coves, estuarine river area, and the developed waterfront (SAIC 2003).

Researchers identified 35 bird species across the four habitats studied. Most of the observed species (60%) use the estuary, while 20% appeared more on the revetted beach, and 17% of the species occurred within the sea stacks marine habitat. During low tide, gulls loaf on the exposed intertidal area, and spotted sandpipers and whimbrels feed in the shallow margins. Cormorants and mergansers commonly inhabit the estuary and river area. The cove between sea stacks commonly hosts scoters, pigeon guillemots, and cormorants. Petrel Island is an important nesting area of common murres and peregrine falcons. Several other bird species roost within the sea stacks including brown pelicans. Bald eagles appear often throughout the project area. Marbled murrelets occur in the area and one nest has been documented.

Harbor seals (*Phoca vitulina*) appear frequently in the estuary, and occasionally a California sea lion (*Zalophus californianus*) is seen. Northern sea otters (*Enhydra lutris kenyoni*) concentrate in the summer at the Quillayute Needles almost two miles to the south, and their preferred rafting habitat in kelp forests is not located in the project area. River otters (*Lutra canadensis*) feed in the estuary and river. Common terrestrial mammals along the beach and riverbank include raccoon (*Procyon lotor*), Douglas squirrel (*Tamiasciurus douglasii*), and black-tailed deer (*Odocoileus hemionus*).

3.6.1 Alternative 1 – No-Action

The No-Action Alternative could have some effect on marine mammals, birds, or terrestrial wildlife. Maintenance dredging and beach nourishment with dredged material would continue. The Quillayute Spit would remain in its current state with the existing repairs and remnant haul road from the 2016 emergency repair. Damage would likely accumulate on the spit and potentially need emergency repair, which could be disruptive to wildlife if repairs could not be completed outside of critical nesting or fledging periods for marbled murrelet or northern spotted owl.

3.6.2 Alternative 2 –Repairs to the Quillayute Spit Over 10 Years

Routine repairs of the Quillayute Spit would cause temporary disturbance to wildlife due to noise and presence of humans and heavy equipment on the spit and staging area. This may have the effect of temporarily displacing a small number of birds and marine mammals including cormorants, mergansers, sandpipers, sea lions, and harbor seals that commonly use the estuary but there is additional habitat for foraging and other behaviors nearby. Following repairs, it may be slightly easier for pedestrians to walk along the Quillayute Spit, but there is no nesting habitat (e.g., old growth forest) on the spit or the nearby islands that the temporarily easier pedestrian access may disturb. Near the staging area there is potentially suitable marbled murrelet nesting habitat. There is no potential for disturbance of young marbled murrelets and other birds that may still be fledging, which is typically complete by mid-August but may include early September, due to the start date of September 24. The nesting and fledging season

ends September 23 when 99.73% of murrelets have fledged (USFWS 2012). This is described further for marbled murrelets in section 3.8 regarding threatened and endangered species.

Harbor seals are frequently present in the estuary and boat basin regardless of boat traffic. They typically avoid vessels, so the presence of the machinery on the spit may cause similar avoidance behavior. The noise from the operating machinery may cause marine mammals to avoid the immediate area around the estuary during the repair work. This disturbance would be minimal and they would be expected to return to normal once the repairs are complete in approximately late November, depending on seasonal weather conditions.

Ambient noise conditions have not been measured in the project area; however, the coastal area typically has high winds and constant waves that are expected to produce a fairly high level of ambient noise. Sources of noise would be from heavy machinery operating on the spit and in the staging area, as well as the rocks being placed. The temporary disturbance to wildlife as a result of noise and the presence of humans and heavy machinery in the project area is not expected to permanently displace or alter the normal behaviors of wildlife; therefore impacts to wildlife are expected to be insignificant.

3.6.3 Alternative 3 –Repairs Over 10 Years with Periodic Supplemental Beach Nourishment

The effects of Alternative 3 would be the same for wildlife as those described for Alternative 2 with the exception of some additional noise in years when cobble is placed for the supplemental beach nourishment. Impacts to wildlife would still be expected to be insignificant.

3.7 Benthic Invertebrates

The USACE studied abundance and distribution of the benthic intertidal organisms in July 1980 (Chitwood 1981), and the study was replicated in 2002 (SAIC 2003). Researchers found 27 taxa among the 21 sampling sites located on ocean beaches and in the estuary. The greatest numbers of epibenthic taxa occurred on the boulders comprising the dike. The greatest densities of infaunal organisms were found in subtidal mud sediments and in the cobble/gravel habitat in the estuary. The predominant species in these areas were amphipods and oligochaetes, while amphipods and nemertean worms were the most abundant taxa on the outer coast beaches. In the bay between James and Rock Islands, the dominant species included several polychaete families, amphipods, oligochaetes, and isopods. Bivalve mollusks were found only in this bay. The only species of crab found during the Tribe's 1979-80 sampling was the Dungeness (*Cancer magister*). This species uses the estuary most heavily in the spring and summer months; very few were found during the winter (Chitwood 1981).

3.7.1 Alternative 1 – No-Action

The No-Action Alternative would have some negative effects to benthic invertebrates. Damage to the Quillayute Spit would displace armor stone where the epibenthic community is present; emergency repairs to the spit would involve reworking and adding armor stone, which would cause mortality to small organisms living within the stones. Each repair is typically 200 to 300 feet in length along the spit and constitutes a small proportion of the entire habitat along the spit and along the Pacific Ocean coast. The small number of epibenthic taxa lost during damages and subsequent emergency repairs to the Quillayute Spit would not have a measurable impact on the total population, which is expected to re-establish quickly after disturbance in this dynamic area, as is observed in other areas (SAIC 2005).

3.7.2 Alternative 2 –Repairs to the Quillayute Spit Over 10 Years

Repairs to the Quillayute Spit would disrupt the epibenthic community present on boulders comprising the spit and cause direct mortality to smaller organisms that are unable to avoid the repairs. This would occur up to annually per the proposed schedule over 10 years. Rocks would be brought in along the crest of the spit then placed individually within the footprint of the structure. The repair area, which would likely be one 200- to 300-foot segment per year, is small relative to the total epibenthic area covered by the invertebrate populations. The loss of a relatively small number of epibenthic organismsto spit repairs compared to total habitat available around the project area would not impact the total population abundance and the population is expected to rebound quickly as has been observed in other areas (SAIC 2005).

3.7.3 Alternative 3 –Repairs Over 10 Years with Periodic Supplemental Beach Nourishment

The effects to benthic invertebrates would be similar as for Alternative 2 and would extend to Site B. In addition to the effects of Alternative 2, in years when there is Supplemental beach nourishment at Site B there would be mortality of invertebrates present in the narrow strip of beach habitat where material lands (see **Error! Reference source not found.** in Section 2). Larger organisms such as crabs would be able to flee the area and are rarely observed at the higher tide elevations where the supplemental beach nourishment placement is proposed. Sediments would be similar to the Quillayute River bedload present on the riverward side of the spit (cobble and gravel material). The depth of the total habitat area available would not change because the cobbles are expected to deform and shift within Site B with wave and tidal action. Due to the cobble movement, it is not expected that the substrate would harden areas that are currently sand; instead, the wave and tidal action would continue to seasonally sort the material by size as is seen in other beach locations and sandy areas would remain available as benthic invertebrate habitat (Section 3.2). In a relatively short period, organisms would reestablish in the placement area due to recruitment from adjacent non-disturbed areas. Based on these factors, effects to benthic invertebrate populations and their habitat at the placement sites would be minor and discountable.

3.8 Threatened and Endangered Species

In accordance with Section 7(a)(2) of the Endangered Species Act of 1973 (ESA), federally funded, constructed, permitted, or licensed projects must take into consideration impacts to federally listed and proposed threatened or endangered species. To satisfy the requirements of the Act, the USACE has analyzed the potential effects to all ESA-listed species that may occur in the project area. These appear in Table 1 along with their critical habitat status.

Table 1. Species listed under the Endangered Species Act with their status, critical habitat, and potential for occurrence in the project area.

Species	Federal Listing	Year Listed	Critical Habitat in Project Area	Potential Occurrence (Likely, Unlikely, or Absent)
Coast/Puget Sound bull trout (*Salvelinus confluentus*)	Threatened Critical Habitat Designated	1998 2010	Yes	Unlikely
Northern spotted owl (*Strix occidentalis caurina*)	Threatened Critical Habitat Designated	1990 2012	No	Unlikely
Marbled murrelet (*Brachyramphus marmoratus*)	Threatened Critical Habitat Designated	1992 1996	No	Likely
Southern green sturgeon (*Acipenser medirostris*)	Threatened Critical Habitat Designated	2006 2009	No	Unlikely
Eulachon (Pacific smelt) (*Thaleichthys pacificus*)	Threatened Critical Habitat Designated	2010 2011	No	Unlikely
Streaked Horned lark (*Eremophila alpestris strigata*)	Threatened Critical Habitat Designated	2013 2013	No	Absent
Short-tailed albatross (*Phoebastris albatrus*)	Endangered	1970	Not applicable	Absent
Yellow-billed cuckoo (*Coccyzus americanus*)	Threatened Critical Habitat Proposed	2014 2014	No	Absent
Southern Resident killer whale (*Orcinus orca*)	Endangered Critical Habitat Designated	2005 2006	No	Absent
Humpback whale (*Megaptera novaeangliae*)	Endangered	1970	Not applicable	Absent
Blue Whale (*Balaenoptera musculus*)	Endangered	1970	Not applicable	Absent
Fin whale (*Balaenoptera physalus*)	Endangered	1970	Not applicable	Absent
Sei whale (*Balaenoptera borealis*)	Endangered	1970	Not applicable	Absent
Sperm whale (*Physeter macrocephalus*)	Endangered	1970	Not applicable	Absent
Leatherback sea turtle (*Dermochelys coriacea*)	Endangered Critical Habitat Designated	1970 2012	No	Absent
Loggerhead sea turtle (*Caretta caretta*)	Endangered	1978	Not applicable	Absent
East Pacific green sea turtle (*Chelonia mydas*)	Endangered Critical Habitat Designated	1978 1998	No	Absent

Several species listed in Clallam County have no potential to be affected by the proposed project. The proposed project will have "no effect" on these species and their designated critical habitat. This is due to sensitivities to human encroachment or because their presence is so transitory or unlikely due to habitat preferences that any temporal effects to these species from construction activities would not be perceived as unusual, cause disruption of behavior or lead to measurable reductions in their prey base. The sea turtle species, whale species, fish species, Taylor's checkerspot butterfly, Northern spotted owl, streaked-horned lark, yellow-billed cuckoo, short-tailed albatross have never been captured in sampling efforts or observed in the action area, or their presence is so transitory that any temporal effects to these species from construction activities would not cause disruption of behavior or lead to measurable

reductions in their prey base. Given the distributions of these species, the Corps believes the proposed project will have “no effect” on these species or their critical habitat (as designated).

Blue whales may feed around the continental shelf off of Washington and Oregon in summer; however, the species is most abundant off of California (NMFS 1998). Humpback whale sightings along the Washington coast are uncommon, and they mainly use those waters as a migration corridor between Alaskan and tropical waters (Wolman 1986). The preferred habitat for all of these whale species is the open ocean, not coastal waters or shallow estuaries.

The project area does not contain any habitat that would attract streaked horned lark or yellow billed cuckoo for breeding or feeding. There have been no recent sightings and they are considered absent from the project area. La Push does not have many open dune areas where streaked horned lark nest, and the species is considered absent from former breeding sites on the Washington Coast north of Grays Harbor (Stinson 2016). Yellow billed cuckoo records before 1950 were limited to counties south and east of Clallam County, and recent records indicate the current population is still not found in Clallam County, but has been sighted in eastern Washington and some sightings in Grays Harbor, King, and Snohomish Counties (Wiles and Kalasz 2017).

There may be transient northern spotted owls dispersed in the area, but past surveys indicate nesting spotted owls are not expected in the area (V. Harke, pers. comm. 2018). Northern spotted owls are in the old growth forest several miles away in Olympic National Park, and the presence of any transient individuals passing through the lower Quillayute estuary where the project occurs is expected to be temporary. The Quillayute Spit and staging area do not contain the preferred forest foraging habitat where small mammals can be found. The construction and staging area will be outside the range of noise disturbance (0.25 miles) that heavy machinery has on nesting northern spotted owls (USFWS 2011). It is highly unlikely for northern spotted owls to occur within the project area along the coast.

Figure 9. Cumulative distribution of known spotted owl site centers (blue dots) in Washington from 1976 to 2011. The number of currently occupied sites is unknown. Figure from WDFW 2012.

Short-tailed albatross are considered absent due to the lack of breeding habitat and preferred foraging environment. Short-tailed albatross are most abundant from their breeding colonies in Japan to Alaska and Canada, mainly in the Sea of Okhotsk, Bering Sea, and around the Aleutian Islands (O'Connor 2013; USFWS 2014). Coastal Washington is at the southern end of a core location for immature short-tailed albatross that extends south from British Columbia (UWFWS 2014). However, tracking data from 2008 to 2012 found that less than 3% of time spent within national waters was on the U.S. West Coast (O'Connor 2013). Immature short-tailed albatross prefer to forage in marine environments around the outer continental shelf margins and break-slope habitats (USFWS 2014).

The proposed project will use low tides to avoid or minimize in-water work during repairs and supplemental beach nourishment to the extent possible, therefore avoiding effects to marine organisms. Work does not extend below +0 ft MLLW but some waves may incidentally enter the work zone due to the dynamic nature of the area. The fish species (green sturgeon, bull trout, and eulachon) have never been captured in sampling efforts or observed in the Quillayute River or estuary. Critical habitat for green sturgeon has been designated along the Washington coast, but Quileute tribal land is excluded (NMFS 2009), and effects are not expected to extend beyond the tribal boundary due to the limited project footprint. The landward extent of designated critical habitat for leatherback sea turtles, found at 33 CFR § 80.1380 (NMFS 2012), abuts the seaward extent of the authorized Federal navigation channel. Quillayute Spit structure repairs do not extend beyond the footprint of the structure; therefore, effects of the repairs or supplemental beach nourishment are not expected to extend into designated leatherback sea turtle critical habitat.

Marbled murrelets can be found near the project area. Marbled murrelets spend most of their lives in the marine environment, where they forage within two miles from shore. Carter (1984) found that the

preferred habitat of murrelets in marine waters is close to shore in relatively shallow water, usually less than 100 meters deep, and in protected areas; murrelets are seldom observed in embayments. This preference tends to rule out a shoreline feature such as the narrow channel of the lower Quillayute River. Repairs and supplemental beach nourishment at the Quillayute Spit and Site B are not likely to disturb or displace any marbled murrelets because the area where the construction activities will occur are not their preferred foraging habitat. Marbled murrelet prey on surf smelt, in addition to other forage fish. As described in Section 3.5, effects to surf smelt are expected to be minimal and discountable. Repair and supplemental beach nourishment of the Quillayute Spit are not expected to result in a long-term reduction in the abundance and distribution of murrelet prey items. One marbled murrelet nest has been recorded in the forest approximately 0.8 miles northeast of the project area (WDFW 2016b; Harke, pers. comm. 2017). According to USFWS (2012), the nesting season in Washington State begins 1 April as marbled murrelets establish nest sites and the season is considered over after September 23 when over 99% of fledglings have left the nests. Potentially suitable nesting habitat is within 0.25 miles of the proposed staging area according to mapping done for the Northwest Forest Plan 20-year monitoring report, adjacent to the Rialto Beach parking lot and Mora Road (Davis et al. 2015). Work will not begin until September 24 to avoid disturbance during the sensitive marbled murrelet nesting and fledging.

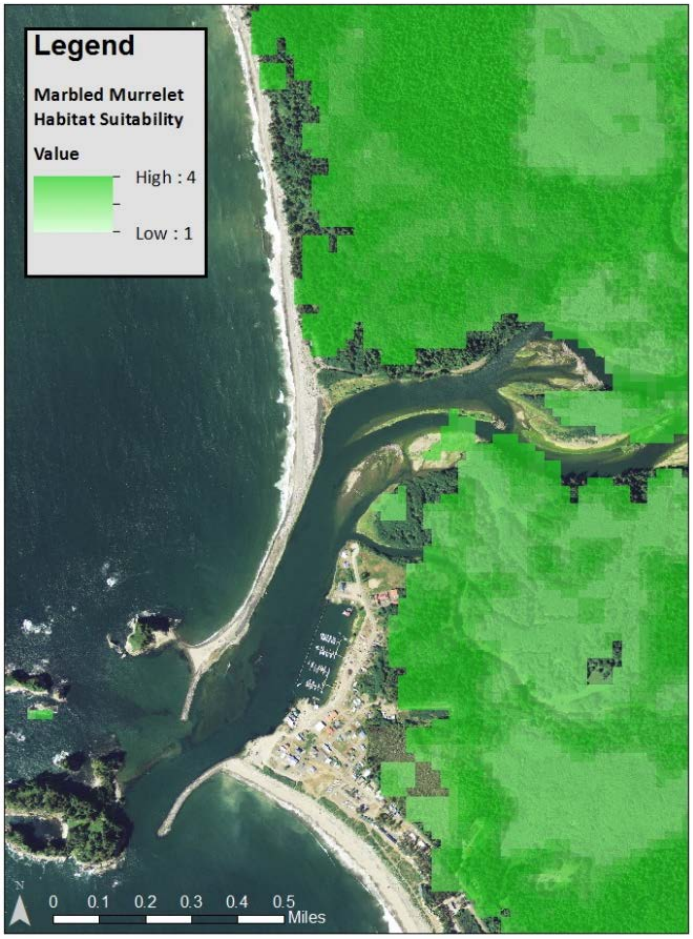

Figure 10. Potential suitable (darkest green) marbled murrelet nesting habitat near La Push, WA (Davis et al. 2015; Falxa and Raphael 2016).

3.8.1 Alternative 1 – No-Action

This alternative may have some negative effects on ESA-listed species or their designated critical habitat. Emergency repairs may need to take place quickly to restore the Quillayute Spit to working order, so measures to avoid or minimize disturbance to ESA-listed species such as limited operating hours for marbled murrelet during nesting season, in-water work windows, or timing work with low tides to avoid or minimize in-water work to the extent possible may not be feasible. Disturbance from noise or proximity to sensitive species may occur and could have a significant negative impact on ESA-listed species under the No-Action Alternative.

3.8.2 Alternative 2 –Repairs to the Quillayute Spit Over 10 Years

For Alternative 2, repairs would be made to the entire Quillayute Spit. Repairs would begin September 24, which is after the time when young murrelets may still be present on nests and would therefore not disturb marbled murrelets during nesting and fledging season. By avoiding working during the nesting season, this alternative would have no effect to marbled murrelets. The USACE has also determined that this alternative would have no effect to other ESA-listed species because either they are not likely to be

present in the action area, or the timing of the work avoids disturbance to the species. Documentation of this analysis and determination is on file at USACE, Seattle District.

3.8.3 Alternative 3 –Repairs Over 10 Years with Periodic Supplemental Beach Nourishment

Effects to all ESA-listed species would be the same for Alternative 3 as described for Alternative 2. Repairs and supplemental beach nourishment would begin September 24, which is after the time when young murrelets may still be present on nests and would therefore not disturb marbled murrelets during nesting and fledging season. By avoiding working during the nesting and fledging season, this alternative would have no effect to marbled murrelets. The USACE has also determined this alternative would have no effect to other ESA-listed species because either they are not likely to be present in the action area, or the timing of the work avoids disturbance to the species. Documentation of this analysis and determination is on file at USACE, Seattle District.

3.9 Cultural Resources

The USACE has coordinated its review of impacts on cultural resources for NEPA with its responsibilities to take into account effects on historic properties as required by Section 106 of the National Historic Preservation Act (NHPA, 16 USC 470). The USACE has determined and documented the area of potential effect (APE) for both direct and indirect effects, as required in 36 C.F.R § 800.4 of the regulations implementing Section 106. The APE includes areas of repair, staging, and access.

A USACE staff archaeologist conducted a records search and literature review for the APE, including a records search of the archaeological and historic site records in the Washington State Department of Archaeology and Historic Preservation (DAHP) online database (WISAARD) and a review of archival records available at the USACE, Seattle District. The literature review revealed that there are multiple archaeological sites in the vicinity, although these properties are located outside the APE and their significant values would not be affected by the undertaking. No historic properties have been recorded within the APE.

The USACE consulted with the Washington State Historic Preservation Officer (SHPO) and Quileute Tribe (Tribe) for this undertaking. Based on the results of literature and records review, the continuous erosion and replacement of the material of which the spit is comprised, and the absence of known or recorded historic properties within the area of potential effect (APE), the USACE found that no historic properties would be affected by the undertaking. The USACE submitted letters documenting the APE to the SHPO and the Tribe on 15 June 2018 and requesting agreement from the SHPO and Tribe with the finding of “no historic properties affected” on 20 June 2018. The SHPO agreed to the APE and the finding in letters dated 18 June 2018 and 23 July 2018, respectively. The Tribe did not comment on the APE. The USACE contacted the Tribe on 6 and 16 July 2018 in a good faith effort to consult with the Tribe concerning the APE prior to closure of the 30-day consultation window described in 36 C.F.R § 800.5(c)(1). The Tribe agreed with the finding in an email dated 26 July 2018. See Appendix H for the consultation record.

3.9.1 Alternative 1 – No-Action

The No-Action Alternative may adversely impact cultural resources. The spit provides protection from wave action and erosion to the Quillayute Federal navigation project channel and to the coastline

landward of the spit. Erosion of these areas, if permitted as a result of unmitigated erosion of the spit, may result in damage to both recorded maritime and terrestrial historic properties.

3.9.2 Alternative 2 –Repairs to the Quillayute Spit Over 10 Years

Alternative 2 would have no effect on cultural resources. Because there are no known historic properties located within the APE, the Corps found that repair would result in no historic properties affected. Repair would also prevent unmitigated erosion of the spit, which may result in damage to maritime and terrestrial historic properties currently protected from wave action and erosion by the spit.

3.9.3 Alternative 3 –Repairs Over 10 Years with Periodic Supplemental Beach Nourishment

Alternative 3 would have the same level of effects as Alternative 2, and the USACE found that repair, including the addition of beach nourishment, would result in no historic properties affected.

3.10 Indian Treaty Rights

In addition to the Federal government's responsibilities under NHPA, the Federal government must consider the effects its actions may have on American Indian treaty rights. The Federal basis of a tribe's legal status rests within the context of U.S. Constitutional provisions for Federal government's powers for treaty making with other sovereign nations, and American Indian tribes' inherent sovereignty. One of the treaty-reserved rights is the ability to conduct fishing activities at all Usual and Accustomed locations. Tribal fisheries are central to the cultural and economic existence of the Tribes and their members.

3.10.1 Alternative 1 – No-Action

The No-Action Alternative would potentially reduce access and capability for Native American fishing to occur if a breach of the spit were to occur. A breach or overtopping would introduce strong ocean waves into the channel and a loss of navigability of the waterway, which would threaten the land and marina that are protected by the spit. Continued maintenance dredging and emergency repairs are not expected to disrupt Tribal fishing activities because construction will be localized to the Quillayute Spit and the immediate nearshore area in front of the spit. This alternative would not achieve the project purpose.

3.10.2 Alternative 2 –Repairs to the Quillayute Spit Over 10 Years

Repair of the Quillayute Spit would protect the marina for fishing vessels to launch and access Usual and Accustomed fishing and shellfishing locations. The Quileute Tribe and Natural Resources Department has not objected to the maintenance of the navigation project features, which are vital to exercising their fishing and shellfishing rights and critical for the economic stability of the community. Repairs to the Quillayute Spit would have a positive effect on tribal economics by providing access to Usual and Accustomed fishing areas and supports a charter fishing business as well as transient moorage for recreational fishing boats. Thus, maintaining the spit is important to the Tribe because fishing is an important economic and cultural activity for the tribe. Construction for repairs to the Quillayute Spit is not expected to interfere with Tribal fishing activities because the project footprint will not extend into the navigation channel or within fishing grounds.

3.10.3 Alternative 3 –Repairs Over 10 Years with Periodic Supplemental Beach Nourishment

Alternative 3 would have greater benefits to tribal fishing rights than Alternative 2 because supplemental beach nourishment would likely reduce the number and frequency of repairs necessary to maintain the Quillayute Spit by reducing the erosion of the beach. Supplemental beach nourishment with cobbles

would not prevent the movement of dredged material placed at Site B to the longshore drift cell where it nourishes surf smelt spawning habitat. Preventing erosion at the spit by absorbing wave energy would maintain nearshore beach habitat in front of the spit for forage fish and benthic organisms, which would help maintain the prey base for local fish..

3.11 Air Quality and Greenhouse Gas Emissions

The Olympic Region Clean Air Agency does not monitor air quality along the Washington Coast in the project area because the northern coast is within the Olympic National Park and has no cities or industrial complexes; the air quality is at low risk for health concerns. There are no significant sources of air pollution within the project area, and onshore winds disperse local emissions from residential and vehicular sources. Due to the cleansing effect of ocean storms and westerly winds, the air quality in the project area is considered excellent. The project area is in an attainment zone for all air quality parameters meaning that it meets National Ambient Air Quality Standards (NAAQS).

Anthropogenic sources of greenhouse gases (primarily carbon dioxide, methane, and water vapor) have been increasing over the past 150 years, and have reached a rate of contribution that is causing global climate change. The concern for Federal projects is the contribution of greenhouse gases to the atmosphere in such large quantities as to outweigh the benefit of executing the proposed action.

3.11.1 Alternative 1 – No-Action

The No-Action Alternative would have a similar effect on regional or local air quality and output of greenhouse gases per repair episode as Alternative 2, but the repairs may not be permanent and may increase the total number of repairs needed.

3.11.2 Alternative 2 –Repairs to the Quillayute Spit Over 10 Years

Construction activities associated with the proposal would create air emissions from operating equipment in each of the 10 repair episodes over the next 10 years. The EPA established threshold levels of pollutants of concern for nonattainment or maintenance areas; the Quillayute Spit is not located in a nonattainment or is no longer in a maintenance area because air quality in the project area does not have air quality worse than the NAAQS (Ecology 2018c). Based on the South Coast Air Quality Management District model for non-road emissions (SCAQMD 2016), the estimated annual emissions from the operation of heavy equipment for construction on the Quillayute Spit (e.g., bulldozers and excavators) and material transportation appear in Table 2.

Table 2. Estimated emissions in metric tons per year for pollutants of concern using SCAQMD (2016) for the approximately 60-day repair episodes in Alternative 2.

Air Pollutant	Estimated annual emissions in metric tons (with truck and trailer transport)
Reactive Organic Gasses (ROGs)	1.2
Carbon Monoxide (CO)	3.9
Nitrogen Oxides (NOx)	11.9
Sulfur Dioxide (SOx)	0.01
Particulate Matter (PM2.5)	0.44

The proposed action would not occur in a nonattainment or maintenance area. Repair and maintenance events would occur in the fall and winter months when the typical weather of wind and rain would be expected to disperse air pollutants. Emissions are not expected to cause adverse health effects or result in violation of applicable air quality standards, therefore, impacts will be inconsequential and result in no more than a *de minimis* increase in criteria pollutant emissions for non-attainment zones over no-action conditions, which would likely entail a greater total number of repair episodes.

Operation of the excavators, dump trucks, and other heavy machinery would emit greenhouse gasses, primarily carbon dioxide and nitrous oxides from burning fossil fuels. In each of the repair and maintenance episodes, the roughly 60 days of work would emit an estimated 994 metric tons of carbon dioxide and 11.9 tons of nitrous oxides (SCAQMD 2016). When compared to the global emissions measured at nearly 7,000 million metric tons of carbon dioxide in 2015 (EPA 2016), the minor contribution of the proposed repair and maintenance activities would not constitute a measurable effect among the impacts of climate change and sea level rise and is therefore not considered a significant impact.

3.11.3 Alternative 3 – Repairs Over 10 Years with Periodic Supplemental Beach Nourishment

Alternative 3 would have slightly greater effects as those described for Alternative 2 due to a longer work period associated with cobble placement. Supplemental beach nourishment would occur approximately every four years and would consist of about 90 days of work. These longer repair events with supplemental beach nourishment would occur about twice in the 2018-2029 time frame (i.e., replace two of the 60-day repair episodes with two 90-day repair episodes) and have slightly greater emissions (Table 3). The remaining four to eight repair events would last about 60 days each and generate the emissions estimated in Table 2. It is assumed that the same number and types of equipment would be working 7 days a week within the allowable work window for the addition of the supplemental beach nourishment.

Table 3. Estimated emissions in metric tons per year for pollutants of concern using SCAQMD (2016) for the approximately 90-day repair episodes in Alternative 3.

Air Pollutant	Estimated emissions in metric tons with periodic supplemental beach nourishment (truck and trailer transport)
Reactive Organic Gasses (ROGs)	1.5
Carbon Monoxide (CO)	4.4
Nitrogen Oxides (NOx)	13.9
Sulfur Dioxide (SOx)	0.01
Particulate Matter (PM2.5)	0.5

In each of the two repair and maintenance episodes that include supplemental beach nourishment, the roughly 90 days of work would emit an estimated 1,198 metric tons of carbon dioxide and 13.9 metric tons of nitrous oxides (SCAQMD 2016). Emissions are not expected to cause adverse health effects or result in violation of applicable air quality standards, therefore, impacts will be inconsequential and result in no more than a *de minimis* increase in criteria pollutant emissions for non-attainment zones over no-action conditions, which would likely entail a greater total number of repair episodes. The minor contribution of the proposed repair and maintenance activities of Alternative 3 would not constitute a

measurable effect among the impacts of climate change and sea level rise and is therefore not considered a significant impact.

3.12 Recreation and Scenic Values

Recreation opportunities in the project area are primarily boating, surfing, beach walking, and fishing. While the proposed action would not occur within wilderness, the rugged coastal wilderness of the nearby area attracts travelers from throughout the Pacific Northwest and farther away. Sportfishing is a popular activity at La Push; anglers fish for salmon, halibut, rockfish, and lingcod. Surfing has been gaining popularity at the beaches on the south side of town, which also bring in campers and backpackers. Cabin rental and recreational vehicle parking is highest in summer, but winter storm watching can bring visitors to La Push in the non-typical tourist season. Visitors to Rialto Beach north of the project area often walk southward along Quillayute Spit and along the beach at low tide. A wide variety of bird species occur around the offshore rocks as well as along the wilderness beaches north and south of town and this area is extremely popular among nature photographers due to the wilderness scenery.

3.12.1 Alternative 1 – No-Action

The No-Action Alternative would have a negative effect on recreation by reducing the ability for recreational vessel use of the navigation channel that provides access to the marina, due to increased shoaling and wave transmission to the marina in the event of a breach. This alternative would have no effect to the ability of the public to enjoy the popular scenic viewpoints of the town's waterfront and public beaches; instead, increased sediment from the Quillayute River that is currently blocked by the Quillayute Spit may enhance local beaches. Emergency repairs may negatively affect recreational beachgoers because the construction would be unscheduled and advanced notice may not be given to the local community. Pedestrian access would be blocked during a breach in the Quillayute Spit, but then temporarily may be easier following a repair. However, the haul road on the crest, past approximately Station 8+00, would quickly become covered with driftwood following a repair and is interspersed with large armor stone from prior repairs. The crest would eventually be completely covered with large armor stone after numerous repairs. Repairs would not likely significantly increase access to the crest of the Quillayute Spit, particularly past about Station 8+00, and would instead gradually decrease access along the crest due to the accumulation of repaired areas.

3.12.2 Alternative 2 –Repairs to the Quillayute Spit Over 10 Years

Providing added protection to the Quillayute Spit would benefit recreational vessel traffic. These vessels need the ability to continue using the marina and for access to ocean sailing and recreational fisheries as well as refueling and restocking boat supplies and groceries. For the approximately 60 days of maintenance activity annually, the heavy machinery would be visible from the shore of the marina, and could be seen as an industrial interruption to the viewscape of the Quillayute River estuary. However, the marina itself is a built environment with vessel traffic, so the presence of machinery would not be a substantial degradation of the local aesthetics and would not be a permanent fixture. The Rialto Beach parking lot would become unavailable as a parking area for Rialto Beach access during the months of September and October approximately every 1-2 years; however, other parking is available. People walking south from Rialto Beach might encounter the bulldozer and excavator, which would be a minor and temporary disruption of the natural characteristics of the wilderness beach. Pedestrian access along

the haul road on the crest of the Quillayute Spit to the repair area would be similar as in Alternative 1 (i.e., temporarily enhanced up to about Station 8+00), but with gradually less access over a set time frame due to the proposed schedule of repairs. Given these minor and temporary disruptions, impacts to recreation and scenic values are expected to be insignificant.

