



**US Army Corps  
of Engineers®**

Seattle District

**NOTICE OF AVAILABILITY: DRAFT ENVIRONMENTAL ASSESSMENT**

U.S. Army Corps of Engineers  
Planning, Environmental and Cultural  
Resources Branch  
P.O. Box 3755  
Seattle, WA 98124-3755

Public Notice Date: March 4, 2022  
Expiration Date: April 2, 2022  
Reference: PMP-22-01  
Name: Quillayute River Federal Navigation Channel Sea Dike Repair

Interested parties are hereby notified that the U.S. Army Corps of Engineers, Seattle District (USACE) has prepared, pursuant to the National Environmental Policy Act (NEPA), a draft Environmental Assessment (EA) for the proposed repair to the Quillayute sea dike, a breakwater-like structure that is part of the Federal navigation project in the Quillayute River estuary at La Push, Washington. The purpose of the sea dike is to reduce wave transmission into the navigation channel; however, the structure has been damaged and is no longer serving its intended purpose.

The Quillayute River Navigation Channel project was constructed in 1931 at the Quillayute River inlet and provides access for U.S. Coast Guard (USCG) vessels to reach the Pacific Ocean for search and rescue missions and provides access to the Quileute Indian Tribe's marina. The proposed action would repair the sea dike structure to its authorized height of plus eight (+8) feet mean lower low water within the environmental in-water work window September 1 through March 1. The draft EA provides analysis of an action alternative compared to taking no action. See the link below to the draft EA for more details.

**COMMENT AND REVIEW PERIOD**

The USACE invites submission of comments on the environmental impact of the proposed action. Comments will be considered in determining whether it would be in the best public interest to proceed with the proposed project. The USACE will consider all submissions received before the expiration date of this notice. Comments not received within the comment period are deemed unexhausted and therefore forfeited (i.e., will not be considered). The comment period is outlined below. The nature or scope of the proposal may be changed upon consideration of the comments received. If significant effects on the quality of the human environment are identified and cannot be mitigated for, the USACE would initiate an Environmental Impact Statement (EIS) and afford all the appropriate public participation opportunities attendant to an EIS.

**COMMENT SUBMISSION**

Submit comments to this office, Attn: Planning, Environmental, and Cultural Resources Branch, PO Box 3755, Seattle, WA, 98124-3755, no later than 30 days after the posting of this notice to ensure consideration. Comments not received within the comment period are deemed unexhausted and therefore forfeited.

In addition to sending comments via mail to the above address, comments may be e-mailed to [quillayuteseadikerepair@usace.army.mil](mailto:quillayuteseadikerepair@usace.army.mil). This Notice and the draft EA can be found online at the links below.

Project Name: Quillayute River Federal Navigation Channel Sea Dike Repair  
<http://www.nws.usace.army.mil/Missions/Environmental/Environmental-Documents/>

Posting Date: March 4, 2022      End of Comment Period: April 2, 2022

**DRAFT FINDING OF NO SIGNIFICANT IMPACT (FONSI)**  
Quillayute River Federal Navigation Project Sea Dike Repair  
Clallam County, Washington

The U.S. Army Corps of Engineers, Seattle District (USACE) has conducted an environmental analysis in accordance with the National Environmental Policy Act (NEPA) of 1969, as amended. The Draft Environmental Assessment (EA) dated **DATE OF EA**, for the Quillayute River Federal Navigation Project Sea Dike Repair addresses navigation maintenance and feasibility in Clallam County, Washington.

The Draft EA, incorporated herein by reference, evaluated various alternatives to repair the sea dike. There is one major Federal action requiring NEPA compliance and analyzed in the EA summarized below.

**Proposed Action:** The preferred alternative is to complete repairs to the sea dike by raising it to its authorized height of plus eight (+8) feet mean lower low water (MLLW), thereby reducing wave transmission into the Quillayute River inlet. The proposal involves placing 10,000 tons of armor stone over a 90-day period during the approved in-water work window between 1 September and 1 March. The armor stone ranges in size between three and six feet in diameter depending upon the density of the stone. All materials placed and rearranged will occur within the design footprint (100 feet long by 40 feet wide) and conform to the top elevation of +8 feet MLLW.

Equipment and materials may be delivered by truck and staged at the boat basin before being transferred and barged to the sea dike, or delivered by barge directly to the sea dike, or a combination of both access routes. If a contractor decides to stage equipment and/or materials at the boat basin, then the precise location will be negotiated by the contractor with the local landowner, the Quileute Tribe. If equipment and materials are delivered by truck to La Push, then barges carrying equipment and materials will travel west along the navigation channel to the south side of the sea dike. Barges are necessary to access the sea dike for construction and to transport all materials and equipment to the sea dike regardless of the material delivery method to La Push. A work barge may be anchored at the sea dike with spuds that are pushed into the substrate. Rock barges will be brought in with tugboats to the work barge as needed to transfer material to the work barge.

**Alternatives:** In addition to a “no action” plan, two alternatives were evaluated. The alternatives included Alternative 2 – Complete Repairs to the Sea Dike (Preferred) and Alternative 3 – Construction of a Temporary Roadway to Access Sea Dike for Repair Work. Refer to the draft EA or more detail about the alternatives (Section 2) and the evaluation process (Sections 3 and 4). For all alternatives, the potential effects were evaluated, as appropriate.

A summary assessment of the potential effects of the recommended plan are listed in Table 1.

Table 1. Summary of Potential Effects of the Proposed Action.

	Insignificant effects	Insignificant effects as a result of mitigation	Resource unaffected by action
Aesthetics	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Air quality	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Aquatic resources/wetlands	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Invasive species	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Fish and wildlife habitat	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Threatened/Endangered species/critical habitat	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Historic properties	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other cultural resources	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Floodplains	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Hazardous, toxic & radioactive waste	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Hydrology	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Land use	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Navigation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Noise levels	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Public infrastructure	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Socioeconomics	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Environmental justice	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Soils	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tribal trust resources	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Water quality	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Climate change	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Impact Minimization:** All practicable and appropriate means to avoid or minimize adverse environmental effects were analyzed and incorporated into the recommended plan. Best management practices (BMPs) as detailed in the EA (Section 2.2.1) will be implemented, if appropriate, to minimize impacts. Site-specific BMPs include the following:

- a. Project is limited to specific authorized dimensions (100 feet long by 40 feet wide) and will be executed within the congressional authority for the project, as modified by historical repairs.
- b. Prior to mobilizing to the project site, all equipment will be washed to minimize the introduction of foreign materials and fluids. All equipment will be free of oil, hydraulic fluid, and diesel fuel leaks.

- c. Refueling shall be monitored by the contractor for the duration of the project.
- d. Fuel hoses, oil drums, oil or transfer valves and fittings, etc. shall be checked regularly for drips and leaks, and shall be maintained and stored properly to prevent spills into Tribal or State waters.
- e. A spill containment and control plan will be prepared that includes notification procedures, specific clean-up and disposal instructions, quick response containment and clean up materials that will be available on the site, methods for disposal of spilled materials, and employee training for spill containment.
- f. A spill kit will be onboard vessels at all times.
- g. Avoid grounding any barges.
- h. Rock will be placed in a manner to minimize the disturbance of the substrate.
- i. If marine debris or other refuse is found on the site, it will be removed and disposed at an approved disposal site.

Conservation measures (Section 2.2.2) to offset potential impacts to fish and wildlife resources include the following:

- a. All work below mean higher high water will occur during the allowable work window (i.e., 1 September to 1 March), coordinated with the Quileute Tribe and Washington Department of Fish and Wildlife to protect salmon and forage fish.
- b. No work will occur during the spring months when macroalgae such as kelp (around James Island) are most susceptible to harm from increases in turbidity.
- c. All work will occur in areas previously disturbed by the construction of the sea dike; no new construction outside the structure footprint (100 feet long by 40 feet wide) will occur.
- d. To avoid disturbance of whale and sea turtle species, the contractor will adhere to the following while transporting materials and equipment in coastal waters:
  - I. Continual visual monitoring for blows, dorsal fins, flukes, and other indications of whale and turtle presence is required.
  - II. Vessel speeds will be maintained at 10 knots or less to reduce potential for injury to marine mammals and marine turtles.
  - III. A distance of at least 300 feet will be maintained from any sightings of whales or marine turtles.
  - IV. If a whale or turtle is spotted, then the vessel will be immediately slowed and placed in neutral. A safe vessel speed and distance will be kept from the animal.

No compensatory mitigation is required as part of the proposed action.

**Public Review:** The USACE invites submission of comments on the environmental impact of the proposed action as outlined in the Draft EA/FONSI. Comments will be considered in determining whether it is in the best public interest to proceed with the proposed project. The USACE will consider all submissions received during the comment period. Comments not received within the comment period are deemed unexhausted and therefore forfeited (i.e., will not be considered). The nature or scope of the proposal may be changed upon consideration of the comments received. If significant effects on the quality of the human environment are identified and cannot be mitigated for, the USACE would initiate an Environmental Impact Statement (EIS) and afford all the appropriate public participation opportunities attendant to an EIS.

**Treaty Tribes:** The project area is contained within the Quileute Tribe's 594-acre Reservation and within the treaty-reserved fishing area. The USACE notified the Quileute Indian Tribe on 25 January 2021, regarding the proposed project to identify properties to which the Tribe may attach religious or cultural significance or other concerns with historic properties that may be affected. On 26 January 2021, the Quileute Tribe responded and informed the USACE that the Tribe had no concerns or additional information to provide. These properties within and near the project area will not be affected.

**Compliance:**

**a. Endangered Species Act (ESA):**

The U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service (NMFS), and the Department of the Interior, U.S. Fish and Wildlife Service (USFWS) are responsible for administering the ESA of 1973. Multiple species listed as threatened or endangered are in and around the Quillayute River inlet and estuary. The USACE submitted a Biological Assessment (BA) for the sea dike repair to NMFS and USFWS. The USFWS concurred with USACE's determination of "may affect, not likely to adversely affect" (NLAA) for bull trout and marbled murrelet and "no effect" to their critical habitat on 22 April 2021. On 18 May 2021, in coordination with NMFS, the request for concurrence was modified to include leatherback turtles and their critical habitat, and Southern resident killer whale (SRKW) and their proposed critical habitat. On 26 May 2021, the NMFS concurred with USACE's determination of NLAA for the North American green sturgeon, Pacific eulachon, SRKW, and leatherback sea turtle and their designated or proposed critical habitats.

**b. Manguson-Stevens Fishery Conservation and Management Act:**

The BA also contained the USACE's determination that the proposed action will not adversely affect essential fish habitat (EFH) for federally managed fish species in Washington waters. The NMFS did not concur with USACE's determination and provided three conservation recommendations to avoid, minimize, mitigate, or otherwise offset the impacts of the proposed action on EFH. The USACE responded

to the NMFS on 30 June 2021, noting that the first recommendation was already incorporated in the list of BMPs as the USACE normally requires no barge grounding for this type of work. The USACE had previously incorporated the second recommendation to keep the gap between the sea dike and lower spit into the design, as the gap alleviates backwater effects on the mainstem Quillayute River. Regarding the third recommendation to incorporate green infrastructure into the proposed repairs, the USACE noted that this is not an option for the proposed sea dike repair action due to the severe wave energy at the site.

**c. Coastal Zone Management Act (CZMA):**

The proposed project occurs on land owned by the Quileute Tribe and is therefore outside the coastal zone [15 CFR 923.33(a)]. Since the project does not occur within a coastal zone, as defined by the CZMA, and there are not expected to be any impacts from the project to the coastal zone or resources of the coastal zone, no consistency determination is required.

**d. Clean Water Act:**

USACE determined that the Quillayute sea dike repair work is exempt from Section 404 per the 404(f)(1)(B) exemption criteria for maintenance of a currently serviceable structure that does not include any modification that changes the character, scope, or size of the original fill design, and is therefore not subject to Section 401 review of the Clean Water Act.

**e. National Historic Preservation Act:**

USACE determined that no historic properties, tribal places of religious and cultural significance, archaeological sites, or eligible National Register of Historic Places (NRHP) listings will be affected by the Quillayute sea dike repair. A letter was sent on 14 January 2021, to the Washington State Historic Preservation Office (SHPO) detailing the scope of work and requesting concurrence with the determination of the undertaking's area of potential effect (APE), including indirect and direct effects. SHPO responded and agreed to the APE determination on 19 January 2021. Following the APE letter to SHPO, USACE sent a letter to the Quileute Indian Tribe on 25 January 2021, pursuant to 36 C.F.R. § 800.3(f) about the project to identify properties to which the Quileute Indian Tribe may attach religious or cultural significance. The Quileute Indian Tribe responded on 26 January 2021 stating that they place no religious or cultural significance on the sea dike and do not want the structure listed on the NRHP. USACE staff conducted a reconnaissance level survey on 3 May 2021. In a letter to SHPO sent 30 June 2021, the USACE determined that the sea dike is not eligible to the NRHP and made the determination of no historic properties affected. SHPO responded on 7 July 2021, and concurred with the USACE determination.

**f. Other Significant Environmental Compliance:**

All applicable environmental laws have been considered and coordination with appropriate agencies and officials has been completed. The USACE determined that the proposed action is exempt from the Clean Air Act General Conformity Rule

(Section 176(c)(4)) as the project involves placement of armor rock with no new widths or depths, in an attainment area where no more than de minimis increase in emissions will be generated. 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. Marine mammal species that have been observed in the action area include harbor seal, California sea lion, and killer whale. The primary concern for marine mammals during the proposed repair project is underwater noise from construction. The USACE compared the estimated noise from placing rock and the guidance on assessing impacts and concluded that there is no requirement for an Incidental Harassment Authorization. On 26 May 2021, the NMFS agreed and concluded that the effects of the proposed action will be insignificant. The Migratory Bird Treaty Act (16 U.S.C. §703-712) as amended protects over 800 bird species and their habitat. Implementation of the preferred alternative will not have any direct and deliberate negative effects to migratory birds: there will be no adverse effect on habitat and the project will 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. The repair actions will occur after the critical nesting period in the spring. 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. Executive Order 14008 “Tackling the Climate Crisis at Home and Abroad” updates Executive Order 12898 and has expanded Federal agencies’ responsibilities for assessing environmental justice consequences of their actions to include the impact of climate change on the health of the American people. The USACE has analyzed the potential effects of the alternatives on communities within a three-mile radius of the proposed action and found that there will be no disproportionately high and adverse human health impacts to any environmental justice communities (Section 4.13). If the sea level were to increase due to effects from climate change, then raising the sea dike to its authorized height of +8 MLLW would help to reduce the frequency and height of ocean waves entering the navigation channel, providing a universal benefit to persons, including any disadvantaged minority or low-income persons, or Tribal communities using the navigation channel. The Quileute Indian Tribe expressed no concern regarding the proposed project on 26 January 2021.

**Finding:** All applicable laws, executive orders, regulations, and local government plans were considered in evaluation of alternatives. Based on the analysis presented in the EA, which has incorporated or referenced the best information available; the reviews by other Federal, State, and local agencies, Tribes; input of the public; and the review by my staff, it is my determination that the recommended plan will not cause significant adverse effects on the quality of the human environment. Therefore, preparation of an EIS is not required.

\_\_\_\_\_  
Date

\_\_\_\_\_  
ALEXANDER "XANDER" L. BULLOCK  
COL, EN  
Commanding



Draft Environmental Assessment

## **Quillayute River Federal Navigation Project**

### **Sea Dike Repair**

### **Clallam County, Washington**



March 2022



**US Army Corps  
of Engineers®**  
Seattle District

## **Draft Environmental Assessment**

### **Quillayute River Federal Navigation Channel Sea Dike Repair**

**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, this Environmental Assessment evaluates the impacts of the proposed repair of the Quillayute sea dike, a breakwater-like structure that is part of the Federal navigation project in the Quillayute River estuary at La Push, Washington. The purpose of the sea dike is to reduce wave transmission into the navigation channel; however, the structure has been damaged and is no longer serving its intended purpose. The Quillayute River Navigation Channel project was constructed in 1931 at the Quillayute River inlet, which provides access for U.S. Coast Guard (USCG) vessels to reach the Pacific Ocean for search and rescue missions and provides access to the Quileute Indian Tribe's marina. This document provides analysis of an action alternative compared to taking no action. The proposed action would repair the sea dike structure to its authorized height of plus eight (+8) feet Mean Lower Low Water within the approved in-water work window September 1 through March 1. The proposed construction work would occur during this work window when wave and tide conditions are favorable. This work window includes the time when the barge is anchored at the sea dike to place rock and the placement of rock. The duration of the work would be approximately three weeks but may extend to 90 days if foul weather causes delays. Equipment and materials may be delivered by truck and staged at the boat basin before being transferred and barged to the sea dike, delivered by barge directly to the sea dike, or a combination of both access routes. A work barge may be anchored at the sea dike with spuds that are pushed into the substrate. Rock barges would be brought in with tugboats to the work barge as needed to transfer material to the work barge. The total volume of repair material would be up to approximately 10,000 tons of armor stone. If no action is taken to repair the sea dike, then wind-driven waves would continue to overtop the sea dike and enter the Quillayute inlet, hampering navigation through the river channel and the marina. This could result in harbor downtime, damage to the harbor and fishing fleet, downtime for the USCG vessels and slips, continued shoaling at the mouth of the harbor, shoreline erosion and damage to shoreline structures.

This document is available online:

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

Please send questions and requests for additional information to:

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## Acronyms and Abbreviations

BMPs	Best Management Practices
CEQ	Council on Environmental Quality
dB	Decibel
DO	Dissolved oxygen
DMMP	Dredged Material Management Program
EA	Environmental Assessment
Ecology	Washington State Department of Ecology
ER	Engineering Regulation
EPA	Environmental Protection Agency
GPS	Global Positioning System
IPCC	Intergovernmental Panel on Climate Change and National Research Council
MLLW	Mean Lower Low Water
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NOAA	National Oceanic and Atmospheric Administration
NPS	National Park Service
PANGA	Pacific Northwest Geodetic Array
Project	Quillayute River Navigation Channel Project
SHPO	State Historic Preservation Office
SLC	Sea Level Change
USACE	U.S. Army Corps of Engineers
USCG	U.S. Coast Guard
WDFW	Washington Department of Fish and Wildlife
WDNR	Washington Department of Natural Resources



# 1 Proposal for Federal Action

This draft Environmental Assessment (EA) evaluates potential environmental impacts of proposed repairs to the Quillayute sea dike, a breakwater-like structure 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 Quillayute River Federal Navigation Channel is located at the entrance to the Quillayute River inlet adjacent to the town of La Push in Clallam County, Washington. The navigation channel and boat basin provide a critical harbor of refuge along the Washington Coast between Neah Bay and Grays Harbor. The authorized navigation channel dimensions allow safe navigation during all tide levels. The purpose of the sea dike is to reduce wave transmission into the navigation channel; however, the structure is currently undersized due to damage from wave and/or current forces it has experienced over the course of its life and is no longer serving the purpose for which it was constructed. The proposed action would repair the sea dike structure to its authorized height of plus eight (+8) feet mean lower low water (MLLW) within the approved in-water work window September 1 through March 1. The proposed construction work would occur during this work window when wave and tide conditions are favorable.

## 1.1 Project Location

The town of La Push, Washington is within the Quileute Indian Tribe's reservation land on the northwest coast of the Olympic Peninsula in Clallam County, Washington (Township 28 North, Range 15 West, Section 28, of the Willamette meridian). The Quillayute River Navigation Channel project was constructed in 1931 at the Quillayute River inlet and provides access for U.S. Coast Guard (USCG) vessels to reach the Pacific Ocean for search and rescue missions and provides access to the Quileute Indian Tribe's marina. 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 the Mora campground, 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 river inlet lies among rocky islands and sea stacks. The Quillayute sea dike is located off James Island at the mouth of the Quillayute River inlet and to the west of the boat basin (Figure 1).

The area of analysis is the lower half-mile of the Quillayute estuary, the marina and waterfront area of La Push, and a portion of the eastern shore of James Island (Figure 1). The analysis includes the roadway into the Quillayute boat basin where transportation of equipment and materials may occur and/or the waters along the Olympic Coast to account for a possible barging operation of materials directly to the sea dike or to the boat basin area.



