

FINDING OF NO SIGNIFICANT IMPACT (FONSI)
SKAGIT RIVER DIKE DISTRICTS 17 AND 22 LEVEE REHABILITATION PROJECTS
SKAGIT COUNTY, WASHINGTON

The U.S. Army Corps of Engineers, Seattle District (USACE) has conducted an environmental analysis in accordance with the National Environmental Policy Act (NEPA) of 1969, as amended. The Final Environmental Assessment (EA) dated 25 July 2023, for the Skagit River Dike Districts (DD) 17 and 22 Levee Rehabilitation Projects addresses flood damage to the levees near the city of Mount Vernon and unincorporated Skagit County, Washington.

The Final EA, incorporated herein by reference, evaluates various alternatives to restore flood protection to the damaged levees. One Federal action requires NEPA compliance and analysis in the Final EA summarized below. The Federal action is the proposed repair of the DD 17 and DD 22 levees.

Proposed Action: The preferred alternative is the Seepage Cutoff Trench on Riverward Side Alternative. This alternative will repair the Skagit DD 17 and DD 22 levees within the horizontal and vertical profiles as they were designed and as they existed prior to the November 2021 flood event. Repair activities for this alternative are summarized in section 2.5 of the Final EA and are hereby incorporated by reference.

Alternatives: In addition to a “no action” alternative, four action alternatives were evaluated. The action alternatives include the non-structural, levee setback, seepage berm on the landward side, and seepage cutoff trench on the riverward side alternatives. Of these, the potential effects were evaluated for the No Action and the seepage cutoff trench on the riverward side alternatives.

See section 2 of the Final EA for alternative formulation and selection. A summary assessment of the potential effects of the recommended plan are listed in Table 1:

Table 1: Summary of Potential Effects of the Proposed Action

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

Impact Minimization: All practicable and appropriate means to avoid or minimize adverse environmental effects were analyzed and incorporated into the recommended plan. Best management practices, as detailed in section 2.6 of the Final EA, will be implemented to minimize impacts. Measures include erosion and sediment control, vegetation avoidance, biological and archaeological monitoring, and avoiding work in the Skagit River and wetlands.

Mitigation: The recommended plan will not result in a loss of waters of the U.S. or adverse or beneficial effects to Endangered Species Act (ESA)-listed species or designated critical habitat. No Clean Water Act (CWA) compensatory mitigation or ESA mitigation is required or proposed.

Public Review: Public review and comment of the Notice of Preparation for the proposed Skagit River Dike District 17 and 22 Levee Repair Projects was completed on May 5, 2023. Comments and responses are included in the Final EA.

Tribal Consultation and Coordination: The Sauk-Suiattle Indian Tribe, Samish Indian Nation, Upper Skagit Indian Tribe, Swinomish Indian Tribal Community, Tulalip Tribes, and the Skagit River System Cooperative (SRSC) were contacted regarding the levee repairs, and USACE will continue to coordinate throughout the project to meet all

USACE obligations to Tribes. To date, one email was received from the Suquamish Tribe with no comment, and one letter was received from the SRSC, on behalf of the Sauk-Suiattle Indian Tribe and the Swinomish Indian Tribal Community, dated 5 May 2023.

In their 5 May 2023 letter, the SRSC advocates for a levee rehabilitation strategy that incorporates elements of a nonstructural and levee setback approach that would be more beneficial to Tribal fisheries resources and ESA-listed species than a repair-in-place approach, while also accomplishing flood risk reduction goals. SRSC also raises concerns about potential impacts to vegetation at DD 17 Site 1, and requests careful monitoring for unintended vegetation impacts during construction and engagement with USACE to offset unintended impacts should they occur. SRSC also raises concerns about ongoing impacts to Skagit River habitats and the continued disconnect of the floodplain from the river as a result the existing system of levees. They request USACE propose mitigation for impacts to floodplain habitats and connectivity perpetuated by the proposed levee repairs. USACE has responded to project-specific concerns in Appendix H, and offers to further meet with the SRSC to discuss broader programmatic concerns with the levee rehabilitation program under Public Law 84-99.

Compliance:

a. Endangered Species Act:

The National Oceanic and Atmospheric Administration (NOAA), National Marine Fisheries Service (NMFS), and the U.S. Fish and Wildlife Service (USFWS) are responsible for administering the Endangered Species Act of 1973 (ESA). USACE evaluated potential effects to ESA-listed species and their critical habitat and determined that the proposed action would have no effect on ESA-listed species or their designated critical habitat. No ESA consultation with the NMFS or the USFWS is required.

b. Magnuson – Stevens Fishery Conservation and Management Act:

USACE determined that the proposed action will not adversely affect essential fish habitat (EFH) identified by the MSA. No consultation with the NMFS is required.

c. Clean Water Act:

USACE has determined the proposed action would not result in a discharge of dredged or fill material into waters of the U.S. No CWA Section 404 review is required.

Section 402 of the CWA is triggered when a construction site would have greater than 1 acre of ground disturbance. The proposed repairs to the DD 17 and DD 22 levees do not exceed 1 acre of ground disturbance individually or cumulatively. No Section 402 review is required.

d. Coastal Zone Management Act:

USACE has determined that the proposed repairs are consistent to the maximum extent practicable with the enforceable policies of the approved Washington Coastal Management Program. USACE sent a Coastal Zone Management Act (CZMA) Consistency Determination to Ecology on May 5, 2023, requesting concurrence that the proposed repairs are consistent to the maximum extent practicable with the enforceable policies of the approved Coastal Zone Management Program. Ecology concurred with USACE's consistency determination on June 15, 2023.

e. National Historic Preservation Act (NHPA):

USACE initiated consultation with the Washington State Historic Preservation Officer (SHPO) on the Area of Potential Effect (APE) on February 13, 2023. The SHPO agreed with the APE on February 16, 2023. USACE also coordinated with the Samish Indian Nation, Upper Skagit Indian Tribe, Sauk-Suiattle Indian Tribe, Swinomish Indian Tribal Community, Tulalip Tribes, and the Skagit River System Cooperative, seeking information on historic properties of cultural or religious significance that may be affected. USACE has not received responses from the Tribes regarding coordination requests under the NHPA.

