FINDING OF NO SIGNIFICANT IMPACT

Alki Coastal Erosion Control Project
Section 103 Coastal Storm Damage Reduction

Seattle, King County, Washington

The Seattle District, U.S. Army Corps of Engineers (USACE) has conducted an environmental analysis in accordance with the National Environmental Policy Act of 1969, as amended. The Final Supplemental Environmental Assessment (SEA) dated 15 July 2020, for the Alki Coastal Erosion Control Project, Section 103 Coastal Storm Damage Reduction includes additional construction techniques that were not addressed within the 2019 Alki Coastal Erosion Control Project, Section 103 Coastal Storm Damage Reduction Integrated Detailed Project Report and Final Environmental Assessment (IDPR & FEA). This project is in West Seattle, King County, Washington.

The September 2019 document proposed the construction of a 500 linear foot seawall to provide coastal erosion protection for public utilities, roadways, and public lands. The new seawall is planned to be constructed immediately adjacent to and seaward of the existing deteriorated wall in the summer of 2020. The Final SEA, incorporated herein by reference, evaluated additional activities to include the potential installation of up to 75 sheet piles using a vibratory hammer along with the construction of a temporary 30-foot by 40-foot staging pad for a drill rig and two excavators.

Two alternatives were evaluated; the first alternative is the preferred alternative identified in the IDPR & FEA and the second alternative is the preferred alternative within the SEA and includes proposed, revised construction techniques. Both alternatives consist of a new soldier pile wall with precast concrete lagging constructed immediately in front of the existing seawall structure to a height of 22 feet above mean low low water (MLLW); the height is two feet higher than the existing structure to account for storm wave heights and future sea level rise. The second alternative includes potential installation of up to 75 sheet piles using a vibratory hammer along with the construction of a temporary 30-foot by 40-foot staging pad for a drill rig and two excavators. Chapter 3 of the SEA provides the analysis and comparison of environmental effects of the two alternatives.

For the two alternatives, the potential effects were analyzed for resources affected by the proposed changes in construction techniques. A summary assessment of the potential effects of the proposed action are listed in Table 1:

	Insignificant effects	Insignificant effects as a result of mitigation	Resource unaffected by action
Aesthetics	☒	☐	☐
Air quality	☒	☐	☐
Aquatic resources (Submerged aquatic vegetation	☒	☐	☐
Birds	☐	☒	☐
Fish	☐	☒	☐
Shellfish	☒	☐	☐
Threatened/Endangered species	☐	☒	☐
Historic properties	☒	☐	☐
Other cultural resources	☒	☐	☐
Hazardous, toxic & radioactive waste	☐	☐	☒
Hydrology	☐	☐	☒
Land use	☐	☐	☒
Noise levels (air)	☒	☐	☐
Noise levels (underwater)	☐	☒	☐
Public infrastructure	☒	☐	☐
Recreation	☒	☐	☐
Environmental justice	☒	☐	☐
Soils	☒	☐	☐
Tribal trust resources	☒	☐	☐
Water quality	☐	☒	☐
Climate change	☐	☐	☒
Public Health and Safety	☐	☐	☒
Sea Level Change	☐	☐	☒

All practical 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 IDPR & FEA and the SEA will be implemented to minimize impacts. Avoidance and minimization measures include compliance with the Water Quality Certification, observance of the designated work window of July 16 through February 15, working at low tide in the dry to minimize in-water noise impacts, and periodic onsite monitoring to ensure BMPs are minimizing impacts to protected species.

Public review of the draft SEA was completed on June 24, 2020. One comment letter was submitted by the Suquamish Indian Tribe during the public review period and has been responded to in the Final SEA and finding of no significant impact (FONSI).

As a result of their comments and coordination with the Suquamish Indian Tribe, the final SEA and FONSI were changed by including monitoring for potential protected species disturbance during seawall construction by USACE biologists.

ENDANGERED SPECIES ACT

Pursuant to section 7 of the Endangered Species Act of 1973, as amended, USACE determined that the proposed project may affect but is not likely to adversely affect the following federally listed species or their designated critical habitat: Puget Sound Chinook salmon, Puget Sound steelhead, boccacio, eulachon, canary rockfish, yelloweye rockfish, green sturgeon, humpback whale, southern resident killer whale, and leatherback sea turtle. The National Marine Fisheries Services (NMFS) concurred with USACE's determination on December 3, 2014. USACE contacted NMFS on April 24, 2020 to notify them of the proposed changes to the project. NMFS added the project update to their administrative record on April 28, 2020.

Pursuant to section 7 of the Endangered Species Act of 1973, as amended, USACE determined that the proposed project may affect but is not likely to adversely affect the following federally listed species or their designated critical habitat: bull trout and marbled murrelet. The U.S. Fish and Wildlife Service (USFWS) concurred with USACE's determination on September 19, 2014. The USACE contacted USFWS on March 31, 2020 to notify them of the proposed changes to the project. USFWS added the project update to their administrative record on April 1, 2020.

NATIONAL HISTORIC PRESERVATION ACT

Pursuant to Section 106 of the National Historic Preservation Act of 1966, as amended, USACE determined that the proposed project has no potential to cause adverse effects on historic properties. The Washington State Historic Preservation Officer concurred with USACE determination of no effect to historic properties in a letter dated May 16, 2020. The construction limits within the IDPR & FEA are different from what was provided to the SHPO at the start of the project. Therefore; USACE has revised the APE and on June 15, 2020 received a concurrence to the Determination of Not Historic Properties Affected with the stipulation for an unanticipated discovery plan.

CLEAN WATER ACT

Pursuant to the Clean Water Act of 1972, as amended, the discharge of dredged or fill material associated with the recommended plan has been found to be compliant with section 404 (b)(1) Guidelines (40 CFR 230). The Clean Water Act Section 404(b)(1) Guidelines evaluation is found in Appendix M of the IDPR & FEA.

An individual water quality certification pursuant to section 401 of the Clean Water Act was obtained from the Washington State Department of Ecology (Ecology) on August 15, 2019. USACE notified Ecology of the proposed changes to the construction techniques for the project and received an amended individual water quality certification on May 27, 2020. All conditions of the amended water quality certification will be implemented to minimize adverse impacts to water quality.

COASTAL ZONE MANAGEMENT ACT

A supplemental determination of consistency with the Washington State Coastal Zone Management program pursuant to the Coastal Zone Management Act of 1972 was obtained from Ecology on June 9, 2020. All conditions of the consistency determination shall be implemented in order to minimize adverse impacts to the coastal zone.

OTHER SIGNIFICANT ENVIRONMENTAL COMPLIANCE

MAGNUSON –STEVENS FISHERY CONSERVATION AND MANAGEMENT ACT

Pursuant to Essential Fish Habitat (EFH) requirements of the Magnuson-Stevens Fishery and Conservation and Management Act of 1976, as amended, the USACE consulted with NMFS in 2014 on any potential impacts to EFH as a result of the proposed project. USACE prepared a final response letter to NMFS's December 2, 2014 EFH conservation recommendations to conclude the EFH coordination and submitted the letter on June 10, 2020. USACE incorporated recommendations to minimize alteration to the substrate and remove a greater amount of intertidal fill from the beach to the north than is added by building the replacement seawall to ensure a net gain in habitat function for listed species. The recommendation to add sand in front of the seawall was not incorporated due to adverse effects to the buried toe design and high cost of disposing of native beach material off-site rather retaining the material place back in front of the wall.

EXECUTIVE ORDER 13175 CONSULTATION AND COORDINATION WITH INDIAN TRIBAL GOVERNMENTS

In accordance with Executive Order 13175, USACE identified affected tribes of the project area and provided information regarding the feasibility study, proposed Federal action, and opportunities for the tribes to provide information and comment on the project. USACE sent an electronic mail providing information on the proposed changes to the project description to the Confederated Tribes and Bands of the Yakama Nation, Tulalip Tribes of the Tulalip Reservation, Muckleshoot Indian Tribe, Snoqualmie Tribe, Sauk-Suiattle Indian Tribe, and Suquamish Indian Tribe describing the project and asking if there are any properties of cultural or religious significance that would be affected by the project.

As a result of comments received from the Suquamish Indian Tribe, a staff-level coordination teleconference was held on July 9, 2020 to resolve their comments.

FINDING

All applicable laws, executive orders, regulations, and local government plans were considered in the evaluation of alternatives. Based on these reports, the reviews by other Federal, State, and local agencies, Tribes, input of the public, and review by my staff, it is my determination that the recommended plan would not significantly affect the human environment; therefore, preparation of an Environmental Impact States is not required.

15 July 2020
Date

Alexander "Xander" L. Bullock
Colonel, Corps of Engineers
District Commander

Final Supplemental Environmental Assessment
Alki Coastal Erosion Control Project
Section 103 Coastal Storm Damage Reduction
Seattle, King County, Washington
July 2020

US Army Corps of Engineers®
Seattle District

In Partnership with:
The City of Seattle, Washington
Parks and Recreation Department

Final Supplemental Environmental Assessment
Alki Coastal Erosion Control Project
Section 103 Coastal Storm Damage Reduction
Seattle, King County, Washington
July 2020

Responsible Agency: The responsible agency for this Supplemental Environmental Assessment (SEA) is the U.S. Army Corps of Engineers, Seattle District (USACE).

Abstract: In accordance with the National Environmental Policy Act (NEPA), this document supplements the 2019 Alki Coastal Erosion Control Project, Section 103 Coastal Storm Damage Reduction Integrated Detailed Project Report and Final Environmental Assessment (IDPR & FEA). This prior document provide the basis for evaluating the impacts of the revised construction techniques. The September 2019 document proposed the construction of a 500 linear foot seawall to provide coastal erosion protection for public utilities, roadways, and public lands. The new seawall is planned to be constructed immediately adjacent to and seaward of the existing deteriorated wall in the summer of 2020. This SEA evaluates the additional impacts of the potential installation of 75 sheet piles using a vibratory hammer during the construction of the new seawall, and a staging pad.

The purpose of the project is to reduce the risk of damages to public utilities and infrastructure resulting from failure of the seawall due to coastal storm events, storm surge, and storm-induced erosion. The seawall and its components have been impacted by years of storm events and corrosion caused by salt water in Puget Sound. Per the USACE's analysis in 2019, the existing seawall has a 50 percent chance of failure by 2023. The proposed Federal action is needed to avoid the risk of catastrophic failure of the existing seawall leading to failure of the sewage pipe and its associated contamination of the waterway and beach.

The project site is located on City of Seattle Parks and Recreation lands and provides recreation, including viewing and walking/biking paths, for local residents. The existing seawall was originally constructed by the City of Seattle in 1927 and runs parallel to Beach Drive Southwest.

Under the revised proposed action, the recommended alternative remains the installation of a new Soldier Pile Wall constructed immediately in front of the existing seawall structure. The finished project will remain within the original proposed project area, but includes additional construction activities that were not analyzed within the IDPR & FEA. The additional activities include the potential installation of up to 75 sheet piles using a vibratory hammer along with the construction of a temporary 30-foot by 40-foot staging pad for a drill rig and two excavators.

The USACE has determined that the revised preferred alternative is similar in scope and location and as proposed, is not likely to adversely affect listed species or critical habitat. Based on the analysis in this final SEA, the USACE has determined the proposed project would not constitute

a major Federal action significantly affecting the quality of the human environment and has prepared a Finding of No Significant Impact (FONSI). The draft SEA was available for a 15-day public review June 9 – 24, 2020. This document, "Supplemental Alki Coastal Erosion Control Project, Seattle WA" is available online at:

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

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1 PROPOSAL FOR FEDERAL ACTION

Under the Council on Environmental Quality regulations, 40 CFR § 1500.1(c) and 40 CFR § 1508.9(a)(1), implementing the National Environmental Policy Act of 1969 (as amended)(NEPA), the purpose of an Environmental Assessment (EA) is to "provide sufficient evidence and analysis for determining whether to prepare an environmental impact statement or a finding of no significant impact" on actions authorized, funded, or carried out by the Federal government, and to assist agency officials to make decisions that are based on understanding of "environmental consequences, and take actions that protect, restore, and enhance the environment." This SEA supplements the September 2019 Alki Coastal Erosion Control Project, Section 103 Coastal Storm Damage Reduction Integrated Detailed Project Report and Final Environmental Assessment (IDPR & FEA). The September 2019 document proposed the construction of a 500 linear foot seawall to provide coastal erosion protection for public utilities, roadways, and public lands. The new seawall is planned to be constructed immediately adjacent to and seaward of the existing deteriorated wall in the summer of 2020. This SEA only evaluates additional impacts of the potential installation of 75 sheet piles using a vibratory hammer during the construction of the new seawall and use of a temporary staging pad.

The original study was requested by the City of Seattle Parks and Recreation Department (City). As a part of the implementation of the project, the non-Federal sponsor of the study, the City, would be obligated to contribute 35 percent of the design and implementation costs including all lands, easements, rights-of-way, relocations, and disposal areas.

The project site is located on City lands and provides recreation, including viewing and walking/biking paths, for local residents. The existing seawall was originally constructed by the City of Seattle in 1927 and runs parallel to Beach Drive Southwest. The seawall provides storm damage protection for public utility and transportation infrastructure located immediately behind the seawall. Further, the seawall prevents loss of public lands associated with the erosive storm and tidal forces in Puget Sound. The crest of the existing seawall is 20.3 feet above mean lower low water (MLLW; Seattle Department of Parks and Recreation 1987). The vertical wall is 7-inch thick by 5-foot 8-inch high by 4-foot 8-inch wide (PND Engineers 2008) precast concrete slabs embedded vertically in a concrete footing that is embedded to 5.7 feet above MLLW (Seattle Department of Streets and Sewers 1922). The precast concrete slabs are held in place by vertical steel trolley rails. Horizontal tiebacks (concrete deadman and wire rope anchoring) were installed to the top waler (a structural support beam) to provide lateral support to the structure, but these connections have completely corroded.

The IDPR & FEA initially screened six alternatives and then conducted a full analysis on three alternatives: a no-action alternative, a Soldier Pile Wall alternative and a retaining wall alternative. The recommended plan (alternative) consisted of a new Soldier Pile Wall with concrete lagging spanning the length of the project using concrete-encased steel beams to support soldier piles spaced at several foot intervals. Small concrete lagging panels would be installed in front of the soldier piles and would be designed to withstand coastal storm events. Toe protection would be placed at the base of the Soldier Pile Wall to prevent scour and undermining of the wall.

Under the revised proposed action, the recommended alternative remains the construction of a new Soldier Pile Wall within the original proposed project area, but includes additional construction activities that were not analyzed within the IDPR & FEA. The additional activities include the potential vibratory installation of 75 sheet piles and construction of a temporary 30-foot by 40-foot sheet pile pad for the drill rig and two excavators.

1.1 Location of the Project Action

The project is located in West Seattle two miles north of Lincoln Park, the site of a prior Section 103 project originally constructed in 1988 by the USACE and sponsored by the City of Seattle, Washington. It is along the shore of Puget Sound and runs parallel to Beach Drive Southwest near Alki Point (Figure 1). The project footprint encompasses approximately 500 linear feet of shoreline and is about 75 feet wide, extending from the beach area to the easterly most edge (far side) of the roadway. All lands within the vicinity are owned by the City of Seattle, including the beach area extending waterward of the project footprint. An existing seawall runs continuously through the project area and provides the current storm and erosion protection for public infrastructure. The existing seawall structure crest is approximately 20 feet above MLLW; it has degraded since its construction in 1927. The degraded condition of the existing structure is not due to a lack of regular routine maintenance as the City of Seattle performs annual inspection and maintenance on the current structure. The infrastructure at risk behind the seawall includes a King County-owned 54-inch sewer main running throughout the entire project area as well as the road; Beach Drive. A Puget Sound Energy gas line and a Seattle Public Utilities water line are located beneath the centerline of Beach Drive and are also at risk of damages or failure caused by coastal storms.