Figure 1. Federally authorized navigation features at La Push, Washington. A repair is proposed for the Quillayute sea dike located off James Island and to the west of the Quillayute boat basin.

## 1.2 Authority

The Quillayute River Navigation Channel project was authorized by the Rivers and Harbors Act of July 3, 1930 (referring to House Document 125, 71st Congress, 1st session) and then modified by the Rivers and Harbors Acts of March 2, 1945 (referring to House Document 218, 78th Congress, 1st Session) and September 3, 1954 (referring to House Document 579, 81st Congress, 2nd Session). The original authorization included the construction of a jetty on the eastern side of the river inlet and a dike with groins on the westerly side. Maintenance dredging of the channel to a depth of six feet was authorized in 1945, and the raising of the jetty to a height of 15 feet, maintenance dredging to a depth of 10 feet, and inclusion of a moorage basin was authorized in 1954.

### Navigation Features

Construction on the navigation project began in 1931. 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 navigation channel and the infrastructure and property of the community of La Push. Authorized features of the Federal navigation project include the following (Figure 2):

1. A small boat basin (marina) 1,070 feet long, 313 feet wide, and -10 feet MLLW deep, with a 1,500-foot timber training wall constructed to elevation +16 feet MLLW deep, plus an authorized over-depth 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 1,450 feet long with a crest width of 18 feet, located on the eastern side of the river mouth authorized at +15 feet MLLW at the crest;
3. A rubble mound sea dike 1,050 feet long with a crest width of 14 feet, authorized at +8 feet MLLW at the crest, along the west side of the river between Quillayute Spit and James Island. The sea dike included four optional rock groins that were not constructed;
4. A navigation channel varying from 75 to 275 feet wide and -10 feet MLLW deep 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; and,
5. Maintenance of Quillayute Spit, 2,080 feet long and +20 feet MLLW at the crest, a naturally occurring spit that is artificially maintained with armoring to protect the marina and town from ocean waves.

All of the above features of the navigation project except for the sea dike groins were completed by February 1960. The long period of construction was in part because of the continual storm damage repair work that had to occur during the construction. Construction of the sea dike groins did not occur during the initial 1931 effort and were later determined unnecessary and classified as inactive in a 1939 report to the Chief of Engineers. The sea dike was constructed using rock quarried from Little James Island. This rock does not meet modern-day standards for density, size, shape, and durability for marine construction projects. The inferior quality and small size (less than three feet in diameter) of the rock used in the sea dike construction likely contributed to the structure failing during winter storms. Repairs last occurred to the sea dike in 1962. Since then, storms and wave action have damaged the Quillayute



sea dike reducing its height to between +2 and +4 feet MLLW, therefore reducing the protection of the navigation channel and boat basin.

### 1.3 Purpose and Need

The purpose of the project is to restore the sea dike to its authorized dimensions so it can effectively protect the channel as intended. The sea dike is not currently functioning as intended because it does not effectively reduce wave transmission to the navigation channel. Its height has been reduced from the authorized height of +8 ft MLLW to between +2 and +4 ft MLLW today due to storm damage sustained over time.

Waves currently overtop the damaged sea dike which results in increased wave transmission into the navigation channel and marina. This can result in maritime downtime (as vessels are unable to navigate the channel until wave conditions improve), damage to the marina and fishing fleet, downtime for the USCG vessels, shoreline erosion and damage to shoreline structures. The marina at La Push provides a livelihood for approximately 325 Quileute 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 (USACE 2017). The navigation channel is necessary to support the navigation and economic activities of this small community. Prolonged maritime downtime can lead to migration of business away from the area, potentially disrupting the local economy in an area that is already economically vulnerable to disruption. Additionally, decreased functionality of the sea dike may lead to increased maintenance dredging costs due to shoaling. La Push is a critical harbor of refuge, and further damage to the sea dike could limit the ability to provide refuge. The river inlet is the only USCG presence on the Olympic Peninsula between Westport and Neah Bay, Washington (approximately 100 nautical miles of shoreline). The USCG station's area of responsibility extends from Cape Alava south to the Queets River. The station personnel are also trained to assist the local police department, fire department and park service with emergency flood response.

## 2 Proposed Action and Alternatives

The U.S. Army Corps of Engineers (USACE) has formulated, evaluated, and screened alternatives for determining the action that maximizes net benefits and minimizes costs. Consideration was given to project area problems and opportunities as well as objectives and constraints while developing the alternatives. USACE considered three alternatives for the Project: two repair alternatives and a no action alternative. One alternative was considered and not carried forward. This chapter describes the range of alternatives selected for detailed analysis.

### 2.1 Alternative 1 – No Action

Under the No-Action Alternative there would be no-repairs to the sea dike. If the USACE takes no action to repair the sea dike, then wind-driven waves would continue to overtop the sea dike and enter the Quillayute inlet, hampering navigation through the river channel and the marina. This could result in harbor downtime, damage to harbor and fishing fleet, downtime to the USCG vessels and slips, continued shoaling at the mouth of the harbor, shoreline erosion and damage to shoreline structures. Over time, ocean waves would eventually dislodge and displace the structure's armor stones to a point where it would provide no wave action protection to the navigation channel, boat basin, other

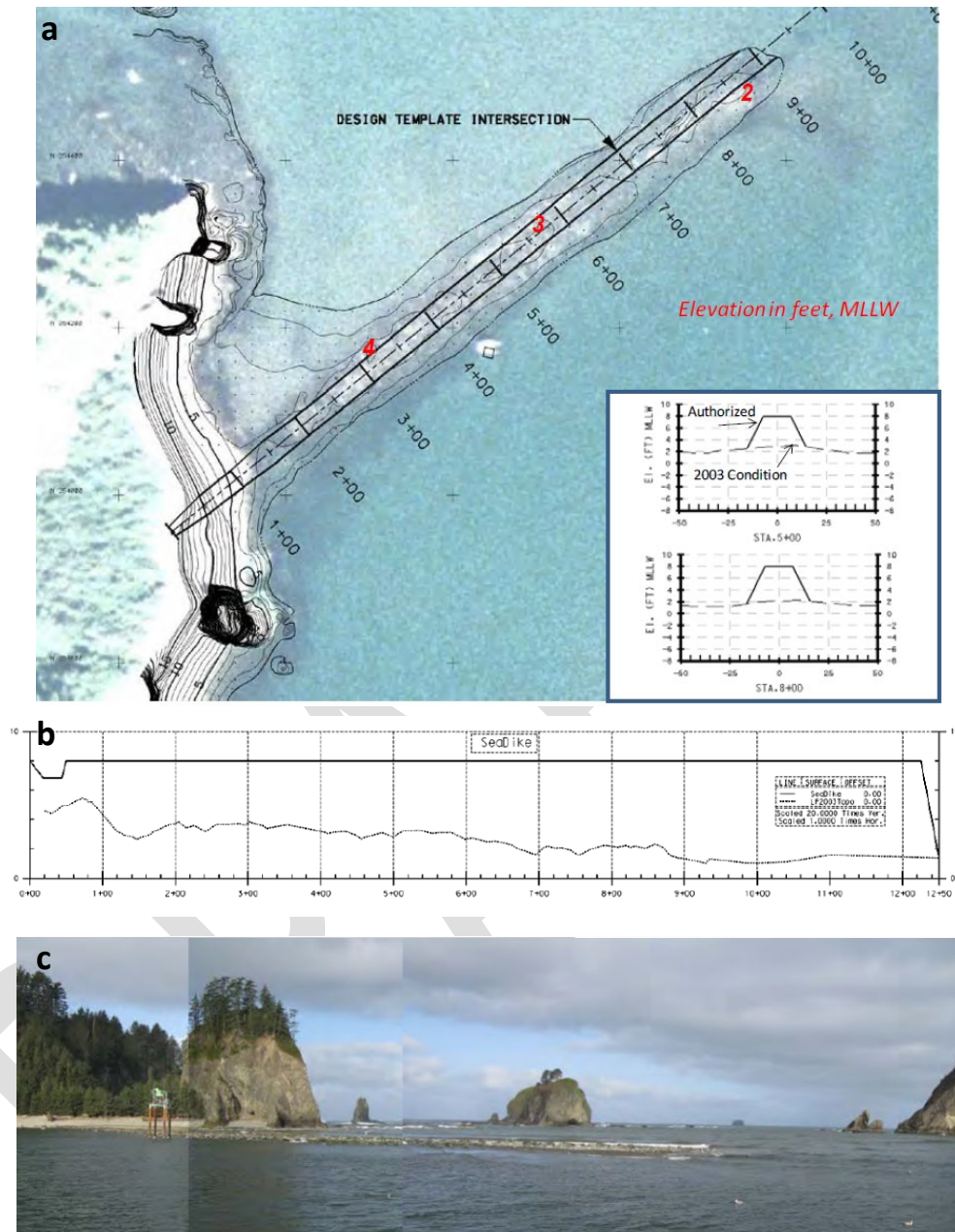
protective structures, or shorelines. The consequence of no-action is continued deterioration of the existing sea dike causing impacts to navigation such that high wave action may cause difficulties for vessels to enter and exit the channel.

## 2.2 Alternative 2 – Complete Repairs to Sea Dike - *Preferred Alternative*

Alternative 2 is repair of the sea dike structure (Figure 2) to its authorized dimensions. Work would occur over a 90-day period between September 1 and March 1. Staging of equipment and materials may occur at the boat basin. The preference is to complete the work when the weather and wave action along the west coast of the Olympic Peninsula tend to be less severe. The Quillayute sea dike is in Tidal Reference Area No. 14 where in-water work windows exist for salmonids, bull trout, and sand lance. The allowable work window is comprised of the common days between all three work windows. For Tidal Reference Area No. 14, the work windows are:

- Salmon Work Window June 15 – February 28;
- Bull Trout Work Window July 16 – February 15; and,
- Pacific Sand Lance Work Window March 2 – October 14 (USACE 2012).

However, surf smelt arrive in the Quillayute River estuary and coastal area in April through August. As a forage fish species, they aggregate in schools of many thousands and potentially millions of fish and occupy the area for weeks in advance of spawning. Peak spawning is between July and August and tapers off by early September. Any kind of in-water work on any of the physical structures that make up the Quillayute River Federal Navigation Project as a whole would likely disrupt the patterns of the schooling fish (Gleason 2021). For this reason, the USACE and the Washington Department of Fish and Wildlife (WDFW), National Park Service (NPS), the Environmental Protection Agency (EPA), and the Quileute Tribal Natural Resource Managers coordinated and agreed upon an in-water work window for the Quillayute River Federal Navigation Project from September 1 to March 1 to avoid impacts to salmonids and forage fish at vulnerable life stages. Trucking and staging of equipment and materials at the boat basin is not restricted by the in-water work window.



All materials placed and rearranged would occur within the design footprint and conform to the top elevation of +8 feet MLLW. The design footprint is the area within that the initial construction of the sea dike which is 40 feet wide by 100 feet long. Repairs to the sea dike would take place along its length from Station 0+50 to 9+00 (Figure 3).

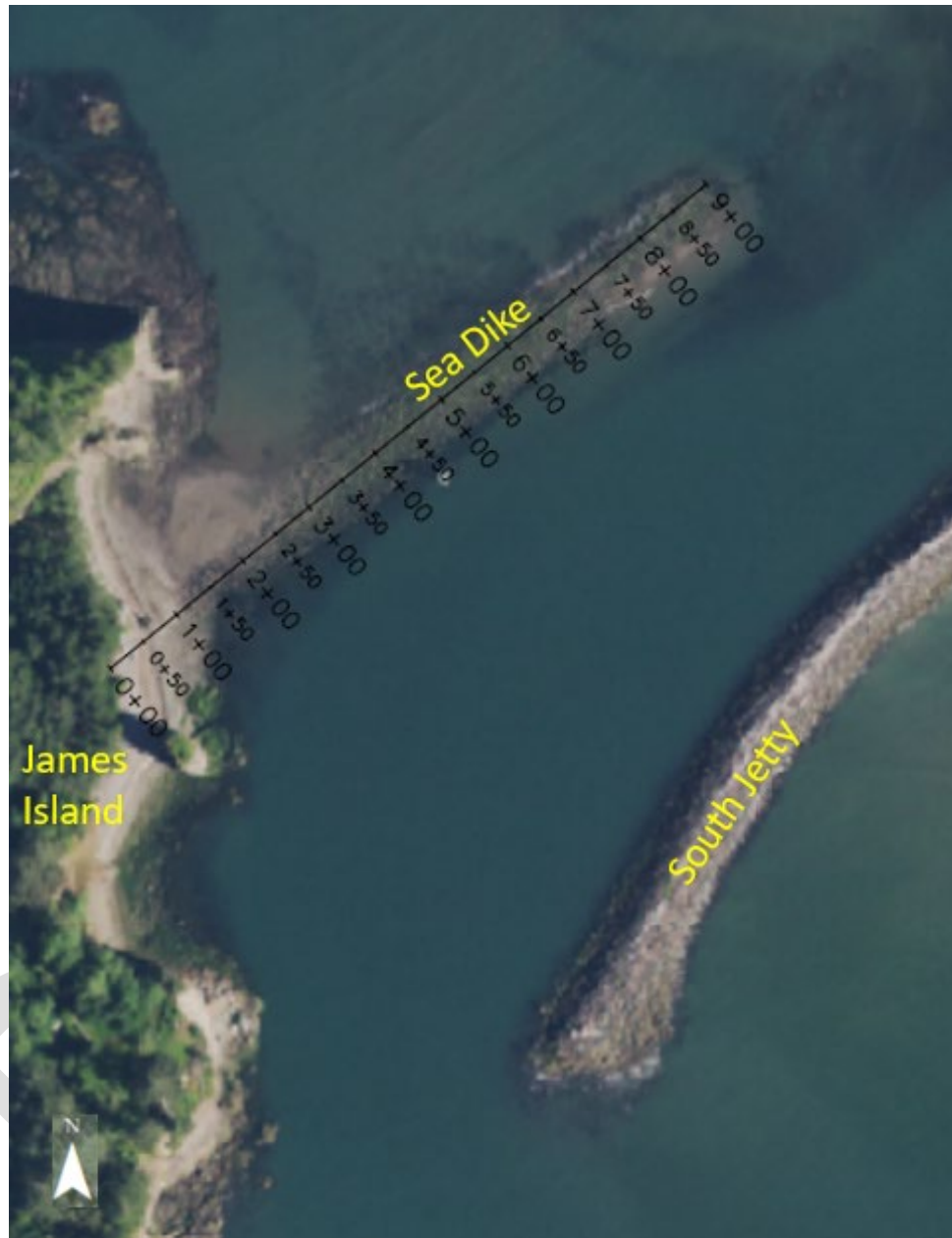


Figure 4 is a typical cross-section of the sea dike showing its authorized height of +8 feet MLLW with a 14-foot crest width and 40-foot-wide footprint. The total volume of repair material would be approximately 10,000 tons of armor stone. Armor stone is the industry standard term used for the outer layer of revetments, breakwaters, dikes, or any other rock structure used for coastal engineering purposes. Armor stone has tighter specifications regarding density, durability, shape, and size that make the stone different from rip rap or other more generic terms used for rock. The armor stone size would range between approximately 3 and 12 tons depending on the density of stone. Additionally, the project

would require a base layer of 2- to 12-inch stone to fill the voids in the remnant structure up to an elevation of +4 feet MLLW. Angular stone is required to ensure maximum interlocking with adjacent and any existing stone. This would require approximately 5,000 cubic yards of base layer material. Work to build the base layer would occur in-water. After construction of the base layer, rock would be placed above the water line during low tide periods as the structure gains height.

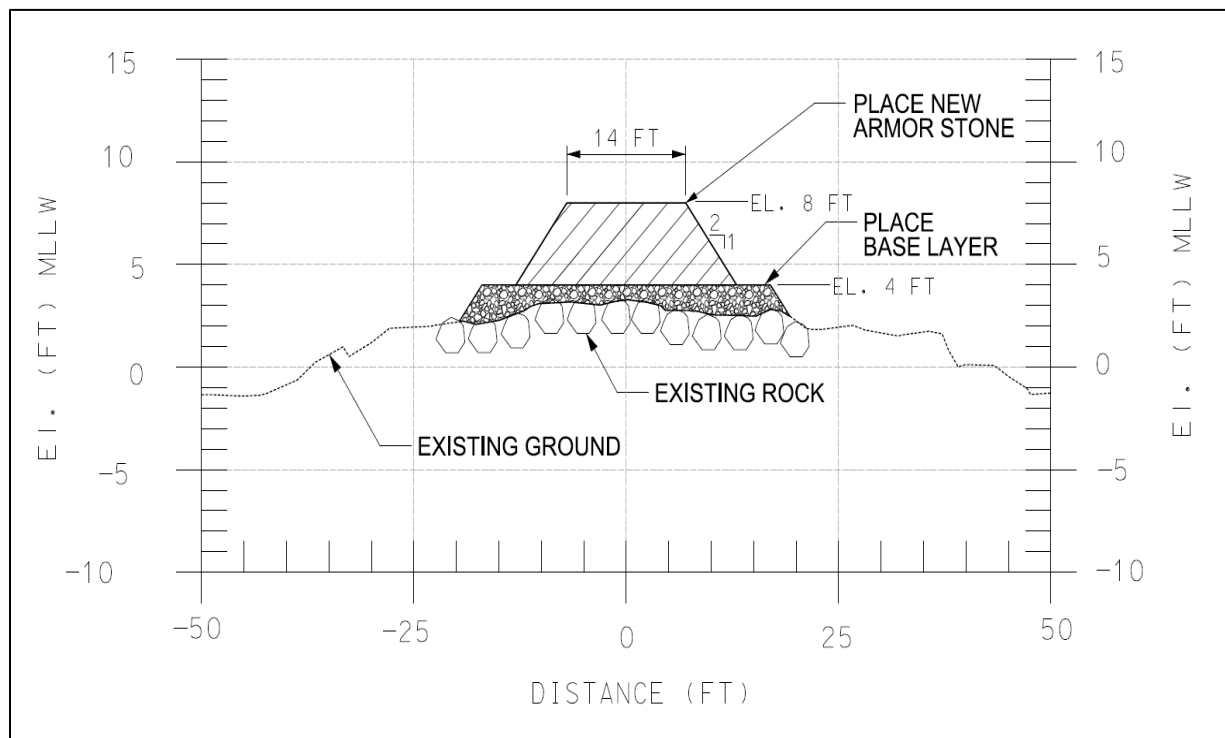


Figure 4. Typical cross section of the Quillayute sea dike.

A summary of proposed repair actions is presented in Table 1. Equipment and materials may be delivered by truck and staged at the boat basin before being transferred and barged to the sea dike, delivered by barge directly to the sea dike, or a combination of both access routes. If a contractor decides to stage equipment and/or materials at the boat basin, then the precise location will be negotiated by the contractor with the local landowner, the Quileute Tribe. If equipment and materials are delivered by truck to La Push, then barges carrying equipment and materials would travel west along the navigation channel to the south side of the sea dike. Barges are necessary to access the sea dike for construction and to transport all materials and equipment to the sea dike regardless of the material delivery method to La Push. Several pieces of heavy machinery would be used throughout the repair. A general description of the typical number and types of machinery for this type of repair are described here, but this may be adjusted based on repair needs and available equipment. A work barge may be anchored at the sea dike with spuds that are pushed into the substrate. Rock barges would be brought in with tugboats to the work barge as needed to transfer material to the work barge.

Table 1. Summary of proposed repair actions.