3.12.3 Alternative 3 –Repairs Over 10 Years with Periodic Supplemental Beach Nourishment

Alternative 3 would have the same effects to recreation and aesthetics as Alternative 2 compared to the No-Action Alternative. In addition to the Alternative 2 effects, in years where there is placement of supplemental beach nourishment material in Site B south of Rialto Beach there would be a slight decrease to the aesthetic value of this specific location due to the change from a small portion of natural beach slope to an artificial shape of graded cobble material. However, this impact would be minor in spatial scale and temporary for only the few weeks it takes for tides to shape and blend the material with existing sediment. The Rialto Beach auxiliary parking lot would become unavailable as a parking area for Rialto Beach access September 24 through February 28; however, other parking is available. The beach in front of the Quillayute Spit that is accessible at low tide is composed of a mixture of sand, cobbles, and fallen armor stone. Adding supplemental beach nourishment cobbles would not significantly alter the appearance and would only extend approximately 50 feet from the revetment at the time of supplemental beach nourishment placement; the remaining 200-300 feet of beach would remain available for recreation. Over time, the cobbles would move in a predominantly offshore direction. Sorting by wave and tidal action would integrate the material with the immediate surrounding beach material. The repair and supplemental beach nourishment construction activities would be temporary with minimal impact on the recreation of the area, and the presence of supplemental beach nourishment will generate no more than a minor change to the beach material and structure that will not prevent recreational activities from taking place. As with Alternative2, impacts to recreation and scenic values are expected to be insignificant.

3.13 Socioeconomic Resources

The project area is contained within the Quileute Tribe's 594-acre reservation. This area contains the Quileute Headquarters building, a museum, a school, a seafood company, ocean front resorts, fish hatchery, the USCG station, the Quileute Natural Resources building, marina, convenience store, and additional amenities. In 2000, there were 128 housing units in the community, of which 91% were occupied and 9% were vacant. Of the occupied housing units, 87% were owner occupied and 13% were renter occupied. The USCG Station Quillayute River hosts approximately 30 active-duty personnel.

According to the 2000 U.S. Census, La Push had a population of 371, with a gender distribution of 57% male and 43% female. In 2000, about 83% of residents were American Indian and Alaska Native, 11% White, 0.5% Black, 0.3% of some other race, and 5% of two or more races. Approximately 5% of residents identified as Hispanic or Latino. A small percentage of residents (4%) were foreign-born having come from Mexico, Canada, and Australia. The median age in La Push in 2000 was 27.5, significantly lower than the national median age of 35.3. Of the population age 18 years and over, 53% had graduated from high school or continued on to higher education, 4% had received a bachelor's degree or higher, and 2% had received a graduate or professional degree according to the 2000 U.S. Census. The Census reports that in 1999 the income of 35% of the population was below the poverty level. Fishing and fishing-related tourism

are the two most significant sources of income for the community. The more recent 2010 U.S. Census does not include information specific to the town of La Push.

The rugged wilderness character of the area attracts travelers from throughout the northwest for activities such as sportfishing, surfing, and camping. Cabin rental and recreational vehicle parking bring tourist dollars to the local area.

3.13.1 Alternative 1 – No-Action

The No-Action Alternative poses a substantial risk to the socioeconomic well-being of the tribal community. Ocean access for fishing vessels in the marina is critical for the Tribe to exercise treaty-reserved fishing rights, which is the largest source of income in La Push. Marina access also attracts recreational fishing vessels to the coastal fisheries resources thereby providing economic inputs to the La Push community. Additionally, if a breach in the Quillayute Spit increases shoaling or wave transmission to the marina and threatens navigability, the Quillayute USCG Station may have to close if they cannot perform their duties from La Push. The absence of the more than 30 USCG staff would remove this source of economic input to the local community. Emergency repairs themselves would have a minimal impact to the tribal community because construction is not expected to significantly disrupt economic inputs to La Push, but frequent unscheduled repairs and damages to the Quillayute Spit would disrupt the community.

3.13.2 Alternative 2 –Repairs to the Quillayute Spit Over 10 Years

The Quillayute Spit has important socioeconomic benefits for the Quileute Tribe and the town of La Push. Maintaining the protection of the channel and boat basin would preserve the socioeconomics of the town of La Push and the Quileute Tribe by maintaining safe access through the navigation channel without exposure to ocean conditions and providing sufficient depth for moorage in the marina. Tribal fishermen would be able to continue participating in local fisheries, and the Quileute Tribe would benefit from the ability to host transient mariners. Maintaining navigability for the USCG station and harbor of refuge are also important socioeconomic resources for the local area.

3.13.3 Alternative 3 –Repairs Over 10 Years with Periodic Supplemental Beach Nourishment

Alternative 3 would have essentially the same and perhaps slightly better effects to socioeconomic resources as Alternative 2 compared to the No-Action Alternative. Supplemental beach nourishment may reduce the number and frequency of repairs to the Quillayute Spit and would help maintain the beach environment in front of the spit. Beach habitat is important for benthic organisms, forage fish, and predators.

3.14 Public Health and Safety

The USCG maintains the Quillayute River Station within the boat basin of the Quileute Tribe's marina, which provides the only harbor of refuge between Neah Bay and Grays Harbor. The USCG monitors safety conditions for mariners in this locale and limits vessel traffic across the bar that forms in the entrance reach of the Federal navigation channel. The Quillayute Spit protects the navigation channel, marina, city of La Push, and USCG station from direct exposure to strong ocean waves and currents.

Wind speeds and wave heights are the primary parameters of concern during October through February. A storm with annual probability will have winds that exceed 55 miles per hour (mph) and a storm with an

every five year probability will have winds that exceed 76 mph (Ecology 2017). Wave heights on the Washington Coast are an average of 4 to 6 feet in the summer and 7 to 10 feet in the winter; storms can cause wave heights of 23 feet at sea that become 30 to 33 feet high at the shoreline (Tillotson and Komar 1997).

3.14.1 Alternative 1 – No-Action

During the rough weather conditions that coincide with the winter season on the Washington Coast, the Quillayute Spit can become damaged or undermined due to the impact of strong ocean waves and currents. Overtopping or a breach of the Quillayute Spit can result from this damage so that wave energy is transmitted to the safe harbor behind the spit. The USCG relies on the calm conditions behind the Quillayute Spit to house their vessels to be able to respond if needed for rescues. The No-Action Alternative may eventually result in a breach or overtopping waves, which would allow these adverse conditions to occur and would likely require frequent emergency repairs. These conditions may endanger the stability of the USCG station.

3.14.2 Alternative 2 –Repairs to the Quillayute Spit Over 10 Years

Executing long-lasting repairs to the spit would provide the USCG with full protection of the facilities located onshore and at the mouth of the Quillayute River to maintain access for ingress and egress of the channel for search and rescue missions.

3.14.3 Alternative 3 –Repairs Over 10 Years with Periodic Supplemental Beach Nourishment

Alternative 3 would have slightly better effects to public health and safety than Alternative 2 compared to the No-Action Alternative. The addition of supplemental beach nourishment would prevent or slow damage to the repaired Quillayute Spit by slowing erosion at the toe of the spit. Less frequent repairs and potential for damage would increase the reliability of the protection the Quillayute Spit provides.

4 Cumulative Effects Analysis

The NEPA defines cumulative effects as the impact on the environment that 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 (40 CFR §1508.7).

The lower Quillayute River has endured significant hydrological modifications to support the marina, USCG station, and flood protection features to protect the town of La Push. The river has been channelized to the point that sediment is no longer naturally delivered to the adjacent ocean beaches, which exhibit signs of erosion. Past construction actions in the project area include initial construction of the boat basin and navigation channel in 1932 and Federal maintenance beginning in 1949 continuing to the present. Additional project features were constructed in 1962 and include a timber training wall 1,500 feet long with elevation at +16 feet MLLW, the South Jetty at 1,400 feet long and +15 feet MLLW, and the sea dike at James Island 1,050 feet long at +8 feet MLLW. As part of routine operations and maintenance, the navigation channel is maintained to authorized depth of -10 feet MLLW.

Actions undertaken to repair navigation features include the following:

- 1954-55: Upper spit breach repaired with sand

- 1960s: Drift logs cabled together and beach material relocated to low spots in the spit to prevent breaches
- 1960s: Dredged material from the boat basin averaging 50,000 CY per year was placed on the spit to prevent breaching but was unreliable
- 1971: 300,000 CY of sand, gravel, and cobbles were dredged from the river and deposited on the spit. Regular monitoring revealed an annual erosion rate of roughly 100,000 CY
- 1974: 50,000 tons of 10- to 1,000-pound rocks and boulders were placed along the middle 1,600 feet of the spit to reduce the growing expense of repairs
- 1981: The lower spit, south of Rock Island, received material from maintenance dredging plus an additional 39,000 tons of armor rock and spalls
- 1979: An additional 90,000 tons of the large rocks were place on the spit; repairs were made to the South Jetty
- 1982: The USACE added 56,000 tons of spalls and larger armor rock on the spit to extend the protection longer than the estimated four to five years; repairs were made to the South Jetty
- 1982-96: Through routine maintenance dredging of the navigation channel, material was placed on the portion of the spit that had not been armored with large rocks
- 1996: A winter storm caused an 800-foot breach in the spit north of the previously placed armoring. The USACE repaired the breach with 205,000 tons of armor rock along a 1,900-foot section of the spit with a riprap toe on the riverside of the spit to prevent undermining of the armoring by river currents
- 2000: The USACE repaired the South Jetty
- 2012 and 2014: Stockpiled dredged material was placed at First Beach to prevent a breach in the South Jetty
- 2016: The USACE repaired a breach in the Quillayute jetty and replaced planks in the timber training wall at the marina

Construction and repair of navigation features described above is linked to a loss of 6.8 acres of beach habitat, 3.4 acres of beach grass, 2.8 acres of sandbar, and a gain of 7.6 acres of rocky habitat (SAIC 2003). Continued operation and maintenance of the navigation features has perpetuated these conditions.

Habitat losses can also be linked, in part, to other anthropogenic influences in the upper watershed that have contributed unnatural rates of sedimentation and erosion. A summary of habitat assessments in significant contributing drainages within the Quillayute River watershed was developed to prioritize salmonid habitat restoration projects in the Quillayute River, and the 2016 "State of Our Watersheds Report" for the Quillayute River basin (Quileute Tribe 2016) describe upstream influences on habitat in the Quillayute River in addition to the navigation project. High road densities that contribute to landslides and result in excessive sedimentation, past forestry practices, invasive species, and the need for riparian and large wood debris restoration to prevent collapsing banks and sediment input into streams and rivers that drain into the Quillayute River were cited as detrimental to salmon habitat in the Quillayute River basin (Hunter 2006; Quileute Tribe 2016).

Other activities in the area that are likely to occur in the future include regular repairs to Mora Road, which runs along the Quillayute River. Mora Road is a heavily trafficked road that can see traffic counts of

up to 180,000 persons per year. The NPS works with the Federal Highway Administration-Western Federal Lands Highway Division to repair and maintain this roadway. In relation to the proposed action, the existing agreement for the USACE to use Mora Road for construction equipment to access Quillayute Spit stipulates the area be restored to its original condition at the end of the permit. Therefore, for each construction event, the contractor would arrange pre- and post-construction surveys of the road and routine inspections. This information would be used to evaluate the road condition, document any potential damage due to Mora Road use associated with spit repair, and determine if repair is needed.

In addition to periodic repair and maintenance to the Quillayute Spit, the only near-term USACE action anticipated to occur at the Quillayute River Navigation Channel project site includes potential repair of the sea dike to authorized height of +8 feet MLLW and continued maintenance dredging of up to 100,000 CY every other year with beach nourishment at Site B and at the base of the South Jetty.

Dredging quantities of the past 25 years appear in Table 3. The average quantity dredged is 59,250 CY and the greatest amount dredged in this period occurred in 1995 when 89,496 CY were removed.

Table 4. Quantities dredged from the Quillayute Navigation Channel and boat basin by year for the past 25 years.

Year of dredging	Quantity (in cubic yards)
1993	51,349
1995	89,496
1998	53,461
1999	83,089
2003	33,821
2007	56,067
2009	60,254
2011	58,960
2015	46,751
2017	48,286

The proposed episodes of repair to the Quillayute Spit and supplemental beach nourishment would cause a temporary effect to biological functions and minor, temporary loss of benthic invertebrates present within Site B and the spit, but would maintain safe conditions for the navigation channel and marina. In consideration of past developments still in existence in the Quillayute estuary, and the limited amount of known future alterations, the proposed repairs and maintenance of the Quillayute Spit with associated supplemental beach nourishment is not a significant addition to cumulative impacts of development at the mouth of the Quillayute River. Supplemental beach nourishment at Site B is expected to reduce the number and frequency of repairs to the Quillayute Spit. The short-term disruption of repairs to the Quillayute Spit and supplemental beach nourishment is outweighed by the assumed long-term benefit of providing stabilizing material to the structure to help better reinforce against erosive forces and avoiding further introduction of non-native rock material into the natural beach environment. The USACE therefore concludes that there would be no significant contribution to cumulative effects associated with the proposed maintenance dredging and placement actions.

5 Conservation Measures

The primary conservation measure concerns the timing of repair work and supplemental beach nourishment. Placement of cobbles would only occur within the allowed in-water work window for the protection of juvenile salmon and spawning surf smelt, and outside the marbled murrelet nesting season to prevent disturbance to nesting times and fledglings. The proposed action includes several measures that would be employed to avoid and minimize any adverse effects, including the following:

a. All work below mean higher high water (MHHW) would occur during the in-water work window coordinated with the Quileute Tribe and WDFW to protect salmon and forage fish 24 September to 28 February.
b. Little to no in-water work would occur due to the timing of repairs and supplemental beach nourishment during low tides. Work does not extend below +0 ft MLLW but some waves may incidentally enter the work zone due to the dynamic nature of the area.
c. No work would occur during the spring months when macroalgae (around James Island) are most susceptible to harm from increases in turbidity.
d. All work would occur in areas previously disturbed by the construction of the spit; for repairs to the spit, no new construction outside the 1974 structure footprint (Figure 2 in Section 2) would occur and supplemental beach nourishment would take place in the previously established beach nourishment area (Site B).
e. The contractor would adhere to the conditions in the water quality certification (Appendix E).
f. To avoid disturbance of marbled murrelets nesting and fledging, work will be scheduled to begin on September 24, after nesting season.
g. For repairs to the spit and placement of cobbles at Site B, all large wood pieces would be moved out of the repair area and placement zone to the side of the work area or on the riverward side of the Quillayute Spit to maintain their availability as a resource in the nearshore zone.
h. To avoid burying cobble under armor rock, cobble will only be placed over segments where armor has already been replaced/repaired or that are undamaged. In the event that armor repair is needed at a segment that has cobble, the cobble will be moved to the side before placing the armor rock and then placed back over the armor.
i. Any large rock from previous construction that has washed into the intertidal zone that can be reached from the haul road on the crest of the spit will be retrieved as safety permits. Rock placed during the proposed repairs is not expected to wash into the intertidal zone.
j. To minimize disturbance due to noise and ground vibration, armor stones for repairing the spit will be placed individually.
k. The haul road on the crest of the spit will be incorporated into the spit under armor stones after repairs are completed.
l. Access to the Quillayute Spit crest will be restricted during construction. After construction, large wood will block vehicles from using the haul road to access the crest.

6 Coordination

The USACE has coordinated with Federal and state agencies and Tribes regarding repairs and maintenance of the Quillayute Spit. Coordination would continue through the period of proposed repairs through

February 2029 to notify regulatory agencies, stakeholders, and adapt to changing conditions. During the development of this EA, the USACE consulted and coordinated with the following entities and agencies:

- Quileute Tribe
- U.S. Environmental Protection Agency
- National Park Service
- U.S. Fish and Wildlife Service
- Olympic Coast National Marine Sanctuary (NOAA)
- Washington Department of Archaeology and Historic Preservation
- Washington Department of Fish and Wildlife
- Washington Department of Natural Resources
- Washington Department of Ecology

7 Environmental Compliance

The USACE has analyzed the environmental effects of the alternatives and the following sections describe how the preferred alternative complies with all pertinent environmental laws and executive orders.

7.1 National Environmental Policy Act

The National Environmental Policy Act (NEPA) (42 U.S.C. §4321 et seq.) commits Federal agencies to considering, documenting, and publicly disclosing the environmental effects of their actions and to solicit public comment on the proposal. As required by NEPA, this EA describes existing environmental conditions in the project area, the proposed action and alternatives, potential environmental effects of the proposed project, and measures to minimize environmental effects. Alternative 3 is the agency preferred alternative. The USACE published the Draft EA and FONSI for a 30-day public comment period per NEPA requirements July 05, 2018 through August 04, 2018. Two comment letters were received (Appendix G).

7.2 Endangered Species Act

The Endangered Species Act (16 U.S.C. §1531-1544), Section 7(a) requires that Federal agencies consult with NMFS and USFWS, as appropriate, to ensure that proposed actions are not likely to jeopardize the continued existence of endangered or threatened species or adversely modify or destroy their critical habitats. The USACE has determined that the preferred alternative will have no effect to all ESA-listed species or designated critical habitat and has prepared documentation of this determination.

7.3 Marine Mammal Protection Act

The Marine Mammal Protection Act (MMPA) of 1972 (16 U.S.C. §1361-1407) restricts harassment of marine mammals and requires interagency consultation in conjunction with the ESA consultation for Federal activities. All marine mammals are protected under the MMPA regardless of whether they are endangered, threatened, or depleted. Marine mammal species that have been observed in the action area include harbor seal (*Phoca vitulina*), California sea lion (*Zalophus californianus*), and killer whale (*Orcinus orca*) far offshore.

The primary concern for marine mammals is disturbance of normal foraging, breeding, and haul out behaviors. The USACE has determined the proposed project will minimally interfere with these activities and concluded that there is no requirement for an Incidental Harassment Authorization.

7.4 Magnuson-Stevens Fishery Conservation and Management Act

The Magnuson-Stevens Fishery Conservation and Management Act (MSA), (16 U.S.C. §1801 et. seq.) requires Federal agencies to consult with NMFS on activities that may adversely affect Essential Fish Habitat (EFH). The objective of an EFH assessment is to determine whether the proposed action(s) "may adversely affect" designated EFH for relevant commercial, federally managed fisheries species within the proposed action area. The assessment also describes conservation measures proposed to avoid, minimize, or otherwise offset potential adverse effects to designated EFH resulting from the proposed action.

The project area has been designated as Essential Fish Habitat (EFH) for various life stages of 50 species of groundfish, 5 coastal pelagic species, and 2 species of Pacific salmon. The USACE has determined that the proposed action would not reduce the quality and/or quantity of EFH for Pacific salmon, coastal pelagic, and groundfish EFH and no adverse effects to EFH are expected to result from the proposed action and thus no consultation is necessary.

7.5 Clean Water Act

The Clean Water Act (33 U.S.C. §1251 et seq.) establishes a Federal policy of protecting the waters of the U.S. Corps regulations implementing the Act require selecting the means of placement of dredged or fill material into water that, after considering all reasonable and practicable alternatives, represents the least costly alternative that is consistent with sound engineering practices and meets the environmental standards of the Section 404(b)(1) evaluation guidelines. The sections of the Clean Water Act that apply to the proposal are 401, regarding certification of conformance with water quality standards during discharges to waterways and 404, regarding fill material in waters and wetlands.

Section 401

For any project that involves placing dredged or fill material in waters of the U.S. or wetlands, or mechanized clearing of wetlands, the Corps sought a water quality certification from EPA or the state agency as delegated by EPA. For this project on tribal land, EPA has authority for Section 401 compliance. The USACE coordinated with EPA to certify that the proposed Federal action would not violate established water quality standards. The USACE submitted documentation necessary for EPA's individual 401 review and received a 401 Water Quality Certification August 16, 2018 (Appendix E).

Section 402

Section 402 of the Clean Water Act that requires a National Pollution Discharge Elimination System (NPDES) permit would be triggered by construction as the area of disturbance would be greater than one acre with the potential to discharge stormwater to waters of the U.S. The staging area and construction area along the Quillayute Spit are composed of gravel, cobble, and rock, and any rain would infiltrate completely into the ground. Based on past experience, no ponding or runoff have been observed during heavy rain at the site. Therefore, an NPDES permit is not required.

Section 404

Under the "Federal standard" implementing Section 404, no discharge of dredged or fill material may take place unless it can be demonstrated that disposal would occur in the least costly, environmentally acceptable manner, consistent with engineering requirements established for the project. To comply with Section 404, it is necessary to avoid negative effects to waters of the U.S. wherever practicable, minimize effects where they are unavoidable, and compensate for effects in some cases. The USACE has prepared a Section 404(b)(1) Evaluation and public interest review, which appears in Appendix A. The findings are that there would be no significant adverse effects to aquatic ecosystems functions and values and that this project is within the public interest. The incremental difference between Alternatives 2 and 3 is so minimal that they can be considered equivalent in terms of environmental impacts; therefore, either could be considered an environmentally acceptable practicable alternative. Alternative 2 was not designated as preferred due to the opportunity to further improve the protection of the Quillayute Spit, reduce the number and frequency of repairs, and reduce erosion of beach habitat in front of the spit with Alternative 3.

7.6 Coastal Zone Management Act

The Coastal Zone Management Act of 1972 as amended (16 U.S.C. §1451-1464) requires Federal agencies to conduct activities in a manner that is consistent to the maximum extent practicable with the enforceable policies of the approved State Coastal Zone Management Program. The Clallam County Shoreline Master Program update is underway with no specific date announced for finalization. The USACE is substantively consistent with the enforceable polices of the 1974 final and 2017 draft Clallam County Shoreline Master Program and provided documentation of this through a consistency determination submitted to Ecology in June 2018 (Appendix D). The USACE received a letter of concurrence prior to finalization of the EA on August 21, 2018.

7.7 National Historic Preservation Act

Section 106 of the National Historic Preservation Act (16 USC 470) requires Federal agencies to take into account the effects of proposed federal undertakings on historic properties included on or eligible for inclusion on the National Register of Historic Places. The implementing regulations for Section 106 (36 C.F.R. § 800) require Federal agencies to consult with various parties, including the Advisory Council on Historic Preservation, the State Historic Preservation Office (SHPO), and Indian tribes, to identify and evaluate historic properties, and to assess and resolve effects to historic properties.

A Corps staff archaeologist conducted a records search and literature review for the APE, including a records search of the archaeological and historic site records in the Washington State Department of Archaeology and Historic Preservation (DAHP) online database (WISAARD) and a review of archival records available at the Corps, Seattle District. The literature review revealed that there are multiple archaeological sites in the vicinity, although these properties are located outside the APE and their significant values would not be affected by the undertaking. No historic properties have been recorded within the APE.

The Corps consulted with the Washington State Historic Preservation Officer (SHPO) and Quileute Tribe

(Tribe) for this undertaking. Based on the results of literature and records review, the continual erosion and replacement of the materials of which the spit is comprised, and the absence of known or recorded historic properties within the area of potential effect (APE), the Corps found that no historic properties would be affected by the undertaking. The Corps submitted letters documenting the APE to the SHPO and the Tribe on 15 June 2018 and requesting agreement from the SHPO and Tribe with the finding of "no historic properties affected" on 20 June 2018. The SHPO agreed to the APE and the finding in letters dated 18 June 2018 and 23 July 2018, respectively. The Tribe did not comment on the APE. The Corps contacted the Tribe on 6 and 16 July 2018 in a good faith effort to consult with the Tribe concerning the APE prior to closure of the 30-day consultation window described in 36 C.F.R § 800.5(c)(1). The Tribe agreed with the finding in an email dated 26 July 2018. See Appendix H for the consultation record.

7.8 Clean Air Act

The Clean Air Act (CAA) as amended (42 U.S.C. §7401, et seq.) prohibits Federal agencies from approving or conducting any action that does not conform to an approved state, tribal, or Federal implementation plan. Under the CAA General Conformity Rule (Section 176(c)(4)), Federal agencies are prohibited from approving any action that causes or contributes to a violation of a NAAQS in a nonattainment area. Repairs, material placement, and the operation of equipment would result in increased emissions. These effects will be localized and temporary. Emissions will not exceed EPA's *de minimis* threshold levels (100 tons/year for carbon monoxide and 50 tons/year for ozone) for non-attainment zones or affect implementation of Olympic Region Clean Air Agency's Clean Air Act implementation plan; therefore, effects will be inconsequential.

7.9 Native American Tribal Treaty Rights

In the mid-1850s, the United States entered into treaties with many Native American tribes in the Northwest. These treaties guaranteed the signatory tribes the right to "take fish at usual and accustomed grounds and stations . . . in common with all citizens of the territory" [*U.S. v. Washington*, 384 F. Supp. 312 at 332 (WDWA 1974)]. In *U.S. v. Washington*, 384 F. Supp. 312 at 343 - 344, the court resolved that the Treaty tribes had the right to take up to 50 percent of the harvestable anadromous fish runs passing through those grounds, as needed to provide them with a moderate standard of living (Fair Share). Over the years, the courts have held that this right comprehends certain subsidiary rights, such as access to their "usual and accustomed" fishing grounds. More than *de minimis* effects to access to usual and accustomed fishing area may violate this treaty right [*Northwest Sea Farms v. Wynn*, F. Supp. 931 F. Supp. 1515 at 1522 (WDWA 1996)]. In *U.S. v. Washington*, 759 F.2d 1353 (9th Cir 1985) the court indicated that the obligation to prevent degradation of the fish habitat would be determined on a case-by-case basis. The Ninth Circuit has held that this right encompasses the right to take shellfish [*U.S. v. Washington*, 135 F.3d 618 (9th Cir 1998)].

The Quileute Indian Tribe has had representation in this process through coordination with the USACE on matters involving the proposed repairs and supplemental beach nourishment. Additionally, the USACE has consulted with tribal biologists regarding avoiding impacts to tribal fisheries resources.

The Corps has concluded the following:

(1) The work protects access to usual and accustomed fishing and gathering areas;

(2) The work will not cause the degradation of fish runs in usual and accustomed fishing grounds or with fishing activities or shellfish harvesting and habitat; and

(3) The work will not impair the Treaty tribes' ability to meet moderate living needs.

7.10 Migratory Bird Treaty Act and Executive Order 13186 Migratory Bird Habitat Protection

The Migratory Bird Treaty Act (16 U.S.C. §703-712) as amended protects over 800 bird species and their habitat, and commits that the U.S. will take measures to protect identified ecosystems of special importance to migratory birds against pollution, detrimental alterations, and other environmental degradations. EO 13186 directs Federal agencies to evaluate the effects of their actions on migratory birds, with emphasis on species of concern, and inform the USFWS of potential negative effects to migratory birds.

Implementation of the preferred alternative would not have any direct and deliberate negative effects to migratory birds: there would be no adverse effect on habitat and the project would only have minor and temporary effects to a small number of individual birds that may be present in the project area. No permit application for "take" of migratory birds is thus required. These birds are assumed to be habituated to the noise and activity of the Quillayute River estuary. Construction is scheduled to occur after the critical nesting period.

7.11 Executive Order 13175 Consultation and Coordination with Indian Tribal Governments

Executive Order 13175 (November 6, 2000) reaffirmed the Federal government's commitment to a government-to-government relationship with Indian tribes, and directed Federal agencies to establish procedures to consult and collaborate with tribal governments when new agency regulations would have tribal implications. The USACE has a government-to-government consultation policy to facilitate the interchange between decision makers to obtain mutually acceptable decisions. In accordance with this Executive Order, the USACE has engaged in regular and meaningful consultation and collaboration with the federally recognized tribe in the project area, the Quileute Indian Tribe.

7.12 Executive Order 12898, Environmental Justice

Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations" provides that each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations. Environmental justice concerns may arise from impacts on the natural and physical environment, such as human health or ecological impacts on minority populations, low-income populations, and Indian tribes or from related social or economic impacts.

The USACE evaluated the nature and location of the proposed construction site and used the EPA Environmental Justice Viewer to determine whether minority populations, low-income populations, or Indian tribes are present in the action area and may be affected. The USACE has analyzed the potential

effects of the alternatives on communities within a 3-mile radius of the proposed action and found that there would be no disproportionately high and adverse human health impacts to any environmental justice communities. The Quileute Indian Tribe has not objected to the proposed project.

7.13 Executive Order 11990, Protection of Wetlands

Executive Order 11990 entitled Protection of Wetlands (May 24, 1977) requires Federal agencies to take action to avoid adversely impacting wetlands wherever possible, to minimize wetlands destruction and to preserve the values of wetlands, and to prescribe procedures to implement the policies and procedures of this Executive Order. The preferred alternative of repair of Quillayute Spit with supplemental beach nourishment would have no effect to any tidal wetlands, as repairs would maintain existing conditions and the placement site is sufficiently distant so as not to influence any wetlands.

7.14 Executive Order 11988, Floodplain Management

Executive Order 11988 entitled Floodplain Management (May 24, 1977) requires Federal agencies to recognize the significant values of floodplains and to consider the public benefits that would be realized from restoring and preserving floodplains. It is the general policy of the USACE to formulate projects that, to the extent possible, avoid or minimize adverse impacts associated with use of the base floodplain and avoid inducing development in the base floodplain unless there is no practicable alternative that meets the project purpose. Per the procedures outlined in ER 1165-2-26 (Implementation of Executive Order 11988 on Flood Plain Management), the USACE has analyzed the potential effects of the recommended plan on the overall floodplain management of the study area.

Executive Order 11988 outlines the responsibilities of Federal agencies in the role of floodplain management. Each agency shall evaluate the potential effects of actions on floodplains and should avoid undertaking actions that directly or indirectly induce growth in the floodplain or adversely affect natural floodplain values. This EA evaluates effects of alternative water operations on flooding and floodplains. No development in any floodplain is anticipated because of the alternatives considered.

There are eight steps to the decision making process required in this Executive Order. The eight steps and responses (in italics) to them are summarized below.

1. Determine if the proposed action is in the base floodplain.

The proposed actions are located within the base floodplains for the Quillayute River.

2. If the action is in the floodplain, identify and evaluate practicable alternatives to locating in the base floodplain.

As the primary objective of the Quillayute Spit is to protect the marina, town, and Quillayute River Navigation Channel from ocean waves, there are no practicable alternatives completely outside of the base floodplain that would achieve this objective.

3. Provide public review.

The proposed project has been coordinated with the public, government agencies, and interested stakeholders. Preparation of this EA is a part of the public review process.

4. Identify the impacts of the proposed action and any expected losses of natural and beneficial floodplain values.

Chapter 3 of this document presents an analysis of alternatives. Practicable measures and alternatives were formulated and potential impacts and benefits were evaluated. The anticipated impacts associated with the recommended plan are summarized in Chapters 3 and 4 of this report. While construction of the project would result in mostly minor and temporary adverse impacts to the natural environment, the proposed action will meet the proposed purpose of the project. For each resource analyzed in Chapter 3, wherever there is a potential for adverse impacts, appropriate best management practices or other environmental considerations were identified. As there is a no permanent impact to biological resources, no biological mitigation is required for the proposed project. No loss of natural or beneficial floodplain values are anticipated as a result of the proposed repairs or supplemental beach nourishment.

5. Minimize threats to life and property and to natural and beneficial floodplain values. Restore and preserve natural and beneficial floodplain values.

Implementing the proposed project would have no significant impacts on human health, safety, and welfare. The proposed project will protect the marina and town of La Push from ocean waves, and help maintain safe navigation within the Quillayute River Navigation Channel.

6. Reevaluate alternatives.

Chapter 3 of this document presents an analysis of alternatives. There are no practicable alternatives completely outside of the base floodplain that would achieve study objectives.

7. Issue findings and a public explanation.

The public will be advised that no practicable alternative to locating the proposed action in the floodplain exists, as indicated in Item 3 above.

8. Implement the action.

The proposed project does not contribute to increased development in the floodplain and does not increase flood risk. The recommended plan is consistent with the requirements of this Executive Order.

8 Public Interest Evaluation Factors for Proposed Activities

The USACE conducted an evaluation of the repairs and supplemental beach nourishment activities in light of the public interest factors prescribed in 33 CFR 336.1(c). These factors include: navigation and the Federal standard for dredged material disposal; water quality; coastal zone consistency; wetlands; endangered species; historic resources; scenic and recreation values; fish and wildlife; marine sanctuaries; and applicable state/regional/local land use classifications, determinations, and/or policies. Of these, navigation and the Federal standard, water quality, coastal zone consistency, wetlands, endangered species, historic resources, scenic values, recreational values, and fish and wildlife have been evaluated in this EA. The factor of marine sanctuaries established under the Ocean Dumping Act has been considered; the USACE has initiated consultation with staff from the Olympic Coast National Marine Sanctuary on the sanctuary effects of Quillayute Spit repair and supplemental beach nourishment and does not anticipate any impact to the marine sanctuary. The factor of application of non-Federal land use policies was

considered in connection with the coastal zone consistency evaluation; no additional impacts to state/regional/local land use classifications, determinations, and/or policies are anticipated as the project would maintain a federally authorized navigation feature that is already used to protect life and property.