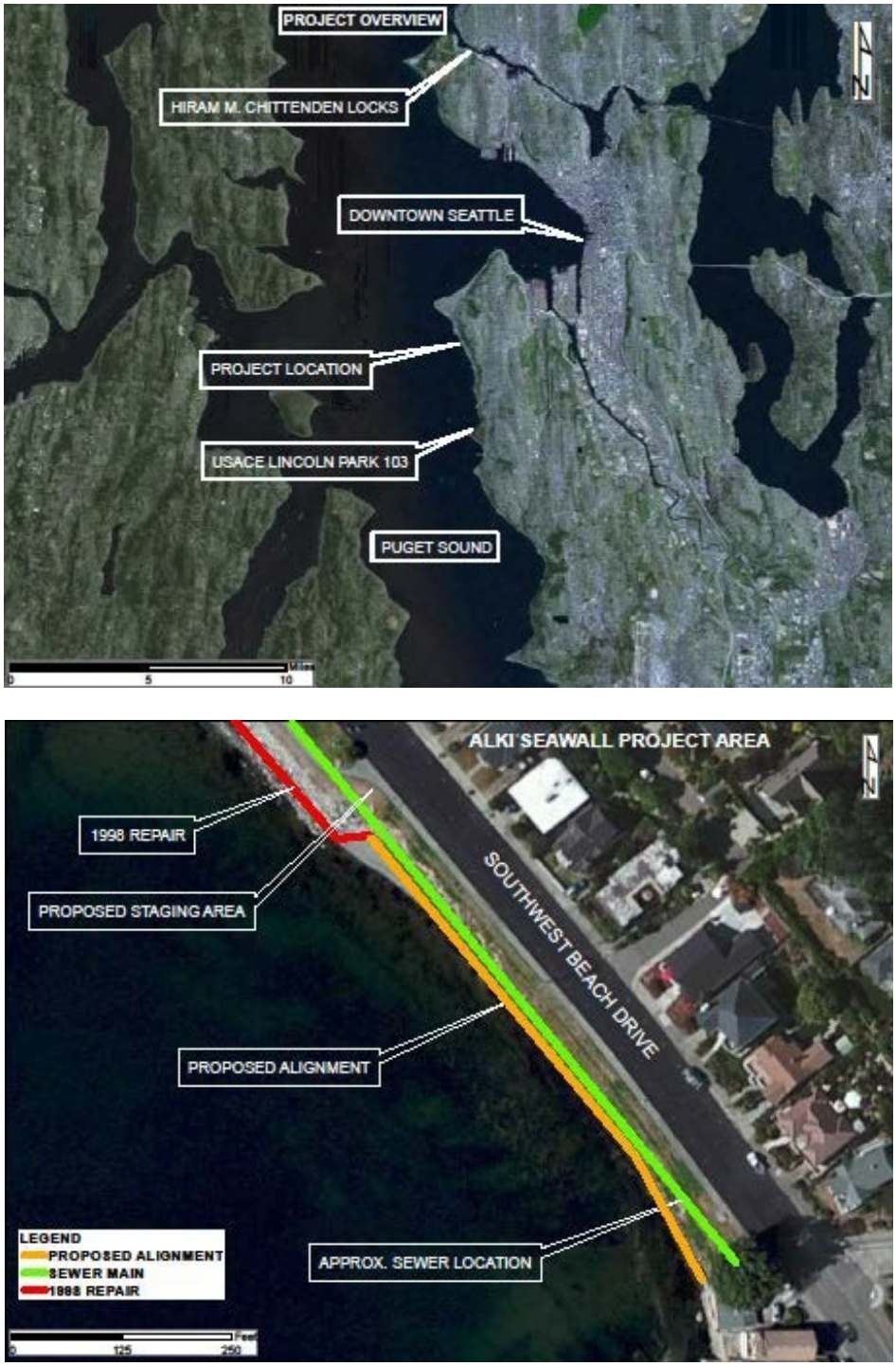

Figure 1. Project Vicinity and Location Overview

1.2 Project Authority

Section 103 of the 1962 River and Harbor Act authorizes the USACE to study, design, and construct small coastal storm damage reduction projects in partnership with non-Federal government agencies, such as cities, counties, special authorities, or units of state government. Projects are planned and designed under this authority to protect public infrastructure from damages resulting from storm driven waves and current and to provide the same complete storm damage reduction project that would be provided under specific congressional authorizations. The maximum Federal cost for planning, design, and construction of any one project is $10,000,000. Each project must be economically justified, environmentally sound, and technically feasible.

1.3 Purpose and Need

The purpose of the project is to reduce the risk of damages to public utilities and infrastructure resulting from failure of the seawall due to coastal storm events, storm surge, and storm-induced erosion. The seawall and its components have been impacted by years of storm events and corrosion caused by salt water in Puget Sound. Per the USACE's analysis in 2019, the existing seawall has a 50 percent chance of failure by 2023. The proposed Federal action is needed to avoid the risk of catastrophic failure of the existing seawall leading to failure of the sewage pipe and its associated environmental impacts including contamination of the waterway and beach.

1.4 Prior Document

Information on the project study can be found in the Alki Coastal Erosion Control Project, Section 103 Coastal Storm Damage Reduction Integrated Detailed Project Report and Final Environmental Assessment (September 2019) and is located on line at the following weblink: https://www.nws.usace.army.mil/Missions/Environmental/Environmental-Documents/. Please look under the date of September 12, 2019 and basin of Puget Sound.

2 PROPOSED ACTION

The following provides a description of the preferred alternative identified in the IDPR & FEA and succeeds with the proposed, revised construction techniques.

2.1 Preferred Alternative - Original

The proposed project consists of a new Soldier Pile Wall with precast concrete lagging constructed immediately in front of the existing seawall structure to a height of 22 feet above MLLW; the height is two feet higher than the existing structure to account for storm wave heights and future sea level rise (Figures 2 and 3). Shafts, 24 inches in diameter, will be augured 6 foot on center to a depth of 22 feet below the existing ground into which steel H piles will be inserted and filled with concrete. Precast concrete face panels will then be placed vertically between columns to create the wall panels and placed to a depth below the scour level to minimize scour risks associated with long-term storm events. The columns include corrosion protection due to the potential impacts of the tidal cycle and salt water. Due to the uncertainty

associated with future sea level rise scenarios, an adaptive design has been considered to allow future retrofits or modifications to the structure should worse than expected sea level change occur.

Constructing a buried toe on the seaward side of the seawall will ensure the seawall is not undermined from scour caused by standing waves. Native material excavated for the buried toe will be retained for placement on top of the buried toe after construction to return the site to its previous condition. The feature also provides additional lateral support to resist earth pressures pushing the wall seaward. To minimize impacts, three feet of armor stone over one foot of filter rock will be buried below grade (Figure 4). The two layer filter and armor rock toe will be embedded below the existing grade and buried with a 1-12" gravel/cobble beach fill. The gravel/cobble layer will have a 5-foot top width and a 3H:1V (horizontal:vertical) slope, for a total width of approximately 14 feet.

The total length of the new seawall is approximately 500 feet. The new seawall will tie into the riprap placed by the City in 1998 on the north end and an existing private seawall on the south end. The north end tie-in will entail pulling back some of the riprap and tapering the wall height down into the riprapped area, and then reworking the riprap in front of the tapered section. A structural connection to the existing privately owned seawall was considered for the south end tie-in. At the recommendation of the structural engineer, a structural connection was screened out based on potential damages to the privately owned seawall. A structural connection was also estimated to be problematic in seismic loading. The final design includes an approximate 5-foot gap between the proposed Soldier Pile Wall and the existing privately owned concrete seawall. Riprap protection was added to provide a transition between the proposed and existing walls.

From a coastal engineering perspective, the ideal elevation of riprap to provide sufficient wave attenuation, reduction of wave runup, and erosion protection is 12’ NAVD88. It was determined that there was a real estate conflict that would prevent riprap placement to the desired elevation. Elevation 10.5’ NAVD88 is the highest elevation that can be achieved without encroaching on private property. The insufficient riprap protection height may result in premature loss or degradation of riprap armoring and/or additional energy transferred to the proposed repair. Overall, the exposed section of wall is approximately five linear feet; minimal maintenance, repairs, or replacement, to include riprap protection replacement, may be required here in the future. The existing seawall will be left in place and buried with backfill material to provide a stable and safe slope up to the existing sidewalk grade.

To offset the permanent loss of 0.02 acres of beach habitat required by the new seawall, a best management practice (BMP) will be implemented to reclaim adjacent lost beach habitat by removing a portion of the riprap and fill materials placed to the north in the 1998 emergency repair that have sloughed onto the beach habitat below. The ratio will be a 1:1 replacement as this habitat reclaims the lost habitat imposed by the new seawall and could begin to function immediately post-construction.