Action	Summary
Staging	Proposed use of developed areas at the Quillayute boat basin to stage equipment and materials before being barged to the sea dike. Alternatively, a contractor may choose to barge equipment and materials directly to the sea dike.
Construction Access	Personnel, equipment, and materials may be transferred from a staging area located at the boat basin (staging area to be negotiated by the contractor with the Quileute Tribe) and loaded onto a barge. Two barges may be used: one barge to work from and another barge to transport rock back and forth from either a quarry or the staging area to the repair area. Other boats and/or tugboats may be used to move the working barge and rock barges, as needed, and/or to transport personnel.
Construction Methods	Construction would begin with in-water work (approximately one week to complete) to rebuild the base layer. Rock would be placed onto the sea dike using heavy machinery, such as a barge-mounted crane or similar equipment. Displaced original rock may be repositioned in the original 40-foot-wide footprint of the sea dike. Angular armor stone would then be used to rebuild the remnant structure up to an elevation of +4 feet MLLW. At this point, the rest of the repair work would be out-of-water (one to two weeks to complete). This work must also be accomplished during the designated in-water work window.
Construction Duration	Initial site preparation and staging of fill material may begin prior to in-water work beginning as early as September 1 <sup>st</sup> . The remaining repair activities would occur during low tides and in daylight. The actual construction is expected to take approximately 21 working days to complete; however, weather and tides are expected to delay work, so the entire repair operations, including mobilization and post-construction site cleanup, may take 90 days to complete.

### 2.2.1 Best Management Practices (BMPs)

Site-specific best management practices (BMPs) have been identified to avoid and minimize unnecessary damage to the environment. BMPs include the following:

- Project is limited to the authorized dimensions (100 feet long by 40 feet wide) and will be executed within the congressional authority for the project, as modified by historical repairs.
- Prior to mobilizing to the project site, all equipment will be washed to minimize the introduction of foreign materials and fluids. All equipment will be free of oil, hydraulic fluid, and diesel fuel leaks.
- Refueling shall be monitored by the contractor for the duration of the project;
- Fuel hoses, oil drums, oil or transfer valves and fittings, etc. shall be checked regularly for drips and leaks, and shall be maintained and stored properly to prevent spills into Tribal or State waters.



- e. A spill containment and control plan will be prepared that includes notification procedures, specific clean-up and disposal instructions, quick response containment and clean up materials that will be available on the site, methods for disposal of spilled materials, and employee training for spill containment.
- f. A spill kit will be onboard vessels at all times.
- g. Avoid grounding any barges.
- h. Rock will be placed in a manner to minimize the disturbance of the substrate.
- i. If marine debris or other refuse is found on the site, it will be removed and disposed at an approved disposal site.

### 2.2.2 Conservation Measures

Proposed repairs to the sea dike will occur during the allowable in-water work window between September 1 and March 1. This includes the time when the barge is anchored at the sea dike to place rock, including the subsequent out-of-water work of building up the dike.

- a. All work below mean higher high water will occur during the allowable in-water work window (i.e., September 1 to March 1), coordinated with the Quileute Tribe and WDFW to protect salmon and forage fish.
- b. No work will occur during the spring months when macroalgae such as kelp (around James Island) are most susceptible to harm from increases in turbidity.
- c. All work will occur in areas previously disturbed by the construction of the sea dike; no new construction outside the structure footprint (100 feet long by 40 feet wide) will occur.
- d. To avoid disturbance of whale and sea turtle species, the contractor will adhere to the following while transporting materials and equipment in coastal waters:
  - I. Continual visual monitoring for blows, dorsal fins, flukes, and other indications of whale and turtle presence is required.
  - II. Vessel speeds will be maintained at 10 knots or less to reduce potential for injury to marine mammals and marine turtles.
  - III. A distance of at least 300 feet will be maintained from any sightings of whales or marine turtles.
  - IV. If a whale or turtle is spotted, then the vessel will be immediately slowed and placed in neutral. A safe vessel speed and distance will be kept from the animal.

## 2.3 Alternatives Considered but Not Carried Forward

### 2.3.1 Construction of a Temporary Roadway to Access Sea Dike

Alternative 3 involved the construction of a temporary roadway along the Upper and Lower Spit to access the sea dike which would then be constructed using the same design as Alternative 2 (Figure 1) such that rock would be placed raising the structure to its authorized height of +8 feet MLLW with a 14-foot crest width and 40-foot-wide footprint. The only change from Alternative 2 would be that all equipment and materials would be transported over a temporary roadway and no barges would be used. This alternative was considered but not carried forward due to concerns regarding safety, cost,

and impacts to natural resources. The cost to build the roadway was estimated to be greater than the cost to repair the sea dike using other access options as described in Alternative 2. A temporary access road to the sea dike would increase project costs and would require additional time to build and remove. Further, the wave action along the Olympic Coast can be severe, especially during storm events, and could damage or wash away a temporary access roadway during the in-water work window. If this occurred, additional funds would be required to repair the roadway before work on the sea dike could resume. If the roadway or portions of the roadway were to wash into the channel, this would create a safety hazard for vessels navigating the channel. Building a temporary roadway along the spit would also hamper public access to these areas and create a greater disturbance to fish and wildlife habitat.

### 3 Issues for Comparison of the Alternatives

This section provides information on the issues relevant to the decision process for selecting the preferred alternative. This analysis investigates the potential for activities associated with the considered alternatives to affect the various issues of concerns (adversely or beneficially), and provides a comparative assessment of each alternative's effects to the environment. 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 Resources Analyzed and Screened Out from Further Analysis

The environmental analysis conducted under the National Environmental Policy Act (NEPA) process provides the decision-maker with relevant and timely information about the environmental effects of their decision and reasonable alternatives to mitigate those impacts. Table 2 identifies the resources evaluated for detailed analysis with a rationale for inclusion or exclusion. Analysis appears in Section 4 unless otherwise noted. Resources were excluded from detailed analysis if they are not potentially affected by the alternatives or have no material bearing on the decision-making process.

Table 2. List of resources considered for detailed effects analysis and rationale for inclusion or exclusion.

Resource	Included in Detailed Analysis (Y/N)	Rationale for inclusion or exclusion
Navigation and Economic Conditions	Y	There are sufficient economic benefits to support justification of the project. Maintenance of the navigation channel would allow the continued presence of the USCG rescue station in La Push for rescue missions and access to the Quileute Indian Tribe's marina. Fishing and fish processing are an important community revenue.
Hydraulics and Geomorphology	Y	The sea dike structure reduces wave transmission to protect the channel and marina and improve navigation into the Quillayute inlet.



Resource	Included in Detailed Analysis (Y/N)	Rationale for inclusion or exclusion
Sea Level Change	Y	Required to be analyzed by USACE policy in ER 1100-2-8162 (USACE 2013). Tide cycles and weather affect the time available to barge to the sea dike to complete repairs. The structure is authorized to +8 feet above MLLW, and additional authority would be needed to raise the structure higher if there was a sea level change.
Groundwater	N	The proposed action is limited to the marine environment above elevation two feet MLLW. No groundwater would be affected.
Water Quality	Y	Potential short-term and localized turbidity could be caused by the proposed action, but no sediment is being dredged. Only displaced stone would be replaced, or new armor stone placed.
Air Quality and Greenhouse Gas Emissions	Y	Only two to four pieces of equipment would be working at the sea dike and would not be expected to impact air quality above ambient levels. Emissions that would occur during construction and the potential changes to long-term vessel emissions are analyzed for impacts.
Underwater Noise	Y	No end-dumping of rock would occur. All rock would be individually placed to minimize underwater noise from construction. Barge noise is assumed to be similar to noise of vessels navigating the channel and the work would be intermittent due to tide and weather constraints and short-term (i.e., total construction time estimated at three weeks).
Noise	Y	Noise from the proposed action would not be expected to be audible above ambient noise of maritime activities. Birds in the project area are assumed to be habituated to noise of vessels navigating the channel and to human activity on the nearby shorelines. Noise from in-water work is analyzed for impacts.
Hazardous, Toxic, and Radiological Waste	N	The action area is not known to have contaminants. There is no heavy industrialization within the community nor upstream of the project site and sediments are ranked “low” for concerns with contamination by the Dredged Material Management Program (DMMP) agencies that oversee sediment testing.
Benthic Organisms	Y	The proposed project is working within the current authorized footprint for the structure and very few benthic macroinvertebrates are within this area. In the short-term there would be some disturbance and mortality to macroinvertebrates by

Resource	Included in Detailed Analysis (Y/N)	Rationale for inclusion or exclusion
		the placement and moving rock, but in the long-term more habitat would be created for algae and the invertebrates (Section 4.8).
Vegetation	Y	The sea dike footprint contains little aquatic vegetation at present as the rock has been displaced and buried; however, if proposed repairs to the sea dike did occur then rocky habitat would be created for seaweeds. There would also be a reduced potential for ocean waves to impact shorelines and wetlands in the estuary upstream from the proposed project thereby providing protection to shoreline vegetation.
Fish	Y	Analysis is required to determine which species would be present, the intensity of effects, and how to avoid or minimize effects.
Wildlife	Y	Marine mammals that may occur in the project area include harbor seals, killer whales, and sea lions and their prey species. Some intertidal invertebrate species inhabit the rock at the sea dike. Terrestrial and marine birds may be present around the industrial port facilities.
Threatened and Endangered Species	Y	The proposed action may affect protected species in the project area. Analysis is required to determine the species potentially affected and the intensity of effects.
Invasive Species	N	This project has minimal potential to introduce invasive species. BMPs prior to construction would be implemented to reduce the risk of introduction. There is no proposal to move soils or plant vegetation.
Cultural Resources	Y	Analysis is required to investigate cultural resources and to determine the extent of any potential effects.
Indian Trust Assets	Y	The project area is within a treaty-reserved fishing area. Analysis and coordination are required to determine whether negative effects are anticipated (Sections 6.9 and 6.11).
Socioeconomic Resources	Y	The USCG, fishing and recreation-based businesses at La Push are dependent upon vessels being able to navigate the Quillayute River inlet.
Recreation and Scenic Values	Y	The proposed action would affect scenic resources and visual characteristics of the action area. A rock structure would protrude out of the ocean by eight feet at MLLW. The proposed action would improve navigation for recreating boat traffic and public access.

Resource	Included in Detailed Analysis (Y/N)	Rationale for inclusion or exclusion
		Temporary noise and disturbance to the recreating public would be expected during the construction.
Public Services and Utilities	N	The proposed action would have no substantial effect on electricity, water, wastewater and stormwater collection, sewer and solid waste, natural gas, oil/petroleum, or telecommunications services.
Public Health and Safety	Y	Intense wave action can occur along the Olympic Coast especially during storm events, affecting navigation through the channel. Raising the sea dike to its authorized height would improve navigation allowing for a safer passage through the channel. Also, USCG would be able to navigate the channel during emergencies.
Environmental Justice Communities	Y	Required to be analyzed by presidential executive order (Section 6.12). The proposed action would not have detrimental effects to sensitive populations as there would be no disproportionately high or adverse human health impacts to any environmental justice communities. The proposed project is expected to provide benefits to the community by facilitating safe passage for fishing and recreational vessels.

## 4 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.

### 4.1 Navigation and Economic Conditions

There are sufficient economic benefits to support justification of the project. Maintenance of the navigation channel ensures the continued presence of the USCG rescue station in La Push for rescue missions and access to the Quileute Indian Tribe's marina. Fishing and fish processing are an important community revenue. The local community relies on the availability and full utility of the channel.

#### 4.1.1 Alternative 1 – No-Action

Under the No-Action Alternative, ocean waves would continue to enter the river inlet making navigation through the channel difficult and dangerous, especially during storm events. Ocean waves would also continue to wash sediment into the channel, which would require dredging, and vessels may be unable

to navigate the channel and boat basin, including the USCG. This could lead to the USCG being unable to conduct rescue missions. Ultimately, vessels having difficulty entering and exiting the Quillayute River inlet would affect the recreational and fish processing industries.

#### 4.1.2 Alternative 2 – Complete Repairs to Sea Dike - Preferred Alternative

The local community relies on the availability and full utility of the channel, the use of which the Preferred Alternative would perpetuate. Alternative 2 is the least costly alternative that would meet the project's purpose and need. The economic benefits afforded through raising the sea dike to its authorized height 8+ MLLW outweigh the Federal costs of the action and the costs the region would incur with an unsafe navigational passage that would ensue under the No-Action Alternative. In the short-term, construction at the sea dike would result in more traffic on La Push roadway while transporting equipment and materials, and increased noise and disturbance at the boat basin and in the navigation channel as repairs are made to the sea dike. However, the Preferred Alternative would generate long-term benefits for navigation and economic conditions when compared to the No-Action Alternative by maintaining vessel access to La Push businesses and the community.

### 4.2 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. These sources of material are easily eroded and transported in flowing water, and therefore, the river transports a moderate bedload of variously sized sediment depending on seasonal discharges. A single storm event of higher river stages can deliver high 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. 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 South Jetty, and the sea dike (Figure 1). The result is a channelized river inlet with a large amount of non-native riprap in the aquatic ecosystem, which prevents some of the natural processes at this location. Also, stabilization of the Quillayute Spit has interrupted the sediment transport process in the littoral drift cell that feeds Rialto Beach to the north causing erosion.

Winter freshets in the Quillayute River have historically breached the upper spit from the riverside resulting in the upper spit needing to be armored and elevated in 1996. Since the early 2000s, the condition of the sea dike allows significant wave transmission from the northwest into the navigation channel near the entrance to the boat basin. Wave height in the navigation channel resulting from the gap between the sea dike and the lower spit have been observed to exceed three feet during typical conditions. During high water, the gap also provides some conveyance of flow to the ocean that otherwise is forced through the main inlet. Past engineers hypothesized that this gap may help alleviate backwater effects on the mainstem Quillayute River.

High river flows and storm events often breach and damage both the Quillayute jetty and sea dike. Following reconstruction of the jetty in 1957, most of the river's conveyance was shifted through the main inlet between the jetty and James Island. Since, the channel has maintained a stable configuration with the navigation channel oriented along the southern side of the inlet adjacent to the jetty. As a result, the threat of undermining from current scour to the sea dike was lowered; however, the sea dike is currently lying below its authorized height of +8 MLLW and so northwesterly waves frequently break over the sea dike during high tides, which adds to the instability of the structure.

At present, the USACE maintains the Quillayute navigation channel by armoring the spit and dredging the navigation channel. This work was evaluated under a separate NEPA document (USACE 2017). The Quillayute Spit is a naturally occurring spit that is artificially maintained with armoring. The Spit is repaired with 10 – 20-ton armor stone every one- to two-years, and supplemental beach nourishment of about 100,000 cubic yards (cy) of 3- to 12-inch diameter cobbles occurs every four years. The USACE maintains the navigation channel and boat basin by dredging up to 100,000 cy of sediment about once every two years, which are maintained at -10 feet MLLW. Dredging occurs with a hydraulic pipeline dredge. Maintenance dredging of the navigation channel is needed because of the shoaling of river borne sediments that reduce the depth of the channel especially across the bar at the mouth of the river. The rate of accretion of sediment requires removal approximately every two years to achieve adequate depth for safe navigation. Dredged material is repurposed by placement at three sites near the navigation channel and located in the nearshore zone or adjacent upland areas. Hydraulic dredging allows the direct placement of material onto beneficial-use sites. Dredging is planned to begin in the fall of 2021 and 2023, and may use the full duration of the approved in-water work window (September 1 to March 1).

The last survey of the sea dike structure occurred in September 2003 and found the rock from the structure displaced from wave and/or current forces and described the condition of the sea dike at that time as “a low, broad-crested structure” (Figure 5). In 2003, the crest elevation of the sea dike varied from +4 feet MLLW near the connection to James Island and tapered off to +2 feet MLLW at its present terminus near station 9+00 (Figure 2). The sea dike originally connected to the Lower Spit and relic stone still sporadically exists beyond Station 9+00 to Station 12+00. USACE staff visited the site in 2021 and found further deterioration of the structure had occurred since the 2003 survey.

The condition of the sea dike affects the boat basin. The crest height of the timber breakwater on the port side of the approach into the boat basin was constructed to +8 feet MLLW in 1962 (Figure 5). This structure is submerged during high tides coupled with west to northwesterly waves, so it provides limited wave attenuation for vessels moored in the boat basin.

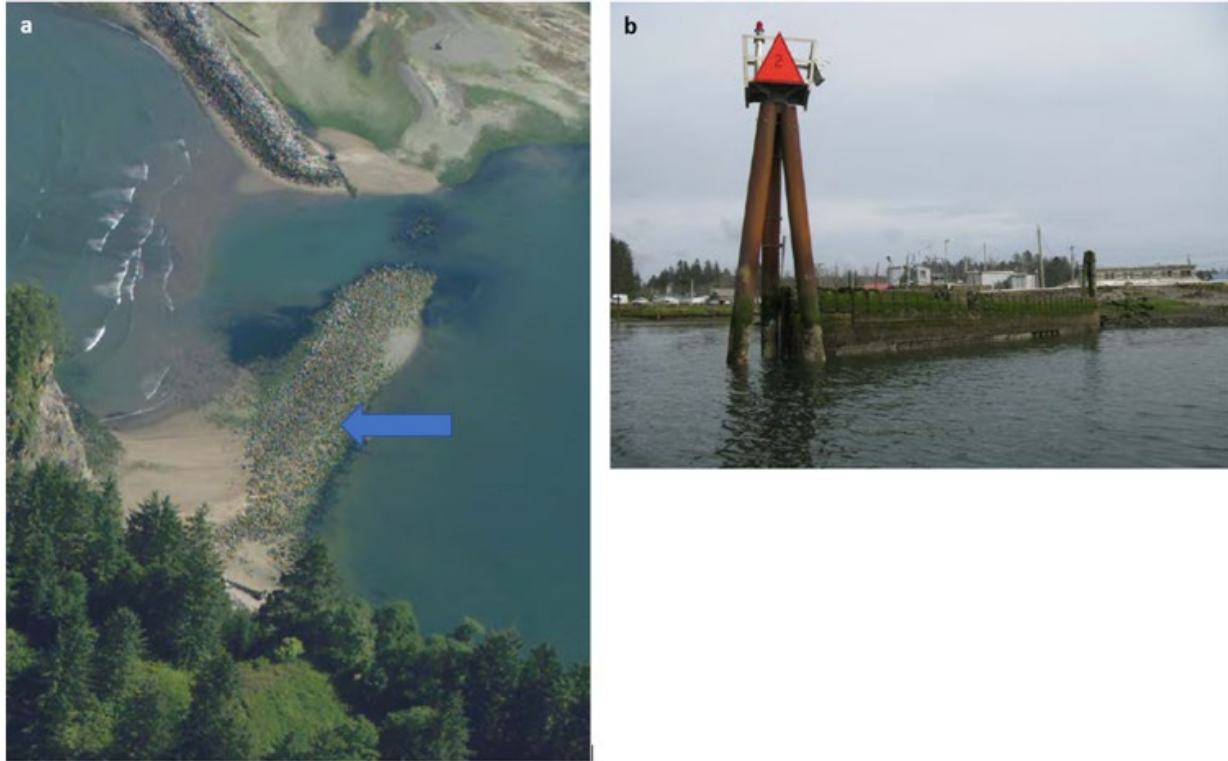


Figure 5. (a) Sea dike (arrow) in 2003 at zero feet MLLW tide. Note the rubble mound appears spread out. (b) Timber breakwater at the boat basin as seen in April 2010. The top planks of the breakwater are at +8 feet MLLW.

#### 4.2.1 Alternative 1 – No-Action

Under the No-Action alternative, ocean waves would continue to dismantle the sea dike until the structure had negligible benefit for navigation. Ocean waves would continue to enter the inlet making navigation through the channel difficult and dangerous, especially during storm events. Ocean waves would continue to wash sediment into the navigation channel, which would require additional dredging, and would likely increase the hazard to the fishing vessels, recreational boats, and USCG vessels needing to conduct rescue missions. Shoreline erosion would continue due to the waves washing over the sea dike.

#### 4.2.2 Alternative 2 – Complete Repairs to Sea Dike - *Preferred Alternative*

Under Alternative 2, repairing the sea dike to its authorized height of +8 MLLW would reduce frequency and height of ocean waves entering the navigation channel, resulting in less sediment being washed into the channel. The reduced frequency and height of ocean waves entering the channel would also reduce the undermining and erosion of the estuary and river shorelines. Natural shorelines could be maintained thereby reducing the need to further armor shorelines to protect them from ocean waves.