Based on the literature review and a records search, cultural resources survey, and coordination with SHPO and the contacted Tribes, USACE determined that the proposed repairs would have no adverse effect to historic properties within the APE that are listed in or determined eligible for listing in the National Register of Historic Places. The SHPO concurred with USACE's determination of no historic properties effected on 10 May 2023.

Determination:

a. Summary of Impacts and Compliance:

Impacts of the proposed work will be minor, short-term, and temporary. This project will have no effect on ESA-listed species or their critical habitat, or EFH identified by the MSA. CZMA coordination has been completed. The project does not involve the discharge of dredged or fill material into waters of the U.S., so no CWA Section 404 review is required. The project complies with the NHPA and USACE has coordinated the work with the Washington SHPO and affected Indian Tribes. USACE will continue to coordinate with affected Tribes.

District Engineer's Conclusion: All applicable laws, executive orders, regulations, and local government plans were considered in evaluation of alternatives. Based on the analysis presented in the Final EA, which has incorporated or referenced the best information available; coordination to date with other Federal, State, and local agencies, Tribes; input of the public; and the review by my staff, it is my determination that the recommended plan will not significantly impact the quality of the human environment and does not require preparation of an environmental impact statement.

7/26/23

Date

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

FINAL ENVIRONMENTAL ASSESSMENT

*SKAGIT LEVEE REHABILITATION (DIKE DISTRICTS 17 AND 22)
SKAGIT COUNTY, WASHINGTON*



July 2023



Seattle District
Corps of Engineers

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Skagit Levee Rehabilitation Environmental Assessment

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Acronyms and Abbreviations

AEP	Annual exceedance probability
APE	Area of potential effect
BMP	Best Management Practices
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulation
CWA	Clean Water Act
DAHP	Washington State Department of Archeology and Historic Preservation
DD	Dike District
DPS	Distinct Population Segment
EA	Environmental Assessment
EFH	Essential Fish Habitat
EIS	Environmental Impact Statement
EO	Executive Order
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FoNSI	Finding of No Significant Impacts
ft	Foot/feet
H:V	Horizontal to Vertical ratio, measured in feet
LF	linear feet
LOP	Level of Protection
NAAQS	National Ambient Air Quality Standards
NAGPRA	Native American Graves Protection and Repatriation Act
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
WAC	Washington Administrative Code
WDFW	Washington Department of Fish and Wildlife

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1 INTRODUCTION

The purpose of an Environmental Assessment (EA), as reflected in 40 Code of Federal Regulations (CFR) Sections 1500.1(a) and 1501.5(c)(1) of the Council on Environmental Quality regulations implementing the National Environmental Policy Act of 1969 (NEPA) as amended, is to “*provide sufficient evidence and analysis for determining whether to prepare an environmental impact statement [EIS] or a finding of no significant impact [FONSI]*” on actions authorized, funded, or carried out by the Federal Government, and “*ensure Federal agencies consider the environmental impacts of their actions in the decision-making process.*” Pursuant to Section 102(C) of the NEPA, this assessment evaluates environmental consequences of the proposed rehabilitation actions to be implemented by the U.S. Army Corps of Engineers (USACE) at the Skagit Levees located near the cities of Burlington and Mount Vernon, Skagit County, Washington.

1.1 BACKGROUND

Non-Federal interests constructed the Dike District (DD) 17 levee in the late 1800s or early 1900s from earthen materials with class V riprap for erosion protection. The levee runs along the left bank of the Skagit River near the city of Mount Vernon in Skagit County, Washington. In its undamaged state, the levee provides 50-year level of protection (LOP) to the City of Mount Vernon and surrounding agricultural areas. The embankment is constructed of silty sand and gravel. Crest width is typically about 13 feet (ft). The riverward slope varies from 1.5 Horizontal (H):1 Vertical (V) to 3H:1V, and back slopes vary from 1.5H:1V to 3H:1V. The levee is vegetated with grass, willows, and weeds, and has a pedestrian trail that runs the length of the crest. Dike District No. 17 performs annual maintenance, including removal of blackberries and mowing grass growing on the levee.

Residents of Fir Island constructed the DD 22 levee in the late 1800s or early 1900s from earthen materials and riprap to protect farms and homes from flooding. The levee is located on the left bank of the North Fork Skagit River from river mile 7.6 to 2.5, and the right bank of the Skagit River (and Freshwater Slough) from river mile 8.1 to 1.0. on Fir Island in Skagit County, Washington. In its undamaged state, the levee provides 50-year LOP to Fir Island. The levee does not tie into the high ground, but rather forms a ring around Fir Island. Riverward slopes vary from 1.5H:1V to 4H:1V, and back slopes vary from 1.5H:1V to 3.5H:1V. Dike District No. 22 performs annual maintenance, including removal of blackberries and thinning or removal of trees that could jeopardize the structural integrity of the levee.

November 2021 Flood Summary:

An atmospheric river event brought heavy rainfall to the region in November 2021, resulting in widespread flooding across the Skagit River basin. The USACE-directed operations at the Upper Baker Dam and Ross Dam provided a substantial reduction of flows in the mainstem Skagit River, though the river still peaked above major flood stage. The Skagit River near Mount Vernon, WA USGS gage 12200500 peaked above the major flood stage on November 16, 2021, with a gage height of 36.81 ft (Figure 1) and a flow rate of 124,000 cubic ft per second (Figure 2). These values represent between 10% annual exceedance probability (AEP) (10-year) and 50% AEP (2-year) flows.