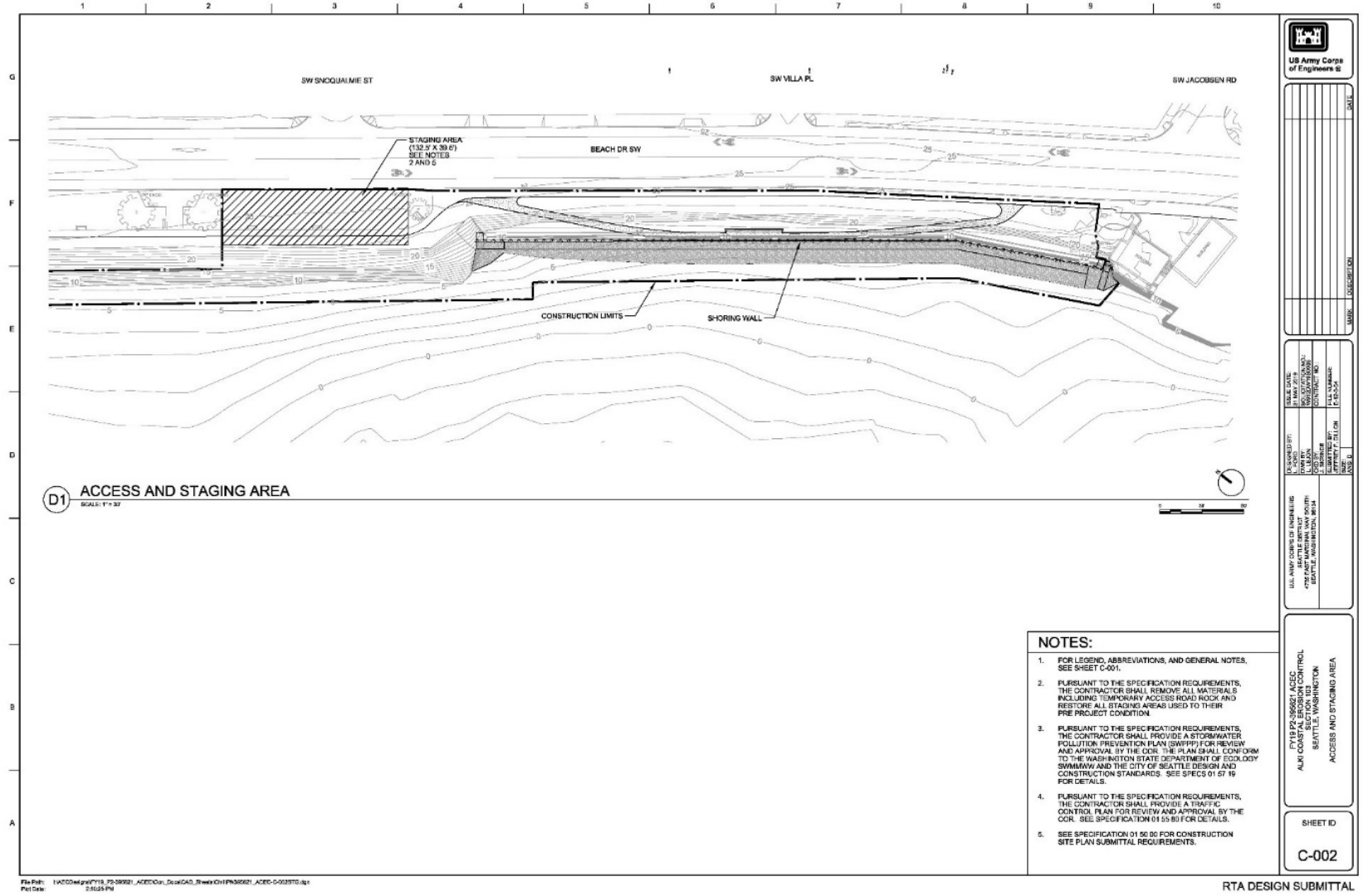

Figure 2. Site Plan

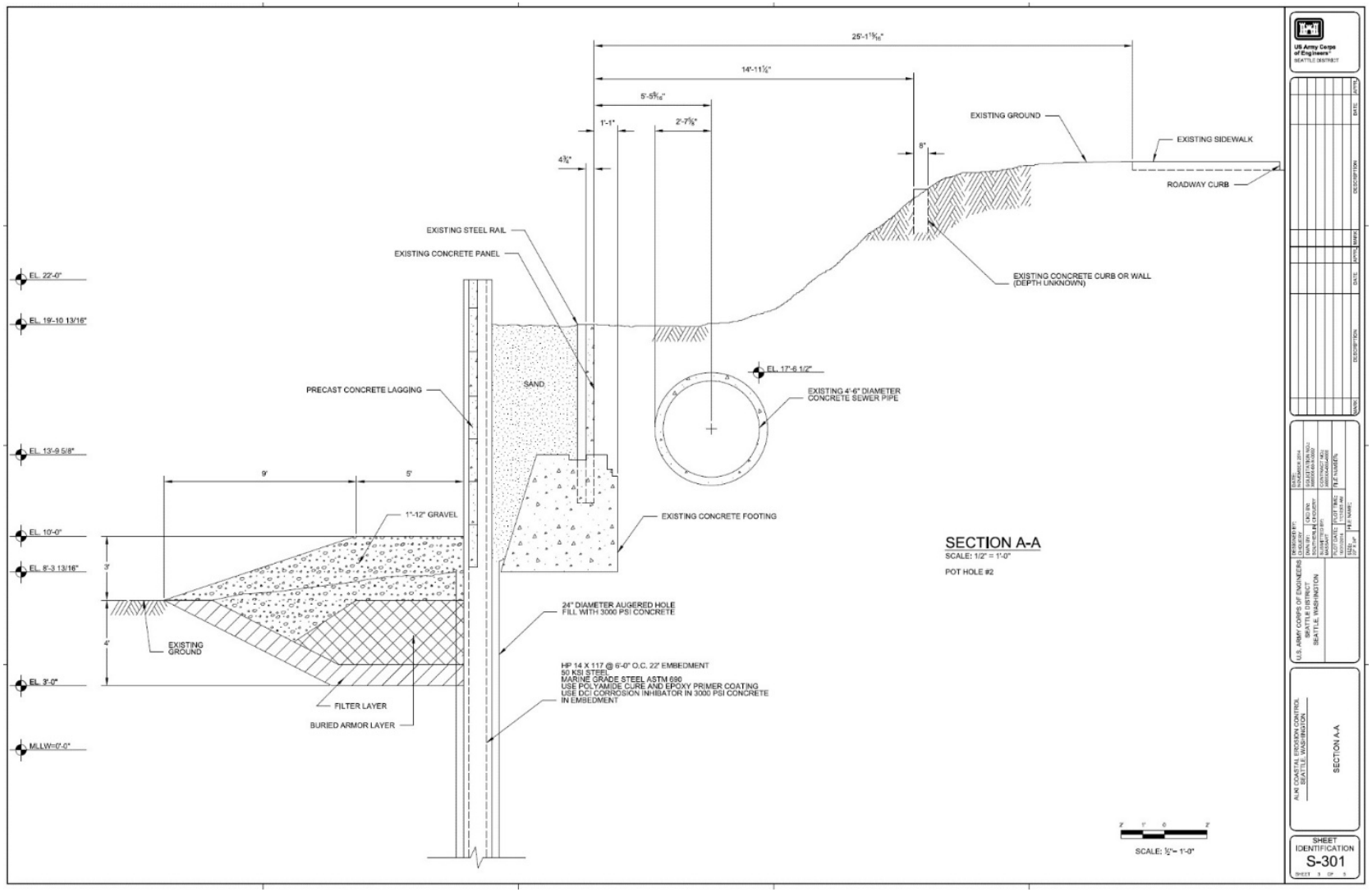

Figure 3. Section View of Soldier Pile Wall

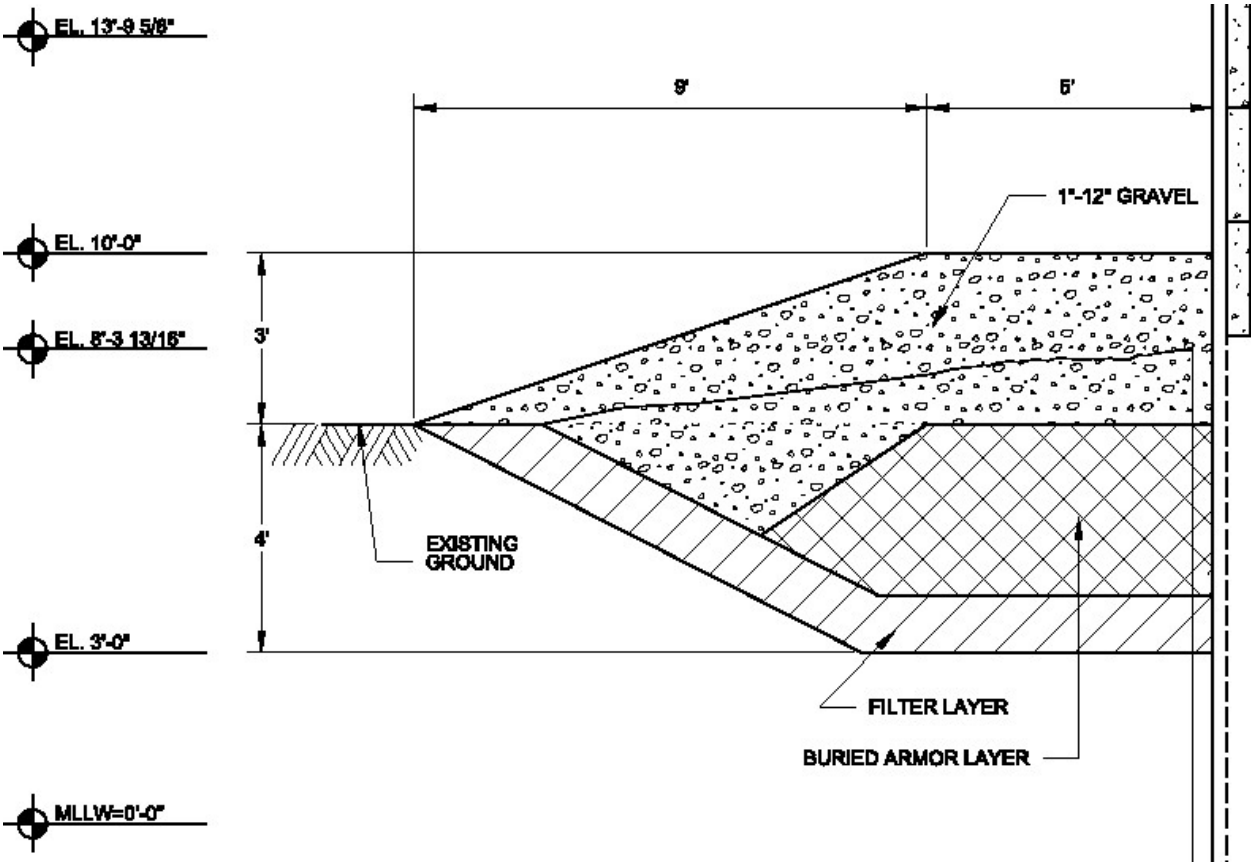

Figure 4. Scour Protection Toe

2.2 Preferred Alternative – Revised

The overall construction method as described above remains the same. Two additional construction activities are proposed that were not analyzed within the IDPR & FEA.

1. Potential vibratory installation of up to 75 sheet piles along the old seawall during the construction of the Soldier Pile Wall. The sheet piles would be installed using a vibratory hammer to drive the piles into the substrate.
    a. The sheet piles would be used to stabilize the existing sea wall during the construction of the new structure (Figure 5). This measure would be necessary if movement of the existing wall is observed during construction of the Soldier Pile Wall. The primary concern is that there could be destabilization of the existing wall, which would threaten the 54-inch sewer pipe, while preparing to install the piles of the Soldier Pile Wall.
    b. If used, the sheet pile (type: AZ Steel sheet pile) would be driven into the substrate about one and a half feet in front of the existing wall approximately six feet apart. In between the sheet piles, street sheets (flat pieces of steel) would be placed to help with the stabilization. It is anticipated that it would take two to

three days to install half of the sheet piles along one half of the wall, followed by two to three days of sheet pile installation approximately one month later along the other half of the sea wall.

c. The use of the sheet piles for stabilization would not increase the final overall footprint of the new sea wall. It is anticipated that the sheet piles would be removed, but some may be permanently incorporated into the new sea wall depending on conditions during construction.

2. Construction of a temporary 30-foot by 40-foot staging pad for a drill rig and two excavators (Figure 6).

   a. The staging pad will be placed on the waterward side of the wall on the beach at the north end of the project. The staging pad will be constructed using a Flexifloat construction system (Figure 7) and anchored to spuds that will be placed on the top of the substrate near the midpoints of the north and south ends of the staging pads (Figure 8). Along the waterward side of the staging pad, steel road plates will be welded on to the top edge of the pad (placed vertically) to protect the equipment on the pad from wave action.

   b. The drill rig and excavators will be staged on the staging pad when tides are too high to work from the beach and will be moved to and from the staging pad via a ramp constructed of ecology blocks, fill and steel road plates before high tide. This is to reduce mobilization time and to reduce the amount of heavy equipment crossing and stressing the shoreline near the 54-inch sewer line.

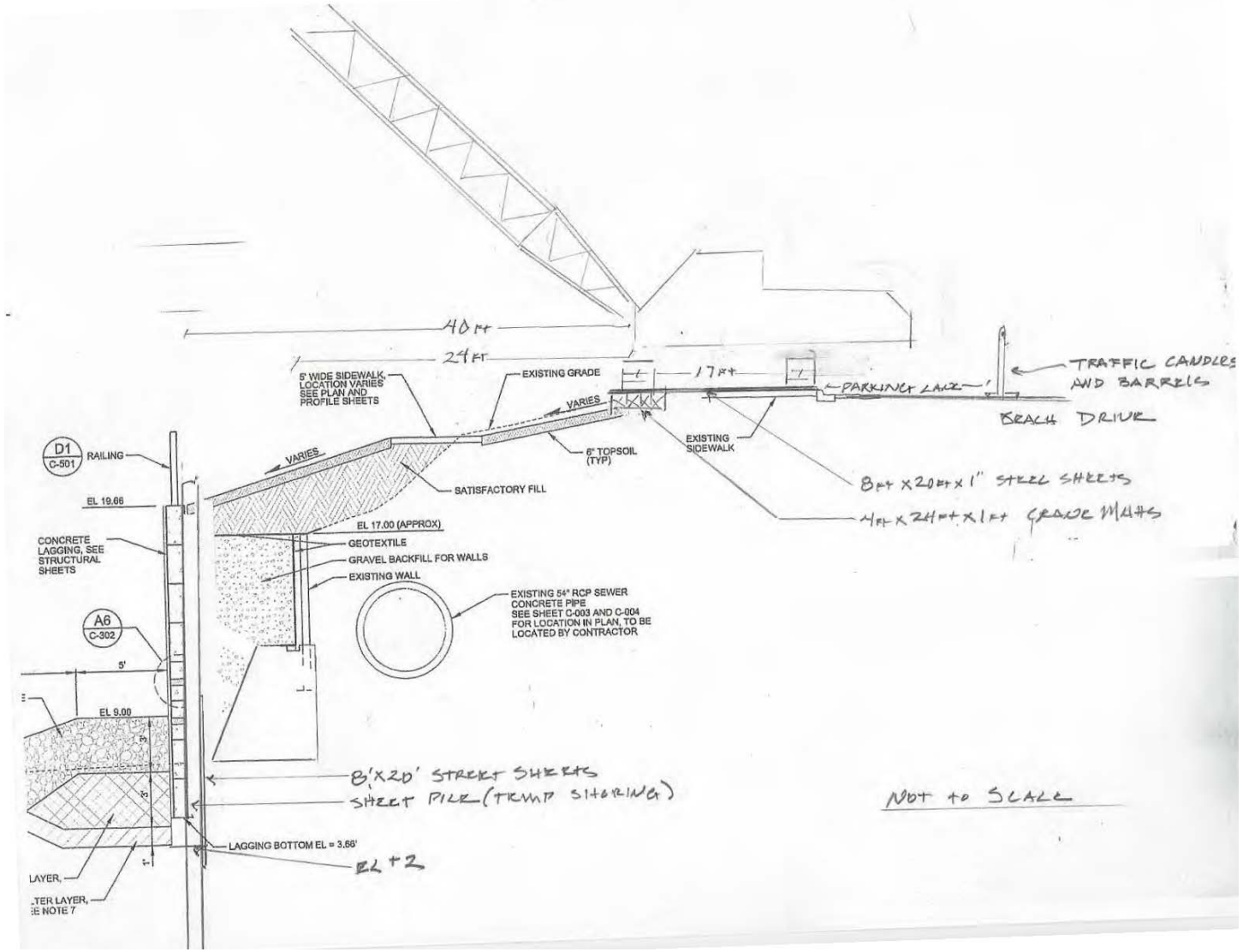

Figure 5. The location of the sheet pile.

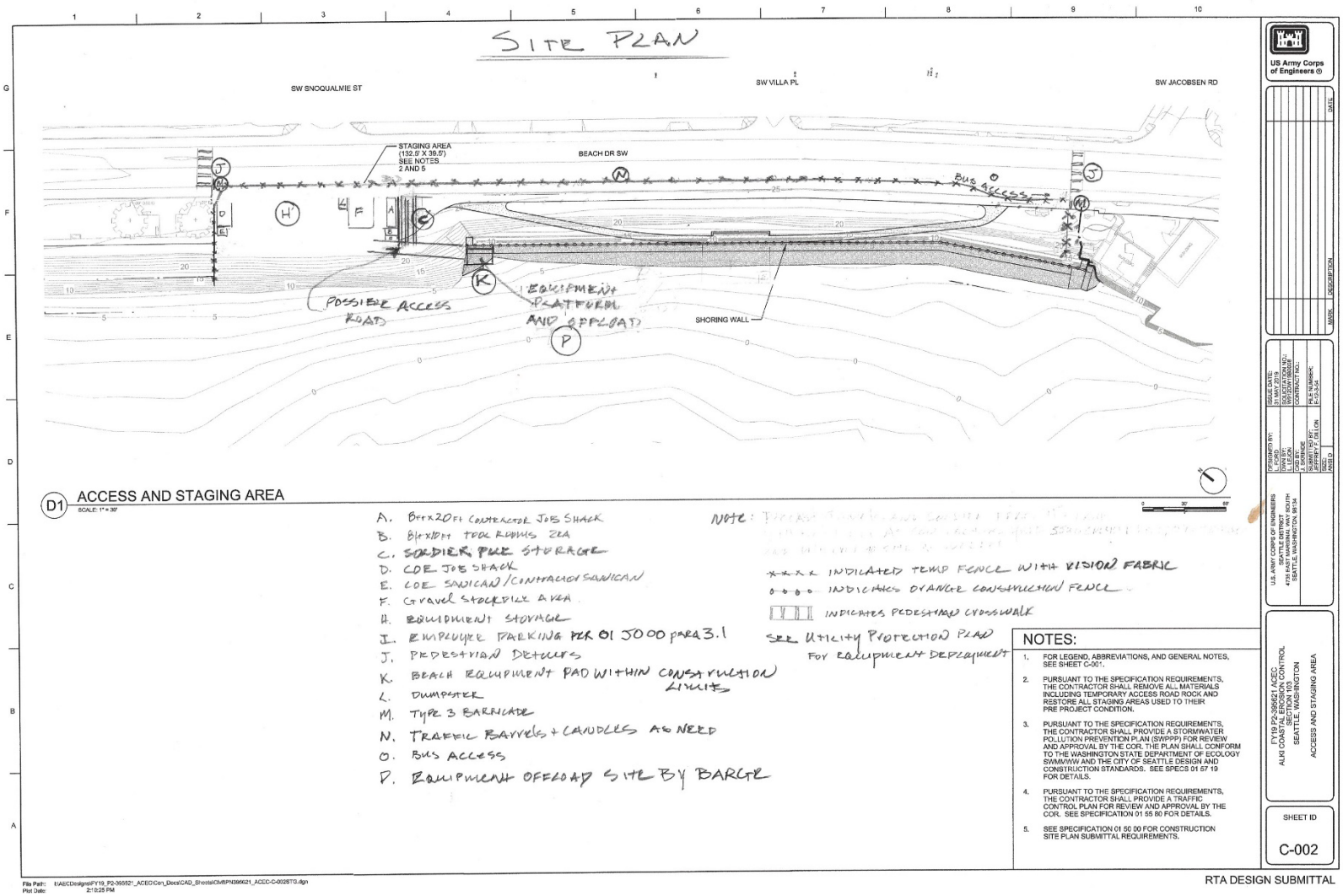

Figure 6. The revised site plan showing the location of the floating pad (letter 'K').

Figure 7. An example of a floating pad using Flexifloat.

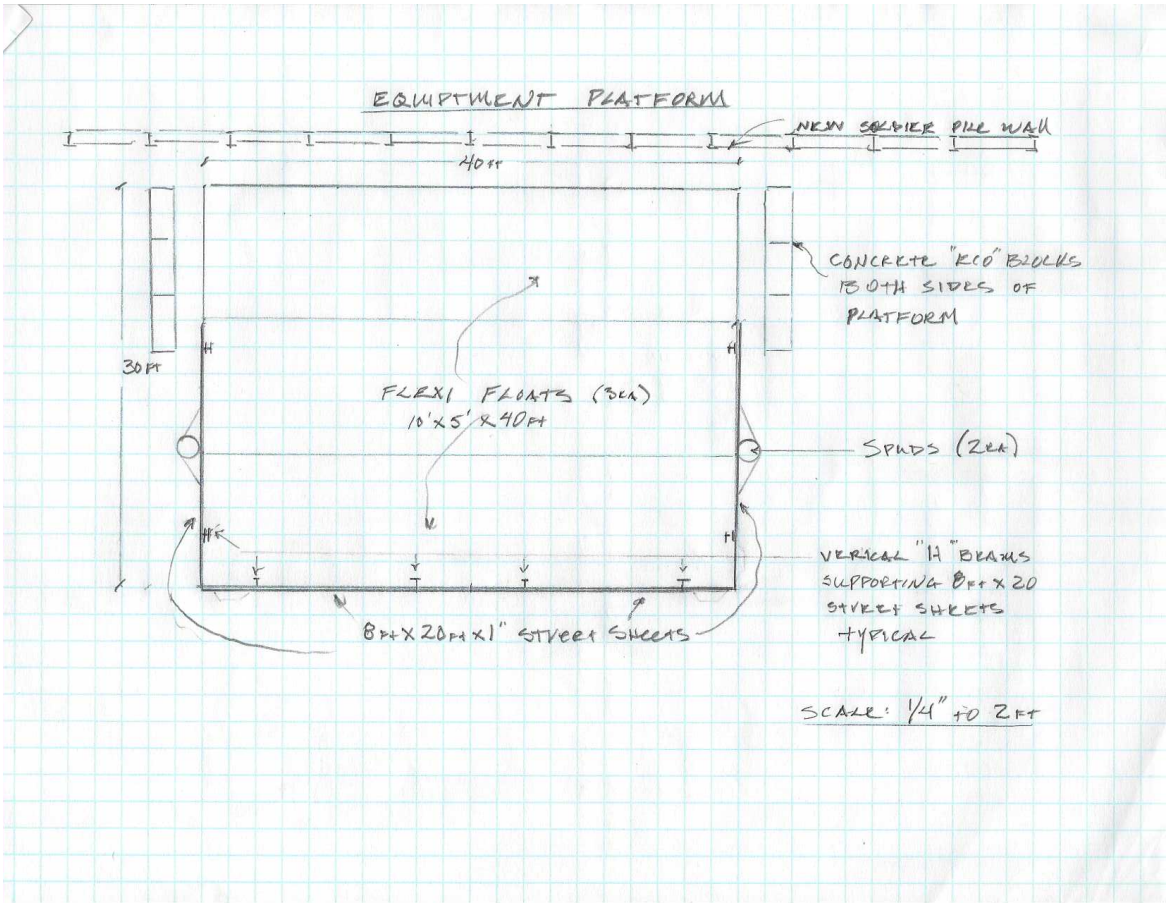

Figure 8. Overhead view of staging platform showing spuds.

3 RESOURCES ANALYZED FOR EFFECTS OF THE PROPOSED CONSTRUCTION TECHNIQUE

This section provides information on the existing conditions of the project area and an analysis of resources affected by the proposed change in construction techniques. Existing conditions are the physical, chemical, biological, and socioeconomic characteristics of the project area. Factors for selecting the proposed construction technique include considering cost, whether the change is environmentally acceptable, is consistent with engineering practices, and meets the purpose and need of the project.

Table 1 below considers the list of resources analyzed in the IDPR & FEA and provides a rationale on whether or not a resource was analyzed within this supplemental environmental assessment as a result of the changes in the construction techniques described in Section 2.2.

Table 1. List of Resources Analyzed in the IDPR & FEA and Considered for Detailed Effects Analysis and Rationale for Inclusion or Exclusion.

