

**DRAFT Environmental Assessment and Clean Water Act, Section 404 Public Interest Review**

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**Snohomish County Diking Improvement District No. 5, Snohomish County, Washington**

**December 2024**



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

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## Acronyms

APE	Area of Potential Effect
BA	Biological Assessment
BMP	Best Management Practices
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
cfs	Cubic Feet per Second
CWA	Clean Water Act
DPS	Distinct Population Segment
EFH	Essential Fish Habitat
EO	Executive Order
EPA	Environmental Protection Agency
ESA	Endangered Species Act
H:V	Ratio of Horizontal to Vertical (measured in feet)
LOP	Level of Protection
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NWP	Nationwide Permit
P.L.	Public Law
SHPO	State Historic Preservation Officer
SIRP	Smith Island Restoration Project
USACE	United States Army Corps of Engineers, Seattle District
U.S.C.	United States Code
USFWS	United States Fish and Wildlife Service
WDOE	Washington Department of Ecology

# Introduction

The U.S. Army Corps of Engineers, Seattle District (USACE), prepared this Environmental Assessment (EA) in accordance with (1) the National Environmental Policy Act of 1969 (NEPA), as amended (42 U.S.C. § 4321 et seq.), (2) regulations of the Council on Environmental Quality (CEQ) for implementing the procedural provisions of NEPA (40 CFR parts 1500-1508), and (3) USACE procedures for implementing NEPA (33 CFR 230). Pursuant to Section 102(C) of NEPA, this assessment evaluates the environmental consequences of the proposed Union Slough levee rehabilitation.

## 1.1 Background

The Union Slough levee is a non-federally constructed levee that is operated and maintained by Snohomish County Diking Improvement District No. 5 (Diking District #5). It is located on Smith Island in the City of Everett, Snohomish County, Washington (Section 8 of Township 29 North, Range 5 East). The levee system is approximately 38,000 feet (7.2 miles) in length, surrounds approximately 1,000 acres, and provides a 37-year level of protection. The City of Everett constructed the levee in the 1930s and Diking District #5 continues to operate and maintain the levee system.

The Union Slough levee was originally constructed as an embankment levee consisting of silts, sands, and gravels with an average height of 7 feet, a top width of 12 feet, and 2H:1V side slopes on both the riverward and landward sides of the levee. The riverward slope was armored with spall rock similar in size to Class I riprap. The levee has been repaired through placements of riprap several times.

In 2007, the Section 1135 Union Slough Restoration Project was completed, setting back approximately 4,600 feet of levee. Previous repairs to the Union Slough Levee under the P.L. 84-99 Program occurred in 1960, 1966, 1975, 1976, 1977, 2012, 2013, 2016, and 2018.

## 1.2 Damaging Flood Event

The levee was damaged during an atmospheric river event in January 2021. Flood waters breached the levee at Station 0+00. The area is tidal, and the high rainfall coincided with a high tide and westerly winds. On January 13, the upstream river USGS Gage at Monroe (Gage 12150800) recorded a river flow of 54,300 cfs on the Snohomish River (Figure 1). At the same time, the tidally influenced USGS Gage at Snohomish (Gage 1215500) recorded a peak water surface elevation of 25.7 feet, greater than the established flood stage of 25.0 feet. This water elevation did not overtop the levee. Based on a flow analysis at the Monroe gage (Table 1), this event has a 70 percent annual exceedance probability (AEP) based on a Bulletin 17C analysis and data from the USGS Scientific Investigations Report 2016-5118 (USACE 2021).

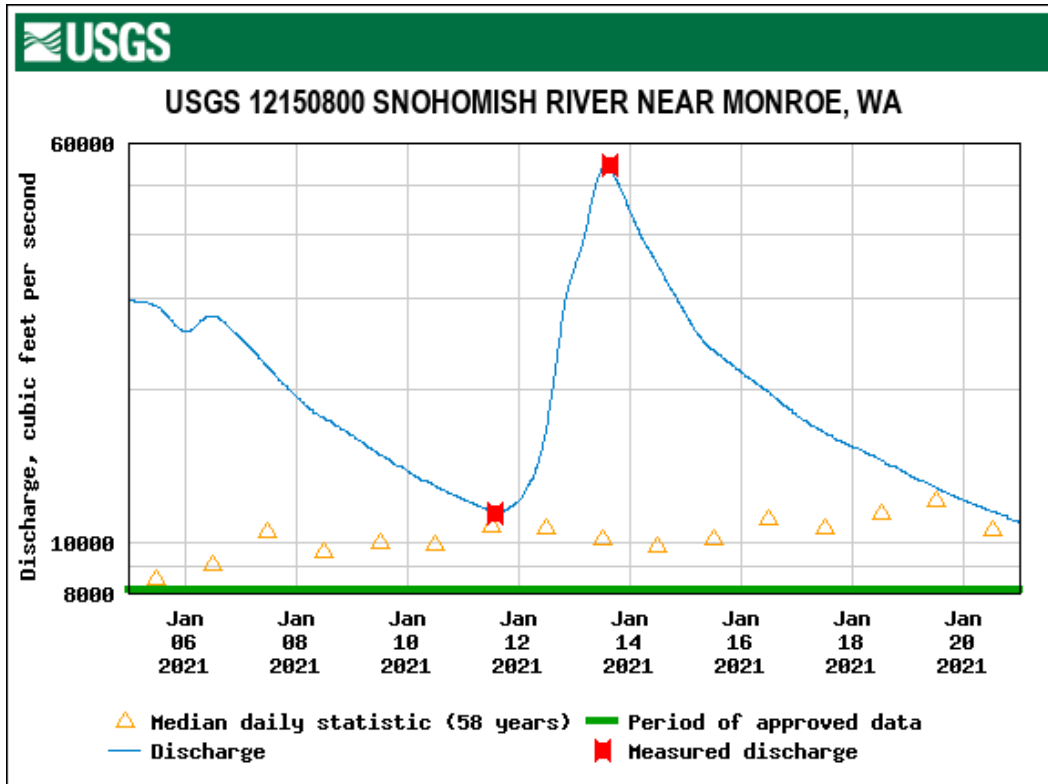


Figure 1. Flow hydrograph at the Snohomish River near the Monroe gage.

Table 1. Flood frequency analysis of the Snohomish River near the Monroe gage (Bulletin 17 – HEC-SSP V. 2.2)

Percent Chance Exceedance	Computed Curve Flow (cfs)	Confidence Limits Flow (cfs)	
		0.05	0.95
0.2	182,114.6	264,930.8	147,836.4
0.5	161,161.9	220,269.6	134,679.3
1.0	145,899.7	190,494.3	124,503.8
2.0	131,055.6	163,747.9	114,063.9
5.0	111,879.5	132,437.2	99,686.9
10.0	97,476.4	111,347.1	88,167.6
20.0	82,778.3	91,917.4	75,758.9
50.0	61,182.5	66,474.2	56,407.5
80.0	45,832.6	49,796.1	41,763.1
90.0	39,617.4	43,337.5	35,373.1
95.0	35,220.3	38,930.5	30,619.6
99.0	28,429.9	32,539.1	22,995.6

### 1.3 Authority

P.L. 84-99 provides USACE with the authority for “the repair or restoration of any flood control work threatened or destroyed by flood, including the strengthening, raising, extending, realigning, or other modification thereof as may be necessary in the discretion of the Chief of Engineers for the adequate functioning of the work for flood control and subject to the condition that the Chief of Engineers may



include modifications to the structure or project, or in implementation of nonstructural alternatives to the repair or restoration of such flood control work if requested by the non-federal sponsor.”

USACE’s repair work under this authority is limited to the repair of flood control works damaged or destroyed by floods. The statute authorizes federal rehabilitation of a damaged flood control structure to the level of protection exhibited by the flood control work prior to the damaging event (33 U.S.C. § 701n(a)(1)). Diking District #5 is the local non-Federal sponsor for the Union Slough levee.

Originally, the City of Everett requested federal assistance to repair the levee on January 15, 2021, following the flooding event in January 2021 (USACE 2021). Diking District #5 assumed responsibility of the levee repair in the fall of 2024 as described in Appendix H.

#### **1.4 Project Location**

The project area is located on the right bank of the Snohomish River between river mile (RM) 1.2 and 4.0 in Everett, Washington. The surrounding area is dominated by commercial and industrial land use and roads. Washington State Highway 529 passes over the eastern section of the levee. A Burlington Northern Sante Fe (BNSF) Railroad line forms the western boundary of the damaged levee (Figure 2). The repair would not affect the tide gate present at Station 0+70.

The riverward slope of the Union Slough levee is vegetated with small saplings, grasses, rushes, cattails, and invasive species, including Japanese knotweed (*Fallopia japonica*) and Himalayan blackberry (*Rubus armeniacus*). There are no trees within the repair footprint. There are wetlands on the landward and waterward side of the levee.



Figure 2. Location of the Union Slough levee and repair site.

### 1.5 Purpose and Need

The purpose of the proposed repair is to restore the level of flood protection provided by the Union Slough levee that existed prior to flood damage sustained during a 2021 flood event, further described in section 1.2. An assessment of the levee confirmed that there is an increased likelihood of damage or breaching of the levee in its current condition (USACE 2021).

The need for the project is the persistent risk to human safety and infrastructure. In an undamaged state, the Union Slough levee provides a 37-year level of protection against flood of an estimated 21 industrial buildings, to include the City of Everett Water Pollution Control Facility and the Cadman Heidelberg Cement Group facility, and approximately 340 people. In its damaged state, the levee provides a 1-year flood (100 percent AEP) level of protection (LOP). If it were to be overtopped or breached, approximately 340 people, 21 buildings, and \$14.6 million of property are at risk from flood (USACE 2021).

# Proposed Action And Alternatives

USACE conducted a preliminary evaluation of the alternatives for fulfilling the purpose of restoring LOP. Viable alternatives must restore reliable flood protection to the LOP prior to the damaging event, must be environmentally acceptable, and should address the identified flood risk by being capable of completing construction prior to the next flood season. The Preferred Alternative is the alternative that restores the LOP while fulfilling all legal, technical, and environmental requirements.

## 1.6 Alternative 1: No Action Alternative

Under this alternative, USACE would not repair the damaged section of levee. During any flood event threatening the integrity of the levee system, USACE or other Federal and non-Federal agencies may act under emergency authorities to preserve the levee system and, to the extent possible, maintain protection of life and property behind the levee. Responding to damages during a flood event, however, would be temporary, less certain of success, potentially more expensive, and could be less protective of environmental and cultural resources. An emergency response would also take time to execute, so there is risk that the levee would overtop or breach before action could be taken.

USACE does not recommend the No Action Alternative because it would risk failure of the levee system and would present unacceptable risk to life and property. It does not meet the project purpose and need. USACE carries the No Action Alternative forward in this report to serve as a basis of comparison for other alternatives.

## 1.7 Alternative 2: Repair in Place

Under this alternative, USACE and BNSF would restore the levee to its pre-damaged condition. BNSF would conduct the work on its real estate right of way (ROW) and USACE would conduct the balance of the work (Appendix H). USACE would rebuild the levee slope and restore the riverward toe across the damaged area. All repairs will be in the pre-flood footprint. This action will impact nearby estuarine wetlands (Category II) along the toe. USACE estimates that 0.15 acres of estuarine wetland will be lost. USACE estimates the loss of wetland and substrate below the high tide line (HTL) will be 6,747 square feet. To mitigate the impacts to the estuarine wetland, Everett, in coordination with Diking District #5 and consistent with their agreement with Ecology, will provide credits at a 1:1 ratio from the Smith Island Restoration Project (SIRP) advanced mitigation site, also known as the Smith Island Habitat Restoration Project associated with dike improvements in Dike District #5 (City of Everett and Washington Department of Ecology 2003, Natural Systems Designs 2022). The Repair in Place Alternative is the preferred alternative.

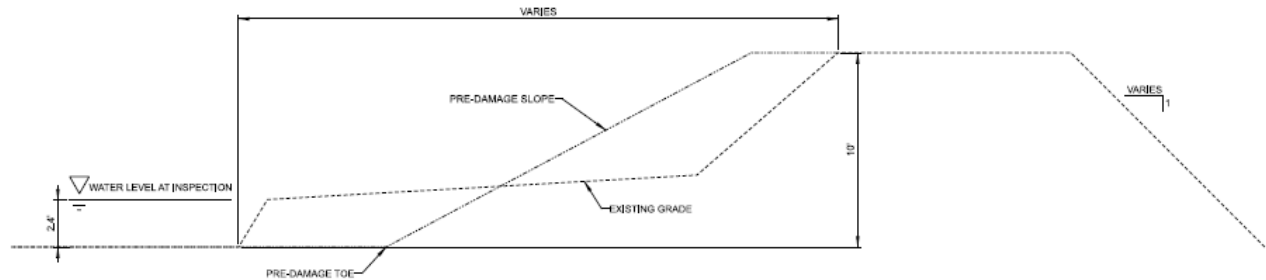
## 1.8 Alternative 3: Non-Structural Alternative

The Non-Structural Alternative would relocate all existing structures, to include the Cadman Heidelberg Cement Group facility, the City of Everett Water Pollution Control Facility, and utilities. This was not a viable alternative for the sponsor because the costs of such relocation would be prohibitive or floodproofing efforts far exceed the costs associated with repairing the levee. USACE did not further consider a non-structural effort.

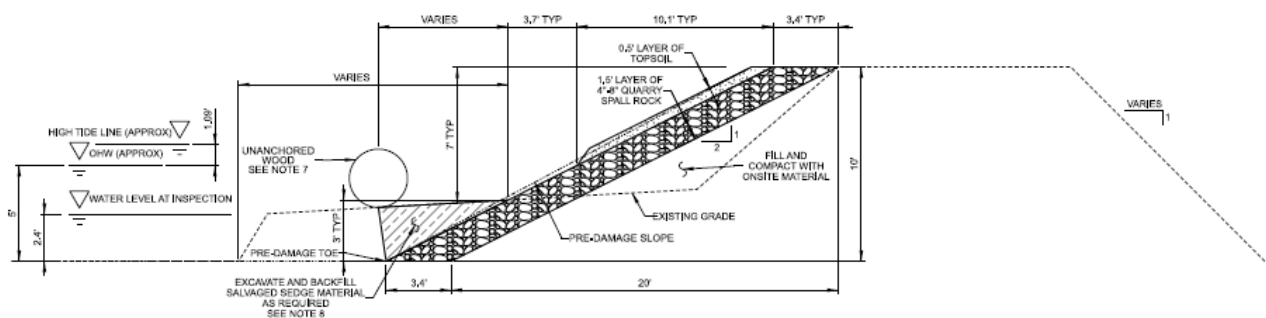
## 1.8.1 Detailed Project Description

### 1.8.1.1 Levee embankment

BNSF would initiate the levee repair within the BNSF ROW. USACE proposes to repair the damaged section of the levee from the State Route 529 overpass and transition to the BNSF ROW after BSNF's completion of its repair in the ROW. The design and construction plan presented in this section reflects the USACE part of the project. The repair would return the levee to its pre-damaged LOP within its pre-damage footprint. The repair will not affect the tide gate present at Station 0+70. The proposed levee repair design includes the removal of sloughed material from the levee and rehabilitation of the riverward slope to prevent further erosion damage. USACE would stage salvaged sedge material within the riverward levee footprint for reuse and place over the quarry spall rock along the lower elevation of the levee. The repair would reestablish rock armor and restore the 2H:1V slope (Figure 3). The armor would consist of 18 inches of 4- to 8-inch quarry spalls and a 6-inch layer of topsoil (Table 2). Design drawings are provided in Appendix A.



F1 CROSS SECTION 1 - TYPICAL EXISTING CONDITIONS  
NTS



A1 CROSS SECTION 1 - TYPICAL PROPOSED REPAIR  
NTS

Figure 3. Union Slough Levee rehabilitation cross section.

Table 2. Materials and Quantities.

Material	Quantity	Location	Use
4- to 8-inch quarry spall rock	600	Levee slope	Levee armor
Topsoil	100	Levee slope	Soil medium for seed mix
Native hydroseed mix	580	Levee crown and riverward	Erosion control and riparian habitat

### 1.8.1.2 Construction sequence

Construction, to include in-water work, would occur between June 1 and October 31, 2025, is expected to take 6 weeks, and would generally consist of the following components described below. Construction access and staging would be on existing roads and identified staging areas. Equipment to be utilized include a hydraulic excavator, dump truck, and skid loader (Table 3). The levee would be repaired in-kind and to current USACE design standards.

Site preparation: The first component of construction includes the preparation of access routes and the existing prism for material removal. A pre-construction meeting would be held. The project limits would be clearly marked using stakes and flagging, and the repair area cleared and grubbed by USACE as necessary. Invasive vegetation, including Japanese knotweed and Himalayan blackberry, would be disposed of off-site by USACE to prevent the spread of invasive vegetation. Staging activities would consist of temporarily stockpiling rock, supplies, equipment, and vehicles. Refer to Appendix A (Design Drawings) for storage and staging locations.

Levee deconstruction and repair: The damaged portion of the levee would be deconstructed by removing, salvaging, and stockpiling remnant riprap and other existing material as practicable. As necessary, sloughed embankment material would be excavated from the scoured riverward toe. These materials would be stockpiled in approved areas for reuse in the repair or disposed of off-site.

Construction would commence at the toe, starting upstream and working downstream, to deflect flows and minimize turbidity in the construction area. The construction would adhere to the construction documents including the Water Quality Monitoring Plan and all applicable Best Management Practices. The buried toe, levee prism, and slope would be constructed per design requirements. The repair would smoothly transition at the upstream and downstream limits of construction into the adjacent slopes.

Complete construction: Upon completion of all construction activities, access routes and staging areas would be restored to pre-construction condition as necessary. All disturbed soils of the project would be covered with topsoil and hydroseeded. This includes the staging areas and access paths that are not graveled or paved.

Table 3. Anticipated Equipment Utilized in the proposed 2024 repair.

Equipment	Equipment Notes	Number	Location	Activities	General Description	In-water?
<b>Skid Loader</b>	Blade length 8 ft	1	Throughout the repair footprint	Manipulates materials. Move and place rock, vegetation, and other materials	Move and place material	No
<b>Excavator</b>	Track-mounted hydraulic excavator w/hydraulic thumb, similar to 300 series, min hp 200, min lbs 70,000, min reach 30 ft	2	Throughout the repair footprint	Workhorse of the repair. Manipulates materials. Move and place rock, vegetation, and other materials.	Move and place material	Only bucket and thumb attachment
<b>Dump truck</b>	10-12 CY Solo Dump truck, haul up to Class V riprap	0 - 2	Haul route, Existing roads	Transport of materials to and from the project	Material transport	No

### 1.9 In-water work window

All work done in water is scheduled to occur during the in-water work window for the lower Snohomish River which is from June 1 to October 31 (USACE 2024).

### 1.10 Impact Avoidance and Minimization Measures Plan

There are three major components of the Impact Avoidance and Minimization Measures Plan: removal of invasive species, salvage estuarine plants, and placement of large woody material (LWM) above the high tide line (HTL). Details of each are outlined below.

#### 1.10.1 Removal of invasive species

All existing vegetation on the riverward slope of the levee would be excavated by USACE, including invasive species. Invasive vegetation, including Japanese knotweed (*Fallopia japonica*) and Himalayan blackberry (*Rubus armeniacus*), would be disposed of off-site by USACE in a manner to prevent the spread of invasive vegetation.

### **1.10.2 Salvage estuarine plants**

Prior to rehabilitation of the levee, estuarine plants in the immediate repair area and within equipment reach would be salvaged from the levee toe, staged on riverward slope during construction, and replaced on the buried toe, below the HTL, after the repair of the damaged levee section.

### **1.10.3 Wood habitat features**

Large woody material (LWM) recovered on-site would be placed by excavator along the levee toe, above the HTL. The excavator would utilize the thumb attachment to recover LWM in the project area and placement may occur after the section of levee has been repaired or at the conclusion of the repair. No live trees would be removed in the repair.

### **1.10.4 Wetland impacts**

Unavoidable impacts will occur during the repair, including the loss of 0.15 acres of sedge wetland in the levee's riverward slope. The levee consisted of an armored bank in its undamaged condition. Since the damaging event in 2021, a sedge wetland/ intertidal habitat has grown in the levee footprint.

To counter the unavoidable impacts to sedge wetlands and substrate change in the river, USACE included mitigation alternatives. Where possible, USACE would salvage sedge mats from the impacted area and place them on the riverward face of the levee at a similar elevation to the current sedge benches. By salvaging the plants with their root systems and soils intact, USACE expects the plants to survive relocation, stabilize the soils, and minimize turbidity increases.

### **1.10.5 Best Management Practices**

To minimize environmental impacts during construction activities, USACE would incorporate the below BMPs into the action. Some are integrated into the repair, while others are guides to operation and care of equipment.

#### **General site conditions**

- All construction activities would occur during daylight hours to minimize noise impacts to the surrounding community.
- In-water work would be limited to the in-water work window (June 1 to October 31) and minimized to the extent possible.
- Vegetation removal would be limited to the repair site.
- Noxious weeds would be disposed of separately from other organic materials at an approved off-site location. Himalayan blackberry and Japanese knotweed, including the root system, would be removed and disposed of appropriately. Because knotweed can regrow from small pieces, care would be taken to prevent fragments from falling into the river. Removed Himalayan blackberry and Japanese knotweed would not be placed in a compost pile or left to rot on-site.
- Material placement into the water would be done in a controlled manner to reduce turbidity and in-water noise generation. No end dumping of rock into the water would occur.

- Rock placement would occur only within the authorized project footprint.
- Rock placement and underwater excavation would begin from the upstream end of the project and progress to the downstream end. Rock would be placed shortly after excavation so it can act as a localized flow deflector and help manage flows in the installation areas.
- All disturbed soils would be covered with topsoil and hydroseeded with a native grass mix. This includes the staging areas and access paths that are not graveled or paved.
- Should any LWM be generated or found on site during repairs, it shall be salvaged and placed above the HTL along the completed toe of the repaired levee where it can continue to provide habitat function. This includes any tree trunks or large shrubs at the Union Slough levee rehabilitation site. The LWM may be placed after a section of levee is completed or after the entire repair is completed. Root wads would be oriented to face upstream.
- All trash and unauthorized fill (including concrete blocks or pieces, bricks, asphalt, metal, treated wood, glass, floating debris, and paper) generated during the repair would be removed from the project and staging areas after work is complete.
- A pre-construction meeting would convene to examine existing conditions and any possible fine-tuning that could be done for BMPs or environmental requirements. The pre-construction meeting may include outside resource agencies like U.S. Fish and Wildlife Service (USFWS) or National Marine Fisheries Service (NMFS).

### **Water Quality**

- Water quality monitoring for turbidity will be performed as outlined in the Water Quality Monitoring Plan (Appendix B). If a potential exceedance is detected at the early warning sample locations, on-site personnel will stop work, assess sediment generating activities, and develop corrective measures. Examples may include slowing down a specific in-water activity and changing the amount of material that is moved below the waterline.
- Temporary erosion control measures would be installed for all phases of work as required to prevent the discharge or accumulation of sediment into the river, the wetland, or off-site. These may include silt fencing, mats, blankets, check dams, bonded fiber matrix, and straw. Accumulation of sediment in any adjacent swales or storm drains would be monitored daily and cleared to ensure continued service throughout construction.