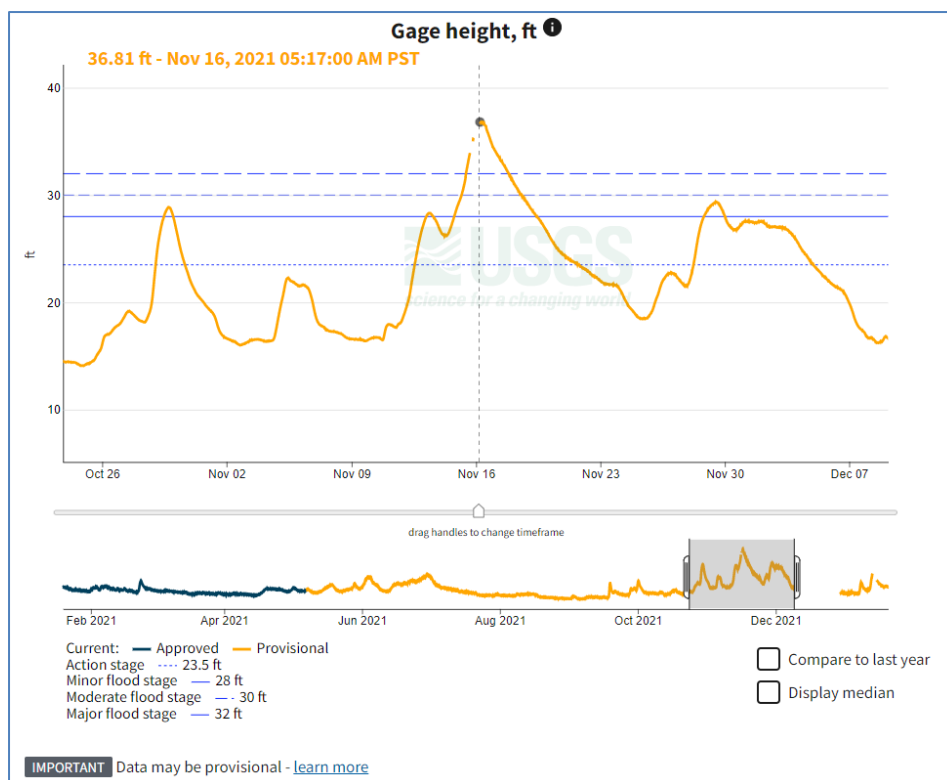


Figure 1. River stage in the Skagit near Mount Vernon, WA USGS gage 12200500.

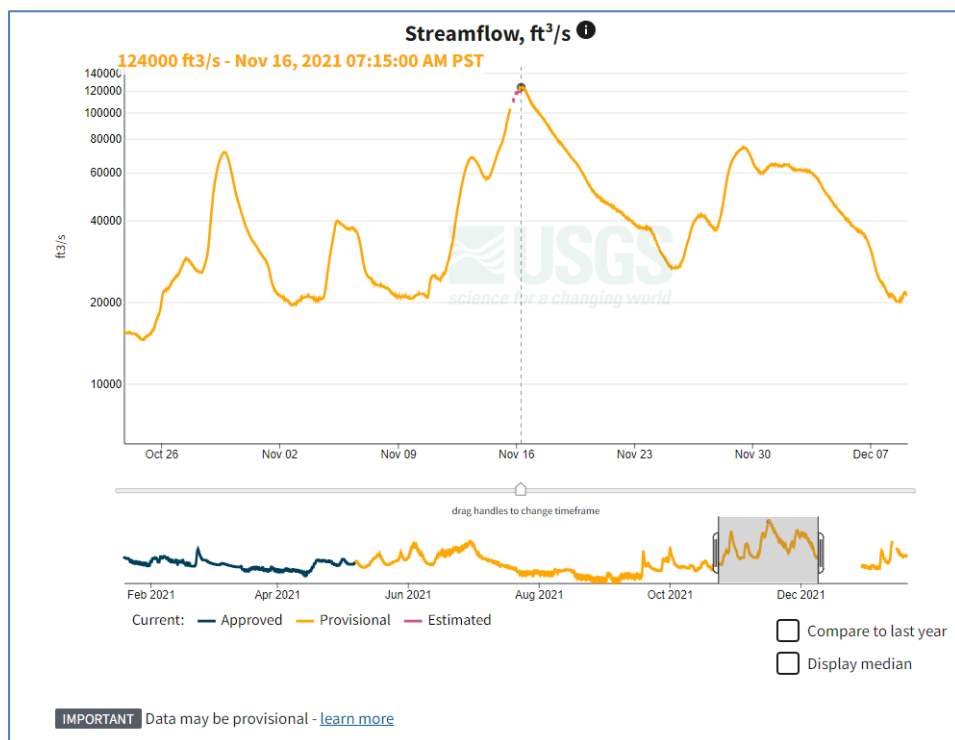


Figure 2. Streamflow in the Skagit near Mount Vernon, WA USGS gate 12200500.

During the November 16, 2021, flood event, damages occurred to the DD 17 levee system at two locations, reducing the LOP provided by this levee system from 2% AEP (50-year) to 10% AEP (10-year):

1. STA 121+00 (Site 2) – Seepage was noted on the centerline of River Bend Road coming up through the pavement. The flow was discolored and resulted in flood fight activities to place a berm on 300 ft of River Bend Road.
2. STA 20+00 to 35+00 (Site 1) – Seepage noted throughout the reach landward of the roadway.

During the November 16, 2021 flood event, damages also occurred to the DD 22 levee system from STA 352+00 to STA 360+00. During the high-water event, seepage was noted in the farm field adjacent to the levee. For approximately 800 linear feet (LF), foundation seepage removed a large volume of sand from the levee foundation. Following the event, data was collected from various sources, including local, state, and USACE personnel to assess damages and associated risks. Sources included information from personnel present during the flood event, as well as from a USACE-lead rapid assessment. USACE personnel determined damage from seepage at the two damaged DD 17 sites and the damaged DD 22 site have reduced the LOP of both levee systems from a 2% AEP (50-year) to a 10% AEP (10-year). Photos of the damaged levees are provided in Appendix A.

1.2 AUTHORITY

The emergency response and proposed 2023 levee repairs are authorized by Public Law 84-99 (33 U.S.C. Section 701n), the Flood Control and Coastal Emergency Act. USACE's rehabilitation and restoration work under this authority is limited to the repair of flood control works damaged or destroyed by flood. The statute authorizes rehabilitation to the condition and LOP exhibited by the flood control work prior to the 2021 damaging event.

33 U.S.C. § 701n provides USACE 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.”

This authority is delegated to Seattle District through 33 CFR, Part 203 and Engineering Regulation (ER) 500-1-1. From ER 500-1-1: “Improvements to design and equipment (e.g., geomembranes) that are a result of state-of-the-art technology, and are commonly incorporated into current designs in accordance with sound engineering principles, are permissible, and are not considered betterments.”

1.3 PROJECT LOCATION

The two DD 17 levee repair sites are located on a non-federally constructed, operated, and maintained levee that runs along the left bank of the Skagit River near the city of Mount Vernon in Skagit County, Washington (Figure 3). The DD 17 Site 1 repair location extends 1,500 LF from station (STA) 20+00 to STA 35+00. The DD 17 Site 2 repair location extends 400 LF from STA 117+00 to 121+00. The upstream end of the DD 17 levee ties into high ground on the north end of Mount Vernon, runs along the left bank of the Skagit River, and ties into the shoulder of

River Bend Road near Site 1. USACE delineated a palustrine scrub-shrub depressional wetland in the forested area between the levee and the Skagit River at Site 1.