In accordance with 33 CFR 337.1(a)(14) and 325.3(c)(1), the USACE considered the following additional relevant factors:

- Conservation: This action would entail repairs and maintenance, and would not involve any new construction or change to the existing structure. The effects on fish and wildlife, including marine mammals and ESA-listed species, have been fully evaluated.
- Economics: As reflected in this EA, the local community relies on the protection afforded by the Quillayute Spit, which this action would perpetuate. The preferred alternative is the least costly alternative that would meet the project's purpose and need. The economic benefits afforded through accomplishing repairs and supplemental beach nourishment outweigh the Federal costs of the action and the costs the region would incur with an eventual return to the pre-construction conditions that would ensue under the No-Action Alternative.
- Shoreline erosion and accretion: The effects on shoreline erosion and accretion appear in the hydraulics and geomorphology section of this EA. Overall, the proposed placement site would reduce negative effects of shoreline erosion.
- Safety: Repairs and maintenance to the Quillayute Spit protects the navigable waterway and a safe harbor for the safe and efficient transit of commercial, tribal, and recreational vessels serves the interests of safety.
- Property ownership: The proposed project protects the small boat basin behind the Quillayute Spit, which allows for full utilization of the private vessel ownership interests by tenants of and visitors.

As provided in 33 CFR Sections 335.4, 336.1(c)(1) and 337.6, the USACE has fully considered, on an equal basis, all alternatives that are both reasonable and practicable, i.e., available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes. The necessary budget resources are available and adequate to fully support the action. The preferred alternative represents the least costly alternative, constituting the discharge of material into waters of the United States in the least costly manner and at the least costly and most practicable location, is consistent with sound engineering practices, and meets the environmental standards established by the Clean Water Act Section 404(b)(1) evaluation process. Execution of the preferred alternative, following consideration of all applicable evaluation factors, would be in the public interest.

9 Unavoidable Adverse Impacts

The primary unavoidable adverse impact would be the loss of benthic invertebrates in the repair area and Site B would occur. However, this would constitute a small proportion of the total population and benthic invertebrates are expected to re-establish soon after construction is complete. Another unavoidable adverse impact would be air pollution and greenhouse gas emissions from the machinery. Both air pollution and greenhouse gas emissions would be *de minimis*.

There would be some minor effects to water quality in the immediate area following inundation of the repair sites and supplemental beach nourishment in Site B. Any effects to water quality would be short lived and small scale. Therefore, any effects to water quality would be insignificant. Effects to aquatic wildlife would be minimized by working during times of the year when ecologically important aquatic species (including ESA-listed species) would not be in the area or in low abundance, and avoiding in-water work to the extent possible (although some waves may incidentally enter the work site due to the dynamic nature of the area). The repairs and supplemental beach nourishment would not negatively affect the present geomorphology of the Quillayute River estuary. Noise impacts would be temporarily increased by the proposed repairs and supplemental beach nourishment, but to a minor degree.

10 Comparison of No-Action and Other Alternatives

Some effects to the human environment would be greater under the preferred alternative than under the no action alternative. Under the no action alternative there would be no planned future repairs or beach nourishment which eventually could significantly reduce vessel access to the harbor resulting in localized improved air quality.

Changes to the wave energy transmission to the shore behind the Quillayute Spit and disturbance to marbled murrelet would perhaps be the most dramatic under the no-action alternative. Repairs and supplemental beach nourishment would not be conducted on a regular basis to the Quillayute Spit, which raises the risk of breaching or waves overtopping of the spit. The facilities behind the Quillayute Spit may be damaged during times the spit is breached, and emergency repairs may be necessary during sensitive migration periods for fish or the nesting period of marbled murrelet. If the spit cannot be repaired or maintained then the marina and U.S. Coast Guard Station may not be able to remain without shelter from rough ocean conditions. In the most extreme scenario, less development would be beneficial for the aquatic environment, including the Quillayute River estuary, and any ESA-listed species in the area. However, the no action alternative would significantly affect the local economy of La Push. Commercial fishing, recreational, and charter boats would not be able to use the marina for mooring. The result would be fewer jobs for local people and would reduce economic input by tourism.

The no action alternative was rejected because it does not meet the purpose and need for the project. The preferred alternative (repairs and supplemental beach nourishment) is recommended because it would fully achieve the project purpose. The preferred alternative would have greater effect on the environment than the no action alternative, but the proposed project would be cost effective relative to meeting the purpose and need of the proposed project, and would provide the greatest safety for vessels using La Push marina, including the Coast Guard. Although the preferred alternative would have a greater effect on the environment, in-water work window restrictions, timing restrictions, and other mitigation measures would avoid or minimize effects to the environment.

11 Summary

As described, the proposed Federal action of repairs to the Quillayute Spit over 10 years with supplemental beach nourishment of cobbles at Site B would not have significant impacts to the quality of the human environment of the Quillayute River estuary and Pacific Ocean beaches. Adhering to the in-

water work window, avoiding in-water work to the extent possible, and limiting work to the designated project footprint is sufficient to avoid significant impacts to natural resources. The USACE has achieved full compliance with all environmental laws including ESA, CWA, and CZMA and has documented this compliance in the FONSI.

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Final Environmental Assessment

and Clean Water Act, Section 404 Public Interest Review

Quillayute Spit Repair and Maintenance 2018-2029

Appendix A
Finding of No Significant Impact (FONSI)/Clean Water Act Section 404 Statement of Findings (SOF)

2018-2029 Quillayute Spit Repair and

Clallam County, Washington

FINDING OF NO SIGNIFICANT IMPACT (FONSI)

AND

CLEAN WATER ACT SECTION 404 STATEMENT OF FINDINGS

1. **Name of Waterway:** Quillayute River Estuary.

2. **Background:** The Seattle District, U.S. Army Corps of Engineers (Corps) is undertaking the following project under the Rivers and Harbors Act of 3 July 1930 (House Document 290, 71st Congress, 2nd session) and modified by the Rivers and Harbors Acts of 2 March 1945 (79th Congress, 1st Session) and 3 September 1954 (83rd Congress, 2nd Session). The need for measures to prevent a breach in the Quillayute Spit has been recognized as essential to the functionality of the Federal navigation project since the project was originally authorized in 1930. Maintenance and stabilization of the Quillayute Spit to serve the required protective purpose has progressed over the intervening years to the point that it is now an acknowledged Federal responsibility to design, operate, and maintain a revetment.

The purpose of the Quillayute Spit is to protect the Quillayute Federal Navigation project from direct exposure to ocean waves, which would impair the use of the federally authorized small boat basin and navigation channel as well as search and rescue use by the local Coast Guard station. Maintenance of the Quillayute Spit is needed because high river flows and ocean waves can damage the spit and lead to overtopping or a breach, which exposes the local Coast Guard station, La Push, and Quileute Reservation to extreme ocean conditions that pose a risk to lives and property. The USCG Quillayute Station is the only vessel response point between Neah Bay and Grays Harbor and is therefore an important location for timely response to endangered mariners nearby in the Pacific Ocean. The marina at La Push offers a livelihood for approximately 325 Tribal members and 50 non-Tribal citizens including USCG personnel. The primary commercial activity is fishing and fish processing, which generates approximately $4,000,000 in annual income.

3. **Action:** The Corps will repair the entire Quillayute Spit between Stations 10+00 and 30+00 over a 10-year period (2018 to February 2029) and perform supplemental beach nourishment at the toe of the spit. Work would be accomplished 24 September through 28 February of any year. It is likely that repairs would be done in 200- to 300-foot sections focusing on the most damaged areas approximately every 1-2 years, depending on funding. This would require up to 10 individual construction events to complete the repair. In order to access the repair areas, a 25-foot wide haul road with up to 10,000 tons of 3- to 9-inch quarry spalls placed during each episode would be built

on the crest of the Quillayute Spit out to the area being repaired. Between Stations 10+00 and 30+00, the Quillayute Spit needs repairs that consist of reworking the existing armor stone with machinery stationed on the structure to create a core layer and capping it with new 10- to 20-ton armor stone. Placing core stone 1-3 feet in diameter may be necessary in areas without sufficient existing material. The project requires some existing armor stone to be reworked down to an elevation of +0 feet MLLW before being tied into existing stone, but it is likely much of the existing armor stone would only need to be reworked down to +5 feet MLLW due to the presence of existing stone that has sloughed down the slope of the spit from ocean wave action. Repairs to the spit would remain within the 1974 design footprint. Work will be timed during low tides for repairs in the intertidal zone to avoid in-water work to the extent possible due to the safety risk to workers and to avoid environmental impacts. Work does not extend below +0 feet MLLW, but some waves may incidentally enter the work zone due to the dynamic nature of the area. The total volume of repair material would be up to approximately 80,000 tons of 10- to 20-ton armor stone and up to approximately 20,000 tons of core stone 1-3 feet in diameter.

Supplemental beach nourishment will be placed at Site B along the toe of the Quillayute Spit approximately every four years. Dredged material is already placed in Site B during maintenance dredging; however, the volume is insufficient so there is a sediment deficit on the ocean-ward side of the spit and wave action continues to damage areas along the entire Quillayute Spit, eroding material from the toe of the riprap. The ocean-ward side of the spit is steep and highly reflective armor stone, which contributes to erosion of the beach in front of the Quillayute Spit. The Corps is proposing to place 3- to 12-inch rounded river cobbles along on the ocean-ward side of the spit within the existing beach nourishment Site B to supplement the placement of dredged material. This material is similar to the Quillayute River bedload that is found on the riverward side of the spit. Site B is approximately 3,000 feet long and 75 feet wide, with an area of approximately 6 acres. The Corps would expect to place up to 100,000 CY within Site B approximately every four years. To avoid burying cobble under armor rock, cobble will only be placed over segments where armor has already been replaced/repaired or that are undamaged. In the event that armor repair is needed at a segment that has cobble, the cobble will be moved to the side before placing the armor rock and then placed back over the armor.

4. Coordination: The Federal action is described in the Final Environmental Assessment (EA): Quillayute Spit Repairs and Maintenance 2018-2029, dated August 2018.

a. Letters of Comment and Responses: The Draft EA, the contents of which are consistent with a Clean Water Act (CWA) Section 404 Public Notice, underwent a public comment period from 05 July 2018 to 04 August 2018.

b. Federal Agencies: The U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service (NMFS), the U.S. Department of the Interior, and the U.S. Fish and Wildlife Service (USFWS) are

responsible for the Endangered Species Act of 1973 (ESA) listed species in Clallam County. The Corps determined that the proposed repairs and maintenance will have no effect on any ESA-listed species or designated critical habitat. The Corps prepared documentation of this determination. The Corps determined that repairs and maintenance will have no adverse effect on Essential Fish Habitat (EFH) for Pacific Coast Salmon, Pacific Coast Groundfish, and Coastal Pelagic Species; it is not necessary to submit a determination of "no adverse effect" to NMFS.

The Corps requested a 401 Water Quality Certification from the Environmental Protection Agency (EPA) and will comply with applicable conditions associated with the discharge of dredged or fill material into the waters of the U.S. The Corps received a 401 Water Quality Certification 16 August 2018.

c. State and Local Agencies: The Corps has determined that the project is consistent to the maximum extent practicable with the enforceable policies of the approved Washington State Coastal Zone Management Program, in particular the Shoreline Management Plans Clallam County, and, therefore, is in compliance with the Coastal Zone Management Act (CZMA). The Corps prepared a Coastal Zone Management Consistency Determination for maintenance dredging and submitted it to Ecology on 29 June 2018. The Corps received a Coastal Zone Management Consistency Concurrence from Ecology 21 August 2018.

Section 106 of the National Historic Preservation Act (16 USC 470) requires Federal agencies to take into account the effects of proposed federal undertakings on historic properties included or eligible for the National Register of Historic Places. The implementing regulations for Section 106 (36 C.F.R. § 800) require Federal agencies to consult with various parties, including the Advisory Council on Historic Preservation, the State Historic Preservation Office (SHPO), and Indian Tribes, to identify and evaluate historic properties, and to assess and resolve effects to historic properties.

The Corps consulted with the Washington SHPO and Quileute Tribe (Tribe) for this undertaking. Based on the results of literature and records review, the continual erosion and replacement of the materials of which the spit is comprised, and the absence of known or recorded historic properties within the area of potential effect (APE), the Corps found that no historic properties would be affected by the undertaking.

d. Treaty Tribes: The Corps has ongoing coordination with the Tribe on matters involving the repair and maintenance of the Quillayute Spit to maintain navigability of the channel and access to ocean fisheries. Additionally, the Corps has consulted with tribal biologists regarding avoiding impacts to tribal fisheries resources.

5. Environmental Effects and Impacts:

a. Summary of Effects: The Final EA for the Quillayute Spit Repair and Maintenance 2018-2029, dated August 2018, describes the effects of the proposed project. Unavoidable adverse effects include the loss of benthic invertebrates at the

repair site and Site B, where the supplemental beach nourishment will occur. Minor and temporary water quality impacts through turbidity are expected, as well as some emissions of air pollutants and greenhouse gases. However, these effects will be temporary and localized and are not expected to be significant.

b. Compliance with Applicable Environmental Laws: The environmental laws listed below are applicable to the proposed action. An evaluation of environmental impacts under each of these regimes, as well as compliance with each of these laws, is documented in the Draft EA.

- National Environmental Policy Act: The Corps has prepared an EA that underwent public review prior to finalization.

- ESA: The Corps has determined that the action will have "no effect" on ESA listed species due to timing restrictions, working in the dry to the maximum extent, and species not being present in the action area. USFWS and NMFS does not provide concurrence for determinations of "no effect".

- Marine Mammal Protection Act: The Corps has determined that the project would not disturb any marine mammal to the extent of causing significant disruption to behavioral patterns, and that it is thus not necessary to pursue an incidental harassment authorization under the MMPA.

- Magnuson-Stevens Fishery Conservation and Management Act: The Corps determined that repairs and maintenance of the Quillayute Spit will have no adverse effect on EFH for Pacific Coast Salmon, Pacific Coast Groundfish, and Coastal Pelagic Species; NMFS does not provide concurrence for determinations of "no adverse effect."

- CWA Sections 404 and 401: The Corps prepared a Section 404(b)(1) Evaluation to demonstrate substantive compliance with Section 404 of the CWA and 40 CFR 230 (Appendix B of the Final EA). The Corps requested and received a Water Quality Certification under section 401 of the CWA from EPA.

- Coastal Zone Management Act: The Corps determined under the CZMA that the project will be consistent to the maximum extent practicable with the enforceable policies of the approved Washington Coastal Zone Management Program using the Clallam County Shoreline Master Plan (SMP) and submitted the determination to Ecology for review and received concurrence from Ecology

- National Historic Preservation Act: The Corps consulted with the Washington SHPO and Tribe for this undertaking. Based on the results of literature and records review, the continual erosion and replacement of the materials of which the spit is comprised, and the absence of known or recorded historic properties within the area of potential effect (APE), the Corps found that no historic properties would be affected by the undertaking.

- Clean Air Act: Maintenance dredging and disposal activities under this project will result in an increase in emissions that is clearly *de minimis* that would not constitute a measurable effect among the impacts of climate change and sea level rise and is therefore not considered a significant impact.

- Native American Tribal Treaty Rights: The Tribe has a reservation and federally adjudicated off-reservation hunting and gathering rights. Repair and maintenance activities would not change access to Usual and Accustomed fishing, shell fishing, or collecting areas, nor would the proposed action reduce the abundance of any harvested species.

- Migratory Bird Treaty Act and Executive Order 13186 Migratory Bird Habitat Protection: Maintenance dredging and disposal activities would not have any direct and deliberate negative effects to migratory birds. There would be no adverse effect on habitat and the project would only have minor and temporary effects to a small number of individual birds that may be present in the project area. No permit application for "take" of migratory birds is thus required. These birds are assumed to be habituated to the noise and activity of the Quillayute River estuary.

- Executive Order 13175 Consultation and Coordination with Indian Tribal Governments: The Corps has engaged in regular and meaningful consultation and collaboration with the federally recognized tribe in the project area, the Quileute Tribe. Letters were sent to the federally recognized Tribe to solicit their input prior to releasing the draft EA for public review.

- Executive Order 12898 Environmental Justice: Repair and maintenance of the Quillayute Spit is not expected to result in any disproportionate adverse environmental effects or impacts on the health of tribal members, or other minority/low-income populations.

- Executive Order 11990 Protection of Wetlands: Repairs and maintenance of the Quillayute Spit with supplemental beach nourishment at the toe of the spit would have no effect to any tidal wetlands, as dredging would maintain existing conditions and the placement sites are sufficiently distant so as not to influence any wetlands.

5. Determination:

a. Alternatives: The Corps considered three alternatives in the draft EA for the Quillayute Spit Repair and Maintenance Project: (1) no action, (2) repairs to the Quillayute Spit over 10 years (3) the preferred alternative of repairs to the Quillayute Spit with supplemental beach nourishment approximately every four years.

The Corps rejected Alternative 1 because it would not meet the project purpose and need. Alternative 2 meets the purpose and need; however, the incremental difference

between Alternatives 2 and 3 is so minimal that they can be considered equivalent in terms of environmental impacts. Alternative 3 would have the added benefit of reducing erosion at the toe of the spit so it is likely fewer and less frequent repairs would be required and in-water work window restrictions, timing restrictions, and other mitigation measures would avoid or minimize effects to the environment. Alternative 2 was not selected due to the opportunity to reduce the number and frequency of repairs to the Quillayute Spit. Alternative 3 meets the practicability, environmental acceptability, and engineering requirements consistency components of the Federal standard, and is the alternative that most fully implements the Federal standard.

b. Individual and Cumulative Environmental Effects: The proposed episodes of maintenance dredging and placement would cause a temporary effect to biological functions, but would maintain a Federally authorized structure. In consideration of past developments still in existence in the Quillayute River estuary, and the limited amount of anticipated future alterations within the estuary itself, the proposed repairs and maintenance of the Quillayute Spit with associated supplemental beach nourishment is not a significant addition to cumulative impacts to the Quillayute River. The short-term disruption of repairs and maintenance is outweighed by the projected long-term benefit of strengthening the Quillayute Spit and providing supplemental beach nourishment to help reinforce against erosive forces and avoiding further introduction of non-native rock material into the natural beach environment. The Corps therefore concludes that there would be no significant contribution to cumulative effects associated with the proposed repairs and maintenance.

c. Conditions in the Water Quality Certification: The Corps requested a water quality certification from EPA and obtained Certification prior to promulgating the FONSI. The Corps will comply with applicable conditions in the certification associated with the discharge of dredged material into the waters of the U.S. All construction work will be limited to September 24 through February 28 to avoid impacts to salmonids and forage fish at vulnerable life stages, and to avoid nesting or fledging marbled murrelet.

d. Conditions in the CZMA General Consistency Concurrence: The Corps determined that this project is consistent to the maximum extent practicable with the enforceable policies of the approved Washington coastal management program and obtained concurrence from Ecology prior to signing the FONSI.

7. Summary of Impacts and Compliance: Impacts of the work will be minor and temporary and will have a small spatial scale compared to the similar habitat area of the entire estuary and adjacent ocean beaches. It has been determined that this project will have no effect to species listed under the ESA. Repairs and maintenance during the approved in-water work windows will avoid and minimize impacts to fish and their prey. No in-water work will occur. Estimated disturbance to marine mammals does not rise to the level that requires an authorization under the Marine Mammal Protection Act. The Corps prepared a 404(b)(1) analysis and received a Water Quality Certification from EPA; this project complies with Sections 401 and 404 of the CWA. The Corps prepared a consistency determination under the CZMA and received concurrence from Ecology.

The project complies with the National Historic Preservation Act and the Corps is coordinating the work with the SHPO and the Tribe.

8. District Engineer's Findings and Conclusions: I have evaluated the repair and maintenance activity in light of the public interest factors prescribed in 33 CFR 336.1(c). The following factors were evaluated as considerations potentially impacting the quality of the human environment in the accompanying EA and coastal zone consistency evaluation: navigation and the Federal standard, water quality, coastal zone consistency, wetlands, endangered species, historic resources, scenic values, recreational values, fish and wildlife, and application of non-Federal land use policies. No additional impacts to state/regional/local land use classifications, determinations, and/or policies are anticipated as the project will maintain an authorized feature of a Federally authorized navigation channel that are already used for vessel transit and the protection of a marina. In accordance with 33 CFR 337.1(a)(14) and 325.3(c)(1), the following additional relevant factors were also considered: conservation, economics, shoreline erosion and accretion, safety, and property ownership.

The selected alternative represents the least costly alternative, constituting the discharge of dredged or fill material into waters of the U.S. in the least costly manner and at the least costly and most practicable location, is consistent with sound engineering practices, and meets the environmental standards established by the CWA Section 404(b)(1) evaluation process. Execution of the selected alternative, following considerations of all applicable evaluation factors, is in the public interest.

Furthermore, based on the attached EA, I have determined that the selected action will not have significant effects on the quality of the human environment and does not require preparation of an environmental impact statement.

03 SEP 18
Date

Mark A. Geraldi
Colonel, Corps of Engineers
District Commander

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Final Environmental Assessment
and Clean Water Act, Section 404 Public Interest Review
Quillayute Spit Repair and Maintenance 2018-2029

Appendix B
Clean Water Act Section 404(b)(1) Evaluation

Quillayute River Federal Navigation Project
Quillayute Spit Repairs and Maintenance
La Push, Clallam County, Washington

Substantive Compliance for
Clean Water Act, Section 404(b)(1) Evaluation

1. Introduction. The purpose of this document is to record the evaluation and findings regarding this project pursuant to Section 404 of the Clean Water Act (CWA).

The following action is covered by this document: routine repairs and maintenance of the Quillayute Spit with placement of rounded river cobble at Site B designated placement site. Work will be conducted at the direction of the U.S. Army Corps of Engineers (USACE). The proposed action is for repairs of approximately 200- to 300-foot sections of the spit approximately every one to two years and placement of up to 100,000 cubic yards (CY) of 3- to 12-inch rounded river cobble at Site B. Repairs and maintenance typically occur with heavy machinery from the crest of the spit and the project would last roughly 90 days, weather permitting; however, the work may take up to 120 days due to winter storms on the Washington Coast. Repair years are anticipated to be up to annually to 2029 and the full duration of the fish work window that closes 1 March each year. This document is intended to cover the period from fall 2018 to 1 March 2029 to allow for the possibility that repairs or beach nourishment may be required throughout the work window to complete the work that starts in fall 2028.

The information contained in this document reflects the findings of the project record. Specific sources of information included the following:

a. U.S. Army Corps of Engineers. 1986. Final Environmental Impact Statement – Quillayute River Navigation Project Operations and Maintenance. U.S. Army Corps of Engineers, Seattle District.
b. CWA, 404(b)(1) Evaluation (see below).
c. Public Interest Review (see below).

This document addresses the substantive compliance issues of the Clean Water Act 404(b)(1) Guidelines [40 CFR §230.12(a)] and the Regulatory Program of the Corps of Engineers [33 CFR §320.4(a)].

2. Description of the Proposed Discharge. The Quillayute River Federal Navigation Channel is located at the town of La Push in Clallam County, Washington. The town of La Push is wholly within the Quileute Indian Tribe's reservation land on the northwest coast of the Olympic Peninsula. The proposed discharge consists of reworking and adding armor stone to the Quillayute Spit and supplemental beach nourishment of rounded river cobble in Site B in front of the spit down to 0 mean lower low water (MLLW).

The proposed action consists of long-lasting repairs to the entire structure between Stations 10+00 and 30+00 over a 10-year period (Figure 2 of the EA). It is likely that repairs would be done in 200-300 foot sections focusing on the most damaged areas approximately every 1-2 years. This would require up to 10 individual construction events to complete the repair. It is unlikely that a full repair of the entire structure would be possible in a single year, but repairs to the greatest extent possible would be conducted in any given year depending on funding and ability to adhere to the work window of 24 September to 28 February.

In order to access the repair areas, a 25-foot wide haul road would be built on the crest of the Quillayute Spit out to the area being repaired. During the November 2016 emergency repair a portion of this haul road was constructed on top of the spit from station 0+00 to station 20+00. As of January 2018,

approximately 50% of this road remains usable with the remainder either covered by logs or over washed. Logs on top of the haul road would be moved to the riverward slope of the spit to allow vehicle access and prevent sudden movement of logs into the construction area by ocean waves, which presents a safety concern. No logs would be removed from the environment. Ocean waves routinely push logs up to the crest of the spit towards the riverward slope. The construction of a haul road on the crest would require up to 10,000 tons of 3- to 9-inch quarry spalls per repair. Repairs to the spit would typically proceed from the farthest offshore location on the spit toward land so the road can be incorporated under the spit repair instead of leaving an unarmored area on the crest.

Currently the Quillayute Spit needs repairs between Stations 10+00 and 30+00. The majority of repairs are located on the ocean-ward side. Repairs to the spit would remain within the design footprint and conform to the design. This would be accomplished by reworking the existing armor stone on the structure to create a core layer and capping it with new 10-20 ton armor stone. Placing core stone 1-3 feet in diameter may be necessary in areas without sufficient existing material. The project requires some existing armor stone to be reworked down to an elevation of 0 feet MLLW before being tied into existing stone, but it is likely much of the existing armor stone would only need to be reworked down to +5 feet MLLW due to the presence of existing stone that has sloughed down the slope of the spit from ocean wave action. Work will be performed by utilizing the low tides for the construction of the revetment in the intertidal zone to avoid or minimize in-water work to the extent possible; work does not extend below +0 ft MLLW but some waves may incidentally enter the work zone due to the dynamic nature of the area. Figure 3 of the EA is a typical section of the Quillayute Spit showing the existing revetment, location of new armor stone, and typical dimensions. The total volume of repair material would be up to approximately 80,000 tons of 10-20 ton armor stone and up to approximately 20,000 tons of 1-3 foot diameter core stone.

The USACE is also proposing to place 3- to 12-inch rounded river cobbles along on the ocean-ward side of the spit at the existing beach nourishment area (Site B) to supplement the placement of dredged material. Site B is approximately 3,000 feet long and 75 feet wide, with an area of approximately 6 acres (Figure 4 of the EA). The USACE would expect to place up to 100,000 CY within Site B approximately every four years (Figure 5 of the EA). The Quillayute Spit was initially composed entirely of bedload material from the Quillayute River which ranged from coarse sand to 12-inch diameter cobbles. Following the development of the Federal navigation project with modification and armoring of the spit, supplemental beach nourishment became necessary because sediment from downdrift beaches cannot reach the spit due to the lack of longshore transport of material and the location of the islands. The sediment supply to the Quillayute Spit is effectively cut off except for dredged material placed in Site B during navigation channel maintenance dredging. Material placed from maintenance dredging is primarily sands and gravels due to the hydraulic dredging method transports limited cobble size material. However, this material is quickly eroded away by the longshore current due to its small size.

By design, the cobble berm would move within the footprint of Site B and change shape seasonally. It is expected that the cobble would primarily move in the offshore direction as opposed to the longshore direction (i.e., along the beach) creating a steeper and coarser beach in front of the revetment. Waves must act at an angle to the beach in order to create a longshore current and longshore transport. Due to the orientation of the spit and the location of James and Rock Island, waves primarily come in parallel to the beach with only a small fraction of the wave energy acting in the longshore direction. As a result most of the erosion on the Quillayute Spit is due to material being lost in the offshore direction rather than being transported in the longshore direction as would occur in a more open coast situation. The longshore current generated by the waves along the spit is strong enough to move sand size particles (e.g., dredged material) but not strong enough to move a significant amount of cobble sized material.

This is one of the main reasons it would be beneficial to place cobbles in Site B. The supplemental beach nourishment cobbles are expected to remain in place for approximately 3-5 years before moving offshore, in contrast to the dredged material that is eroded away by the longshore current soon after placement. Dredged material would still be placed in Site B during maintenance dredging of the navigation channel because it is beneficial to retain the sandy material in the environment.

Supplemental beach nourishment would act as a "dynamic revetment" in front of the Quillayute Spit to absorb wave energy and prevent erosion in front of the spit that lowers the beach and allows undermining of the toe. This type of design is based on natural cobble berms that can absorb a large amount wave energy, reduce wave runup, or reflect some waves into incoming waves to break and lower the energy of incoming waves rather than reflecting it to the beach in front of the berm and contributing to erosion (Johnson et al. 2014). To avoid burying cobble under armor rock, cobble will only be placed over segments where armor has already been replaced/repaired or that are undamaged. In the event that armor repair is needed at a segment that has cobble, the cobble will be moved to the side before placing the armor rock and then placed back over the armor. Supplemental beach nourishment with cobbles was previously proposed in 1974 as maintenance of the Quillayute Spit to prevent lowering of the beach in front of the spit that may lead to undermining and breaching (USACE 1974). The Quillayute Spit was initially formed by cobbles that were part of the Quillayute River bedload and later modified with large armor stone. Cobble material can still be found on the riverward side of the spit and is more closely representative of historic material that would have been present around the Quillayute Spit.

Material for supplemental beach nourishment would be obtained from a river quarry so the rounded river cobbles would be of similar composition to bedload material in the Quillayute River. Trucks of cobble material would likely be emptied directly onto the repair section and shaped by other machinery (e.g., dozer or excavator). Cobbles of 3- to 12-inch diameter are similar to the bedload material of the Quillayute River, and can be seen on the riverward slope of the spit during low tide. After initial placement along Site B, the focus for each placement event would be those areas identified in need of nourishment. Technical input from USACE coastal engineers and analysis of the latest site conditions will factor into the initial supplemental beach nourishment and subsequent placement along Site B.

Several pieces of heavy machinery would be used throughout the repairs; a general description of the typical number and types of machinery for this type of repair is described here but may be adjusted slightly based on repair needs and available equipment. Repair material would be obtained from a local quarry and may be stockpiled in the staging area in the Rialto Beach visitor parking lot just north of the Quillayute Spit where it could then be transported out to the repair area. Material for repairs would most likely be transported by truck and trailer to the staging area. Work would be done during low tides for the construction of the revetment in the intertidal zone to avoid or minimize in-water work to the extent possible; work does not extend below +0 ft MLLW but some waves may incidentally enter the work zone due to the dynamic nature of the area. A bulldozer would be used to grade the haul road. All machinery would stay within the repair area footprint.

3. Project Need. Repair and maintenance of the Quillayute Spit is needed because strong ocean waves erode the toe of the spit to undermine the structure which leads to damage, overwashing, and eventually breaching of the spit. Transmission of waves through the spit creates hazardous navigation conditions in the navigation channel and marina. The U.S. Coast Guard and tribal fishing vessels are the primary users of this channel.

4. **Project Purpose**. The purpose of the action is to provide for safe navigation and moorage by protecting the navigation channel and marina from rough ocean conditions. The purpose for placement at the beneficial use site in front of the Quillayute Spit is to absorb wave energy that causes erosion and reduce the risk of breaching.

5. **Availability of Environmentally Acceptable Practicable Alternatives to Meet the Project Purpose**. The alternatives evaluated for this project were as follows:

a. *Alternative 1 (No Action)*. The No-Action Alternative is analyzed as the future without-project conditions for comparison with the action alternatives. Under this alternative, the USACE would not perform regular repairs to the Quillayute Spit. However, if the integrity of the revetment were threatened then the USACE or other Federal or non-Federal agencies may act under emergency authorities to preserve the revetment system and, to the extend possible, maintain protection of life and property behind the revetment. Responding to damages during an emergency event, however, would be temporary, less certain of success, potentially more expensive, and could be less protective of environmental and cultural resources. A response would also take time to activate and execute, so there is a risk that it would not prevent revetment failure. The No-Action Alternative poses a risk to the USCG's ability to carry out rescue missions, and to recreational boaters and commercial fishermen who may run encounter ocean waves and strong currents when transiting the channel. Eventually, access to the marina would be unavailable. This would have significant economic effects to the Quileute Tribe at the town of La Push, and the USCG has stated that they would likely have to close this station if the navigation channel is not operational. This alternative would not meet the project purpose and need, but is carried forward for evaluation purposes.

b. *Alternative 2 –Repairs to the Quillayute Spit Over 10 Years*.