The Quillayute River inlet has endured significant hydrological modifications to support the marina, USCG station, and flood protection features to protect the town of La Push. 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. Presently, the USACE maintains the

navigation channel by dredging about once every two years. Repairing the sea dike under the Preferred Alternative would reduce the amount of sediment washing into the navigation channel and thereby reduce the frequency to dredge the channel. Repairing the sea dike to its authorized dimensions would alter the hydraulics and geomorphology of the area immediately around the sea dike by restoring the intended level of navigation protection; however, this alternative would not result in changing the hydraulics or geomorphology of the surrounding area, which includes Rialto Beach and the Olympic National Park, or the overall Pacific Coast.

#### 4.3 Sea Level Change

Sea level change (SLC) due to changes in climate could increase the frequency of extreme water levels. Engineering Regulation (ER) 1100-2-8162 (USACE 2013) requires that projects be evaluated to determine how sensitive they are to various scenarios of SLC. Because predictions of SLC have uncertainty, the risks associated with three sea level change scenarios are addressed. These scenarios are termed low, intermediate, and high, and they correspond to different rates of global sea level acceleration starting from year 1992. Over the period 1901 to 2010, global mean sea level rose by 0.19 meters (IPCC 2013).

Relative local sea level change is a combination of global SLC (0.067 inches per year according to IPCC 2007) and local vertical land movement. The accuracy of local mean sea level rates is a function of the period of record of the water level time series. ER 1100-2-8162 recommends that a National Oceanic and Atmospheric Administration (NOAA) water level station should be used with a period of record of at least 40 years. However, global sea level change projections are not available for the local tidal gauge NOAA La Push, Quillayute River, Washington [9442396] because the length of record is not sufficient for this type of analysis. Additionally, the effect of river flow on water levels at the site make long-term change analysis more difficult. The closest tide gauge that meets the requirements is NOAA Neah Bay, Washington [9443090] located approximately 33 miles north of La Push. Therefore, all global sea level change projections in this analysis are based on the Neah Bay tide gauge data.

Due to the location of La Push on the Olympic Peninsula, and the local tectonic forces, it is subject to positive vertical land movement known as uplift. This uplift in the land effectively slows the rate of relative local sea level change relative to the global sea level change. This effect is most pronounced at Neah Bay located on the northern tip of the peninsula and slows as you approach the broad alluvial valleys of Grays Harbor and Willapa Bay to the south. To get a more accurate value of vertical land movement for La Push, local values of vertical land movement were determined based on long-term Global Positioning System (GPS) measurements.

Central Washington University operates the Pacific Northwest Geodetic Array (PANGA) consisting of the PANGA Geodesy Laboratory at Central Washington University and 350 continuously operating, high-precision GPS sites across the Pacific Northwest (<http://www.geodesy.cwu.edu/>). Figure 6 shows the locations of the PANGA stations relative the project location. The Neah Bay station located closest to the tidal gauge reports an average local vertical land movement of + 2.3 millimeters per year. The station p401 closest to the project location reports an average local vertical land moment of +0.8 millimeters per year. To define the local vertical land movement more accurately, the values from PANGA station p401 located approximately five miles east of La Push were used for sea level change analysis.



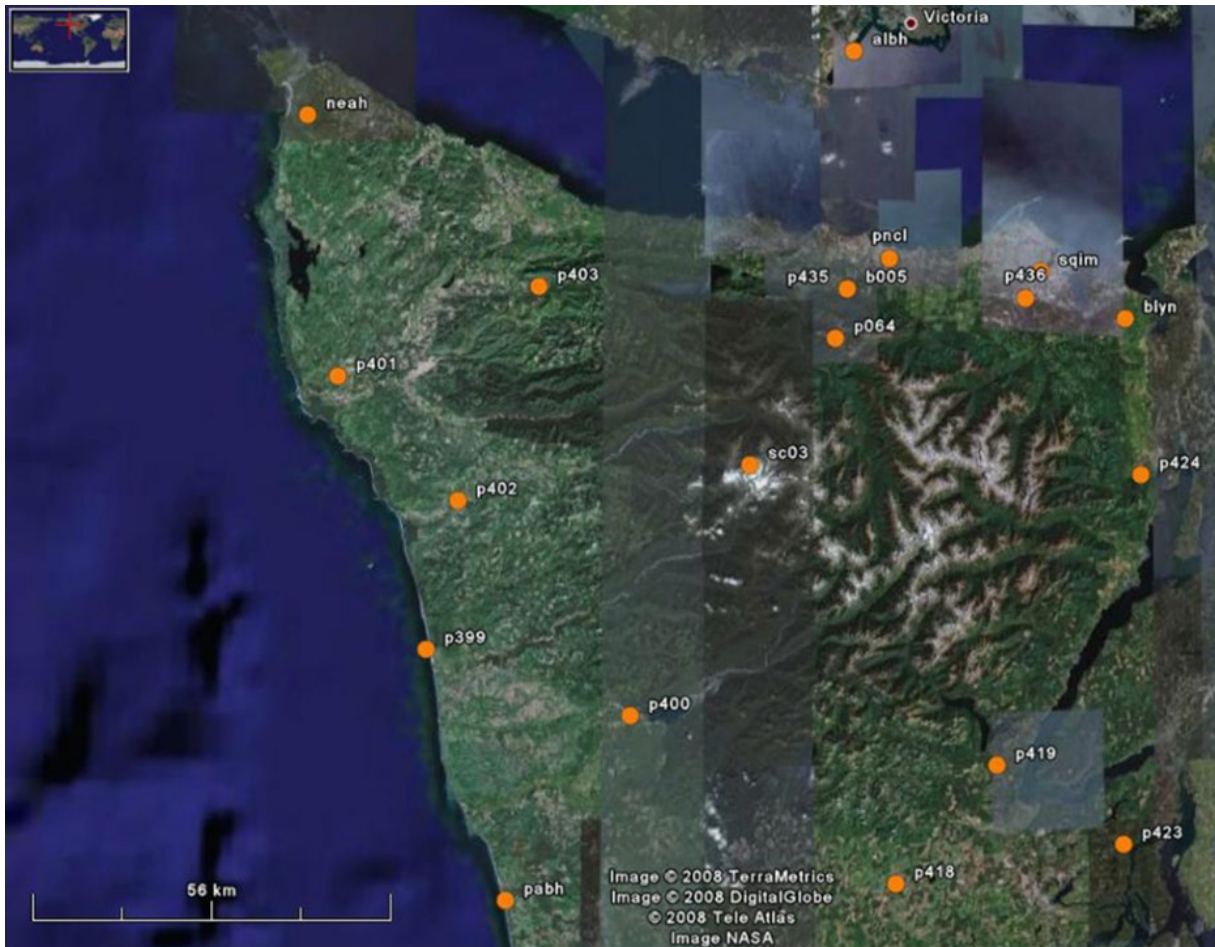


Figure 6. PANGA vertical land movement monitoring locations.

Table 3 and Figure 7 show the projected relative sea level change at the site range from zero to 4.27 feet over 80 years. The rate for the "USACE Intermediate Curve" is computed from the modified NRC Curve I considering both the most recent IPCC projections and modified National Research Council projections with the local rate of vertical land movement added.



Table 3. Estimated relative SLC from 2020 to 2100 Neah Bay, Washington [9443090]. User defined rate: 0.00295 feet per year. All values are expressed in feet.

Year	USACE Low	USACE Intermediate	USACE High
2020	0.00	00.00	0.00
2025	0.02	0.04	0.13
2030	0.03	0.09	0.27
2035	0.04	0.14	0.44
2040	0.06	0.19	0.62
2045	0.07	0.25	0.82
2050	0.09	0.32	1.05
2055	0.10	0.39	1.28
2060	0.12	0.46	1.54
2065	0.13	0.54	1.82
2070	0.15	0.62	2.11
2085	0.16	0.71	2.46
2080	0.18	0.80	2.76
2085	0.19	0.89	3.11
2090	0.21	0.99	3.48
2095	0.22	1.10	3.89
2100	0.24	1.20	4.27

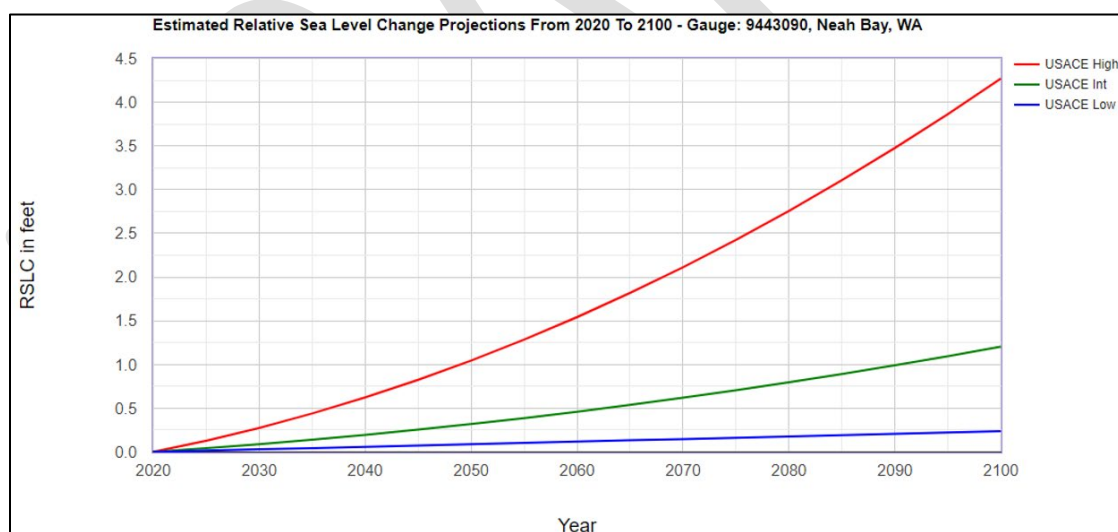


Figure 7. Relative local SLC curves for La Push, Washington. Estimated relative SLC from 2020 to 2100 Neah Bay, Washington [9443090]. User defined rate: 0.00295 feet per year. All values are expressed in feet.

#### 4.3.1 Alternative 1 – No-Action

Under the No-Action Alternative, no repairs would occur, and the sea dike would continue to deteriorate over time. At present, the navigation structure often fails to provide wave action protection

during storm surges. Low atmospheric pressure due to systems that impact the coast can cause rises in water levels of up to two feet regularly during the winter months under existing conditions. The additional water level increase due to SLC for the low and intermediate scenarios are well within the existing range of water level increase seen during storms conditions. Without repairs to the sea dike, the community of La Push would experience chronic, disruptive flooding that would affect navigation through the channel, erode shorelines, and cause damage to the boat basin, structures, and property.

#### 4.3.2 Alternative 2 – Complete Repairs to Sea Dike - Preferred Alternative

Under Alternative 2, the proposed repair actions to the sea dike would reduce wave energy entering the channel as well as control the direction of the river flow at the entrance. The low and intermediate rates of sea level change over the next 50 years would result in an increase in water levels of 0.15 and 0.65 feet, respectively. The largest impact to the project would be an increased frequency in elevated water levels which would allow more wave energy and associated erosion and damage, but they would be within the existing range of conditions the sea dike currently experiences. The high SLC scenario would result in an increase in water levels of 2.11 feet over the next 50 years. This scenario would increase water levels to the point where existing storm conditions are the baseline conditions and would likely require an increase in both the height and rock size of the sea dike which could be implemented as an adaptive management measure in the future if this scenario occurs.

#### 4.4 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. No part of the 5.6-mile Quillayute River is on the 303(d) list for any water quality parameters; however, First Beach is listed as Category 2 for bacteria and the Dickey River, a tributary to the Quillayute, is listed as Category 5 for temperature. Dissolved oxygen (DO) in the navigation channel does not typically reach levels sufficiently low to cause aquatic organisms harm (i.e., below four milligrams per liter) because 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 causing increased temperature and sedimentation, there is little other disturbance that might affect water quality.

##### 4.4.1 Alternative 1 – No-Action

The No-Action Alternative would have no effect to water quality in the Quillayute estuary or at any placement sites. The shoreline and river channel banks would be vulnerable to erosion. The boat basin and nearshore structures would be at risk of being undermined, possibly releasing turbidity. 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, but some turbidity could be generated. The No-Action Alternative would have a discountable effect to water quality in the Quillayute estuary and at the sea dike.

##### 4.4.2 Alternative 2 – Complete Repairs to Sea Dike - Preferred Alternative

Under Alternative 2, the sea dike would reduce the wave transmission into the inlet so less erosion would occur. There would be less risk to boat basin and nearshore structures (i.e., marina, and town of

La Push) from storm surges. There would also be less need to dredge the navigation channel, which would reduce impacts to water quality from dredging.

Long-term changes to water quality on the Olympic Coast due to global climate change are expected in the nearshore and marine environment (Miller et al. 2013). Anticipated changes include increased temperature, lower DO, and lower pH by 2100. Water quality impacts from the proposed project would be temporary, and cumulative impacts could occur only if other turbidity-generating construction activities occur at the same time as the proposed repair. This is possible but not likely due to the project location and duration of the in-water work window. Water quality issues in the Quillayute River inlet stem more from land-use practices like logging and mining, and not from in-water construction. Conservation measures, project design, and BMPs are expected to minimize effects to water quality. See Section 6.5 for compliance with the Clean Water Act (CWA).

#### 4.5 Noise

Noise is a pressure wave that decreases in intensity over distance from the source. Depending on the nature of the noise source, noise propagates at different rates. A noise that is 100 decibels (dB) at about 3 feet will have an intensity of only 1/100 as much at about 32 feet. This means that at 32 feet the sound is 80 dB and at 328 feet the intensity is reduced to 60 dB (i.e., comparable to background conversation in a restaurant). Background and ambient sound levels vary by location and weather conditions such as wind or rainfall can increase ambient sound in undeveloped areas. Locations on the Pacific Coast have higher ambient sound levels due to flow noise from surface wind, breaking waves, and bubble formation (Wenz 1962). Noise can affect the behavior, alter temporal or movement patterns, and/or increase physiological stress of fish and wildlife (Francis and Barber 2013; Popper et al. 2014; 2019; Shannon et al. 2016).

Studies directly measuring underwater sound from underwater rock placement are lacking (Wyatt 2008; Kongsberg Maritime Limited 2015). One study did measure sound from rock placement from a vessel through a steel/high-density polyethylene pipe in an open-water marine environment; this study measured sound levels up to 120 dB, which were attributed primarily to the vessel (Nedwell and Edwards 2004). Underwater repositioning of rock conducted under the proposed action has similarities with backhoe dredging with respect to the equipment and material involved. Sound from backhoe dredging was measured between 124 and 148 dB at 60 meters (Reine et al. 2012). The authors estimated a maximum intensity at one meter of 179 dB. However, a backhoe dredge is significantly larger and more powerful than excavators that would be used to conduct work under the proposed action, so the sound created by a backhoe dredge (124 and 148 dB at 60 meters) would be louder than what would occur from the proposed action. An excavator working in the dry creates about 85 dB at 50 feet (USDOT 2018).

Most vessels, but particularly large ships, produce low frequency sound (i.e., below one kilohertz) from onboard machinery, hydrodynamic flow around the hull, and from propeller cavitation, which is typically the dominant source of noise (Ross 1987, 1993). A tug/barge vessel generates about 170 dB traveling at eight knots (Veirs et al. 2016). Noise is generated intermittently over the course of construction depending on rock delivery and placement cycles.

Different species exhibit different hearing ranges and injury thresholds. The National Marine Fisheries Service (NMFS) fish injury thresholds for both continuous and pulsed sound are 183 dB (for cumulative

sound) and 206 dB (for peak sound) (NOAA et al. 2008). The NMFS cumulative sound thresholds for marine mammals are between 183 dB (for low frequency hearing whales such as humpback, blue, sperm and sei whales) and 185 dB (for high-frequency hearing whales such as the killer whale) (NOAA et al. 2008). The NMFS peak sound injury thresholds for marine mammals are 219 dB (low-frequency) and 230 dB (high-frequency) (NOAA et al. 2008). The U.S. Fish and Wildlife (USFWS) has identified the underwater marbled murrelet injury threshold for pulsed sound is 202 dB (pile strikes below this threshold do not accumulate to cause injury) (USFWS 2011).

#### 4.5.1 Alternative 1 – No-Action

The No-Action Alternative would have no direct effect on noise. Current effects to noise are temporary and within the range of intensity of noise produced by on-going activities in the area.

#### 4.5.2 Alternative 2 – Complete Repairs to Sea Dike - *Preferred Alternative*

There would be a localized increase in ambient noise levels from the construction equipment operating during the transporting of materials to the sea dike by truck/tug/barge, and the repositioning and placing of armor rock by an excavator at the work site. Proposed repairs would be conducted during daylight hours, and so this would limit noise impacts on surrounding areas. Construction-related traffic may cause temporary increases to, and disruption of, local traffic, but no long-term change in traffic would occur as a result of the project.

Depending upon the tide, the proposed action could produce underwater sound from the repositioning and placement of rock at the sea dike. However, this noise would only be in the initial construction of the sea dike base. The construction activity's greatest underwater sound levels would likely be generated by work below the waterline: retrieving rock displaced by wave action from the original structure, and placing it back into the authorized footprint, while raising the sea dike base. Once the base work is completed, then the remaining work would be in the dry, but still accessed by barge. Operation of a tug/barge vessel would also generate noise while in transit to the sea dike.

The limited data available suggests sound potentially created by the proposed action would not exceed the thresholds set by NMFS and therefore would not cause fish or marine mammal injury. Popper et al. (2014) and Reine et al. (2012) both indicate there is no direct evidence for fish mortality or mortal injury from continuous sound such as that resulting from the proposed action.

Wildlife species tend to differ in their sensitivities to noise exposure (Bayne et al. 2008; Francis et al. 2009, 2011). The proposed repair work to the sea dike would occur between September 1 and March 1, prior to most avian migration and mating seasons, including the breeding season for the marbled murrelet, which occurs between mid-May and late-July in Washington. Any noise generated by the proposed action between September 1 and March 1 would have no effect on a breeding bird.

#### 4.6 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 considered low risk for air quality related health concerns as it has no cities or industrial complexes and is within the Olympic National Park. 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.

#### 4.6.1 Alternative 1 – No-Action

The No-Action Alternative would have no effect on regional or local air quality and would have no output of greenhouse gases.

#### 4.6.2 Alternative 2 – Complete Repairs to Sea Dike - *Preferred Alternative*

Under Alternative 2, the short-term effects of the proposed action would be roadway traffic and vehicle exhaust increase, increased dust on roadway and exhaust from heavy equipment and barges operating at the sea dike. The amount of equipment needed for the sea dike repair would consist of between two to four pieces of heavy equipment and a couple of barges and tugboats. The emissions generated from the proposed action would not greatly or permanently affect regional air quality because the nature of the construction activities would be temporary and occasional due to interruptions from weather and tidal influences, plus the volume of armor rock being placed (i.e., about 10,000 tons) would only take about 7 to 10 barge trips to the sea dike (a barge can carry about 1,500 tons of rock). If equipment and materials were all barged to the sea dike, then less road traffic would occur. A barge can carry more material than a haul truck (i.e., barges can carry between 1,500 to 1,700 tons of rock, whereas a haul truck can carry between 100 to 300 tons). If equipment and materials were all trucked to a staging area in La Push, then further emissions would be generated by operating a tug/barge to move staged material to the sea dike. This means that less emission of greenhouse gases would be expected if all equipment and materials were barged directly to the sea dike. However, it is likely that a contractor would use a mix of trucking and barging to move materials to the sea dike.

The EPA established 100 tons per year (TPY) as the threshold level for the requirement of a conformity determination for key NAAQS pollutants in a non-attainment or maintenance area; the 100 TPY threshold applies separately to each pollutant (40 CFR 93 § 153). As shown in Table 4, based on the South Coast Air Quality Management District model for non-road emissions (SCAQMD 2016), the estimated annual emissions from the operation of the heavy equipment, trucks, barges, and tugs would be less than 12 TPY for each pollutant of concern and would not exceed the 100 TPY threshold. Notably, if materials were barged to the Quillayute boat basin instead of being trucked in, the estimated annual emissions from the operation of the heavy equipment, barges and tugs would be even lower at less than 4 TPY for each pollutant.