Resource	Included in Detailed Analysis (Y/N)	Rationale for inclusion or exclusion
Physical Characteristics and Aesthetics	N	The proposed finished project footprint would not be expanded and there are no proposed changes to the physical seawall characteristics or the use of the area as a construction site during the project. The addition of a temporary construction element (staging pad) does not substantially alter the previously discussed effects to this this resource. The analysis for this resource remains the same as the analysis conducted within the IDPR & FEA.
Soils	N	The proposed finished project footprint would not be expanded and all changes to soils would occur within the existing footprint. The analysis for this resource remains the same as the analysis conducted within the IDPR & FEA.
Water Quality	Y	While the work will still be conducted in the dry, equipment would be staged on a staging pad during high tide. The staging pad was not analyzed within the IDPR & FEA.
Air Quality and Noise	Y	The proposed finished project would still occur within the same period, however the effects of installing sheet piles with a vibratory hammer were not analyzed within the IDPR & FEA.
Submerged Aquatic Vegetation	N	The proposed finished project footprint would not be expanded and submerged aquatic vegetation was not expected to be negatively impacted. The analysis for this resource remains the same as the analysis conducted within the IDPR & FEA.
Fish	Y	The proposed finished project footprint would not be expanded and construction would occur in the dry during established work windows for fish. The additional effects of driving sheet pile using a vibratory hammer and a staging pad were not analyzed within the IDPR & FEA.

Birds	Y	The finished project footprint and construction duration would remain the same as the IDPR & FEA. However, the effects of installing sheet piles with a vibratory hammer were not analyzed within the IDPR & FEA.
Shellfish	Y	The finished project footprint and construction duration would remain the same as the IDPR & FEA. A staging pad would be installed on the beach and may float a little during high tide. The staging pad was not analyzed within the IDPR & FEA.
Sensitive, Threatened and Endangered Species	Y	The finished project footprint and construction duration would remain the same as the IDPR & FEA. The additional effects of driving sheet pile using a vibratory hammer and a staging pad were not analyzed within the IDPR & FEA.
Historic and Cultural Resources	N	While the proposed finished project scope has been expanded, there are no proposed changes that would affect historic or cultural resources. The analysis for this resource remains the same as the analysis conducted within the IDPR & FEA.
Land Use	N	The proposed finished project footprint would not be expanded and there are no proposed changes to the land use. The analysis for this resource remains the same as the analysis conducted within the IDPR & FEA.
Recreation	N	The proposed finished project footprint would not be expanded and there are no proposed changes to recreation. The analysis for this resource remains the same as the analysis conducted within the IDPR & FEA.
Transportation and Utilities	N	The proposed finished project footprint would not be expanded and there are no proposed changes to transportation or utilities. The analysis for this resource remains the same as the analysis conducted within the IDPR & FEA.
Hazardous, Toxic, and Radiological Waste	N	The proposed finished project footprint would not be expanded. The analysis for this resource remains the same as the analysis conducted within the IDPR & FEA.

3.1 Water Quality

The Puget Sound Basin contains surface- and ground-water resources of significant economic and ecological importance (USGS 1994). These provide water for a large population, recreational opportunities for residents and visitors, and an ecosystem that supports an economically important fishery. Water quality issues identified for surface waters in the Puget Sound Basin include: the degradation of aquatic habitat through destruction of riparian habitat, sediment deposition and channel scour; bacterial contamination and nutrient enrichment from sewage treatment plant discharges, failed septic systems, and agricultural runoff; and contamination by point discharges and storm runoff of metals, pesticides, and petroleum products (USGS 1994).

Index scores of marine water condition have generally declined in recent years, indicating an overall decrease in water quality (Puget Sound Partnership 2012). The largest driver of the decline has been the increase in nitrate levels caused by human inputs to the system. Increased nitrate levels can fuel algal blooms, leading to low dissolved oxygen. The 2012 Washington State Department of Ecology (WDOE) water quality assessment indicates that marine waters in the project area are not on the 303(d) list of impaired waterbodies (WDOE 2012). Marine waters approximately one half mile to the north and one third mile to the south of the project area are classified as Category 5 for bacteria (WDOE 2012).

3.1.1 Preferred Alternative – Original

The Soldier Pile Wall alternative, once constructed, would protect the sewer pipe from erosion. During construction, work would be done in the dry at low tide. When tides rise and hit the work area during the construction period, slight turbidity increases may occur. Use of BMPs such as minimizing on-site equipment maintenance, restricting work within the construction boundaries, and ensuring all equipment and materials are clean would minimize potential for contamination. A small amount (0.02 acres) of beach would be lost due to the footprint of the new wall; however, the equivalent amount of beach habitat would be reclaimed through the riprap removal BMP. Overall impacts to water quality from the Soldier Pile Wall would be minimal and a Water Quality Certification was obtained from WDOE on 15 August 2019.

3.1.2 Preferred Alternative – Revised

As stated above, the Soldier Pile Wall alternative, once constructed, would protect the sewer pipe from erosion. During the development of the construction work plan, the Contractor proposed construction practices that would reduce potential possibilities of destabilization of the sewer line during the seawall construction. The construction work would still be done in the dry at low tide, but instead of moving the heavy equipment off the beach and up on shore for each high tide, the Contractor proposed constructing a staging pad to hold the equipment during high tide. This would reduce the pressure on the shoreline and reduce the potential of erosion to the sewer pipe during construction as a result of mobilization and de-mobilization of heavy equipment. The staging pad would be temporary and all pad elements would be removed when construction is

complete. When the tides rise and hit the work area during the construction period, slight turbidity increases may occur. Additional BMPs for the staging pad would consist of no major maintenance of the equipment on the pad and having secondary containment under the equipment while it is staged on the staging pad. Impacts to water quality would be temporary and are expected to not be significant. An amendment to the original Water Quality Certification was obtained from WDOE on May 27, 2020.

3.2 Air Quality and Noise

The Clean Air Act requires the Environmental Protection Agency (EPA) to set National Ambient Air Quality Standards for pollutants considered harmful to public health and the environment (EPA 2013). States are required to develop a plan for any areas that cannot meet these standards, called nonattainment areas, to improve air quality. After a nonattainment area begins to consistently meet the air quality standards, it is called a maintenance area. The project area is not within a maintenance area for ozone and carbon monoxide pollution (WDOE 2013). Ozone is a component of smog that is not emitted into the air but is instead formed when nitrogen oxides (NOx) and volatile organic compounds (VOCs) react with one another in the presences of sunlight. Emissions from industrial facilities, electric utilities, motor vehicle exhaust, gasoline vapors, and chemical solvents are some of the major sources of NOx and VOCs. Carbon monoxide is an odorless, tasteless, colorless gas that is emitted primarily from any form of combustion. Emissions from motor vehicles, wood stoves, open burning, and industrial facilities are all sources of carbon monoxide pollution.

West Seattle is hosts a mix of single-family residential, low and mid-rise buildings, neighborhood commercial zones, and urban parks. Across the street from the project area are two rows of single-family residences and a 20-acre forested city park. Typical noises consist of those generated by automobiles, trucks, and other internal combustion engines as well as from boats and ships navigating Puget Sound.

3.2.1 Preferred Alternative – Original

Construction activities for the project would have short-term effects to air quality and noise. Any effects would only occur during construction. Construction would occur during daylight hours, five days a week. There would be a temporary increase in emissions and noise during construction; however, the effects would be minimal given the short duration of the construction. The pollutant production from construction equipment is expected to be *de minimis* and to have no effect on the ozone and carbon dioxide maintenance criteria. Construction noise associated with the usage of heavy machinery may disturb residents in close proximity to the site. Following construction, there would be no change in air quality or noise at the site. Overall, the impact to air quality and noise will be minor and temporary.

3.2.2 Preferred Alternative – Revised

Construction would occur during daylight hours, five days a week within the established fish work window. Within that period, there may be approximately six days with vibratory pile driving. There would be a temporary increase in emissions and noise during construction. Emissions effects would be minimal given the short duration of the project. The pollutant production from construction equipment is expected to be *de minimis* and to have no effect on the existing ozone and carbon dioxide maintenance criteria.

Construction noise associated with project would be increased as a result of the installation of sheet piles using a vibratory hammer. Using the Washington State Department of Transportation's (WSDOT) biological assessment manual's chapter on construction noise impact assessment (WSDOT 2019), common loud noises can range from an impact pile driver at 110 dBA (extremely loud), to a garbage truck at 100 dBA (very loud), to a heavy truck in city traffic at 90 dBA (very annoying). The ambient sound and traffic noise along the project site is estimated at approximately, 65 dBA using the estimated population within West Seattle and the relatively low volume of traffic (fewer than 1,000 cars/hour, WSDOT 2019).

The estimated noise levels of the equipment to be used during construction are: 84 dBA for an auger drill, 81 dBA for an excavator, and 101 dBA for a vibratory pile driver (closest reasonable, similar action) when heard from approximately 50 feet away (WSDOT 2019). When the excavator and auger are in use, the combined noise is estimated at 86 dBA, which would be considered annoying to very annoying. When the vibratory hammer is in use during the 6 days, the noise of the vibratory hammer will mask out the excavator and auger and the noise will be considered very loud. While the majority of houses are more than 50 feet away from the construction area and the sound level will have been reduced by the time it reaches the houses, the sound will still be considered loud. The forested hillside behind the houses will help to lower the noise level and will absorb the sound instead of bouncing it back towards the houses. Beach Drive as the main road along that area, would have numerous garbage trucks and heavy trucks driving through there on a regular basis. While the construction sounds would be loud and more sustained over the construction period, it would be a temporary increase from loud sound levels that are known to regularly occur. Construction noise associated with the usage of heavy machinery may disturb residents in close proximity to the site, but is temporary with the loudest noised occurring for 6 days.

Following construction, there would be no change in air quality or noise at the site. Overall, the impact to air quality and noise would be minor and temporary.

3.3 Fish

Cutthroat trout (*Oncorhynchus clarki clarki*) and Chinook (*O. tshawytscha*), chum (*O. keta*), coho (*O. kisutch*), and pink salmon (*O. gorbuscha*) feed and rear in nearshore areas around the project area. Juvenile salmonids feed on epibenthic invertebrates in the intertidal zone. Adult salmonids migrate along the shoreline during the late summer to early winter months.

Fauntleroy Creek, about 2.8 miles south of the project area, supports a run of coho salmon that was re-introduced in 1991 as part of the Salmon in the Classroom program (Fauntleroy Watershed Council 2002). The Duwamish River, approximately 5 coastal miles from the project, supports runs of Chinook, chum, coho, pink, bull trout, and steelhead.

In addition to salmonids, marine fish such as a variety of surfperch (Embiotocidae), flatfish (Pleuronectiformes), gunnel (Pholididae), prickleback (Stichaeidae), and rockfish (*Sebastes* sp.) species occur along Puget Sound shorelines. Common species that likely utilize the project nearshore habitat include striped perch (*Embiotoca lateralis*), surf smelt (*Hypomesus pretiosus*), staghorn sculpin (*Leptocottus armatus*), English sole (*Parophrys vetulus*), copper rockfish (*Sebastes caurinus*), and cabezon (*Scorpaenichthys marmoratus*). The intertidal and shallow subtidal zones provide feeding and rearing habitat for young marine fish and offer feeding and spawning habitat for mature adult fish. As with salmonids, the benthic invertebrate resources in nearshore areas provide abundant prey for marine fish.

3.3.1 Preferred Alternative - Original

Construction of the wall would move the hardened shoreline waterward, slightly decreasing available habitat for fish, but to a much lesser extent than the No-Action Alternative. Minimal change to existing habitat characteristics is expected. Construction would occur in the dry during low tides to minimize water quality impacts and thereby limit the potential for harm to fish species. Impacts to fish are not expected to be significant.

3.3.2 Preferred Alternative - Revised

While the finished construction would remain the same as the original preferred alternative, the revised construction technique would include sheet pile driving using a vibratory hammer. The sheet pile driving would occur in the dry (not in water) during low tide, but noise attenuation through the substrate is expected based on Caltrans (2015). The sound will propagate for some distance through the substrate.

Potential impacts to fishes as a result of the installation of sheet piles using a vibratory hammer include the following: 1) physiological damage and elevated stress levels from suspended sediment, and decreased dissolved oxygen (DO), and 2) a behavioral response to flee associated with suspended sediment, decreased DO, and noise. The sound field associated with pile driving when it occurs on land near the water and in the water is poorly understood. It is complex and reflects acoustic input from sound propagating through the water, propagating through the substrate, and reflecting off both substrate and water surface (Popper 2019). Two main hammers are used to drive material into the substrate; impact hammers and vibratory hammers. The vibratory hammer produces sound energy that is spread out over time and is generally 10 to 20 dB lower than impact hammers; it is often used as an environmental mitigation in construction projects (CALTRANS 2015).

How a fish is affected by underwater noise is based on whether or not they have a swim bladder: fishes with no swim bladder or other gas chamber (flatfish), fishes with swim bladders in which hearing does not involve the swim bladder or other gas volume (salmonids and sturgeon), and fishes in which hearing involves a swim bladder or other gas volume (Atlantic cod and herring) (Popper 2014).

Because fish may be injured or killed as a result of some in-water noise, there are established noise thresholds for different types of in-water generated noises. Vibratory hammers are considered a continuous sound generator unlike an impulsive sound like an explosion. There is no direct evidence for death or potential mortal injury for continuous noise and there are no continuous noise thresholds for fish without swim bladders or those with swim bladders not involved in hearing (Popper et al. 2014).

The fish that would be most vulnerable to the noise from the vibratory hammer are surf smelt, rockfish, and herring (*Clupea pallasii*). The sheet pile driving would occur in the dry. With the noise from the other construction activities, most fish would be avoiding the nearshore area and they may be farther away than they would otherwise when the vibratory hammer starts, thus reducing the impacts. Additionally, the work would be conducted during the fish work window, so it would be anticipated that impacts to vulnerable spawning fish and incubating eggs would be avoided. Because of the avoidance of the area by mobile organisms, conducting work during the work window, and the temporary impacts to water quality and noise, the proposed construction changes would not have significant effects to these resources.

3.4 Birds

Shallow nearshore waters and intertidal sediments in the project area produce fish, vegetation, and invertebrate forage for a variety of waterfowl, gulls, shorebirds, and other marine birds. Bird species known to occur in the area include pigeon guillemot (*Cepphus columba*), black brant (*Branta bernicla nigricans*), common goldeneye (*Bucephala clangula*), harlequin duck (*Histrionicus histrionicus*), white-winged scoter (*Melanitta fusca*), marbled murrelet (*Brachyramphus marmoratus*), and rhinoceros auklet (*Cerorhinca monocerata*). With the exception of black brant (which prefer eelgrass and algae), these birds feed primarily on crustaceans, mollusks, and small fish.

Birds that frequent the Seattle portion of the Puget Sound shoreline must adapt to a moderately high level of disturbance. Near the project site, the disturbance level is moderate and ranges from pedestrians (some with dogs) to regular boat traffic.

3.4.1 Preferred Alternative – Original

The proposed construction would slightly increase activity over ambient levels. Some displacement of birds may occur. Due to the small size of the project, construction disturbance would be limited in size and duration. Birds moving from the project area would not be displaced from locally important habitat. The completed project would not change habitat features important to bird life. Overall, adverse impacts to birds are not anticipated as a result of the proposed work.

3.4.2 Preferred Alternative – Revised

The overall activity level would be slightly increased over ambient levels and some displacement of birds may occur. The project location is an urban area with little terrestrial bird habitat. Sheet pile driving with a vibratory hammer over 6 days will increase both the terrestrial noise and potentially some in-water noise as the sound moves through the substrate. Terrestrial birds will be able to avoid the area, and a wooded hillside provides habitat approximately 360 feet away (behind two rows of houses). Aquatic birds will also be able to move away from the disturbance by moving farther offshore or up and down the shoreline outside of the disturbance. No birds would be displaced from locally important habitat and the completed project would not change habitat features important to bird life. Overall, adverse impacts to birds are not anticipated as a result of the proposed work.

3.5 Shellfish

The intertidal area adjacent to the project provides habitat for a variety of mollusks including butter clams (*Saxidomus gigantea*), littleneck clams (*Protothaca staminea*), macoma clams (*Macoma* spp.), and common cockle (*Clinocardium nuttalli*); as well as a variety of crabs including Dungeness crabs (*Cancer magister*) and red rock crabs (*Cancer productus*). The Washington State Department of Health advises against shellfish harvest on any beach on the eastern shore of Puget Sound between Everett and Tacoma due to pollution.

3.5.1 Preferred Alternative - Original

The Soldier Pile Wall alternative has the smallest footprint of the proposed repair options, thus minimizing the permanent loss of beach habitat. The loss of 0.02 acres of beach due to Soldier Pile Wall installation will impact the species composition in the footprint, though no change to the larger vicinity would be expected. Construction below the wall will remain within established boundaries to limit impact to the beach. Overall impacts would not be significant for the reach of the shoreline.