Repairs to the entire structure would be done between Stations 10+00 and 30+00 (Figure 2) over a 10-year period; the repairs would likely be done in 200- to 300-foot sections focusing on the most damaged areas approximately every 1 to 2 years, but could be larger sections depending on funding and ability to perform the work within the work window of 24 September to 28 February. In order to access the repair areas, a 25-foot wide haul road of 3- to 9-inch quarry spalls would be built on the crest of the Quillayute Spit out to the area being repaired and incorporated into the structure after repairs are complete. Repairs would be accomplished by reworking the existing armor stone on the structure with machinery positioned on the crest to create a core layer and capping it with new 10- to 20-ton armor stone (Figure 3 of the EA). Some existing armor stone on the structure would need to be reworked down to 0 feet MLLW, but it is likely most reworking would be only down to about +5 feet MLLW. Repairs would be scheduled during low tides so that in-water work will be avoided or minimized to the extent possible; it is dangerous for the workers and difficult to complete the construction when there is water on the site; however, due to the dynamic nature of the area there may be some waves entering the work zone. The total volume of repair material would be up to approximately 80,000 tons of 10- to 20-ton armor stone and up to approximately 20,000 tons of 1- to 3-foot diameter core stone.

c. *Alternative 3 –Repairs Over 10 Years with Periodic Supplemental Beach Nourishment (Agency Preferred Alternative).* Alternative 3 would be identical to those described in Alternative 2, with the addition of supplemental beach nourishment with 100,000 CY of 3- to 12-inch diameter rounded river cobbles within the dredged material placement site (Site B) of Quillayute Spit about every 4 years (Figures 4 and 5 of the EA). The regulated placement is at Site B.

There is a sediment deficit on the ocean side of the spit because material erodes from the toe of the riprap offshore. Wave action then damages areas along the entire Quillayute Spit. Supplemental beach nourishment would form a "dynamic revetment" to absorb wave energy and slow erosion of the beach in front of the spit. Dredged material is currently placed on the ocean side of the Quillayute Spit; however, the amount of dredged material from the navigation channel is not a sufficient amount to compensate for sediment loss from in front of the Quillayute Spit. Instead, the longshore current generated by waves along the spit moves small particles such as the coarse, sandy dredged material along the shore to the north and south. The longshore current is not strong enough to move significant amounts of larger, cobble-sized material; conversely, coastal engineering analysis found that due to the wave direction and force, cobbles would be expected to move in the offshore direction to the west over approximately 3-5 years. The Corps proposes to use machinery from the crest of the Quillayute Spit to place up to 100,000 CY of 3- to 12-inch rounded river cobbles within Site B approximately every four years. The cobble sizes are of similar composition to the Quillayute River bedload material found on the riverward side of the Quillayute Spit. Dredged material would continue to be placed and is still expected to become part of the longshore drift cell that nourishes adjacent beaches.

Findings. The USACE rejected Alternative 1 because it would not meet the project purpose and need. Alternative 2 meets the purpose and need due to the ability to schedule the work during a time without sensitive species migrating through the area and being able to avoid nesting and fledging marbled murrelet; however, the incremental difference between Alternatives 2 and 3 is so minimal that they can be considered equivalent in terms of environmental impacts. Alternative 3 would have the added benefit of reducing erosion at the toe of the spit so it is likely fewer and less frequent repairs would be required. Alternative 2 was not selected due to the opportunity to reduce the number and frequency of repairs to the Quillayute Spit associated with Alternative 3.

6. Significant Degradation, Either Individually or Cumulatively, to the Aquatic Environment

a. *Impacts on Ecosystem Function.* Quillayute Spit repairs and supplemental beach nourishment placement would be timed to occur during low tides but when the site is inundated by high tide or if waves run up on the beach into the site then a small visible turbidity plume may occur that is quickly dispersed by wave and tidal action. Supplemental beach nourishment at Site B consists of clean, river rounded cobbles 3-12 inches in diameter. The power of ocean waves in this dynamic area moves vast quantities of sediment around the beach creating wide areas of visible turbidity even when no supplemental beach nourishment is occurring. Therefore, the minor amount of cobble material entering the water for the short duration of high tide is not considered a significant effect.

The USACE received a water quality certification from the EPA and will comply with all required conditions associated with the discharge of dredged or fill material into waters of the U.S. contained in the certification (Appendix E). No release of contaminants is expected due to the clean nature of the material. Based on the short-term, minor effects to water quality, there would be no significant impact to this resource.

b. *Impacts on Recreational, Aesthetic and Economic Values*. Presence of machinery on the built environment of the spit will be temporary. Access to the beach would only be limited during construction or supplemental beach nourishment, and will be temporary and limited compared

to the available nearby beach access. Navigation will not be obstructed. No significant adverse effects on recreation, aesthetics, or the economy are anticipated.

Findings. The USACE has determined that there would be no significant adverse effects to aquatic ecosystem functions and values.

7. Appropriate and Practicable Measures to Minimize Potential Harm to the Aquatic Ecosystem

a. *Impact Avoidance Measures*. The primary avoidance measure concerns the timing of construction and placement of supplemental beach nourishment materials. Repairs and maintenance would only occur within the allowed in-water work window for the protection of juvenile salmon and spawning surf smelt; little to no in-water work will occur because work will occur during low tides. Work does not extend below +0 ft MLLW but some waves may incidentally enter the work zone due to the dynamic nature of the area; in-water work is avoided due to the safety risk to workers and to avoid environmental impacts. The USACE will minimize impacts to marbled murrelets by beginning the work window September 24, outside of the marbled murrelet nesting and fledging season. Another avoidance measure is to reduce erosion at the toe of the Quillayute Spit so that repairs are as infrequent and minimal as possible; the USACE anticipates fewer and less frequent repairs by minimizing the failure mechanism (erosion).

b. *Impact Minimization Measures*. The USACE would minimize impacts to the aquatic environment by complying with all required conditions associated with the discharge of dredged or fill material into waters of the U.S. contained in the water quality certification from EPA. The USACE will minimize the impact of the Quillayute Spit by not adding width or height to the project footprint and by taking measures to reduce the frequency and number of repairs via supplemental beach nourishment. Supplemental beach nourishment is of a similar composition to the Quillayute River bedload material and is not expected to significantly alter the existing sediment composition on the ocean-ward side of the Quillayute Spit.

c. *Compensatory Mitigation Measures*. There will be no compensatory mitigation measures because the work will not have more than a negligible change to any habitat characteristics and supplemental beach nourishment generates net benefits in the form of fewer or less frequent repairs and maintenance. The placement of supplementary beach nourishment material will occur at areas that have previously received fill material and will emulate the natural sediment transport process of Quillayute River bedload material that has been interrupted by stabilization and armoring of the Quillayute Spit.

Findings. The USACE has determined that all appropriate and practicable measures have been taken to minimize potential harm. There are no practicably available placement alternatives that would be less costly and still be consistent with engineering and environmental requirements, while meeting the project need for disposition of dredged material.

8. Other Factors in the Public Interest.

a. *Fish and Wildlife*. The USACE is coordinating with State and Federal agencies, as well as the Quileute Tribe, to assure careful consideration of fish and wildlife resources. The USACE prepared an analysis of effects to threatened and endangered species in accordance with the ESA. The USACE will assure full compliance with the ESA prior to and during project implementation.

b. *Water Quality*. The USACE has obtained a Section 401 Water Quality Certification from the EPA. The USACE will abide by the conditions in the Water Quality Certification to ensure compliance with State water quality standards when conducting activities involving discharge of materials into the waters of the U.S.

c. *Historic and Cultural Resources*. The USACE determined that the proposed repair will result in no historic properties affected. The Washington State Preservation Officer and Quileute Tribe documented their agreement with this determination in correspondence dated 23 July 2018 and 26 July 2018, respectively.

d. *Activities Affecting Coastal Zones*. The USACE has provided a Coastal Zone Management consistency determination to Ecology June 2018 that concludes the work will be consistent to the maximum extent practicable with the enforceable polices of the approved State of Washington Coastal Zone Management Program. The USACE received a letter of concurrence from Ecology prior to signing the FONSI.

e. *Environmental Benefits*. Supplemental beach nourishment at Site B would add material similar to the existing riverborne material present on the riverward side of the Quillayute Spit within the nearshore environment. The material would reduce erosion at the toe of the spit and is expected to reduce the number and frequency of repairs to the spit. Adding material to the erosional zone will reduce the need for repairs and adding less natural material such as riprap for reinforcement of the navigation structures.

f. *Navigation*. The proposed repair and supplemental beach nourishment actions are not expected to impede the navigation channel. If an obstruction were to be anticipated, a "Notice to Mariners" would be issued before repair and supplemental beach nourishment operations are initiated. The action will have an overall benefit for navigation by protecting the Federal navigation channel. This allows vessel entry and exit to the USCG station and marina and a safe environment without the influence of rough ocean conditions.

Findings. The USACE has determined that this project is within the public interest based on review of the public interest factors.

9. **Conclusions**. Based on the analyses presented in the Environmental Assessment, as well as the following 404(b)(1) Evaluation and General Policies analysis, the USACE finds that this project complies with the substantive elements of Section 404 of the Clean Water Act.

404(b)(1) Evaluation [40 CFR §230]

Potential Impacts on Physical and Chemical Characteristics (Subpart C)

1. **Substrate [230.20]** The surface substrate at Site B consists of sand, gravel, and cobbles. Supplemental beach nourishment placed here will be similar in nature to the Quillayute River bedload material present on the riverward side of the Quillayute Spit, and will integrate with the natural beach sediments. Placement is considered a beneficial use to reduce erosion at the toe of the spit and limit the number and frequency of repairs needed.

2. **Suspended Particulate/Turbidity [230.21]** Quillayute Spit repairs and supplemental beach nourishment will be timed during low tides to avoid placing material directly into the water to the extent practicable. When the repair or placement site is inundated by tides or waves, there may be a temporary increase in turbidity and suspended particulate levels. Increases in turbidity associated with repairs and placement operations will be minimal (confined to the areas in the immediate vicinity of the placement site) and of short duration (currents will disperse any suspended material within hours of placement).

3. **Water Quality [230.22]** No significant water quality effects are anticipated. The material placed at Site B will be 3- to 12-inch rounded river cobble and is not likely to generate a substantial turbidity plume. The USACE received a water quality certification from the EPA and will comply with all required conditions associated with the discharge of dredged or fill material into waters of the U.S. contained in the certification (Appendix E). No release of contaminants is expected due to the clean nature of the material. Based on the short-term, minor effects to water quality, there would be no significant impact to this resource. Supplemental beach nourishment will be timed during low tides so that material is not placed directly into the water. During higher tide levels, the cobbles will be inundated by ocean water as the waves run up the beach. This can generate a small visible turbidity plume during the hour the tide reaches this height; however, the power of ocean waves moves vast quantities of sediment around the beach creating wide areas of visible turbidity even when no material placement is occurring. Therefore, the minor amount of material entering the water for the short duration of high tide has a negligible effect to water quality. No change to water quality is anticipated.

4. **Current Patterns and Water Circulation [230.23]** Supplemental beach nourishment will not obstruct flow or change the direction of water flow/circulation. The purpose of supplemental beach nourishment is to absorb wave energy that would otherwise be reflected onto the beach in front of the spit where erosion undermines the toe of the spit and damages the structure. Therefore, the energy of the wave reflecting off of the spit in the offshore direction will be reduced to limit erosion and subsequent repairs and maintenance. The overall length of the Quillayute Spit is a small portion of the entire Pacific Coast and changes to wave energy are not expected to extend beyond the beach immediately in front of the spit. No other changes to the velocity of water flow/circulation, including the longshore current, or to the dimensions of the receiving water body will occur. Repairs to the Quillayute Spit will maintain the present current patterns and water circulation.

5. **Normal Water Fluctuations [230.24]** The placement of material will not impede normal tidal fluctuations. Site B along the shoreline of the Pacific Ocean and is not of a sufficient quantity to influence tidal fluctuations.

6. **Salinity Gradients [230.25]** Supplemental beach nourishment will not divert or restrict tidal flows and thus will not affect salinity gradients.

Potential Impacts on Biological Characteristics of the Aquatic Ecosystem (Subpart D)

1. **Threatened and Endangered Species [230.30]** Pursuant to Section 7 of the ESA, the USACE analyzed potential effects of Quillayute Spit repair and maintenance on protected species. The USACE has determined that the preferred alternative will have no effect on any ESA-listed species or critical habitat.

2. **Aquatic Food Web [230.31]** Turbidity associated with repairs and supplemental beach nourishment operations may interfere with feeding and respiratory mechanisms of benthic, epibenthic, and planktonic invertebrates; however, the amount of turbidity generated when the site is inundated by tides will be incredibly minor and likely immeasurable compared to the background fluctuations of turbidity. Supplemental beach nourishment at Site B would cause mortality of invertebrates present in the narrow strip of beach habitat where material lands. Larger organisms such as crabs would be able to flee the area and are rarely observed at the higher tide elevations where the cobbles are placed. Cobbles would be the same type and coarseness as those already present in the area and on the riverward side of the Quillayute Spit, and the total habitat area available would remain. In a relatively short period, organisms would reestablish in the placement area due to recruitment from adjacent non-disturbed areas. Based on these factors, effects to benthic invertebrate populations and their habitat at the placement sites would be minor and discountable. Potential effects of placement operations on salmonids will be reduced and/or avoided through implementation of timing restrictions. Supplemental beach nourishment may cause a low level of risk of disturbance to spawning surf smelt; however, the timing and location avoids spawning surf smelt and the sediment provides a long-term benefit by reducing the number and frequency of repairs to the Quillayute Spit in the future.

3. **Wildlife [230.32]** Noise associated with placement operations may have an effect on bird and marine mammals in the project area. The effects of any sound disturbance would likely result in displacement of animals, but not injury. Beginning work after September 23 will avoid disturbance to the marbled murrelet during their nesting and fledging period. Increases in turbidity associated with the proposed action could reduce visibility, thereby reducing foraging success for any animals in the area, but is expected to be nearly indistinguishable from natural turbidity fluctuations. Any reduction in availability of food would be highly localized and would subside rapidly upon completion of the repair and maintenance operations. The proposed actions are not expected to result in a long-term reduction in the abundance and distribution of prey items.

Potential Impacts to Special Aquatic Sites (Subpart E)

1. **Sanctuaries and Refuges [230.40]** The Olympic Coast National Marine Sanctuary is located near but does not include the placement areas. No effects of the project are expected to extend to the Sanctuary.

2. **Wetlands [230.41]** Supplemental beach nourishment will not take place in wetlands. Use of the designated placement site will not alter the inundation patterns of wetlands in the project area.

3. **Mudflats [230.42]** Supplemental beach nourishment will not take place on mudflats. Use of the designated placement site will not alter the inundation patterns of nearby mudflats.

4. **Vegetated Shallows [230.43]** Supplemental beach nourishment will not take place on or directly adjacent to vegetated shallows.

5. **Coral Reefs [230.44**] Not applicable.

6. **Riffle and Pool Complexes [230.45]** Not applicable.

Potential Effects on Human Use Characteristics (Subpart F)

1. **Municipal and Private Water Supplies [230.50]** Not applicable.

2. **Recreational and Commercial Fisheries [230.51]** Tribal commercial and subsistence fisheries and non-tribal sportfishing are popular activities at La Push; anglers fish for salmon, halibut, rockfish, and lingcod. Repairs and maintenance of the Quillayute Spit will protect the navigation channel and marina so that fishing vessels can launch and access fishing and shellfishing locations. The Quillayute Spit also supports a charter fishing business as well as transient moorage for recreational fishing boats by protecting the marina and city of La Push from rough ocean conditions.

3. **Water-related Recreation [230.52]** Recreation opportunities in the project area are primarily boating, surfing, beachwalking, and fishing. Only temporary disruptions to beachwalking at Site B would occur from September 24 through February 28 while supplemental beach nourishment and repairs are in progress; the late fall and winter seasons are not the primary recreation time for coastal Washington recreation. In addition, Site B is a small proportion of the area available for water-related recreation in the area. Cobbles placed are similar in nature to material already present in Site B adjacent to the spit (sand, cobbles, and armor stone) and would occupy approximately 50 feet from the Quillayute Spit. The placement area and the remaining 200 to 300 feet of beach between Site B and the water would remain available for recreation after construction is complete. The project would have no permanent detriment to recreation and would in fact maintain conditions for recreational vessels.

4. **Aesthetics [230.53]** The rugged wilderness character of the area attracts travelers from throughout the Pacific Northwest and farther away. Supplemental beach nourishment at Site B would cause a slight decrease to the aesthetic value of this specific location due to the change from a natural beach slope to an artificial slope. However, this impact would be minor in spatial scale and temporary for only the few weeks it takes for tides to shape the cobbles. People walking south from Rialto Beach might encounter the machinery performing repairs or supplemental beach nourishment, which would be a minor disruption of the natural characteristics of the wilderness beach.

5. **Parks, National and Historic Monuments, National Seashores, Wilderness Areas, Research Sites, and Similar Preserves [230.54]** The project is adjacent to a National Park. However, no changes to any park resources are anticipated to result from placement.

Evaluation and Testing (Subpart G)

1. **General Evaluation of Dredged or Fill Material [230.60]** Supplemental beach nourishment material to be placed is 3- to 12-inch cobbles, similar in nature to the bedload material of the Quillayute River located on the riverward side of the spit. Cobbles would have a low percentage of fines due to washing or already clean nature of the material from the quarry. Repair materials consist of 10- to 20-ton armor stone and 1- to 3-foot diameter core stone with 3- to 9-inch quarry spalls for the haul road, all of which will remain on or within the Quilayute Spit following repairs.

2. **Chemical, Biological, and Physical Evaluation and Testing [230.61]** It is unlikely the material would be contaminated due to the size and source of cobbles and other material obtained from local quarries. Therefore, testing of the material is unnecessary.

Action to Minimize Adverse Effects (Subpart H)

1. **Actions Concerning the Location of the Discharge [230.70]** The effects of the discharge are minimized by the choice of placement site. The supplemental beach nourishment placement site has been designated for beach nourishment. The discharge will not disrupt tidal flows. The location of the proposed discharge has been planned to minimize negative effects to the environment.

2. **Actions Concerning the Material to be Discharged [230.71]** Materials will be clean cobbles and armor stone and there are no expected chemicals of concern in the materials to be discharged; therefore, no treatment substances nor chemical flocculates will be added before placement.

3. **Actions Controlling the Material after Discharge [230.72]** No containment levees or capping are necessary because the clean material is intended to serve as supplemental beach nourishment.

4. **Actions Affecting the Method of Dispersion [230.73]** The placement sites have been selected by examining the wave direction and forces that contribute to erosion at the toe of the Quillayute Spit. Currents and circulation patterns were used to predict the direction of dispersion of the discharge, which is in the offshore direction instead of the longshore to prevent movement of cobbles to surf smelt spawning habitat and to not interfere with the placement of dredged material nourishes this habitat.

5. **Actions Related to Technology [270.74]** Appropriate machinery and methods of transport of the material for discharge will be employed. All machinery will be properly maintained and operated.

6. **Actions Affecting Plant and Animal Populations [270.75]** The USACE has initiated coordination with the Quileute Tribe and the State and Federal resource agencies to assure there will be no greater than minimal effects to plant, fish, and wildlife resources.

7. **Actions Affecting Human Use [230.76]** The discharge will not result in damage to aesthetic features of the aquatic landscape. The discharge will not increase incompatible human activity in remote fish and wildlife areas.

8. **Other actions [230.77]** Not applicable.

Application by Analogy of the General Policies for the Evaluation of Public Interest [33 CFR §320.4, used as a reference]

1. **Public Interest Review [320.4(a)]** The USACE finds these actions to be in compliance with the 404(b)(1) guidelines and not contrary to the public interest.

2. **Effects on Wetlands [320.4(b)]** No wetlands will be altered by the placement of material from dredging operations.

3. **Fish and Wildlife [320.4(c)]** The USACE has initiated coordination with the local Quileute Tribe and the State and Federal resource agencies to assure there will be no greater than minimal effects to fish and wildlife resources.

4. **Water Quality [320.4(d)]** The USACE has obtained a 401 Water Quality Certification from the EPA and will abide by the conditions of the Certification to ensure compliance with water quality standards (Appendix E).

5. **Historic, Cultural, Scenic, and Recreational Values [320.4(e)]** The USACE has begun consultation with representatives of the Quileute Nation and the State Historic Preservation Office, and anticipates that the planned undertaking will result in no historic properties affected. No wild and scenic rivers, historic properties, National Landmarks, National Rivers, National Wilderness Areas, National Seashores, National Recreation Areas, National Lakeshores, National Parks, National Monuments, estuarine and marine sanctuaries, or archeological resources will be adversely affected by the proposed work.

6. **Effects on Limits of the Territorial Sea [320.4(f)]** Not applicable.

7. **Consideration of Property Ownership [320.4(g)]** The Quillayute Spit, staging area, and placement site are on Quileute tribal reservation land. Access to Site B is through Federal property of the National Park Service and right of entry is through an existing real estate access permit.

8. **Activities Affecting Coastal Zones [320.4(h)]** The USACE provided a Coastal Zone Management consistency determination to Ecology June 2018 that concludes the work will be consistent to the maximum extent practicable with the enforceable polices of the approved State of Washington Coastal Zone Management Program. The USACE received a letter of concurrence from Ecology prior to signing the FONSI.

9. **Activities in Marine Sanctuaries [320.4(i)]** The Olympic Coast National Marine Sanctuary (OCNMS) is located near but does not include the placement areas. No effects of the project are expected to extend to the Sanctuary. The USACE has initiated coordination with OCNMS staff for consideration of natural resources.

10. Other Federal, State, or Local Requirements [320.4(J)]

a. National Environmental Policy Act. An Environmental Assessment (EA) was prepared to satisfy the documentation requirements of NEPA.

b. Endangered Species Act. In accordance with Section 7(a)(2) of the Endangered Species Act of 1973, as amended, federally funded, constructed, permitted, or licensed projects must take into consideration impacts to federally listed threatened or endangered species. Pursuant to Section 7 of the ESA, the USACE analyzed potential effects of Quillayute Spit repair and maintenance on protected species. The USACE has determined that the preferred alternative will have no effect to any ESA-listed species or critical habitat.

c. Clean Water Act. The USACE must demonstrate compliance with the substantive requirements of the Clean Water Act. This document records the USACE's evaluation and findings regarding this project pursuant to Section 404 of the Act. Public Notice CENWS-PMP-18-17 served as the basis for seeking a Section 401 Water Quality Certification from the EPA. The USACE will abide by applicable conditions of the Water Quality Certification associated with the discharge of material into the waters of the U.S. to ensure compliance with water quality standards (Appendix E).

d. Coastal Zone Management Act. The Coastal Zone Management Act of 1972 (CZMA), as amended, requires federal agencies to carry out their activities in a manner that is consistent to the maximum extent practicable with the enforceable policies of the approved Coastal Zone Management Program. The proposed action is considered consistent to the maximum extent practicable with the State Program.

e. Marine Protection, Research, and Sanctuaries Act. Section 102 of the Marine Protection, Research, and Sanctuaries Act (MPRSA) authorizes the EPA to promulgate ocean dumping criteria and designate ocean disposal sites. This project will not involve ocean disposal of dredged material.

f. National Historic Preservation Act. The National Historic Preservation Act (16 USC 470) requires that the effects of proposed undertakings on sites, buildings, structures, or objects included or eligible for the National Register of Historic Places must be identified and evaluated. The USACE has initiated consultation with the Washington SHPO and the Quileute Nation. The USACE anticipates a finding of no historic properties affected.

g. Fish and Wildlife Coordination Act. The Fish and Wildlife Coordination Act (16 USC 470) requires that wildlife conservation receive equal consideration and be coordinated with other features of water resource development projects. A Fish and Wildlife Coordination Act Report (FWCA) is not required for the proposed placement of sediments because the FWCA does not apply to operations and maintenance activities on existing projects.

11. Safety of Impoundment Structures [320.4(k)] Not applicable.

12. Floodplain Management [320.4(l)] Placement operations will not alter any floodplain areas.

13. Water Supply and Conservation [320.4(m)] Not applicable.

14. Energy Conservation and Development [320.4(n)] Not applicable.

15. **Navigation [320.4(o)]** This project will maintain the navigability of the Quillayute River Navigation Channel. The placement activities will not impede navigation.
16. **Environmental Benefits [320.4(p)]** In supplemental beach nourishment years, placing cobble at Site B would be beneficial by reducing the number and frequency of repairs to the Quillayute Spit following repairs. The cobbles placed will more closely match the material from the Quillayute River, which used to reach the beach prior to the armoring of the spit.
17. **Economics [320.4(q)]** Protecting the navigation channel is an economic benefit for the local community. Tribal fishermen would be able to continue participating in local fisheries, and the Quileute Tribe would benefit from the ability to host transient mariners. Maintaining navigability for USCG station and harbor of refuge are also important socioeconomic resources for the local area. USACE has determined that this project is economically justified.
18. **Mitigation [320.49(r)]** Potential effects of placement operations will be avoided and minimized through implementation of tidal and timing restrictions. No compensatory mitigation is required for the project.

Final Environmental Assessment
and Clean Water Act, Section 404 Public Interest Review
Quillayute Spit Repair and Maintenance 2018-2029

Appendix C
Endangered Species Act Compliance

CENWS-PMP-E **10 August 2018**

MEMORANDUM FOR RECORD

SUBJECT: Endangered Species Act (ESA) and Magnuson-Stevens Fisheries Conservation and Management Act "No Effect" Determination for Quillayute Maintenance and Repair 2018-2029

1. Introduction

This memo evaluates the effects to Federal ESA listed species of U.S. Army Corps of Engineers (USACE) proposed repairs and supplemental beach nourishment of the Quillayute Spit, a revetment that is part of the Federal navigation project in the Quillayute River estuary at La Push, Washington. La Push is located near the northwest corner of the Olympic Peninsula, in Clallam County, Washington. The harbor is a dredged basin originally constructed in 1932. The basin provides a harbor of refuge, a U.S. Coast Guard (USCG) station, transient and permanent moorage in a marina, and a boat launch ramp. Damage to the spit from rough ocean conditions requires repairs to ensure safe navigation. When storms and wave action damage the Quillayute Spit and overtopping or a breach occurs, it presents a safety hazard to vessels that moor in the marina or transit the navigation channel. Emergency repairs last occurred to a 300-foot section in November 2016.

a. Location/Project Area

The Quillayute Spit is located at the town of La Push in Clallam County, Washington (T28N, R15W, Section 28). The town of La Push is about 50 miles southwest of Port Angeles and 15 miles west of Forks (Figure 1). The channel and boat basin protected by the Quillayute Spit provide a harbor of refuge along the Washington Coast between Neah Bay and Grays Harbor. The Quillayute River drains a portion of the western slope of the Olympic Mountains in northwestern Washington. It forms the northerly boundary of the Quileute Indian Reservation and enters the Pacific Ocean at La Push, about 30 nautical miles south of the entrance of the Strait of Juan de Fuca. La Push is 62 nautical miles north of Grays Harbor, Washington.

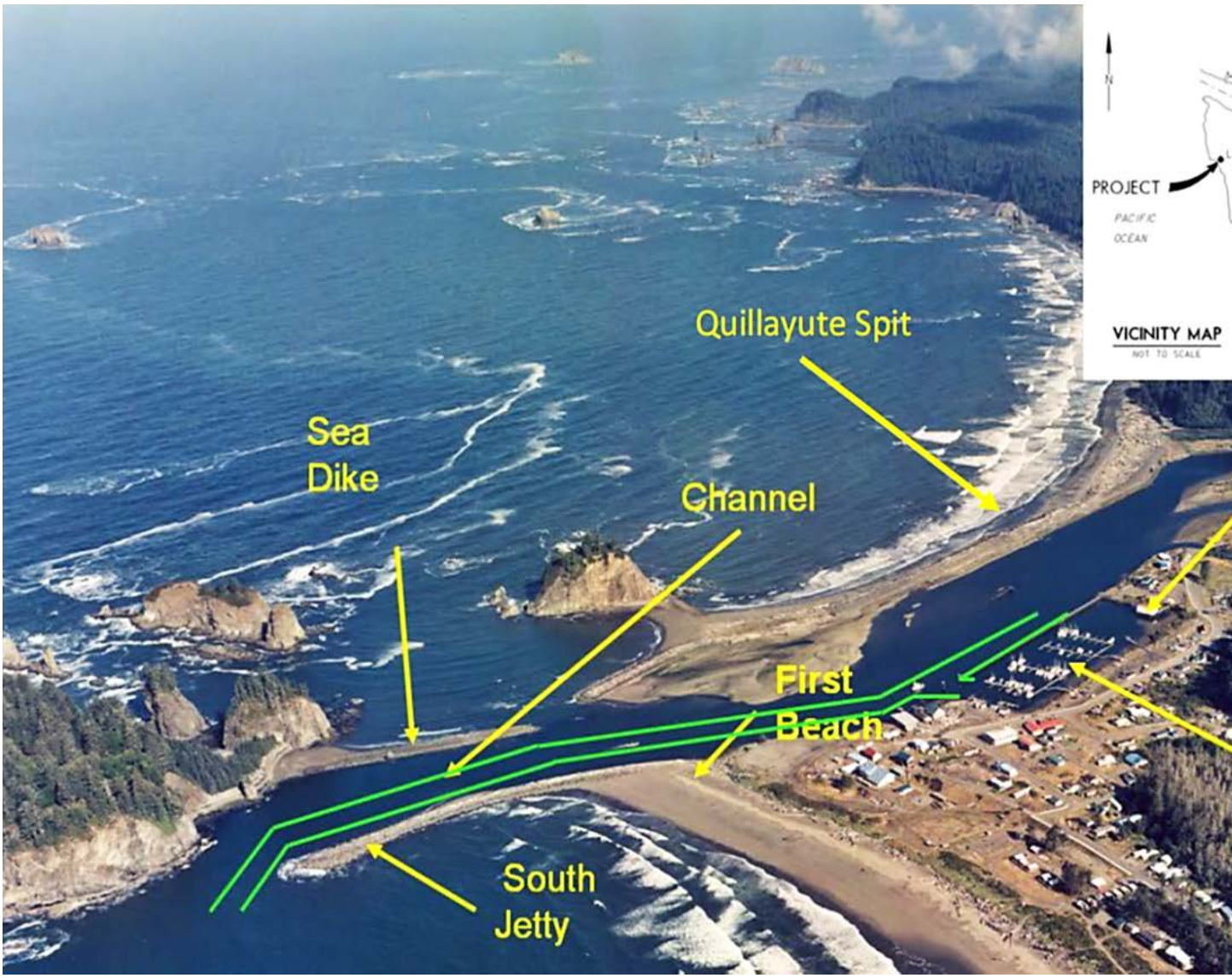

Figure 1. Federally authorized navigation features at La Push, Washington.

Repairs and maintenance are proposed for the Quillayute Spitover a 10-year period. It is likely that repairs would be done in about 200-300 foot sections focusing on the most damaged areas every 1-2 years. This would require up to 10 individual construction events to complete the repair. It is unlikely that a full repair of the entire structure would be possible in a single year, but repairs to the greatest extent possible would be conducted in any given year depending on funding and ability to adhere to the work window of 24 September to 28 February. The marbled murrelet nesting and fledging period ends on 23 September and the approved work window for salmon on the Washington coast is June 15 to February 28 (Corps 2012; USFWS 2012).

Access Road Construction

In order to access the repair areas, a 25-foot wide haul road would be built on the crest of the Quillayute Spit out to the area being repaired. During the November 2016 emergency repair a

portion of this haul road was constructed on top of the spit from Station 0+00 to Station 20+00 (Figure 2). As of January 2018, approximately 50% of this road remains usable with the remainder either covered by logs or over washed. Logs on top of the haul road would be moved to the riverward slope of the spit to allow vehicle access and prevent sudden movement of logs into the construction area by ocean waves, which presents a safety concern. No logs would be removed from the environment. Ocean waves routinely push logs up to the crest of the spit towards the riverward slope. The construction of a haul road on the crest would require up to about 10,000 tons of 3- to 9-inch quarry spalls per repair. Repairs to the spit would typically proceed from the farthest offshore location on the spit toward land so the road can be incorporated under the spit repair instead of leaving an unarmored area on the crest.