The proposed action would not occur in a nonattainment or maintenance area. In addition, 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 would be inconsequential and result in no more than a de minimis increase in criteria pollutant emissions over no-action conditions.

Operation of the excavators, dump trucks, and other heavy machinery would emit greenhouse gasses, primarily carbon dioxide and nitrous oxides from burning fossil fuels (Table 4). The roughly 21 days (the estimated amount of work time was based on the size and amount of rock being transported) of proposed work at the sea dike would emit an estimated 330.1 tons of carbon dioxide and 1.9 tons of nitrous oxides. If truck and trailer were used to transport materials, then it would take about 50 days to transport materials and an estimated 1,700 tons of carbon dioxide and 10.1 tons of nitrous oxides would be emitted in addition to the repair actions at the sea dike. If a barge were used to transport materials to the Quillayute sea dike for the repairs rather than truck and trailer, it would result in about 374.7 tons of carbon dioxide and 2.4 tons of nitrous oxides. When compared to the U.S. emissions measured at nearly 7,000 million metric tons of carbon dioxide in 2017 (EPA 2019), and the global emissions estimated over 33,000 million metric tons of carbon dioxide in 2010 (EPA 2020), proposed project would provide a negligible contribution.

Table 4. Estimated emissions in metric tons per year for pollutants of concern using SCAQMD (2016).

<b>Air Pollutant</b>	<b>Estimated annual emissions in tons (truck and trailer transport)</b>	<b>Estimated annual emissions in tons (barge transport)</b>
Reactive Organic Gasses (ROGs)	1.12	0.30
Carbon Monoxide (CO)	4.15	1.06
Nitrogen Oxides (NOx)	11.98	3.08
Sulfur Dioxide (SOx)	0.02	< 0.01
Particulate Matter (PM <sub>2.5</sub> )	0.27	0.08

#### 4.7 Vegetation

The coastal beach zone consisting of the jetties, dike, and rocky habitat are mostly devoid of vegetation, but may have some attached micro- and macroalgae. According to the Washington Department of Natural Resources (WDNR), subtidal kelp forests occur offshore from the project area and around James Island (WDNR 2014). Rockweeds and algae grow on the large rock of the sea dike during spring, summer, and fall months.

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 hydrophytes. Perennial plants dominate 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 low intertidal elevation vegetation is comprised mainly of hairgrass, pea, Douglas aster, and curly dock. The high intertidal vegetation zone is comprised principally of common rush, silverweed, sedge, and redtop.



The sand flats primarily host forbs and grasses. The most common species in this area are dune grass, reed canary grass, silverweed, and thistle. 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 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 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, and hemlock. The understory is dominated by salmonberry, buttercups, and piggyback, with small invasions of non-native plants.

#### 4.7.1 Alternative 1 – No-Action

The No-Action Alternative would involve no additional rock to be placed at the sea dike so there would not be additional substrate for seaweed species. Without the dike the effects from ocean waves would increase and waves would travel farther upstream of the Quillayute River causing possible erosion in the river channel and any low-lying wetland areas. During high storm surges, the waves may eventually cause possible loss of trees and possibly undercutting the bank along the Mora roadway. Mora Road is the only roadway to Rialto Beach and is located off of La Push Road to the north of the Quillayute River. More shoreline vegetation would be lost with wave driven erosion.

#### 4.7.2 Alternative 2 – Complete Repairs to Sea Dike - *Preferred Alternative*

Under Alternative 2, shoreline vegetation would be more protected from wave action, thus protecting important fish and wildlife habitat. Past actions to construct the navigation features have likely changed aquatic vegetation patterns based on the presence of kelp around sea stacks. The newly placed armor rock at the sea dike would provide substrate for algae and invertebrate species in addition to substrate available around James Island and on other navigation features; however, the amount of available habitat would not be substantially different from existing conditions. The short- and long-term effects to vegetation from the proposed sea dike repair would be minor due to the implementation of BMPs to minimize the amount of turbidity. For instance, all equipment will be washed to reduce the introduction of invasive weeds, rock will be placed in a manner to minimize the disturbance of the substrate, and no work will occur during the spring months when macroalgae such as kelp are most susceptible to harm from increases in turbidity. Increased turbidity could affect kelp and minimally change available substrate in the project area.

### 4.8 Fish and Wildlife

There are numerous factors that have contributed to population trends of fish and wildlife on the Washington coast including fishing practices, land use, vessel traffic and noise, contaminants, and the Marine Mammal Protection Act. Some populations have increased in numbers, while others have declined to the point of becoming threatened or endangered. 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 to avoid and minimize impacts based on timing (Chitwood 1981). Information on fish resources from this study and other recent sources appear below.

## Forage Fish

Forage fish are critical prey items for many fish and wildlife species. Two distinct sizes of surf smelt have been found in the Quillayute estuary (i.e., 2 to 4 inches and 6 to 10 inches), possibly representing one-year-old and two to three-year-old age classes, respectively. Most of the smelt were caught in the lower and mid estuary. Surf smelt are known to spawn on Rialto Beach and to the south of La Push (Figure 8) between May and September with the peak in July and August (Fradkin 2001). Other forage fish that may be present include Pacific herring, sand lance, and anchovy (Chitwood 1981). No Pacific smelt were captured during the Quileute Tribe's 1979-80 study, and none have been reported since that time. According to WDFW Forage Fish Spawning Data, there are no recorded detections of sand lance or Pacific herring spawning along this reach of the Washington Coast (WDFW 2020).

Surf smelt are obligate beach spawners and require unaltered coastlines for successful spawning (Rice 2006; Quinn et al. 2012). Surf smelt spawn during high tides, using the upper third of a beach's tidal range (Loosanoff 1937; Rice 2006; Penttala 2007). Spawning occurs between May to September with a peak in July and August (Fradkin 2001). Habitat degradation in the nearshore environment can negatively impact the species primarily because of their usage of the upper-intertidal area for spawning (Rice 2006; Lee and Levings 2007). Since the sea dike is over a mile from any known surf smelt spawning areas (Figure 8) and the repair actions do not involve dredging, no impacts to surf smelt spawning habitat should occur. No appreciable turbidity is expected from the proposed work. To avoid impacts to salmonids and forage fish at vulnerable life stages, the in-water work window is September 1 to March 1. For these reasons, the proposed repair actions are not expected to impact the spawning of surf smelt.

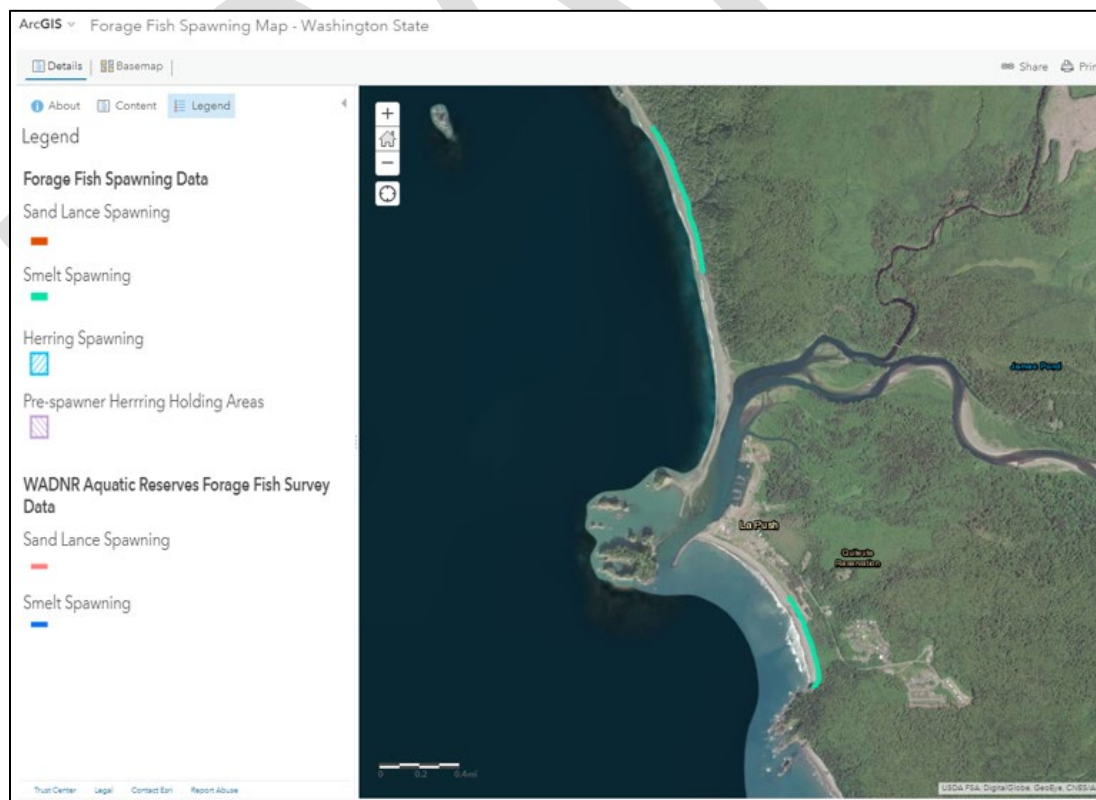


Figure 8. Documented surf smelt spawning locations near La Push, Washington (WDFW 2020).



### ***Salmonids***

The Quillayute River watershed supports six anadromous salmonid species: Chinook, coho, chum, pink, sockeye, and steelhead. Chinook are the most important fishery species for the Quileute Tribe and steelhead are a popular sport-fishing target in the river. Fish usage of the estuary 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 salmon consistently occurs between April and September, and coho salmon 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 recorded in any studies of the estuary.

### ***Other Pelagic and Demersal Fish***

Small numbers of other fish captured during sampling included saddleback gunnels, starry flounder, sculpins, rockfish, perch, threespine stickleback, and shad (Chitwood 1981). The rocky habitat along the South Jetty likely hosts reef dwelling fish like rockfish and lingcod and some of these species may also be present at the sea dike.

### ***Intertidal Invertebrate Species***

The constant water motion experienced by rocky shore habitats brings food, larvae, spores, and nutrients to the species that brave the high wave action, making this an extremely productive and species-rich habitat (Leigh et al. 1987). Wind-driven coastal upwelling keeps the nearshore waters cold and rich in nutrients for much of the year (Ebert and Russell 1988; Connolly and Roughgarden 1998). This rocky subtidal habitat supports a diverse array of algae and invertebrate species that consists of organisms living on and around the rocks and any soft sediment beneath them (Nyblade 1979). In the eulittoral zone (rocky substrate above the maximum height of the tide), organisms include cyanobacteria, lichens, barnacles, gastropods and isopods (Dethier 1990). These organisms must be able to protect themselves from desiccation. In the mediolittoral zone (area between the highest and lowest tide level), typical organisms consist of those in the supralittoral zone (in the upper mediolittoral zone) as well as limpets, winkles, chitons, sea urchins, sea stars, sea cucumbers and mussels (Dethier 1990, Paine 1980; Dayton 1971, 1975; Nyblade 1979). Invertebrates living in the sediment under rocks could include the mud shrimp, mud dwelling brittle stars, and several species of clams and polychaete worms (Dethier 1990; Paine 1980).

### ***Wildlife***

Estuaries like the Quillayute River estuary are important forage areas for visiting wildlife, such as migratory shorebirds, ducks, and geese. In 2002, the USACE completed wildlife surveys at the Quillayute River inlet 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 percent) use the estuary, while 20 percent appeared more on the revetted beach, and 17 percent of the species occurred within the sea stacks marine habitat. During low tide, gulls use 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, one of the sea stacks beside James Island, is an important nesting area of common murre 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 appear frequently in the estuary, and an occasional California sea lion has been observed. River otters feed in the estuary and river. Common terrestrial mammals along the beach and riverbank include raccoon, Douglas squirrel, and black-tailed deer.

#### 4.8.1. Alternative 1 – No-Action

The No-Action Alternative would result in the erosion of the sea dike over time, resulting in less localized resting structure for birds and the displacement of species in the sandy substrate as rock is displaced from the existing structure. The current structure does provide habitat for invertebrate species at present so the displacement of rock would displace these invertebrates. The invertebrate community would change from one dominated by species that are less sensitive to desiccation like barnacles and mussels to one that consists of species sensitive to desiccation like sea stars and anemones.

#### 4.8.2 Alternative 2 – Complete Repairs to Sea Dike - *Preferred Alternative*

Under Alternative 2, short-term effects from more traffic on the La Push roadway would occur while transporting equipment and materials. This includes possible noise and disturbance from vehicles, heavy equipment, barges and boats in the boat basin and sea dike areas. If a contractor chooses to barge all equipment and materials to the sea dike, then the coastal barge traffic would increase, but this traffic would comprise only about a dozen trips or less and the trips would be intermittently influenced by weather and the tides.

Wildlife in the project area is assumed to be habituated to noise of vessels navigating the channel and to human activity on the nearby shorelines and in the community of La Push. The noise generated by the repair activities would be produced by two to four pieces of heavy equipment and the sound of transferring and placing rock. This noise would be intermittent, as work is dependent upon tidal cycles and weather, and occur throughout an in-water work window between September 1 and March 1. During construction, anchoring a barge at the sea dike for several weeks and in-water work to rebuild the base over two to three workdays would cause temporary underwater disturbance such as noise, vibrations, and turbidity. The turbidity generated by construction of the sea dike is expected to be short-term and in an area of high sediment transfer that could make it difficult to discern from natural turbidity. The presence of a barge and heavy machinery could disturb fish and wildlife in the vicinity of the sea dike during construction due to noise and vibration so that they flee or are interrupted during foraging. However, they are assumed to be habituated to the current level of sporadic vessel traffic (Schwemmer et al. 2011), and construction equipment would not block migration, rearing, or nursery sites.

No significant impacts to fish and wildlife resources are anticipated from the Preferred Alternative since short-term construction impacts would be minimized through the use of BMPs and conservation measures (Sections 2.2.1 and 2.2.2). Surface area above water would be created at the sea dike for birds to rest and forage. The repaired sea dike would also offer more surface area for seaweed growth and

sessile (stationary) invertebrates and expands artificial habitat for different invertebrates from what would occur on the sandy shoal.

#### 4.9 Threatened and Endangered Species

Seventeen species or distinct population segments (DPS), listed as threatened or endangered under the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531, et seq.) may occur in the project area. They appear in Table 5 with their listing status and critical habitat status. Critical habitat is designated for 10 of the 17 species listed in Table 5, but only four of these species have a critical habitat designation in the action area. Critical habitat designated for green sturgeon and the leatherback turtle includes the nearshore areas of the Washington coast and the area of the sea dike; however, the designation for these species excludes the Quillayute River estuary. The southern resident killer whale critical habitat designation also occurs along the Washington coast, but excludes the area where the sea dike is located.

Table 5 .Species listed under the Endangered Species Act with their status, critical habitat, and potential for occurrence within the action area.

Species	Federal Listing	Year Listed	Critical Habitat in Action Area	Potential Occurrence (Likely, Unlikely, or Absent)
<b>Fish</b>				
Coastal/Puget Sound bull trout ( <i>Salvelinus confluentus</i> )	Threatened Critical Habitat Designated	1999 2010	Yes, but not in estuary	Likely
Southern green sturgeon ( <i>Acipenser medirostris</i> )	Threatened Critical Habitat Designated	2006 2009	Yes, but not in estuary	Likely
Pacific eulachon ( <i>Thaleichthys pacificus</i> )	Threatened Critical Habitat Designated	2010 2011	No	Likely
<b>Birds</b>				
Marbled murrelet ( <i>Brachyramphus marmoratus</i> )	Threatened Critical Habitat Designated	1992 1996	No	Likely
Streaked horned lark ( <i>Eremophila alpestris strigata</i> )	Threatened Critical Habitat Designated	2013 2013	No	Absent
Yellow-billed cuckoo ( <i>Coccyzus americanus</i> )	Threatened Critical Habitat Proposed	2014 2014	No	Absent
Northern spotted owl ( <i>Strix occidentalis caurina</i> )	Threatened Critical Habitat Designated	1990 2012	No	Unlikely
Short-tailed albatross ( <i>Phoebastria albatrus</i> )	Endangered	1970	No	Absent
<b>Marine Mammals</b>				
Southern Resident killer whale ( <i>Orcinus orca</i> )	Endangered Critical Habitat Designated	2005 2006	Yes, but not in estuary or sea dike area	Unlikely
Humpback whale ( <i>Megaptera novaeangliae</i> )	Endangered	1970	No	Absent
Blue whale ( <i>Balaenoptera musculus</i> )	Endangered	1970	No	Absent

Species	Federal Listing	Year Listed	Critical Habitat in Action Area	Potential Occurrence (Likely, Unlikely, or Absent)
Fin whale ( <i>Balaenoptera physalus</i> )	Endangered	1970	No	Absent
Sei whale ( <i>Balaenoptera borealis</i> )	Endangered	1970	No	Absent
Sperm whale ( <i>Physeter macrocephalus</i> )	Endangered	1970	No	Absent
<b>Marine Turtles</b>				
Leatherback sea turtle ( <i>Dermochelys coriacea</i> )	Endangered Critical Habitat Designated	1970 2012	Yes, but not in estuary	Unlikely
East Pacific green sea turtle ( <i>Chelonia mydas</i> )	Threatened Critical Habitat Designated	1978 1998	No	Unlikely
Loggerhead sea turtle ( <i>Caretta caretta</i> )	Endangered	1978	No	Unlikely

The Southern Resident killer whale (SRKW), marbled murrelet and three fish species (bull trout, green sturgeon, and eulachon) listed in Table 5 all have the potential to be present in the action area. The SRKW critical habitat designation also occurs along the Washington coast, but excludes the area where the sea dike is located. It is unlikely that the other listed marine mammals or marine turtle species would be present near the proposed construction area; however, all these species have the remote potential to be present in waters along the Olympic Coast during a barging operation. The proposed project is unlikely to disturb or displace any marbled murrelets because they rarely occur in the action area and the construction of the sea dike is a short-term localized project. Murrelets are relatively opportunistic foragers, and they have flexibility in prey choice, which enables them to move if disturbed by construction noise while foraging. Bull trout may use the action area primarily as a migratory corridor as telemetry data showed the fish migrating from the Hoh River to the Quillayute River (Brenkman and Corbett 2005). Bull trout may use the action area for foraging and overwintering as well although this has not been documented.

For several species and their designated critical habitat listed in Table 5 (streaked horned lark, yellow-billed cuckoo, Northern spotted owl, short-tailed albatross, humpback whale, blue whale, fin whale, sei whale, sperm whale, and the sea turtle species), the proposed project would have no effect. This is due to their sensitivities to human encroachment or because their presence is so transitory or unlikely due to habitat preferences absent in the action area. The streaked-horned lark, yellow-billed cuckoo, Northern spotted owl, and short-tailed albatross have never been captured in sampling efforts or recorded in the action area; 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. Except for the SRKW, the preferred habitat for whales is the open ocean, not shallow estuaries; thus, it is extremely unlikely that any of these whales would be present in the shallow embayment where the Quillayute sea dike is located. The SKRW monitored off the Olympic coast spend about 10 to 16 days annually near the Quillayute River in the winter months (Hanson et al. 2018). Only transient killer whales have been observed periodically entering the Quillayute estuary during the

summer months (J. Hagen, Marine Policy Advisor, Quileute Natural Resources, pers. comm.). All whale species are susceptible to vessel strikes, and most can avoid slow moving vessels like a barge, which travels at four knots or slower. Of the three marine turtles listed in Table 5, only the leatherback sea turtle has the potential to be present in the action area as it has some ability to regulate its body temperature and can survive in colder waters unlike the other sea turtles.

#### 4.9.1 Alternative 1 – No-Action

This alternative would have no effect on ESA-listed species or their designated critical habitat because no proposed repair actions would occur.