The DD 22 levee repair site is located on a non-federally constructed, operated, and maintained complete levee system protecting Fir Island in Skagit County, Washington (Figure 3). The DD 22 repair site extends 800 LF from STA 352+00 to STA 360+00. The levee is located on the left bank of the North Fork Skagit River from river mile 7.6 to 2.5 and the right bank of the Skagit River (and Freshwater Slough) from river mile 8.1 to 1.0. The levee does not tie into the high ground, but rather forms a ring around Fir Island. USACE delineated a palustrine scrub-shrub depressional wetland at the base of the DD 22 levee slope on the edge of a wooded area.

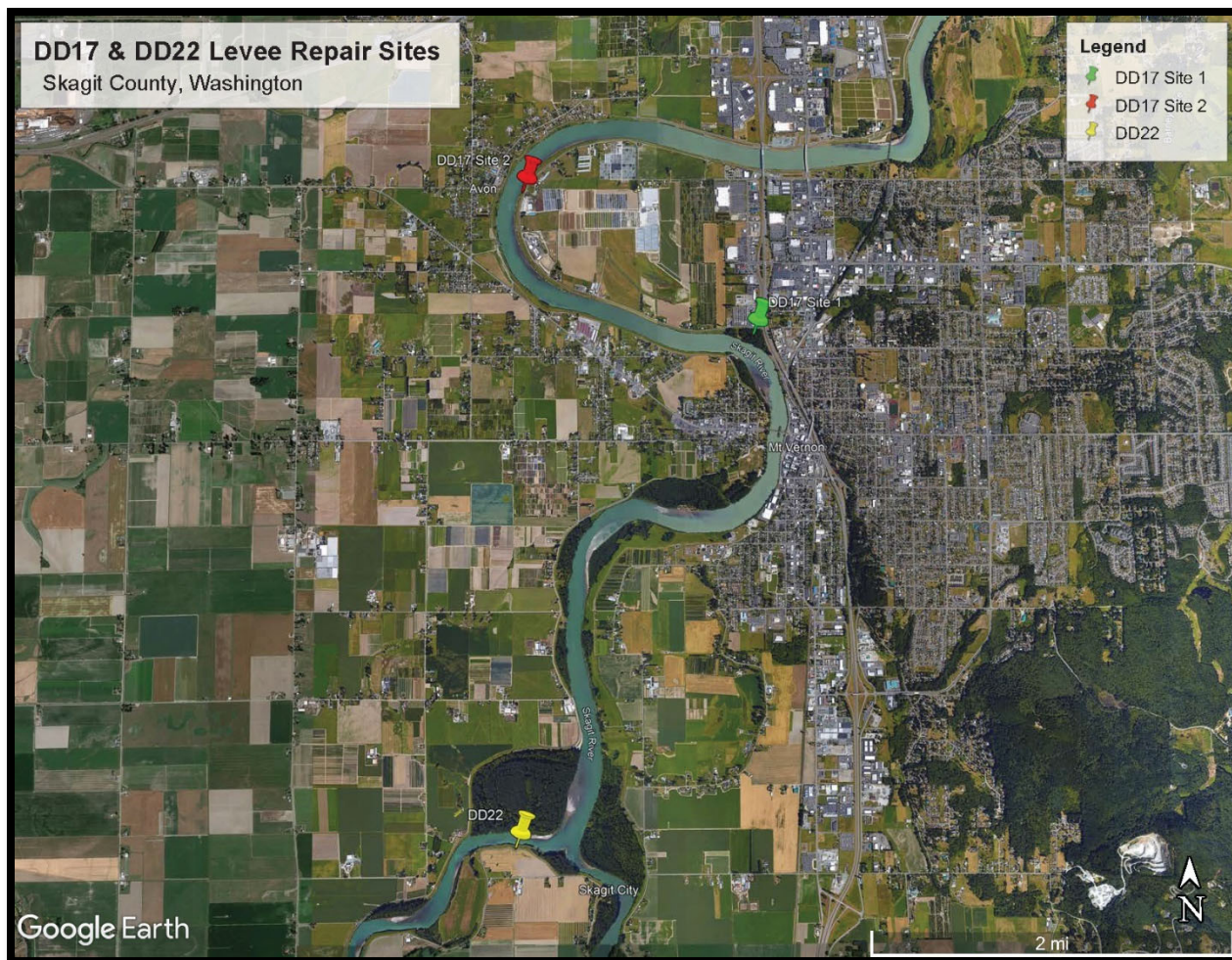


Figure 3. Dike District (DD) 17 (Sites 1 and 2) and DD 22 levee repair sites.

1.4 PURPOSE AND NEED

The purpose of the project is to restore the AEP protection level and geographic extent of flood protection of the DD 17 and DD 22 levees provided prior to damage incurred during the November 2021 flood event. The project is needed because the levees no longer provide the designed LOP. The project would restore flood protection to the 2% AEP (50-year) level provided by the levees prior to the damaging flood event. If the levees were to fail, there would

be an increased risk to human safety, improved property, and public infrastructure in and around Mount Vernon. The proposed levee repairs addressed in this EA are the result of requests for assistance from the respective non-federal sponsors.

2 PROPOSED ACTION AND ALTERNATIVES

USACE conducted a preliminary evaluation on the alternatives for fulfilling the purpose of restoring the levees to their pre-damage 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 being constructed prior to the next flood season (autumn 2023). The preferred alternative must be the least costly alternative that restores the level of protection while fulfilling all legal, technical, and environmental requirements.

Under Public Law 84-99, USACE has limited discretion over repair alternatives. USACE may deviate from the original design of the non-Federal levee (e.g., setback levee) with the participation of the non-Federal sponsor who must agree to meet various obligations, including land acquisition and additional cost-share funding, to execute any alternative. USACE is deviating from the original design of the non-Federal DD 17 and DD 22 repair sites by constructing a seepage cutoff trench, which is supported by the non-Federal sponsors.

For the proposed levee repairs, four action alternatives and a no-action alternative are considered, as described in the following sections.