### **Use of Equipment**

- Construction equipment would be cleaned prior to site delivery.
- Drive trains would not operate in the water. Only the excavator bucket with thumb attachment would extend into the water.
- Low sulfur fuel would be used.
- Refueling of equipment and vehicles must take place in designated staging areas behind the levee.



- Biodegradable hydraulic fluids would be used as appropriate in any portion of the equipment that would work in the water.
- Construction equipment shall be regularly checked for drips or leaks and immediately removed from service until corrected.
- At least one fuel spill kit with absorbent pads would be on site at all times.
- A water truck would be positioned at the construction site to spray water on material or activities to prevent airborne dust.

## Alternatives Comparison

This section provides information on the existing conditions of resources within the project area and issues relevant to the decision process for selecting the preferred alternative. Existing conditions are the physical, chemical, biological, and socioeconomic characteristics of the project area. Factors for selecting the preferred alternative include considering which of the alternatives would be the least costly, environmentally acceptable, consistent with engineering practices, and meet the purpose and need of the project. Table 4 identifies the resources evaluated for detailed analysis with a rationale for inclusion or exclusion. Resources were excluded from detailed analysis if they are not potentially affected by the alternatives or have no material bearing on the decision-making process.

Table 4. List of resources considered for detailed effects analysis and rationale for inclusion for exclusion.

Resource	Included in Detailed Analysis	Rationale for inclusion or exclusion
Water Resources and Water Quality	Yes	The proposed action may affect water quality from vegetation removal and levee repair. Impacts could result from in-water work and removal of riparian vegetation. Additionally, a levee repair would impact hydrology and hydraulics. Analysis is required to establish present water quality conditions and to determine the extent of any potential effects.
Vegetation and Wetlands	Yes	The proposed action would affect terrestrial and riparian vegetation located in the project footprint. Most of this vegetation is wetland vegetation. Therefore, analysis is required to investigate what vegetation and wetlands exists, and to determine the extent of any potential effects.
Fish and Wildlife	Yes	The proposed action would affect species in the project area. Analysis is required to determine what species are present and the extent of potential effects.
Threatened and Endangered Species	Yes	The proposed project would affect protected species in the project area. Formal consultation with the USFWS and NMFS is required. Analysis is required to determine what species are present and the extent of potential effects.

<b>Resource</b>	<b>Included in Detailed Analysis</b>	<b>Rationale for inclusion or exclusion</b>
Air Quality, Greenhouse Gas Emissions, and Noise	Yes	The proposed action involves construction equipment that would generate exhaust and noise. Analysis is required to investigate what air quality and climate conditions there are and to determine the extent of any potential effects.
Noise	Yes	The proposed action involves construction equipment that would generate noise. Analysis is required to investigate what noise conditions there are and to determine the extent of any potential effects.
Historic and Cultural Resources	Yes	Analysis is required to investigate cultural resources and to determine the extent of any potential effects.
Land Use, Utilities, and Infrastructure	Yes	The proposed action could temporarily impact land use, utilities, and infrastructure during construction. Analysis is required to investigate what land use, utilities, and infrastructure may be impacted.
Hazardous, Toxic, and Radioactive Waste	No	The project area is not known to have contaminants nor is it adjacent to a designated state of Federal contaminates site or clean-up site.
Environmental Justice	Yes	Analysis is required to investigate impacts to marginalized communities and to determine the extent of any potential effects.
Recreation	No	The repair area is within the “urban industrial” shoreline designation of the Everett Shoreline Master Program. The area downriver of the SR 529 bridge is not identified for recreation.

## **1.11 Water Resources and Water Quality**

### **1.11.1 Existing Conditions Pre-Flood (2021)**

The Snohomish River estuary is nine miles long, ranges from three to four-and-a-half miles wide and encompasses six major islands (Snohomish County 2013). The lower Snohomish River is comprised of the mainstem river and three interconnected distributary tidal channels: Union Slough, Steamboat Slough and Ebey Slough (Snohomish County 2013). Union Slough is the smallest of the three sloughs. The levee system encircling Smith Island is the Union Slough levee system. The proposed levee repair is located on the right bank of the mainstem Snohomish River.

In general, the water quality is good in the Snohomish River basin. In the repair area on the Snohomish River, waters are listed as impaired for temperature. Upriver near the town of Snohomish, the waters are listed as impaired for pH, temperature, dissolved oxygen, and bacteria.

### **1.11.2 Alternative 1: No Action**

Under this alternative, USACE would not repair the levee. It might be repaired by another entity, or not at all. If no repairs are made, floodwaters could potentially breach the levee. Accumulating debris,

turbidity, and potential hazardous materials could wash back into the river. If USACE is requested to assist during flood events that may result in a levee breach, the flood fighting effort would likely generate in-water sediment. If onsite flood responses are effective, impacts to water quality would likely be minimal and short term. If a flood response is not implemented in time or is not sufficient due to the scale of the flood, a breach could occur.

### **1.11.3 Alternative 2: Repair in Place**

This Alternative could have short-term water quality impacts during construction. There would be in-water work and water quality impacts could occur such as an increase in turbidity. BMPs for construction activities would be employed. As a result, the effects to water quality would likely be minimal and short-term. Overall, the Repair in Place Alternative would have an insignificant impact on water quality for this reach of the Snohomish River or Union Slough.

## **1.12 Vegetation and Wetlands**

### **1.12.1 Existing Conditions Pre-Flood (2021)**

Riverbank conditions in the project area reach of the Snohomish River are heavily modified. Almost no intact riparian buffer exists in the reach. The levee's landward slope is covered in sod. An access road from 34th Avenue NE runs parallel to Highway 529 and connects to a gravel road that runs the length of the levee crown. The access road is routinely maintained by the City of Everett.

The riverward slope of the Union Slough levee is vegetated with grasses, rushes, cattails, small willow saplings and invasive species, including Japanese knotweed and Himalayan blackberry. There are no trees within the repair footprint. An assortment of large root wads has collected at the east end of the levee above the HTL.

There are two freshwater emergent/scrub-shrub wetlands on the landward side of the repair footprint and an estuarine wetland on the riverward side. The wetlands on the landward side are separated by the levee access road from 34th Avenue NE with one being east of the access road and one on the west side of the access road. The western landward wetland is approximately 1.3 acres and is between the levee and 34th Avenue NE, bound to the west by the BNSF railroad and to the east by the levee access road from 34th Avenue NE. The eastern landward wetland is approximately one acre and is between the levee and 34th Avenue NE, bound to the west by the levee access road from 34th Avenue NE and to the east by a Cadman Heidelberg Cement Group facility. The Category II estuarine wetland is 0.15 acres and between the levee and the Snohomish River. Sedges and *lilaeopsis* are the primary vegetation in the estuarine wetland. No eelgrass has been documented or observed in the project area.

### **1.12.2 Alternative 1: No Action**

Without repair, USACE expects no impact to vegetation. Continued erosion of the damaged area would be expected to continue to compromise the existing vegetation on the slope and crest, causing further slumping and exposure of bare soil. A breach of this levee would inundate the vegetation behind the levee with brackish water, potentially causing a degradation of freshwater marsh vegetation, a vital ecosystem for waterfowl and small mammals.

### **1.12.3 Alternative 2: Repair in Place**

Vegetation in the repair footprint would be cleared to complete repairs. Impacts to the vegetation and wetlands landward of the levee would be completely avoided because no work would occur on the landward slope of the levee. On the river side, the construction of the levee repair will permanently impact 0.15 acres of estuarine wetlands. Prior to levee toe work, approximately 270 cubic yards of sedge mats in the construction footprint and within the reach of the excavator would be salvaged between the levee and the Snohomish River. The sedge would be temporarily staged on the riverward slope of the levee or the tidal bench and then placed riverward of the repaired levee toe in the area disturbed by construction.

Transplanted marshes have been shown to provide habitat to rearing Chinook salmon (*Oncorhynchus tshawytscha*). Levings and Nishimura (1997) found that the species composition of fish communities using transplanted marshes is similar to that of reference areas. In their studies, there was no evidence that juvenile salmon avoided transplanted marshes or that such marshes are dominated by non-salmonids. A transplanted marsh in the Puyallup estuary exhibited significant residency of Chinook fry (Shreffler et al., 1990).

To address the unavoidable adverse impacts to 0.15 acres of estuarine wetland, compensatory mitigation will be obtained at a 1:1 ratio through a debit of 0.15 acres from the SIRP advanced mitigation site. The loss of vegetation is expected to be fully mitigated.

## **1.13 Fish and Wildlife**

### **1.13.1 Existing Conditions Pre-Flood (2021)**

Union Slough and the lower Snohomish River supports anadromous stocks of seven salmonids: coho (*Oncorhynchus kisutch*), chum (*O. keta*), pink (*O. gorbuscha*), Chinook (*O. tshawytscha*), coastal cutthroat (*O. clarki*), steelhead (*O. mykiss*), and bull trout (*Salvelinus confluentus*), and Pacific Lamprey (*Lampetra tridentata*). These species are important in recreational fisheries. Five of them are important for commercial and Native American fisheries. All species spawn in freshwater upstream of the estuary. Spawning occurs throughout the summer, including August to September for pink and Chinook salmon and May to June for steelhead and cutthroat trout. Dolly Varden (*S. malma*) are also found in the project area. Dolly Varden and bull trout are closely related and have considerable biological similarities. Bull trout are mainly an inland species while Dolly Varden are more coastal, however in Washington both are present in the Puget Sound area and both could be expected in the project vicinity.

Upstream migration of adult salmonids occurs every month of the year, mostly in August through March. Migrating salmon can pass through the Snohomish River to reach upstream holding and spawning areas. Most of the salmonid spawning occurs upstream of the project location near the city of Snohomish. No spawning has been identified in the project area.

By the time adult salmon and steelhead enter the Snohomish River, most have stopped active feeding. The smaller adult sea-run cutthroat trout and Dolly Varden, however, actively feed in the lower river channels and shorelines where favorable habitats are found.

Downstream smolt migration occurs mainly in the spring and early summer. Estuarine habitats provide a transition zone where juvenile salmonids physiologically adapt from fresh to saltwater environments. Non-salmonid species that are also present in the estuary include the peamouth chub (*Mylocheifus caurinus*), the Pacific staghorn sculpin (*Leptocottus armatus*), the prickly sculpin (*Cottus asper*), and the three-spined stickleback (*Gasterosteus aculeatus*).

In Snohomish County, pigeons, seagulls, raccoons, squirrels, beaver, opossum, river otter, muskrat, bats, skunk, bobcats and coyotes may be present. Migratory birds use four major migratory routes (Pacific, Central, Mississippi, and Atlantic flyways) in North America. Washington is within the Pacific flyway. The City of Everett Water Pollution Control Facility oxidation ponds and the adjacent Spencer Island support a wide variety of wintering waterfowl. Although not considered a natural waterfowl habitat, the oxidation ponds are of value to waterfowl and other wildlife species. The oxidation ponds are considered one of the best waterfowl birding areas in Snohomish County. Other shorebirds, such as great blue herons and other wading birds, use the Smith Island and Spencer Island habitats.

### **1.13.2 Alternative 1: No Action**

The No-Action Alternative could result in continued erosion of the bank, especially in a flood event, and could leave the levee vulnerable to continued damage and breaching. A breach would result in inundation behind the levee and could potentially strand fish behind the levee when flood levels decrease. Additionally, associated turbidity and potential pollution impacts to the river are likely during an event where the levee fails.

During a flood, an emergency flood fight could occur to prevent a levee breach. Such activities would likely cause fish and wildlife to leave the area or potentially result in fish or wildlife mortality. Emergency actions would entail more in-water work and vegetation clearing that would have greater impact on fish and wildlife than a scheduled rehabilitation action. Emergency actions would continue until the levee is rehabilitated. The exact effect on fish and wildlife associated with emergency flood actions is difficult to quantify or predict.

### **1.13.3 Alternative 2: Repair in Place**

Rehabilitation work under this alternative would cause short-term impacts to fish and wildlife during the construction window (June 1 – October 31, 2025). The primary impacts would be a temporary increase in noise, vibration, and human activity caused by heavy equipment use. These impacts may temporarily alter the behavior of fish and wildlife during construction. Construction work at the levee toe would be below the HTL, and during the in-water work window (June 1 – October 31). Repair work on the levee toe would involve excavation and rock placement in the water. Fish present at the first onset of construction near the work site may incidentally be injured or killed if in contact with construction equipment or materials. However, this is not expected as fish would likely flee the work area immediately after onset of construction. It is likely that excavation and rock placement noise would cause behavioral responses of fish in the project area.

USACE would limit construction activities to daylight hours when background noises are generally higher.

In-water work could cause minor, localized, short-term turbidity impacts. Fish may avoid the project area due to an increase in turbidity and/or an increase in noise during rock delivery and placement. Completion of the repair during the in-water work window would avoid sensitive time periods for salmonids and limit fisheries impacts during construction.

Amphibians, invertebrates, and birds that utilize the estuarine wetland may avoid the project area due to the construction activities and the salvaging sedge plant activity. Longer term impacts to wildlife that reside in the estuarine wetland would occur from the permanent impacts to the sedge wetlands that are used for foraging and refuge habitat and sediment disturbing activities. Union Slough is largely unarmored, with similar sedge wetlands and habitat throughout. The SIRP advanced mitigation site would be debited in order to offset the estuarine wetland impact.

The levee rehabilitation will result in permanent impacts to 0.15 acres of Category II estuarine wetlands between the levee and the Snohomish River. Advanced mitigation from the SIRP will provide in-kind mitigation to the estuarine wetlands with no temporal loss (Appendix I).

### 1.14 Threatened and Endangered Species

In accordance with Section 7(a)(2) of the Endangered Species Act (ESA), Federally funded, constructed, permitted, or licensed projects must take into consideration impacts to federally-listed threatened or endangered species. The species listed in Table 7 are protected under the ESA and may occur in the project area. The following sections briefly summarize relevant information about the protected species, current knowledge on the presence, and use of the project and action areas by these species. The ESA consultation assesses how the proposed project may affect the species, concluding with a determination of effect. See section 8.6 for details about ESA compliance.

Table 5. ESA-protected species potentially affected by the proposed action

Species	Listing Status	Critical Habitat
Puget Sound Chinook salmon ( <i>Oncorhynchus tshawytscha</i> )	Threatened	Designated
Puget Sound steelhead ( <i>Oncorhynchus mykiss</i> )	Threatened	Designated
Coastal/Puget Sound bull trout ( <i>Salvelinus confluentus</i> )	Threatened	Designated
Killer whale ( <i>Orcinus orca</i> )	Endangered	Designated in all Puget Sound waters deeper than 20 feet.
North American Wolverine ( <i>Gulo gulo luscus</i> )	Threatened	Not designated
Marbled murrelet ( <i>Brachyramphus marmoratus</i> )	Threatened	Designated
Yellow-billed Cuckoo ( <i>Coccyzus americanus</i> )	Threatened	Not designated

Several of the species in Table 5 may occur or may have occurred within the action area. However,

these species cannot be affected by the proposed action due to a lack of trees, degraded terrestrial habitat, and water quality issues in and around the action area. The proposed action would have no effect on wolverine, marbled murrelet, or yellow-billed cuckoo and their designated critical habitat due to their specialized habitat requirements (which are not found in the action area), their lack of tolerance for human development or activities (which would preclude their presence in the action area), or both.

Wolverines occupy alpine and subalpine forest habitats throughout the Cascade Mountain Range (WDFW 2024a). Marbled murrelets are seabirds that nest in mature and old-growth conifer forests (WDFW 2024b). Yellow-billed cuckoos prefer riparian zones with cottonwoods, willows, fir woodlands and open brushy hillsides (WDFW 2024c). The preferred habitats for these species are not present in the project area and no critical habitat is designated in the action area. Consequently, these species and their critical habitats would not be affected by the proposed action and are not discussed further in this document.

#### **1.14.1 Existing Conditions Pre-Flood (2021)**

##### **1.14.1.1 Puget Sound Chinook Salmon**

The Puget Sound Chinook salmon was listed as threatened on March 24, 1999 (64 F.R. 14308), revised on June 28, 2005 (70 F.R. 37160), and updated on April 14, 2014 (79 F.R. 20802). Final critical habitat for Puget Sound Chinook salmon was designated on December 14, 2004 (69 F.R. 74571) and updated on September 2, 2005 (70 F.R. 52629).

Chinook salmon are most often found in large streams or rivers, and many stocks spawn far inland. Chinook salmon are considered main channel spawners, although they would use smaller channels and streams with sufficient flow. Chinook salmon adults would be migrating to their spawning locations during the proposed construction period. Juvenile Chinook salmon would likely be present in the action area during the proposed construction period.

##### **1.14.1.2 Puget Sound Steelhead**

The Puget Sound steelhead was listed as threatened on May 11, 2007 (72 F.R. 26722) and updated on April 14, 2014 (79 F.R. 20802). Final critical habitat for Puget Sound steelhead was designated on January 14, 2013 (78 F.R. 2725) and updated on February 24, 2016 (81 F.R. 9252). Potential effects from the proposed repair to Puget Sound Steelhead are similar to those for Chinook salmon.

##### **1.14.1.3 Coastal Puget Sound Bull Trout**

The Puget Sound bull trout (*Salvelinus confluentus*) was listed as threatened on November 1, 1999 (64 F.R. 58910). Final critical habitat for Puget Sound bull trout was designated in 2004 (69 F.R. 59995) and revised in 2010 (75 F.R. 63898). Potential effects from the proposed repair to Coastal Puget Sound bull trout are similar to those for Chinook salmon. During the proposed construction period, warm water temperatures, increased noise and vibration from construction repair activities and a possible increase in turbidity may limit the use of the project area by bull trout for all life stages. During this time, most sub-adult and adult bull trout have moved through the project area to upstream habitat areas or spawning sites. Some adults and sub-adults may not have migrated or have

delayed their migration upstream and could still be in the action area.

#### **1.14.1.4 Southern Resident Killer Whale**

Southern Resident Killer Whales (*Orcinus orca*, SRKWs) were listed as endangered on February 16, 2006 (70 F.R. 69903) and updated on April 14, 2014 (79 F.R. 20802). Final critical habitat for Southern Resident killer whale was designated on December 29, 2006 (71 F.R. 69054) and revised on September 1, 2021 (86 F.R. 41668). The Union Slough levee rehabilitation would not directly affect SRKWs, as they do not inhabit the project or action area. There is potential for indirect impacts through project effects to their prey base, which includes Chinook and chum salmon, but effects would have no influence on population levels of the prey species or cause the loss of individual fish that could serve as prey for killer whale. This no effect to their food base is expected from the project.

#### **1.14.2 Alternative 1: No Action**

The No Action Alternative could result in continued erosion and destabilization of the levee embankment, especially in a flood event, and could leave the levee vulnerable to continued damage and breaching. A breach would result in inundation behind the levee and could potentially strand ESA-listed fish when flood levels decrease. Additionally, associated turbidity and potential pollution impacts to the river are likely during an event where the levee fails.

During a flood, an emergency flood fight could occur to prevent a levee breach. Such action could require in-water work that could affect Chinook salmon, steelhead, and bull trout. Emergency actions could have greater impact on aquatic dependent ESA-listed species habitat than a scheduled rehabilitation action. Flood fight actions that remove vegetation and disturb the river would have negative impacts, the severity of which is determined by timing, location, and extent which cannot be accurately predicted. If flood fights are unsuccessful and the levee fails, inundation of the commercial and industrial properties behind the levee would occur along with potential releases of contamination from impervious surfaces to the Snohomish River. SRKWs do not use the Snohomish River and are indirectly affected by impacts to outmigrant (juvenile) Chinook salmon.

A primary factor contributing to inferior recruitment of ESA listed salmonids in the Snohomish River is lack of complexity, refugia, and shallow aquatic habitat. Aquatic and riparian habitats in this part of the Snohomish River are poor quality and partially contribute to impaired water quality (pH, temperature, dissolved oxygen, and bacteria). The existing grade of the levee embankment is inadequate for stable long-term establishment of large vegetation. These habitats would likely remain in poor condition, and this reach would continue to function solely as a migratory corridor, not spawning ground or suitable rearing habitat.

#### **1.14.3 Alternative 2: Repair in Place**

The proposed in-water construction window (June 1 - October 31, 2025) coincides with the presence of salmonids in the Snohomish River. Migrating adult Chinook salmon would be present in the river during the construction window as well as juvenile steelhead. Bull trout could be present at the very beginning and very end of the construction period.

Based on the preceding effects analysis along with the Impact Avoidance and Minimization



Measures, USACE has concluded the project may affect, and is likely to adversely affect Chinook salmon, steelhead, and bull trout. The project may affect, and is likely to adversely affect, critical habitat for Chinook salmon, steelhead, and bull trout in the action area. The primary effects are summarized below:

- In-water work would be conducted in a manner that complies with water quality criteria. Noise emissions and turbidity plumes from construction activities may cause behavioral responses, such as avoidance of the project area.
- Physical injury or mortality of salmonids is possible as a result of the construction activities.
- The project location is within the known range of Chinook salmon, steelhead, and bull trout.
- Juvenile and adult steelhead and Chinook salmon are likely to be present in the action area when work is occurring. Bull trout could also be present.

SRKWs do not enter the Snohomish River and so are not directly impacted by the proposed activities. There is potential for indirect impacts via impacts to their prey, which include Chinook and Chum salmon due to injury to juveniles. Adult Chinook salmon migrating past the project area are semelparous, meaning they migrate upstream to reproduce and die as a part of their natural life-history. Therefore, adult Chinook salmon affected by the project may have reduced reproductive effort, but the adults themselves are no longer an available prey item for SRKWs during this stage of migration. The project would not affect SRKW and is not likely to adversely affect their critical habitat.

## **1.15 Air Quality, Greenhouse Gas, and Noise**

### **1.15.1 Existing Conditions Pre-Flood (2021)**

The Clean Air Act sets National Ambient Air Quality Standards (NAAQS) to regulate harmful pollutants (42 U.S.C. § 7403). NAAQS are set for six common air pollutants: ozone, carbon monoxide, nitrogen dioxide, particulate matter (solid and liquid particles suspended in the air), sulfur dioxide, and lead. Areas that persistently exceed the standards are designated as nonattainment areas. The proposed project is in an attainment area. Based on data provided by the Puget Sound Clean Air Agency station in Marysville, WA, typical air quality in the project area is good with periodically moderate air quality (Figure 4).