#### 4.9.2 Alternative 2 – Complete Repairs to Sea Dike - *Preferred Alternative*

Potential impacts of the proposed project to threatened and endangered species are addressed in a separate Biological Assessment (BA). The USACE determined that this alternative may affect, but would not adversely affect (NLAA) bull trout, the marbled murrelet, North American green sturgeon, Pacific eulachon, and the SRKW. The USACE determined that there would be no effect to the critical habitat for these species because the proposed action would produce only temporary turbidity, noise, and disturbance near areas where the species may be migrating or foraging. These species are also capable of moving if they are disturbed while migrating or foraging. Therefore, the effect of noise disturbance associated with the proposed project is expected to be negligible. There is greater potential for a barging operation to encounter whale and sea turtle species while at sea. However, barges are slow moving vessels (i.e., they travel at four knots or slower) so whales and sea turtles have some ability to avoid these vessels. The SKRW monitored off the Olympic coast spend about 10 to 16 days annually offshore of La Push (Hanson et al. 2018), and are absent from the action area due to the shallow depth around the sea dike. Only transient killer whales have been observed near the Quillayute River (Geyer 2021a). Given the distributions of all the above-mentioned species, the USACE has determined the proposed project would have no effect on these species or their critical habitat (as designated).

Long-term effects to threatened and endangered species are the same as those described for fish and wildlife in Section 4.8.

#### 4.10 Cultural Resources

The USACE has coordinated its review of cultural resources impacts under Section 106 of the National Historic Preservation Act (NHPA). In a letter dated January 14, 2021, the USACE determined the area of potential effect (APE) for the Quillayute River Federal Navigation Sea Dike Repair Project to be the lower half-mile of the Quillayute estuary, the marina and waterfront area of La Push and a portion of the eastern shore of James Island. The analysis included the roadway into the Quillayute boat basin where transportation of equipment and materials may occur and the waters along the Olympic coast to account for a possible barging operation. The APE for both direct and indirect effects encompassed approximately 281.60 acres (0.44 mi<sup>2</sup>). The USACE believes that the APE is sufficient to identify and consider both direct and indirect effects of the proposed project (Figure 9). The Washington Department of Archaeology and Historic Preservation (DAHP) agreed to this determination on January 19, 2021 (Appendix C).

On March 8, 2021, the USACE sent a letter to DAHP requesting concurrence with the USACEs' determination and findings. DAHP replied on March 23, 2021 (Appendix C), requesting further

information about the undertaking and requested the USACE to record the Quillayute sea dike on a Historic Property Inventory Form (HPIF) and to evaluate the Quillayute sea dike for its eligibility for listing in the National Register of Historic Places (NRHP).



Figure 9. Map showing the APE for the direct and indirect effects of the Quillayute River Federal Navigation Project.

Two USACE archaeologists conducted a reconnaissance level survey on May 3, 2021. The sea dike is a single course, rubble mound constructed on a natural sand bank. The sea dike was completed circa 1930 and altered by numerous repairs up until 1962. Since 1962, the sea dike has eroded and lost 95 percent of its structure.

The USACE has made a reasonable and good faith effort to identify historic properties that may be affected by this undertaking. On June 30, 2021, the USACE wrote a follow-up letter to the initial determination and findings letter sent on March 8, 2021. This letter addressed the additional information requested by DAHP. The letter also informed DAHP that further details were included in the online HPIF that was submitted through the Washington Information System Architectural and Archaeological Records Database (WISAARD) platform.

The USACE has determined that the sea dike is not eligible to the NRHP and has made the determination of no historic properties affected. This determination was made by applying the National Register criteria for evaluation. These criteria are Secretary of the Interior standards by which every property that is nominated to the National Register is judged. This section details the sea dike's properties (i.e.,



such as structural integrity, design, setting, materials, workmanship, feeling, or association) and whether those properties qualify the Quillayute sea dike as eligible under a specific criterion, or multiple criteria. Criterion A seeks to determine whether the property is associated with events that have a significant contribution to the broad patterns of Washington state's history. The sea dike is not eligible under criterion A as it is not associated with events that have made a significant contribution to the broad patterns of history that occurred in Washington state during the 1930s. Criterion B seeks to determine whether the property is associated with the lives of persons significant in Washington state's past. Under criterion B, the sea dike is not eligible for inclusion on the NRHP since it has no connection to any person of national, tribal, or local significance. Criterion C seeks to determine whether the property embodies the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction. Under criterion C, the sea dike is not eligible for inclusion on the NRHP due to loss of integrity since most of the resource has washed away and very little of the original rubble placed there remains. The construction of the sea dike is typical for maritime infrastructures of this type across the state, and it does not embody the distinctive maritime characteristics of a type, period, or method of construction, or represent the work of a master, or possess high artistic values, or represent a significant and distinguishable entity whose components may lack individual distinction. Criterion D seeks to determine whether the property has yielded, or may be likely to yield, information important in prehistory or history. Under criterion D, the sea dike does not have the potential to provide any new information on historic or prehistoric habitation.

The USACE has determined that the sea dike is not eligible to the NRHP and has made the determination of no historic properties affected. The sea dike is not eligible under criterion A as it is not associated with events that have made a significant contribution to the broad patterns of history that occurred in Washington state during the 1930s. Under criterion B, the sea dike is not eligible for inclusion on the NRHP since it has no connection to any person of national, tribal, or local significance. Under criterion C, the sea dike is not eligible for inclusion on the NRHP due to loss of integrity since most of the resource has washed away and very little of the original rubble placed there remains. The construction of the sea dike is typical for maritime infrastructures of this type across the state, and it does not embody the distinctive maritime characteristics of a type, period, or method of construction, or represent the work of a master, or possess high artistic values, or represent a significant and distinguishable entity whose components may lack individual distinction. Under criterion D, the sea dike does not have the potential to provide any new information on historic or prehistoric habitation.

The USACE also summarized efforts taken to identify cultural resources within one mile of the APE. The USACE staff archaeologist conducted a records search and literature review of the WISAARD. The research revealed that no archaeological resources are in the APE; however, several archaeological sites are located within one mile of the APE. James Island is a place of significant cultural importance to the Tribe.

DAHP responded to the USACE determinations and findings letter on July 7, 2021 (Appendix C), and DAHP concurred with the determination.



#### 4.10.1 Alternative 1 – No-Action

The No-Action Alternative could potentially impact the cultural resources near the vicinity of the project area over time. While cultural resources are not directly impacted by the undertaking, the sea dike reduces wave transmission into the navigation channel, and it also protects the infrastructure and property of the community of La Push. Failure to fix the sea dike can cause the waves to slowly damage the infrastructure and the community's properties and could also cause long-term damage. Specifically, at James Island, the increase in wave transmission could impact sites of significant cultural importance to the Quileute Nation. Cultural resources cannot be replaced if damaged or destroyed, so not repairing the sea dike places these cultural resources in imminent danger.

#### 4.10.2 Alternative 2 – Complete Repairs to Sea Dike - *Preferred Alternative*

Under the preferred alternative, complete repairs to the sea dike would reduce wave transmission into the navigation channel, and it would protect the infrastructure and property of the community of La Push. A repaired sea dike would also ensure greater protection to the cultural resources on James Island. The preferred alternative ensures that the Quileute Tribe's properties attached to religious or cultural significance can be protected.

The USACE has made the determination that implementation of the repairs will have no impact on any archaeological, religious, or tribal places of significance. This determination was made after reviewing the project specifications, location, and documentation describing previous archaeological surveys and recorded archaeological sites in the vicinity of the project. The reconnaissance survey confirmed that complete repairs to the sea dike does not alter any archaeological sites, or character defining qualities.

### 4.11 Recreation and Scenic Values

Recreation opportunities in the project area are primarily boating, surfing, beach walking, and fishing. The rugged wilderness character of the area attracts travelers from throughout the Pacific Northwest and farther away. Sport fishing 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 during the non-typical tourist season. Visitors to Rialto Beach north of the project area often walk southward along Quillayute Spit. 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.

#### 4.11.1 Alternative 1 – No-Action

Under the No-Action Alternative, recreational vessels would have a difficult time navigating the channel into the boat basin due to high wave action increasing the risk to boaters.

#### 4.11.2 Alternative 2 – Complete Repairs to Sea Dike - *Preferred Alternative*

Under Alternative 2, the influence of Pacific wave action would be greatly reduced by the raised sea dike allowing recreational vessels to safely navigate the channel to and from the boat basin. In the short-term, construction related noise from personnel and equipment staged at the boat basin and/or working at the sea dike would disturb the recreating public. It may be possible that less noise and disturbance would occur to the recreating public if equipment and materials are barged directly to the sea dike instead of being trucked and loaded onto a barge in the boat basin area. This noise and

disturbance would be expected to last for the duration of construction (i.e., about 21 days of intermittent work that could occur during the months of September 1 to March 1). Sea dike repairs would re-establish the structure to the authorized elevation, and it would be similar construction (armor stone) and aesthetic appearance as other navigation features in the project area. The raising of the sea dike to its authorized height of +8 feet MLLW would improve passage in the navigation channel and would not obstruct views of James Island and other sea stacks or the open ocean.

#### 4.12 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, resorts, fish hatchery, the USCG station, the Quileute Natural Resources building, marina, convenience store, and additional amenities. In 2018, there were 128 housing units in the community, of which 91 percent were occupied and 9 percent were vacant. Of the occupied housing units, 45 percent were owner occupied and 55 percent were renter occupied (i.e., 2018 American Community Survey). The USCG Station Quillayute River has approximately 30 active-duty personnel in-station.

According to the 2000 U.S. Census, La Push had a population of 371, with a gender distribution of 57 percent male and 43 percent female. The more recent 2010 U.S. Census does not include information specific to the town of La Push. However, the 2018 American Community Survey reports a total population of 451, with 55 percent male and 45 percent female. In 2000, about 83 percent of residents were American Indian and Alaska Native, 11 percent Caucasian and the remainder percentage peoples of another race. Five percent of residents identified as Hispanic or Latino. A small percentage of residents (four percent) 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 percent had graduated from high school or continued to higher education, 4 percent had received a bachelor's degree or higher, and 2 percent had received a graduate or professional degree according to the 2000 U.S. Census. The Census reports that in 1999, the income of 35 percent of the population was below the poverty level. The 2018 American Community Survey reports that 37 percent 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 rugged wilderness character of the area attracts travelers from throughout the northwest for activities such as sport fishing, surfing, and camping. Cabin rental and recreational vehicle parking bring tourist dollars to the local area.

##### 4.12.1 Alternative 1 – No-Action

Under the No-Action Alternative, increased erosion of shorelines in front of critical infrastructure would put these structures at risk; and funds would be needed to protect shorelines from erosion. Vessels may be unable to navigate the channel and boat basin, including the USCG. This could lead to the USCG being unable to conduct rescue missions. Ultimately, this could result in substantial impacts affecting the recreational and fish processing industries.

##### 4.12.2 Alternative 2 – Complete Repairs to Sea Dike - *Preferred Alternative*

In the short-term under Alternative 2, noise and disturbance from increased truck traffic on La Push Road and at the boat basin might affect tourism such that the recreating public would avoid this area.

Fishing vessels may take longer to navigate in and out of the channel to avoid barges and/or the construction activities at the sea dike; however, the construction would be intermittent, as it is dependent upon tidal influence and the weather, and it would only take about 21 days to complete. There may be less noise and disturbance to the community of La Push if all equipment and materials are barged directly to the sea dike and not trucked into La Push and staged at the boat basin area. In the long-term, the town of La Push would benefit from having a protected entrance and exit to and from the marina, and a protected marina and associated facilities. The Preferred Alternative would generate long-term benefits for navigation and economic conditions when compared to the No-Action Alternative by maintaining vessel access to La Push businesses and the community.

#### 4.13 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 critical 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. As time progresses after dredging, the entrance reach of the channel fills in across the bar that forms between outgoing river flows and the tidal currents from the ocean. The USCG issues vessel restrictions for crossing the bar and occasionally must close the bar to all vessel traffic. Heavy weather and the shallow bar depth cause these dangerous conditions.

Wind speeds and wave heights are the primary parameters of concern during October through February along the Olympic Coast. During this period, annual storms have winds that exceed 55 miles per hour (mph) and 20 percent of these annual storms can 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).

##### 4.13.1 Alternative 1 – No-Action

The No-Action Alternative would not allow the USGC to safely exit and enter channel during storm events, putting the USGC personnel and the public at risk. In the short-term, during rough weather conditions that coincide with lower tides, the USCG would need to move their vessels out of the harbor and take up position outside the bar to be able to respond if needed for rescues. In addition, the berths for USCG rescue vessels can experience shoaling as the navigation channel fills in leaving limited options for vessel moorage and safety. The No-Action Alternative would exacerbate these conditions and would impact the USCG's ability to conduct rescue missions. Besides the USCG, the public would also find the channel more dangerous to navigate and shoreline developments would be at risk. Under the status quo, there could be increased damage to the harbor and/or to the town of La Push caused by large storm events.

##### 4.13.2 Alternative 2 – Complete Repairs to Sea Dike - *Preferred Alternative*

Alternative 2 would result in the protection of the Quillayute inlet and town of La Push such that these areas would be better able to weather large storm events coming from the ocean direction. Under Alternative 2, the USGC would be able to exit and enter the channel during storm events and readily complete rescue missions. The long-term effect of the sea dike with other navigation features is reliable navigation that is beneficial to the health and safety of La Push and the surrounding communities on the Olympic Peninsula.

#### 4.14 Environmental Justice

Environmental Justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. 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.

Most of the population in La Push (over 83 percent; Section 4.11) are identified as belonging to a minority group and more than a third of the population (37 percent) are considered low-income earners.

##### 4.14.1 Alternative 1 – No Action

Under the No-Action Alternative, the sea dike would not be repaired and would allow wave transmission into the Quillayute River Inlet making navigation difficult and potentially causing damage to the boat basin, infrastructure, and shorelines. The local community composed primarily of minority and low-income individuals would be adversely affected as they would potentially be unable to fish or provide recreational opportunities to boaters, and could potentially impact the USCG's ability to conduct rescue missions. The No-Action Alternative would result in a disproportionately high and adverse human health impact since the local economy in La Push is economically vulnerable to disruption (Section 4.11), flooding damage (Sections 4.1 and 4.2) and life-safety issues (Section 4.12).

##### 4.14.2 Alternative 2 – Complete Repairs to Sea Dike - *Preferred Alternative*

Fishing and recreation, as well as the presence of the USGS station, provide income to members of the community, and these activities are dependent upon being able to safely navigate the Quillayute River inlet. Alternative 2 would reduce wave transmission in the Quillayute Inlet thereby allowing safe passage for fishing and recreational vessels. The USCG would also be able to respond to emergencies. Implementing the Preferred Alternative is expected to benefit minority or low-income populations.

## 5 Unavoidable Adverse Effects of the Preferred Alternative

Unavoidable adverse effects associated with the preferred alternative at the site would be: (1) temporary and localized increases in noise, activity, and emissions which may affect fish and wildlife in the area; (2) temporary and localized disruption of local traffic by construction activity, vehicles, and barges; (3) irretrievable commitment of fuels and other materials for repairs; and (4) temporary and localized increase in turbidity levels during in-water construction, which may affect aquatic organisms in the area.

## 6 Coordination

The USACE has coordinated with Federal and state agencies and tribes regarding repair of the Quillayute sea dike. Coordination would continue throughout the period of the proposed repair to update 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 Indian Tribe

- U.S. Environmental Protection Agency
- National Park Service
- U.S. Fish and Wildlife Service
- National Marine Fisheries Service
- 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

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 draft 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 2 is the agency preferred alternative.

### 7.2 Endangered Species Act

The Endangered Species Act (16 U.S.C. §1531-1544), Section 7(a) requires that Federal agencies consult with the 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 determined that the proposed action may affect, but is not likely to adversely affect the following species: North American green sturgeon, Pacific eulachon, SRKW, leatherback sea turtle, Coastal/Puget Sound bull trout and the marbled murrelet and prepared documentation of this determination (USACE 2021). Further, the USACE determined that there would be no effect to any of the ESA-listed species' critical habitat. The USACE initiated informal consultation with the Services on January 4, 2021. The USFWS agreed with this determination and the USACE received a letter of concurrence dated April 22, 2021 (Appendix A). The NMFS agreed to initiate consultation on May 18, 2021, after a review of the BA and subsequent conversations about the completeness of the request and information provided by the USACE. In coordination with NMFS, the request for concurrence was modified to include leatherback turtles and their critical habitat, and SRKW and their proposed critical habitat. On May 26, 2021, the NMFS concurred with the USACE that the proposed action is not likely to adversely affect the ESA-listed species or their designated or proposed critical habitats (Appendix A).

### 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, California sea lion, and killer whale far offshore.

The primary concern for marine mammals in the proposed repair project is underwater noise from construction. The USACE has compared the estimated noise from placing rock and the guidance on assessing impacts and concluded that there is no requirement for an Incidental Harassment Authorization. On May 26, 2021, the NMFS agreed and concluded that the effects of the proposed action would be insignificant (Appendix A).

#### 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 EFH for various life stages of 50 species of groundfish, five coastal pelagic species, and two species of Pacific salmon. The USACE 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. The USACE submitted this determination to NMFS on January 4, 2021. On May 26, 2021, the NMFS responded that the proposed action would adversely affect the EFH of Pacific salmon, groundfish, and coastal pelagic species. The NMFS stated that water quality, substrate, and prey would all be briefly impaired and that the jetty structure would interrupt migration areas and alter the interaction between the ocean and the estuary. NMFS provided three conservation recommendations to avoid, minimize, mitigate, or otherwise offset the impacts of the proposed action on EFH as follows:

- 1) Avoid barge ground out;
- 2) Maintain the gap between the lower spit and the sea dike to ensure migration corridor remains open; and,
- 3) Evaluate if any green infrastructure options are suitable for this site.

The USACE responded to the NMFS on June 30, 2021 (Appendix B), noting that the first recommendation would be incorporated in the list of BMPs as the USACE normally requires that no barge grounding occur for this type of work. Regarding the second recommendation, the USACE had already incorporated this recommendation into the design. The USACE coastal engineers considered an alternative to close the gap between the sea dike and the Quillayute lower spit during the design phase but rejected this alternative because leaving the gap between the sea dike and lower spit helps to alleviate backwater effects on the mainstem Quillayute River. The third recommendation is not an option for the proposed sea dike repair action due to the severe wave energy at the site. However, the sea dike is a part of the larger navigation project that the USACE manages using the engineering with nature principles of beneficial placement of dredge material on the Quillayute River spit (Rialto Spit) and



First Beach. Further, after construction is completed, the structure would soon be colonized by algae and invertebrate species that are adapted to high wave action areas.

## 7.5 Clean Water Act

The CWA is the primary legislative vehicle for Federal water pollution control programs and the basic structure for regulating discharges of pollutants into waters of the United States. The CWA was established to “restore and maintain the chemical, physical, and biological integrity of the nation’s waters.” The CWA sets goals to eliminate discharges of pollutants into navigable waters, protect fish and wildlife, and prohibit the discharge of toxic pollutants in quantities that could adversely affect the environment. The USACE does not issue permits for its own civil works activities; nevertheless, the USACE accepts responsibility for the compliance of its civil works projects under Section 404 of the CWA, as well as the obligation to seek water quality certification under Section 401 if applicable.

The USACE concludes that the Quillayute sea dike repair work is exempt from Section 404 per the 404(f)(1)(B) exemption criteria for maintenance of a currently serviceable structure that does not include any modification that changes the character, scope, or size of the original fill design, and is therefore not subject to Section 401 review. No water quality certification is required for the proposed action. Since the project is exempt under Section 404(f)(1)(B), no public interest review is required.

## 7.6 Coastal Zone Management Act

According to the Coastal Zone Management Act (CZMA) Section 307 (16 U.S.C. § 1456), a Federal consistency requirement applies when any Federal activity, within or outside the coastal zone, is reasonably foreseen to affect any land or water use or natural resource of the coastal zone. The proposed project and its effects occur on land within the Quileute Reservation and is therefore outside the coastal zone [15 CFR 923.33(a)]. Since the project does not occur within the coastal zone, as defined by the CZMA, and there are not expected to be any impacts from the project to the coastal zone or resources of the coastal zone, no consistency determination is required.