3.5.2 Preferred Alternative - Revised

The project, with the revised construction techniques remains within the footprint of the original preferred alternative. While 0.02 acres of beach will be lost due to the Soldier Pile Wall installation, a BMP to remove riprap from an adjacent area will open 0.02 acres of habitat leading to no net loss of habitat. Construction activities in front of the wall will remain within established boundaries to limit impact to the beach. Increased noise from sheet pile driving

using a vibratory hammer may impact some shellfish, but the impact would be temporary and invertebrates would be able to rapidly recolonize the area. Overall impacts would not be significant for the reach of the shoreline.

3.6 Sensitive, Threatened, and Endangered Species

In accordance with Section 7(a)(2) of the Endangered Species Act (ESA) of 1973, as amended, Federally funded, constructed, permitted, or licensed projects must take into consideration impacts to Federally listed and proposed threatened or endangered species. Several species protected under the ESA are found in King County (Table 2).

Table 2. Endangered Species Act Protected Species Listed in King County.

Species	Listing Status	Critical Habitat
Marbled Murrelet *Brachyramphus marmoratus*	Threatened	Designated, not in project area
Northern spotted owl *Strix occidentalis caurina*	Threatened	Designated, not in project area
Yellow-billed cuckoo *Coccyzus americanus*	Threatened	Designated, not in project area
Coastal/Puget Sound Bull Trout *Salvelinus confluentus*	Threatened	Designated
Puget Sound Chinook Salmon *Oncorhynchus tshawytscha*	Threatened	Designated
Puget Sound Steelhead *Oncorhynchus mykiss*	Threatened	Proposed
Bocaccio *Sebastes paucispinis*	Endangered	Proposed
Eulachon *Thaleichthys pacificus*	Threatened	Designated, not in project area
Canary rockfish *Sebastes pinniger*	Delisted	Not applicable
Yelloweye rockfish *Sebastes ruberrimus*	Threatened	Proposed
Green sturgeon *Acipenser medirostris*	Threatened	Designated, not in project area
Humpback Whale *Megaptera novaeangliae*	Endangered	Not designated
Southern Resident Killer Whale *Orcinus orca*	Endangered	Designated
Leatherback Sea Turtle *Dermochelys coriacea*	Endangered	Designated, not in project area
Canada lynx *Lynx canadensis*	Threatened	Designated, not in project area

Gray wolf *Canis lupus*	Endangered	Designated, not in project area
Grizzly bear *Ursus arctos horribilis*	Threatened	Not designated
North American wolverine *Gulo gulo luteus*	Proposed	Not proposed

Many of the species listed in Table 2 would not be expected to occur at this urban project site due to a lack of habitat availability. These include Northern spotted owl, Canada lynx, gray wolf, grizzly bear, North American wolverine, and yellow-billed cuckoo. Additionally, there is no change to the evaluation for leatherbacks from the original preferred alternative within the IDPR & FEA and is not discussed further.

3.6.1 Individual Species Discussion

Information on the species potentially occurring in the project area was provided in the IDPR & FEA, which this document supplements. Species discussions are not repeated here.

3.6.2 Preferred Alternative - Original

Construction of the Soldier Pile Wall could impact any salmonids (bull trout, Chinook, and steelhead) and larval rockfish (bocaccio and yelloweye rockfish) in the project vicinity due to increased noise and activity, and potentially increased turbidity. All work would be completed between 15 July and 15 February. The work window avoids sensitive migration periods for salmonids, including bull trout. Presence of eulachon in Puget Sound is so rare that impacts to this species are expected to be negligible. Any green sturgeon or salmonids in the area would be highly mobile and able to escape the construction area if noise or activity made the vicinity less desirable during construction. Similar habitat is available nearby for their use. The placement of the Soldier Pile Wall would result in the permanent conversion of approximately 0.02 acres of beach habitat to armored shoreline in an area that could be used by salmonids for foraging during high tides. A BMP to offset this loss in the form of riprap removal to reclaim beach habitat adjacent to the project site was included in the final design of this project.

Similarly, construction activity and noise could cause marbled murrelet to leave the area while the activity is ongoing. This species is highly mobile and would be expected to find other suitable habitat nearby.

Killer whales do not use nearshore habitats, but the use of these habitats as rearing for salmonids, their main prey species, does link them to work on shorelines. The minor and discountable impact to salmonids would be expected to have negligible potential impacts to killer whale.

Overall, with the implementation of appropriate BMPs for the permanent loss of beach habitat, impacts of the Soldier Pile Wall alternative to sensitive, threatened, and endangered species would not be significant.

3.6.3 Preferred Alternative - Revised

Construction timing and foot print remains the same with the revised preferred alternative. However, the revised construction technique includes sheet pile driving using a vibratory hammer. Several listed species depend on forage fish such as Pacific herring and smelt for their survival. The sheet pile diving would occur from approximately July 15 to about September 30, which is outside of the potential spawning for the Elliot bay stock of herring and outside the general herring spawning range of January through June (WDFW 2019). No forage fish spawning is known to occur at the project site (USACE 2013; WDFW 2018).

A brief introduction to in-water noise is discussed in section 3.4.2. The USACE has reviewed the 2017 U.S. Fish and Wildlife Service (USFWS) Programmatic Biological Opinion for Regional General Permit 6, Structures in Inland Marine Waters in Washington State which states:

> "Vibratory pile driving is not currently associated with injury or death to fishes or other aquatic organisms, including diving seabirds. This may be attributable to slower rise times (the time taken for the impulse to reach is peak pressure) associated with vibratory pile driving, and the fact that the energy produced is distributed over the duration of pile installation (WSDAOT 2014, as cited in USFWS 2017)."

Within that document (USFWS 2017), it was anticipated that vibratory pile driving would cause only minor behavioral effects to marbled murrelet, bull trout, and adult salmonids. Behavioral effects are extremely unlikely to result in measurable effects or significant impairment of their normal behaviors. Effects to marbled murrelets, bull trout, and adult salmonids associated with vibratory installation of piles are considered insignificant.

Vibratory pile driving may cause behavioral changes to juvenile salmonids (steelhead, Chinook, and chum) that could lead to predation (USFWS 2017). However, the work during this project will be conducted in the dry, and it is expected to avoid inducing behavioral changes to juvenile salmonids. It is also highly unlikely for juvenile Chinook salmon to be present in the area during construction to be affected by vibratory sheet pile driving due to the in-water work window.

Rockfish (bocaccio and yelloweye rockfish) have a swim bladder like salmonids and receive sound pressure waves similarly. Therefore, it is also anticipated that the action would cause only minor behavioral effects and are extremely unlikely to result in measureable effects or significant impairment of their normal behaviors.

The presence of eulachon in Puget Sound is so rare that impacts to this species are expected to be negligible. While it is highly unlikely for a eulachon to be present, eulachon do not have swim bladders and there are no continuous noise thresholds set for fish without swim bladders. Impacts to eulachon are expected to negligible.

Any sturgeon that are in the area are highly mobile and are likely to avoid underwater noise associated with pile driving and would not likely remain in the area long enough to experience noise levels that would result in damaging effects (Krebs et al. 2016).

Killer whales are unlikely to be within the area where the continuous sound is being generated from vibratory sheet pile driving. Any noise propagation that would occur would be in shallow water where killer whales within Puget Sound would not occur. Killer whales have not been documented in that area more than four times during the proposed work window for vibratory sheet pile driving, July – September, according to The Whale Museum (http://www.westcoast.fisheries.noaa.gov/protected_species/marine_mammals/evaluating_sound.html). It is highly unlikely for Southern Resident killer whales to be present and affected by vibratory sheet pile driving.

During construction of the seawall, USACE biologists will periodically conduct onsite monitoring for seabirds and marine mammals to ensure that the avoidance and minimization measures described are successful in reducing in-water noise impacts to protected species.

The USACE is employing avoidance and minimization measures by conducting the work using a vibratory hammer along with working during the low tide and in the dry (out of the water), and periodically monitoring for potential impacts to protected species. The limited area of the effect, short duration of vibratory sheet pile driving, and relatively low noise level, particularly compared to impact hammer pile driving, makes it highly unlikely for any of these species to be present or remain present long enough to be affected by vibratory sheet pile driving. In addition, forage fish are unlikely to be measurably affected because of the low likelihood that forage fish will be present. This determination is based on the following: a lack of documented spawning habitat in the project area, short duration of pile driving, and conducting the vibratory pile driving at low tide and in the dry.

4 CUMULATIVE EFFECTS

The NEPA defines cumulative effects as the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions (40 CFR §1508.7).

Alterations of the South Central Puget Sound Sub-Basin shoreline, which includes the project area, are omnipresent with almost complete shoreline armoring throughout (Simenstad et. al. 2011). The WDOE Coastal Atlas indicates that the shoreline has been modified 90-100 percent for one mile on either side of the proposed project (WDOE 2019).

The existing seawall structure was constructed in 1927. Emma Schmitz Memorial Overlook Park was donated in 1945 by Emma Schmitz "for park...and no other purpose whatsoever" (City of Seattle 1995). In 1998, the City of Seattle was prompted to take emergency action to stabilize

a portion of the seawall to the north of the proposed Federal project. Three small storm events caused waves that caused erosion of the seawall and threatened utilities, roadways, and public lands. The City completed permanent emergency repairs on this adjacent site in the form of a riprap revetment that extends 50 feet into the nearshore area.

The proposed Soldier Pile Wall alternative would impact 0.02 acres of nearshore habitat compared to 0.06 acres for the Retaining Wall alternative. Habitat impacts from the proposed Federal project would be addressed through removal of a portion of the adjacent riprap placed during the City's emergency repair (see IDPR & FEA).

In 1988, the USACE partnered with the City at Lincoln Park, approximately 2 miles south of the Alki seawall to place armor rock along 250 feet of beach at Williams Point and complete beach nourishment. The substrate placement created a gravel beach along the Lincoln Park shoreline where erosion had previously scoured all substrate down to a hard clay layer at the toe of the seawall. Periodic renourishment of the beach is needed, with the first occurring in 1994, the second in 2002, and the third in 2010.

Future actions may include more shoreline restoration projects, similar to efforts at Lincoln Park. Other future actions may include repairs or replacement of existing infrastructure to protect property from shoreline erosion. Further development actions are unlikely, as this area is already a highly developed urban shoreline. The repair of the seawall will maintain the existing state along the urban shoreline. Impacts as a result of construction activities on the beach area would be temporary and species would be able to rapidly recolonize the area. Overall impacts would not be significant for the reach of the shoreline. All of the potential impacts discussed in Section 3 affect a limited area, occur for a short duration, and are temporary in nature during the period of construction.

5 ENVIRONMENTAL COMPLIANCE

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

5.1 National Environmental Policy Act

Section 1500.1(c) and 1508.9(1) of the NEPA requires Federal agencies to "provide sufficient evidence and analysis for determining whether to prepare an environmental impact statement or a finding of no significant impact" on actions authorized, funded, or carried out by the Federal government to insure such actions adequately address "environmental consequences, and take actions that protect, restore, and enhance the environment". The Finding of No Significant Impact (FONSI) was signed on September 12, 2019 and posted on the USACE website. This SEA evaluates the potential environmental impacts of the additional project component of vibratory pile driving and the use of a storage pad on the beach, which was added after signing the FONSI. The draft SEA was made available for public review June 9 – 24, 2020. The public

was notified via electronic mailings. Refer to Appendix A for the comment letter received from the Suquamish Indian Tribe during the public review period and the USACE's responses to the comments within that letter.

5.2 Endangered Species Act

In accordance with Section 7(a)(2) of the Endangered Species Act of 1973, as amended, Federally funded, constructed, permitted, or licensed projects must take into consideration the project and conservation measures taken to reduce those effects were addressed in detail in a Biological Evaluation (BE). The BE was submitted to USFWS and National Marine Fisheries Service (NMFS) on August 8, 2014 for review and consultation. In correspondence dated September 19, 2014 and December 3, 2014, the USFWS and the NMFS respectively concurred with the USACE' findings. The USACE contacted both agencies to discuss the proposed changes to the project by sending an updated project description and supplemental analysis to USFWS on March 31, 2020 and to NMFS on April 24, 2020. USFWS and NMFS added the project updates to their administrative records on April 1, 2020 and April 28, 2020, respectively.

5.3 Clean Water Act

The proposed work was evaluated pursuant to Section 404(b)(1) of the Clean Water Act in accordance with the guidelines promulgated by the Environmental Protection Agency (40 CFR 230) for evaluation of the discharge of dredged or fill material into waters of the United States. In addition, consideration has been given to the need for the work and to such water quality standards as are appropriate and applicable by law. An individual Water Quality Certification was received August 15, 2019. Alternatives not requiring the discharge of dredged or fill material into water of the U.S. are not available, practicable, or are more damaging to the aquatic ecosystem. The proposed discharge represents the least environmentally damaging practicable alternative and would include all appropriate and practicable measures to minimize adverse effects on the aquatic environment. The WDOE was contacted on April 6, 2020 regarding the proposed changes to the project and the USACE received an amended WQC on May 27, 2020 (Appendix B).

5.4 Essential Fish Habitat

In accordance with the Essential Fish Habitat (EFH) requirements of the Magnuson-Stevens Fishery Conservation and Management Act, the USACE consulted with NMFS on any potential impacts to EFH as a result of the proposed changes to construction. For the IDPR & FEA, NMFS determined in a letter dated 3 December 2014 that the proposed action would adversely affect EFH by small increases in suspended sediments, impacts to the benthic community, and intertidal fill. The letter included recommended conservation measures to avoid, mitigate, or offset the impact of the proposed action. The USACE provided an interim response in a letter dated 22 December 2014 stating that implementation of the recommended conservation measures would be evaluated in the design and implementation phase. The USACE provided a description of the proposed revised construction techniques and an updated analysis to NMFS on

April 24, 2020 and indicated that the change in project methods does not change the prior EFH assessment and determination, because the permanent project footprint is not increased from what was described in the IDPR & FEA.

The temporary construction footprint would not affect adjacent beach slope or substrate, and no impacts to nearby macroalgae beds are anticipated. Now that the design phase is completed, USACE prepared a final response letter to NMFS's December 2, 2014 EFH conservation recommendations to conclude the EFH coordination, and submitted the letter on June 10, 2020 (Appendix C).

5.5 Marine Mammal Protection Act

The Marine Mammal Protection Act (MMPA) of 1972 (16 U.S.C. §§1361-1407) restricts harassment of marine mammals. Typical stressors from construction activities most likely to result in impacts to marine mammals that could rise to the level of harassment as defined under the MMPA include underwater detonations and vibratory pile driving. Vibratory pile driving is proposed for this project. Some individual animals may experience minor temporary physiological or behavioral effects in response to the vibratory pile driving noise, but it is not expected to result in significant (Level A or Level B) harassment of any marine mammal. There would be no permanent loss of habitat and all impacts would cease entirely at construction completion. BMPs (e.g., limiting the construction area, working in the dry at low tide, etc.) would further reduce the likelihood of impacts to marine mammals. Thus, the USACE determined that it is not necessary to pursue an incidental harassment authorization under the MMPA.

5.6 Fish and Wildlife Coordination Act

In accordance with the Fish and Wildlife Coordination Act (16 USC 661 et seq.), the USACE is required to coordinate with the USFWS. The USACE met with the USFWS at the project site to solicit input on the study and how to minimize the environmental impacts of the project. USFWS has assisted in developing the BMP incorporated into the project that will reclaim the lost beach habitat imposed by the new seawall. The USFWS has determined that a Coordination Act Report is not required for this project and the coordination is in compliance with the Act, as stated in an email received by the USACE dated 25 July 2016.

5.7 National Historic Preservation Act

Section 106 of the National Historic Preservation Act requires that a Federal undertaking account for the potential effects on sites, districts, buildings, structures, or objects that are included in or eligible for inclusion in the National Register of Historic Places. The USACE initiated consultation in 2013 with the State Historic Preservation Office (SHPO) and received a letter dated May 16, 2016 where the SHPO concurred with the USACE's finding of No Historic Properties Affected. The construction limits within the 2019 IDPR & FEA are different from what was provided to the SHPO in 2013 therefore; the USACE has revised the APE and on June 15, 2020 received a concurrence to the Determination of Not Historic Properties Affected with

the stipulation for an unanticipated discovery plan (Appendix D). The revised APE does not change the finding that there are no proposed changes that would affect historic or cultural resources.