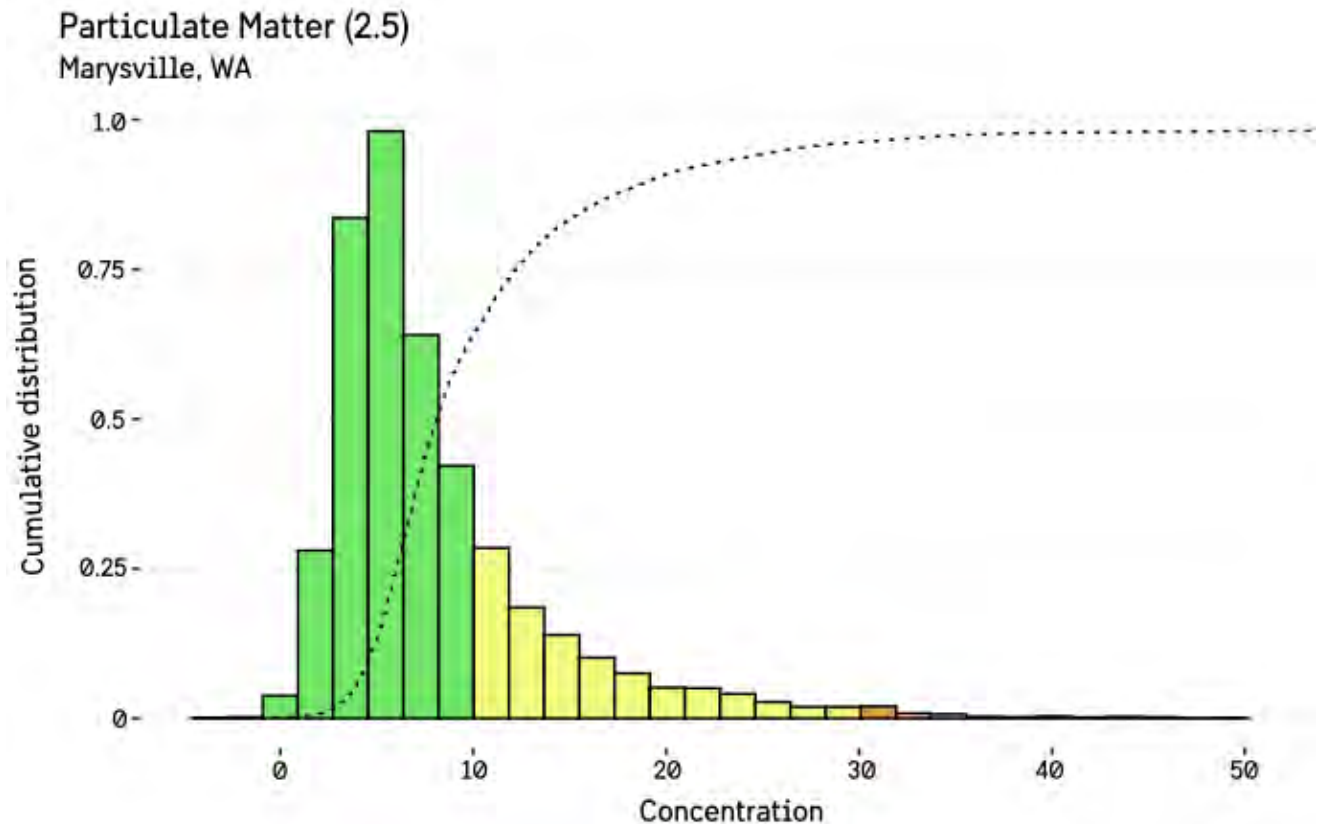


Figure 4. Frequency of particulate matter concentrations, daily average from 2019-2024. Air quality indicator colors: green = good, yellow=moderate, orange=unhealthy for sensitive groups

Greenhouse gases (GHG) accumulate in the atmosphere and contribute to climate change by absorbing energy and slowing the rate at which energy, such as heat or light, escapes into space, insulating and warming the Earth. GHG emissions are often reported in carbon dioxide (CO<sub>2</sub>) equivalent (CO<sub>2</sub>e), which provides a common unit of measure to compare different GHG emissions to account for the ability of various gasses to absorb different amounts of energy.

Human-caused GHG emissions have contributed to inordinate global-scale changes to climate, including significant increases of global temperatures. 2023 was the warmest year on record (NOAA 2024). The concern for Federal projects is whether the contribution of GHGs to the atmosphere is so large that they outweigh the benefit of executing the proposed action. The current national strategy to accomplish net-zero GHG emissions aims to reduce emissions by 2030 by 40 percent relative to 1990 and achieve a negative trajectory (‘net-zero’) after 2050 (United States Department of State 2021). Recent estimates (2015) of annual GHG emissions for Washington State were 94.6 million metric tons (MMT) CO<sub>2</sub>e (WDOE 2022) and Snohomish County’s approximately 5.2 MMT CO<sub>2</sub>e (Cascadia Consulting Group 2017).

The project site and its surroundings have been developed, with various activities contributing to ambient noise levels. Anthropogenic noise sources at the project site include rail transportation, industrial facilities, internal combustion engines, and commercial activities.

### **1.15.2 Alternative 1: No Action**

This alternative would have limited to variable direct effects on air quality or noise. Emergency actions may be required to protect lives and property in the event of a flood. These actions would likely have less air emissions and a shorter duration of noise generated compared to the Repair in Place due to substantially greater construction effort (USACE 2021). Over a longer term, it is possible that multiple seasons of flood fighting would cumulatively contribute to greater air emissions over time. Effects to air quality and noise would be temporary and within the range produced by on-going activities in the area. Effects of ambient air quality and noise would be negligible.

### **1.15.3 Alternative 2: Repair in Place**

Impacts to air quality for the proposed rehabilitation work are *de minimis* under Federal emissions thresholds in maintenance or non-attainment areas (40 C.F.R. § 93.153). Construction equipment used during the proposed levee rehabilitation work would temporarily and locally generate increased diesel exhaust emissions. USACE calculated expected emissions for the project using conservative estimates for equipment horsepower, average fleet year (2015), and maximum expected equipment run time over the construction period (20 days) with equipment-specific emission rates from the California Air Resources Board OFFROAD2007 model-based database (CARB 2007). This model does not calculate nitrous oxide directly, so USACE calculated this component with a factor of 0.92 gN<sub>2</sub>O generated per gallon fuel consumed (EPA 2024). Emissions summary as a construction estimate is presented in Table 4. Emission rates and summary emissions are presented in Appendix C

The project could directly emit up to 52.9 metric tons (MT) of CO<sub>2</sub>, 4 kg of methane, and 4 kg of nitrous oxide, which have equivalent global warming potentials of 29.8:1 and 273:1 to CO<sub>2</sub> respectively (IPCC 2021). Project GHG emissions would be roughly equivalent to the annual contributions of 1.3 average households in Snohomish County to GHG emissions (EcoDataLab and Stockholm Environment Institute 2023). The estimated ‘social cost’ of GHG production in 2020 dollars would be \$7,034 (EPA 2023). While the preferred alternative may result in both more emissions and a higher social cost of greenhouse gases than the No Action Alternative, it would not result in significant effects as it does not prevent the US from achieving ‘net-zero’ by 2050.

Impacts to noise would be similar to that under a flood fight as described in the No Action Alternative. However, all construction would take place during daylight hours to avoid disturbing local residents and businesses. All noise impacts would be temporary and would attenuate below ambient noise levels at distances where residential areas are located. Underwater noise occurring within the authorized in-water work window may cause behavioral responses of fish in the project area but is unlikely to directly cause injury to fish or wildlife.

Table 6. Estimated total emissions for the proposed levee repair.

<b>Emission Type</b>	<b>NOx</b>	<b>SOx</b>	<b>CO</b>	<b>VOC</b>	<b>PM<sup>1</sup></b>	<b>GHG<sup>2</sup></b>
<b>Construction Estimate</b>	0.33	0.001	0.21	0.05	0.01	54.05
<b>Threshold (metric tons/yr)</b>	250	250	100	250	100	25,000 <sup>3</sup>

### 1.16 Historic and Cultural Resources

Cultural resources can include prehistoric (i.e., pre-contact), protohistoric (i.e., contact), and historic (i.e., post-contact) sites, structures, districts, or any other physical evidence of human activity considered important to a culture, a subculture, or a community for scientific, traditional, religious, or other applicable reasons. Depending on their condition and use, such resources can provide insight into living conditions of previous civilizations or retain cultural and religious significance to contemporary groups, referred to as Traditional Cultural Properties.

NEPA instructs Federal agencies to assess the probable impacts of their actions on the human environment, defined as the natural and physical environment and the relationship of people with that environment (40 C.F.R. § 1508.1). Similarly, under 36 C.F.R. § 800, the implementing regulations of the National Historic Preservation Act (NHPA) of 1966 (as amended in 2000), Federal agencies must take into consideration the potential effect of an undertaking on historic properties, which refers to cultural resources listed in or eligible for inclusion in the National Register of Historic Places (NRHP).

As stipulated in 36 C.F.R. § 800.8, Section 106 can be coordinated with the requirements of NEPA. Preparation of this EA can be sufficient to fulfill the required determination of effects for Section 106 compliance. Section 106 requires Federal agencies to afford the Advisory Council on Historic Preservation and other interested parties a reasonable opportunity to comment on the proposed undertaking if there is an adverse effect to an eligible Historic Property.

#### 1.16.1 Existing Condition Pre-Flood (2021)

The Union Slough levee was originally constructed in the 1930s by the City of Everett. Since the levee is greater than 50 years old, it may potentially be historic property per the National Historic Preservation Act. USACE has coordinated its environmental review of impacts on cultural resources for NEPA with its responsibilities to take into account effects on historic properties as required by Section 106 of the National Historic Preservation Act. USACE has determined and documented the area of potential effect (APE) for both direct and indirect effects, as required at 36 C.F.R § 800.4 of the regulations implementing Section 106. The APE includes the length of the levee repair and all staging and access areas, totaling 8 acres. The Washington State Historic Preservation Officer agreed with our determination of the APE on January 30, 2024.

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1 PM2.5 and PM10 are combined in this table. Each is regulated at 100 tons/year for emissions.  
 2 Green House Gases (GHG) represents the sum of carbon dioxide, nitrous oxide, and methane.  
 3 CEQ benchmark of 25,000 metric tons total.

### **1.16.2 Alternative 1: No Action**

The No-Action Alternative would have no impact on cultural resources within the APE. Under this alternative, USACE would not repair the levee, and the risk of future levee failures would remain. No action would result in continued degradation of the levee through natural erosion processes. As the no action would not be considered an undertaking, as defined in 36 CFR 800, this alternative would be considered to have no potential to effect cultural resources. Potential failure of the levee could adversely affect historic structures, if present, behind the levee that may be eligible for inclusion in the NRHP.

### **1.16.3 Alternative 2: Repair in Place**

As the proposed repair does not alter the alignment, the levee and its character defining qualities would remain intact as a flood control structure in the protection of life and property. This action would avoid adverse effects to historic properties and unevaluated cultural resources by restoring the LOP. Based on the literature review and a records search, cultural resource survey, and coordination with the Washington State Department of Archeology and Historic Preservation (DAHP) and the contacted Tribes, USACE determined that the proposed rehabilitation would have no adverse effect to historic properties within the APE that are listed in or determined eligible for listing in the NRHP. Effects on cultural resources would be negligible.

## **1.17 Environmental Justice**

### **Executive Orders (EOs):**

- EO 12898: Environmental Justice in Minority Populations and Low-Income Populations
- EO 14008: Tackling the Climate Crisis
- EO 13985 & 14091: Advancing Racial Equity and Support for Underserved Communities Through the Federal Government
- EO 14096: Revitalizing Our Nation’s Commitment to Environmental Justice for All

“Environmental Justice” is the fair treatment and meaningful involvement of all people regardless of income, race, color, national origin, or disability in agency decision making and other Federal activities that affect human health and the environment so that people: (1) Are fully protected from disproportionate and adverse human health and environmental effects (including risks) and hazards, including those related to climate change, the cumulative impacts of environmental and other burdens, and the legacy of racism or other structural or systemic barriers; and (2) Have equitable access to a healthy, sustainable, and resilient environment in which to live, play, work, learn, grow, worship, and engage in cultural and subsistence practices.

Environmental justice and disproportionate impacts to disadvantaged communities shall be considered throughout the Civil Works programs and in all phases of project planning and decision-making, consistent with the goals and objectives of various Administration policies.

EO 12898 directs Federal agencies to take the appropriate steps to identify and address any

disproportionately high and adverse human health or environmental effects of Federal programs, policies, and activities on minority and low-income populations. Minority populations are those persons who identify themselves as Black, Hispanic, Asian American, American Indian/Alaskan Native, and Pacific Islander. A minority population exists where the percentage of minorities in an affected area either exceeds 50 percent or is meaningfully greater than in the general population. EO 14008 updates EO 12898 and has expanded Federal agencies' responsibilities for assessing environmental justice consequences of their actions. EO 13985, EO 14091, and EO 14096 charge the Federal Government with advancing equity for all, including communities that have long been underserved, and addressing systemic racism in our Nation's policies and programs.

### **1.17.1 Analysis Methods**

USACE analyzed demographic data to assess the approximate locations and potential concerns of low-income and minority populations in the community of concern. The analysis relied on the EPA's EJScreen tool and the White House CEQ Climate and Economic Justice Screening Tool (EPA 2024, CEQ 2024).

EJScreen is EPA's environmental justice mapping and screening tool that provides a nationally consistent dataset and approach for combining environmental and demographic socioeconomic indicators. Using the tool, USACE analysts chose a geographic area on the EJScreen map. The tool then synthesized demographic socioeconomic and environmental information for that area to express them in the context of 13 indicators or indexes. The environmental justice indexes are exposure to toxic air pollutants including particulate matter, ozone, and lead, proximity to superfund sites, hazardous waste, and wastewater discharge. Demographic indexes are the percentages of the population that are people of color, low income, unemployed, with limited English speakers, less than a high school education and population under 5 or over 64. Vulnerability to flood, wildfire, and sea level rise due to climate change and lack of health, housing, transportation, and food services are also analyzed. The environmental justice index uses the concept of "excess risk" by looking at how far above the national average the block group's demographics are. USACE applied the EJScreen assessment of the 13 indicators within an affected radius around the project area of approximately 5 miles. USACE compared indicators for the project area to those in the city of Everett and Washington State. EPA considers a project to be in an area of potential environmental justice concern when an EJScreen analysis for the impacted area shows one or more of the 13 environmental justice indexes at or above the 80th percentile in the nation and/or state. The area consisting of the repair and 5-mile buffer and city of Everett are over the 80th percentile for some of the environmental justice indexes (Appendix D). The 5-mile buffer area is over the 80th percentile for drinking water non-compliance. The city of Everett is over the 80th percentile for particulate matter, wastewater discharge, and drinking water non-compliance (Appendix D).

The CEQ’s Climate and Economic Justice Screen Tool is a geospatial mapping tool used to identify disadvantaged communities that face burdens. The tool has an interactive map and uses datasets that are indicators of burdens. Communities are considered disadvantaged if they are in a census tract that meets the threshold for at least one of the tool’s categories of burden and corresponding economic indicator or are on the lands of a Federally recognized Tribe. USACE researched this additional information from the CEQ tool to ensure it rigorously investigated the existence of environmental justice communities or issues of concern.

### **1.17.2 Analysis Results**

Detailed data generated from the EJScreen report can be found in Appendix D and online at the following link: <https://www.epa.gov/ejscreen>,

From the EJScreen research, USACE found that the aggregate minority population is estimated to be 31 percent in the affected area, 33 percent within the state of Washington, and 40 percent for the United States (Appendix D). The city of Everett has an estimated aggregate minority population of 41 percent, which is more than that of the population within 5 miles of the project area (Appendix D).

The aggregate low-income population percentage within 5 miles of the project area and city of Everett is above the state average but below the country average. The aggregate low-income population is estimated at 21 percent within 5 miles of the project area, 23 percent in the state of Washington, and 30 percent for the United States (Appendix D). The aggregate low-income population is estimated at 28 percent in the city of Everett (Appendix D).

The percentage within 5 miles of the project area and the city of Everett does not exceed 50 percent. Therefore, the affected area is not considered to have a high concentration of minority or low-income persons based on CEQ criteria.

The 5-mile buffer area around the project is above the 50th percentile in the nation for members of the population who are unemployed, limited English speakers, and those under the age of 5 (Appendix D).

Detailed information from the CEQ tool can be found at the following URL: <https://screeningtool.geoplatform.gov/en/>.

Using the CEQ’s Climate and Economic Justice Screening Tools, USACE found the project site is located within a partially disadvantaged tract (CEQ 2024). Communities are considered disadvantaged if they are in a census tract that meets the threshold for at least one of the tool’s categories of burden and corresponding economic indicator or are on the lands of a Federally recognized Tribe. The project site is located within a partially disadvantaged tract because the lands of Federally Recognized Tribes that cover less than 1% of this tract are considered disadvantaged.

Detailed information from the CEQ tool can be found at the following URL: <https://screeningtool.geoplatform.gov/en/>.

### **1.17.3 Existing Conditions Pre-Flood (2021)**

The EJ analyses conducted above concluded that the project area is located within a disadvantaged track according to CEQ and the surrounding area does have higher than state and country averages of

minority populations and unemployment rates. Additionally, the project area also experiences greater concentrations of particulate matter PM2.5, nitrogen dioxide, diesel particulate matter, traffic proximity, lead paint, and underground storage tanks when compared to state averages. When compared to national averages, the project area experiences greater concentrations of particulate matter PM2.5, diesel particulate matter, and underground storage tanks (Appendix D).

#### **1.17.4 Alternative 1: No Action**

In its undamaged condition, the Union Slough levee provides a 37-year LOP. In the damaged condition, the levee presently provides an approximate 1-year LOP. The No Action Alternative could result in continued erosion of the bank, especially in a flood event, and could leave the levee vulnerable to continued damage and breaching. A levee breach would result in inundation landward of the levee. If no action is taken, the disadvantaged populations identified in the Environmental Justice analyses would remain unprotected from flooding. Low income and linguistically isolated communities are less likely to receive or understand flood risk alerts and have proportionately more to lose in every flood event. Given the proximity of underground storage tanks, they are also at a higher risk of exposure to toxic substances during a flood event. The No Action alternative would not ensure that these communities would be able to have an environment that is healthy, sustainable, climate-resilient, and free from harmful pollution and chemical exposure. The No Action alternative would not protect against the disproportionate and adverse human health and environmental effects and risks.



### **1.17.5 Alternative 2: Repair in Place**

The Repair in Place Alternative does not involve a facility siting decision and would not disproportionately affect minority or low-income populations, nor would it have any adverse human health impacts. The area is at or above the 80th percentile in the nation or state for 3 of the 13 environmental justice indexes, specifically the indexes for particulate matter, wastewater discharge, and drinking water non-compliance. Repair work to the Union Slough levee would not cause long-term increases to these 3 environmental justice indexes or any of the indexes. Only minor and temporary increases related to construction equipment emissions are anticipated. Other environmental justice Indexes unrelated to emissions would remain unaffected (e.g., Superfund proximity, wastewater discharge indicator). The project maintains flood protection for the affected area which is above the 90th percentile for expected population loss from natural hazards and projected flood risk (CEQ 2024). Populations with higher unemployment, limited English skills, less than a high school education, and over the age of 64 are more vulnerable to the impacts of flooding and are less able to move to avoid this risk. If this alternative is not implemented, the surrounding communities would experience greater flood risk. Additionally, tribal governments in the project area have been informed about the proposed action. This project would not have any disproportionate negative impacts on environmental justice communities, nor would its interactions with other projects have disproportionate negative impacts. No cumulative impact to environmental justice is expected from interaction of the proposed levee repairs with other past, present, and reasonably foreseeable projects. The proposed action would not directly or through contractual or other arrangements, use criteria, methods, or practices that discriminate on the basis of race, color, or national origin, nor would it have a disproportionate effect on minority or low-income communities.

### **1.18 Land Use, Utilities, and Infrastructure**

#### **1.18.1 Existing Conditions Pre-Flood (2021)**

There are two highway overpasses in the eastern portion of the project footprint, State Highway 529N and 529S, that allow vehicle travel over the Snohomish River. In the western portion of the project footprint there is a BNSF railroad line that allows for the transport of goods by rail. A 24-inch corrugated culvert with a flap gate passes through the levee. A gravel access road off 34th Ave NE, approximately 260 feet long, provides access to the levee for maintenance.

Adjacent properties are currently used as a materials plant by Granite Construction Company (north of the project area) and a logging camp (west of the project area).

#### **1.18.2 Alternative 1: No Action**

Taking no action to prevent continuing erosion and a possible breach of the levee could lead to impacts to utilities and public infrastructure. Continued erosion of the levee would be expected to occur, resulting in possible damages to surrounding infrastructure including Everett's water treatment facility as well as local roads and infrastructure on the island. Increased risk of flood damage to utilities and public services would continue. No impact to recreation would be expected.

### **1.18.3 Alternative 2: Repair in Place**

The preferred alternative would restore flood protection for infrastructure on the landward side of the levee. The project would restore flood risk reduction for critical infrastructure (i.e., City of Everett Water Pollution Control Facility) at this site by restoring the levee's previous LOP.

Existence of an important public utility, specifically the water treatment facility, was a determining factor in choosing the Repair in Place alternative. The increased and prolonged vulnerability to flooding for this structure when compared with the No Action alternative was not acceptable and did not sufficiently meet the purpose and need of the project. During construction activities, vehicles and construction equipment may disrupt local traffic due to merging, turning, and traveling together. This increase in traffic would be localized and of short duration, with no long-term impacts. Implementation of this alternative would provide immediate flood risk reduction to public infrastructure. No long-term change in traffic would occur as a result of the project.

## **Mitigation**

Under NEPA "mitigation means measures that avoid, minimize, or compensate for effects caused by a proposed action or alternatives as described in an environmental document or record of decision that have a connection to those adverse effects" 40 C.F.R. § 1508.1(y). While NEPA requires consideration of mitigation, it does not mandate the form or adoption of any mitigation. Mitigation includes, in general order of priority:

1. Avoiding the effect altogether by not taking a certain action or parts of an action.
2. Minimizing effects by limiting the degree or magnitude of the action and its implementation.
3. Rectifying the effect by repairing, rehabilitating, or restoring the affected environment.
4. Reducing or eliminating the effect over time by preservation and maintenance operations during the life of the action.
5. Compensating for the effect by replacing or providing substitute resources or environments.

The proposed action would employ BMPs and conservation measures to avoid and minimize adverse effects. BMPs and conservation measures are described in section 3.2 above.

In addition, wetland impacts will be mitigated with credits deducted from Everett's SIRP advanced mitigation site. No mitigation is being proposed for the temporary impacts to wetlands.

The City of Everett currently has 33.58 acres of wetland mitigation credits in the SIRP. In accordance with the Advanced Wetland Mitigation Agreement Smith Island Habitat Restoration Project, (February 21, 2003), dike improvements along the Snohomish River or Union Slough on Smith Island may debit against the SIRP. The utilization of credits will provide in-kind mitigation for the levee repair's impact to 0.15 acres of Category II estuarine wetlands which would occur on the project site. The levee repair and mitigation area are both located within WRIA #7, and on Smith Island.

The proximity of the impact site to the repair area, and the lack of a significant barrier between the two, may also indicate a habitat connection, particularly for birds. The SIRP provides appropriate mitigation for the repair impacts for the following reasons:

Both the project site and the mitigation area are located on Smith Island in the Lower Snohomish River.