2.1 ALTERNATIVE 1: NO ACTION ALTERNATIVE

Under the No Action Alternative, USACE would not repair the damaged sections of the DD 17 and DD 22 levees, and the levees would remain in their damaged condition. This alternative would not meet the project purpose because the AEP protection level would not be restored. The levees would likely be further damaged in future flood events and could fail, which would endanger protected homes, businesses, and public infrastructure. During any flood event that threatens 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. Any response to damages during a flood event would be temporary, less certain of success, potentially more expensive, and could be less protective of environmental and cultural resources. A response would also take time to activate and execute, increasing the probability that it would not prevent levee failure, such as overtopping or breaching.

The No Action alternative is not preferred because it would maintain the increased likelihood of damages or breaching of the levee, presenting a risk to human safety and improved property. It does not meet the project purpose and need, nor is it acceptable to the non-Federal sponsors. While the No Action Alternative is not preferred, it is carried forward for further evaluation to serve as a baseline condition in the evaluation of other alternatives.

2.2 ALTERNATIVE 2: NON-STRUCTURAL ALTERNATIVE

The nonstructural alternative consists of floodplain management strategies that are offered by other Federal and state programs and generally involve changes in land use. Such strategies would include zoning, easements, flood-warning procedures, floodplain evacuation, and flood insurance. These processes and programs are outside the scope of Federal control and

responsibility for this action, and are outside the authority of the Dike District to implement. Nonstructural strategies also involve acquiring, relocating, elevating, and flood-proofing existing structures. The cost associated with purchasing, relocating, or otherwise flood-proofing over 700 acres of residential, commercial, industrial, and agricultural land, including parts of Interstate 5 (I-5), make this alternative impractical. If local jurisdictions (i.e., Skagit County and the city of Mount Vernon) chose to undertake a nonstructural approach to flood damage reduction in this area, the process of studying, planning, funding, and implementing such actions would take many years and require extensive community engagement. During this time, the levees would continue to operate at a reduced level of protection, subjecting the surrounding community to an increased risk of flooding. Additionally, PL 84-99 requires the participation of the non-Federal sponsors to implement a nonstructural alternative, and Skagit County Dike District 17 and Skagit County Dike District 22 have not requested to implement a nonstructural alternative nor agreed to meet the various obligations they would have for executing a nonstructural alternative. Therefore, this alternative is not carried forward for detailed consideration.

2.3 ALTERNATIVE 3: LEVEE SETBACK ALTERNATIVE

The levee setback alternative would shift the alignment of the levee embankment landward to avoid or minimize direct contact with the river and provide additional space for water conveyance. Typically, the setback would involve construction of a new earthen embankment structure and abandonment of the existing levee located on the riverbank. In this instance, a setback levee may be more costly than other alternatives due to the need for more embankment material and real estate requirements. This approach could also encroach on existing structures, privately owned land, and public infrastructure. Therefore, the cost and time needed to implement this alternative make this option impractical given the PL 84-99 program's requirement to implement repairs with a favorable benefit-to-cost ratio and the emergency need for repair. Implementing this alternative would also require participation of the non-Federal sponsor. While a setback levee would meet the project purpose, Skagit County Dike District 17 and Skagit County Dike District 22 have not agreed to incur new obligations, including land acquisition and additional cost-share funding needed to execute a setback alternative. Therefore, this alternative is not carried forward for detailed consideration.

2.4 ALTERNATIVE 4: SEEPAGE BERM ON LANDWARD SIDE ALTERNATIVE

This alternative would establish a seepage berm on the landward side of the levee. A seepage berm is typically constructed by placing impervious soils on the landward side of the levee, extending the footprint of the levee landward from several dozen to several hundred feet. The seepage berm reinforces existing top stratum reduces seepage pressure near the toe of the levee. This approach is not practical due to space constraints and easement issues. At DD17 Sites 1 and 2, River Bend Road is located at the landward toe of the levee along the entire length of the levee sections proposed for repair. Residential and commercial development is located on the opposite side of River Bend Road from the levee. Constructing a seepage berm on the landward side of the levee at DD 17 Sites 1 and 2 would require moving River Bend Road and residential and commercial buildings. Moving River Bend Road and improved property would be expensive and impractical. The DD 22 repair site is located on private property, and the area at the landward toe of the levee is an active agricultural field. While securing an easement could be possible at the DD 22 repair site, the process could take years and would require the local sponsor to initiate and fund the transaction. Overall, this alternative would be less effective, practical, and timely than the cutoff trench. Therefore, this alternative is not carried forward for detailed consideration.

2.5 ALTERNATIVE 5: SEEPAGE CUTOFF TRENCH ON RIVERWARD SIDE ALTERNATIVE (PREFERRED ALTERNATIVE)

This alternative is USACE's preferred alternative and meets the project purpose and need. The Seepage Cutoff Trench on Riverward Side Alternative will repair the damage to the DD 17 and DD 22 levees by constructing a trench and installing a clay core at the upper base of the riverward levee bench within an upland area. USACE proposes implementing the Seepage Cutoff Trench on Riverward Side Alternative to repair the levees to their pre-damage LOP. Design plans for repairs to the DD 17 and DD 22 levees under this alternative are provided in Appendix B. This alternative involves no work below the ordinary high water mark (OHWM) of the Skagit River, no in-water work, no work in wetlands, and no expansion of the pre-damage levee footprint.

Repairs to the DD 17 levee under this alternative will include the construction of 1,900 LF of seepage trench at two separate locations. The trenches will extend 1,500 LF at Site 1 from STA 20+00 to STA 35+00, and 400 LF at Site 2 from STA 117+00 to STA 121+00. The trenches will measure 4 feet wide by up to 20 feet deep and will be backfilled with clay. The proposed repair will create a low permeability layer in the soil between the damaged sections of levee and the Skagit River, intercepting existing seepage paths through the foundation to prevent further seepage damage. The repair will return the levee to its prior 2% AEP (50-year) LOP.

Repairs to the DD 22 levee under this alternative will include the construction of 800 LF of seepage trench. The seepage cutoff trench will measure 4 feet wide by up to 20 feet deep and will be backfilled with clay. The repair will create a low permeability layer in the soil between the damaged section of levee and the Skagit River, intercepting existing seepage paths through the foundation to prevent further seepage damage. The repair will return the levee to its prior 2% AEP (50-year) LOP.