5.8 Clean Air Act

Section 176 of the Clean Air Act, 42 USC 7506(c), prohibits Federal agencies from approving any action that does not conform to an approved state or Federal implementation plan. The proposed coastal erosion protection project will have temporary impacts to local air quality. The USACE has determined that the emissions from construction vehicles is of short duration and is unlikely to exceed *de minimis* levels of direct emissions of a criteria pollutant or its precursors. A conformity determination is not required, pursuant to 40 CFR 93.153 (c)(2)(iv). Please refer to Section 3.2 for additional information regarding impacts to air quality.

5.9 Executive Order 12898, Environmental Justice

Executive Order 12898 directs Federal agencies to identify and address disproportionately high and adverse human health or environmental effects of agency programs and activities on minority and low-income populations. No Tribal resources would be harmed. No adverse effects to minority or low-income populations would result from the implementation of the proposed project.

5.10 Coastal Zone Management Act

The Coastal Zone Management Act (CZMA) of 1972 as amended (16 U.S.C. §1451-1464) requires Federal agencies to carry out their activities in a manner that is consistent to the maximum extent practicable with the enforceable policies of the approved State Coastal Zone Management Program. The aim of the act is to "preserve, protect, develop, and where possible, to restore or enhance the resources of the nation's coastal zone." The delegated authority for review of consistency in Washington State is WDOE. In compliance with State law, the City of Seattle has developed its own Shoreline Management Master Program under the State Shoreline Management Act. The USACE has determined the project is fully consistent with the enforceable polices of the City of Seattle's Shoreline Master Program. The USACE prepared a CZMA consistency determination according to the relevant city code and submitted a final consistency determination to WDOE for their review and concurrence on 2 May 2019, as part of the Water Quality Certification package. WDOE requested a 30-day review extension on 24 June 2019 and the USACE agreed to extend the review period until 31 July 2019. A response was not received from WDOE specifically concurring that consistency with CZMA was achieved. Because of lack of action within the prescribed 90-day period, as extended, WDOE's concurrence that the project was consistent to the maximum extent practicable with the enforceable policies of Washington State Coastal Zone Management Program is presumed in accordance with 33 CFR 336.1(b)(9)(iv) and 15 CFR 930.41(a). As a result of the revised project description, the USACE requested a supplemental CZMA consistency review from Ecology for the new construction activities in accordance with 15

CFR §930.41(d) on May 4, 2020. WDOE concurred with the USACE's supplemental Consistency Determination on June 9, 2020 (Appendix E).

5.11 Native American Tribal Treaty Rights

In the mid-1850s, the United States entered into treaties with nearly all of the Native American tribes in the territory that would become Washington State. 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 also encompasses the right to take shellfish [*U.S. v. Washington*, 135 F.3d 618 (9th Cir 1998)].

The Federal government must consider the effects its actions may have on American Indian trust resources, traditions, and cultural practices. The Federal basis of a tribe's legal status rests with the context of U.S. Constitutional provisions for Federal government's powers for treaty making with other sovereign nations, and American Indian tribes' inherent sovereignty. Numerous tribes in the Puget Sound area are parties to treaties with the U.S., which reserve lands and rights to the tribes. One of the treaty-reserved rights is the ability to take fish at all place where the tribe fished at treaty time, commonly referred to as "usual and accustomed" (U&A) locations. Tribal fisheries are central to the cultural and economic existence of tribes and their members. Treaty terms and the rights arising from them cannot be rescinded or canceled without explicit Congressional consent. Federal agencies, including the USACE, have a legal obligation to abide by treat terms and to avoid interference with treaty reserved fishing rights. The following Tribes have usual and accustomed fishing rights in the project area:

- Muckleshoot Indian Tribe,
- Suquamish Indian Tribe,
- Snoqualmie Indian Tribe (although they no longer retain treaty rights),
- Confederated Tribes and Bands of the Yakama Nation,
- Sauk-Suiattle Tribe, and
- Tulalip Tribes of the Tulalip Reservation.

5.12 Tribal Government Consultation and Coordination Process

In accordance with Executive Order 13175 Consultation and Coordination with Indian Tribal Governments, the USACE identified affected tribes of the project area and provided information regarding the feasibility study, proposed Federal action, and opportunities for the tribes to provide information and comment on the project. Consultation began with the coordination of and subsequent site visit to the project location to discuss the proposed project with all stakeholders in 2013.

The following list provides information regarding the USACE's efforts to coordinate with the tribes:

1. Site visit to the Emma Schmitz Memorial Overlook held April 26, 2013.
2. Section 106 of HNPA consultation (see 7.5 for details)
3. Notification email of changes to the project description sent to cultural and natural resources managers sent on June 1, 2020.
4. Staff-level coordination teleconference with the Suquamish Indian Tribe biologist on July 9, 2020.

6 SUMMARY

As described, the revised proposed Federal action with the change in construction techniques to include driving sheet piles with a vibratory hammer and constructing a temporary storage pad waterward of the seawall would not have significant impacts to the environment along Alki or Puget Sound. Adhering to the work windows and limiting work to the designated project footprint is sufficient to avoid significant impacts to cultural and natural resources.

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8 APPENDICES

Appendix A – NEPA Comments Received and Responses

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THE SUQUAMISH TRIBE
PO Box 498 Suquamish, WA 98392-0498

Filed electronically

June 24, 2020

Vanessa Pepi
U.S. Army Corps of Engineers
Environmental and Cultural Resources Branch
P.O. Box 3755
Seattle, WA 98124
Vanessa.E.Pepi@usace.army.mil

RE: Alki Coastal Erosion Control Project – Notice of Availability of Draft Supplemental Environmental Assessment

Dear Ms. Pepi:

This letter provides the Suquamish Tribe's (Tribe) comments regarding the Alkai Coastal Erosion Project – Notice of Availability (NOA) of Draft Supplemental Environmental Assessment (DSEA). The Suquamish people lived, gathered plants, collected ceremonial and spiritual items, hunted, and fished for thousands of years in western Washington State. The Tribe is a federally recognized Indian Tribe and pursuant to the 1855 Treaty of Point Elliott, the Tribe reserved the right to fish and gather shellfish at its "usual and accustomed" (U&A) fishing grounds and stations in Puget Sound. The Tribe's U&A includes the marine waters from the northern tip of Vashon Island to the Fraser River in Canada, including Haro and Rosario Straits, the streams draining into the western side of Puget Sound and Hood Canal. The proposed project has the potential to impact Tribal resources including, but not limited to, Tribal treaty natural resources.

Comments

1 General: The U.S. Army Corps of Engineers has said that a Tribal briefing will be scheduled after the comment period has closed. This does not facilitate meaningful coordination with Tribes.

2 General: The Finding of No Significant Impact and Clean Water Act Section 404 Statement of Findings (FONSI/SOF) states on page 2 that consultation regarding cultural resources was done but it does not appear that consultation with appropriate Tribal staff regarding environmental review and potential impacts to Tribal Treaty fishery activities has occurred. Assuming that there are no impacts without appropriate consultation would be inaccurate.

3 General: There is no detailed discussion of mitigation for the loss of beach habitat resulting from the installation of the new wall waterward of the existing wall (just a general statement in the FONSI/SOF regarding removal of the failing riprap associated with the emergency repair). There will be a net loss of 871.2 SF of beach habitat. Removal of a portion of the failing emergency repair should be a requirement and not be

considered mitigation for the impacts of the further waterward location of the new wall. Additional mitigation needs to be included in the proposal.

4 General: There is no aquatic vegetation survey map in the materials available for review. Please provide a copy to the Tribe. How far is eelgrass from the construction activities?

5 General: The FONSI/SOF states that salmonid migration periods are avoided, however, this is somewhat misleading as it does not mean that these fish are not present in the project vicinity.

6 General: The FONSI/SOF states "a small amount (0.02 acres) of beach will be lost to the footprint of the new wall". This is a net loss of 871.2 SF and not considered insignificant. In addition there is no discussion of the buried armor layer that extends 14' waterward from the face of the proposed wall. Has WDFW or other agencies provided any input or comment on this project? If yes, please provide copies of those comments to the Tribe.

7 Page 1: Provide a survey drawing that accurately illustrates the location of utilities, the existing seawall, and the proposed seawall. Please include elevations including but not limited to Mean Low Low Water (MLLW) and the Ordinary High Water Line (OHWL).

8 Page 7: There is no detail provided regarding the staging/storage pad. Not only will hydraulic pumping create scour in the intertidal area but the six ecology blocks on the beach are an additional impact. They are a physical impact which will create a scour point and smother any biota in the substrate below. More detailed discussion regarding these impacts is needed.

9 Page 13: If the staging/storage pad wasn't discussed in the FEA it needs to be discussed in the supplement.

10 Page 16: There is no discussion of potential barge trips. Are all materials and debris being moved via the upland? If there are proposed barge trips what is the proposed timing and number of barge trips expected? Barge activity has the potential to impact ESA listed species as well as Tribal Treaty fishery activities.

11 Page 16: Threatened and Endangered Puget Sound Steelhead *(O. Mykiss)* should be included in the analysis of fish utilizing the marine shoreline. As written it implies they are only in the Duwamish River.

12 Page 18: Pedestrians walking dogs on the uplands is not comparable to the vibratory installation of sheet pile.

13 Page 18: The ecology blocks, construction activity and equipment driving on the beach will impact shellfish/prey availability for wildlife, fish and other aquatic species. More discussion is needed.

14 Page 21: There is little discussion regarding noise disturbance on Murrelets and Killer Whales. Noise has been found to impact both migratory and feeding behavior. Although vibratory installation is not as loud as pile driving more discussion is warranted. Text regarding best management practices needs to be added stating:

- Vibratory or impact pile driving must not be initiated if marine mammals are present within 300 feet of the work site.
- Vibratory or impact pile driving must not be initiated if ESA-listed birds (Marbled murrelets) are seen within 160 feet.

16 Page 28 – Section 5.11 Native American Treaty Rights: The document states that there are no impacts to Tribal Treaty Rights. Without meaningful consultation with Tribes this is incorrect.

The Suquamish Tribe requests a project briefing (as stated previously via email) and be provided additional opportunities to provide comment as additional information becomes available. Send project updates and notifications to myself (aosullivan@suquamish.nsn.us) for environmental review and to Dennis Lewarch (dlewarch@suquamish.nsn.us) for cultural resource review. We request that you keep us informed of project status and any relevant project related actions.

Sincerely,

Alison O'Sullivan
Senior Biologist, Suquamish Tribe Natural Resources Department

USACE Response to Comments

 # 1 General: The U.S. Army Corps of Engineers has said that a Tribal briefing will be scheduled after the comment period has closed. This does not facilitate meaningful coordination with Tribes.

Response: *A request for a briefing was received by the USACE on June 2, 2020. The USACE Tribal Liaison wanted to allow all informed Tribes the opportunity to review the Supplemental Environmental Assessment, provide comments, or request a meeting. The intention was to have a meeting for all Tribes wishing to coordinate with the USACE on this project.*

 # 2 General: The Finding of No Significant Impact and Clean Water Act Section 404 Statement of Findings (FONSI/SOF) states on page 2 that consultation regarding cultural resources was done but it does not appear that consultation with appropriate Tribal staff regarding environmental review and potential impacts to Tribal Treaty fishery activities has occurred. Assuming that there are no impacts without appropriate consultation would be inaccurate.

Response: *A letter to Chairman Forsman (cc'd to Dennis Lewarch) was sent on April 9, 2013 to initiate tribal consultation. Additionally, a site visit for resource agencies and the Confederated Tribes and Bands of the Yakama Nation, Tulalip Tribes of the Tulalip Reservation, Muckleshoot Indian Tribe, Snoqualmie Tribe, Sauk-Suiattle Indian Tribe, and Suquamish Indian Tribe was arranged for April 26, 2013. For individuals unable to attend the site meeting, a follow-up email was sent on May 3, 2013 to all of the proposed attendees and included the handouts provided at the site visit. Specifically, that email was sent to D. Williams and D. Lewarch of the Suquamish Indian Tribe. We received no comments from the Suquamish Tribe. After award of the construction contract, the contractor identified concerns with protection of the existing sewer line and the limited staging area for construction at the project site. When the contractor proposed construction method changes, the USACE again reached out to the Suquamish Tribe on June 1, 2020 advising of the proposed changes and that a draft Supplemental Environmental Analysis (SEA) would soon follow. The Notice of Availability of the Draft SEA was sent out and made available to the public on June 9, 2020. We received comments from the Suquamish Indian Tribe on June 24, 2020.*

The Final Integrated Detailed Project Report and Final Environmental Assessment (September 2019), was completed approximately 5-years later due to lack of funding, which slowed down the development of the project.

 # 3 General: There is no detailed discussion of mitigation for the loss of beach habitat resulting from the installation of the new wall waterward of the existing wall (just a general statement in the FONSI/SOF regarding removal of the failing riprap associated with the emergency repair). There will be a net loss of 871.2 SF of beach habitat. Removal of a portion of the failing emergency repair should be a requirement and not be considered mitigation for the impacts of the further waterward location of the new wall. Additional mitigation needs to be included in the proposal.

Response: *Within the Final Integrated Detailed Project Report and Final Environmental Assessment (September 2019), it is stated that a 1:1 ratio would be used to restore beach habitat. Therefore, for as much of the beach habitat would be lost during the repair of the seawall, a corresponding amount of beach habitat would be restored by removing rip rap from the 1998 emergency repair. The purpose of the project is not to repair the 1998 emergency repair.*

 # 4 General: There is no aquatic vegetation survey map in the materials available for review. Please provide a copy to the Tribe. How far is eelgrass from the construction activities?

The Final Integrated Detailed Project Report and Final Environmental Assessment (September 2019), states that eelgrass beds are patchy throughout the area and run along the shoreline from Alki Point to the north and past Lincoln Park to the south. It also states that bull kelp is absent from the shoreline directly adjacent to the project site, but is patchy north and south of the project. As the SEA was being prepared, all resources analyzed in the September 2019 document were reviewed to determine whether or not a resource should be analyzed again as a result of the change in the project (Table 1 in the SEA). An internet search was conducted to determine if there were significant changes in the area since 2013. The Washington Department of Natural Resources' Puget Sound Seagrass Monitoring effort shows that there have been no surveys conducted along the section of shoreline where the project is located (Figure 1).

Additionally, according to the Washington Department of Natural Resources' Aquatic Resources Interactive Map for Nearshore Habitat, kelp is patchy in the area and along the area of the repair there is no depiction of kelp there. Sea grass and eelgrass do not show up on the map at all (Figure 2).

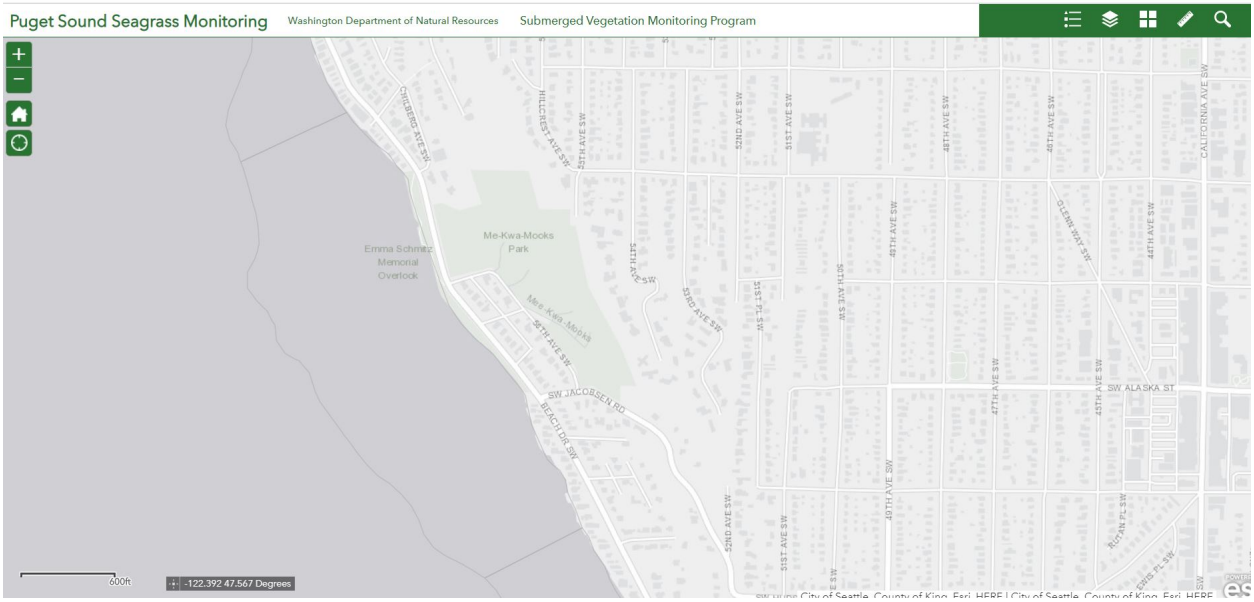

Figure 1. Showing the Puget Sound Seagrass Monitoring screenshot (site accessed on June 26, 2020).