Repairs to the Quillayute Spit

The Quillayute Spit needs repairs between Stations 10+00 and 30+00 (Figure 2). The majority of repairs are located on the ocean-ward side. Repairs to the spit would remain within the 1974 design footprint. This would be accomplished by reworking the existing armor stone on the structure to create a core layer and capping it with new 10-20 ton armor stone. Placing core stone 1-3 feet in diameter may be necessary in areas without sufficient existing material to support the new layer of armor stone. The project requires some existing armor stone to be reworked down to an elevation of 0 feet MLLW before being tied into existing stone, but it is likely much of the existing armor stone would only need to be reworked down to about +5 feet MLLW due to the presence of existing stone that has sloughed down the slope of the spit from ocean wave action. In-water work will be avoided or minimized to the extent possible by utilizing the low tides for the construction of the revetment in the intertidal zone due to safety risks to workers and to avoid environmental impacts. Work does not extend below +0 feet MLLW but some waves may incidentally enter the work zone due to the dynamic nature of the area. Figure 4 is a typical section of the Quillayute Spit showing the existing revetment, location of new armor stone, and typical dimensions. The total volume of repair material would be up to approximately 80,000 tons of 10-20 ton armor stone and up to approximately 20,000 tons of 1-3 foot diameter core stone.

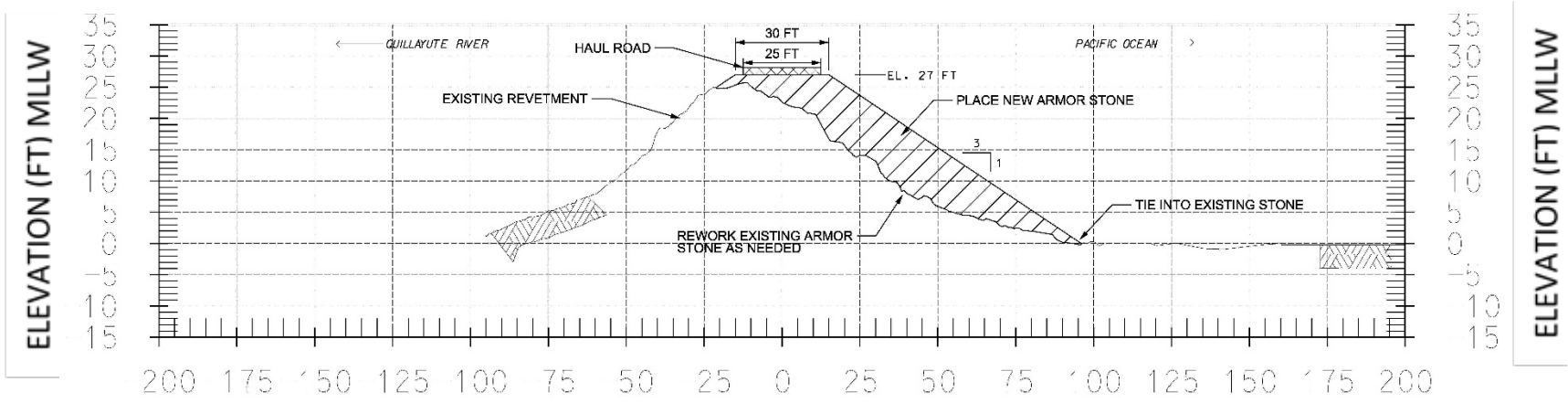

Figure 4. Typical section of the Quillayute Spit (also called Rialto Spit Revetment) repair. The drawing shows the existing revetment, repair areas where new stone will be placed, location of the temporary haul road, and where it ties into existing stone at the base relative to mean lower low water (MLLW).

Supplemental Beach Nourishment

The USACE is also proposing to perform supplemental beach nourishment with 3- to 12-inch diameter rounded river cobbles along on the ocean-ward side of the spit at Site B to supplement the placement of dredged material. Dredged material is placed at Site B during maintenance dredging every 1-2 years, but there is still a sediment deficit so erosion at the toe of the spit and damage to the spit occurs. Site B is approximately 3,000 feet long and 75 feet wide, with an area of approximately 6 acres (Figure 3). The USACE would expect to place up to 100,000 CY of cobbles entirely within the existing beach nourishment location of Site B every four years (Figure 5). The Quillayute Spit was initially composed entirely of bedload material from the Quillayute River which ranged from coarse sand to 12-inch diameter cobbles. Following the development of the Federal navigation project with modification and armoring of the spit, supplemental beach nourishment became necessary because sediment from downdrift beaches cannot reach the spit due to the lack of longshore transport of material and the location of the islands. The sediment supply to the Quillayute Spit is effectively cut off except for dredged material placed in Site B during navigation channel maintenance dredging. Material placed from maintenance dredging is primarily sands and gravels due to the hydraulic dredging method that transports limited cobble size material. However, this material is quickly eroded away by the longshore current due to its small size and does not remain to support the Quillayute Spit and prevent erosion at the toe.

Supplemental beach nourishment would act as a "dynamic revetment" in front of the Quillayute Spit to absorb wave energy and prevent erosion in front of the spit that lowers the beach and allows undermining of the toe. This type of design is based on natural cobble berms that can absorb a large amount of wave energy, reduce wave runup, or reflect some waves into incoming waves to break and lower the energy of incoming waves rather than reflecting it to the beach in front of the berm and contributing to erosion. Supplemental beach nourishment with cobbles was previously proposed in 1974 as maintenance of the Quillayute Spit to prevent lowering of the beach in front of the spit that may lead to undermining and breaching.

By design, the cobbles from supplemental beach nourishment would move within the footprint of Site B and change shape seasonally. It is expected that the cobble would primarily move in the offshore direction as opposed to the longshore direction (i.e., along the beach) creating a steeper coarser beach in front of the revetment. Waves must act at an angle to the beach in order to create a longshore current and longshore transport. Due to the orientation of the spit and the location of James and Rock Island, waves primarily come in parallel to the beach with only a small fraction of the wave energy acting in the longshore direction. As a result, most of the erosion on the Quillayute Spit is due to material being lost in the offshore direction rather than being transported in the longshore direction as would occur in a more open coast situation. The longshore current generated by the waves along the spit is strong enough to move sand size particles (e.g., dredged material) but not strong enough to move a significant amount of cobble sized material. This is one of the main reasons it would be beneficial to place supplemental

beach nourishment (cobbles) in Site B. The supplemental beach nourishment cobbles are expected to remain in place for 3-5 years before moving offshore, in contrast to the dredged material that is eroded away by the longshore current soon after placement.

Material for supplemental beach nourishment would be obtained from a river quarry so the rounded river cobbles would be of similar composition to bedload material in the Quillayute River. Trucks of cobble material would likely be emptied directly onto the repair section and shaped by other machinery (e.g., dozer or excavator). Cobbles of 3- to 12-inch diameter are similar to the bedload material of the Quillayute River, and can be seen on the riverward slope of the spit during low tide. After initial placement along Site B, the focus for each placement event would be to those areas identified in need of nourishment. Technical input from USACE coastal engineers and analysis of the latest site conditions will factor into the initial supplemental beach nourishment and subsequent placement along Site B.

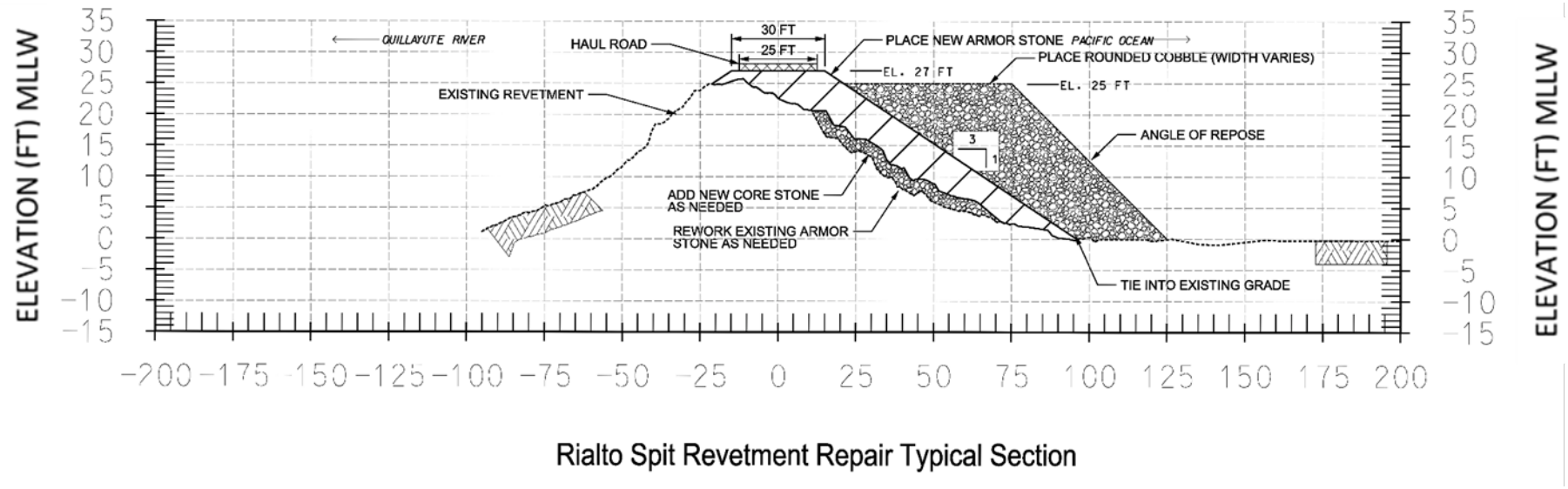

Figure 5. Typical cobble placement for supplemental beach nourishment along Quillayute Spit relative to mean lower low water (MLLW).

Construction Techniques and Equipment

Several pieces of heavy machinery would be used throughout the repairs; a general description of the typical number and types of machinery for this type of repair is described here but may be adjusted slightly based on repair needs and available equipment. Repair material would be obtained from a local quarry and may be stockpiled in the staging area in the Rialto Beach visitor parking lot just north of the Quillayute Spit where it could then be transported out to the repair area. Material for repairs would most likely be transported by truck and trailer to the staging area. Work would be done in the dry during low tides for the construction of the revetment in the intertidal zone. A bulldozer would be used to grade the haul road. All operating machinery would stay within the repair area footprint.

Construction Timing

The work window is September 24 through February 28 for the repairs and supplemental beach nourishment at Site B.

2. Threatened and Endangered Species in the Project Vicinity

Clallam County contains seventeen species protected under the Endangered Species Act of 1973 that could potentially occur in the project vicinity. Table 1 summarizes the species' status and critical habitat designation. The following sections briefly summarize relevant life history information on the protected species, synthesize current knowledge on the presence and use of the project and action areas by these species, and then evaluate how the proposed project may affect the species concluding with a determination of effect.

Several species listed in Clallam County have no potential to be affected by the proposed project. The proposed project will have "no effect" on these species and their designated critical habitat. This is due to sensitivities to human encroachment or because their presence is so transitory or unlikely due to habitat preferences that any temporal effects to these species from construction activities would not be perceived as unusual, cause disruption of behavior or lead to measurable reductions in their prey base. Most sea turtle, whale species, and fish species, Taylor's checkerspot butterfly, Northern spotted owl, streaked-horned lark, yellow-billed cuckoo, short-tailed albatross have never been captured in sampling efforts or recorded in the action area, or their presence is so transitory that any temporal effects to these species from construction activities would not cause disruption of behavior or lead to measurable reductions in their prey base. Given the distributions of these species, the USACE believes the proposed project will have no effect on these species or their critical habitat (as designated). Below is more information on the presence of these species in the action area.

Table 1. Species listed under the Endangered Species Act with their status, critical habitat, and potential for occurrence in the project area.

Species	Federal Listing	Year Listed	Critical Habitat in Project Area	Potential Occurrence (Likely, Unlikely, or Absent)
Coast/Puget Sound bull trout (*Salvelinus confluentus*)	Threatened Critical Habitat Designated	1998 2010	No	Unlikely
Northern spotted owl (*Strix occidentalis caurina*)	Threatened Critical Habitat Designated	1990 2012	No	Unlikely
Marbled murrelet (*Brachyramphus marmoratus*)	Threatened Critical Habitat Designated	1992 1996	No	Likely
Southern green sturgeon (*Acipenser medirostris*)	Threatened Critical Habitat Designated	2006 2009	No	Absent
Eulachon (Pacific smelt) (*Thaleichthys pacificus*)	Threatened Critical Habitat Designated	2010 2011	No	Unlikely
Streaked Horned lark (*Eremophila alpestris strigata*)	Threatened Critical Habitat Designated	2013 2013	No	Absent
Short-tailed albatross (*Phoebastris albatrus*)	Endangered	1970	Not applicable	Absent
Yellow-billed cuckoo (*Coccyzus americanus*)	Threatened Critical Habitat Proposed	2014 2014	No	Absent
Southern Resident killer whale (*Orcinus orca*)	Endangered Critical Habitat Designated	2005 2006	No	Absent
Humpback whale (*Megaptera novaeangliae*)	Endangered	1970	Not applicable	Absent
Blue Whale (*Balaenoptera musculus*)	Endangered	1970	Not applicable	Absent
Fin whale (*Balaenoptera physalus*)	Endangered	1970	Not applicable	Absent
Sei whale (*Balaenoptera borealis*)	Endangered	1970	Not applicable	Absent
Sperm whale (*Physeter macrocephalus*)	Endangered	1970	Not applicable	Absent
Leatherback sea turtle (*Dermochelys coriacea*)	Endangered Critical Habitat Designated	1970 2012	No	Absent
Loggerhead sea turtle (*Caretta caretta*)	Endangered	1978	Not applicable	Absent
East Pacific green sea turtle (*Chelonia mydas*)	Endangered Critical Habitat Designated	1978 1998	No	Absent

a. Leatherback, Loggerhead, and East Pacific Green Sea Turtles

The landward extent of designated critical habitat for leatherback sea turtles abuts the seaward extent of the authorized Federal navigation channel at the mouth of the Quillayute River. Quillayute Spit repairs and supplemental beach nourishment will occur during low tide to avoid in-water work to the extent possible (although some waves may incidentally enter the work site), and do not extend beyond the footprint of the structure or Site B, or into pelagic areas where turtles may be foraging. No regular occurrences of the East Pacific green sea turtle off the coast of Washington were noted in the 1998 recovery plan for this species, and their critical habitat is only located off the coast of Puerto Rico (NMFS 1998a). Loggerhead sea turtles are found offshore of the west coast of Washington, but not inshore. These turtle species are considered absent from the project area; therefore, Quillayute Spit repairs and supplemental beach nourishment would have "**no effect**" on loggerhead sea turtles, leatherback sea turtles or their critical habitat, or East Pacific green sea turtles or their critical habitat.

b. Green Sturgeon

The green sturgeon (Southern DPS is listed as threatened) is the most widely distributed member of the sturgeon family. They are found in waters from San Francisco Bay to Canada and prefer relatively shallow marine depths (20-60 m), which is outside of the project area (Adams et al. 2007; Huff et al. 2011). Many green sturgeon spend summer among multiple bays, estuaries, or rivers, with large numbers observed congregating within these areas to feed on shallow mud flats; the Quillayute River estuary is not a known congregation area (Moser and Lindley 2007; Dumbauld et al. 2008; Lindley et al. 2008). Critical habitat for green sturgeon has been designated along the Washington coast, but Quileute tribal land is excluded (NMFS 2009) and effects are not expected to extend beyond the tribal boundary. Green sturgeon are considered to be absent from the project area; therefore, USACE has determined the proposed action would have "**no effect**" on green sturgeon or their critical habitat.

c. Blue, Humpback, Fin, Sei, and Sperm Whale

Blue whales may feed around the continental shelf off of Washington and Oregon in summer; however, the species is most abundant off of California (NMFS 1998b). Humpback whale sightings along the Washington coast are uncommon, and they mainly use those waters as a migration corridor between Alaskan and tropical waters (Wolman 1986). Fin, Sei, and Sperm Whales have typically been absent from recent surveys of Washington waters in less than 200 meters of water (Calambokidis et al. 2004; NMFS 2010). The preferred habitat for all of these whale species is the open ocean, not coastal waters or shallow estuaries, and are considered absent from the project area; therefore, USACE has determined the proposed action would have "**no effect**" on these whale species.

d. Southern Resident Killer Whale (SRKW)

From late spring through early fall, SRKW are typically present in inland marine waters such as the Georgia Basin, with their presence often coinciding with salmon returns (NMFS 2006a). In late fall and winter their range and movements are more poorly known, but sightings have ranged from Vancouver Island to as far south as Monterey Bay (Wiles 2004). Ship surveys of the northern Washington coast have observed SRKW, in addition to northern and offshore residents, and transients, mostly at the mid-continental shelf at depths of 100-200 meters and the sightings were about 8 to 28 miles offshore (Calambokidis et al. 2003). Designated critical habitat is located in inland marine waters but have not been designated for coastal areas (Wiles 2004). SRKW are considered absent from the project area; therefore, USACE has determined the proposed action would have "**no effect**" on SRKW or their critical habitat.

e. Streaked Horned Lark and Yellow Billed Cuckoo

The project area does not contain habitat that would attract streaked horned lark or yellow billed cuckoo for breeding or feeding. La Push has limited open dune areas where streaked horned lark nest, and the species is considered absent from former breeding sites on the Washington Coast north of Grays Harbor (Stinson 2016). Yellow billed cuckoo records before 1950 were limited to counties south and east of Clallam County, and recent records indicate the current population is still not found in Clallam County, but has been sighted in eastern Washington and some sightings in Grays Harbor, King, and Snohomish Counties (Wiles and Kalasz 2017). There have been no recent sightings and both species are considered absent from the project area. There is no critical habitat for either species in the project area. USACE has determined that the proposed action would have "**no effect**" on streaked horned lark, yellow billed cuckoo, or their critical habitat.

f. Short-Tailed Albatross

Short-tailed albatross are considered absent from the project area due to the lack of breeding habitat and preferred foraging environment. Short-tailed albatross are most abundant from their breeding colonies in Japan to Alaska and Canada, mainly in the Sea of Okhotsk, Bering Sea, and around the Aleutian Islands (O'Connor 2013; USFWS 2014). Coastal Washington is at the southern end of a core location for immature short-tailed albatross that extends south from British Columbia (UWFWS 2014). However, tracking data from 2008 to 2012 found that less than 3% of time spent within national waters was on the U.S. West Coast (O'Connor 2013). Immature short-tailed albatross prefer to forage in marine environments around the outer continental shelf margins and break-slope habitats (USFWS 2014). The USACE has determined that the proposed action would have "**no effect**" on short-tailed albatross.

g. Coastal/Puget Sound Bull Trout

There are six recovery units for bull trout in the conterminous United States, with Puget Sound bull trout falling within the Coastal Recovery Unit. The Coastal Recovery unit includes the Olympic Peninsula, Puget Sound, and Lower Columbia River basins, Upper Willamette River,

Hood River, Lower Deschutes River, Odell Lake, and the Lower Mainstem Columbia River. This unit has 21 core areas distributed across the geographical regions of Olympic Peninsula, Puget Sound, and Lower Columbia basins. The Coastal-Puget Sound DPS contains the only anadromous form of bull trout in the United States. The Coastal Recovery Unit Implementation Plan for bull trout does not list the Quillayute River or its tributaries as a core area for population distribution (USFWS 2015a).

Bull trout are unlikely to occur in the project area. The closest natal river for bull trout is the Hoh River, approximately 15 miles away down the Pacific coast (WDFW 2018). The maximum migration distance for bull trout from their natal stream is about 75 miles. Telemetry monitoring of 39 anadromous bull trout from the Hoh River and Kalaloch Creek basins located 5 individuals in other coastal watersheds, but did not observe bull trout in the Quillayute River (Brenkman and Corbett 2005). Despite the seemingly favorable conditions of the Quillayute estuary, no bull trout were caught in either the 1979-80 sampling efforts (Chitwood 1981) or the 2002 biological inventory study (SAIC 2003). The Quillayute/Sol Duc River stock that had been labeled bull trout/Dolly Varden was determined through genetic analysis to be only Dolly Varden (WDFW 2004). WDFW reports that there are no historic reports of native char being caught on hook and line gear in the Sol Duc River, a tributary of the Quillayute.
Bull trout designated critical habitat includes the nearshore area of the Washington coast but the project area is within Quileute Tribal lands, which are excluded from the critical habitat designation.aseline water quality and habitat conditions will not be degraded by the proposed action. The spit repairs and supplemental beach nourishment will produce only short-term, localized disturbances. Work below MHHW will be done during low tide to avoid or minimize in-water work to the extent possible; work does not extend below +0 feet MLLW but some waves may incidentally enter the work zone due to the dynamic nature of the area. During repairs and supplemental beach nourishment, turbidity is not expected to increase measurably above ambient conditions due to the large grain size and clean nature of the cobble material, the individual placement of rocks, and the timing of work during low tides to avoid or minimize in-water work to the extent possible (some waves may incidentally enter the work site).

Indirect effects to bull trout prey species, such as the local population of surf smelt, will be avoided by timing work during low tides to avoid or minimize in-water work to the extent possible (some waves may incidentally enter the work site), and performing the supplemental beach nourishment at Site B about 0.75 miles from the nearest surf smelt spawning beach. The minor amount of epibenthic fauna that will be impacted do not appear to constitute a significant fraction of bull trout or forage fish diets.

Bull trout are unlikely to be in the project area, there will be little to no in-water work, and bull trout prey items will not be impacted so USACE has determined that the proposed project will have "**no effect"** on bull trout or their critical habitat. There is no designated critical habitat in the project area (due to the location within Quileute Tribal land) and effects of the project are not

expected to extend beyond tribal boundaries, so there will be **no effect** on bull trout designated critical habitat.

h. Eulachon

Eulachon are a small anadromous fish that migrate into some of the major river systems along the west coast of North America to spawn in the early spring (late February to May). The nearest estuary known to contain a major stock of eulachon is the Fraser River in British Columbia. Neither the Chitwood (1981) nor the USACE (SAIC 2003) environmental studies of the Quillayute estuary identified any eulachon; however, it is possible that adult eulachon might enter the lower Quillayute River estuary temporarily for foraging or refuge. The Bogachiel River, a tributary to the Quillayute River, has been listed as a eulachon spawning location (NMFS 2006b; NMFS 2017); however, this claim has not been substantiated with observations of adult or larval eulachon at this location during sampling (ODFW and WDFW 2014). There is no critical habitat near the project area. Eulachon are unlikely to occur in the project area.

Risks to eulachon from the Quillayute spit repairs and supplemental beach nourishment include possible impacts from temporary water quality degradation due to localized turbidity. Work below MHHW will be done during low tide so that in-water work is avoided to the extent possible and any potential turbidity is expected to occur when the project site is inundated by the tide; some waves may incidentally enter the work site. Strong currents and wave action with the clean nature of the material are expected to result in immeasurable turbidity. Based on no recorded occurrences of eulachon in the Quillayute estuary and measures taken to avoid and minimize in-water work, it is anticipated that the project will have **"no effect"** on eulachon or their critical habitat.

i. Northern Spotted Owl

Northern spotted owls are unlikely to be present in the project area. There may be transient northern spotted owls dispersed in the area, but past surveys indicate nesting spotted owls are not expected in the area (V. Harke, USFWS, pers. comm. 2018). Northern spotted owls are typically located farther inland on the Olympic Peninsula than La Push (Figure 6). The project area will be outside the range of noise disturbance (0.25 miles) that heavy machinery has on nesting northern spotted owls (Figure 6; USFWS 2011).

The proposed action is not likely to disturb or displace northern spotted owl because the area where the construction activities will occur are not their preferred foraging habitat in the forest. The Quillayute Spit, Site B, and staging area do not contain the preferred forest foraging habitat where small mammals, the preferred prey of spotted owls, can be found. If foraging does occur in the forest adjacent to the project area, the primarily nocturnal nature of spotted owls will temporally isolate their presence from the construction activities. Designated northern spotted owl critical habitat is located about 15 miles to the east in the Olympic National Forest.

Based on the low probability of nesting owls near the project area and the transitory and temporally isolated nature of foraging owls in the forest near the project area, there will be "**no effect**" to northern spotted owls. There will be "**no effect**" on their critical habitat because there is none located in the project area.

Figure 6. Cumulative distribution of known spotted owl site centers (blue dots) in Washington from 1976 to 2011. The number of currently occupied sites is unknown. Figure from WDFW 2012.

j. Marbled Murrelet

Marbled murrelets spend most of their lives in the marine environment, where they forage within two miles from shore. Marbled murrelets forage in the near-shore marine environment and nest in inland old-growth coniferous forests. According to USFWS (2012), the nesting season in Washington State begins April 1 as marbled murrelets establish nest sites and the season is considered over after September 23 when over 99% of fledglings have left the nests. Adults with young to feed fly between terrestrial nest sites and ocean feeding areas primarily during the dawn and dusk hours. Prey species include forage fish (including surf smelt), rockfish, capelin, as well as amphipods.

Carter (1984) found that the preferred habitat of murrelets in marine waters is close to shore in relatively shallow water, usually less than 100 meters deep, and in protected areas; murrelets are seldom observed in embayments. This preference tends to rule out a shoreline feature such as the narrow channel of the lower Quillayute River. Non-nesting marbled murrelets are typically more dispersed and found farther from shore (about one mile on average) than during the nesting season prior to September 24 (Strachan et al. 1995; Hébert and Golightly 2008). No marbled murrelet sightings near the Quillayute River were recorded during the 1979-80 field observations (Chitwood 1981) or wildlife surveys in 2002 (SAIC 2003) but marbled murrelets have been recorded off-shore from the Quillayute River mouth (i.e., the ocean-ward side of the spit) within

5,000 meters of the shoreline during summertime surveys (Lance and Pearson 2007). Marbled murrelet are likely to occur near the project area.

The WDFW Priority Habitat and Species database shows the border of the nearest detection area is about 0.2 mile away from the Rialto Beach daily visitor parking lot, which is the construction staging area (WDFW 2016). A forest stand is considered occupied if the stand is contiguous. In addition, mapping done for the Northwest Forest Plan 20-year monitoring report indicates there is potentially suitable nesting habitat within 0.25 miles of the proposed staging area in the Rialto Beach parking lot (Davis et al. 2015; Figure 7). Over the past 10 years of maintenance dredging of the navigation channel and disposal in Site B, the USACE has informally consulted with USFWS regarding ESA-listed species in the project area; USFWS stated they have low concern for impacts to species under their jurisdiction and recommended the USACE document a "No Effect" determination for this project. In 2016, however, USFWS reported that there is a nest site near the project area (Jensen pers. comm. 2016). The nest site, which was occupied during surveys in 2016, was about 0.8 mile away from the north end of placement Site B (WDFW 2016b; V. Harke, USFWS, pers. comm. 2017). The area has not been surveyed since 2016, so without recent nest location data all potentially suitable habitat is considered potentially occupied for effects analysis. Due to the proximity of the project area to potentially suitable nesting habitat, the work window for the Quillayute Spit will not begin until September 24, after the nesting and fledging period.

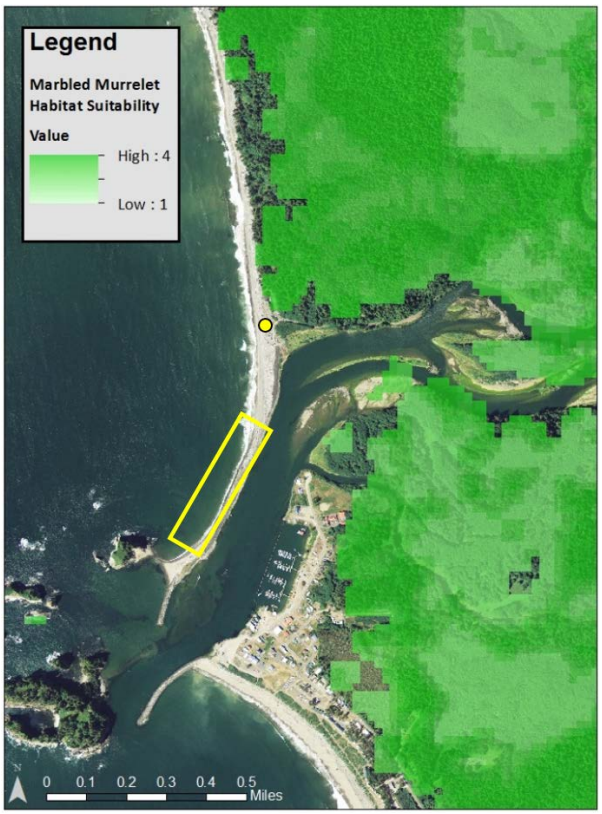

Figure 7. Potential suitable marbled murrelet nesting habitat near La Push, WA (Davis et al. 2015; Falxa and Raphael 2016). Darker green indicates higher suitability as nesting habitat relative to the staging area (yellow dot) and approximate repair and supplemental beach nourishment area (yellow box).

Effects of the proposed action depend on noise-generating activity. Baseline conditions in the reported nest location include significant personal vehicle traffic and thousands of visitors to the Rialto Beach area of Olympic National Park throughout the summer, coinciding with nesting season. Seasonal park visitor traffic diminishes in September compared to the peak, but remains highly active on weekends. For the proposed project, noise generated by heavy machinery and the movement of large stone at the staging area at the Rialto Beach parking lot and on the Quillayute Spit and Site B for repairs and supplemental beach nourishment is considered.

Marbled murrelets are relatively opportunistic foragers, and they have flexibility in prey choice, which likely enables them to respond to changes in prey abundance and location (USFWS 1996). This indicates that if murrelets are disturbed while foraging, they would likely move without significant injury. Project activities are not likely to disturb or displace any marbled murrelets because the riverward side of the spit is not their preferred foraging habitat, as stated above, and will not disturb non-nesting marbled murrelet foraging about one mile from shore, on average (Strachan et al. 1995; Hébert and Golightly 2008). The effect of noise disturbance associated with the proposed project is expected to be discountable.

Marbled murrelet prey on forage fish such as surf smelt. Effects to surf smelt and therefore indirect effects to marbled murrelet prey items are expected to be discountable and any reduction in prey availability is not expected to be measurable and would rebound rapidly upon completion of the construction work. The surf smelt are known to spawn May through September with the peak in July and August (Fradkin 2001). The closest surf smelt spawning beach is approximately 0.75 miles to the north, and supplemental beach nourishment material is not expected to travel in the longshore direction toward the beach due to the generally offshore movement of material by waves at the Quillayute Spit. Repair and supplemental beach nourishment of the Quillayute Spit are not expected to result in a long-term reduction in the abundance and distribution of murrelet prey items.

According to USFWS, a "No Effect Determination" is justified when the noise from road machinery will occur outside of the nesting period (USFWS 2015b), which is the case for the proposed repairs and supplemental beach nourishment. Since construction activities will have no effect on nesting habitat or the murrelet food base, and the effects of any noise disturbance during construction will take place outside of the sensitive nesting and fledging period, the proposed project will have "**no effect**" on the marbled murrelet. Approximately 100,000 acres of critical habitat for marbled murrelets exists in the forested area about 10 miles southeast of La Push. The project will have "**no effect**" on designated critical habitat for murrelets since no critical habitat is located near the project.

3. Essential Fish Habitat

The Magnuson-Stevens Fisheries Conservation and Management Act requires Federal agencies to consult with the National Marine Fisheries Service (NMFS) regarding actions that may affect Essential Fish Habitat (EFH) for Pacific coast groundfish, coastal pelagic species, and Pacific salmon. The Act defined EFH as "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity." EFH is the habitat (waters and substrate) required to support a sustainable fishery and a managed species' contribution to a healthy ecosystem. The marine extent of groundfish and coastal pelagic EFH includes those waters from the nearshore and tidal submerged environments within Washington, Oregon, and California state territorial waters out to the exclusive economic zone (200 miles) offshore between the Canadian border to the north and the Mexican border to the south. Waters include aquatic areas and their associated physical, chemical, and biological properties that are used by fish. Substrate includes sediment, hard bottom, structures underlying the waters, and associated biological communities. The variables used for EFH analysis are latitude, substrate, and depth, which overlap with areas known to host prey species.

The project area as previously described in Section 2 of this document is part of the Washington State Estuarine and Non-rocky Shelf EFH composites, and has been designated as EFH for various life stages of species that are found here, which include: 57 species of groundfish, five coastal pelagic species, and two species of Pacific salmon according to the NMFS Fisheries

Management Plans (PFMC 1998, 2003, 2008). The Hoh-Quillayute system is designated as freshwater EFH for Chinook and coho salmon. Forage fish may be present around the Quillayute Spit because surf smelt spawning beaches are located about 0.75 miles to the north and there have been unsubstantiated reports of eulachon spawning in tributaries of the Quillayute River (ODFW and WDFW 2014).

a. Potential Effects to EFH

The Quillayute Spit is a naturally occurring spit that is artificially maintained with armoring. Maintenance of the Quillayute Spit began in the 1950s during which time the USACE built bulkheads, cabled drift logs together into large woody debris structures and placed dredged material onto the ocean side of the spit. Since then, numerous repairs and maintenance actions with additional armor stone and beach nourishment have occurred. The proposed project is a maintenance activity. The Quillayute Spit will be repaired with 10- to 20-ton armor stone every one to two years, and supplemental beach nourishment of about 100,000 CY of 3- to 12-inch diameter cobbles will occur every four years.