- The Project will result in impacts to Category II estuarine wetlands. The SIRP restored over 50 acres of Category I estuarine wetlands and achieved its ecological goals in 2017, so there is no temporal loss of ecological function.
- The ecological benefits of large-scale mitigation projects are widely recognized, and mitigation banks are considered the preferred mitigation type by USACE, EPA, and WDOE.
- Mitigation at the Smith Island Advanced Mitigation Area will result in no-net-loss of wetland area and functions.

In its November 30, 2017 letter, WDOE stated the SIRP year-ten monitoring report received on October 31, 2017, previous monitoring reports, and the overall ecological development of the restoration areas, demonstrated the SIRP met the intent of the mitigation plan and WDOE's Order. WDOE concluded the City of Everett has met the wetland mitigation conditions of WDOE Order #02SEANR-4717 and amendments. The SIRP has sufficient credits available, and the Mitigation Area will provide in-kind mitigation to Category II estuarine wetland impacts. Mitigation credits will be debited prior to construction of the project.

## **Unavoidable Adverse Effects**

Unavoidable adverse effects associated with the preferred alternative would be (1) temporary and localized increases in noise, activity, and emissions from construction equipment, which may affect fish and wildlife in the area; (2) temporary and localized disruption of local traffic by construction activity and vehicles; (3) irretrievable commitment of fuels and other materials for rehabilitation work; (4) and removal of vegetation from within the proposed construction areas.

## **Cumulative Effects**

The CEQ regulations implementing NEPA defines cumulative effects as effects on the environment that result from the incremental effects of the action when added to the effects of other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-federal) or person undertakes such other actions. Cumulative effects can result from actions with individually minor but collectively significant actions taking place over a period of time (40 C.F.R. §1508.1(g)(3)).

The Snohomish River Basin has changed significantly since the mid-1800s. As the state's second largest river basin, the Snohomish River has been diked, channelized, and drained, to create farmlands and homes (WDOE 2009). In the last 150 years, hundreds of acres of fish and wildlife habitat have been lost due to the development with the basin. Changes to the natural floodplain, channel migration, and sediment fluxes of the Snohomish River from private, city, state, and Federal actions further impact the quality of habitat, abundance of species present, and ecological processes

of the river basin.

Construction and development near the project location are primarily conducted by state, local, and Federal agencies. The actions near the project location involve river access improvements, restoration, or rehabilitation of flood control works.

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Table 7. List of projects in the Snohomish River basin.

<b>Project Name</b>	<b>Location</b>	<b>Type of Project</b>	<b>Year</b>	<b>Agency</b>
Spencer Island	Between Union Slough and Steamboat Slough at RM 3.8	Ecosystem Restoration	Future	USACE and WDFW
Union Slough	Spencer Island, right bank Snohomish River at RM 1.0	P.L. 84-99	2025	Diking District #5 and USACE
Marshland Levee	South of Snohomish, WA and Snohomish River near RMs 8-15	P.L. 84-99	2024	Marshland Flood Control District and USACE
Aquatic Land Withdraw for Snohomish Watershed Kelp and Eelgrass Protection Zone	Possession Sound west of Snohomish River Estuary	WDFW proposed withdraw of 2,298 acres of aquatic land from leasing and development	2022	WA Dept WDOE
Rotary Park Boat Ramp Float Replacement	Snohomish River near RM 7	Replacement of the public boat ramp	2021	City of Everett
Marshland Flood Control District Flood Canal Maintenance	South of Snohomish, WA and Snohomish River near RMs 8-15	Maintenance of sediment ponds, ditches, and flood canals	2020	WA Dept WDOE
Riverview, Rivershore Road: Multisite Embankment Repair	Snohomish River near RM 9	Multisite embankment repair	2020	Snohomish County
Union Slough	Spencer Island, left bank Union Slough at RM 2	P.L. 84-99	2018	Diking District #5 and USACE
Union Slough	Smith Island, left bank Union Slough near RM 3	P.L. 84-99	2016	Diking District #5 and USACE
City of Snohomish Boat Ramp	Snohomish River near RM 13	Construction of a public boat ramp	2015	WDFW
No Name	Snohomish River near RM 8	Shoreline management for 1,700 cubic yards of fill	2014	WA Dept WDOE
Union Slough	Union Slough left bank RM 3 (Site 2)	P.L. 84-99	2013	Diking District #5 and USACE
Union Slough	Snohomish River right bank RM 3 (Site 1), Union Slough left bank RM 3 (Site 2)	P.L. 84-99	2012	Diking District #5 and USACE

Union Slough	Spencer Island, left bank Steamboat Slough at RM 3.8	Section 1135 ecosystem restoration	2007	Diking District #5 and USACE
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Future flooding on the Snohomish River is likely to result in periodic rehabilitation actions. Sponsors may seek Federal assistance with rehabilitation or emergency responses. If USACE determines that the damages are eligible for assistance under the P.L. 84-99 Levee Rehabilitation Program, then additional rehabilitation work would take place. The local non-federal sponsor is responsible for maintenance associated with levee rehabilitation work, including vegetation.

To maintain existing land use development, future activities along the Snohomish River would likely cause similar impacts to those from the Union Slough Levee Rehabilitation project (SNO-01-21).

Future damage from flooding is likely to occur to levees along the Snohomish River and its sloughs and tributaries. Non-Federal entities would likely undertake at least some repair actions under those circumstances and would potentially seek Federal assistance with repairs or emergency actions.

SIRP completed its ten-year monitoring period in 2017. The SIRP created 57.9 acres of habitat credit and as of 2018, the remaining balance is 33.58 acres. Approximately 400 acres of estuarine habitat were restored when the levee reach (replaced by a setback levee in 2018) was breached in 2018, completing the Smith Island Estuary restoration project. The restoration project will contribute significantly toward achieving salmon recovery benchmarks identified in the Puget Sound Salmon Recovery Plan, the Puget Sound Action Agenda, the Snohomish River Basin Salmon Conservation Plan, and actions noted on the Snohomish River Basin Three Year Work Plan.

### 1.1 Conclusion

The proposed project would contribute to maintaining the current channelized state of the river and protect existing investment in a community with commercial and industrial development. When evaluated in the context of past, present, and reasonably foreseeable future actions, the incremental additional effects of the proposed project would not result in significant adverse effects and would not appreciably alter the existing pattern of land use development and cumulative effects within the Snohomish River.

## Coordination

USACE is coordinating with Federal and state agencies and Tribes regarding the proposed Federal action. USACE has been in contact with the following agencies and entities throughout the proposed project development, the environmental review and compliance process, and would continue coordination until the project is completed.

- BNSF
- City of Everett

- Confederated Tribes and Bands of the Yakama Nation
- Lummi Tribe of the Lummi Reservation
- NMFS
- Sauk-Suiattle Indian Tribe
- Snohomish Tribe of Indians
- Snoqualmie Indian Tribe
- Stillaguamish Tribe of Indians of Washington
- Suquamish Indian Tribe
- Swinomish Indian Tribal Community
- Tulalip Tribes of Washington
- USFWS
- WDOE
- Washington State Department of Archaeology and Historic Preservation
- Washington State Department of Transportation

USACE is releasing this draft EA and Draft Finding of No Significant Impacts (FONSI) for the proposed project for a 30-day public review and comment period. Details of the comment period are provided on the cover page.

## **Environmental Compliance**

This EA is being prepared pursuant to Sec. 102(C) of the NEPA, and includes compliance with other laws, regulations and Executive Orders as discussed below.

### **1.2 American Indian Religious Freedom Act**

The American Indian Religious Freedom Act of 1978 (42 U.S.C. 1996) establishes protection and preservation of Native Americans' rights of freedom of belief, expression, and exercise of traditional religions. Courts have interpreted the Act to mean that public officials must consider Native Americans' interests before undertaking actions that might impact their religious practices, including impact on sacred sites.

No alternative is expected to have any effect upon Native Americans' rights of freedom of belief, expression, and exercise of traditional religions. There are no known cultural resources or sacred sites at the project location.

### **1.3 Bald and Golden Eagle Protection Act**

The Bald and Golden Eagle Protection Act (16 U.S.C. § 668-668d) prohibits the taking, possession, or commerce of bald and golden eagles, except under certain circumstances. A USACE biologist did

not observe any eagle nests at the project site during the project scoping site visit. Based on iNaturalist observations (2024), no bald eagles or nests have been sighted near the project area. However, sightings of bald eagles are common in the area. The recommended alternative is not expected to cause take of either bald or golden eagles since there are no known nests near the repair site.

#### **1.4 Clean Air Act of 1972**

The Clean Air Act as Amended (42 U.S.C. §7401, et seq.) prohibits Federal agencies from approving any action that does not conform to an approved State or Federal implementation plan. Blasting and the removal of rock, the operation of equipment, and the operation of vehicles during construction would result in increased vehicle emissions and a slight increase in fugitive dust. These effects would be localized and temporary. Emissions would not exceed EPA's de minimis threshold levels (100 tons/year for carbon monoxide and 50 ton/year for ozone) or affect implementation of Washington's Clean Air Act implementation plan. Therefore, effects are expected to be insignificant.

#### **1.5 Clean Water Act – Federal Water Pollution Control**

The Federal Water Pollution Control Act (33 U.S.C. § 1251 et seq.) is more commonly referred to as the CWA. This act is the primary legislative vehicle for Federal water pollution control programs and the basic structure for regulating discharges of pollutants into waters of the U.S. The CWA was established to “restore and maintain the chemical, physical, and biological integrity of the nation's waters.” The CWA sets goals to eliminate discharges of pollutants into navigable waters, protect fish and wildlife, and prohibit the discharge of toxic pollutants in quantities that could adversely affect the environment.

This draft EA evaluates possible impacts to water quality, primarily with respect to turbidity and water temperature. The proposed levee rehabilitation work does require work in the active channel since some construction activities would take place below the ordinary high water mark/high tide line and in wetlands.

Three sections of the CWA are pertinent to the proposed action. Section 401 covers water quality and evaluation of the effects discharges would have on water quality standards. Section 402 addresses non-point discharges including, but not limited to, stormwater runoff from construction sites. Section 404 addresses discharge of fill into Waters of the United States. Requirements of those three CWA sections are briefly discussed below.

##### **1.5.1 Section 404 and 401**

USACE is responsible for administration of Section 404 of the CWA. USACE does not issue Section 404 permits to itself for its own civil works activities, but USACE accepts responsibility for the compliance of its civil works projects with Sections 404 under the CWA for jurisdictional activity. The proposed levee rehabilitation work requires placing fill below the HTL. There is a Category II estuarine wetland that would be impacted by repair activities. The work proposed at Union Slough is functionally analogous to activities covered by Nationwide Permit (NWP) 3 (Appendix G). A 404(b)(1) alternatives analysis and public interest evaluation were conducted by USACE for the issuance of NWP 3 in 2021; USACE determined that the activities authorized by the NWPs do not have more than a minimal adverse impact on water quality and the aquatic environment and that



permitting the covered NWP activities was in the public interest. USACE adopts and incorporates by reference the previous analysis (86 FR 73522, Reissuance and Modification of Nationwide Permits; 2021 Nationwide Permit 03\_Final Decision Document, COE-2022-00002-0572). Based on the analyses presented in the 404(b)(1) evaluation and general policies for the evaluation of permit applications analysis, USACE finds that the project complies with the substantive elements of Section 404 of the CWA.

### **1.5.2 Section 401**

To ensure compliance with Section 401 of the CWA, USACE requested a Section 401 Water Quality Certification from WDOE on July 8, 2024. WDOE is the Certifying Authority for Section 401 of the CWA in Washington. USACE has analyzed the Union Slough site and the NWP-specific conditions established by WDOE for the general Water Quality Certification (WQC) associated with authorization under the NWP 3. Based on the review of these state-specific conditions, this project is not covered by the general Section 401 WQC approved by WDOE for the 2021 NWPs. WDOE has not granted a general WQC for projects covered by NWP 3 when the project or activity increases the original footprint of the structure by more than 1/10th acre of wetlands. In the case of the Union Slough project, 0.15 acres of wetland would be impacted by construction. Therefore, USACE requested an Individual WQC from WDOE on July 2, 2024. USACE received an Individual WQC from WDOE on August 27, 2024 (WQC Order No. 23187).

### **1.5.3 Section 402**

Section 402 of the CWA is triggered when a construction site would have greater than 1 acre of ground disturbance. A Section 402 National Pollutant Discharge Elimination System Permit is not required since the total project footprint is less than 1 acre.

### **1.6 Coastal Zone Management Act of 1972**

The Coastal Zone Management Act of 1972 as amended (16 U.S.C. §1451-1464) requires Federal agencies to conduct activities in a manner that is consistent to the maximum extent practicable with the enforceable policies of the approved State Coastal Zone Management Program. USACE has determined that the proposed project is substantively consistent with the enforceable policies of the State Clean Air Act, State Water Pollution Control Act, and the State Shoreline Management Act (SMA). The SMA is locally implemented through the Snohomish County Shoreline Master Programs. USACE sent a Coastal Zone Management Act Consistency Determination to WDOE requesting concurrence that the proposed repairs are consistent to the maximum extent practicable with the enforceable policies of the approved CZM Program on September 16, 2024. USACE received a CZM Consistency decision on October 22, 2024.

### **1.7 Endangered Species Act**

In accordance with Section 7(a)(2) of the ESA of 1973, as amended, federally funded, constructed, permitted, or licensed projects must take into consideration impacts to Federally listed or proposed threatened or endangered species and their critical habitats.

USACE evaluated potential effects to endangered species in a Biological Assessment that was sent to

the USFWS and NMFS on March 8, 2024. The BA contained an evaluation of effects of the proposed project on ESA-listed species and their critical habitat. USACE determined the project would adversely affect Chinook salmon, steelhead, bull trout, and their critical habitat (Table 5). Consultation is ongoing with the USFWS and NMFS.

Table 8. Summary of effects determinations for ESA-listed species and designated critical habitat.

Species	Species Effect Determination	Critical Habitat Determination
Puget Sound Chinook salmon ( <i>Oncorhynchus tshawytscha</i> )	Likely to Adversely Affect	Likely to Adversely Affect
Puget Sound steelhead ( <i>Oncorhynchus mykiss</i> )	Likely to Adversely Affect	Likely to Adversely Affect
Coastal/Puget Sound bull trout ( <i>Salvelinus confluentus</i> )	Likely to Adversely Affect	Likely to Adversely Affect
Killer whale ( <i>Orcinus orca</i> )	No Effect	Not Likely to Adversely Affect
North American Wolverine ( <i>Gulo gulo luscus</i> )	No Effect	No Effect
Marbled murrelet ( <i>Brachyramphus marmoratus</i> )	No Effect	No Effect
Yellow-billed Cuckoo ( <i>Coccyzus americanus</i> )	No Effect	No Effect

### 1.8 Magnuson-Stevens Fisheries Conservation and Management Act

The Magnuson-Stevens Fishery Conservation and Management Act, (16 U.S.C. § 1801 *et. seq.*), as amended by the Sustainable Fisheries Act of 1996 (P.L. 104-267) requires Federal agencies to consult with NMFS regarding actions that may adversely affect essential fish habitat (EFH) for Pacific coast groundfish, coastal pelagic species, and Pacific salmon. The Act defined EFH as “those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity.” EFH is the habitat (waters and substrate) required to support a sustainable fishery and a managed species’ contribution to a healthy ecosystem. Waters include aquatic areas and their associated physical, chemical, and biological properties used by fish. Substrate includes sediment, hard bottom, structures underlying the waters, and associated biological communities. The Snohomish River is designated as EFH for groundfish from the mean higher high-water line and the upriver extent of saltwater intrusion in the river mouth. Freshwater EFH components for salmonid include migration corridors, spawning habitat for adults, and rearing habitat for juveniles.

USACE determined that the proposed action may adversely affect EFH designated for groundfish and Pacific salmon species. Effects of the proposed work on EFH would be essentially identical to those discussed in section 3.4 and section 8.6. There could be temporary impacts during construction to include increased noise, vibration, and turbidity. This determination was included in the BA sent to the NMFS on March 8, 2024, requesting formal consultation. Consultation on EFH with NMFS is ongoing.

## **1.9 Migratory Bird Treaty Act of 1918 and Executive Order 13186, Responsibilities of Federal Agencies to Protect Migratory Birds**

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

Birds inhabit the riparian area of the Snohomish River all year, and the proposed work may overlap with some nesting seasons. Nesting seasons vary by species; however, the majority of local bird species nest between February through July (Backyard Bird Shop 2024). USACE must complete the proposed heavy equipment work between June 1 and October 31 and anticipates requiring 30 days for construction. Construction activity would be limited to daylight hours and would be intermittent.

Some work may overlap with the prime nesting season (April to mid-June) to comply with the in-water work window (June 1 to October 31). No trees in the project footprint that may provide nesting to migratory birds would be removed. Implementation of the Preferred Alternative would not have any direct, affirmative, or purposeful negative effect to migratory birds. There would be no adverse effect on habitat and the project would only have minimal and temporary incidental effects to a small number of individual birds that may be present in the project area. No permit application for “take” of migratory birds is required.

### **1.10 National Environmental Policy Act**

NEPA (42 U.S.C. § 4321 et seq.) commits Federal agencies to considering, documenting, and publicly disclosing the environmental effects of their actions. It requires that an EIS be included when a recommendation or report on proposals for legislation and other major Federal actions significantly affects the quality of the human environment. Major Federal actions determined not likely to have significant effects on the quality of the human environment may be evaluated through an EA.

This draft EA evaluates the environmental effects of the proposed Union Slough Levee Rehabilitation Project consistent with the requirements of NEPA.

#### **1.10.1 NEPA / Proposed Action**

The prospective Federal action is the proposed repair to the Union Slough levee as discussed in the body of this draft EA. This draft EA has been prepared pursuant to NEPA. Effects on the quality of the human environment as a result of the proposed levee repair are anticipated to be less than significant. A draft Finding of No Significant Impact (FONSI) has also been prepared and is being circulated for public comment (Appendix E).

## **8.9.2 NEPA SUMMARY**

This Draft EA / FONSI is available for public review and comment. USACE invites submission of comments on the environmental impact of the proposed action. USACE will consider all submissions received during the comment period. The nature or scope of the proposal may be changed upon consideration of the comments received and this EA updated. If significant effects on the quality of the human environment are identified and cannot be mitigated, USACE would initiate an EIS and afford all the appropriate public participation opportunities attendant to an EIS. Comments and responses will be included in the final EA.

### **1.11 National Historic Preservation Act of 1966**

Section 106 (54 U.S.C. § 306108) of the National Historic Preservation Act (54 U.S.C. § 300101) requires that Federal agencies evaluate the effects of Federal undertakings on historical, archeological, and cultural resources and afford the Advisory Council on Historic Preservation opportunities to comment on the proposed undertaking if there is an adverse effect to an eligible Historic Property. The lead agency must examine whether feasible alternatives exist that avoid eligible cultural resources. If an effect cannot reasonably be avoided, measures must be taken to minimize or mitigate potential adverse effects.

USACE initiated consultation with the State Department of Archaeology and Historic Preservation on the APE on January 30, 2024, and received concurrence on the same day (Appendix F). USACE also initiated consultation with the Tulalip Tribes of Washington, Confederated Tribes and Bands of the Yakama Nation, Sauk-Suiattle Indian Tribe, Snohomish Tribe of Indians, Snoqualmie Indian Tribe, Stillaguamish Tribe of Indians of Washington, and the Swinomish Indian Tribal Community on February 2, 2024. To date the USACE has received no comments from the contacted Tribes on the APE.

### **1.12 Native American Tribal Treaty Rights & Tribal Consultation under EO 13175, Consultation and Coordination with Indian Tribal Governments**

The United States has a unique, legally affirmed Nation-to-Nation relationship with American Indians and Alaska Native Tribal Nations, which is recognized under the Constitution of the United States, treaties, statutes, EOs, and court decisions. The United States recognizes the right of Tribal Governments to self-govern and supports Tribal sovereignty and self-determination. The United States also has a unique trust relationship with and responsibility to protect and support Tribal Nations.

Between 1778 and 1871, the United States entered into about 400 treaties with various Indian nations on a government-to-government basis. Under the United States Constitution, treaties are accorded precedence equal to Federal law. Treaty rights are binding on all Federal and state agencies, and take precedence over State constitutions, laws, and judicial decisions. Treaty terms, and the rights arising from them, cannot be rescinded, or cancelled without explicit and specific evidence of Congressional intent – indicating that Congress was aware of the conflict between its intended action on the one hand and Indian treaty rights on the other, and chose to resolve the conflict by abrogating the treaty. A right enumerated in a treaty ratified by the Senate may only be superseded by a subsequent act of

Congress.

USACE has a trust policy to consult with, and consider views of, federally recognized American Indian Tribes when proposing an action that may have the potential to significantly affect tribal rights, resources and lands. See Department of Defense Instruction 4710.02, Section 3, Subject: DOD Interactions with Federally Recognized Tribes (September 24, 2018). USACE discharges that duty by notifying, consulting with, and meaningfully considering tribal concerns that are raised through this consultation process.

In the 1850s, in exchange for the cession of their ancestral lands, numerous Tribes in the Pacific Northwest entered treaties with the United States to secure for themselves, amongst other considerations, the preservation of fishing rights in the ceded areas. These treaties were negotiated and signed by the then-Governor of the Washington Territory, Isaac I. Stevens, and are collectively known as the “Stevens Treaties.”

In 1974, many (but not all) of the Stevens Treaties signatory Tribes’ “usual and accustomed grounds” within Puget Sound were delineated in a Federal court adjudication, *United States v. Washington*, 384 F. Supp. 312 (W.D. Wash. 1974). The Stevens treaties reserved the signatory Tribes’ right to “take fish at usual and accustomed grounds and stations . . . in common with all citizens of the territory.” *Id.* at 332. Federal case law has recognized that the signatory Tribes also reserved the right to take up to 50 percent of the harvestable anadromous fish runs passing through those grounds (Fair Share). Over the years, the courts have held that this right also comprehends certain subsidiary rights, such as access to their “usual and accustomed” fishing grounds. See *NW. Sea Farms v. U.S. Army Corps of Engineers*, 931 F. Supp 1515 (W.D. Wash. 1996).

USACE has evaluated impacts to fish and wildlife in this project and sent letters on January 22, 2024, to the Confederated Tribes and Bands of the Yakama Nation, Lummi Tribe of the Lummi Reservation, Sauk-Suiattle Indian Tribe, Snoqualmie Indian Tribe, Stillaguamish Tribe of Indians of Washington, Suquamish Indian Tribe, Swinomish Indian Tribal Community, and the Tulalip Tribes of Washington requesting comments on the proposed project. The Snoqualmie Indian Tribe attended a site visit with USACE on February 28, 2024, and the Swinomish Indian Tribal Community responded that it would like to be notified once a draft EA is available for review. To date USACE has received no other comments from the contacted Tribes.