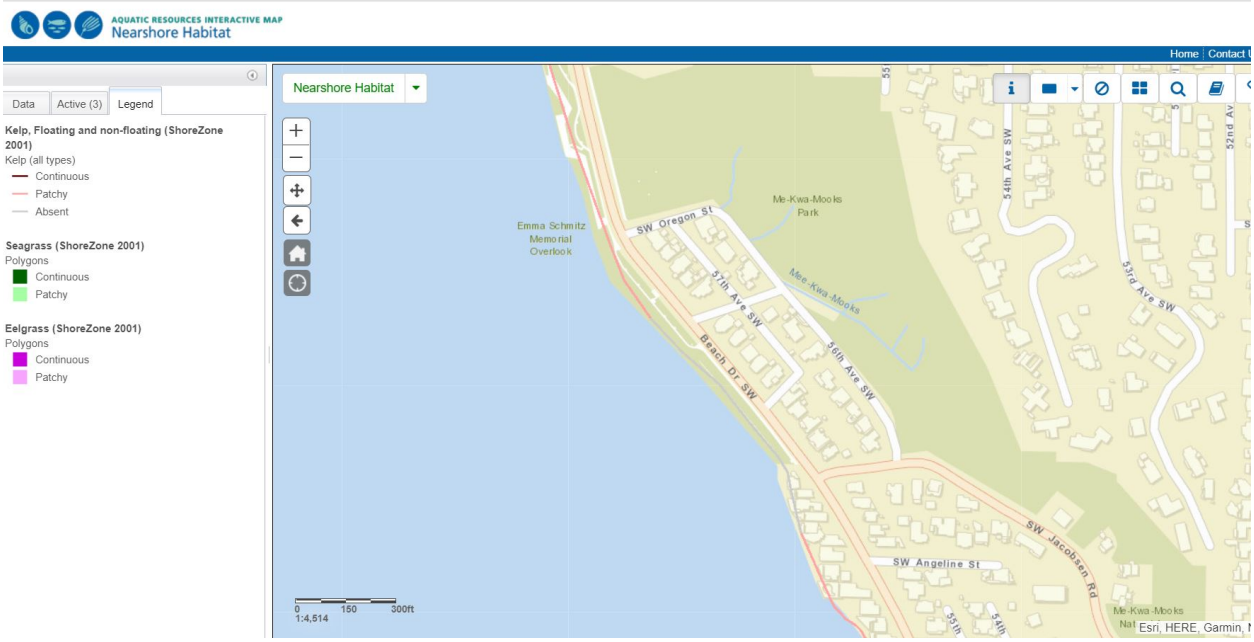

Figure 2. Showing the Aquatic Resources Interactive Map, Nearshore Habitat screenshot (site accessed on June 26, 2020).

The site was also visited by a USACE biologist at low tide on June 26, 2020 (at approx. 3:30 pm) and photographed. The following figures 3 and 4 show the condition of the site at this time. No seagrass was observed within or directly outside the construction limits.

Figure 3. View from the north end of the site looking towards the south. The green on the beach substrate is a couple of species of algae.

Figure 4. The staging pad will be located adjacent to the 1998 riprap repair.

 # 5 General: The FONSI/SOF states that salmonid migration periods are avoided, however, this is somewhat misleading as it does not mean that these fish are not present in the project vicinity.

Response: *The USACE agrees that Final Integrated Detailed Project Report and Final Environmental Assessment (September 2019) does not rule out the presence of fish the project vicinity. However, given that the construction work will occur outside of the salmonid migration period, the project has taken considerable effort and environmental coordination to be scheduled at a time where fish presence is most limited. The intertidal and shallow subtidal zones provide feeding and rearing habitat for young marine fish and offer feeding and spawning habitat for mature adult fish. The project is conducting the work between July 15 and February 15 because the in-water work window avoids sensitive migration periods for salmonids, including bull trout. The work window was included as part of the project for the Endangered Species Act (ESA) consultations with USFWS and NMFS and included within the Clean Water Act (CWA) water quality certification and Coastal Zone Management Act (CZMA) concurrence provided by Ecology. Ecology included WDFW within the CWA review process and USACE addressed WDFW's comments during that process.*

 # 6 General: The FONSI/SOF states "a small amount (0.02 acres) of beach will be lost to the footprint of the new wall". This is a net loss of 871.2 SF and not considered insignificant. In addition there is no discussion of the buried armor layer that extends 14' waterward from the face of the proposed wall. Has WDFW or other agencies provided any input or comment on this project? If yes, please provide copies of those comments to the Tribe.

Response: *Within the Final Integrated Detailed Project Report and Final Environmental Assessment (September 2019), it is stated that a 1:1 ratio would be used to restore beach habitat. Therefore, for as much of the beach habitat would be lost during the repair of the seawall, a corresponding amount of beach habitat would be restored by removing rip rap from the 1998 emergency repair. The full description of the wall is included within the Final Integrated Detailed Project Report and Final Environmental Assessment. Scour at the base of the new structure is calculated to occur and toe protection is required to mitigate this risk. To minimize beach impacts, the toe of the wall will be buried below grade and buried with a minimum of three feet of one- to six-inch gravel/cobble-sized beach fill. Native beach material excavated for the buried toe will be retained for placement on top of the buried toe after construction to return the site to its previous condition and minimize alteration to the substrate. Additionally, within that document, Appendix K of the Final Integrated Detailed Project Report and Final Environmental Assessment has the responses from U.S. Fish and Wildlife and National Marine Fisheries Service.*

 # 7 Comment Page 1: Provide a survey drawing that accurately illustrates the location of utilities, the existing seawall and the proposed seawall. Please include elevations including but not limited to Mean Low Low Water (MLLW) and the Ordinary High Water Line (OHWL).

Response: *The projects plans are included within Appendix F of the FEA. The utilities are shown near the beginning of the plan set. All of the utilities are under the road and behind the seawall.*

 # 8 Comment Page 7: There is no detail provided regarding the staging/storage pad. Not only will hydraulic pumping create scour in the intertidal area but the six ecology blocks on the beach are an additional impact. They are a physical impact which will create a scour point and smother any biota in the substrate below. More detailed discussion regarding these impacts is needed.

Response: *The staging pad is discussed on page 7 within the SEA. "The staging pad will be constructed using a Flexifloat construction system (Figure 7) and anchored to spuds that will be placed on the top of the substrate near the midpoints of the north and south ends of the staging pads (Figure 8). Along the waterward side of the staging pad, steel road plates will be welded on to the top edge of the pad (placed vertically) to protect the equipment on the pad from wave action." On page 10, Figure 8 shows the dimensions of the staging pad. The staging pad is within the construction limits, which is the area expected to be impacted by the construction activity. The impacts within the construction limits are discussed within the Final Integrated Detailed Project Report and Final Environmental Assessment (September 2019). The purpose of the staging pad is to address the risk of damaging the existing sewer pipe by limiting heavy equipment movement back and forth from the original staging area to the actual work area. The staging pad helps to disperse the weight across a wider area, which is intended to reduce scour during the project along with keeping the equipment out of the water during high tide. The staging pad is only expected to be in place during construction of the project. The Final Integrated Detailed Project Report and Final Environmental Assessment specifies that the site will be returned to similar conditions by placing native material back on to the site.*

 # 9 Comment Page 13: If the staging/storage pad wasn't discussed in the FEA it needs to be discussed in the supplement.

Response: *The staging pad is one of the primary activities that is discussed within the SEA.*

 # 10 Comment Page 16: There is no discussion of potential barge trips. Are all materials and debris being moved via the upland? If there are proposed barge trips what is the proposed timing and number of barge trips expected? Barge activity has the potential to impact ESA listed species as well as Tribal Treaty fishery activities.

Response: *Use of a barge is not contemplated for this project. There are no barge trips included within the project description. As planned, all materials would be brought to the project site by road.*

 # 11 Comment Page 16: Threatened and Endangered Puget Sound Steelhead (O. Mykiss) should be included in the analysis of fish utilizing the marine shoreline. As written it implies they are only in the Duwamish River.

Response: *Section 3.3 is a generalized discussion of impacts to fish. Impacts to listed fish are discussed in Section 3.6, not Section 3.3. As written, it implies that any adult salmonids may be migrating along the shoreline as they head to a natal stream. Additionally, steelhead aren't known to feed and rear in nearshore areas of Puget Sound. Steelhead are known to rear in their natal river and then head straight out to the ocean. Therefore, they are not anticipated to be rearing or foraging at the project site.*

 # 12 Comment Page 18: Pedestrians walking dogs on the uplands is not comparable to the vibratory installation of sheet pile.

Response: *On page 18 of the SEA, the paragraph is discussing current conditions at the site, not conditions that would occur during construction. Conditions that are expected to occur during construction can be found on page 19.*

 # 13 Comment Page 18: The ecology blocks, construction activity and equipment driving on the beach will impact shellfish/prey availability for wildlife, fish and other aquatic species. More discussion is needed.

Response: *Impacts to benthic organisms are discussed in both the Final Integrated Detailed Project Report and Final Environmental Assessment (September 2019) and the SEA (*Section 3.5). *The SEA supplements the Final Integrated Detailed Project Report and Final Environmental Assessment, which has more detail. The impacts to benthic organisms are expected to be temporary and those benthic organisms would be expected to recolonize the area where construction activities took place and to the location where rip rap is removed.*

#14 Comment Page 21: There is little discussion regarding noise disturbance on Murrelets and Killer Whales. Noise has been found to impact both migratory and feeding behavior. Although vibratory installation is not as loud as pile driving more discussion is warranted. Text regarding best management practices needs to be added stating:

- Vibratory or impact pile driving must not be initiated if marine mammals are present within 300 feet of the work site.

- Vibratory or impact pile driving must not be initiated if ESA-listed birds (Marbled murrelets) are seen within 160 feet.

Response: *Threatened and endangered species occurrences are discussed in more detail in the Final Integrated Detailed Project Report and Final Environmental Assessment (September 2019), which is then supplemented by the SEA, to include potential impacts as a result of the use of a vibratory hammer. The potential effects of using a vibratory hammer to drive sheet pile is discussed in Sections 3.3.2 and 3.6.3. USACE has worked to avoid and minimize impacts to species by using avoidance measures such as conducting the working using a vibratory hammer and doing the work in the dry during low tide. Through these efforts, it is anticipated that effects to species are likely to be remain within the existing ESA effects determinations.*

It is unlikely that marbled murrelet, because they are uncommon in the Puget Sound area, would be foraging in the waters off of the project location. Work using a vibratory hammer would be conducted only during low tide and in the dry, which would reduce the sound propagation in the water at the depths where a marbled murrelet may be foraging (outside a 160 foot radius), thus making it highly unlikely for impacts to marbled murrelet. Additionally, while it is unlikely that marbled murrelets would be foraging in the waters off of the project location, USFWS has indicated that vibratory pile driving is not currently associated with injury or death to salmonids and diving seabirds.

Southern resident killer whales may occur offshore of the project area. USACE used the NMFS 2018 spreadsheet companion to the "Technical Guidance for Assessing Effects of Anthropogenic Noise on Marine Mammal Hearing" to determine potential impacts to marine mammals. For shallow water use of a vibratory hammer (a more conservative estimation than the proposed work in the dry at low tide), the area of potential impact from the point of origin of the noise was less than 100 feet. The work will be done in the dry at low tide; the propagation of sound will not reach the furthest estimated distance calculated by the NMFS spreadsheet. It is highly unlikely killer whales will be within 100 feet of the noise generation due to the depth of the water at low tide and general disturbance of the area as a result of the construction. USACE determined that this change in construction technique does not change the prior effect determination under the ESA.

During construction of the seawall, USACE biologists will periodically go out to the project site to monitor for marine mammals and seabirds to ensure that the above BMPs are working.

 # 15 Page 28 – Section 5.11 Native American Treaty Rights: The document states that there are no impacts to Tribal Treaty Rights. Without meaningful consultation with Tribes this is incorrect.

The Suquamish Tribe requests a project briefing (as stated previously via email) and be provided additional opportunities to provide comment as additional information becomes available. Send project updates and notifications to myself (aosullivan@suquamish.nsn.us) for environmental review and to Dennis Lewarch (dlewarch@suquamish.nsn.us) for cultural resource review. We request that you keep us informed of project status and any relevant project related actions.

Response: *Alison O'Sullivan requested a project briefing and USACE held that briefing with the Tribe on Thursday, July 9, 2020. All comments were resolved during the conference call.*

Appendix B – Water Quality Certification; First Amendment to Original Order #16624

NOT AN ORIGINAL!! THIS IS A COPY REFLECTING ALL AMENDMENTS TO DATE.
First Amendment Changes are reflected in red.

IN THE MATTER OF GRANTING A WATER QUALITY CERTIFICATION TO U.S. Army Corps of Engineers in accordance with 33 U.S.C. 1341 (FWPCA § 401), RCW 90.48.120, RCW 90.48.260 and Chapter 173-201A WAC	)))))))	**ORDER # 16624** Construct a 500' linear seawall to replace the existing, deteroriating seawall and protect the Emma Scmitz Memorial park on Elliot Bay located in King County, Washington.

U.S. Army Corps of Engineers
Seattle District
Attn: Scott Pozarycki
PO Box 3755
Seattle, WA 98124-3755

On May 8, 2019, the Department of Ecology (Ecology) received a Joint Aquatic Resources Permit Application (JARPA) from U.S. Army Corps of Engineers (Corps) requesting a Section 401 Water Quality Certification (WQC) for the Emma Schmitz (Alki) Coastal Erosion Control Project: Section 103 Coastal Storm Damage Reduction. Ecology issued a joint public notice for the project on June 4, 2019.

The Corps is proposing to build a 500' linear seawall to protect utility and transportation infrastructure as well as the Emma Schmitz Memorial Park. The new seawall will be a solider pile wall with concrete lagging and concrete-encased steel beams, located adjacent to the existing wall that is deteriorating. To prevent damage to the existing sewer pipe located adjacent to the seawall in the upland area, a temporary, floating staging area will be placed waterward within the limits of construction. This area will provide temporary storage of heavy equipment in order to minimize weight placed on the pipe and avoid cracking it. The height of the new wall will be 22' feet above mean lower low water (MLLW). To protect the new wall from scour, a buried toe consisting of 1 foot layer filter rock and three feet of armor rock will be placed below the existing grade and buried with a 1-12" gravel/cobble beach fill. The existing seawall will be buried with backfill material to provide a stable slope leading up to the existing sidewalk grade. To offset the loss of beach habitat from the new structure, a portion of riprap placed during an emergency repair will be removed.

The project is located in West Seattle at 4503 Beach Dr SW on Puget Sound in King County, Washington.
Section 15 T24N R03E
WRIA 9 Duwasmish - Green

AUTHORITIES

In exercising authority under 33 U.S.C. § 1341, RCW 90.48.120, and RCW 90.48.260, Ecology has reviewed this application pursuant to the following:

1. Conformance with applicable water quality-based, technology-based, and toxic or pretreatment effluent limitations as provided under 33 U.S.C. §§1311, 1312, 1313, 1316, and 1317 (FWPCA §§ 301, 302, 303, 306 and 307);

2. Conformance with the state water quality standards contained in Chapter 173-201A WAC and authorized by 33 U.S.C. §1313 and by Chapter 90.48 RCW, and with other applicable state laws; and

3. Conformance with the provision of using all known, available and reasonable methods to prevent and control pollution of state waters as required by RCW 90.48.010.

WATER QUALITY CERTIFICATION CONDITIONS

Through issuance of this Order, Ecology certifies that it has reasonable assurance that the activity as proposed and conditioned will be conducted in a manner that will comply with applicable water quality standards and other appropriate requirements of state law. In view of the foregoing and in accordance with 33 U.S.C. §1341, RCW 90.48.120, RCW 90.48.260 Chapter 173-200 WAC and Chapter 173-201A WAC, water quality certification is granted to the Applicant subject to the conditions within this Order.

Certification of this proposal does not authorize Corps to exceed applicable state water quality standards (Chapter 173-201A WAC), ground water quality standards (Chapter 173-200 WAC) or sediment quality standards (Chapter 173-204 WAC). Furthermore, nothing in this certification absolves Applicant from liability for contamination and any subsequent cleanup of surface waters, ground waters or sediments resulting from project construction or operations.