The primary ecological functions provided for juvenile salmonids within the Quillayute River estuary (riverward side of the spit) are feeding and growth. Salmonids feed on aquatic insects, copepods, euphausiids, and amphipods in the estuary; Quillayute Spit repairs and supplemental beach nourishment will not impact the overall abundance of these organisms except for a minor amount of amphipods that may become entrained by repair materials or supplemental beach nourishment material on the ocean-ward side of the spit. Juvenile salmonids are expected to have migrated out of the area well before the start of the work window on 24 September. Potential adverse effects will be minimal because the project footprint represents only a small proportion of the available foraging habitat in the vicinity, repairs and supplemental beach nourishment do not decrease the total habitat area that may be used by salmonids, and any dip in prey item abundance will be of a short duration during a season of low salmonid usage.

The groundfish EFH habitat classifications found near the project area are the following, based on descriptors found in the Fishery Management Plan (PFMC 2008):

Megahabitats: coastal intertidal and estuarine

Induration: benthos, intertidal benthos, and water column

Meso/microhabitat: artificial structure and unconsolidated bottom

Modifiers: current system, cobble, gravel/cobble, gravel, sand/gravel, silt/sand

Because the depth of Site B will change by only a few feet and will remain coarse-grained sand, gravel, and cobble substrate after supplemental beach nourishment, changes to this habitat are not considered to be significant alterations. The supplemental beach nourishment material will occupy approximately the first 50 feet from the Quillayute Spit, on top of and adjacent to the

existing armor stone. No significant change to the intertidal habitat at the disposal site is expected to occur.

For concerns with essential fish habitat of the coastal pelagic species, it is more important to focus on effects to the water column, than with substrate. When the repair or supplemental beach nourishment areas are inundated by the tide or waves, a small amount of turbidity that is likely indistinguishable from background turbidity may be generated. This turbidity is expected to dissipate quickly because the repair material and cobbles are large-grained material and armor stone. Additionally, the activity will not result in physical alterations that could affect water temperature.

The proposed action will not result in increased levels of organic materials or inorganic contaminants. Water quality may be temporarily impacted by turbidity shortly after repairs or placement of the nourishment materials, but no long-term degradation will occur. The action will not remove large woody debris or other natural beach complexity features, nor is it likely to affect any vegetated shallows. Benthic productivity will be temporarily impacted, but significant effects to prey species are not anticipated.

b. Proposed EFH Conservation Measures

The following list comprises measures the USACE will take during the proposed activities:

Comply with the 401 Water Quality certification requirements to avoid and minimize any adverse impact to water quality.

Observe timing restrictions to avoid direct impact to EFH fish and the availability of their prey items.

Observe timing restrictions and limit supplemental beach nourishment placement to Site B to avoid impacts during peak surf smelt spawn timing (July and August) and surf smelt spawning habitat to the north as they are an important prey item of many larger species.

c. Conclusion

The Corps of Engineers has determined that the proposed action **will not adversely affect** EFH for Federally managed fisheries in Washington. This determination is based on the limited scope and duration of the construction and the temporary and minor nature of project impacts.

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Final Environmental Assessment

and Clean Water Act, Section 404 Public Interest Review

Quillayute Spit Repair and Maintenance 2018-2029

Appendix D

Coastal Zone Management Act Consistency Determination

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
PO Box 47600 • Olympia, WA 98504-7600 • 360-407-6000
711 for Washington Relay Service • Persons with a speech disability can call 877-833-6341

August 21, 2018

U.S Army Corps of Engineers
Seattle District
Attn: Laura Boerner, Chief
P.O. Box 3755
Olympia, WA 98124-3755

RE: Coastal Zone Consistency for Activity Undertaken by a Federal Agency
Quillayute Spit Repair and Maintenance 2018-2029
La Push, Clallam County, Washington

Dear Ms. Boerner:

On July 5, 2018, the U.S. Army Corps of Engineers (Corps) submitted a Certification of Consistency with the Washington State Coastal Zone Management Program (CZMP). The proposed federal activity includes repairs to the entire Quillayute Spit structure (Stations 10+00 to 30+00) over a 10 year period by reworking existing armor stone and placing new armor stone. Access will be provided via a 25 foot wide haul road to be built with 3-9 inch quarry spalls placed along the crest of the spit. All repair work will stay within the original footprint. In addition to repairs, the project also entails placing supplemental beach nourishment consisting of 3 to 12 inch diameter rounded river cobbles along the ocean ward side of the spit (Site B, ~3000 feet long by 75 feet wide). This material will act as a dynamic revetment to absorb wave energy and prevent erosion in front of the spit. The project is located at La Push, Quileute Tribe Reservation in Clallam County, Washington.

Pursuant to Section 307(c)(3) of the Coastal Zone Management Act of 1972 as amended, Ecology concurs with Corps' determination that the proposed work is consistent with Washington's CZMP.

If you have any questions regarding Ecology's consistency determination please contact Penny Kelley at 360-407-7298.

YOUR RIGHT TO APPEAL

You have a right to appeal this decision to the Pollution Control Hearing Board (PCHB) within 30 days of the date of receipt of this decision. The appeal process is governed by Chapter 43.21B RCW and Chapter 371-08 WAC. "Date of receipt" is defined in RCW 43.21B.001(2).

To appeal you must do all of the following within 30 days of the date of receipt of this decision:

- File your appeal and a copy of this decision with the PCHB (see addresses below). Filing means actual receipt by the PCHB during regular business hours.
- Serve a copy of your appeal and this decision on Ecology in paper form - by mail or in person. (See addresses below.) E-mail is not accepted.

You must also comply with other applicable requirements in Chapter 43.21B RCW and Chapter 371-08 WAC.

ADDRESS AND LOCATION INFORMATION

Street Addresses	Mailing Addresses
Department of Ecology Attn: Appeals Processing Desk 300 Desmond Drive SE Lacey, WA 98503 **Pollution Control Hearings Board** 1111 Israel RD SW STE 301 Tumwater, WA 98501	**Department of Ecology** Attn: Appeals Processing Desk PO Box 47608 Olympia, WA 98504-7608 **Pollution Control Hearings Board** PO Box 40903 Olympia, WA 98504-0903

Sincerely,

Brenden McFarland, Section Manager
Shorelands and Environmental Assistance Program
WA Department of Ecology HQ

e-cc: Justine Barton, EPA
Penny Kelley, Ecology
Rick Mraz, Ecology
Kate Whitlock, Corps of Engineers
ecyrefedpermits@ecy.wa.gov

Draft Environmental Assessment

and Clean Water Act, Section 404 Public Interest Review

Quillayute Spit Repair and Maintenance 2018-2029

Appendix E
Water Quality Certification

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue, Suite 155
Seattle, WA 98101-3140

OFFICE OF
ENVIRONMENTAL REVIEW
AND ASSESSMENT

August 16, 2018

Laura Boerner, Chief
Planning, Environmental, and Cultural Resources Branch
U.S. Army Corps of Engineers, Seattle District
P.O. Box 3755
Seattle, Washington 98124-3755

Dear Ms. Boerner:

The U.S. Army Corps of Engineers, Seattle District, has requested a new Clean Water Act Section 401 water quality certification for the repair and maintenance of the Quillayute Spit, beginning on September 24, 2018 (Public Notice CENWS-PMP-18-17). The Quillayute Spit is part of the Quillayute River Federal Navigation Project and serves to protect the river channel and adjacent boat basin. The current project proposes to repair the entire Quillayute Spit between Stations 10+00 and 30+00 over a 10-year period (2018 to 2029). The Corps also proposes to place supplemental beach nourishment approximately every four years to create a dynamic revetment at the toe of the Spit.

Repairs to the Spit would likely be done in 200- to 300-foot sections, annually or bi-annually, and will focus on the most damaged areas. The first repair will occur in fall 2018 and will be a 200-foot section between Stations 22+00 and 24+00. Up to 10 separate construction events could be required to repair the 2000-foot-long project area. Access is proposed via a 25-foot wide haul road to be built with 10,000 tons of 3- to 9-inch quarry spalls placed along the crest of the Spit. Repairs will consist of reworking existing armor stone. A core layer will be created and capped with new 10- to 20-ton armor stone as needed. If the core layer lacks sufficient material, additional one to three-foot diameter core stone may be placed before covering with armor stone. The project will require existing armor stone to be reworked down to an elevation of 0' mean lower low water, with intertidal areas worked at low tides. Most work is anticipated for elevations above +5' MLLW. The total volume of repair material to be placed over the course of the 10-year project is approximately 20,000 tons of one to three-foot diameter core stone, and 80,000 tons of 10- to 20-ton armor stone (see Figure 1).

The Corps would also place supplemental beach nourishment material at "Site B" on the ocean-ward side of the Spit, creating a dynamic revetment, that would protect the toe of the Spit. Site B is an intertidal area along the toe of the Spit, approximately 3,000 feet long and 75 feet wide, with an area of about five acres (see Figures 2 and 3). The Corps would place up to 100,000 cubic yards of three- to 12-inch rounded river cobble every four years at Site B. This cobble is similar to the Quillayute River bedload that historically nourished the beaches at the river mouth and Spit before the river was channelized in its current configuration. The cobble will supplement the Corps' current practice of placing dredged material at Site B. Supplemental beach nourishment is not proposed for fall 2018.

For federal actions allowing discharges into navigable waters of the U.S., §401 of the CWA requires that the Corps obtain certification that the discharge will comply with the applicable provisions of Sections 301, 302, 303, 306 and 307 of the CWA. The U.S. Environmental Protection Agency provides certification in any case where a state has no authority to give such a certification [33 U.S.C §1341(a)].

Washington State lacks jurisdiction over activities occurring on Quileute Tribal lands. The EPA's coordination with the Quileute Tribe and other federal and state agencies indicates no outstanding unresolved issues associated with the project as proposed. The most recent Public Notice CENWS-PMP-18-17, dated July 5, 2018, "U.S Army Corps of Engineers, Seattle District Quillayute Spit Repair and Maintenance 2018-2029, La Push, WA," requested that water quality comments be submitted to the EPA. The EPA did not receive comments or requests based on the public notice. The Corps also did not receive water quality comments.

Pursuant to §402 of the CWA, the EPA has determined that the 2017 National Pollutant Discharge Elimination System General Permit for Discharges from Construction Activities (NPDES Permit # WAR10I000 - *NPDES General Permit for Discharges from Construction Activities in Indian Country within the State of Washington*), also called the construction general permit or CGP, likely applies to this project. The quarry spalls, armor stone, core rock and cobbles proposed for construction, and construction vehicles and equipment supporting the activity will be stored in adjacent upland areas (e.g., the Rialto parking lot). The haul road will be constructed in uplands along the crest of the Spit, and equipment will be working immediately adjacent to, and at times, in and over the water. The 2017 NPDES CGP, issued by the EPA to permit construction activities in Indian Country within the State of Washington, may be necessary for the management of stormwater runoff from the project. Because the site disturbance size threshold which triggers the requirement for permit authorization to discharge stormwater is $\geq$ one-acre (43,000 sq. ft.), and it is likely that construction activities (including the upland staging areas and haul road) will fall above this disturbance threshold, the Corps and/or their contractor must assess and pursue the appropriate NPDES permit authorizations.

We understand that the Corps intends to monitor the Spit and the dynamic revetment, using contractor as-builts, annual structure condition surveys, topographical surveys, and LIDAR mapping approximately every two years (via the national coastal mapping program which includes this area of the Washington coast). The performance of the dynamic revetment is of interest to the EPA as this type of structure has been recently proposed to slow erosion at several coastal projects. The EPA anticipates receiving updates on the project's performance at the Seattle District Corps' regularly scheduled semi-annual agency and tribal dredging coordination meetings. If these regularly scheduled updates do not occur, or if the EPA is unable to attend, we anticipate that the Corps will provide the EPA and the Quileute Tribe a specific annual update based on annual structure condition surveys and other project assessments. Up-front coordination prior to each construction season, per the attached conditions, is expected so that we may plan and conduct field visits during active work at the project site.

The EPA has no objections to the project under §401 of the CWA, provided that the detailed project description and drawings in the referenced public notice, as well as the conditions in this letter and enclosure, are followed. The EPA recently reviewed and provided comments on the Draft Environmental Assessment for the Quillayute Spit Repair and Maintenance Project 2018-2024. EPA will amend this certification should the Corps Final EA or other subsequent interagency coordination/documentation reveal significant changes to the project that warrant an amendment. Of particular concern are changes that could affect water quality or the anticipated project construction window.

Please note that this letter does not exempt the Corps from compliance with other requirements of the Quileute Tribe or other federal, state or local agencies. If you have any questions, or for further coordination on this project, please contact Justine Barton of my staff at (206) 553-6051 or at barton.justine@epa.gov, or contact me at (206) 553-1841 or nogi.jill@epa.gov.

Sincerely,

Jill A. Nogi

Jill A. Nogi, Unit Manager
Environmental Review and Sediment Management

Enclosure

cc: Frank Geyer, Interim Director, Quileute Tribe Natural Resources
Christina Miller, Olympic National Park
George Galasso, Olympic Coast National Marine Sanctuary
Penny Kelley, Ecology
Chris Waldbillig, WDFW
Kaitlin Whitlock, USACE
John Pell, USACE

QUILLAYUTE SPIT REPAIR AND MAINTENANCE 2018-2029
WATER QUALITY CERTIFICATION CONDITIONS

Project Description and Context

The objective of the proposed work is to repair and maintain the Quillayute Spit, which is part of the Quillayute River Federal Navigation Project, that serves to protect the navigation channel and adjacent small boat basin. The Corps proposes to repair the entire Quillayute Spit between Stations 10+00 and 30+00 over a 10-year period (2018 to 2029). The Corps also proposes to place supplemental beach nourishment approximately every four years to create a dynamic revetment at the toe of the Spit.

Repairs to the Spit would likely be done in 200- to 300-foot sections, annually or bi-annually, and will focus on the most damaged areas. Up to 10 separate construction events could be required to repair the 2000-foot-long project area. Access is proposed via a 25-foot wide haul road to be built with 10,000 tons of 3- to 9-inch quarry spalls placed along the crest of the Spit. Repairs will consist of reworking existing armor stone. A core layer will be created and capped with new 10- to 20-ton armor stone as needed. If the core layer lacks sufficient material, additional one to three-foot diameter core stone may be placed before covering with armor stone. The project will require existing armor stone to be reworked down to an elevation of 0' mean lower low water, with intertidal areas worked at low tides. Most work is anticipated for elevations above +5' MLLW. The total volume of repair material to be placed over the course of the 10-year project is approximately 20,000 tons of one to three-foot diameter core stone, and 80,000 tons of 10- to 20-ton armor stone (see Figure 1).

The Corps would also place supplemental beach nourishment material at "Site B" on the ocean-ward side of the Spit, creating a dynamic revetment, protecting the toe of the Spit. Site B is an intertidal area along the toe of the Spit, approximately 3,000 feet long and 75 feet wide, with an area of about five acres (see Figures 2 and 3). The Corps would place up to 100,000 cubic yards of three- to 12-inch rounded river cobble every four years at Site B. This cobble is similar to the Quillayute River bedload that historically nourished the beaches at the river mouth and Spit before the river was channelized in its current configuration. The cobble will supplement the Corps' current practice of placing dredged material at Site B.

The work will occur in a fall/winter work window from September 24th to February 28th in any given year of construction (2018-2029). The proposed project is described in Public Notice CENWS-PMP-18-17, dated July 5, 2018. All work will occur in areas previously disturbed by construction of the Spit. Spit repairs must remain within the original 1974 structure footprint, and supplemental beach nourishment must occur within the existing identified dredged material placement area (Site B).

401 Certification Points-of-Contact and General Conditions

1. For purposes of this certification, the term "Tribe" refers to the point-of-contact for the Quileute Indian Tribe, Natural Resources Department, Interim Director Frank Geyer, office phone 360-374-2027, email: frank.geyer@quileutenation.org;
2. All notifications and submittals to the EPA Region 10 required by the conditions of this certification must be sent to the EPA point-of-contact: Justine Barton, U.S. Environmental Protection Agency, MS: OERA-140, 1200 Sixth Avenue, Suite 155, Seattle, WA 98101. Phone 206-553-6051; email: barton.justine@epa.gov. Notifications/submittals must be identified with Public Notice CENWS-PMP-18-17, and include the project name, project location, project

contact and the contact's phone number;

3. Work authorized by this certification is limited to the work describe in the Corps' Public Notice and associated figures. This certification will cease to be valid if the project is constructed or operated in a manner not consistent with the project description as found in those documents and in the Final EA when available;
4. Access to the project area must be provided for site inspections to ensure the conditions of this certification are met;
5. This certification does not exempt the Corps from, and is provisional upon, compliance with other statutes, codes or requirements administered by the Quileute Indian Tribe, or other federal, state and local agencies; and
6. A copy of this certification and any tribal or federal permit requirements and conditions must be kept on the project site, and kept readily available for reference by construction supervisors, managers and foremen, or tribal, Corps or EPA inspectors.

Project Specific Conditions

1. Notification and Pre- and Post-Project Construction Coordination

a. The Corps of Engineers must notify the EPA and tribal points-of-contact at least 10 days before pre-construction meetings, and at least seven days before commencing initial work in any given construction year. The contractor's Environmental Protection Plan must be provided for EPA's review, preferably prior to the pre-construction meeting. The EPP and pre-construction meeting must clearly address the best management practices discussed in this certification; and
b. No later than 60 days following completion of the work in a construction year, the Corps of Engineers must submit as-built drawings, including final footprint and placement volumes at each repair or nourishment location, to the EPA and tribal points-of-contact.
c. The EPA anticipates receiving updates on the project's performance at the Seattle District Corps' regularly scheduled semi-annual agency and tribal dredging coordination meetings. If these regularly scheduled updates do not occur, or if EPA is unable to attend, the Corps must provide EPA and the Quileute Tribe a brief annual update/project status based on the Corps annual structure condition surveys and other project assessments.

2. Construction Staging Areas and Heavy Equipment Best Management Practices (BMPs)

a. In each construction year, staging and work areas must be identified and specified to EPA and the Quileute Tribe at least seven days prior to mobilization to the site and the initiation of construction. Staging areas will be located within clearly marked upland areas, a minimum of 50 feet from tribal and state waters. If a staging area is located within 50 feet of tribal or state waters, then the contractor must discuss this issue in their spill prevention and containment plan and obtain approval from EPA before placing the staging area in the 50-foot setback area. Staging, storage and stockpiling of materials will only occur in upland areas (i.e., above mean higher high water which is +8.5' MLLW);
b. Construction debris and equipment must be stored upland of MHHW (+8.5' MLLW) so that it cannot enter tribal or state waters, or degrade water quality;
c. Alteration or disturbance of existing beach and intertidal vegetation must be held to a minimum in the areas not slated for repairs or supplemental beach nourishment;
d. The contractor must identify access methods and location(s) during the pre-construction

meeting, as well as plans specific to their equipment and schedule that will minimize impacts to beach and intertidal areas during construction;

e. All equipment used below MHHW must utilize bio-degradable hydraulic fluid;
f. To protect the Quillayute River and adjacent coastal waters and their designated uses from potential discharges of oils and grease, the contractor must identify all equipment staging, cleaning, maintenance, refueling and fuel storage areas. These activities must take place within specified location(s). Fuel hoses, oil drums, oil or fuel transfer valves and fittings, etc., must be checked regularly for drips and leaks, and must be maintained and stored properly to prevent spills into tribal or state waters;
g. All vehicles must be inspected daily for fluid leaks before the onset of operations. Any leaks detected must be repaired in the vehicle staging area, if possible, and before the vehicle resumes operation. Inspections must be documented in a record that is available for review on request by the Corps, EPA or Tribe;
h. Wash water containing oils, grease or other hazardous materials resulting from wash down of equipment must not be discharged into tribal or state waters. The contractor must set up a designated area for washing down equipment;
i. Secondary containment must be paced under any equipment or tanks stored on site;
j. Any discharge of oil, fuel or chemicals into tribal or state waters, or onto lands with a potential for entry into tribal or state waters, is prohibited; and
k. The contractor must prevent the transportation and introduction of aquatic invasive species from previous jobsites by thoroughly cleaning all equipment to be used on this project prior to its arrival on-site. Accumulation of soils, sediment, debris and vegetation must be removed from drive mechanisms (wheels, tires, tracks, etc.) and the undercarriage of all equipment. Work boots and other gear must also be cleaned.

3. Construction BMPs

a. Work in and near the Quillayute River and Pacific Ocean must be done with an effort to minimize turbidity, prevent erosion of existing nearshore and beach areas, and prevent other water quality impacts. Best management practices must be used to minimize turbidity resulting from storage and handling of materials, and from construction. At the pre-construction meeting, the contractor will be asked to provide a description of their BMPs to minimize turbidity specific to their construction year;
b. Construction materials brought to the site, especially the haul road quarry spalls and beach nourishment cobbles, must be clean and free of fine-grained materials that could cause turbidity;
c. Timing of repairs in intertidal areas and supplemental beach nourishment must occur to the extent feasible during low tides;
d. During construction, the operation of heavy equipment must be held to the minimum necessary within all intertidal and nearshore areas. Outside of active repair areas and specifically identified beach nourishment areas, alteration or disturbance of existing beach and intertidal vegetation must be held to a minimum;
e. Natural materials on the Spit and Site B larger than 12 inches in diameter, including trees, stumps, and logs, must be retained in the system. Natural materials may be moved to allow access or construction in nearshore areas and on the Spit; however, these materials must then be replaced at similar elevations following construction. As needed for safety, large wood may be moved to the river-ward side of the Spit to be retained as a habitat feature and nearshore resource in the Quillayute system;

f. As safety permits, any large rock that has unraveled into the intertidal zone and outside the authorized project footprint, or that has been lost during construction activities, must be retrieved and reused;
g. Garbage, plastic and any other anthropogenic debris encountered during construction must immediately be removed, stored, and ultimately disposed in an appropriate designated upland facility. This includes debris pulled from the Spit during construction of the haul road, during repairs, and/or during placement of supplemental beach nourishment. The contractor must identify a secure method for storing debris found on the spit and for handling garbage generated during construction. Methods and locations for debris and garbage storage must be animal, weather and windproof. The appropriate upland disposal facility for final disposal, must be identified by the contractor at the pre-construction meeting;
h. If during site development or ongoing operations an area of potential archeological significance is uncovered, work in the immediate vicinity must be halted and the Quileute Tribe and State Historic Preservation Office notified immediately;
i. Following placement of supplemental beach nourishment on the Spit, no pits, depressions or features that could trap fish may remain; and
j. The Spit haul road must be left inaccessible to vehicle traffic immediately following project completion each construction season. EPA anticipates that winter storms and drift logs will render the road impassable after several years. Following year ten (10), the haul road will be incorporated into the spit under armor stone and drift logs, and will be inaccessible to vehicle traffic.

4. Water Quality Compliance/Spill Prevention and Control

a. The contractor must develop and implement a spill prevention and containment plan and must have spill cleanup materials and an emergency call list available on site at all times;
b. Work that is not in compliance with the provisions of this certification, or causing distressed or dying fish, discharges of petroleum products, chemicals, or other toxic or deleterious materials into tribal or state waters, or onto land with a potential for entry into tribal or state waters, is prohibited. If such work, conditions, or discharges occur, the contractor must notify the EPA and tribal points-of-contact immediately, and take the following actions:
    1. Cease operations at the location of the non-compliance;
    2. Assess the cause of the water quality problem, and take appropriate measures to correct the problem and/or prevent further environmental damage;
    3. In the event of discharge of oil, fuel, or chemicals into tribal or state waters, or onto land with a potential for entry into tribal or state waters, containment and cleanup efforts must begin immediately and be completed as soon as possible, taking precedence over normal work. Cleanup must include proper disposal of any spilled material and used cleanup materials;
    4. Immediately notify Ecology's Regional Spill Response Office at 360-407-6300 with the nature and details of the problem, any actions taken to correct the problem, and any proposed changes in operation to prevent further problems; and
    5. Immediately notify the national Response Center at 1-800-424-8802, for actual spills to water only.
c. In the event of finding distressed or dying fish, the operator must notify the EPA and tribal points-of-contact immediately. Depending on the specifics of the situation, the EPA, in coordination with the Corps and Quileute Tribe, may require the operator to conduct water quality monitoring to ensure ongoing operations are consistent with applicable water quality

standards for dissolved oxygen and turbidity, before allowing the work to resume; and

d. In addition to the phone notifications listed above, the Corps and/or their contractor must submit a detailed written report to the EPA and tribal points-of-contact within five (5) days that describes the nature of the event, corrective action taken and/or planned, steps to be taken to prevent a recurrence, results of any samples taken, and any other pertinent information.

5. Specific Water Quality Standards and Points of Compliance

a. In the absence of tribal water quality standards, the EPA will reference state water quality standards applicable in the immediately adjacent area where coastal waters are categorized as "extraordinary," and the criteria of the categorization apply as described in WAC 173-201A-210 (1);
b. This certification does not authorize temporary exceedances of water quality standards beyond the limits established in WAC 173-201A-210(1)(e)(i);
c. For estuaries or marine waters, the turbidity point of compliance is a 150-foot radius surrounding the in-water activity. Turbidity occurring outside that zone that is more than 5 nephelometric units (NTU) over background when the background is 50 NTU or less, or a 10% increase in turbidity when the background turbidity is more than 50 NTU is a violation of the turbidity water quality standard;
d. All other applicable water quality criteria (e.g. dissolved oxygen) must be met throughout the project area at all times per WAC 173-201A-210(1); and
e. Any water quality effects, after the application of reasonable BMPs, are intended only for the duration of time necessary to complete repairs and placement operations. Unavoidable turbidity effects within the turbidity point of compliance are authorized for brief periods of time and are not authorization to exceed those standards for the entire duration of construction and placement. In no case does this certification authorize degradation of water quality that significantly interferes with or becomes injurious to characteristic water uses, or causes long-term harm to the Quillayute River estuary and adjacent waters.

6. Construction Timing

Spit repair and maintenance, and supplemental beach nourishment, must occur in a fall/winter work window from September 24th to February 28th in any given year of construction between 2018-2029. The proposed project is described in Public Notice CENWS-PMP-18-17, dated July 5, 2018. This window is for the protection of juvenile salmon and spawning surf smelt, and avoids the marbled murrelet nesting season.

Expiration and Amendment

This certification is valid September 24th through February 28th of any construction year, starting September 24, 2018, and ending February 28, 2029. The certification work window in any given year may be extended beyond this date range at the discretion of the EPA, in consultation with the Quileute Tribe. Extension of any work window requires a written request to the EPA.

The EPA point-of-contact for amendments, modifications, or any other changes to this certification is Justine Barton, U.S. Environmental Protection Agency, MS: OERA-140, 1200 Sixth Avenue, Suite 155, Seattle, WA 98101. Phone 206-553-6051; email: barton.justine@epa.gov.

Figure 1. Quillayute Spit Repair Location with Stations

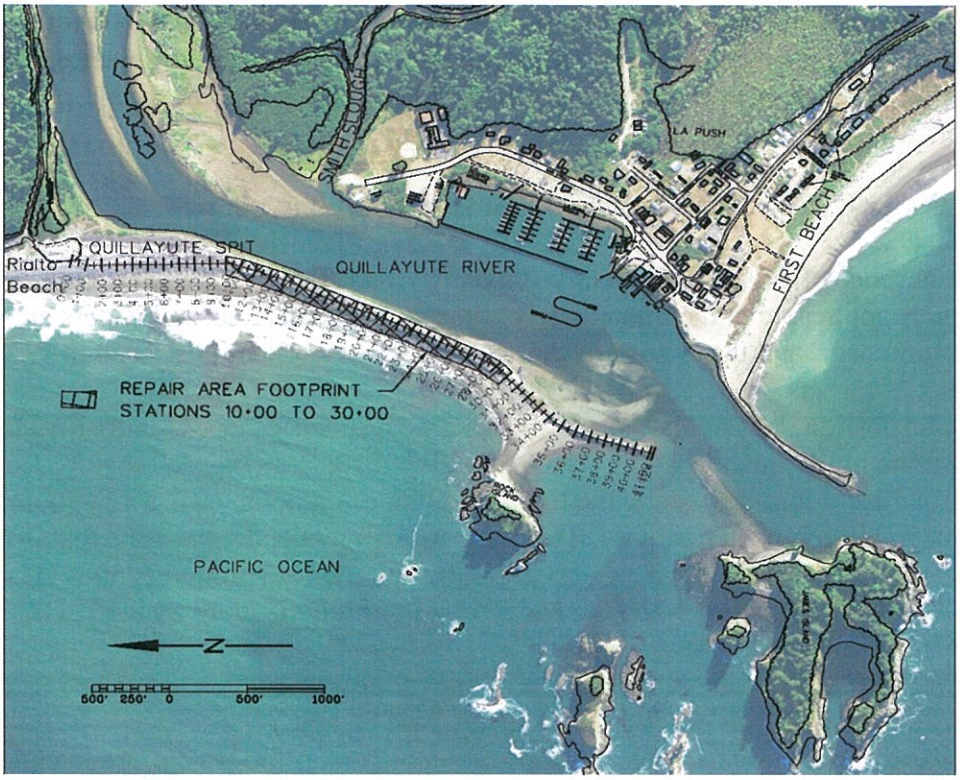


Figure 2. Site B Placement Area

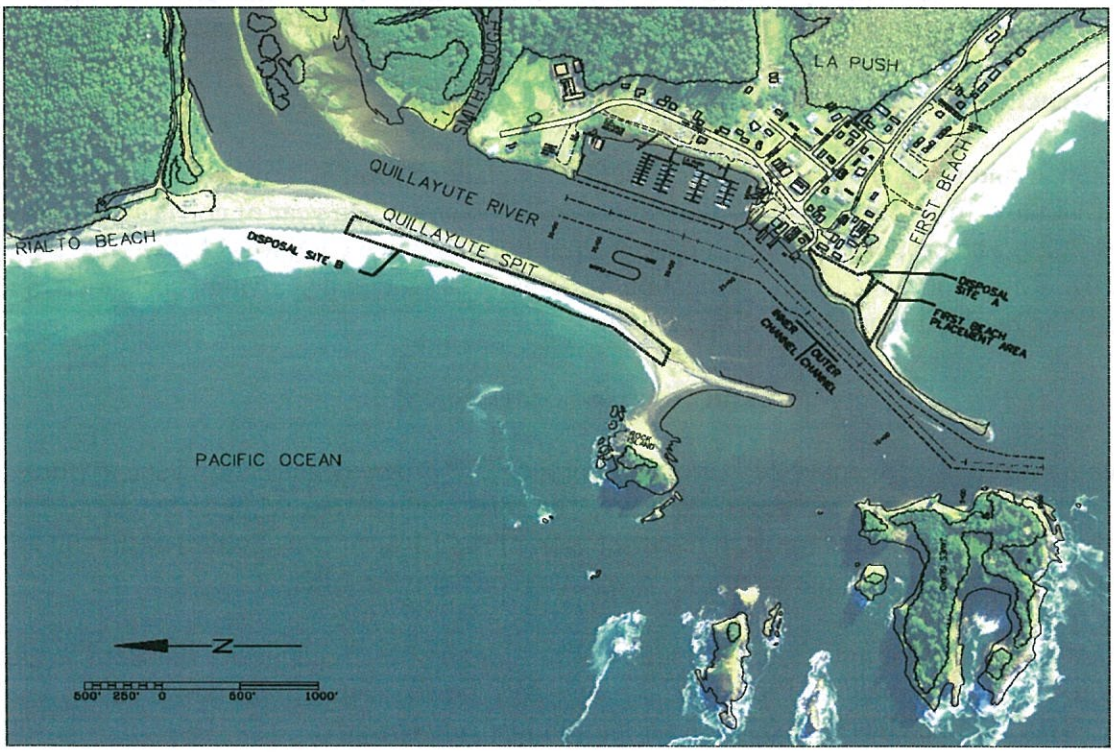
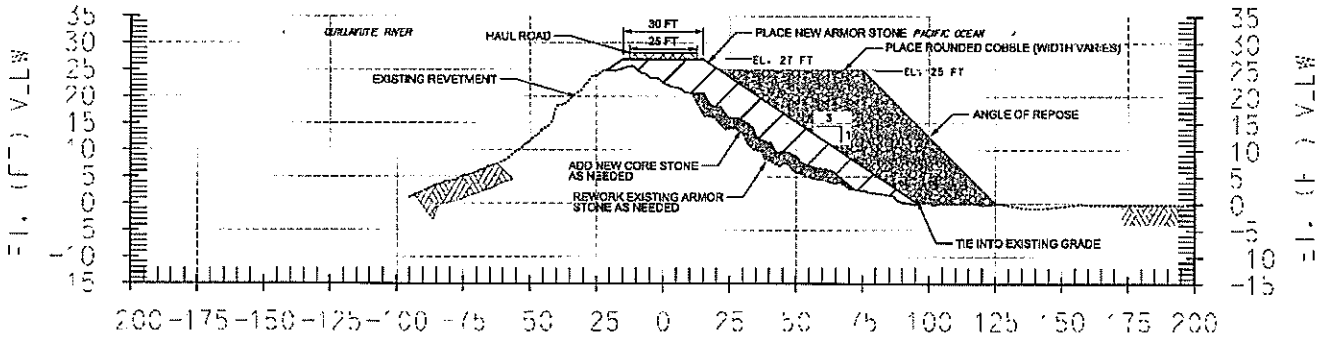


Figure 3. Spit Repair and Cobble Beach Nourishment Cross-section



Rialto Spit Revetment Repair Typical Section

Final Environmental Assessment
and Clean Water Act, Section 404 Public Interest Review
Quillayute Spit Repair and Maintenance 2018-2029

Appendix F
Public Notice

US Army Corps of Engineers
Seattle District

Public Notice

Navigation Section
Post Office Box 3755
Seattle, Washington 98124-3755
Attn: John Pell (OD-TS-NS)
or Kaitlin Whitlock (PMP-E)

Notice Date: July 05, 2018
Expiration Date: August 04, 2018
Reference: CENWS-PMP-18-17

U.S. ARMY CORPS OF ENGINEERS, SEATTLE DISTRICT QUILLAYUTE SPIT REPAIR AND MAINTENANCE 2018-2029, LA PUSH, WASHINGTON

Interested parties are hereby notified that the U.S. Army Corps of Engineers, Seattle District (Corps) plans to conduct annual repairs of the Quillayute Spit with supplemental beach nourishment approximately every four years, in La Push, Washington. The repairs would occur from 2018 through 2029 and are described below. The location of the proposed dredging and disposal sites are shown on the attached figures. The Corps has prepared, pursuant to the National Environmental Policy Act, a draft Environmental Assessment (EA) to address the potential environmental impacts associated with the proposed action. The purpose of this Public Notice is to solicit comments from interested persons, groups, and agencies on the Corps' proposal for maintenance and repair of the spit and placement of materials into the waters of the U.S. under NEPA.