### **1.13 Executive Order 11988, Floodplain Management**

EO 11988 requires Federal agencies to avoid, to the extent possible, the long and short-term adverse impacts associated with the occupancy of the floodplain, and to avoid direct and indirect support of floodplain development where there is a practicable alternative. In accomplishing this objective, *"each agency shall provide leadership and shall take action to reduce the risk of flood loss, to minimize the impact of floods on human safety, health and welfare, and to restore and preserve the natural and beneficial values served by flood plains."*

Under Engineering Regulation 500-1-1(Chapter 5 Section 3 Paragraph 5-13. f), the provisions of EO 11988 are normally not applicable to the repair of flood control works to the pre-disaster condition, such as the proposed Union Slough repair, as the repair actions do not directly affect either the

modification or occupancy of floodplains, and do not directly or indirectly impact floodplain development. Only a proposed project that constitutes a major rehabilitation project, requires extensive engineering and design, and a significantly changes project footprint is to be evaluated for its impact on the floodplain.

#### **1.14 Executive Order 11990 Protection of Wetlands**

EO 11990 encourages Federal agencies to take actions to minimize the destruction, loss, or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands when undertaking Federal activities and programs.

The proposed levee repairs would have an unavoidable impact to 0.15 acres of sedge wetlands and intertidal mudflat. Due to the unavoidable impacts to wetlands, compensatory mitigation at the City of Everett's advanced mitigation site upstream is proposed at a ratio of 1:1. A total of 0.15 credits will be debited from the SIRP advanced mitigation site prior to construction. Actions proposed by USACE are consistent with EO 11990.

### **Public Interest Evaluation Factors for Section 404**

An evaluation of the levee repair activity was conducted in light of the public interest factors prescribed in 33 CFR 336.1(c). These factors include: navigation and the Federal standard for dredged material disposal; water quality; coastal zone consistency; wetlands; endangered species; historic resources; scenic and recreation values; fish and wildlife; marine sanctuaries; and applicable state/regional/local land use classifications, determinations, and/or policies. Of these, water quality, coastal zone consistency, wetlands, endangered species, historic resources, scenic values, recreational values, and fish and wildlife have been evaluated in this draft EA. The factor of marine sanctuaries is not applicable as work would not occur in marine sanctuaries.

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

### **Summary of Assessment**

The No Action Alternative does not meet the project's purpose and need of the proposed Federal action. The Preferred Alternative fulfills the project's purpose and need by restoring flood protection to the area damaged by the 2021 flood. Based on the above analysis, the proposed Union Slough Levee Rehabilitation Project would not constitute a major Federal action significantly affecting the

quality of the human environment, and therefore does not require preparation of an EIS. Public comments are invited on this Draft EA and will be considered prior to the issuance of a Final Environmental Assessment.

DRAFT

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<https://wdfw.wa.gov/species-habitats/species/coccyzus-americanus#desc-range>

**Appendix A – Design Drawings**

DRAFT



US Army Corps  
of Engineers®  
Seattle District

# FY24 P2-498573 UNSL UNION SLOUGH LEVEE REHAB 2021 EVERETT, WASHINGTON



**PROJECT VICINITY MAP**  
NTS



**PROJECT LOCATION MAP**  
NTS

**INDEX OF DRAWINGS**

SHEET ID	TITLE
GENERAL	
G-001	TITLE, VICINITY MAP, PROJECT MAP, AND INDEX
CIVIL	
CS100	ACCESS AND HAUL ROUTE
CS101	PROPOSED SITE PLAN
C-301	CROSS SECTIONS 1
C-302	CROSS SECTIONS 2

	US Army Corps of Engineers Seattle District
Date:	09 JANUARY 2024
File No.:	E-6-7-61
Substation No.:	
Recommended by:	01/09/2024 DEV L GREEN, P.E.
Reviewed by:	01/09/2024 CATHY M M. PETROFF
Approved by:	01/09/2024 ANL L. VASARODAD
Chief, Engineering Div.:	
Submitted by:	01/09/2024 JANET CORMANI
Reviewed by:	01/09/2024 ANL L. VASARODAD
Chief, Plans and Tech Review:	
U.S. ARMY CORPS OF ENGINEERS JANET CORMANI, DISTRICT ENGINEER SEATTLE, WASHINGTON	U.S. ARMY CORPS OF ENGINEERS ANL L. VASARODAD, P.E. SEATTLE, WASHINGTON
Prepared by:	JANET CORMANI, DISTRICT ENGINEER SEATTLE, WASHINGTON
Reviewed by:	ANL L. VASARODAD, P.E. SEATTLE, WASHINGTON
Chief, Planning Section:	
U.S. ARMY CORPS OF ENGINEERS JANET CORMANI, DISTRICT ENGINEER SEATTLE, WASHINGTON	U.S. ARMY CORPS OF ENGINEERS ANL L. VASARODAD, P.E. SEATTLE, WASHINGTON
Prepared by:	JANET CORMANI, DISTRICT ENGINEER SEATTLE, WASHINGTON
Reviewed by:	ANL L. VASARODAD, P.E. SEATTLE, WASHINGTON
Chief, Planning Section:	
<b>SHEET IDENTIFICATION</b>	<b>G-001</b>



IF SHEET MEASURES LESS THAN 22" X 34" IT IS  
A REDUCED PRINT. REDUCE SCALE ACCORDINGLY.



**A1 ACCESS AND HUAL ROUTE**  
1" = 200'

**GENERAL NOTES:**

1. PROJECT ENTRY- FROM SR 529 NORTH TURN RIGHT ONTO 28TH PL NE, TURN RIGHT ONTO 30TH AVE NE, TURN RIGHT ONTO 34TH AVE NE, THEN IN APPROXIMATELY 500FT TURN RIGHT ONTO THE ACCESS ROAD TO THE PROJECT SITE.
2. PROJECT EGRESS- FROM THE ACCESS ROAD TURN LEFT ONTO 34TH AVE NE, IN APPROXIMATELY 2100FT TURN RIGHT ONTO THE SR 529 SOUTH.
3. STAGING AREA WILL BE COVERED IN TOPSOIL, HYDROSEEDDED AND MATCH THE EXISTING CONDITIONS POST CONSTRUCTION.

 <b>US Army Corps of Engineers</b>
PROJECT NO: _____ DRAWING NO: _____ SHEET NO: _____
DESIGNED BY: _____ CHECKED BY: _____ U.S. ARMY CORPS OF ENGINEERS WASHINGTON FIELD OFFICE WASHINGTON, DC 20542-0001
PROJECT TITLE: <b>ACCESS AND HUAL ROUTE</b>
SHEET ID: <b>UNSL CS100</b>
100% DESIGN SUBMITTAL

FOR APPROVAL AND RECORD: ARMY/CORPS OF ENGINEERS, WASHINGTON FIELD OFFICE, WASHINGTON, DC 20542-0001, DRAWING NO. UNSL/CS100, SHEET NO. A1, PROJECT TITLE: ACCESS AND HUAL ROUTE, DATE: 11/15/2024, BY: [Signature], FOR AEC: [Signature]



**GENERAL NOTES:**

1. PROJECT ACCESS WILL BE FROM 34TH AVE. NE.
2. STAGING AREA WILL BE COVERED IN TOPSOIL. HYDROSEEDING AND MATCH THE EXISTING CONDITIONS POST CONSTRUCTION.
3. RECOVERED ON-SITE LARGE WOODY MATERIAL (LWM) WILL BE PLACED UNANCHORED ALONG THE LENGTH OF THE LEVEE REPAIR WATERWARD OF THE SALVAGED SEDGE MAT. THE PLACEMENT OF THE LWM WILL BE DETERMINED BY THE EQUIPMENT REACH FROM THE TOP OF THE LEVEE WHEN IT REACHES ITS MAXIMUM LENGTH BASED ON THE WEIGHT LIMITS OF THE EQUIPMENT.
4. NO WORK TO OCCUR IN LANDWARD WETLAND BOUNDARY.
5. CONSTRUCTION SHALL OCCUR DURING THE ESTABLISHED WORK WINDOW OF JUNE 1 - OCTOBER 31 TO MINIMIZE DETRIMENTAL IMPACTS TO FISH HABITAT.
6. MATERIAL WILL BE PLACED AND NOT DUMP AROUND THE CULVERT TO PREVENT DAMAGE TO THE CULVERT. NO EXCAVATION NEAR OR AROUND THE CULVERT SHOULD BE CONDUCTED TO PREVENT DAMAGE TO THE CULVERT.
7. REPAIR OF THE LEVEE ON BNSF PROPERTY BETWEEN THE RAILROAD EMBANKMENT AND PROPERTY LINE NEAR LEVEE STATION 0+50 WILL BE COMPLETED BY BNSF. ALL CONSTRUCTION ACTIVITIES BY BNSF WILL OCCUR ABOVE OHW. USACE WILL COMPLETE THE REMAINDER OF THE LEVEE REPAIR FROM THE BNSF PROPERTY LINE TO THE UPSTREAM END OF THE REPAIR NEAR STATION 5+00.



PROJECT NO.	DATE
PROJECT NAME	
LOCATION	
SCALE	
DESIGNED BY	
CHECKED BY	
DATE	

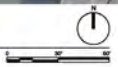
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LOCATION	
SCALE	

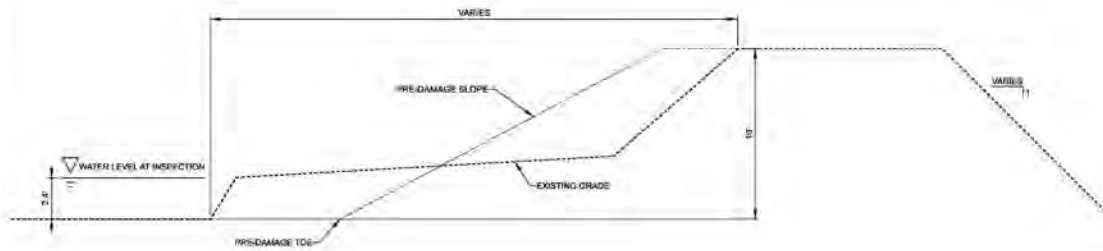
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PROJECT NAME	
LOCATION	
SCALE	

SHEET ID  
UNSL  
CS101

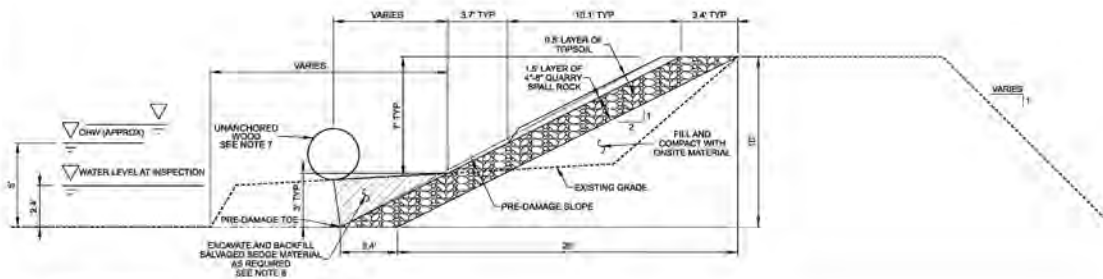
100% DESIGN SUBMITTAL

A1 PROPOSED SITE PLAN  
1" = 30'





F1 CROSS SECTION 1 - TYPICAL EXISTING CONDITIONS



A1 CROSS SECTION 1 - TYPICAL PROPOSED REPAIR

**GENERAL NOTES:**

- PROJECT SITE EXTENDS FOR 800 LINEAL FEET INCLUDING TRANSITIONS FROM NATIONAL LEVEE DATABASE (NLD) FROM STATION 548 TO STATION 549. ACTUAL STATION OF CROSS SECTIONS WILL VARY DEPENDING ON FIELD CONDITIONS.
- USACE SHALL BE RESPONSIBLE FOR LOCATING UNDERGROUND AND OVERHEAD UTILITIES AS APPLICABLE PRIOR TO COMMENCING WORK.
- QUARRY SMALL ROCK SHALL CONFORM TO THE GRADATIONS IN TABLE 1 ON C-301. STONE SHALL BE HARD, SOUND, AND DURABLE MATERIAL, FREE FROM SEAMS, CRACKS AND OTHER DEFECTS TENDING TO LEAD TO PREMATURE WEATHERING.
- TOPSOIL PLANTING MATRIX SHALL CONSIST OF A 70/30 MIXTURE OF SOIL AND ORGANIC COMPOST. ENGINEERED TOPSOIL SHALL CONFORM TO GRADATION IN TABLE 2 ON C-301 AND SHALL BE FREE OF ROOTS, CHEMICALS, GARBAGE AND DEBRIS.
- WHERE HISTORICAL RIVERWARD TOE EXCEEDS THE EXTENT OF THE LEVEE REPAIR, EFFORT SHOULD BE MADE FOR EXISTING MATERIAL TO REMAIN INTACT SUCH THAT SAFE CONSTRUCTION PRACTICES AND STABLE SLOPES ARE STILL MAINTAINED.
- LIMIT CONSTRUCTION ACTIVITIES TO WORK AREAS SHOWN.
- RECOVERED ON-SITE LARGE WOODY MATERIAL (LWM) WILL BE PLACED UNANCHORED ALONG THE LENGTH OF THE LEVEE REPAIR WATERWARD OF THE SALVAGED SEDGE MAT. THE PLACEMENT OF THE LWM WILL BE DETERMINED BY THE EQUIPMENT REACH FROM THE TOP OF THE LEVEE WHEN IT REACHES ITS MAXIMUM LENGTH BASED ON THE WEIGHT LIMITS OF THE EQUIPMENT.
- REPAIR WILL OCCUR IN APPROXIMATELY 20 FT SEGMENTS AT A TIME. THE SEDGE MATS WILL BE PILED UP AND MOVED UPSTREAM OR DOWNSTREAM FROM THE REPAIR LOCATION ON THE RIVERWARD BEACH TEMPORARILY. THIS WILL KEEP THE SEDGE MATS WET.

**REPAIR STEPS:**

- SEGREGATE SMALL ROCK FROM SEDGE MATERIAL AND RETAIN ON SITE. EXCAVATE SEDGE MATERIAL FROM TOE OF SLOPE. REMOVE EXISTING SMALL ROCK AND RETAIN AS PRACTICABLE.
- CONSTRUCT SLOPE USING 4" TO 6" QUARRY SMALL ROCK. RECONSTRUCT THE 18" ROCK ARMOR BLANKET ON THE SLOPE BY PLACING WITH THE EXCAVATOR AND SHAPING/COMPACTING WITH THE BUCKET TO PROVIDE A STABLE KEYED-IN SURFACE.
- PLACE 0.5' OF SALVAGED SEDGE MAT IN THE HORIZONTAL BENCH BELOW OHW AND OVER THE ROCK ARMORING TOE. SALVAGED SEDGE MAT SHALL NOT BE COMPACTED.
- PLACE 0.5' OF TOPSOIL FROM THE OHW TO THE TOP OF THE LEVEE. TRANSITION UPSTREAM AND DOWNSTREAM ENDS OF REPAIR TO SMOOTHLY TIE INTO EXISTING SLOPE AND EXISTING ELEVATION.
- RESTORE CROWN AS APPLICABLE TO MATCH WITH ADJACENT EXISTING LEVEE.
- HYDROSEED EXPOSED GROUND WITH REQUIRED LOCAL NATIVE MIX.

TABLE 1: REPAIR GRADATIONS (ASSUMED SPECIFIC GRAVITY = 2.80)

DISTRIBUTION	SIZE (IN)	WEIGHT (LBS)
100% SMALLER THAN	12	150
10% SMALLER THAN	17	25

\*A DEVIATION OF +/- 4% IS ALLOWED FOR SIZE AND +/- 10% FOR WEIGHT

TABLE 2: ENGINEERED TOPSOIL GRADATION

SEIVE SIZE	PERCENT PASSING BY WEIGHT
1/2"	100
NO. 4	75-100
NO. 10	40-75
NO. 20	25-55
NO. 40	25-55
NO. 200	10-20

TABLE 3: MATERIAL QUANTITIES

SITE	LENGTH (FT)	4"-6" QUARRY SMALL ROCK (CY)	SALVAGED SEDGE MATERIAL (CY)	TOPSOIL (CY)	HYDROSEED (ACRES)
PROJECT SITE	800	800	170	100	0.36

US Army Corps of Engineers

PROJECT: ...

DATE: ...

DESIGNER: ...

CHECKED BY: ...

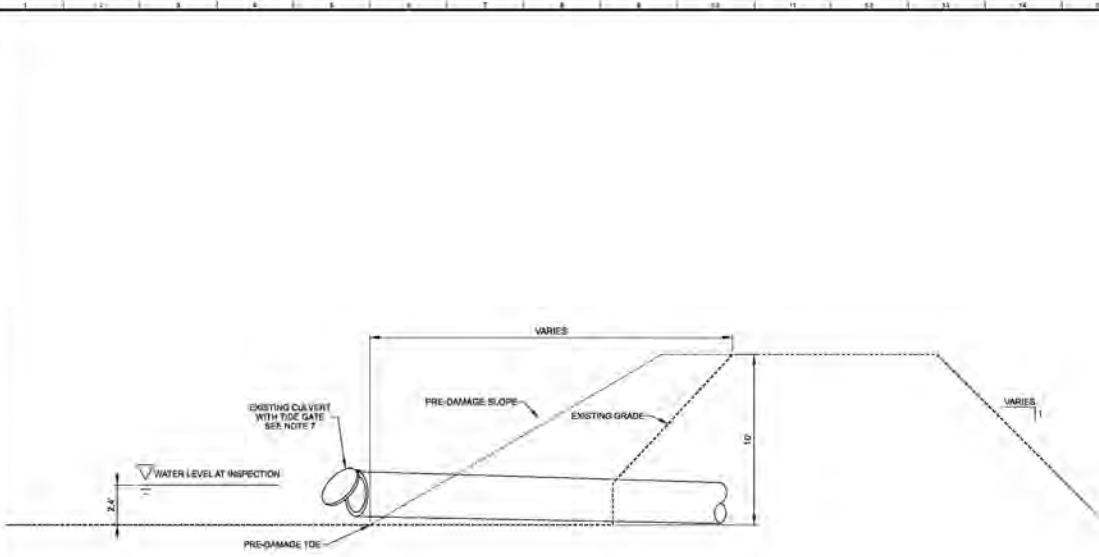
APPROVED BY: ...

PROJECT SITE: ...

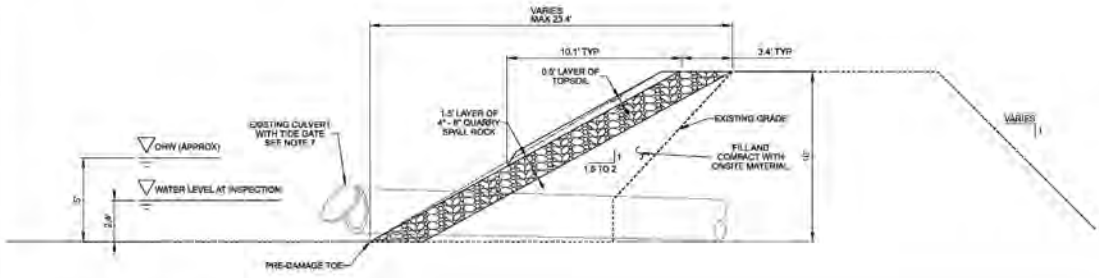
CROSS SECTION 1

SHEET ID: UNSL C-301

100% DESIGN SUBMITTAL



G1 CROSS SECTION 2 - CULVERT EXISTING CONDITIONS



A1 CROSS SECTION 2 - CULVERT PROPOSED REPAIR

**GENERAL NOTES:**

1. PROJECT SITE EXTENDS FOR 800 LINEAL FEET INCLUDING TRANSITIONS FROM NATIONAL LEVEL DATABASE (N.L.D.) FROM STATION 5485 TO STATION 5490. ACTUAL STARTING OF CROSS SECTIONS WILL VARY DEPENDING ON FIELD CONDITIONS.
2. USACE SHALL BE RESPONSIBLE FOR LOCATING UNDERGROUND AND OVERHEAD UTILITIES AS APPLICABLE PRIOR TO COMMENCING WORK.
3. QUARRY SPALL ROCK SHALL CONFORM TO THE GRADATIONS IN TABLE 1 ON C-301. STONE SHALL BE HARD, SOUND, AND DURABLE MATERIAL, FREE FROM SEAMS, CRACKS AND OTHER DEFECTS TENDING TO LEAD TO PREMATURE WEATHERING.
4. TOPSOIL PLANTING MATRIX SHALL CONSIST OF A 70/30 MIXTURE OF SOIL AND ORGANIC COMPOST. ENGINEERED TOPSOIL SHALL CONFORM TO GRADATION IN TABLE 2 ON C-301 AND SHALL BE FREE OF ROOTS, CHEMICALS, GARBAGE AND DEBRIS.
5. WHERE HISTORICAL RIVERWARD TOE EXCEEDS THE EXTENT OF THE LEVEE REPAIR, EFFORT SHOULD BE MADE FOR EXISTING MATERIAL TO REMAIN INTACT SUCH THAT SAFE CONSTRUCTION PRACTICES AND STABLE SLOPES ARE STILL MAINTAINED.
6. LIMIT CONSTRUCTION ACTIVITIES TO WORK AREAS SHOWN.
7. MATERIAL WILL BE PLACED AND NOT DUMP AROUND THE CULVERT TO PREVENT DAMAGE TO THE CULVERT. NO EXCAVATION NEAR OR AROUND THE CULVERT SHOULD BE CONDUCTED TO PREVENT DAMAGE TO THE CULVERT.

**REPAIR STEPS**

1. SEGREGATE SPALL ROCK FROM SEDGE MATERIAL AND RETAIN ON SITE.
2. EXCAVATED SEDGE MATERIAL FROM TOE OF SLOPE. REMOVE EXISTING SPALL ROCK AND RETAIN AS PRACTICABLE.
3. CONSTRUCT SLOPE USING 4" TO 6" QUARRY SPALL ROCK.
4. RECONSTRUCT THE 18" ROCK ARMOR BLANKET ON THE SLOPE BY PLACING WITH THE EXCAVATOR AND SHAPING/COMPACTING WITH THE BUCKET TO PROVIDE A STABLE KEYED-IN SURFACE.
5. PLACE 8" OF SALVAGED SEDGE MAT IN THE HORIZONTAL BENCH BELOW OHW AND OVER THE ROCK ARMORING TOE. SALVAGED SEDGE MAT SHALL NOT BE COMPACTED.
6. PLACE 8" OF TOPSOIL FROM THE OHW TO THE TOP OF THE LEVEE.
7. TRANSITION UPSTREAM AND DOWNSTREAM ENDS OF REPAIR TO SMOOTHLY TIE INTO EXISTING SLOPE AND EXISTING ELEVATION.
8. RESTORE CROWN AS APPROPRIATE TO MATCH WITH ADJACENT EXISTING LEVEE.
9. HYDROSEED EXPOSED GROUND WITH REQUIRED LOCAL MIXTURE.