No in-water work, work or fill in wetlands, or work below the OHWM in the Skagit River are proposed for the DD 17 and DD 22 levee repairs. Construction activities at each of the three sites are anticipated to last 4 to 6 weeks during the months of August through October 2023, and will be carried out concurrently to the extent feasible. Construction timing is planned to coincide with the low summer water table so excavation for the seepage cutoff trench has the greatest likelihood of reaching the ideal target depth of 20 feet. Construction vehicles will access from existing levee roads and paths as shown on the design plans (Appendix B). Equipment and materials, including material excavated from the repair site, will be staged within the levee footprint. Topsoil will be replaced and hydroseed will be applied over disturbed areas to restore vegetation to pre-construction conditions. Best management practices (BMPs) will be employed during construction to avoid and minimize potential environmental impacts from the project.

2.5.1 Detailed Levee Repair Descriptions

At all three levee repair locations, the preferred alternative is a seepage cutoff trench. An excavator will be used to dig a 4-foot-wide trench up to a depth of 20 feet, striving to extend at least 2 feet into the pervious soil strata. Excavation and associated backfill will occur in lengths of 20 to 40 feet to minimize time of open trenches. Excavated soils will be stockpiled at least 2 feet from the trench edge for later disposal or recycling.

Trench walls are expected to be stable for material excavation and backfill without the use of shoring or other controls. If walls show excess sloughing of material, collapse, or other issues, sloping and terracing of adjacent materials may be implemented. Slopes and terraces generally shall not exceed 0.75H:1V per EM 385-1-1 Section 25 in assumed Type "A" Soil. Determination

of soil type per Engineer Manual (EM) 385-1-1 Section 25 is to be assessed by a competent person who may require additional/differing criteria following observation of site-specific soils. Open trenches will adhere to all applicable laws, regulations, and pertinent best practices to ensure safe working and operations near the trench. Deviations in excavated depth are to be approved by relevant construction personnel with input from geotechnical engineers. The trench will be backfilled with low permeability soil material (i.e., clay). Placement will occur in lifts no larger than 8 inches loose lifts, followed by 3 to 8 passes by a sheepsfoot, or similar apparatus that avoids vibratory actions. Similarly, placement of material will not occur when more than 6 inches of standing water is present within the trench without appropriate mitigation and/or approval from the appropriate construction or engineering representatives. Similarly, care will be taken to maintain proper moisture controls during procurement, storage, and placement of import material.

Sloughed or collapsed material will not be permitted to mix with imported impervious material and will be removed when necessary. Sloping or terracing of slopes may be used during backfill as needed. Four inches of salvaged topsoil will be replaced over the clay and hydroseeded with the seed mixture described in BMP 22 (section 2.6.1). All disturbed portions of the levee, including areas used for access or staging, will be restored to preconstruction conditions and will be hydroseeded. No de-watering of the trench will occur. Repairs will restore the levee to its prior 50-year LOP (2 percent AEP).

2.5.2 Construction Sequence

Construction will occur in a single construction period and will generally consist of the major components described below. Construction refers only to those activities associated with the deconstruction and reconstruction of the levee prism. Specific existing conditions for the location where the fill material will be purchased are unknown, as the materials will be purchased from privately owned companies through a contract bidding process prior to construction. However, any borrow site, quarry, or gravel mine shall be fully permitted by the state.

Site Preparation: The first component of construction includes the preparation of access routes and the existing levee prisms for material removal. A pre-construction meeting will be held. The project limits will be clearly marked using stakes and flagging, and the repair area cleared and grubbed as necessary. If invasive vegetation is removed, including species such as Japanese knotweed and Himalayan blackberry, plant parts will be disposed of off-site in a manner to prevent the spread of the invasive vegetation. Staging activities will consist of temporarily stockpiling clay, supplies, equipment, and vehicles. Storage, and work activities will be limited to the areas shown in the design plans (Appendix B).

Construct Levee Repair: Construction will commence concurrently across all three repair sites to the maximum extent practicable. Trench excavation and backfill will occur in lengths of 20 to 40 feet to minimize the duration and extent of open trenches. Seepage cutoff trenches will be excavated to a target depth of 20 ft but may be shallower if the water table is encountered during excavation. If the water table is encountered during excavation, the excavation will be halted even if the target depth is not reached. Construction will adhere to the design plans for each repair site. No modification or rehabilitation of the waterward or landward slope or levee crest will occur.

Complete Construction: Upon completion of all construction activities, areas disturbed by seepage cutoff trench excavation and backfill, equipment and material staging, and road access will be restored to pre-construction condition.

2.6 BEST MANAGEMENT PRACTICES AND MITIGATION

Mitigation for the effects of a proposed action is evaluated as part of the NEPA process.

Mitigation can take any of the following forms:

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

The preferred alternative is planned and designed to avoid and minimize project impacts to the maximum extent feasible. All access would be over existing roads and trails, and all staging would be in previously developed or disturbed uplands. The repair work summarized above includes no in-water work, tree removal, or loss of waters of the U.S. No Clean Water Act (CWA) compensatory mitigation is proposed. The project will have no effect to Endangered Species Act (ESA) listed species and designated critical habitat, therefore no ESA mitigation is proposed. The BMPs listed below include measures to protect the Skagit River and nearby wetlands from sediment and turbidity originating from the project area.

2.6.1 Best Management Practices (BMPs)

USACE developed a list of BMPs and will incorporate these into the action to reduce environmental impacts. Some are integrated into the repair, while others are guides to operation and care of equipment. These measures are as follows:

1. Work will be conducted during daylight hours.
2. Work areas at the repair sites are restricted to the areas shown on CS102 and CS103 of the DD 17 project drawings, and CS101 and CS102 of the DD 22 project drawings.
3. Temporary erosion control measures will be installed for all phases of work to be conducted. As construction advances, installation of silt fencing or straw wattles will occur along the full length of disturbed areas of the project site. Additional erosion control measures will be utilized as needed to prevent the discharge or accumulation of sediment into the Skagit River, wetlands, adjacent swales, catch basins, storm drains, and offsite. Accumulation of sediment in adjacent swales or storm drains will be monitored daily and cleared to ensure continued service throughout construction.
4. All construction impacts must be confined to the minimum area necessary to complete the project and boundaries of clearing limits associated with site access. The construction site boundaries will be clearly marked to avoid or minimize disturbance of riparian vegetation, wetlands, and other sensitive sites. If vegetation cannot be avoided, the Construction Manager will contact the Project Manager. The Project Manager will then work with the Corps Biologist to determine appropriate actions. The Corps Biologist will notify the Skagit River System Cooperative biologist within 30 days of completion of construction to inform and discuss next steps regarding vegetation disturbance.
5. Refueling of equipment and vehicles must take place behind the levee or at least 100 feet away from the Skagit River ordinary high water mark (OHWM) and flagged wetland boundaries.
6. Provisions will be taken to prevent pollutants from reaching the soil, groundwater, or surface water. During project activities, contractors will be required to perform daily