A further purpose of this Notice is to solicit comments on the proposed disposal of fill material into the waters of the U.S. under the Clean Water Act. This Public Notice is being issued under Clean Water Act Section 404 and in accordance with rules and regulations published as 33 CFR 335 "Operation and Maintenance of Army Corps of Engineers Civil Works Projects Involving the Discharge of Dredged or Fill Material into Waters of the U.S. or Ocean Waters"; 33 CFR 336 "Factors to be Considered in Evaluation of Army Corps of Engineers Dredging Projects Involving the Discharge of Dredged Material into Waters of the U.S. and Ocean Waters"; 33 CFR 337 "Practice and Procedure"; and 33 CFR 338 "Other Corps Activities Involving the Discharge of Dredged Material or Fill into Waters of the U.S."

AUTHORITY

The Quillayute River Navigation Channel project and maintenance dredging by the Department of the Army was authorized by the Rivers and Harbors Act of 3 July 1930 (House Document 290, 71st Congress, 2nd session) and modified by the Rivers and Harbors Acts of 2 March 1945 (79th Congress, 1st Session) and 3 September 1954 (83rd Congress, 2nd Session). The need for measures to prevent a breach in the Quillayute Spit has been recognized as essential to the functionality of the Federal navigation project since the project was originally authorized in 1930. Maintenance and stabilization of the Quillayute Spit to serve the required protective purpose has progressed over the intervening years to the point that it is now an acknowledged Federal responsibility to design, operate, and maintain a revetment.

LOCATION: This project is located at the town of La Push in Clallam County, Washington (Figure 1). The project site is accessed via travelling west to the end of Washington State Route 110 to the Quileute Tribe's Marina at 47.910744 North latitude and -124.635793 West longitude.

PROPOSED PROJECT

The Corps proposes to repair the entire Quillayute Spit between Stations 10+00 and 30+00 over a 10-year period (2018 to 2029) and perform supplemental beach nourishment at the toe approximately every four years (Figures 2 and 3). Work is expected to be accomplished 24 September through 28 February of each year in which work is conducted. It is likely that repairs would be done in 200- to 300-foot sections focusing on the most damaged areas approximately every 1-2 years, depending on funding. This would require up to 10 individual construction events to complete the repair. In order to access the repair areas, a 25-foot wide haul road with up to 10,000 tons of 3- to 9-inch quarry spalls would be built on the crest of the Quillayute Spit out to the area being repaired. Between Stations 10+00 and 30+00, the Quillayute Spit needs repairs that would consist of reworking the existing armor stone with machinery stationed on the structure to create a core layer and capping it with new 10- to 20-ton armor stone. Placing core stone 1-3 feet in diameter may be necessary in areas without sufficient existing material. The project would require some existing armor stone to be reworked down to an elevation of +0 feet MLLW before being tied into existing stone, but it is likely much of the existing armor stone would only need to be reworked down to +5 feet MLLW due to the presence of existing stone that has sloughed down the slope of the spit from ocean wave action. Work would be timed during low tides for repairs in the intertidal zone to avoid or minimize in-water work to the extent possible; work does not extend below +0 feet MLLW but some waves may enter the work zone due to the dynamic nature of the area. The total volume of repair material to be placed over the full 10-year period would be up to approximately 80,000 tons of 10- to 20-ton armor stone and up to approximately 20,000 tons of core stone 1-3 feet in diameter.

Supplemental beach nourishment would be placed at Site B along the toe of the Quillayute Spit. Dredged material is already placed in Site B during maintenance dredging; however, the volume is insufficient so there is a sediment deficit on the ocean-ward side of the spit and wave action continues to damage areas along the entire Quillayute Spit, eroding material from the toe of the riprap. The ocean-ward side of the spit is steep and highly reflective armor stone, which contributes to erosion of the beach in front of the Quillayute Spit. The USACE is proposing to place 3- to 12-inch rounded river cobbles along on the ocean-ward side of the spit at Site B to supplement the placement of dredged material. This material is similar to the Quillayute River bedload that is found on the riverward side of the spit. Site B is approximately 3,000 feet long and 75 feet wide, with an area of approximately 5 acres. The USACE would expect to place up to 100,000 CY within Site B every four years. To avoid burying cobble under armor rock, cobble will only be placed over segments where armor has already been replaced/repaired or that are undamaged. In the event that armor repair is needed at a segment that has cobble, the cobble will be moved to the side before placing the armor rock and then placed back over the armor.

PROJECT PURPOSE

The purpose of the action is to restore and maintain the function of the Quillayute Spit protecting the Quillayute Federal Navigation project from direct exposure to ocean waves, which would impair the

use of the federally authorized small boat basin and navigation channel as well as search and rescue use by the local Coast Guard station.

ENVIRONMENTAL AND CULTURAL RESOURCES COMPLIANCE

The proposed repair and maintenance activities have been reviewed in accordance with the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.); the Endangered Species Act (ESA) of 1973 (16 U.S.C. 1531 et seq.); Magnuson-Stevens Fishery Conservation and Management Act of 1976 (16 U.S.C. §1801 et. seq.); Section 404 of the Clean Water Act (33 U.S.C. 1344); Coastal Zone Management Act of 1972 as amended (16 U.S.C. 1451 et seq.), and the National Historic Preservation Act of 1966 as amended (54 U.S.C. 300101 et seq.).

A Draft Environmental Assessment (EA) and Clean Water Act, Section 404(b)(1) Analysis have been prepared for this action and are posted online at the following website:

http://www.nws.usace.army.mil/Missions/Environmental/Environmental-Documents/

The Draft EA's public comment period is concurrent with the comment period for this Public Notice. Once complete, the Final EA will be posted and available on the Seattle District website listed above.

The Corps has analyzed effects to threatened and endangered species pursuant to Section 7(a)(2) of the ESA. The Corps has determined the preferred alternative will have no effect to any ESA-listed species or critical habitat and has prepared documentation of this determination. Confirmed through coordination with the National Marine Fisheries Service and U.S. Fish and Wildlife Service, the Corps has determined it need not request consultation in light of this "no effect" determination. Documentation of the draft analysis is an appendix to the draft EA for public review.

The Corps is seeking a Clean Water Act, Section 401 water quality certification (WQC) from the Environmental Protection Agency. In conducting activities involving the discharge of materials into waters of the U.S., the Corps will abide by the conditions of the WQC to ensure compliance with State water quality standards. The Corps has determined that the proposed work is consistent to the maximum extent practicable with the enforceable policies of the approved Washington Coastal Zone Management Program and will provide this determination to the Washington State Department of Ecology (Ecology) for their review. The Coastal Zone Management Act Consistency Determination is an appendix to the Draft EA. The Corps has coordinated the work with the Washington State Historic Preservation Office (SHPO) and the Quileute Tribe.

PUBLIC INTEREST EVALUATION

The decision to proceed with repairs and placement of material will be preceded by a determination of whether the proposed activity would be in the public interest. All factors which may be relevant to the proposal's public interest will be considered; among those are navigation and the Federal standard for dredged material disposal; water quality; coastal zone consistency; wetlands; endangered species; historic resources; scenic and recreation values; fish and wildlife; marine sanctuaries; applicable state/regional/local land use classifications, determinations, and/or policies; conservation; economics; shoreline erosion and accretion; safety; and considerations of property ownership.

As a foundation for its public interest determination the Corps will consider, on an equal basis, all alternatives that are both reasonable and practicable, i.e., available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes. The Corps will select the alternative that represents the least costly alternative, constituting the discharge of dredged or fill material into waters of the United States in the least costly manner and at the least costly and most practicable location, that is consistent with sound engineering practices, and that meets the environmental standards established by the Clean Water Act, Section 404(b)(1) evaluation process.

PUBLIC HEARING

Any person may request, in writing and within the comment period specified in this Public Notice, that a public hearing be held to consider this proposal. Requests for a public hearing must clearly set forth the following: the interest that may be affected, the manner in which the interest may be affected by this activity, and the particular reason for holding a public hearing regarding this activity.

COMMENT AND REVIEW PERIOD

The Corps is soliciting comments from the public; Native American Nations or tribal governments; Federal, State, and local agencies and officials; and other interested parties to consider and evaluate the effects of this activity. To make this decision, comments are used to assess impacts on ESA-listed species, historic properties, water quality, general environmental effects, and other public interest factors listed above. The proposed discharge will be evaluated for compliance with guidelines promulgated by the Environmental Protection Agency (EPA) under authority of Section 404(b)(1) of the Clean Water Act. Comments will also be considered in determining whether it would be in the public interest to proceed with the proposed project. The Corps will consider all submissions received before the expiration date of this notice. The nature or scope of the proposal may be changed upon consideration of the comments received. The Corps will initiate an Environmental Impact Statement (EIS), and afford the appropriate public participation opportunities attendant to an EIS, if significant effects on the quality of the human environment are identified and cannot be mitigated.

Conventional mail or e-mail comments on this Public Notice will be accepted and made part of the record and will be considered in determining whether it would be in the public interest to authorize this proposal. Submitted comments should include the public notice number on the subject line. The comment must include the commentator's name, address, and phone number. All comments whether conventional mail or e-mail must reach this office no later than the expiration date of this public notice to ensure consideration. The nature or scope of the proposal may be changed upon consideration of the comments received.

Replies to this Public Notice should be mailed to reach the District Engineer, ATTN: CENWS-PMP-18-17, PO Box 3755, Seattle, Washington 98124-3755, not later than August 04, 2018 to assure consideration. Requests for additional information should be directed to Mr. John Pell, Project Manager, at (206) 764-3413 or via email at John.L.Pell@usace.army.mil or Mrs. Kaitlin Whitlock, environmental coordinator, at (206) 764-3576 or via email at Kaitlin.E.Whitlock@usace.army.mil

COMMENTS TO THE ENVIRONMENTAL PROTECTION AGENCY

Any person desiring to present views on the project pertaining to a request for water quality certification under Section 401 of the Clean Water Act may do so by submitting written comments to the following address:

Attn: Ms. Justine Barton
US EPA Region 10
1200 Sixth Avenue, MS 202-3
Seattle, Washington 98101
barton.justine@epa.gov.

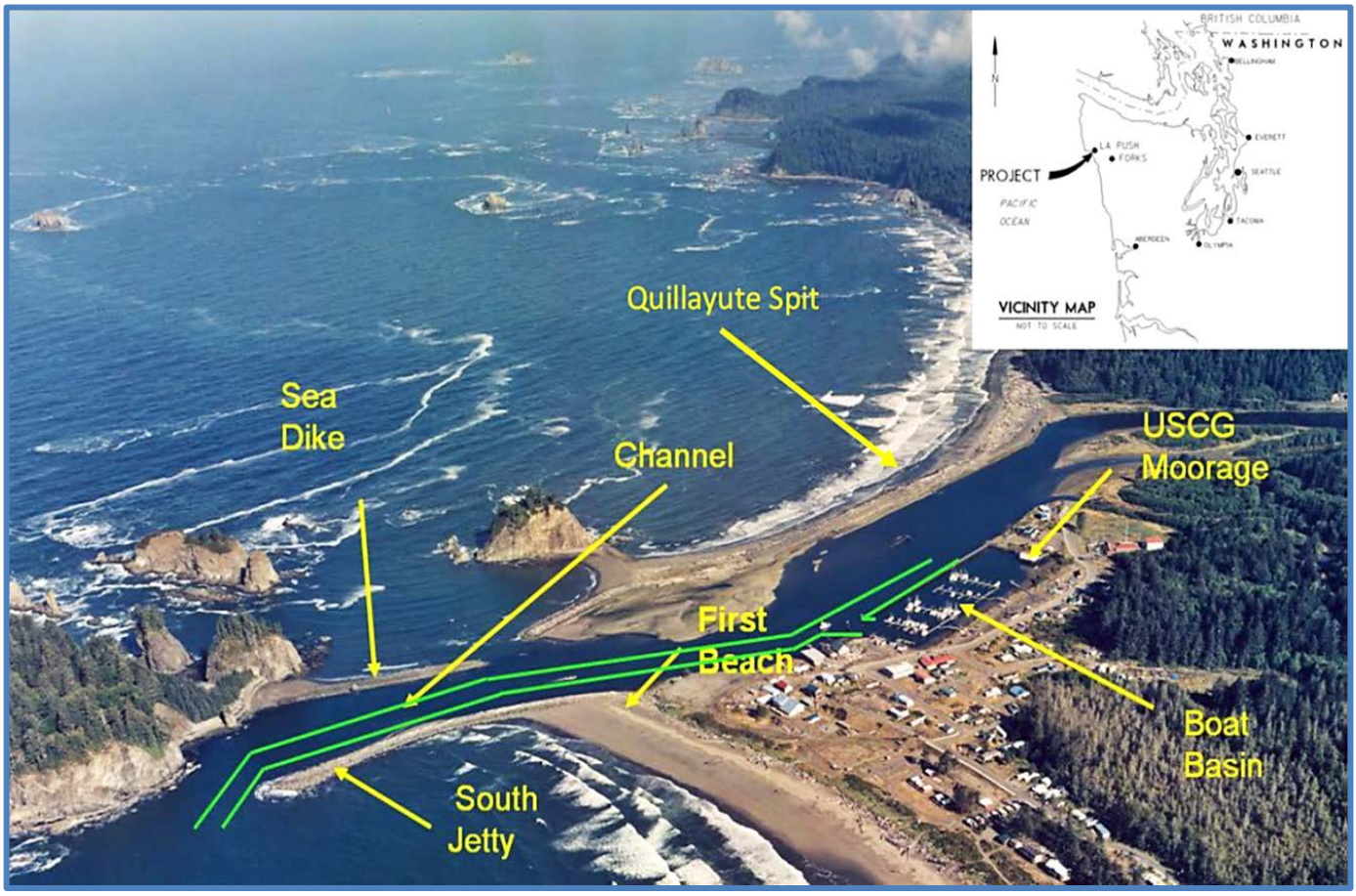


Figure 1. Federally authorized navigation features at La Push, Washington. Repairs and maintenance are proposed for the Quillayute Spit.

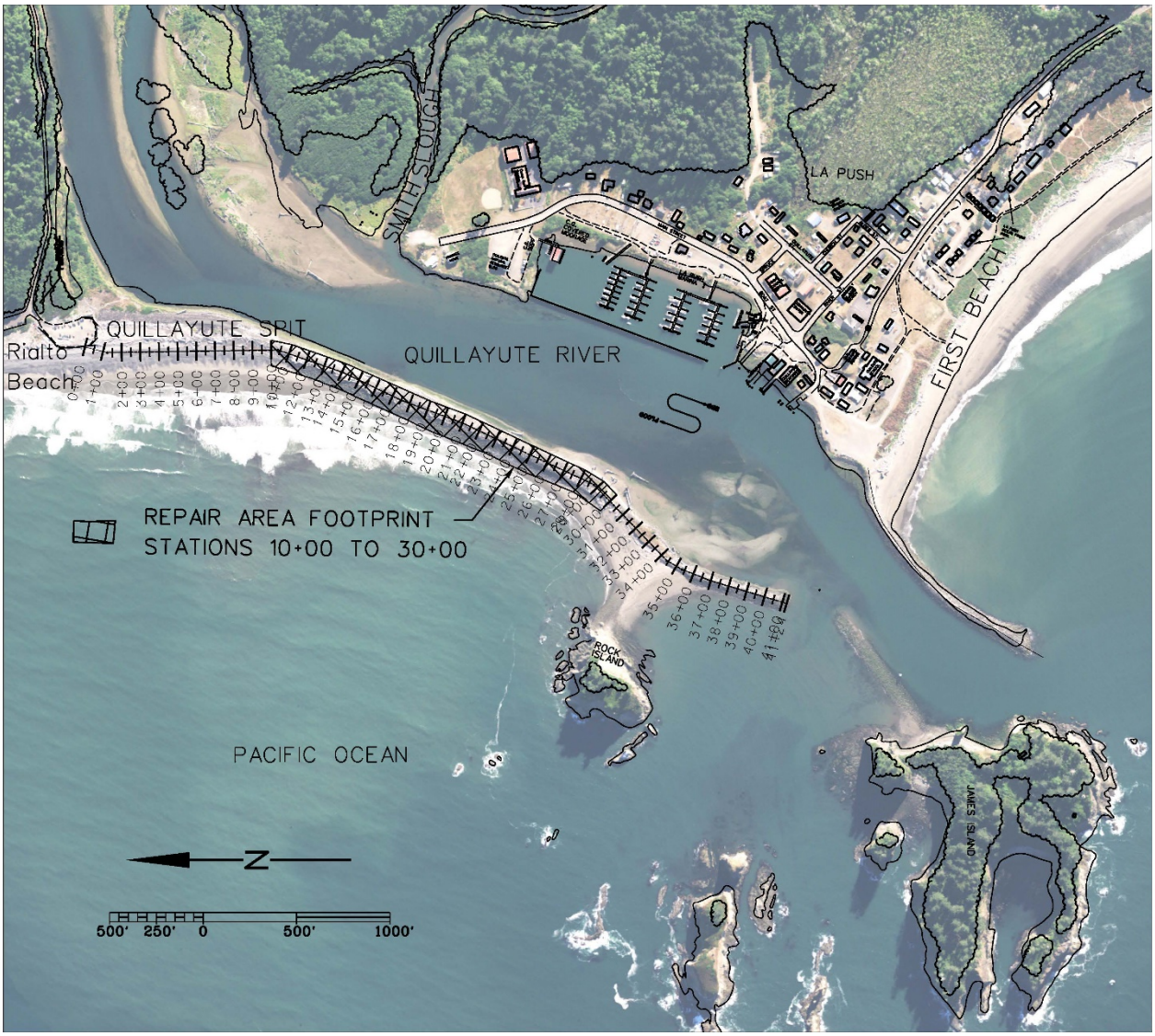


Figure2. Repair area footprint of the Quillayute Spit from Station 10+00 to 30+00.

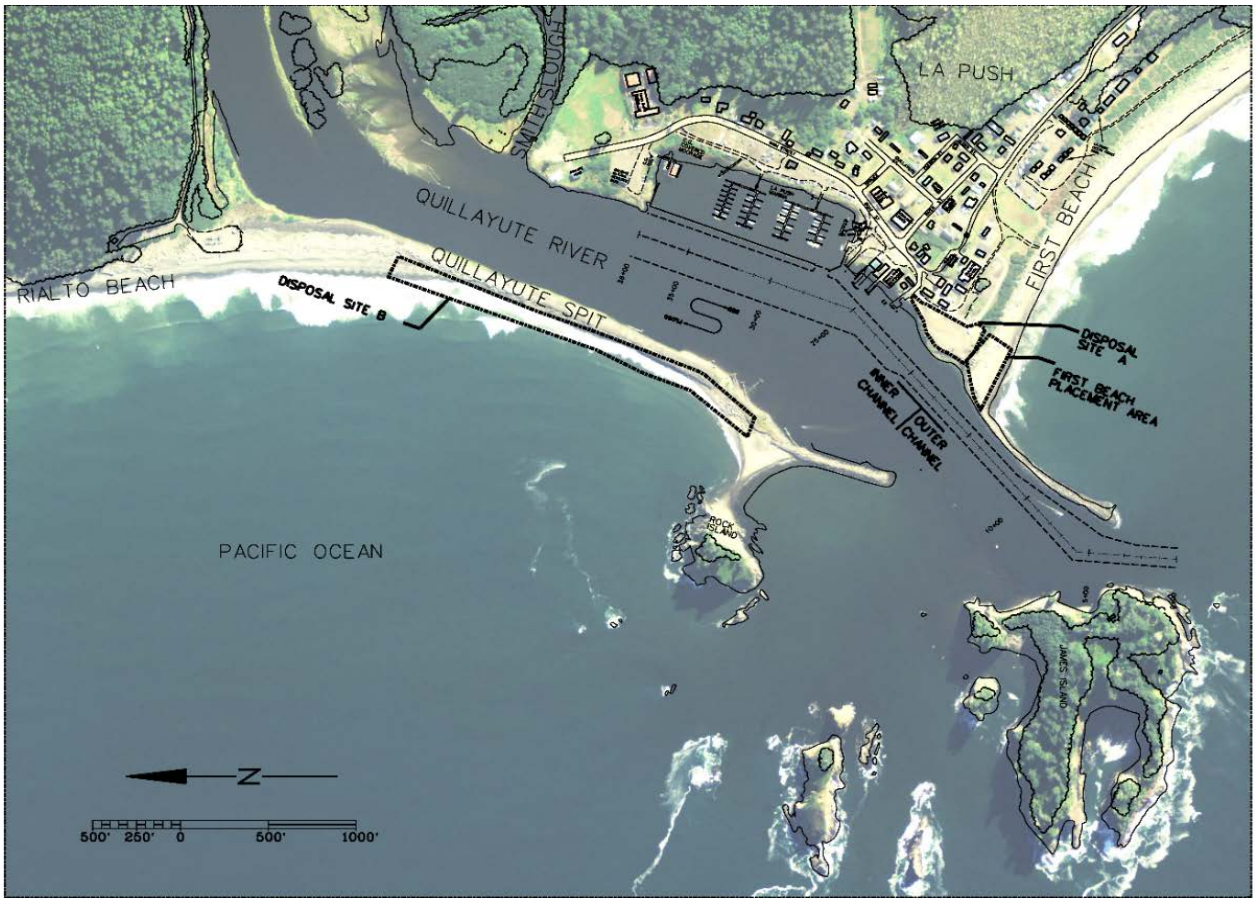


Figure 3. The proposed location for supplemental beach nourishment is at Site B along the length of the Quillayute Spit.

Final Environmental Assessment
and Clean Water Act, Section 404 Public Interest Review
Quillayute Spit Repair and Maintenance 2018-2029

Appendix G
Public Comments and Responses

United States Department of the Interior

NATIONAL PARK SERVICE
Olympic National Park
600 East Park Avenue
Port Angeles, Washington 98362-6798

IN REPLY REFER TO:
D30(OLYM-S)

August 3, 2018

U.S. Army Corps of Engineers
ATTN: CENWS-PMP-18-17
PO Box 3755
Seattle, WA 98124-3755

Subject: Draft EA and CWA Section 404 Public Interest Review Quillayute Spit Repair and Maintenance 2018-2029

Dear Colonel Mark Geraldi,

Thank you for the opportunity to review and comment on the "Draft Environmental Assessment and Clean Water Act Section 404 for the Quillayute Spit Repair and Maintenance 2018-2029." While Olympic National Park (ONP or "the park") supports the needs of our tribal neighbors and the U.S. Coast Guard, we look forward to the opportunity to work together to refine the proposal and collaborate on mutually beneficial objectives.

The draft environmental assessment (EA) evaluates potential impacts of repairs approximately every 1-2 years to the Quillayute Spit, with supplemental beach nourishment every four years for a 10-year period, covering a project timeframe of 2018-2029. The U.S. Army Corps of Engineers has a Special Use Permit (SUP) with Olympic National Park that extends to only 2020. 1

Page 1 of the EA states that "The area of analysis includes the Quillayute Spit surrounded by a quarter mile buffer, which includes the marina and waterfront area of La Push and Rialto Beach." Within this buffer also lies Olympic National Park. Rialto Beach is within the park boundary and is managed by the park. The EA fails to state that a portion of the action area includes ONP and the impact analysis is remiss in addressing impacts on park resources and visitors. 2

In regard to the information provided in section 1.2 "Authority," specifically under the "Navigation Features" portion, which begins on page 3, the sediment deficit has possibly also led to erosion of the ONP beaches to the north. In particular, the beachfront of the Rialto Beach parking area continues to erode, resulting in the loss of visitor parking. To what extent is the levee and reduced beach nourishment responsible for this erosion? 3

Under Alternative 3, the agency's preferred alternative, Site B was selected for the placement of 100,000 CY of 3- to 12-inch rounded river cobbles approximately every four years. How was Site B selected for supplementation of the placement of dredged material? Is this the best location for beach nourishment from an operational standpoint, or was it selected as a convenient location? 4

Chapter 3 "Affected Environment and Effects of the Alternatives," section 3.1 "Hydraulics and Geomorphology" should also include an analysis of the upstream impacts of the levee/spit, especially as related to lateral erosion of the channel, loss of channel habitat, and threats to park and La Push infrastructure. The spit does lead to erosion of Rialto Beach. This is likely exacerbated by the reduction in beach supplementation from the original proposed level of 50,000 CY annually. 5

In Section 3.12 "Recreation and Scenic Values" the term "wilderness character" is used to describe the attraction of visitors to the area, however, the project area is not actually within wilderness as defined by the Wilderness Act. In order to avoid concerns raised by wilderness interest groups, the USACE may want to consider revising the intro to section 3.12 to read, "While the proposed action would not occur within wilderness, the rugged coastal wilderness of the nearby area attracts travelers from throughout the Pacific Northwest and farther away." While noise from actions within the project area could certainly have an impact on the coastal wilderness area within the park just north of the project site, the potential impact may not be substantial enough to warrant analysis. 6

In this same section, "Recreation and Scenic Values," there is no mention of Olympic National Park even though the work would occur on the north shore and the analysis here for Alternative 2 specifically states, "The Rialto Beach parking lot would become unavailable as a parking area for Rialto Beach access during the months of September and October approximately every 1-2 years…" Under Alternative 3 it is noted that this alternative "…would have the same effects to recreation and aesthetics as Alternative 2…" and further notes that the Rialto Beach parking lot would essentially be closed from September 24 through February 28. In the "off season" visitation within Olympic National Park shifts from a balance of coastal and interior users to mainly coastal users. Nearly 50% of our annual visitation occurs on the coast and year-round. Park visitation in September and October varies from 14,000 to 67,000 visitors per month. Please provide clarification whether this proposed closure would occur for only the gravel parking lot that lies south of the paved parking lot, and is now within the Quileute Nation's boundary. Otherwise, closure of the Rialto Beach parking area could be an issue for park visitors and wilderness users, an analysis specific to park visitors should be included. 7

Section 3.13 "Socioeconomic Resources" should also include an analysis specific to park visitation. Closure of the parking area and subsequent access restrictions for Rialto Beach can have a substantive impact on businesses in the area, including Forks, La Push, and surrounding communities. 8

Also, there's no mention of potential damage to Mora Road. The traffic counts on this road exceed 180,000 persons per year. As the USACE is aware, this road provides access to Rialto Beach, which is a popular day use area and trailhead for coastal backpacking trips. The Federal Highway Administration - Western Federal Lands Highway Division (FHWA), our partner agency for park road work has suggested that the spit repair construction has had and 9

would continue to have impacts on Mora Road. This road was not constructed for the extensive heavy loading associated with the USACE's proposed action. This may be exacerbated by the period of the proposed action during the wetter months when subgrades may be more saturated and vulnerable to irreversible impacts from heavy loads. The road has incurred damage from previous USACE repairs and beach nourishment to the spit due to heavy equipment utilizing the park road to access the project site. Prior to any hauling taking place on this road, FHWA recommends that an assessment be conducted to document and set a baseline for current road conditions. Follow-up assessments would then be conducted after the first, and each subsequent, construction season to assess whether there was any damage to the road resulting from USACE work. The park expects that any road impacts documented from these FHWA assessments would be corrected by USACE because they would result from the proposed USACE spit work. These repairs should be completed as recommended by FHWA to mitigate future potential damage to road. Please see the attached letters regarding this issue. 9 con't

Under the Cumulative Effects Analysis, the repairs to Mora Road from previous work on the spit and beach nourishment should also be included. This would be for both past and, given the proposed continuation of the work, reasonably foreseeable future actions. Also missing from the impacts analysis are the effects of the armored spit on channel function upstream of the spit. This may be a cumulative effect given the maintenance activities began in 1949 and have been ongoing since then. 10

We would like to see a quantitative analysis of the effects of beach sedimentation and erosion on the entire area of influence (not just to Rialto Beach). Use a sediment budget approach. Model all alternatives (so as to include the effects of beach nourishment) and compare to natural (undisturbed) conditions. Could additional supplemental beach nourishment occur to address erosion on an area-wide scale? There should be pre- and post-monitoring of beach response. 11

Additionally, we would like to see an evaluation of the project's effects on river channel geomorphology. Use hydraulic modeling (2-D minimum) for sedimentation and erosion of the river bed and banks. Model all alternatives and "natural" (pre-original project). There should be pre- and post-project monitoring of river bed response. The effect of fines and impacts on lower river redds should be included. Include considerations of timing of the project and impacts on fish migration. 12

Please contact me at 360-565-3002 if you have any questions regarding these issues and considerations. Park staff may be able to assist the USACE in addressing the park's comments in revising the draft FONSI.

Sincerely,

M. Sarah Creachbaum
Superintendent

Encl.
CC: Kaitlin Whitlock, USACE; John Pell, USACE

United States Department of the Interior

NATIONAL PARK SERVICE
Olympic National Park
600 East Park Avenue
Port Angeles, Washington 98362-6798

IN REPLY REFER TO:
D30(OLYM-S)

January 5, 2017

John Pell
US Army Corps of Engineers
Navigation Project Manager
Office: 206-764-3413
Mobile: 206-909-7968
4735 E. Marginal Way S.
Seattle, WA 98134-2385

Dear Mr. Pell,

I am writing to share with you our experience with the emergency work at Rialto Beach jetty conducted by your agency in October of 2016.

This work was initiated in October 2016 as an emergency work effort to strengthen the Rialto Beach jetty, which protects the community of La Push and navigable waterways on the Quillayute River and harbor. You contacted the park to coordinate access logistics for material deliveries on this road and to assess the fitness of this road for this traffic. We indicated to you that we were concerned with the washout area because of its narrowness and its bearing capacity.

During discussions between Olympic National Park (ONP) staff with your agency it was determined that:

1. ONP would close the road for the duration of the project to avoid hazards to public traffic related to the number and size of trucks and;
2. USACE made verbal commitments to repair the existing damage and to correct any damage that occurred due to the truck traffic of this U.S. Army Corps of Engineers (USACE) repair work.

We understand that you could not repair the existing road damage through the jetty repair contract and, even so, we appreciate your efforts to accomplish it.