NO.	DATE	REVISION

DESIGNED BY	
CHECKED BY	
DATE	
PROJECT NO.	
SCALE	
DATE	


SHEET NO  
UNSL  
C-302

100% DESIGN SUBMITTAL

**Appendix B – Water Quality Monitoring Plan**

DRAFT



# Water Quality Monitoring Plan

Project: Union Slough levee repair

Date: June 17, 2024

Best Management Practices (BMPs; Attachment A) include water quality monitoring. Water quality monitoring will occur during in-water sediment-generating activities. Each type of sediment generating activity will be monitored.

## SEDIMENT-GENERATING ACTIVITIES TRIGGERING MONITORING EFFORTS

- In-water levee toe or bank excavation,
- Placement of levee toe rock, and
- Rock placement for bank construction.

## MONITORING FREQUENCY AND DURATION

- Point of Compliance monitoring will occur once per hour for the first three hours after the start of each new sediment-generating activity and then once every three hours, if no exceedance is noted, until the end of the workday.
- Background samples will be taken at the same frequency as Point of Compliance samples.
- If, after a minimum of one full day, sampling results verify that turbidity levels generated by a specific activity remain consistently below the stated water quality standards, sampling may be reduced or stopped for that activity.
  - Sampling will resume during new sediment-generating activities or if precipitation events or any other changes result in higher or lower potential project-related turbidity.
  - Sampling will resume if visual monitoring indicates possible exceedance at the Point of Compliance locations. BMPs will be evaluated to see if additional steps can be taken to reduce and control turbidity.
- Visual monitoring will be done continuously for all in-water work.
- Maximum turbidity levels will meet WAC 173-201A-210(1)(e)(i). Turbidity shall not exceed 5 NTU over background when the background is 50 NTU or less; or a 10 percent increase in turbidity when the background turbidity is more than 50 NTU.

## SAMPLING LOCATIONS

Sampling locations are shown in Attachment B and are located at the following points:

- Background – 100 feet upstream of the repair site or the closest safe accessible location.
- Point of Compliance – 150 feet downstream of the project site.

June 2024

## SAMPLING PROCEDURES

Water samples will be collected and analyzed for the appropriate parameters, per the monitoring frequency described above, following the equipment and sampling guidelines below:

- Continuous visual monitoring will occur to identify the presence of oil or grease on the water's surface.
- Turbidity will be monitored using a Hach turbidimeter or equivalent.
- The onsite USACE Biologist or Quality Construction Assurance Personnel will conduct the water quality monitoring and are responsible for providing the results to the Washington State Department of Ecology (Ecology).
- A portable turbidity meter will be used in the field. A representative sample should accurately reflect the true condition of the water source from which the sample was taken. The following protocol will be used to ensure a representative sample is analyzed:
  - Use a clean container to obtain a sample from the source.
  - Collect the sample with care to avoid disturbance of sediments and collecting surface contaminants.
  - Gently but thoroughly mix the sample before pouring it into the small vial used to read the sample in the turbidimeter.
  - Without allowing the sample to settle, take turbidity reading according to turbidimeter manufacturer's instructions.
  - Several measurements can be taken, with the average used as the data for comparison.
- Turbidity samples will be collected:
  - Near the surface (~2 feet below)
  - Mid-depth
  - Near the bottom (~2 feet above)

A calibration check of the turbidimeter using secondary standards will be carried out regularly (at least once per week). The instrument will be recalibrated using primary standards at least once every 3 months, or more when a calibration check indicates there is a problem. The manufacturer's calibration procedures will be followed.

## NON-COMPLIANCE

USACE will notify Ecology if either visual or physical monitoring indicates that water quality standards have been exceeded. See the Reporting section of this plan for reporting details. Notifications will be made per the following requirements:

- Notify Ecology within 24 hours of the exceedance.

June 2024

- Submit a detailed written report to Ecology within 5 days describing the nature of the event, corrective action taken or planned, steps to be taken to prevent a recurrence, results of any samples taken, and any other pertinent information.
- Work will stop and cleanup efforts initiated if an oil or grease sheen is observed in the river. Equipment will be inspected to determine the source of the sheen. All oil and grease spills will be reported immediately.

### CONTINGENCY SAMPLING

If sample results confirm that water quality is out of compliance with water quality standards, USACE will modify or stop the activity causing the problem and commence the contingency sampling requirements (Table 1). Contingency Monitoring will also commence if visual monitoring indicates possible exceedances at the Point of Compliance. USACE shall return to standard sampling procedures after two consecutive sample periods show compliance with water quality standards. If compliance is not achieved within two hours of the initial exceedance, USACE will notify Ecology of the sustained exceedance and issue a stop-work order within 24 hours. After the stop-work order has been issued, water quality sampling will resume and shall be collected at hourly intervals until water quality return to background. Once water quality is within compliance, work will resume, and the contractor shall resume water quality monitoring as prescribed.

Table 1. Contingency sampling requirements.

Parameter	Contingency Sampling Location	Contingency Frequency	WQ Standard
Turbidity	Point of Compliance	Hourly	When background < 50 NTU: not to exceed 5 NTU over background When background > 50 NTU: Not to exceed 10% over background
Oil/Grease	Throughout project area	Continuous-Visual	No Sheen

### REPORTING

All water quality monitoring results (visual and physical) will be recorded on the monitoring form (Attachment C).

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**TURBIDITY**

All sample results or exceedances will be provided to Ecology at the following email addresses:

- [fednotification@ecy.wa.gov](mailto:fednotification@ecy.wa.gov)
- [DGRE461@ECY.WA.GOV](mailto:DGRE461@ECY.WA.GOV) (Doug Gresham)

Sample results will be provided to Ecology 30 days after construction is completed.

**OIL/GREASE**

The following entities will be contacted immediately in the event of an oil or grease spill. Details of the spill will be recorded on the monitoring form.

- Ecology. Additional details available online: <<https://ecology.wa.gov/About-us/Get-involved/Report-an-environmental-issue/Report-a-spill>>
  - [fednotification@ecy.wa.gov](mailto:fednotification@ecy.wa.gov)
  - Doug Gresham, [DGRE461@ECY.WA.GOV](mailto:DGRE461@ECY.WA.GOV)
  - [Washington Emergency Management Division, 1-800-258-5990](#)
  - Ecology's Regional Spill Response Office
    - Rob Walls, Spills Manager, 425-649-7130, [rob.walls@ecy.wa.gov](mailto:rob.walls@ecy.wa.gov)
  - National Response Center, 1-800-424-8802
- Washington Department of Fish and Wildlife
  - Andy Carlson, Oil Spill Team Manager, 360-902-2530, [Andy.Carlson@dfw.wa.gov](mailto:Andy.Carlson@dfw.wa.gov)

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ATTACHMENT A - BEST MANAGEMENT PRACTICES

June 2024

The following list of Best Management Practices (BMPs) will be incorporated into the action. This list may be modified further as a result of consultation with resource agencies.

1. All construction activities will occur during daylight hours to minimize noise impacts to the surrounding community.
2. In-water work will be limited to the in-water work window (June 1 to October 31) and minimized to the extent possible.
3. Temporary erosion control measures will be installed for all phases of work as required to prevent the discharge or accumulation of sediment into the river, the wetland, or off-site. These may include silt fencing, mats, blankets, bonded fiber matrix, and straw. Accumulation of sediment in any adjacent swales or storm drains will be monitored daily and cleared to ensure continued service throughout construction.
4. Water quality monitoring for turbidity would be performed as outlined in the Water Quality Monitoring Plan (Appendix B). If a potential exceedance is detected at the point of compliance locations, on-site personnel would stop work, assess sediment generating activities, and develop corrective measures. Examples may include slowing down a specific in-water activity and changing the amount of material that is moved below the waterline.
5. Vegetation removal will be limited to the repair site.
6. Noxious weeds will be disposed of separately from other organic materials at an off-site location approved for disposing noxious weeds. Himalayan blackberry and Japanese knotweed, including the root system, will be removed and disposed of appropriately. Because knotweed can regrow from small pieces, care will be taken to prevent fragments from falling into the river. Removed Himalayan blackberry and Japanese knotweed will not be placed in a compost pile or left to rot on-site.
7. Construction equipment will be cleaned prior to site delivery.
8. Drive trains will not operate in the water. Only the excavator bucket with thumb attachment will extend into the water.
9. Refueling of equipment and vehicles must take place in designated staging areas.
10. Biodegradable hydraulic fluids will be used as appropriate in any portion of the equipment that will work in the water.
11. Construction equipment shall be regularly checked for drips or leaks and immediately removed from service until corrected.
12. At least one fuel spill kit with absorbent pads will be on site at all times.
13. Material placement into the water will be done in a controlled manner to reduce turbidity and in-water noise generation. No end dumping of rock into the water will occur.
14. Rock placement will occur only within the authorized project footprint.
15. Rock placement and underwater excavation will occur from the upstream end of the project to the downstream end. Rock is placed shortly after excavation so it would act as a localized flow deflector and help manage flows in the installation areas.
16. All disturbed soils will be topped with topsoil and hydroseeded with a native grass mix. This includes the staging areas and access paths that are not graveled or paved.
17. Should any large woody material (LWM) be generated or found on site during

June 2024

repairs, it shall be salvaged and placed above the MHW along the completed toe of the repaired levee where it can continue to provide habitat function. This includes any tree trunks or large shrubs at the Union Slough levee repair site. The LWM may be placed after a section of levee is completed or after the entire repair is completed. Root wads will be oriented to face upstream.

18. All trash and unauthorized fill (including concrete blocks or pieces, bricks, asphalt, metal, treated wood, glass, floating debris, and paper) generated during the repair will be removed from the project and staging areas after work is complete.
19. A pre-construction meeting will be conducted to look at existing conditions and any possible fine-tuning that could be done for BMPs or environmental requirements. The pre-construction meeting may include outside resource agencies like USFWS or NMFS.






ATTACHMENT B - SAMPLING LOCATIONS

June 2024

Sample locations for the repair are identified in the figures below.

Figure Key

-  Background 100' upstream
-  150' Point of compliance potential sampling locations (depending on current at time of sampling)
-  Project repair limits



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ATTACHMENT C - SAMPLE MONITOR RESULTS REPORTING FORM

June 2024

Date:	Weather:		Site Designation/Location:			
Time of Day	Construction Activity	Background Sample (NTU)	Point of Compliance Sample (NTU)	Background & Compliance Change (NTU)	Description of visible plume (length downstream, width as % of channel)	Description of visible sheen (length downstream, width as % of channel)
Example: 0700	Excavation and toe rock placement	20.2	21.1	+0.9	Visible plume 50 ft long, <10% of channel width	Visible sheen 12ft long, 1 to 5% of channel width

Notes:

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**Appendix C – Air pollutant and GHG emission calculations**

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TABLE C-1. Estimated GHG emission rates for project vehicles (grams/hour)

Type	HP	#	Hours/day	Days	ROG	CO	NOX	SOX	PM	CO2	CH4
Skid Steer Loader	50	1	10	20	17.162	96.991	93.086	0.150	5.144	11575.28	1.548
Excavator	175	2	10	20	47.703	301.793	336.028	0.573	18.358	50902.82	4.304
Off-Highway Truck	250	2	10	20	56.768	167.911	445.326	0.850	14.864	75543.66	5.122

TABLE C-2. Estimated total GHG emission rates for project vehicles (MT)

Type	HP	#	Hours/day	Days	ROG	CO	NOX	SOX	PM	CO2	CH4	N2O
Skid Steer Loader	50	1	10	20	0.003	0.019	0.019	0.000	0.001	2.315	0.000	0.000
Excavator	175	2	10	20	0.019	0.121	0.134	0.000	0.007	20.361	0.002	0.002
Off-Highway Truck	250	2	10	20	0.023	0.067	0.178	0.000	0.006	30.217	0.002	0.002

**Appendix D – Environmental Justice**

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# EJScreen Community Report

This report provides environmental and socioeconomic information for user-defined areas, and combines that data into environmental justice and supplemental indexes.

## Repair Site - 5 mile buffer

5 miles Ring Centered at 48.017849,-122.187782  
Population: 120,705  
Area in square miles: 78.53



### COMMUNITY INFORMATION



### BREAKDOWN BY RACE



### BREAKDOWN BY AGE



### LIMITED ENGLISH SPEAKING BREAKDOWN



Notes: Numbers may not sum to totals due to rounding. Hispanic population can be of any race. Source: U.S. Census Bureau, American Community Survey (ACS) 2018-2022. Life expectancy data comes from the Centers for Disease Control.

### LANGUAGES SPOKEN AT HOME

LANGUAGE	PERCENT
English	84%
Spanish	7%
Russian, Polish, or Other Slavic	2%
Other Indo-European	1%
Vietnamese	1%
Tagalog (Including Filipino)	1%
Other Asian and Pacific Island	1%
Other and Unspecified	1%
Total Non-English	16%

Report for 5 miles Ring Centered at 48.017849,-122.187782  
Report produced August 22, 2024 using EJScreen Version 2.3



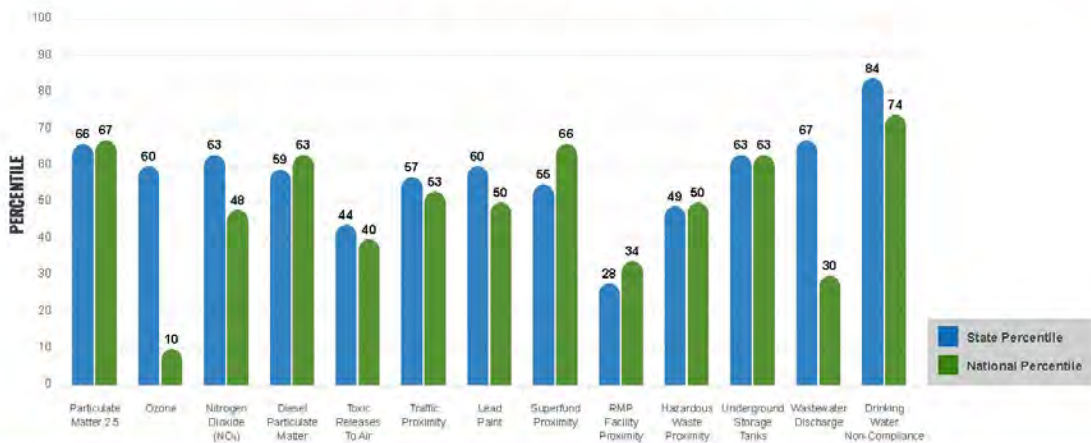
## Environmental Justice & Supplemental Indexes

The environmental justice and supplemental indexes are a combination of environmental and socioeconomic information. There are thirteen EJ indexes and supplemental indexes in EJScreen reflecting the 13 environmental indicators. The indexes for a selected area are compared to these for all other locations in the state or nation. For more information and calculation details on the EJ and supplemental indexes, please visit the [EJScreen website](#).

### EJ INDEXES

The EJ indexes help users screen for potential EJ concerns. To do this, the EJ index combines data on low income and people of color populations with a single environmental indicator.

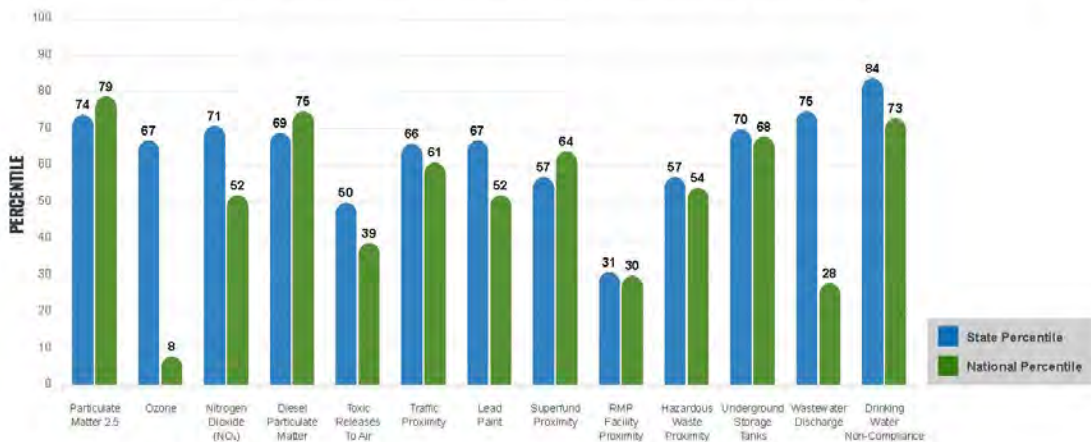
#### EJ INDEXES FOR THE SELECTED LOCATION



### SUPPLEMENTAL INDEXES

The supplemental indexes offer a different perspective on community-level vulnerability. They combine data on percent low income, percent persons with disabilities, percent less than high school education, percent limited English speaking, and percent low life expectancy with a single environmental indicator.

#### SUPPLEMENTAL INDEXES FOR THE SELECTED LOCATION



Report for 5 miles Ring Centered at 48.017849, -122.187782

Report produced August 22, 2024 using EJScreen Version 2.3

# EJScreen Environmental and Socioeconomic Indicators Data

SELECTED VARIABLES	VALUE	STATE AVERAGE	PERCENTILE IN STATE	USA AVERAGE	PERCENTILE IN USA
<b>ENVIRONMENTAL BURDEN INDICATORS</b>					
Particulate Matter 2.5 ( $\mu\text{g}/\text{m}^3$ )	9.56	9.51	64	8.45	83
Ozone (ppb)	52.3	51.8	57	61.8	8
Nitrogen Dioxide ( $\text{NO}_2$ ) (ppbv)	7	6.3	63	7.8	43
Diesel Particulate Matter ( $\mu\text{g}/\text{m}^3$ )	0.25	0.256	51	0.191	76
Toxic Releases to Air (toxicity-weighted concentration)	280	1,800	37	4,600	37
Traffic Proximity (daily traffic count/distance to road)	1,000,000	1,200,000	51	1,700,000	54
Lead Paint (% Pre-1960 Housing)	0.26	0.23	66	0.3	54
Superfund Proximity (site count/km distance)	0.18	0.53	56	0.39	69
RMP Facility Proximity (facility count/km distance)	0.076	0.51	24	0.57	29
Hazardous Waste Proximity (facility count/km distance)	1.2	2.9	44	3.5	48
Underground Storage Tanks (count/ $\text{km}^2$ )	8	6.1	77	3.6	86
Wastewater Discharge (toxicity-weighted concentration/m distance)	2.3	300	68	700000	26
Drinking Water Non-Compliance (points)	2.8	1	93	2.2	87
<b>SOCIOECONOMIC INDICATORS</b>					
Demographic Index USA	1	N/A	N/A	1.34	42
Supplemental Demographic Index USA	1.53	N/A	N/A	1.64	49
Demographic Index State	1.37	1.47	52	N/A	N/A
Supplemental Demographic Index State	1.48	1.37	62	N/A	N/A
People of Color	31%	33%	54	40%	50
Low Income	21%	23%	53	30%	40
Unemployment Rate	5%	5%	59	6%	57
Limited English Speaking Households	2%	4%	59	5%	64
Less Than High School Education	7%	8%	60	11%	48
Under Age 5	6%	5%	64	5%	65
Over Age 64	14%	17%	44	18%	41

\*Diesel particulate matter index is from the EPA's Air Toxics Data Update, which is the Agency's ongoing, comprehensive evaluation of air toxics in the United States. This effort aims to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that the air toxics data presented here provide broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. For more information on the Air Toxics Data Update, please visit <https://www.epa.gov/air-toxics-data-update>.

**Sites reporting to EPA within defined area:**

Superfund .....	1
Hazardous Waste, Treatment, Storage, and Disposal Facilities .....	3
Water Dischargers .....	
<b>Total</b> .....	<b>294</b>
Air Pollution .....	18
Brownfields .....	17
Toxic Release Inventory .....	15

**Other community features within defined area:**

Schools .....	42
Hospitals .....	4
Places of Worship .....	79

**Other environmental data:**

Air Non-attainment .....	No
Impaired Waters .....	Yes

Selected location contains American Indian Reservation Lands* .....	Yes
Selected location contains a "Justice40 (CEJST) disadvantaged community" .....	Yes
Selected location contains an EPA IRA disadvantaged community .....	Yes

Report for 5 miles Ring Centered at 48.017849, -122.187782  
 Report produced August 22, 2024 using EJScreen Version 2.3

## EJScreen Environmental and Socioeconomic Indicators Data

HEALTH INDICATORS					
INDICATOR	VALUE	STATE AVERAGE	STATE PERCENTILE	US AVERAGE	US PERCENTILE
Low Life Expectancy	20%	18%	75	20%	59
Heart Disease	4.4	4.8	39	5.8	22
Asthma	11	10.9	52	10.3	72
Cancer	6.2	6.5	42	6.4	42
Persons with Disabilities	15.1%	13.4%	65	13.7%	64

CLIMATE INDICATORS					
INDICATOR	VALUE	STATE AVERAGE	STATE PERCENTILE	US AVERAGE	US PERCENTILE
Flood Risk	5%	11%	46	12%	40
Wildfire Risk	0%	12%	0	14%	0

CRITICAL SERVICE GAPS					
INDICATOR	VALUE	STATE AVERAGE	STATE PERCENTILE	US AVERAGE	US PERCENTILE
Broadband Internet	9%	8%	64	13%	46
Lack of Health Insurance	6%	6%	55	9%	43
Housing Burden	Yes	N/A	N/A	N/A	N/A
Transportation Access Burden	Yes	N/A	N/A	N/A	N/A
Food Desert	Yes	N/A	N/A	N/A	N/A

*Report for 5 miles Ring Centered at 48.017849, -122.187782  
 Report produced August 22, 2024 using EJScreen Version 2.3*



# EJScreen Community Report

This report provides environmental and socioeconomic information for user-defined areas, and combines that data into environmental justice and supplemental indexes.

## Everett

City: Everett  
Population: 109,751  
Area in square miles: 49.26



### COMMUNITY INFORMATION



### BREAKDOWN BY RACE



### BREAKDOWN BY AGE



### LIMITED ENGLISH SPEAKING BREAKDOWN



Notes: Numbers may not sum to totals due to rounding. Hispanic population can be of any race. Source: U.S. Census Bureau, American Community Survey (ACS) 2018-2022. Life expectancy data comes from the Centers for Disease Control.