## 7.7 National Historic Preservation Act

Section 106 of the NHPA (54 USC 300101-307108) requires Federal agencies to take into account the adverse effects proposed Federal undertakings may have on historic properties determined potentially eligible, determined eligible, or included on the NRHP. The implementing regulations for Section 106 (36 C.F.R. § 800) requires Federal agencies to consult with various parties, including the Advisory Council on Historic Preservation, the State Historic Preservation Office (SHPO), and federally recognized tribes, to identify and evaluate historic properties, and to assess and resolve effects to historic properties.

USACE completed full Section 106 consultation with the Washington SHPO and the Quileute Indian Tribe for this project. Additionally, two USACE archaeologists conducted a reconnaissance level survey on May 3, 2021. Regarding the literature and records review, the WISAARD revealed that no archaeological resources are in the project footprint; however, three archaeological sites are located within one mile of the sea dike. James Island is a place of significant cultural importance to the Quileute Indian Tribe.

The USACE notified the Quileute Indian Tribe on January 25, 2021, pursuant to 36 C.F.R. § 800.3(f) about the project to identify properties to which they may attach religious or cultural significance. The Tribe responded on January 26, 2021, and said they place no religious or cultural significance on the sea dike. The Quileute Indian Tribe does not want the structure listed on the National Register of Historic Places.

## 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. According to 40 CFR Section 93.153 (c)(2)(ix), the requirement for a conformity determination is waived where the proposal would result in a clearly *de minimis* increase in emissions, as long as the project involves maintenance dredging and disposal operations in which no new depths are required, and approved disposal sites are used. The proposed action is repair and placement at approved sites with no new widths or depths, in an attainment area where no more than *de minimis* increase in emissions would be generated. The action is therefore exempt from the requirement for a General Conformity Determination.

## 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 representation in this process through coordination with the USACE on matters involving the repair of the sea dike to maintain navigability of the marina and access to ocean fisheries. A letter was sent to the Tribe on January 14, 2021, followed by an email exchange where the Tribe expressed no concerns regarding the proposed work at the sea dike. Additionally, the USACE has consulted with tribal biologists regarding avoiding impacts to tribal fisheries resources.

The USACE has concluded the following:

- (1) The work protects access to usual and accustomed fishing and gathering areas;
- (2) The work would 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 would 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. It commits the U.S. to take measures to protect identified ecosystems of special importance to migratory birds against pollution, detrimental alterations, and other environmental degradations. Executive Order 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. The repair actions would occur after the critical nesting period in the spring.

### 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, and Executive Order 14008, Tackling the Climate Crisis at Home and Abroad

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 social or economic impacts. Executive Order 14008 updates Executive Order 12898 and has expanded Federal agencies’ responsibilities for assessing environmental justice consequences of their actions to include the impact of climate change on the health of the American people.

The USACE has analyzed the potential effects of the alternatives on communities within a three-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 (Section 4.13). The Quileute Indian Tribe expressed no concern regarding the proposed project on January 26, 2021 (Geyer 2021b). If the sea level were to increase due to effects from climate change, then raising the sea dike to its authorized

height of +8 MLLW would help to reduce the frequency and height of ocean waves entering the navigation channel. Thus, Alternative 2 would provide a universal benefit to persons, including any disadvantaged minority or low-income persons, or Tribal communities using the navigation channel.

### 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 to repair the sea dike would have no effect to any tidal wetlands, as the proposed repair actions would reduce wave transmission in the navigation channel and estuary. The placement site is sufficiently distant so as not to affect any wetlands.

## 8 Summary

Based on the above analysis, this project is not a major Federal action significantly affecting the quality of the human or natural environment, and therefore does not require preparation of an environmental impact statement. Conservation measures, BMPs, and coordination with Federal, State, and Tribal natural resource departments, and limiting work to the designated project footprints is sufficient to avoid significant impacts to natural resources.

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## Appendices

### Appendix A – Consultation Letters Received from the Services



#### United States Department of the Interior

FISH AND WILDLIFE SERVICE  
Washington Fish and Wildlife Office  
510 Desmond Dr. S.E., Suite 102  
Lacey, Washington 98503



In Reply Refer To:  
01EWF00-2021-I-0450

Laura Boerner  
U.S. Army Corps of Engineers, Seattle District  
ATTN: Katherine Cousins  
PO Box 3755  
Seattle, Washington 98124-3765

Dear Ms. Boerner:

Subject: Quillayute River Federal Navigation Channel, Sea Dike Repair

This letter is in response to your December 29, 2020, request for our concurrence with your determination that the proposed action in the Quillayute River estuary in Clallam County, Washington, “may affect, but is not likely to adversely affect” federally listed species. The U.S. Fish and Wildlife Service (Service) received your letter and Biological Assessment (BA), providing information in support of “may affect, not likely to adversely affect” determinations, on January 4, 2021.

Specifically, you requested informal consultation pursuant to section 7(a)(2) of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*) (Act) for the federally-listed species and critical habitat identified below.

- Bull trout (*Salvelinus confluentus*)
- Marbled murrelet (*Brachyramphus marmoratus*)

#### Project Description:

The U.S. Army Corps of Engineers (Corps) proposes to repair the Quillayute sea dike, a ‘breakwater’ structure that is part of the Federal Navigation Project in the Quillayute River estuary at La Push, Washington. The sea dike and associated jetty ensure the safety of, and adds protection for, the navigation channel, boat basin (i.e., marina and boat launch), and a U.S. Coast Guard station, from rough ocean conditions and high-river flow events (USACE 2021).

INTERIOR REGION 9  
COLUMBIA-PACIFIC NORTHWEST  
IDAHO, MONTANA\*, OREGON\*, WASHINGTON  
\*PARTIAL

While the sea dike, originally constructed in 1931, has been repaired previously, it is currently positioned below the authorized height of plus eight (+8) feet (ft) above Mean Lower Low Water (MLLW) and, thus, allows wave transmission into the inlet. Wave transmission impedes navigation and contributes to additional shoaling in the river inlet's entrance. The proposed repairs will require: staging; construction access via barge(s), boats, and/or tugboats; rock and stone (i.e., base layer) placement, repositioning, and rebuilding; and placement of additional fill. All materials placed and/or rearranged to repair the sea dike will be within the original design footprint (i.e., the area that the initial construction of the sea dike occupied, which is 40 ft wide by 100 ft long) and conform to the top elevation of +8 ft MLLW.

The Corps expects repairs to the sea dike will occur over a 90-day period between June 15 and February 15, preferably during the summer months when weather and wave action are less severe. In-water work will be completed between July 16 and October 14.

The Corps has determined that the action will have "no effect" on additional listed species and designated critical habitat that are known to occur in Clallam County. "No effect" determinations rest with the federal action agency. The Service has no regulatory or statutory authority for concurring with "no effect" determinations, and no consultation with the Service is required. We recommend that the federal action agency document their analyses on effects to listed species, and maintain that documentation as part of their project file.

Sufficient information has been provided to determine the effects of the proposed action and to conclude whether or not it would adversely affect federally-listed species and/or designated critical habitat. Our concurrence is based on information provided by the federal action agency, best available science, and complete and successful implementation of the conservation measures included by the federal action agency.

## EFFECTS TO BULL TROUT AND MARBLED MURRELET

### I. Effects to Bull Trout and Marbled Murrelet

Effects will not be measureable, will not significantly disrupt normal behaviors (i.e., the ability to successfully feed, move, and/or shelter), and are therefore considered insignificant and/or discountable because of the following:

- The action is located in the Quillayute River estuary where, at present, anadromous, adult and sub-adult bull trout occurrence is rare, and exposure to construction activities is extremely unlikely. While there was one bull trout observation in the Quillayute River in October of 2009, there is no documented bull trout spawning that occurs in the river (USACE 2021). Thus, the Service expects that bull trout use or migrate through the action area infrequently and in low numbers.

- The action area offers foraging opportunities for marbled murrelet, which have been recorded offshore from the mouth or inlet of the Quillayute River. Based on project location and baseline environmental conditions, the Service expects that marbled murrelets use (i.e., forage in), nest in, and/or migrate through the action area infrequently and in low numbers.
- All proposed repairs to the sea dike will occur during the allowable work window. The work window includes summer months when environmental conditions are favorable. Construction activities will occur during low tides and in daylight, when bull trout and marbled murrelets are most likely to be absent from the action area.
- Construction activities will have impacts to water quality, native substrates/benthos, and will result in temporary sources of elevated sound and visual disturbance. These impacts will be temporary and limited in physical extent and duration. Any bull trout and/or marbled murrelets that are exposed to construction activities are likely to exhibit a mild behavioral response (e.g., avoidance of the ongoing work). Adverse effects, including injury and mortality, are extremely unlikely and considered discountable.

## II. Effects to Habitat and Prey (Bull Trout and Marbled Murrelet)

The action area and the lower Quillayute River are excluded from the bull trout critical habitat designation (i.e., as Quileute Tribal lands), and, thus, there will be no effect on designated bull trout critical habitat.

The proposed action will repair the sea dike within the original design footprint (i.e., the area that the initial construction of the sea dike occupied, which is 40 ft wide by 100 ft long). Thus, proposed repairs (e.g., staging, barging, and construction activities) are not expected to impede foraging or migration, and will not result in a long-term reduction in the abundance or distribution of bull trout and/or marbled murrelet prey (e.g., surf smelt [*Hypomesus pretiosus*]). Proposed repairs will have limited impacts to water quality and native substrates/benthos, but little or no impact(s) to submerged aquatic vegetation or marine forage fish habitat along the existing sea dike footprint. These effects are considered insignificant.

With full and successful implementation of the conservation measures and permit terms and conditions, the Service expects that the effects of the proposed action will neither measurably degrade nor diminish habitat functions or prey resources in the action area.

## CONCLUSION

This concludes consultation pursuant to the regulations implementing the Act (50 CFR 402.13). The Service's review and concurrence with your effect determinations are based on implementation of the project as described. It is the responsibility of the federal action agency to ensure that the projects they authorize or carry out are in compliance with the regulatory permit and the Act. If a permittee or the federal action agency deviates from the measures outlined in a permit or project description, then the federal action agency has the obligation to reinstate consultation and comply with section 7(d).

This project should be re-analyzed and re-initiation may be necessary if: 1) new information reveals effects of the action that may affect listed species or critical habitat in a manner, or to an extent, not considered in this consultation; 2) if the action is subsequently modified in a manner that causes an effect to a listed species or critical habitat that was not considered in this consultation; and/or, 3) a new species is listed or critical habitat is designated that may be affected by this project.

This letter constitutes a complete response by the Service to your request for informal consultation. A record of this consultation is on file at the Washington Fish and Wildlife Office, in Lacey, Washington. If you have any questions about this letter or our shared responsibilities under the Act, please contact Molly Good (molly\_good@fws.gov; 360-753-5822) or Ryan McReynolds (ryan\_mcreynolds@fws.gov; 360-753-6047).

Sincerely,

THOMAS  
MCREYNOLDS

Digitally signed by  
THOMAS MCREYNOLDS  
Date: 2021.04.22  
17:37:04 -0700

for Brad Thompson, State Supervisor  
Washington Fish and Wildlife Office

#### References

USACE (U.S. Army Corps of Engineers). 2021. Biological Assessment: Quillayute River Federal Navigation Project, Sea Dike Repair, La Push, Clallam County, Washington. U.S. Army Corps of Engineers, Seattle, Washington, 51.





**UNITED STATES DEPARTMENT OF COMMERCE**  
**National Oceanic and Atmospheric Administration**  
NATIONAL MARINE FISHERIES SERVICE  
West Coast Region  
Oregon and Washington Coastal Area Office  
510 Desmond Drive SE, Suite 103  
Lacey WA, 98503

Refer to NMFS No:  
WCRO-2021-00002

May 26, 2021

Laura Boerner  
Chief, Planning, Environmental  
and Cultural Resources Branch  
USACE, Seattle District  
PO Box 3755  
Seattle, WA 98124-3755

Re: Endangered Species Act Section 7(a)(2) Concurrence Letter and Magnuson-Stevens  
Fishery Conservation and Management Act Essential Fish Habitat Response for the  
Quillayute Sea Dike Repair, La Push, Clallam County, WA, HUC 171001010900.

Dear Ms. Boerner:

On January 4, 2021, NOAA's National Marine Fisheries Service (NMFS) received your request for a written concurrence that the United States Army Corps of Engineers (USACE) proposal to repair the sea dike at the Quillayute River estuary in Clallam County under the Rivers and Harbors Act, is not likely to adversely affect (NLAA) species listed as threatened or endangered or critical habitats designated under the Endangered Species Act (ESA). This response to your request was prepared by NMFS pursuant to section 7(a)(2) of the ESA and implementing regulations at 50 CFR 402.

The USACE's request for informal consultation indicate their determination was Essential Fish Habitat (EFH) would not be adversely affected. The standard for adverse effects is slightly different between the ESA and EFH, and NMFS' review pursuant to section 305(b) of the Magnuson-Stevens Fishery Conservation and Management Act (MSA) (16 U.S.C. 1855(b)) indicates the likely effects of the proposed action on EFH, would adversely affect the EFH of Pacific salmon, groundfish, and coastal pelagic species.

For these reasons, the enclosed document includes a brief analysis supporting our concurrence that the proposed action does not adversely affect the Southern Distinct Population Segment (SDPS) Green Sturgeon, the SPDS Pacific Eulachon, Leatherback Turtles, Southern Resident Killer Whales (SRKW) or their designated or proposed critical habitats, and presents the results of our EFH consultation. Three EFH recommendations are provided.



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

#### **Consultation History**

In January 2021, NMFS received a request from the USACE for informal consultation with a request for our concurrence that the proposed Sea Dike repairs are not likely to adversely affect ESA listed species (green sturgeon, Pacific eulachon) or their designated critical habitat. A biological assessment for the proposed action was included. The consultation was assigned on May 17, 2021.

After a review of the BA and request, and telephone conversations between the NMFS staff biologist and the USACE project manager to discuss the completeness of the request and information provided, the USACE's request for concurrence that the project is NLAA was modified to include leatherback turtles and their critical habitat, and SRKW and their proposed critical habitat.

The consultation was initiated on May 18, 2021.

#### **Proposed Action and Action Area**

The proposed project includes permanent repairs to the sea dike structure that are expected to occur over a 90-day period between July 16 and October 14. The project will return the sea dike to its authorized height of 15 feet. The sea dike (or "jetty") was last repaired in 1962, and rough sea conditions and high winter flows from the Quillayute River have degraded the structure. Repairs are required to ensure safe navigation conditions. All materials placed and rearranged will occur within the design footprint and conform to the top elevation of +8 feet Mean Lower Low Water (MLLW). The design footprint is the area that the initial construction of the sea dike occupied, and that is 40 feet wide by 100 feet long. Repairs to the sea dike will likely take place along its entire length. Staging of equipment and materials may occur at the boat basin within the action area. The total volume of repair material will be up to approximately 10,000 tons of armor stone. The armor stone size will range between approximately 3 and 12 tons depending on the density of stone. Additionally, the project will require a base layer of 2- to 12-inch stone to fill the voids in the remnant structure up to an elevation of +4 feet MLLW.

Access to the sea dike, and all materials and equipment transported to the sea dike will be by barge. Equipment and materials may be transported by truck to the boat basin to be staged before being barged to the sea dike, or barged directly to the sea dike, or a combination of both access routes.

The work barge maybe anchored at the sea dike with spuds that are pushed into the substrate. Rock barges will be brought in with tugboats to the work barge as needed.

Best Management Practices to minimize effects include:

- Equipment will be washed before it is brought to the site to reduce introduction of fuels and oils;
- Equipment will have no leaks of oil, hydraulic fluid, or diesel fuel;
- Equipment will be monitored and maintained;
- Refueling will be monitored;
- Marine debris or other refuse will be removed and disposed of at an approved site.



Figure 1. Project site showing sea wall to be repaired and adjacent natural and manmade features.

The project area includes a quarter-mile radius around the Quillayute sea dike, which includes James and Rock Islands, portions of the navigation channel and the upper spit, the south jetty, a portion of the Quillayute estuary, the boat basin, and waterfront area of La Push.

The action area is based upon likely construction impacts, and is a roughly half-mile radius of the proposed repair of the Quillayute sea dike and staging area at the boat basin; the roadway into the Quillayute boat basin, where transportation of equipment and materials may occur; and the waters along the Olympic coastline to account for a possible barging operation. These areas encompass all possible effects of the project because they include the sea dike, navigation

channel where barges may travel and the boat basin where the contractors may stage equipment and materials.

The BA indicates that the condition of the sea dike affects the boat basin, and when the jetty is structurally sufficient it provides wave attenuation for vessels moored in the boat basin. We considered under the ESA whether or not the proposed action would cause any other activities and determined that, based on stated purpose and need, the sea wall supports vessel traffic and moorage at the location, but that the project will not alter the amount or intensity of vessel use or presence at this location, and for the life of the project, the effects associated with vessel use and presence will be consistent with baseline conditions.

Because the action area extends a half-mile radius from the project site, it contains designated critical leatherback sea turtles, and green sturgeon, and proposed critical habitat for southern resident killer whales, as well as containing areas that are designated as EFH for Pacific salmonids, ground fish and coastal pelagic species. Eulachon may also occur in the action area, but do not have designated critical habitat there. The area is also outside of the recently designated critical habitat for humpback whales.

#### **Action Agency's Effects Determination**

The USACE determined that all species and critical habitats (designated and proposed) are not likely to be adversely affected.

The action agency considered effects to EFH not adverse, however, because adverse effects do not include qualifiers regarding significance or insignificance, we consider effects to features of critical habitat and for Pacific Coast salmon, Pacific Coast groundfish, and coastal pelagic species species to be briefly adversely affected. Our evaluation of these effects is presented in a separate section of this document.

### **ENDANGERED SPECIES ACT**

#### **Effects of the Action**

Under the ESA, "effects of the action" are all consequences to listed species or critical habitat that are caused by the proposed action, including the consequences of other activities that are caused by the proposed action. A consequence is caused by the proposed action if it would not occur but for the proposed action and it is reasonably certain to occur. Effects of the action may occur later in time and may include consequences occurring outside the immediate area involved in the action (50 CFR 402.02). In our analysis, which describes the effects of the proposed action, we considered 50 CFR 402.17(a) and (b). When evaluating whether the proposed action is not likely to adversely affect listed species or critical habitat, NMFS considers whether the effects are expected to be completely beneficial, insignificant, or discountable. Completely beneficial effects are contemporaneous positive effects without any adverse effects to the species or critical habitat. Insignificant effects relate to the size of the impact and should never reach the scale where take occurs. Effects are considered discountable if they are extremely unlikely to occur.



The likely effects of the Federal project consist of the temporary effects of construction, as well as the incremental long-term effects of altering wave action to protect the navigation channel. The temporary effects are possible water quality diminishments, modified substrate, and disruption of forage fish spawning conditions, and the transit of and presence of construction barges. We evaluate if exposure to these by species and features of critical habitat. If exposure is not discountable, we determine if the response among listed species and features of critical habitat are or are not significant.

Leatherback Sea Turtles and CH: Western Pacific leatherbacks are more abundant in coastal waters during periods of intense coastal upwelling, which may create favorable foraging conditions, from early summer to late fall, when water temperatures reach their warmest annual levels (Sato, 2017. Internal citations omitted). In Washington, sighting and stranding records occur from May through October. As juveniles mature, they swim to higher latitudes in the spring where food is abundant, but return to lower latitudes before winter to stay warm (Gaspar et al. 2012, as cited in Sato 2017). Despite this, presence in Washington waters is rare. There were 78 documented occurrences from a variety of sources between 1975 and 2013, with records extending from the mouth of the Columbia River north to Cape Flattery, and aerial surveys conducted off the coasts of California, Oregon, and Washington between 1989 and 1992 noted only 14 leatherbacks in Washington waters (Sato, 2017). The likelihood of leatherback exposure to construction barges or sediment is extremely low, even more so because migration areas are in deeper water than the action area. Because the likelihood of exposure of any individual leatherback sea turtles to vessels or suspended sediment during project work is extremely low, we consider effects to this species discountable.