- inspections of equipment, maintain appropriate spill-containment materials on site, and store all fuels and other materials in appropriate containers.
7. Equipment maintenance activities shall not be conducted on the construction site.
 8. Equipment used near the water will be cleaned prior to construction.
 9. At least one fuel spill kit with absorbent pads will be onsite at all times.
 10. Drive trains of equipment will not operate in the water.
 11. Biodegradable hydraulic fluids will be used in machinery where appropriate.
 12. Use environmentally acceptable lubricants composed of biodegradable base oils such as vegetable oils, synthetic esters, and polyalkylene glycols in equipment operated in or near the water.
 13. The landward delineated boundary of wetlands will be verified and flagged during the growing season and before construction.
 14. High-visibility construction fencing will be installed landward of flagged wetland boundaries prior to excavation.
 15. Silt fencing and straw wattles, or an equivalent erosion control measure, will be installed upslope of the delineated wetlands.
 16. A pre-construction meeting with a USACE biologist, USACE Archaeologist, and the contractor will occur. Outside resource agencies and/or the project sponsor may also be present. A USACE biologist will review BMPs with the contractor and verify high-visibility construction fencing is present around wetlands.
 17. A USACE biologist will be on site during trench construction that is within 100 feet of wetland boundary and will remain available upon request for consultation during construction.
 18. A USACE archaeologist will be on site during construction unless the Contractor has been notified in writing that they will not be present. Without notice that the archaeologist will not be present that day, no ground disturbing work can occur.
 19. During trench construction near wetlands, the excavator arm will be swung landward of the trench (or otherwise not over the wetland) to avoid discharges into/near wetlands.
 20. No in-water work shall occur.
 21. Noxious weeds will be disposed of separately from other organic materials at an approved off-site location. Himalayan blackberry, including the root system, will be removed, and disposed of appropriately. Removed Himalayan blackberry will not be placed in a compost pile or left to root onsite.
 22. All disturbed soils will be covered with topsoil and hydroseeded with the Meadow Seed Mix specified in the Stormwater Management Manual for Western Washington, BMP C120, Table II-3.4: Temporary and Permanent Seed Mixes which includes *Agrostis alba* or *A. oregonensis* 20% by weight, *Festuca rubra* 70% by weight, and *Trifolium repens* 10% by weight.
 23. All trash and unauthorized fill will be removed from the project when construction is complete.

In addition, develop a Fueling and Spill Recovery Plan prior to construction that will include specific BMPs to prevent fluid spills and to prepare and react quickly should an incident occur.

3 ENVIRONMENTAL RESOURCES OF CONCERN AND EFFECTS

3.1 LAND USE, UTILITIES, AND INFRASTRUCTURE

3.1.1 Existing Conditions Pre-Flood (2021)

Land uses in the vicinity of the levees are a mix of residential, commercial, and agricultural. The levees provide protection for residences, commercial properties, state and local roads, agricultural lands, and associated public infrastructure. Roads are located directly landward of both levees. Power lines and phone lines are strung along those roads either at the landward base of the levee or, more commonly, across the road from the levee. The city of Mount Vernon is located adjacent to the DD 17 repair sites. Land use outside the city limits is largely agricultural and rural residential. Near DD 17 Site 2 is the Anacortes water treatment plant. Several highways and bridges are the area, including Interstate 5 and the Skagit River Bridge, and a railroad. Lions Park is located between DD 17 Site 1 and the Skagit River and provides walking trails and dog friendly green space for pedestrian recreation. Land use near DD 22 is primarily agricultural, as is most land use on Fir Island.

3.1.2 No Action Alternative

Implementation of the No Action Alternative would not be expected to result in any land use changes. Under the No Action Alternative, the levees would not be repaired, and, public infrastructure could be damaged or lost and local area traffic could be affected if flooding occurs due to breaches in weak sections of the levee. This could affect commercial traffic, access to private residences, evacuations, and emergency response services. Emergency flood fight efforts may occur to protect lives and improved property depending on the severity of flooding. These activities and local efforts to maintain the levees are expected to be insufficient to maintain existing land use within the floodplain landward of the levee.

3.1.3 Seepage Cutoff Trench on Riverward Side Alternative (Preferred Alternative)

Effects to land uses are expected to be temporary in nature with the proposed repair. Overall, there would be minor and temporary impacts to land use, utilities, and infrastructure. Land use in the project area would not change but may be disrupted temporarily by construction activities and equipment. Before work is started, a utility locate would be completed to verify the presence and absence of utilities in the construction footprints. Construction-related traffic may cause temporary increases to, and disruption of, local traffic. Flaggers and signs would be used, as needed, to direct traffic safely around the construction site. Existing infrastructure would not be altered in a way that changes or hinders its intended purpose and use. Damaged utilities and infrastructure would be replaced or repaired as necessary. Effects to land use, utilities, and infrastructure would be negligible.

3.2 WATER RESOURCES AND WATER QUALITY

3.2.1 Existing Conditions Pre-Flood (2021)

The Skagit River is designated for aquatic life uses as core summer salmonid habitat (Washington Administrative Code [WAC] 173-201A-602). The core summer habitat designation is characterized by the river's use from June 15 to September 15 as either salmonid spawning or emergence, adult holding, use as important summer rearing habitat by one or more salmonid species, or as foraging habitat by adult and sub-adult native char. Other common characteristic aquatic life uses for waters in this category include spawning outside of the summer season,

rearing, and migration by salmonids. In general, the upper reaches of the Skagit River meet state water quality standards. Most of the degraded water quality conditions occur in tributaries to the Skagit River and in the Samish Basin, while the Skagit River itself meets standards on most occasions (Skagit County 2008). Water quality standards (e.g., temperature, dissolved oxygen, and turbidity) are established based on the aquatic life use designation. In addition, the Skagit River is designated for primary contact recreational uses, all water supply uses, and all miscellaneous uses.