ONP is committed to collaborative efforts that accomplish the respective missions our agencies. Unfortunately, we have learned that the road incurred additional damage resulting from the jetty work. Federal Highway engineers have visited the site since the completion of USACE work and determined that the slump area has increased by approximately 20 percent and that the previous design for repairs needs to be revised to accommodate the new extended damage. We would appreciate discussing with you options for correcting the additional damage. Please contact Lisa Turecek at (360) 565-3150.

Finally and on a much happier note, I wanted to let you know that USACE onsite project lead, Tony Doersam, did a great job of communicating with park staff and insuring that cleanup work was satisfactorily completed.

Sincerely,

M. Sarah Creachbaum
Superintendent

DEPARTMENT OF THE ARMY
SEATTLE DISTRICT, CORPS OF ENGINEERS
P.O. BOX 3755
SEATTLE, WASHINGTON 98124-2255

REPLY TO
ATTENTION OF

27 February 2017

M. Sarah Creachbaum
National Park Service
600 East Park Avenue
Port Angeles, WA 98362-6798

Dear Ms. Creachbaum:

Thank you for your recent inquiry letter dated 5 January 2017 regarding our recently completed emergency repairs of the Rialto Revetment, in La Push, Washington and the repair of Mora Road. We began hauling on Mora Road in support of our construction on the revetment on October 19, 2016 and completed hauling November 15, 2016.

As part of our construction efforts, my staff and our Emergency Management staff coordinated with your team to ensure proper access using Mora Road for access for material delivery. We appreciate your staff's timely assistance throughout this emergency action to protect the breaching of the revetment. However, your letter indicates a verbal commitment from my staff to repair the existing damage and correct any additional damage potentially caused by USACE truck traffic during our repair work. We regret any confusion regarding the assumption of repairs. My staff does not have record of this verbal commitment, nor would the full scope of such commitment be within our authorities. We do have a record of an email sent from John Pell to Taylor Lee and Elizabeth Turacek dated October 13, 2016 in which we clarified that we would not repair the road to the specifications provided by your staff but would only be placing material on the landward side of the existing lane to make the road passable.

As part of our repair, we used our existing Special Use Permit SUP-OLYM-600-043 for road access, which stipulates the area be restored to its original condition at the end of the permit. To evaluate changes in the road from original condition part of our actions included routinely inspecting the road to see if any additional damages occurred from our operations. Monitoring included measuring of observed cracks on the waterside of the jersey barrier. The first monitoring event occurred before hauling on October 19, 2016 and continued throughout the duration of construction. Final post construction inspection on November 18, 2016. Based on these measurements, the existing cracks present in Mora Road did not change in width. Therefore, we have no evidence of additional damage to the road caused by USACE contracted truck traffic.

We understand that a recent evaluation of Federal Highway engineers indicates additional slumping has occurred on Mora road. Without documentation to support the claim of damage from USACE activities, USACE cannot commit to support any road repair efforts.

USACE is committed to continue our collaborative efforts regarding access to the Rialto Revetment that help us accomplish our respective missions. If additional documentation is available regarding USACE related damage to the road, we would be happy to discuss options for moving forward. Please contact Elizabeth Chien at (206)-316-3968 if you wish to discuss further.

Sincerely,

Kym Anderson
Chief, Navigation Section
United States Army Corps of Engineers
Seattle District

United States Department of the Interior

NATIONAL PARK SERVICE
Olympic National Park
600 East Park Avenue
Port Angeles, Washington 98362-6798

IN REPLY REFER TO:
D30(OLYM-S)

July 26, 2017

John Pell, Navigation Project Manager
U.S. Army Corps of Engineers
4735 E. Marginal Way S.
Seattle, WA 98134-2385

Dear Mr. Pell,

I am writing to update you on the status of the Mora Road as you requested in communication with Christina Miller on my staff in late June. I understand that the U.S. Army Corps of Engineers (USACE) plans to perform dredging work in the Quillayute River this fall and will need to utilize the Mora Road in order to gain access to the work site.

Currently, Olympic National Park (ONP) maintains this road for light-duty visitor vehicle access and ONP's maintenance work is funded accordingly. We realize that this road is needed for USACE work access, but I have concerns about the wear and tear on the road which jetty maintenance and repair work creates. Olympic National Park (ONP) has recently completed repairs on the Mora Road. These repairs stabilized approximately 800 linear feet of slumped road prism and resurfaced the damaged pavement surface in the slump area, and slurry sealed the entire road. The sum of these repairs exceeded $500,000.

Last fall, USACE performed repairs to the La Push jetty requiring transport of extremely large riprap (1-2 rocks per truck) and quarry spalls. Approximately 250 truckloads of each of these materials were delivered via the Mora Road in a period of six weeks during saturated conditions. With this heavy truck traffic, the scope of ONP's planned repairs expanded significantly. The crack widths increased and there were additional cracks indicating more extensive slumps.

ONP requests that USACE cover road maintenance costs resulting from USACE project impacts. This consideration could occur by direct work on the road or by fund transfer. The entire road has been repaired except for one section immediately east of the recent soil nail repairs. This section would be an ideal section for direct improvement by USACE if you elect to proceed with dredging work.

Thank you for your consideration, and I look forward to future collaboration to ensure maintenance of both the jetty and the Mora Road.

Sincerely,

Lee Taylor
Acting Superintendent

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue
Seattle, WA 98101-3140

OFFICE OF
ENVIRONMENTAL REVIEW
AND ASSESSMENT

August 3, 2018

Colonel Mark A. Geraldi
District Commander, U.S. Army Corps of Engineers – Seattle District
ATTN: CENWS-PMP-18-17
P.O. Box 3755
Seattle, WA 98124-3755

Dear Colonel Geraldi:

The U. S. Environmental Protection Agency has reviewed the Draft Environmental Assessment for the Quillayute Spit Repair and Maintenance Project 2018-2029 in Clallam County, Washington (EPA Project Number: 18-0048-COE) pursuant to Section 309 of the Clean Air Act and the National Environmental Policy Act.

The Draft EA evaluates the impacts of repair and maintenance of the federal navigation revetment (the Quillayute Spit) at the mouth of the Quillayute River near La Push, Washington, for the fall/winter work seasons 2018 through 2029.

Overall, we appreciate your coordination with the EPA prior to the publication of the Draft EA, and for information supporting the Clean Water Act Section 401 water quality certification for this project. We also appreciate the conservation measures provided in the Draft EA, especially the retrieval and reuse of rock lost to the intertidal zone during construction and over time from the unraveling of armor on the Spit. However, we recommend that the Final EA clarify that maintenance dredging and placement of dredged material on the Spit is anticipated to continue and that information regarding the past construction of a haul road and subsequent status of the top of the Spit due to past and anticipated future emergency actions be included as part of all the alternatives evaluated. Our recommendations pertaining to specific sections of the Draft EA are included below.

Section 1

We recommend providing context for the historic maintenance of the navigation features as described in Section 1.2. We also recommend including information on the mouth of the Quillayute system prior to the 1950's early in the document. Descriptions of the historic migration of the mouth to the north and south, allowing for distribution of sediment throughout the project area, will provide important context for the later statements in Section 2.3 that supplemental nourishment will simulate natural sediment transport processes. 1

Section 2

Our review finds that Section 2.2 (Alternative 2) is the first mention of a haul road in the draft EA, and as mentioned above, we recommend the Final EA and associated documents provide clear descriptions of the direct, indirect and cumulative impacts of the haul road and the long-term greater pedestrian access to the repaired Spit. This additional information should include an accurate description of the road and how it will be managed, including during construction, between seasonal construction windows, and long-term maintenance (i.e., after 10 years). The EPA's access to the Spit during recent 2

field visits was enhanced by the relatively minor adjustments made during recent emergency repairs and we observed members of the public utilizing the top of the Spit as well. As there are potential adverse impacts to wildlife and cultural resources on James Island, should larger numbers of the public have access, we recommend that the Final EA and Clean Water Act 404(b)(1) analysis address these impacts. This would include pedestrians walking from the Spit to James Island via the Sea Dike at low tide. 2 con't

We understand that the size of staging areas in the Rialto parking lot(s) and the actual area of construction along the Spit will vary from year to year. We recommend the Corps consider whether annual construction activities could affect upland areas greater than one acre in size, and provide updated information in the EA on any required National Pollutant Discharge Elimination System stormwater discharge general permit authorization from the EPA. 3

The dynamic revetment/supplemental beach nourishment concept is described in Section 2.3 Alternative 3 (the Preferred Alternative) and Figure 5. We recommend the Final EA more clearly describe the long-term footprint of the material placed for the dynamic revetment. Include information on how far and at what depth supplemental beach material will move offshore. The discussion should describe the current offshore substrate and whether supplemental placement could change offshore substrates and/or whether gravels/cobbles from current dredged material placement already move to that location. 4

Section 3

The EPA recommends that Section 3.5 Forage Fish provide additional clarifying description of the Langness et al. 2015 study, including whether the study included sampling within the proposed project area and which years sampling occurred. We also recommend that the description of Section 3.5.1 No Action be clarified as to the movement of dredged material placed at Site B. It will be important for agency decision makers and the public to understand why material might not be placed at Site B, or that the dredged material and any bedload may move past and/or out a breach and head north toward Rialto. 5

We recommend that Section 3.6 Effects to Wildlife be further clarified with more discussion of direct and indirect impacts of the haul road and long-term access to the Spit and surrounding areas. We also recommend that the No-Action alternative should include the effects of a breach as well as the continued effects of dredging and dredged material placement at Site B. 6

The EPA recommends including additional information in Section 3.7.3 (Alternative 3) about the effects of the project on benthic invertebrates due to the supplemental placement of 3-12" cobble. Include information on how far and at what depth supplemental beach material will move offshore. As in Section 2.3, we recommend that the discussion describe the current offshore substrate and any changes due to the supplemental placement. We recommend that this section also address whether the sandy beaches to the south of Site B, currently sheltered at the end of the Spit, would be impacted. 7

We note that Section 3.12.1 Recreation indicates that sediment flowing out a breach will add to the beaches to the north. Our review finds that this differs from the earlier fish discussion, where the breach is considered a problem with loss of sediment to the north. We note that a breach would also prevent access along the Spit, and recommend that the Final EA include information on the impacts to access due to a breach. 8

Section 4

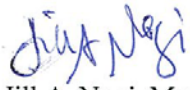
The EPA recommends removing the Section 4 Cumulative Effects statement, "However, these habitat losses can also be linked to activities in the upper watershed such as past forestry practices that cause 9

unnatural rates of sedimentation and erosion." This statement does not seem to be supported by the information documented in the EA. There are known impacts to the Quileute River estuary from the construction and repair of the navigation features over time, and we recommend that they are clearly stated in this section. The EPA agrees that these navigation project cumulative effects have already occurred and are currently occurring.

9 con't

If you have any questions about these recommendations, or for further coordination on this project, please contact Justine Barton of my staff at (206) 553-6051 or by electronic mail at barton.justine@epa.gov, or contact me at (206) 553-1841 or by electronic mail at nogi.jill@epa.gov. Ms. Barton will be providing your staff with minor suggested edits to the Draft EA itself, under separate cover.

Sincerely,



Jill A. Nogi, Manager
Environmental Review and Sediment Management

cc: Frank Geyer, Quileute Tribe
Chris Waldbillig, WDFW
Penny Kelley, Ecology
George Galasso, Olympic Coast Marine Sanctuary
Christina Miller, Olympic National Park
Kaitlin Whitlock, Seattle District Corps of Engineers
John Pell, Seattle District Corps of Engineers

USACE Response to Public Comments

Olympic National Park

The USACE thanks Olympic National Park (ONP) for their comments and interest in the proposed Quillayute Spit Repair and Maintenance 2018-2029 Project in Clallam County, Washington.

Response to comment 1: For access to Mora Road after 2020, the USACE would coordinate another Special Use Permit (SUP) with ONP.

Response to comment 2: Thank you for correcting this oversight. The EA has been revised to state that a portion of the quarter mile buffer around the Quillayute Spit for analysis of impacts overlaps with Rialto Beach, which is managed by the Olympic National Park.

Response to comment 3: The project area is in a highly dynamic coastal region that experiences significant erosion due to wave action. The Quillayute Spit is a naturally formed structure that was reinforced in its current position beginning in the 1950s and prevents the mouth of the Quillayute River from moving up to 1.25 miles along the coast as was observed in the late 1800s to early 1950s. This natural feature likely blocks some sediment that would typically enter the littoral drift cell, leading to a sediment deficit on the seaward side of the spit. Reinforcing the spit has not altered the wave conditions along the adjacent shoreline. The placement of beach nourishment using dredged material is intended to address this sediment deficit arising from the natural feature. However, the volume of beach nourishment material placed in front of the spit to date has not been sufficient to fully eliminate the sediment deficit. It is likely that the existing sediment deficit has reduced the amount of material available for longshore transport to adjacent shorelines. While the wave conditions and associated rate of erosion has not changed substantially due to maintenance of the spit, the reduction in sediment supplied to adjacent shoreline due to the sediment deficit likely increases the net erosion of the adjacent shoreline. Due to the extremely dynamic nature of the system the magnitude of this impact is unknown. The supplemental beach nourishment with rounded cobbles is intended to minimize the impact of reinforcing the spit.

Response to comment 4: The purpose of the beach nourishment using dredged material and supplemental beach nourishment with rounded cobbles is to address the sediment deficit, slow erosion at the toe of the Quillayute Spit and reduce the need for frequent repairs. Site B is normally used for placement of dredge material for supplemental beach nourishment based on the design of the Quillayute Spit. This is the best location for beach nourishment from a coastal engineering standpoint to reduce damage to the Quillayute Spit from waves.

Response to comment 5: The Quillayute River historically had a more sinuous and braided channel (Southerland et al. 2015). The operation and maintenance of the navigation channel, anthropogenic changes, and infrastructure present in the alluvial floodplain have changed it to a single, meandering channel that lacks instream complexity, cover, and connection to the floodplain (Southerland et al. 2015). Because the Quillayute River has assumed a meandering channel morphology, lateral erosion and threats to infrastructure occur.

An elevation change analysis was performed for the littoral cell by comparing lidar (LIght Detection And Ranging) elevations collected in 2011 to those collected in 2016. Figure 1 shows the difference in elevation in feet between the two datasets. The entire Rialto Beach littoral cell is losing material in the

intertidal zone with a small amount of creation at higher elevations. There is a hot spot of erosion along the landward end of the spit and the transition to Rialto Beach where the beach has lowered as much as 10 feet over the 5 year period of analysis. This is indicative of a sediment starved system the placement of the cobble revetment would be expected to slow the rate of erosion in this area (Figure 1).

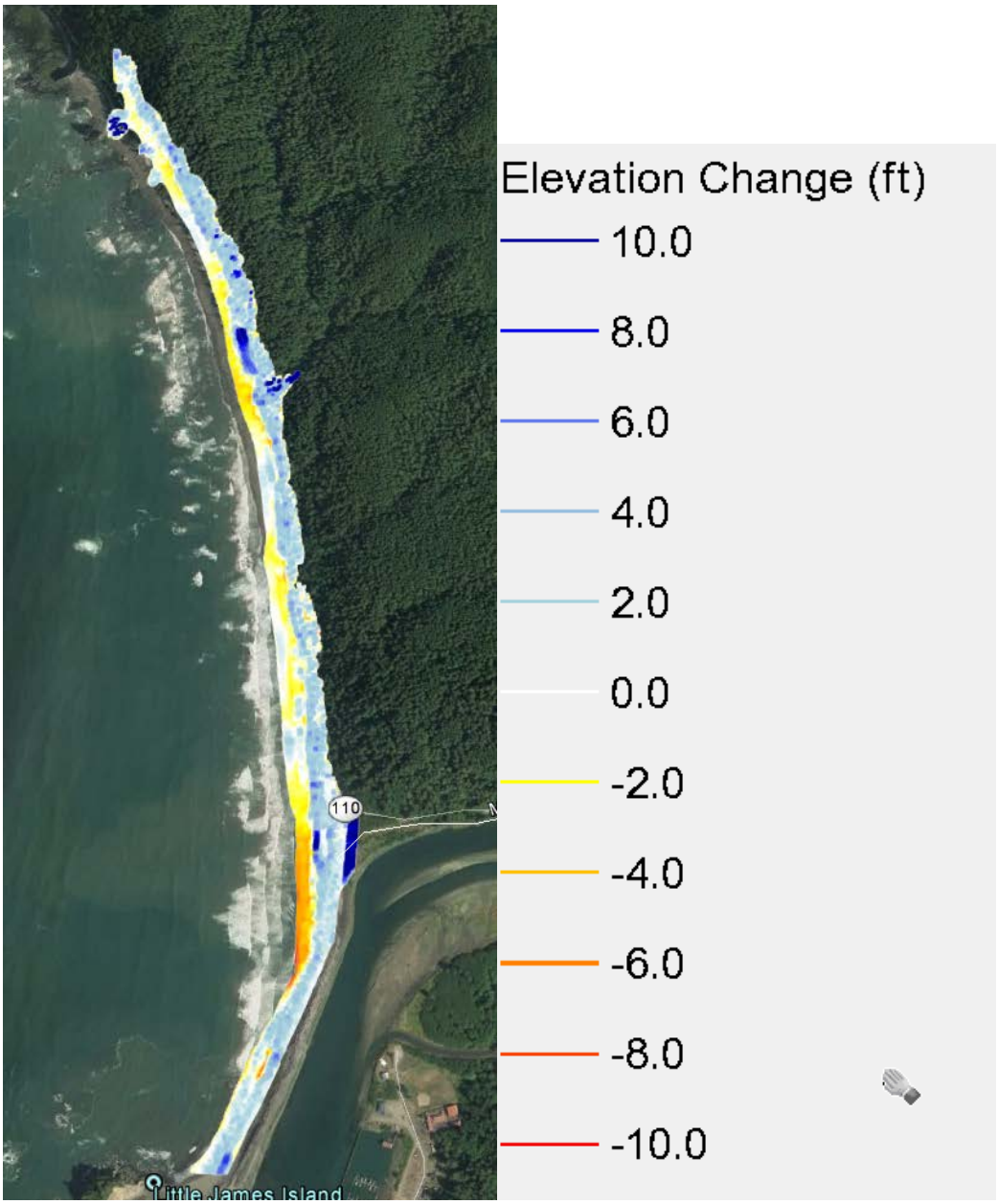


Figure 1. Elevation Change from 2011 to 2016 based on national coastal mapping program lidar.

As explained previously, the Quillayute Spit is a naturally occurring feature. It is the existence of the Spit that has generated the sediment deficit. The Federal revetment reinforcing the Spit is a legislatively authorized structure necessary to the preservation of the navigation channel and to the protection of the small boat harbor and tribal community, and the question of continued fulfillment of this authorization is outside the scope of the need and purpose of this action. As indicated above, the cobble

placement feature of the preferred alternative is intended to slow the rate of erosion and contribute to the amelioration of this sediment deficit.

From aerial photographs taken after establishment of the navigation channel, it is evident that there has been a gradual evolution of the channel planform upstream of the navigation channel and it is reasonable to assume that a portion of this change is attributable to the existence of the spit and navigation channel. The development of a large meander bend upstream of the confluence of the Dickey River with the Quileute River is one of the indicators that the lengthening of the river and associated changes in channel gradient have affected the upstream hydrodynamics. On the beach side, it also reasonable to assume that the existence of the navigation channel and spit have altered the littoral drift pattern and likely contributed to observed changes in beach morphology.

The estuarine and riverine changes of the Quileute River are quite complex and a detailed analysis of the effects of the levee and spit would require extensive data gathering and modeling that are not within the scope of the revetment repair. There are, however, pathways to evaluating both upstream and downstream impacts of the navigation channel and the spit and revetment. For example, Section 111 under the Continuing Authorities Program, whose purpose is shore damage prevention or mitigation caused by Federal navigation projects is one avenue where this analysis, along with an evaluation of alternatives could move forward.

Response to comment 6: Thank you for helping to clarify this statement. The EA has been revised to read "While the proposed action would not occur within wilderness, the rugged coastal wilderness of the nearby area attracts travelers from throughout the Pacific Northwest and farther away" to remove any implication that the project site is located in a wilderness area as defined by the Wilderness Act.

Response to comment 7: This statement has been revised to remove the inconsistency between the two alternatives in the "Recreation and Scenic Values" section of the EA. Only the gravel parking lot south of the paved parking lot would be used as a staging area for about 60-90 days between September 24 and February 28. The adjacent, paved Rialto Beach parking area would not be used and would remain open to the public.

Response to comment 8: The main, paved parking area for Rialto Beach would not be used and would not restrict access to Rialto Beach, and therefore would not have a substantive impact on businesses or communities in the area. It is likely that trucks would bring in materials along Mora Road approximately twice a day. The contractor would work with ONP to develop a traffic control plan to ensure the safety of the public and workers.

Response to comment 9: There has been no documentation of previous damage caused by construction actions associated with previous Quillayute Spit repairs as captured by pre- and post-construction monitoring done during 2016 emergency repairs. The existing SUP stipulates the area be restored to its original condition at the end of the permit for each construction event. Therefore, the contractor would arrange pre- and post-construction surveys of the road, as well as routine inspections, to evaluate the road condition and document any potential damage due to Mora Road use associated with spit repair.

Response to comment 10: Thank you for suggesting additional items to include in the cumulative effects analysis. Repairs to Mora Road are done on a regular basis and the draft EA has been revised to reflect this activity takes place adjacent to the project area.

The final EA has a description of the numerous factors that have affected channel function upstream of the Quillayute Spit. The Quillayute River historically had a more sinuous and braided channel (Southerland et al. 2015). The operation and maintenance of the navigation channel, in addition to anthropogenic changes and infrastructure present in the alluvial floodplain, have changed it to a single channel that lacks instream complexity, cover, and connection to the floodplain (Southerland et al. 2015). Because the Quillayute River has assumed a meandering channel morphology, lateral erosion and threats to infrastructure occur.

Response to comments 11 and 12: There is not enough available information to perform a sediment budget evaluation for the entire Rialto Beach littoral cell. An elevation change analysis was performed for the littoral cell by comparing lidar elevations collected in 2011 to those collected in 2016. Please see the response to comment 5 for more information about the elevation change analysis.

A detailed study of the effects of the levee and spit are outside of the scope of the current action. In addition, the estuarine and riverine changes of the Quileute River are quite complex and analysis would require extensive data gathering and modeling that are not within the scope of the revetment repair. There are pathways to evaluating both upstream and downstream impacts of the navigation channel and the spit and revetment. Section 111 under the Continuing Authorities Program, whose purpose is shore damage prevention or mitigation caused by Federal navigation projects, is one avenue where this analysis, along with an evaluation of alternatives could move forward.

The project avoids and minimizes in-water work to the extent possible for safety considerations, which also avoids effects to salmon. The project is not expected to degrade baseline water quality parameters such as turbidity or temperature, and the project timing (September 24 through February 28) avoids main periods of fish migration and spawning.

Environmental Protection Agency

The USACE thanks the Environmental Protection Agency (EPA) for their comments and interest in the proposed Quillayute Spit Repair and Maintenance 2018-2029 Project in Clallam County, Washington.

Response to comment 1: Thank you for the suggestion to add historical context to the project description. Additional details about the historic migration of the mouth of the Quillayute River have been added to Section 1.2.

Response to comment 2: A description has been added to Section 2.2 of the haul road management during construction, between seasonal construction windows, and after all repairs have been made. During construction, the parking lot staging area and access to the Quillayute Spit crest will be controlled by the contractor. After a construction event, large wood will block vehicular access to the crest. Pedestrian access to the crest of the Quillayute Spit along the haul road up to about Station 8+00 may become temporarily easier following a construction event, but the remainder of the haul road quickly becomes covered in large wood in winter conditions and more difficult to navigate than simply walking along the beach at low tide. This will result in pedestrian access conditions along the crest of the Quillayute Spit that are similar to current conditions. Access along the Quillayute Spit by walking the beach at low tide has always been an available route for pedestrians. Over the long term, the proposed repairs would make the crest of the Quillayute Spit increasingly more difficult to navigate due to the eventual presence of large armor stone across the entire crest. The final EA includes mentions throughout to acknowledge any changes to pedestrian access and the potential impacts associated with the proposed action.

Response to comment 3: Thank you for the information about the NPDES permit authorization. The staging and construction areas are composed of gravel, cobble, and large rock. At this time, these site characteristics allow for complete infiltration of stormwater into the ground and no ponding or runoff has been observed in the past during heavy rains. Therefore, an NPDES permit is not required. This determination would be reevaluated if site conditions or on-site observations note changing conditions. And the USACE would obtain an NPDES permit, if necessary, prior to construction.

Response to comment 4: Allan and Hart (2009) evaluated the movement of a dynamic cobble revetment at Cape Lookout State Park in Oregon. The dynamic revetment is similar in size and material composition (2-8" cobbles) to the proposed dynamic revetment and is exposed to a similar wave climate. Monitoring of the cobble revetment showed an average longshore transport distance of 100-500 feet per year with a maximum of 1,000 feet per year. It is expected that the material placed for the dynamic revetment at Site B would exhibit similar transport characteristics with material slowly migrating to the north over time providing sediment to the beach north of the spit. Cobble material placed in Site B is not expected to move south along the spit due a lack of wave energy from sheltering effects of the offshore islands.

They also found that dynamic cobble berms generally reach a stable slope of around 1V (vertical) on 5H (horizontal). Monitoring of the cobble revetment showed cross shore movement of cobble due to wave action of up to 100 feet. Based on these results and the elevation of the proposed dynamic revetment it is expected that the material remain within 300-400 feet of the toe of the cobble placement.

In general, the existing substrate in this area is a mix of sand, gravel, and cobbles which changes composition in response to wave action through the year. The beach is coarser with more exposed cobbles and gravels during the winter time, and sandier and flatter due to onshore sediment movement by smaller waves in the summer time. Historically, sand, gravel, and cobbles have been placed seaward of the revetment in the proposed dynamic revetment location during dredging operations and the material has spread out longshore and cross-shore with no visible change in substrate composition.

Response to comment 5: More specific information about the sampling locations of the Langness et al. (2015) study has been added to the draft EA. The study sampled three locations on Rialto Beach and two locations on the Quillayute Spit (within the project area), and additional samples to the north and south. Section 3.5.1 has been revised to clarify that beach nourishment with dredged material may not be placed in Site B if there is an active breach in the Quillayute Spit. If there is a breach, it is likely waves and potentially sediment could move into the navigation channel.

Response to comment 6: The final EA more clearly states the impacts to pedestrian access along the crest of the Quillayute Spit. Pedestrian access conditions along the crest of the Quillayute Spit would be similar to current conditions and would not create additional direct, indirect, or cumulative impacts to wildlife along the Quillayute Spit or on the islands at the end of the structure.

Thank you for suggesting the addition to the No-Action Alternative. Additional information about the effects of structure failure and ongoing maintenance dredging and beach nourishment has been added to this Alternative.

Response to comment 7: Please see the response to comment 4. The final EA includes this information. Cobble material placed in Site B is not expected to move south along the spit due a lack of wave energy from sheltering effects of the offshore islands. It is not likely that substrate composition will change appreciably to have an effect on benthic invertebrates.

Response to comment 8: Section 3.12.1 (Recreation) refers to sediment coming from the Quillayute River. The discussion in section 3.5.1 (Fish) refers to the movement of dredged material placed during maintenance dredging, and how beach nourishment with dredged material would likely not be placed if there was an existing breach in the Quillayute Spit. The discussions of movement of sediment (from the Quillayute River versus that placed in conjunction with maintenance dredging) during a breach has been clarified in the final EA.

Response to comment 9: Thank you for this suggestion. The cumulative effects section has been revised to acknowledge that the continued maintenance and existence of the navigation channel project features has perpetuated altered habitat in the lower Quillayute River over time. However, it is important to also acknowledge other anthropogenic sources of habitat degradation within the basin in order to fully discuss cumulative effects. Additional sources of information have been added to the draft EA to better explain the cumulative actions within the region. In particular, high road densities that contribute to landslides and result in excessive sedimentation, past forestry practices, and invasive species have been detrimental to salmon habitat in the Quillayute River basin; the need for riparian and large wood debris restoration to prevent collapsing banks and sediment input into streams and rivers that drain into the Quillayute River is also an issue (Hunter 2006; Quileute Tribe 2016).

Final Environmental Assessment
and Clean Water Act, Section 404 Public Interest Review
Quillayute Spit Repair and Maintenance 2018-2029

Appendix H
National Historic Preservation Act Compliance

Allyson Brooks Ph.D., Director
State Historic Preservation Officer

June 18, 2018

Mr. Evan R. Lewis
Environmental Resources Section
Corps of Engineers – Seattle District
PO Box 3755
Seattle, Washington 98124-3755

Re: Quillayute Spit Revetment Repair & Enhancement Project
Log No.: 2018-06-04385-COE-S

Dear Mr. Lewis:

Thank you for contacting our department. We have reviewed the materials you provided for the Area of Potential Effect (APE) for the proposed Quillayute Spit Revetment Repair & Enhancement Project, La Push, Clallam County, Washington

We concur with your determination of the Area of Potential Effect (APE) as described and presented in your figures and text.

We look forward to further consultations as consult you with the concerned tribal governments, provide the results of the professional cultural resources review, and your determination of effect.

We would also appreciate receiving any correspondence or comments from concerned tribes or other parties that you receive as you consult under the requirements of 36CFR800.4(a)(4).

These comments are based on the information available at the time of this review and on behalf of the State Historic Preservation Officer in compliance with the Section 106 of the National Historic Preservation Act, as amended, and its implementing regulations 36CFR800.4. Should additional information become available, our assessment may be revised. Thank you for the opportunity to comment.

Sincerely,

Robert G. Whitlam, Ph.D.
State Archaeologist
(360) 890-2615
email: *rob.whitlam@dahp.wa.gov*

Allyson Brooks Ph.D., Director
State Historic Preservation Officer

July 23, 2018

Ms. Alaina Harmon
US Army Corps of Engineers
P.O. Box 3755
Seattle, WA 98124-3755

In future correspondence please refer to:
Project Tracking Code: 2018-06-04385
Property: Quillayute Spit Revetment Repair and Enhancement
Re: No Historic Properties

Dear Ms. Harmon:

Thank you for contacting the Department of Archaeology and Historic Preservation (DAHP) and providing information for the Quillayute Spit Revetment Repair project. I have reviewed the material and concur with your finding of no historic properties affected. As a result of this concurrence, further contact with DAHP on this matter is not necessary. However, if information become available and/or the scope of work changes, please resume consultation by DAHP and all consulting parties. In the event that archaeological or historic materials are discovered during project activities, work in the immediate vicinity must stop, the area secured, and contact made with concerned tribes and DAHP for further consultation.

We appreciate receiving any correspondence or comments from concerned tribes or other parties that you receive as you consult under the requirements of 36 CFR 800.4(a)(4).

These comments are based on the information available at the time of this review and on behalf of the State Historic Preservation Officer (SHPO) in conformance with Section 106 of the National Historic Preservation Act and its implementing regulations 36 CFR 800.

Finally, please note that in order to streamline our responses, DAHP requires that all documents related to project reviews be submitted electronically. Correspondence, reports, notices, photos, etc. must now be submitted in PDF or JPG format. For more information about how to submit documents to DAHP please visit: http://www.dahp.wa.gov/programs/shpo-compliance. To assist you in conducting a cultural resource survey and inventory effort, DAHP has developed guidelines including requirements for survey reports. You can view or download a copy from our website

Thank you for the opportunity to review and comment. If you have any questions, please don't hesitate to contact me.

Sincerely,

Matthew Sterner, M.A.
Transportation Archaeologist
(360) 586-3082
matthew.sterner@dahp.wa.gov

From:	Frank Geyer
To:	Harmon, Alaina C CIV USARMY CENWS (US)
Cc:	Morris, Frances L (Lori) CIV USARMY CENWS (US)
Subject:	[Non-DoD Source] re: Corps letter to Quileute on Quillayute spit revetment project and no finding of NO Historic Properties Affected
Date:	Wednesday, July 25, 2018 3:54:48 PM
Attachments:	ACOE RE SPIT REPAIR.pdf
Importance:	High

Alaina,

I would like to apologize for the lack of response by the Tribe on this matter. I was sent the attached letter today from the Tribal office. In the future please cc me on such letters and we will attempt to respond in the required time.

I would like to say that I am in full agreement with the Corps finding of No Historic Properties Affected determination for the reasons expressed in the letter to the Tribe. The Natural Resources Department along with the Tribal Council have been engaged in discussions with the Corps about the project and are happy to see that it's moving forward. The protection of our coastal village infrastructure is vital to our existence. We appreciate all the Corps has done and will continue to do for our tribe.

thank you.

Frank Geyer
Director
Quileute Natural Resources
(360) 374-2027
frank.geyer@quileutetribe.com