A. General Conditions

1. In this Order, the term "Applicant" shall mean the Corps and its agents, assignees, and contractors.

2. All submittals required by this Order shall be sent to HQ Office, Attn: Federal Permit Manager, PO Box 47600, Olympia, WA 98504-7600 or via e-mail to fednotification@ecy.wa.gov and cc to penny.kelley@ecy.wa.gov. The submittals shall be identified with Order No. 16624 and include the Applicant name, project name, project contact, and the contact phone number.

3. Work authorized by this Order is limited to the work described in the JARPA received by Ecology on May 8, 2019.

4. The Applicant shall obtain Ecology review and approval before undertaking any changes to the proposed project that might significantly and adversely affect water quality, other than those project changes required by this Order.

5. Within 30 days of receipt of any updated information, Ecology will determine if the revised project requires a new Public Notice and Water Quality Certification or if a modification to this Order is required.

6. The Applicant shall keep copies of this Order on the job site and readily available for reference by Ecology personnel, the construction superintendent, construction managers and lead workers, and state and local government inspectors.

7. The Applicant shall provide access to the project site and all mitigation sites upon request by Ecology personnel for site inspections, monitoring, and/or necessary data collection, to ensure that conditions of this Order are being met.

8. Nothing in this Order waives Ecology's authority to issue additional orders if Ecology determines that further actions are necessary to implement the water quality laws of the state. Further, Ecology retains continuing jurisdiction to make modifications hereto through supplemental order, if additional impacts due to project construction or operation are identified (*e.g.*, violations of water quality standards, downstream erosion, etc.), or if additional conditions are necessary to further protect water quality.

9. In the event of changes or amendments to the state water quality, ground water quality, or sediment standards, or changes in or amendments to the state Water Pollution Control Act (RCW 90.48) or the federal Clean Water Act, Ecology may issue an amendment to this Order to incorporate any such changes or amendments applicable to this project.

10. The Applicant shall provide to Ecology a signed statement (see Attachment A for an example) that s/he has read and understands the conditions of this Order and any permits, plans, documents and approvals referenced herein. The signed statement shall be submitted to Ecology per Condition A2 at least 7 days prior to start of in-water work.

11. This Order does not authorize direct, indirect, permanent, or temporary impacts to waters of the state or related aquatic resources, except as specifically provided for in conditions of this Order.

12. Failure of any person or entity to comply with the Order may result in the issuance of civil penalties or other actions, whether administrative or judicial, to enforce the terms of this Order.

B. Notification Requirements

1. The following notification shall be made via phone or e-mail (e-mail is preferred) to Ecology's Federal Permit Manager via e-mail to fednotification@ecy.wa.gov and cc to penny.kelley@ecy.wa.gov. Notifications shall be identified with Order No. 16624 and include the Applicants name, project name, project location, project contact and the contact's phone number.

    a. Immediately following a violation of state water quality standards or when the project is out of compliance with any of this Orders conditions.
        1. In addition to the phone or e-mail notification, the Applicant shall submit a detailed written report to Ecology within five (5) days that describes the nature of the event, corrective action taken and/or planned, steps to be taken to prevent a recurrence, results of any samples taken, and any other pertinent information.
    b. At least ten (10) days prior to all pre-construction meetings
    c. At least ten (10) days prior to conducting initial in-water work activities for each in-water work window.
    d. At least seven (7) days within project completion.

C. Timing

1. This Order will expire five (5) years from the date of issuance. Continuing this Order beyond the five-year term of this Order will require the Applicant to apply for an extension prior to the expiration of this Order.

2. In water work below the ordinary high water line must occur between July 15th through February 15th of any year.

D. Water Quality Monitoring & Criteria

1. Puget Sound is categorized as extraordinary and the criteria of the categorization apply as described in WAC 173-201A-210 (1), except as specifically modified by this Order.

2. The Applicant shall conduct visual water quality monitoring when working below the OHWM.
3. Visible turbidity anywhere beyond the temporary area of mixing (point of compliance) from the activity shall be considered an exceedance of the standard.
4. Visual monitoring results shall be submitted weekly to the Ecology Federal Permit Manager per condition A.2.

5. Mitigation and/or additional monitoring may be required if the monitoring results indicate that the water quality standards have not been met.

E. Construction

General Conditions

1. All clearing limits, stockpiles, staging areas, and trees to be preserved shall clearly be marked prior to commencing construction activities and maintained until all work is completed for each project.

2. No petroleum products, fresh concrete, lime or concrete, chemicals, or other toxic or deleterious materials shall be allowed to enter waters of the state.

3. All construction debris, excess sediment, and other solid waste material shall be properly managed and disposed of in an upland disposal site approved by the appropriate regulatory authority.

4. Turbid de-watering water associated with in-water work shall not be discharged directly to waters of the state, including wetlands. Turbid de-watering water shall be routed to an upland area for on-site or off-site settling.

5. Clean de-watering water associated with in-water work that has been tested and confirmed to meet water quality standards may be discharged directly to waters of the state including wetlands. The discharge outfall method shall be designed and operated so as not to cause erosion or scour in the stream channel, banks, or vegetation.

6. All equipment being used below the ordinary high water mark shall utilize bio-degradable hydraulic fluid.

~~7. Staging areas will be located a minimum of 50 feet and, where practical, 200 feet, from waters of the state including wetlands. If a staging area must be located within 50 feet of waters of the state, then the Applicant shall provide a written explanation and obtain approval from Ecology's Federal Permit Manager before placing the staging area in the setback area.~~

7. Upland staging areas will be located a minimum of 50 feet and, where practical, 200 feet, from waters of the state including wetlands. If a staging area must be located within 50 feet of the waters of the state, then the Applicant shall provide a written explanation and obtain approval from Ecology's Federal Permit Manager before placing the staging area in the setback area.

8. No equipment shall enter, operate, be stored or parked within any sensitive area except as specifically provided for in this Order.

9. The temporary floating staging area shall be used for the minimum amount of time needed for wall construction and provide storage of equipment only.

10. Any equipment stored on the floating staging area shall have secondary containment to prevent discharge of oil or hydraulic fluid to waters of the state.

11. No maintenance of equipment shall be performed on the temporary floating staging area but shall be removed to the upland staging area for repair.

12. Equipment used for this project shall be free of external petroleum-based products while used around the waters of the state, including wetlands. Accumulation of soils or debris shall be removed from the drive mechanisms (wheels, tires, tracks, etc.) and the undercarriage of equipment prior to its use around waters of the state, including wetlands.

~~13. No equipment shall enter, operate, be stored or parked within any sensitive area except as specifically provided for in this Order.~~

14. Fuel hoses, oil drums, oil or fuel transfer valves and fittings, etc., shall be checked regularly for drips or leaks, and shall be maintained and stored properly to prevent spills into state waters.

15. Wash water containing oils, grease, or other hazardous materials resulting from wash down of equipment or working areas shall not be discharged into state waters. The Applicant shall set up a designated area for washing down equipment.

Seawall Construction

16. All forms for concrete shall be completely sealed to prevent the possibility of fresh concrete entering waters of the state.

17. All concrete shall be completely cured prior to coming into contact with water.

18. Concrete process water shall not enter waters of the state. Any concrete process/contact water discharged from a confined area with curing concrete shall be routed to upland areas to be treated and disposed of appropriately with no possible entry to state waters.

19. All excavated sediment not incorporated into the buried toe shall be disposed upland in an approved disposal site.

F. Emergency/Contingency Measures

1. The Applicant shall develop and implement a spill prevention and containment plan for this project.

2. The Applicant shall have adequate and appropriate spill cleanup material available on site at all times during construction.

3. The Applicant shall have adequate and appropriate spill response materials on hand to respond to emergency release of petroleum products or any other material into waters of the state.

4. Fuel hoses, oil drums, oil or fuel transfer valves and fittings, etc., shall be checked regularly for drips or leaks, and shall be maintained and stored properly to prevent spills into state waters.

5. Work causing distressed or dying fish, discharges of oil, fuel, or chemicals into state waters or onto land with a potential for entry into state waters, is prohibited. If such work, conditions, or discharges occur, the Applicant shall notify the Ecology Federal Permit Manager per condition B.1. and immediately take the following actions:

    a. Cease operations at the location of the non-compliance.
    b. Assess the cause of the water quality problem and take appropriate measures to correct the problem and/or prevent further environmental damage.
    c. In the event of a discharge of oil, fuel, or chemicals into state waters, or onto land with a potential for entry into state waters, containment and cleanup efforts shall begin immediately and be completed as soon as possible, taking precedence over normal work. Cleanup shall include proper disposal of any spilled material and used cleanup materials.
    d. Immediately notify Ecology's Regional Spill Response Office and the Washington State Department of Fish & Wildlife with the nature and details of the problem, any actions taken to correct the problem, and any proposed changes in operation to prevent further problems.
    e. Immediately notify the National Response Center at 1-800-424-8802, for actual spills to water only.

6. Notify Ecology's Regional Spill Response Office immediately if chemical containers (e.g. drums) are discovered on-site or any conditions present indicating disposal or burial of chemicals on-site that may impact surface water or ground water.

Appendix C – Essential Fish Habitat Final Response Letter to NMFS

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

June 10, 2020

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 a final response for the Essential Fish Habitat (EFH) Conservation Recommendations for the Alki Coastal Erosion Control Project, Seattle, Washington (WCR-2014-1323). The U.S. Army Corps of Engineers, Seattle District (Corps) provided an interim response on December 22, 2014 to your agency's letter (December 3, 2014; enclosed) for the Endangered Species Act (ESA) Section 7 informal consultation concurrence and Magnuson-Stevens Fishery Conservation and Management Act EFH consultation. The Corps could not provide a final response at the time as the design phase needed to be complete first. Now, the Corps has completed the project design and has the following responses to the three EFH conservation recommendations for the proposed action:

(1) Minimize alteration to the substrate as much as practical (e.g. place sheet piling deep enough to eliminate need for toe armoring in front of structure).

The Corps has incorporated this recommendation in the design. However, storm waves coincident with extreme water levels can reflect off the wall and develop a standing wave pattern in front of the wall, which is conducive to scour. As a result, scour at the base of the new structure is calculated to occur and toe protection is required to mitigate this risk. Further, USACE Engineering Manual 1110-2-110 recommends the use of toe protection to ensure seawalls are not undermined. The intent of the toe berm is to dissipate waves prior to impacting the wall. This will minimize the amount of sediment scour on the seabed adjacent to the vertical wall face and will also reduce the amount of wave run-up and overtopping on the wall. Therefore, a buried toe will be constructed on the seaward side of the seawall to ensure the seawall is not undermined from scour

caused by standing waves. The feature also provides additional lateral support to resist earth pressures pushing the wall seaward.

To minimize beach impacts, three feet of armor stone weighing between 200 and 400 pounds each at the toe of the wall over one foot of filter rock will be buried below grade. To minimize alteration to the substrate as much as practical, the two layer filter and armor rock toe will be embedded below the existing grade and buried with a 1-6" gravel/cobble beach fill. The gravel/cobble layer will have a 5-foot top width and a 3H:1V (horizontal:vertical) slope, for a total width of approximately 14 feet; this provides protection from wave erosion. Sheet pile may be used to provide additional support if the existing seawall begins to move during construction. Native material excavated for the buried toe will be retained for placement on top of the buried toe after construction to return the site to its previous condition and minimize alteration to the substrate.

(2) Remove a greater amount of intertidal fill from the beach to the north than is added by building the replacement seawall to ensure a net gain in habitat function for listed species.

The Corps has incorporated this recommendation in the design. A small amount (0.02 acres) of beach will be lost due to the footprint of the new wall. To offset the loss of this habitat, the project will reclaim adjacent beach habitat by removing a portion of riprap from the City of Seattle 1998 emergency repair to the north. Riprap that has sloughed onto beach habitat below the emergency repair will be removed from the beach to reclaim beach habitat. The ratio will be at least a 1:1 replacement as this habitat reclaims the lost habitat imposed by the new seawall and could begin to function immediately post-construction.

(3) Place sand along the beach to decrease average grain size and simulate natural sediment supply that is currently interrupted by the seawall, and that will support forage fish habitat requirements.

The Corps has not incorporated this recommendation in the design. Native coarse sand, gravel, and cobble material that is excavated from the base of the existing seawall will be placed over the buried toe and 1-12" gravel/cobble beach fill for the 3H:1V (horizontal:vertical) slope needed to provide the appropriate level of protection from wave erosion. Sand cannot be placed over the native material that will be excavated and replaced over the buried toe of the new seawall because it would negatively alter the beach profile by making it too steep (greater than 3H:1V) and finer sediments are expected to be winnowed away by waves. As described in 2014, the inclusion of this element in final project plans was dependent on evaluation during the design phase and available funding; unfortunately, replacing the native beach material entirely with sand

to achieve a 3H:1V slope would require costly off-site disposal of the native beach material and would not sufficiently absorb wave energy to protect the seawall.

If you have any questions or require more details, please contact Ms. Katie Whitlock of the Planning, Environmental, and Cultural Resources Branch (206-764-3576; kaitlin.e.whitlock@usace.army.mil).

Sincerely,

BOERNER.LAURA.A.1251907443
Digitally signed by BOERNER.LAURA.A.1251907443
Date: 2020.06.10 13:58:23 -07'00'

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

Enclosure

Appendix D – State Historic Preservation Officer Concurrence on the Alki Seawall Replacement Project

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

June 15, 2020

Ms. Laura A. Boerner
Planning, Environmental & Cultural Resources
Seattle District
Corps of Engineers
PO Box 3755
Seattle, Washington 98124

Re: Alki Seawall Replacement Project
Log No.: 072513-01-COE-S

Dear Ms. Boerner:

Thank you for contacting our department. We have reviewed the information you provided for the proposed Alki Seawall Replacement Project, Seattle, King County, Washington

We concur with your Determination of No Historic Properties Affected with the stipulation for an unanticipated discovery plan.

We would 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).

In the event that archaeological or historic materials are discovered during project activities, work in the immediate vicinity must stop, the area secured, and the concerned tribe's cultural staff and cultural committee and this department notified.

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, including information regarding historic properties that have not yet been identified. Thank you for the opportunity to comment and a copy of these comments should be included in subsequent environmental documents.

Sincerely,

Robert G. Whitlam, Ph.D.
State Archaeologist
(360) 586-3080
email: *rob.whitlam@dahp.wa.gov*

Appendix E – Federal Consistence for the Emma Schmitz Seawall Coastal Erosion Control Project in Seattle, Washington

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

June 9, 2020

Ms. Laura Boerner, Chief
Environmental and Cultural Resources Branch
Corps of Engineers, Seattle District
P.O. Box 3755
Seattle, WA 98124-3755

RE: Federal Consistency Concurrence for the Emma Schmitz Seawall Coastal Erosion Control Project, in Seattle, Washington

Dear Laura Boerner:

On May 4, 2020, the Department of Ecology (Ecology) received the U.S. Army Corps of Engineers's (the Corps) supplemental Consistency Determination (CD) for the above project. The Corps's proposed new work consists of potential vibratory installation of 75 sheet piles and construction of a temporary 30-foot by 40-foot sheet pile pad for the drill rig and 2 excavators. The new work prompted the need for a supplemental Consistency Determination pursuant to CFR 930.46 – "Supplemental coordination for proposed activities." Additionally, the Corps requested that the Section 401 Water Quality Certification be amended to address the new work.

The new work triggers additional review of the enforceable policies found in the SMA, and the Corps opted to demonstrate compliance with those policies by analyzing the Seattle Shoreline Master Program. Ecology issued an amended Section 401 Water Quality Certification on May 27, 2020, which satisfied the requirements of the state Water Pollution Control Act's enforceable policies. Pursuant to Section 307(c)(3) of the Coastal Zone Management Act of 1972 as amended, Ecology concurs with the Corps's supplemental Consistency Determination that the proposed new work is consistent to the maximum extent practicable with the Washington Coastal Zone Management Program's enforceable policies.

Should you have any questions regarding Ecology's concurrence, please contact Therese Swanson at 360-584-3744 or terry.swanson@ecy.wa.gov.

YOUR RIGHT TO APPEAL

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

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

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

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

ADDRESS AND LOCATION INFORMATION

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

Sincerely,

Brenden McFarland, Section Manager
Environmental Review and Transportation Section
Shorelands and Environmental Assistance Program

Ecc: Kaitlyn Winlock Kaitlin.E.Whitlock@usace.army.mil
Michael Scuderi Michael.R.Scuderi@usace.army.mil
Fed permits box ecyrefedpermits@ecy.wa.gov
Loree' Randall, loree.randall@ecy.wa.gov
Penny Kelley penny.kelley@ecy.wa.gov
Maria Sandercock Maria.sandercock@ecy.wa.gov