### LANGUAGES SPOKEN AT HOME

LANGUAGE	PERCENT
English	72%
Spanish	12%
Russian, Polish, or Other Slavic	3%
Other Indo-European	1%
Korean	1%
Vietnamese	3%
Tagalog (including Filipino)	1%
Other Asian and Pacific Island	2%
Arabic	1%
Other and Unspecified	3%
Total Non-English	28%

Report for City: Everett

Report produced August 22, 2024 using EJScreen Version 2.3

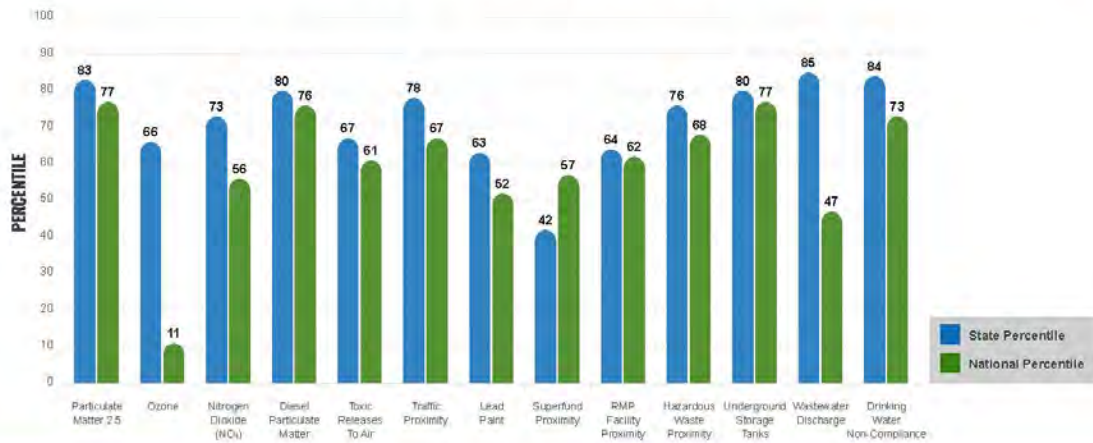
## Environmental Justice & Supplemental Indexes

The environmental justice and supplemental indexes are a combination of environmental and socioeconomic information. There are thirteen EJ indexes and supplemental indexes in EJScreen reflecting the 13 environmental indicators. The indexes for a selected area are compared to these for all other locations in the state or nation. For more information and calculation details on the EJ and supplemental indexes, please visit the [EJScreen website](#).

### EJ INDEXES

The EJ indexes help users screen for potential EJ concerns. To do this, the EJ index combines data on low income and people of color populations with a single environmental indicator.

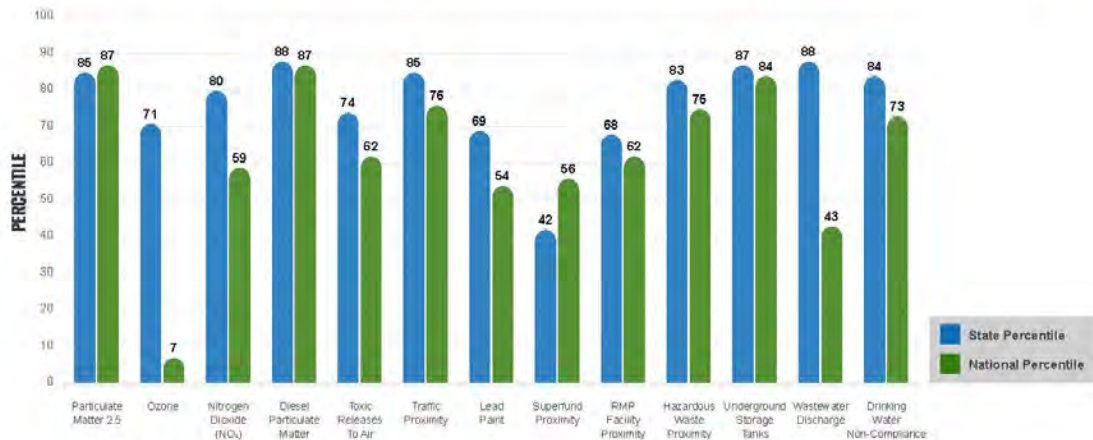
#### EJ INDEXES FOR THE SELECTED LOCATION



### SUPPLEMENTAL INDEXES

The supplemental indexes offer a different perspective on community-level vulnerability. They combine data on percent low income, percent persons with disabilities, percent less than high school education, percent limited English speaking, and percent low life expectancy with a single environmental indicator.

#### SUPPLEMENTAL INDEXES FOR THE SELECTED LOCATION



Report for City: Everett

Report produced August 22, 2024 using EJScreen Version 2.3

# EJScreen Environmental and Socioeconomic Indicators Data

SELECTED VARIABLES	VALUE	STATE AVERAGE	PERCENTILE IN STATE	USA AVERAGE	PERCENTILE IN USA
<b>ENVIRONMENTAL BURDEN INDICATORS</b>					
Particulate Matter 2.5 ( $\mu\text{g}/\text{m}^3$ )	9.82	9.51	70	8.45	86
Ozone (ppb)	51.9	51.8	48	61.8	6
Nitrogen Dioxide ( $\text{NO}_2$ ) (ppbv)	7.1	6.3	65	7.8	45
Diesel Particulate Matter ( $\mu\text{g}/\text{m}^3$ )	0.34	0.256	72	0.191	87
Toxic Releases to Air (toxicity-weighted concentration)	600	1,800	48	4,600	49
Traffic Proximity (daily traffic count/distance to road)	1,600,000	1,200,000	69	1,700,000	66
Lead Paint (% Pre-1960 Housing)	0.27	0.23	67	0.3	56
Superfund Proximity (site count/km distance)	0.021	0.53	42	0.39	56
RMP Facility Proximity (facility count/km distance)	0.34	0.51	52	0.57	54
Hazardous Waste Proximity (facility count/km distance)	2.9	2.9	63	3.5	67
Underground Storage Tanks (count/ $\text{km}^2$ )	13	6.1	85	3.6	92
Wastewater Discharge (toxicity-weighted concentration/m distance)	7.9	300	81	700000	34
Drinking Water Non-Compliance (points)	0.00028	1	84	2.2	73
<b>SOCIOECONOMIC INDICATORS</b>					
Demographic Index USA	1.32	N/A	N/A	1.34	56
Supplemental Demographic Index USA	1.79	N/A	N/A	1.64	64
Demographic Index State	1.8	1.47	71	N/A	N/A
Supplemental Demographic Index State	1.85	1.37	79	N/A	N/A
People of Color	41%	33%	68	40%	58
Low Income	28%	23%	67	30%	53
Unemployment Rate	6%	5%	67	6%	65
Limited English Speaking Households	7%	4%	82	5%	80
Less Than High School Education	11%	8%	75	11%	62
Under Age 5	6%	5%	59	5%	60
Over Age 64	14%	17%	45	18%	42

\*Diesel particulate matter index is from the EPA's Air Toxics Data Update, which is the Agency's ongoing, comprehensive evaluation of air toxics in the United States. This effort aims to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that the air toxics data presented here provide broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. For more information on the Air Toxics Data Update, please visit <https://www.epa.gov/air-toxics-data-update>.

**Sites reporting to EPA within defined area:**

Superfund .....	0
Hazardous Waste, Treatment, Storage, and Disposal Facilities .....	5
Water Dischargers .....	243
Air Pollution .....	23
Brownfields .....	15
Toxic Release Inventory .....	27

**Other community features within defined area:**

Schools .....	32
Hospitals .....	5
Places of Worship .....	68

**Other environmental data:**

Air Non-attainment .....	No
Impaired Waters .....	Yes

Selected location contains American Indian Reservation Lands* .....	Yes
Selected location contains a "Justice40 (CEJST)" disadvantaged community .....	Yes
Selected location contains an EPA IRA disadvantaged community .....	Yes

Report for City: Everett  
 Report produced August 22, 2024 using EJScreen Version 2.3

## EJScreen Environmental and Socioeconomic Indicators Data

HEALTH INDICATORS					
INDICATOR	VALUE	STATE AVERAGE	STATE PERCENTILE	US AVERAGE	US PERCENTILE
Low Life Expectancy	21%	18%	77	20%	61
Heart Disease	4.6	4.8	45	5.8	26
Asthma	11.1	10.9	59	10.3	76
Cancer	5.9	6.5	37	6.4	38
Persons with Disabilities	15.1%	13.4%	65	13.7%	64

CLIMATE INDICATORS					
INDICATOR	VALUE	STATE AVERAGE	STATE PERCENTILE	US AVERAGE	US PERCENTILE
Flood Risk	5%	11%	48	12%	42
Wildfire Risk	0%	12%	0	14%	0

CRITICAL SERVICE GAPS					
INDICATOR	VALUE	STATE AVERAGE	STATE PERCENTILE	US AVERAGE	US PERCENTILE
Broadband Internet	10%	8%	68	13%	50
Lack of Health Insurance	8%	6%	74	9%	60
Housing Burden	Yes	N/A	N/A	N/A	N/A
Transportation Access Burden	Yes	N/A	N/A	N/A	N/A
Food Desert	Yes	N/A	N/A	N/A	N/A

*Report for City: Everett  
Report produced August 22, 2024 using EJScreen Version 2.3*

**Appendix E – Draft Finding of No Significant Impact**

DRAFT



**DRAFT FINDING OF NO SIGNIFICANT IMPACT (FONSI)  
AND  
CLEAN WATER SECTION 404 STATEMENT OF FINDINGS  
2021 UNION SLOUGH LEVEE REPAIR PROJECT  
SNOHOMISH COUNTY, WASHINGTON  
NEPA ID Number: EAXX-202-00-G3P-1734328419**

The U.S. Army Corps of Engineers, Seattle District (USACE) has begun an environmental analysis in accordance with the National Environmental Policy Act (NEPA) of 1969, as amended. The Draft Environmental Assessment (EA) dated DD MM YYYY, for the 2021 Union Slough Levee Rehabilitation Project (SNO-01-21) addresses flood damage to the levee near Snohomish, Washington.

The Draft EA, incorporated herein by reference, evaluates various alternatives to restore flood protection to the damaged levee. There is one major Federal action requiring NEPA compliance and analyzed in the Draft EA summarized below.

**Proposed Action:** The preferred alternative is the Repair in Place Alternative. This alternative would reconstruct the riverward slope within the pre-damaged footprint. Total construction length, including transitions, would be approximately 430 linear feet. Repair work under this alternative is summarized in section 3 of the Draft EA and is hereby incorporated by reference.

**Alternatives:** In addition to a “no action” plan, two alternatives were evaluated. The alternatives include the Non-Structural and the Repair in Place Alternatives. The non-structural was not a viable alternative because the costs of such relocation would be prohibitive or floodproofing efforts far exceed the costs associated with repairing the levee. The potential effects were evaluated for the No Action and Repair in Place Alternatives. See section 2 of the Draft EA for alternative formulation and selection. A summary assessment of the potential effects of the recommended plan are listed in Table 1:

Table 9. Summary of Potential Effects of the Proposed Action

	Insignificant effects	Insignificant effects because of mitigation*	Resource unaffected by action
Vegetation	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Navigation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Water Resources	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Geology and Soils	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Wetlands	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Threatened and Endangered Species	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fish and Wildlife	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Cultural Resources	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hazardous, Toxic, and Radiological Waste	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Insignificant effects	Insignificant effects because of mitigation*	Resource unaffected by action
Air Quality and Noise	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Land Use, Utilities, and Infrastructure	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Recreation	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Impact Minimization:** All practicable and appropriate means to avoid or minimize adverse environmental effects were analyzed and incorporated into the recommended plan (section 3.2). Best management practices, as detailed in section 3.2.2 of the Draft EA, would be implemented to minimize impacts. Measures include removing invasive vegetation, water quality monitoring, restricting in-water work to June 1 to October 31 when the river level is lowest to minimize construction related impacts to protected salmon, and mitigating impacts to wetlands.

**Mitigation:** The recommended plan would result in unavoidable adverse impacts to 0.15 acres of estuarine wetland. Compensatory mitigation for this impact will be obtained at a 1:1 ratio through the purchase/withdrawal of 0.15 credits withdrawn from the Smith Island Restoration Project advanced mitigation site. See section 5 in the Draft EA for more details.

**Public Review:** USACE invites submission of comments on the environmental impact of the proposed action as outlined in the Draft EA/FONSI. USACE will consider all submissions received during the comment period. The nature or scope of the proposal may be changed upon consideration of the comments received. If significant effects on the quality of the human environment are identified and cannot be mitigated for, USACE would initiate an Environmental Impact Statement (EIS) and afford all the appropriate public participation opportunities attendant to an EIS.

**Treaty Tribes:** The Confederated Tribes and Bands of the Yakama Nation, Lummi Tribe of the Lummi Reservation, Sauk-Suiattle Indian Tribe, Snoqualmie Indian Tribe, Stillaguamish Tribe of Indians of Washington, Suquamish Indian Tribe of the Port Madison Reservation, Swinomish Indian Tribal Community, and the Tulalip Tribes of Washington were contacted regarding the levee repair and USACE would continue to coordinate throughout the project to meet Tribal Treaty obligations. To date, two comments have been received. See section 8.11 in the Draft EA for more details.

**Compliance:**

**a. Endangered Species Act:**

The National Oceanic and Atmospheric Administration, National Marine Fisheries Service (NMFS), and the U.S. Fish and Wildlife Service (USFWS) are responsible for the Endangered Species Act of 1973 (ESA). USACE requested consultation with the USFWS and NMFS under section 7 of the ESA on March 8, 2024. Consultation is ongoing. See section 8.6 in the Draft EA for more details.

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

USACE determined that the recommended plan may adversely affect essential fish habitat (EFH) designated for groundfish and Pacific salmon species. EFH consultation was initiated on March 8, 2024. See section 8.7 in the Draft EA for more details.

**c. Clean Water Act:**

The proposed levee rehabilitation work requires placing fill below the HTL. There is a Category II estuarine wetland that would be impacted by repair activities. The work proposed at Union Slough is functionally analogous to activities covered by Nationwide Permit (NWP) 3. A 404(b)(1) alternatives analysis and public interest evaluation were conducted by USACE for the issuance of NWP 3 in 2021; USACE determined that the activities authorized by the NWPs do not have more than a minimal adverse impact on water quality and the aquatic environment and that permitting the covered NWP activities was in the public interest. Based on the analyses presented in the 404(b)(1) evaluation and general policies for the evaluation of permit applications analysis, USACE finds that the project complies with the substantive elements of Section 404 of the CWA.

Based on the review of state-specific conditions, this project is not covered by the general Section 401 Water Quality Certification (WQC) approved by the Washington Department of Ecology (WDOE) for the 2021 NWPs. Therefore, USACE requested an Individual WQC from WDOE on July 2, 2024. The WQC was issued by WDOE on August 27, 2024. See section 8.4 in the Draft EA for more details.

**d. Coastal Zone Management Act:**

USACE has determined the proposed repairs are consistent to the maximum extent practicable with the enforceable policies of the approved Washington Coastal Management Program. USACE submitted a Coastal Zone Management Act (CZMA) Consistency Determination to the Washington Department of Ecology requesting concurrence with the USACE determination on September 16, 2024. The CZMA concurrence decision was issued by WDOE on October 22, 2024. See section 8.5 in the Draft EA for more details.

**e. National Historic Preservation Act:**

USACE initiated consultation with the Washington State DAHP on the Area of Potential Effect (APE) on January 30, 2024. The DAHP concurred with the APE on the same day. USACE also coordinated with the Tulalip Tribes of Washington, Confederated Tribes and Bands of the Yakama Nation, Sauk-Suiattle Indian Tribe, Snohomish Tribe of Indians, Snoqualmie Indian Tribe, Stillaguamish Tribe of Indians of Washington, and the Swinomish Indian Tribal Community about the APE on February 2, 2024. Prior to repairs, USACE would complete consultation with DAHP. A qualified USACE archaeologist conducted an inspection of the project area to identify any historic properties, archeological resources, or resources that are culturally significant and determined a survey would not be necessary. USACE would continue to evaluate the project and prepare the necessary documentation for compliance with Section 106 of the National Historic Preservation Act and its implementing regulations under 36 CFR § 800. To date, USACE has received no comment from the contacted Tribes regarding the APE letters.

## **Draft Determination:**

### **a. Summary of Impacts and Compliance:**

Impacts of the proposed work are anticipated to be minor, short-term, and temporary. Endangered Species Act, National Historic Preservation Act, and Coastal Zone Management Act consultations are ongoing.

**Draft District Engineer's Finding:** I have evaluated the Union Slough levee rehabilitation in light of the public interest factors prescribed in 33 CFR 336.1(c). The following factors were evaluated as considerations potentially impacting the quality of the human environment in the accompanying draft EA and coastal zone consistency evaluation: navigation and the Federal standard, water quality, coastal zone consistency, vegetation, wetlands, fish and wildlife, endangered species, historic and cultural resources, land use, utilities, and infrastructure, environmental justice, and application of non-Federal land use policies. No additional impacts are anticipated as the project would repair damage to an existing levee. In accordance with 33 CFR 337.1(a)(14) and 325.3(c)(1), the following additional relevant factors were also considered: conservation, economics, shoreline erosion and accretion, safety, and property ownership.

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

All applicable laws, executive orders, regulations, and local government plans were considered in evaluation of alternatives. Based on the analysis presented in the Draft EA, which has incorporated or referenced the best information available; the reviews by other Federal, state and local agencies, Tribes; input of the public; and the review by my staff, it is my anticipated determination that the recommended plan would not cause significant adverse effects on the quality of the human environment and does not require preparation of an environmental impact statement.

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Date

---

Kathryn P. Sanborn, PhD, PE, PMP  
Colonel, Corps of Engineers  
District Commander

**Appendix F – Cultural Resource Documentation**

DRAFT



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

January 30, 2024

Vanessa Pepi  
Environmental Resources Section  
Corps of Engineers – Seattle District  
PO Box 3755  
Seattle, Washington 98124-3755

Re: PL84-99 Union Slough Diking District #5 Levee Rehabilitation Project  
Log No.: 2024-01-00430-COE-S

Dear Vanessa Pepi:

Thank you for contacting our department. We have reviewed the materials you provided for the Area of Potential Effect (APE) for the proposed *PL84-99 Union Slough Diking District #5 Levee Rehabilitation Project* on the right bank of the Snohomish River in the City of Everett, Snohomish County, Washington

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

We look forward to further consultation as you consult with the concerned tribal governments, the results of your identification efforts, and your determination of effect.

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

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

Sincerely,

A handwritten signature in blue ink, appearing to read 'Rob Whitlam', with a long horizontal flourish extending to the right.

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

State of Washington • Department of Archaeology & Historic Preservation  
P.O. Box 48343 • Olympia, Washington 98504-8343 • (360) 586-3065  
[www.dahp.wa.gov](http://www.dahp.wa.gov)



**Appendix G – Clean Water Act Mitigation Use Plan with Nationwide Permit No.3  
Functional Analogy Memorandum**

DRAFT

MEMORANDUM FOR RECORD

SUBJECT: Mitigation Use Plan for City of Everett Union Slough Levee Repair Project

1. The U.S. Army Corps of Engineers, Seattle District (USACE), is proposing to conduct repairs of the City of Everett Union Slough Levee located along the Snohomish River in Everett, Washington (Figure 1). Repairs are intended to address damage caused during the January 2021 flood event when the Snohomish River exceeded the flood stage. The levee is located in the Snohomish River Water Resources Inventory Area (WRIA) No. 7.

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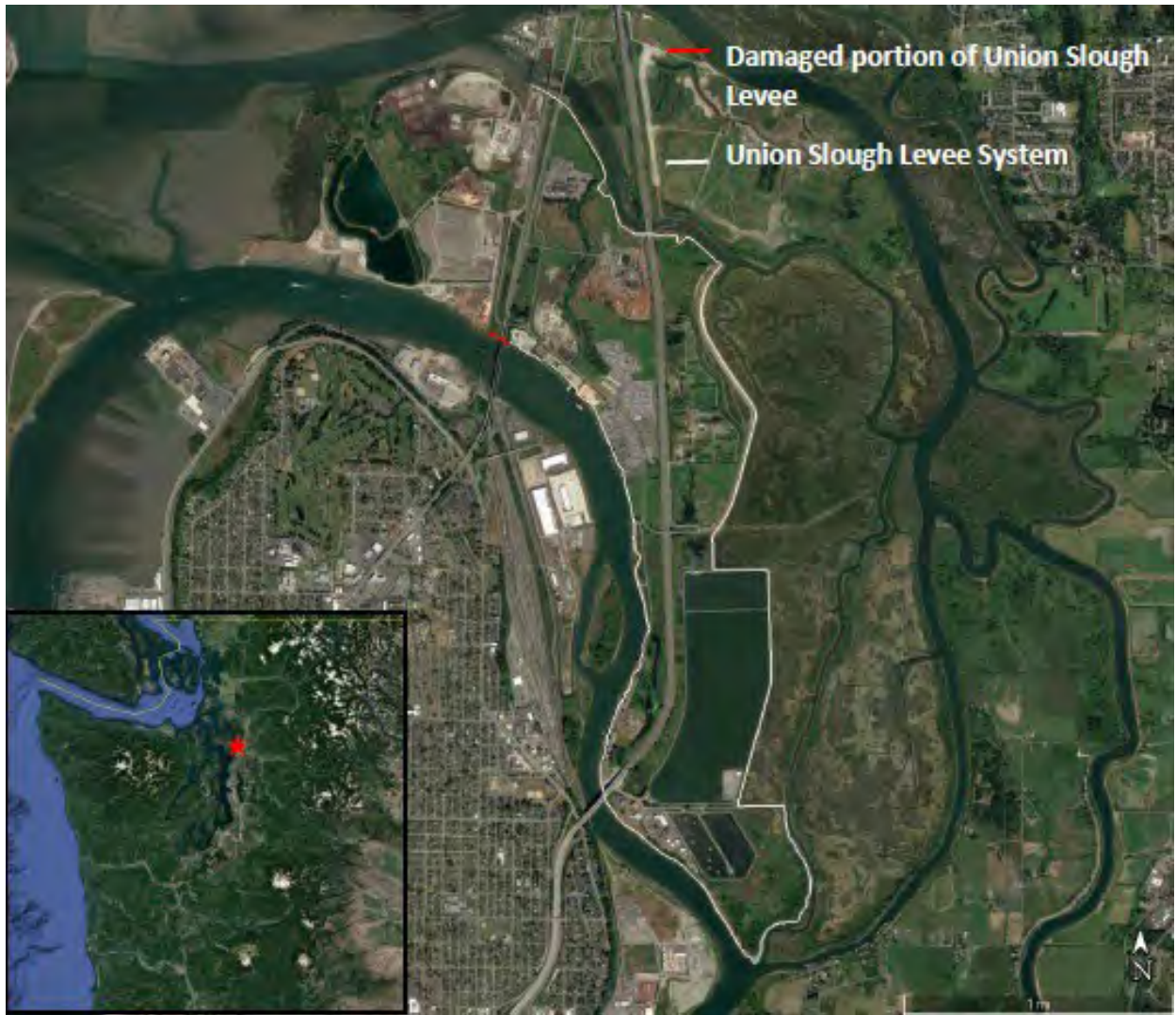


Figure 1. Project location on the Lower Snohomish River, Everett, Snohomish County, Washington.

2. The proposed levee repair is authorized by Public Law 84-99 (33 U.S.C §701n). USACE rehabilitation work under this authority is limited to flood control works damaged or destroyed by floods. The statute authorizes rehabilitation to the level of protection exhibited by the flood control work prior to the damaging event. The City of Everett is the local sponsor for this project. Previous repairs to the Union Slough Levee under Public Law (PL) 84-99 occurred in 1960, 1966, 1975, 1976, 1977, 2012, 2013, 2016, and 2018.

The proposed repair is located near River Mile 1.0 of the Snohomish River and extends almost 500 linear feet along the right bank of the Snohomish River between Stations 0+00 and 5+00 (Figure 2). The current preferred alternative is to repair the site by stabilizing and armoring the riverward slope to prevent further erosion damage and to bring the slope back to 2H:1V (Figure 3, Figure 4). A wetland delineation and rating were conducted on February 12, 2024, by biologists from USACE. Wetlands identified on the site are riverine wetlands landward of the levee and Category II estuarine wetlands between the levee and the Snohomish River.