Leatherbacks consume jelly fishes and tunicates, and can also prey upon cephalopods. The primary constituent element essential for conservation of leatherback turtles is the occurrence of prey species, primarily scyphomedusae of the order Semaestomeae (*Chrysaora*, *Aurelia*, *Phacellophora*, and *Cyanea*), of sufficient condition, distribution, diversity, abundance and density necessary to support individual as well as population growth, reproduction, and development of leatherbacks. These species are not prevalent in the action area, and we consider the project effects are not likely to co-occur with brown sea nettles. If moon jellies or tunicates are exposed to brief water quality reductions or modified substrate, these prey are not likely to be diminished in abundance or presence in a way that impairs them as an available element of critical habitat, and the effects on critical habitat for leatherbacks is insignificant.

SDPS Green Sturgeon and CH: As subadults and adults, members of the southern DPS of green sturgeon migrate seasonally along the West Coast. Subadult and adult green sturgeon congregate in bays and estuaries in Washington, Oregon, and California during the summer and fall months. During winter and spring months they congregate off of the northern Vancouver Island in British Columbia, Canada. Green sturgeon prefer relatively shallow marine depths of 66-197 feet (Huff et al. 2011), deeper than areas within the action area, and within the Quillayute River and estuary, there are no reports of green sturgeon taken in the Tribal fishery (J. Hagen, Marine Policy Advisor, Quileute Natural Resources, pers. comm. as cited in USACE BA). We consider the likelihood of species presence during the proposed in-water work to be very low but not discountable. If green sturgeon were present during work, they could be exposed to localized turbidity and vessel presence. Green sturgeon are bottom

dwelling fish that stir sediments to prey on species and are highly adapted to suspended sediments. Exposure to sediment is unlikely to cause adverse responses, and response, therefore is considered insignificant.

Because of their preference for deeper water, we consider the likelihood that individuals will respond to vessel presence to be low, and thus exposure and response are insignificant.

The physical and biological features essential for the conservation of the Southern DPS of green sturgeon in marine waters are:

- (i) *Safe Migration*. A migratory pathway necessary for the safe and timely passage of Southern DPS fish within marine and between estuarine and marine habitats.
- (ii) *Water quality*. Nearshore marine waters with adequate dissolved oxygen levels and acceptably low levels of contaminants (e.g., pesticides, organochlorines, elevated levels of heavy metals) that may disrupt the normal behavior, growth, and viability of subadult and adult green sturgeon.
- (iii) *Food resources*. Abundant prey items for subadults and adults, which may include benthic invertebrates and fishes.

The migration corridor is outside of the action area and therefore effects to this safe passage are discountable. While water quality and sediments will be disturbed by the proposed action, suspended sediment is not likely to impair values for SPDS green sturgeon migration, and any effects are insignificant. Similarly, sediments at the site are larger cobbles and stones, less suitable to providing preferred prey and easy foraging (sturgeon rely on Ampullae of Lorenzini (special sensing organs that allow them to detect electrical signals given off by prey in murky waters and substrates. They then, they use their long, flexible "lips" (i.e., protrusible jaw) to suck up food from the bottom). Effects of the proposed work on prey abundance is insignificant.

SRKW and Critical Habitat: SRKW may be present on the coast of Washington throughout the year. The SRKW monitored off the Olympic coast spend about 10 to 16 days annually near the Quillayute River (Hanson et al. 2018), and have been observed periodically entering the Quillayute estuary (J. Hagen, Marine Policy Advisor, Quileute Natural Resources, pers. comm.). Both spring Chinook, preferred SRKW prey, and chum salmon, the next most common prey, are present in the Quillayute, but these are not listed runs. The 4 month in water work timing of July 16- October 14 avoids peak adult salmon run timing November, through spring, and therefore we do not expect SRKW to be in pursuit of prey fishes at this location during the work.

Construction vessels may be brought in and staged over a longer period before work begins (June 15 - Feb 15) so SRKW could be present when vessels transit to or from the action area. We expect the USACE to follow current approach regulations to keep vessels 200 yards away from SRKW. Despite this, if SRKW are present when construction barges arrive or leave the project site, SRKW will notice and are likely to respond vessel noise. SRKW have been noted to have disrupted foraging behavior when vessels are nearby (Holt, et al. 2021). However, the period of



vessels transiting to or from the action area is expected to be very brief (measured in hours, at a maximum) and disrupted feeding behavior if it occurs, it is expected this behavior would abate after the vessels are stationed and the engines cease operating. We consider effects on SRKW will be insignificant.

Proposed critical habitat for SRKW includes areas deeper than 20 feet in water adjacent to Washington State, including Clallam County, where the proposed action will occur. The action area does include a small area where waters are likely at a depth that falls within the area proposed designated. The primary constituent elements for SRKW proposed critical habitat along the Washington coast are:

- (i) *Water quality* to support growth and development;
- (ii) *Prey species* of sufficient quantity, quality, and availability to support individual growth, reproduction, and development, as well as overall population growth; and
- (iii) *Passage conditions* to allow for migration, resting, and foraging.

As described above in earlier sections, the most likely effects are brief diminishments to water quality in a small footprint, to substrate, and disturbance associated with construction vessels. The transitory nature of these effects will be insignificant on water quality, may have a very slight effect on some individual salmonids (prey species of SRKW) if they are present in the action area, but which the work window is designed to minimize, and will not impair migration conditions. All effects to features of SRKW PCEs are insignificant.

SDPS Pacific Eulachon: —Eulachon live in saltwater, spawn in freshwater, and migrate into some of the major river systems along the west coast of North America to spawn in the early spring every year. Known spawning rivers in Washington include the Bear, Columbia (Lower and major tributaries), Cowlitz, Elochoman, Elwah, Grays, Kalama, Lewis, Naselle, Nemah, Quinault, Queets, Toutle and Wynoochee (WDNR 2014). The Bogachiel River, a tributary to the Quillayute River, has been listed as a eulachon spawning location (NMFS 2006; NMFS 2017); however, there are no observations of adult or larval eulachon at this location. Juvenile eulachon move offshore to deeper (66-492 feet) areas near the bottom on the continental shelf (Hay and McCarter 2000, as cited in USACE BA), and environmental studies of the Quillayute estuary found no eulachon present (Chitwood 1981; SAIC 2003, as cited in the BA). It is unlikely that individual eulachon will be present in the action area while work occurs. There is one report of a single fish being caught in a gill net approximately five miles upstream in the Quillayute River in January 2019 (J. Hagen, Marine Policy Advisor, Quileute Natural Resources, pers. comm. as cited in USACE BA). No other reports are found of the fish being caught or observed in the action area. Exposure to project effects are discountable.

The Quillayute and its estuary are not designated as critical habitat. Nearshore and marine areas are not designated as critical habitat.

## Conclusion

Based on this analysis, NMFS concurs with the USACE that the proposed action is not likely to adversely affect the subject listed species or their designated or proposed critical habitats.

#### Reinitiation of Consultation

Reinitiation of consultation is required and shall be requested by the USACE or by NMFS, where discretionary Federal involvement or control over the action has been retained or is authorized by law and (1) the proposed action causes take; (2) new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered; (3) the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in the written concurrence; or (4) a new species is listed or critical habitat designated that may be affected by the identified action (50 CFR 402.16). This concludes the ESA consultation.

#### MAGNUSON-STEVENSON FISHERY CONSERVATION AND MANAGEMENT ACT

Section 305(b) of the MSA directs Federal agencies to consult with NMFS on all actions or proposed actions that may adversely affect EFH. Under the MSA, this consultation is intended to promote the conservation of EFH as necessary to support sustainable fisheries and the managed species' contribution to a healthy ecosystem. For the purposes of the MSA, EFH means "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity", and includes the associated physical, chemical, and biological properties that are used by fish (50 CFR 600.10). Adverse effect means any impact that reduces quality or quantity of EFH, and may include direct or indirect physical, chemical, or biological alteration of the waters or substrate and loss of (or injury to) benthic organisms, prey species and their habitat, and other ecosystem components, if such modifications reduce the quality or quantity of EFH. Adverse effects may result from actions occurring within EFH or outside of it and may include direct, indirect, site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions (50 CFR 600.810). Section 305(b) of the MSA also requires NMFS to recommend measures that can be taken by the action agency to conserve EFH. Such recommendations may include measures to avoid, minimize, mitigate, or otherwise offset the adverse effects of the action on EFH (50 CFR 600.905(b)).

The Pacific Fishery Management Council manages the fisheries for coho, chinook, and Puget Sound Pink Salmon and has defined EFH for these three species. When the EFH needs of all these species at each life stage is considered as a whole, the EFH for the Pacific coast salmon fishery is broad, covering freshwater, estuarine, and marine environments. Salmon EFH extends from the nearshore and tidal submerged environments within state territorial waters out to the full extent of the exclusive economic zone (200 miles or 370.4km) offshore of Washington. Habitat areas of particular concern (HAPCs) for salmon include estuaries such as bays, sounds, inlets, river mouths and deltas, pocket estuaries, and lagoons influenced by ocean and freshwater, and also include submerged aquatic vegetation includes the canopy kelps and eelgrass.

Groundfish include many species of rockfish, sablefish, flatfish, and Pacific whiting that are often (but not exclusively) found on or near the ocean floor or other structures. Groundfish EFH includes all waters and substrate from the high tide line (including estuaries) to 3,500 meters

(1,914 fathoms) in depth. HAPCs for groundfish off of Washington include all waters and sea bottom in state waters shoreward from the three nautical mile boundary of the territorial sea shoreward to MHHW.

The coastal pelagic species (CPS) fishery includes four finfish (Pacific sardine, Pacific chub mackerel, northern anchovy, and jack mackerel), and market squid. The east-west boundary of CPS EFH includes all marine and estuary waters from the coasts of California, Oregon, and Washington to the limits of the EEZ and above the thermocline where sea surface temperatures range between 10° and 26° centigrade. The east-west boundary of CPS EFH includes all marine and estuary waters from the coasts of California, Oregon, and Washington to the limits of the EEZ and above the thermocline where sea surface temperatures range between 10° and 26° centigrade.

NMFS determined the proposed action would adversely affect water quality, substrate, and prey. Each of these would all be briefly impaired, and the jetty structure will interrupt migration areas and alter the interaction between the ocean and the estuary. These changes affect EFH for Pacific salmon, groundfish, and coastal pelagic species.

#### **Essential Fish Habitat Conservation Recommendations**

NMFS determined that the following conservation recommendations are necessary to avoid, minimize, mitigate, or otherwise offset the impact of the proposed action on EFH.

- 1) Avoid barge ground out;
- 2) Maintain the gap between the lower spit and the sea dike to ensure migration corridor remains open;
- 3) Evaluate if any green infrastructure options are suitable for this site.

As required by section 305(b)(4)(B) of the MSA, the USACE must provide a detailed response in writing to NMFS within 30 days after receiving an EFH Conservation Recommendation. Such a response must be provided at least 10 days prior to final approval of the action if the response is inconsistent with any of NMFS' EFH Conservation Recommendations unless NMFS and the Federal agency have agreed to use alternative time frames for the Federal agency response. The response must include a description of the measures proposed by the agency for avoiding, minimizing, mitigating, or otherwise offsetting the impact of the activity on EFH. In the case of a response that is inconsistent with the Conservation Recommendations, the Federal agency must explain its reasons for not following the recommendations, including the scientific justification for any disagreements with NMFS over the anticipated effects of the action and the measures needed to avoid, minimize, mitigate, or offset such effects (50 CFR 600.920(k)(1)).

The USACE must reinitiate EFH consultation with NMFS if the proposed action is substantially revised in a way that may adversely affect EFH, or if new information becomes available that affects the basis for NMFS' EFH conservation recommendations (50 CFR 600. 920(l)).

Please direct questions regarding this letter to Bonnie Shorin at [bonnie.shorin@noaa.gov](mailto:bonnie.shorin@noaa.gov) or by telephone at 360 995 2750.

Sincerely,



Scott A. Hecht, Ph.D.  
Branch Chief  
Washington Coast Lower Columbia River Branch  
Oregon Washington Coastal Area Office

cc: Katherine Cousins, USACE



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## Appendix B – Essential Fish Habitat Final Response Letter to NMFS



DEPARTMENT OF THE ARMY  
U.S. ARMY CORPS OF ENGINEERS, SEATTLE DISTRICT  
PO BOX 3755  
SEATTLE, WA 98124-3755

June 30, 2021

Planning, Environmental and Cultural  
Resources Branch

Mr. Kim Kratz  
Assistant Regional Administrator  
Oregon Washington Coastal Office  
National Marine Fisheries Service  
1201 NE Lloyd Blvd, Suite 1100  
Portland, OR 97232-1202

Dear Mr. Kratz:

This letter is in response to the Essential Fish Habitat (EFH) Conservation Recommendations for the Quillayute Sea Dike Repair Project at La Push, Washington (WCR- WCRO-2021-00002). On January 4, 2021, the U.S. Army Corps of Engineers, Seattle District (USACE) submitted a biological assessment (BA) requesting informal consultation with the National Marine Fisheries Service (NMFS). The NMFS initiated work on the consultation for the proposed project on May 18, 2021. After review of the BA and staff-level telephone conversations between the NMFS and the USACE to discuss the completeness of the information provided, the USACE's request for concurrence that the project is not likely to adversely affect federally listed species was modified to include leatherback sea turtle and its critical habitat as well as Southern Resident killer whale and its proposed critical habitat. On May 26, 2021, the NMFS concurred that the proposed action is not likely to adversely affect the federally listed species or their designated or proposed critical habitats. The NMFS determined that the proposed project would adversely affect the EFH of Pacific salmon, groundfish, and coastal pelagic species and provided three conservation recommendations to avoid, minimize, mitigate, or otherwise offset the impacts of the proposed action on EFH. The USACE has the following responses to the three EFH conservation recommendations for the proposed action:

- (1) Avoid barge ground out.

The USACE has incorporated this recommendation in the list of Best Management Practices (BMPs) and conservation measures for the proposed project. The USACE normally requires that no barge grounding occur for this type of work, and this conservation measure is now incorporated as a BMP.

- (2) Maintain the gap between the lower spit and the sea dike to ensure migration corridor remains open.



CENWS-PMP-E  
SUBJECT: Quillayute Sea Dike Repair (WCR- WCRO-2021-00002)

The USACE has already incorporated this recommendation into the proposed action's design. The USACE coastal engineers did consider an alternative to close the gap between the sea dike and the Quillayute lower spit during the design phase, but rejected this alternative. During high water, the gap provides some conveyance of flow that otherwise is forced through the main inlet. Engineers found that flooding in that area is due to the coincidence of high river flows and high tide levels along with precipitation events. Leaving the gap between the sea dike and lower spit helps to alleviate backwater effects on the mainstem Quillayute River. For this reason, the alternative to close the gap between the sea dike and lower spit was considered but not carried forward. The USACE will adhere to this conservation recommendation.

(3) Evaluate if any green infrastructure options are suitable for this site.

Green infrastructure such as log jams or plantings are not an option for the sea dike repair action due to the severe wave energy from the long fetch across the Pacific Ocean at this site. However, the sea dike is a part of the larger navigation project, which the USACE manages with the engineering with nature principles of beneficial placement of dredge material both on the Quillayute River spit (Rialto Spit) and First Beach. It is also expected that soon after the armor rock is placed on site, it would be colonized by algae and invertebrate species that are adapted to high wave action areas thus providing greater surface area of intertidal habitat for invertebrates.

If you have any questions or require more details, please contact our ESA Coordinator, Dr. Fred Goetz (206-764-3515; [Frederick.A.Goetz@usace.army.mil](mailto:Frederick.A.Goetz@usace.army.mil)) or Ms. Katherine Cousins of the Planning, Environmental, and Cultural Resources Branch (206-764-6968; [Katherine.L.Cousins@usace.army.mil](mailto:Katherine.L.Cousins@usace.army.mil)).

Sincerely,

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Laura A. Boerner, LG, LHG  
Chief, Planning, Environmental and  
Cultural Resources Branch

## Appendix C – Response Letters from Washington State Historic Preservation Office



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

January 19, 2021

Ms. Laura A. Boerner  
Environmental Resources Section  
Corps of Engineers – Seattle District  
PO Box 3755  
Seattle, Washington 98124-3755

Re: Quillayute River Federal Navigation Project Sea Dike Repair Project  
Log No.: 2021-01-00226-COE-S

Dear Ms. Boerner:

Thank you for contacting our department. We have reviewed the materials you provided for the Area of Potential Effect (APE) for the proposed Quillayute River Federal Navigation Project Sea Dike Repair 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 you consult with the concerned tribal governments, provide the results of the professional cultural resources review, and render 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,

A handwritten signature in blue ink, appearing to read 'Rob Whitlam', is written over a horizontal line.

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

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

March 23, 2021

Laura Boerner, LG, LHG  
Chief, Planning, Environmental and  
Cultural Resources Branch  
US Army Corps of Engineers - Seattle District

In future correspondence please refer to:  
Project Tracking Code: 2021-01-00226  
Property: Quillayute River Federal Navigation Project  
Re: More Information Needed

Dear Laura Boerner:

Thank you for contacting the Washington State Historic Preservation Officer (SHPO) and Department of Archaeology and Historic Preservation (DAHP) regarding the above referenced proposal. In response, we have reviewed the materials you provided for this project. In order to complete our review we request the following information be provided to our office:

- Please record and evaluate the Quillayute sea dike for its eligibility for listing in the National Register of Historic Places (NRHP) on a Historic Property Inventory Form (HPIF). This is intended to formally determine if the Quillayute sea dike is eligible or ineligible for the NRHP, and thus assess all potential effects the undertaking may, or may not, have on historic properties.
- We would like to use this opportunity to highly encourage the agency ensure that any HPIFs completed for this undertaking be done by a cultural resource professional meeting the SOI Professional Qualification Standards in History or Architectural History ([https://www.nps.gov/history/local-law/arch\\_stnds\\_9.htm](https://www.nps.gov/history/local-law/arch_stnds_9.htm)).

We appreciate receiving copies of any correspondence or comments from concerned tribes and 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 SHPO pursuant to Section 106 of the National Historic Preservation Act and its implementing regulations 36 CFR 800.

Thank you for the opportunity to review and comment. Please ensure that the DAHP Project Number (a.k.a. Project Tracking Code) is shared with any hired cultural resource consultants and is attached to any communications or submitted reports. If you have any questions, please feel free to contact me.

Sincerely,

Holly Borth  
Project Compliance Reviewer  
(360) 890-0174  
holly.borth@dahp.wa.gov

State of Washington • Department of Archaeology & Historic Preservation  
P.O. Box 48343 • Olympia, Washington 98504-8343 • (360) 586-3065  
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Allyson Brooks Ph.D., Director  
State Historic Preservation Officer

July 7, 2021

Laura Boerner, LG, LHG  
Chief, Planning, Environmental and  
Cultural Resources Branch  
US Army Corps of Engineers - Seattle District

In future correspondence please refer to:  
Project Tracking Code: 2021-01-00226  
Property: Quillayute River Sea Dike Project  
Re: No Historic Properties Affected

Dear Laura Boerner:

Thank you for contacting the Washington State Historic Preservation Officer (SHPO) and Department of Archaeology and Historic Preservation (DAHP) regarding the above referenced proposal. Your communication on this action has been reviewed on behalf of the SHPO under provisions of Section 106 of the National Historic Preservation Act of 1966 (as amended) and 36 CFR Part 800. Our review is based upon documentation provided in your submittal.

First, we concur that Property ID: 724385, the Quillayute River Sea Dike, is not eligible for listing in the National Register of Historic Places. We also concur that no historic properties will be affected by the current project as proposed. As a result of our concurrence, further contact with DAHP on this proposal is not necessary. However, if new information about affected resources becomes available and/or the project scope of work changes significantly, please resume consultation as our assessment may be revised. Also, if any archaeological resources are uncovered during construction, please halt work immediately in the area of discovery and contact the appropriate Native American Tribes and DAHP for further consultation.

Thank you for the opportunity to review and comment. Please ensure that the DAHP Project Number (a.k.a. Project Tracking Code) is shared with any hired cultural resource consultants and is attached to any communications or submitted reports. If you have any questions, please feel free to contact me.

Sincerely,

Holly Borth  
Project Compliance Reviewer  
(360) 890-0174  
holly.borth@dahp.wa.gov

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