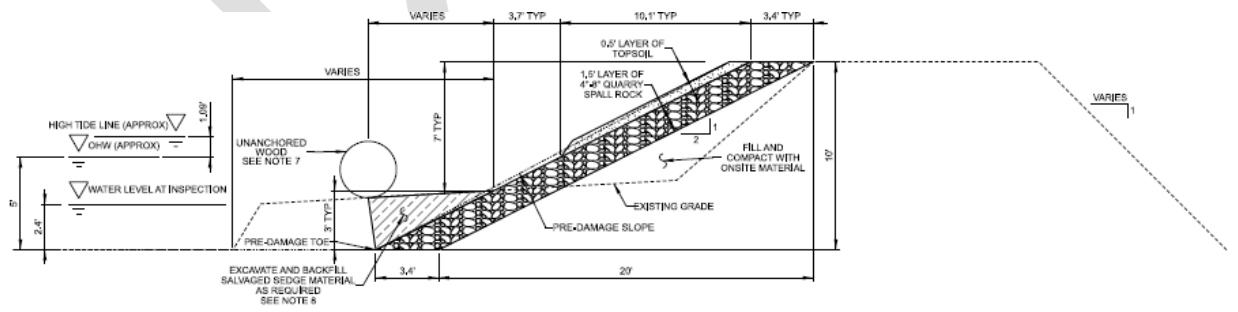


Figure 2. Location of the levee repair on the Snohomish River in Everett, Snohomish County, Washington. The Advanced Mitigation Area is indicated in green.



A1 PROPOSED SITE PLAN WITH WETLAND BOUNDARIES

Figure 3. Site plan for the proposed levee repair on the Snohomish River. The estuarine wetland on site is outlined in green and the levee footprint is outlined in grey.



A1 CROSS SECTION 1 - TYPICAL PROPOSED REPAIR

Figure 4. Proposed levee repair cross-section in the Snohomish River.

Impacts to the wetlands landward of the levee will be completely avoided because no work will occur on the landward slope of the levee. On the river side, the construction of the levee repair will result in permanent impacts to 0.15 acres of Category II estuarine wetlands. As the non-federal sponsor, the City of Everett is providing 0.15 credits (in acres) as part of its work-in-kind contribution under PL 84-99. The credits will be withdrawn from the Smith Island Restoration Project advanced mitigation site (Natural Systems Design 2022), also known as the Smith Island Habitat Restoration Project associated with dike improvements in Dike District 5 (City of Everett and WA Dept of Ecology, 2003).

3. The purpose of the project is to restore the level of flood protection to commercial properties and public infrastructure, including the City of Everett's Water Pollution Control Facility. Prior to the damaging flood event, the levee provided a 37-year Level of Protection (LOP). Within the protected area of the Union Slough levee are 21 industrial buildings and an estimated daytime population of 340 persons. In the damaged condition, the levee will provide a 1-year LOP.

Under the proposed project, the levee will be repaired to its pre-damaged riverward footprint. The proposed levee repair will stabilize and armor the riverward slope to prevent further erosion damage. This repair will include the replacement of the rock armor and return the slope to 2H:1V. The armor will consist of 18 inches of 4" – 8" quarry spalls with a 6-inch layer of topsoil above the high tide line. The repair project is scheduled to be conducted during the approved in-water work window of 1 June to 31 October.

The levee repair design utilizes existing access roads on site. Damaged portions of the levee will be excavated within the existing levee prism, and the structure will be reconstructed to USACE design standards within the pre-damaged footprint. The riverine wetland on the landward side of the levee will be clearly marked using stakes and flagging, and a pre-construction meeting to confirm project limits will avoid impacts in the freshwater wetland and minimize the impact to estuarine wetlands.

4. The following actions are proposed as mitigation sequencing:

a. Impacts to the freshwater wetland landward of the levee will be avoided by using existing access roads and working from the levee crest.

b. Impacts to estuarine wetland will be minimized by working within the levee's original footprint and salvaging marsh plants, where practicable.

c. Compensation for unavoidable impacts will be provided through the withdrawal of credits from the Smith Island Restoration Project advanced mitigation site.

Following avoidance and minimization measures, the proposed project will impact up to 0.15 acres of estuarine wetlands along the levee toe.

5. USACE does not issue Section 404 permits to itself for its own civil works activities, but USACE does provide substantive compliance with the CWA and other environmental laws. The

work proposed at Union Slough is functionally analogous to activities covered by Nationwide Permit (NWP) 3. A 404(b)(1) alternatives analysis and public interest evaluation were conducted by USACE for the issuance of NWP 3 in 2021; USACE determined that the activities authorized by the NWPs do not have more than a minimal adverse impact on water quality and the aquatic environment and that permitting the covered NWP activities was in the public interest. USACE adopts and incorporates by references the previous analysis (86 FR 73522, Reissuance and Modification of Nationwide Permits; 2021 Nationwide Permit 03\_Final Decision Document, COE-2022-00002-0572).

USACE has analyzed the Union Slough site and the NWP-specific conditions established by Washington State for the general Water Quality Certification associated with authorization under the NWP 3. Based on the review of these state-specific conditions, this project is not covered by the certification approved for these NWPs and an individual Section 401 Water Quality Certification is required and will be sought.

6. USACE, through the City of Everett (City), proposes to purchase/withdraw 0.15 acres from the advanced mitigation site called Smith Island Restoration Project (SIRP) advanced mitigation site (Natural Systems Design 2022) or Smith Island Habitat Restoration Project associated with dike improvements in Dike District 5 (City of Everett and WA Dept of Ecology 2003). The use of the mitigation credits were approved for an expanded area in the Lower Snohomish in the 2022 document. We refer to the mitigation site as SIRP in this document. In a letter dated November 30, 2017, Ecology stated that the SIRP had met the intent and 10-year ecological goals of the mitigation plan. With this success in the advanced mitigation area, impacts to Category II emergent wetlands can be mitigated at a 1:1 ratio. Using this ratio, USACE is proposing to mitigate impacts to 0.15 acre of Category II estuarine wetland with the purchase/withdrawal of 0.15 credits.

In 2022, the City of Everett received clarification (Natural Systems Design 2022) regarding the use of SIRP credits for impacts within the City of Everett, including the City's Chaplin Reservoir and along the associated water transmission lines. The withdrawal/purchase of credits will provide in-kind mitigation for the levee repair's impact to 0.15 acres of Category II estuarine wetlands on the project site.

7. The SIRP provides appropriate mitigation for the project impacts for the following reasons:

a. Both the project site and the mitigation area are located on Smith Island in the Lower Snohomish River.

b. The Project will result in impacts to Category II estuarine wetlands. The SIRP restored over 50 acres of Category I estuarine wetlands and achieved its ecological goals in 2017, so there is no temporal loss of ecological function.

c. The ecological benefits of large-scale mitigation projects are widely recognized, and mitigation banks are considered the preferred mitigation type by USACE, EPA, and Ecology (see USACE and EPA's 2008 final rule re: compensatory mitigation, 40 CFR Part 230).

d. Mitigation at the advanced mitigation site will result in no net loss of wetland area and functions.

8. In conclusion, the permanent impacts to Category II estuarine wetlands discussed within this plan are within the SIRP service area. The Smith Island project has sufficient credits available for purchase, and the advanced mitigation site will provide in-kind mitigation to Category II estuarine wetlands with no temporal loss. We therefore request that the purchase of 0.15 credits at the SIRP be considered appropriate compensatory mitigation for the permanent impacts to 0.15 acre of Category II estuarine wetlands at the City of Everett's Union Slough Levee repair project on the Snohomish River.

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Collin Ray

Chief, Planning and Environmental and Cultural  
Resources Branch

#### References

U.S. Army Corps of Engineers and Environmental Protection Agency. Federal Register Vol. 73 No. 70 April 10, 2008. Compensatory Mitigation for Losses of Aquatic Resources; Final Rule.

City of Everett and Washington Department of Ecology. February 21, 2003. Advanced Wetland Mitigation Agreement Smith Island Habitat Restoration Project.

Natural Systems Design. October 31, 2022. Verification of Clarifications Regarding City of Everett's Smith Island/Union Slough Advance Mitigation Site (e-mail).

**Appendix H – Notification to WDOE of Change in Scope and Sponsor**

DRAFT



DEPARTMENT OF THE ARMY  
U.S. ARMY CORPS OF ENGINEERS, SEATTLE DISTRICT  
4735 EAST MARGINAL WAY SOUTH BLDG 1202  
SEATTLE, WA 98134-2388

December 4, 2024

Planning, Environmental,  
and Cultural Resources Branch

Ms. Jessica Hausman  
Aquatic Permitting and Protection Section  
Washington State Department of Ecology  
P.O. Box 47600  
Olympia, Washington 98504

Dear Ms. Hausman,

The U.S. Army Corps of Engineers, Seattle District (USACE) was issued a Clean Water Act (CWA) Section 401 Water Quality Certification (WQC) # 23187 for the proposed repair of the Union Slough levee on Smith Island in the Snohomish River at Everett, Snohomish County, Washington. As explained in our e-mail dated October 25, 2024, the project has been recently revised to include a reduction in impact and a change in non-federal sponsorship.

The revised scope of the repair now excludes the Burlington Northern Sante Fe (BNSF) right of way. USACE will be repairing approximately 430 linear feet rather than 480 linear feet and constructing the transition to the proposed BNSF repair. The non-federal sponsor for this repair has changed from the City of Everett to Snohomish County Diking Improvement District No. 5. However, the Mitigation Use Agreement (MUA) with the City of Everett will not change, and credits will be debited as outlined in the MUA.

As requested in your e-mail dated October 31, 2024, we have enclosed the updated plans. USACE hereby certifies that all information contained herein is true, accurate, and complete to the best of our knowledge and belief.

This letter with enclosure is being sent via e-mail to you at [jemo461@ecy.wa.gov](mailto:jemo461@ecy.wa.gov) and [ecyrefedpermits@ecy.wa.gov](mailto:ecyrefedpermits@ecy.wa.gov).



If you have any questions or need additional information, Ms. Mary Bacon is the Environmental Coordinator for this project and can be contacted at (206) 536-0751 or [mary.m.bacon@usace.army.mil](mailto:mary.m.bacon@usace.army.mil). Ms. Caren Crandell, Clean Water Coordinator, can be reached at (206) 764-6169 or [caren.j.crandell@usace.army.mil](mailto:caren.j.crandell@usace.army.mil); and I may also be contacted at (206) 764-6761 or [vanessa.e.pepi@usace.army.mil](mailto:vanessa.e.pepi@usace.army.mil).

Sincerely,



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Vanessa Pepi  
Chief, Planning, Environmental and  
Cultural Resources Branch

Enclosure



US Army Corps of Engineers  
Seattle District

# FY24 P2-498573 UNSL UNION SLOUGH LEVEE REHAB 2021 EVERETT, WASHINGTON



PROJECT VICINITY MAP  
M10



PROJECT LOCATION MAP  
M10

INDEX OF DRAWINGS

SHEET NO.		TITLE
GENERAL		
D-001	THIS SHEET	PROJECT MAP AND AREA
SPECIAL		
C-001	ACCESS AND HUAL ROUTE	PROPOSED SITE PLAN
C-002	CROSS SECTION 1	CROSS SECTION 2

19 JANUARY 2024  
E-612-01

PROJECT NO.  
TASK NO.

DESIGNER  
CHECKER  
APPROVER

DATE

PROJECT TITLE  
G-001

SAFETY PAYS

NOT TO SCALE



GENERAL NOTES:

- PROJECT ENTRY FROM SR 520 NORTH TURN RIGHT ONTO SUNLAND RD, TURN RIGHT ONTO SUNLAND RD, TURN RIGHT ONTO SUNLAND RD. THEN IN APPROXIMATELY 800 FT TURN RIGHT ONTO THE ACCESS ROAD TO THE PROJECT SITE.
- PROJECT EXITS FROM THE ACCESS ROAD TURN LEFT ONTO SUNLAND RD. IN APPROXIMATELY 170 FT TURN RIGHT ONTO SR 520 SOUTH.
- ENGINEERING WILL BE COVERED IN TOPSOIL, HYDROSEEDING AND MAT ON THE EXISTING CONDITIONS POST CONSTRUCTION.

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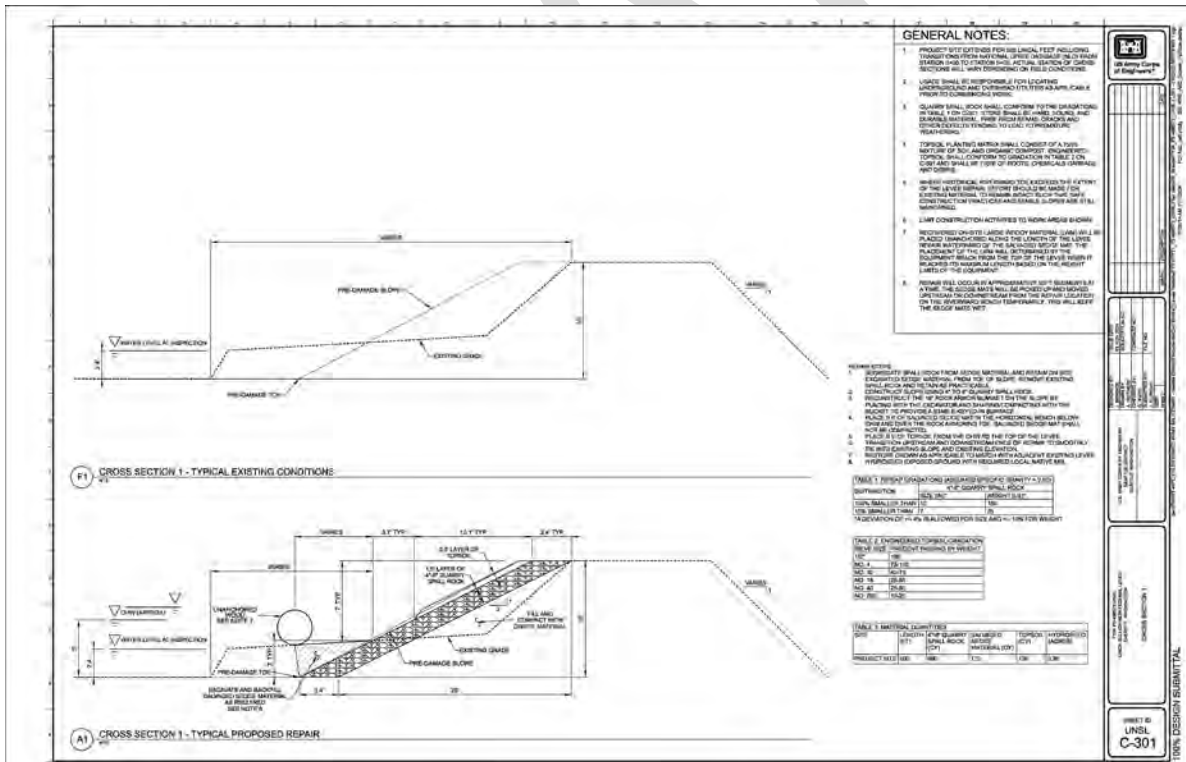
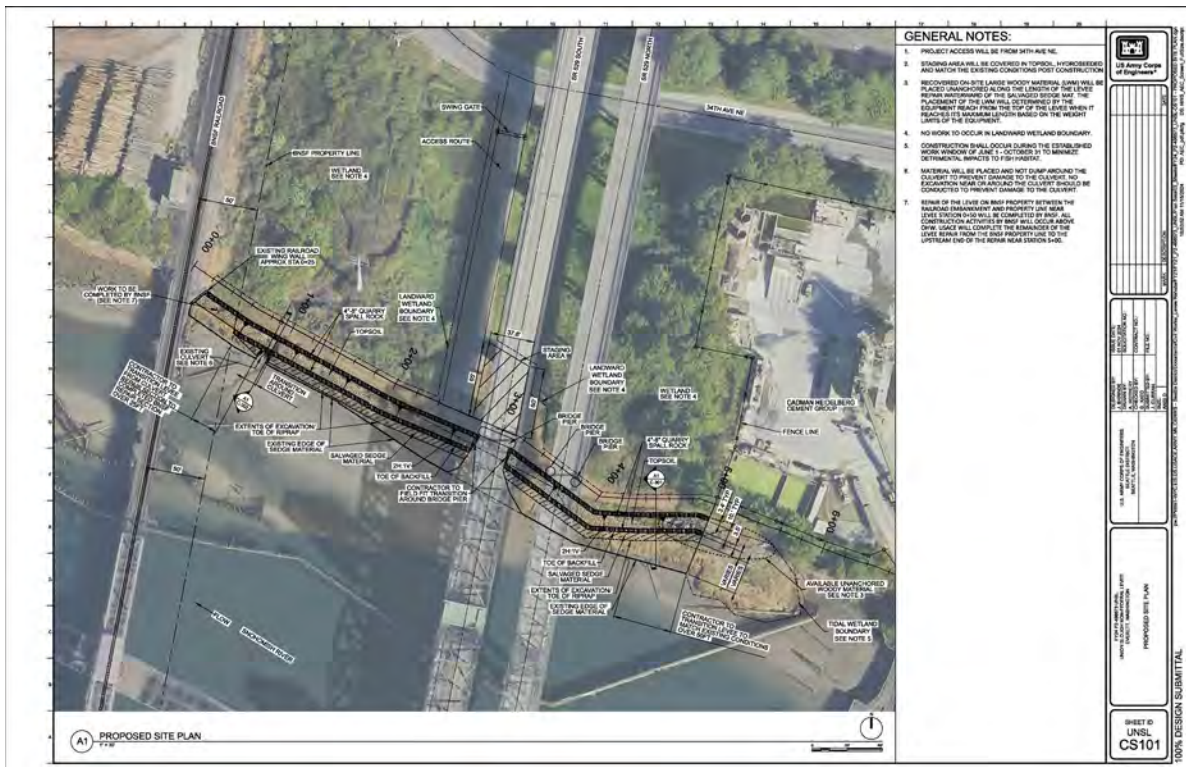
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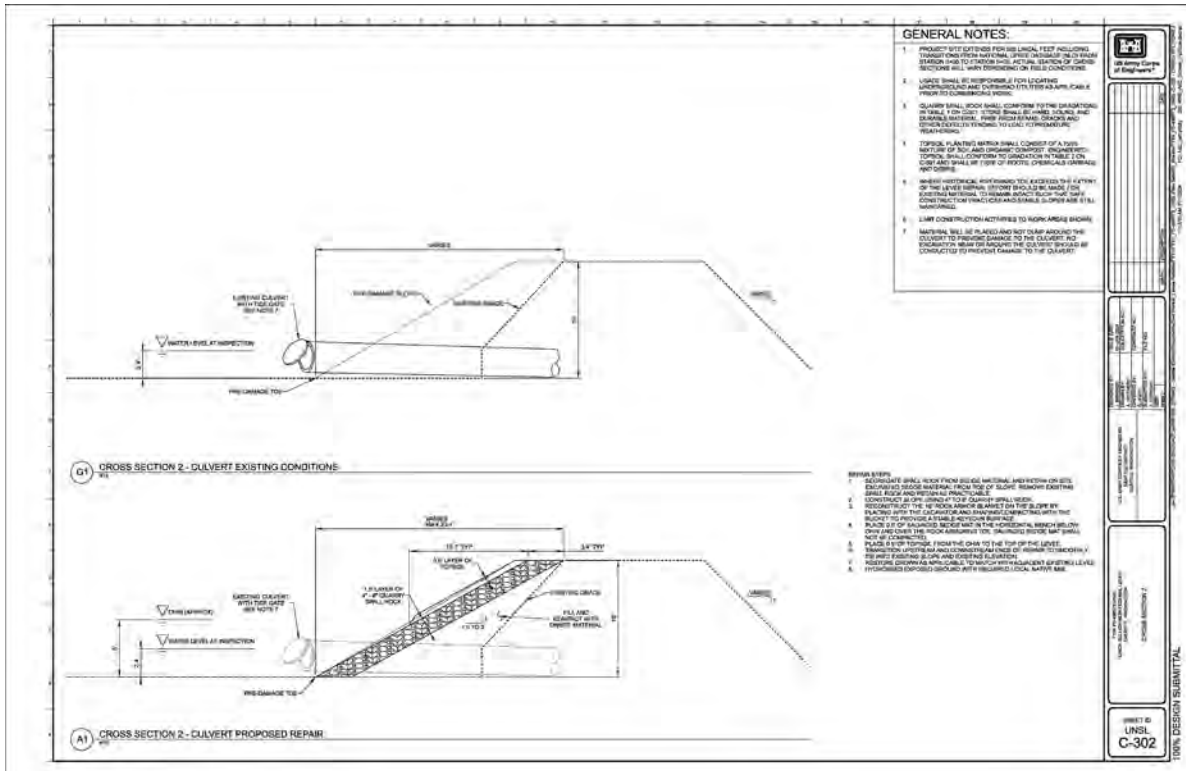
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**GENERAL NOTES:**

1. PROJECT W/F EXTENDS PER USUAL PRACTICE INCLUDING TRANSITION FROM NORMAL W/F TO SLOPE PROTECTION. DESIGN SHALL CONFORM TO ACTUAL SLOPE OF CHANNEL. SECTION WILL VARY DEPENDING ON THE CONDITIONS.
2. QUARRY SHALL BE RESPONSIBLE FOR LOCATING, UNCOVERING AND DETERMINING THE APPLICABLE FROM TO CORRECTING WEIR.
3. QUARRY SHALL ROCK SHALL CONFORM TO THE SPECIFICATIONS IN TABLE 1 FOR 2007. STONE SHALL BE HARD, SOUND AND DURABLE MATERIAL. FREE FROM FINE SAND, GRASS AND OTHER MATERIALS TENDING TO CAUSE CORROSION OF THE WEIR.
4. TYPICAL PLANTING MENUS SHALL CONSIST OF A 50% MIXTURE OF SOFT AND HARDWOOD TREES. PROTECTIVE COVER SHALL CONFORM TO SPECIFICATIONS IN TABLE 1 FOR 2007. ALL PLANTING SHALL BE DONE IN ACCORDANCE WITH USUAL PRACTICE.
5. WEIR STRUCTURE SHALL BE CONSTRUCTED TO A MINIMUM OF ONE LEVEE SPACING. STORM SHALL BE MADE FOR PROTECTION. TO REMOVE STORM SHALL BE CONSTRUCTION FROM CURB AND SIMILAR SLOPES ARE STILL MAINTAINED.
6. LIMIT CONSTRUCTION ACTIVITIES TO NEARBY SLOPES.
7. MATERIAL SHALL BE PLACED AND NOT CLEAR AROUND THE CULVERT TO PREVENT DAMAGE TO THE CULVERT. THE PROTECTION SHALL BE MAINTAINED. THE CULVERT SHALL BE CONDUCTED TO PREVENT DAMAGE TO THE CULVERT.

**REPAIR NOTES:**

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