3.2.2 No Action Alternative

Under this alternative, the damaged levees could sustain further damage, which may lead to flood fighting measures and fill placement during future high-water events. This would increase sediment and turbidity in the river, which may be a minor concern during a flood event. If flood fighting efforts were unsuccessful and a levee fails, it could allow floodwater to transport debris, sediment, and pollutants back into the river from adjacent properties with substantial impacts to water quality and potential for sediment contamination. Adjacent areas include industrial, recreational, agricultural, and residential properties.

3.2.3 Seepage Cutoff Trench on Riverward Side Alternative (Preferred Alternative)

Under this alternative, the DD 17 and DD 22 levees would be repaired by constructing a seepage cutoff trench along a portion of the waterward toe of the levee sections experiencing seepage-induced foundation damage. All repair work would occur in uplands, sufficiently landward of the Skagit River OHWM to avoid all potential impacts to the riverbank and water column. Wetlands near the DD 17 Site 1 and DD 22 repair sites will be avoided. No fill will be placed in the wetlands, no construction equipment or personnel will enter the wetlands, and erosion control measures will be used to avoid and minimize the potential for eroded sediments to enter the wetlands. BMPs, including restrictions on fueling and prevention of fluid leaks from construction equipment, would be employed to prevent discharge of pollutants into the river and nearby wetlands. Materials used for the repair would be clean and contaminant free and purchased through a contract bidding process from vendors fully permitted by the state.

No trees, shrubs, or woody plants will be removed from the project areas during access or repair work. No impacts to existing shoreline shading, water temperature, or particulate organic matter inputs are anticipated. No effect to water resources or quality from this alternative is anticipated.

3.3 VEGETATION AND WETLANDS

3.3.1 Existing Conditions Pre-Flood (2021)

Wetlands: USACE staff identified and delineated two wetlands in the project area. One palustrine scrub-shrub wetland is located in a depression within a wooded area between the DD 17 Site 1 repair site and the Skagit River. A second palustrine scrub-shrub wetland is located in a depression at the base of the riverward slope of the DD 22 levee repair site on the edge of a wooded area. A combined wetland report for the DD 17 and DD 22 project areas is provided in Appendix C.

Vegetation: The lower Skagit River levees are highly managed to maintain levee safety standards and visibility for inspection. Most of the trees in the project area are small to medium size and tend to be one of three species: black cottonwood, willow, and red alder. Non-native species are prevalent on the levees through the lower Skagit River. Species such as Himalayan

blackberry, reed canary grass, Scotch broom, Japanese knotweed, and butterfly bush are common. Other plants found in the project area are salal and yarrow.

The DD 17 levee at Site 2 is a well-maintained grassed levee with a dirt and gravel pedestrian trail along the crest. No trees or other woody vegetation are present on the levee or riverward bench at this location. At Site 1, DD 17 is also covered by grass on both slopes with a dirt and gravel pedestrian trail along the crest. Trees and shrubs are present throughout the bench between the riverward levee slope and the Skagit River. Trees near the levee include red alder, balsam poplar, and black cottonwood, with some Pacific willows around the wetland.

At the DD 22 repair site the riverward and landward slopes are typically well maintained with a grassy surface that is mowed regularly along the crown and side slopes. The crest of the levee has a gravel path along its length, with small patches of Himalayan blackberry and other weeds. Riverward of the levee is a roughly 75-foot-wide grassy bench that leads down to the river, where a single-tree-wide strip of vegetation lines the riverbank. Active farm fields dominate the landscape on the landward side of the levee.

3.3.2 No Action Alternative

The DD 17 and DD 22 levees may start to fail depending upon the magnitude and duration of future flood events. Under these circumstances, a flood fight would likely be conducted to try to save the levee and to protect lives and improved properties from flooding. Construction during a flood event is difficult and is completed as quickly as possible; therefore, vegetation would be removed or buried as needed to accomplish the levee rescue under difficult construction conditions, regardless of the type of vegetation. Levees typically are not revegetated following the flood fight actions due to the rapid nature of construction and high-water levels. If a flood fight was unsuccessful and the levee failed, inundation and possible channel migration could have impacts on area vegetation.

3.3.3 Seepage Cutoff Trench on Riverward Side Alternative (Preferred Alternative)

Under this alternative, no trees, shrubs, or other vegetation would be cleared from the construction footprint, staging areas, or access routes. The only vegetation that will be impacted by construction is grass and other ground cover species that may be present on the slopes and crest of the levee, and along the toe where seepage cutoff trench excavation will occur. Topsoil will be salvaged from excavated areas and replaced once the trench is backfilled, and all disturbed areas will be hydroseeded. The effects of this alternative on vegetation will be negligible.

3.4 THREATENED AND ENDANGERED SPECIES

3.4.1 Existing Conditions Pre-Flood (2021)

3.4.1.1 Chinook

Puget Sound Chinook salmon was listed as threatened on March 24, 1999 and revised on June 28, 2005 (NMFS 1999; NMFS 2005a). Critical habitat was designated for Puget Sound Chinook salmon in 2005 and includes the Skagit River in the project area (NMFS 2005b).

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 do use smaller channels and streams with sufficient flow. Due to their large size, Chinook salmon can spawn in

larger substrate (up to 14 cm or about 5.5 inches) than most other salmon species (Anchor Environmental, L.L.C. 2003).

The Washington Department of Fish and Wildlife (WDFW) Priority and Habitats and Species List database (2018a) identifies six stocks of Chinook in the Skagit River: 1) Upper Sauk (run: Spring, status: depressed), 2) Suiattle (run: Spring, status: healthy), 3) Cascade (run: Spring, status: depressed), 4) Upper Skagit (run: Summer, status: depressed), 5) Lower Skagit (run: Fall, status: depressed), and 6) Lower Sauk (run: Summer, status: depressed). Summer-run Chinook salmon are supplemented by hatchery releases upstream of the action area. The Skagit River has four life history strategies for wild Chinook. There are three ocean-type strategies: 1) Fry migrants, which migrate quickly to Skagit Bay after emergence, 2) Delta rearing migrants, which migrate quickly downstream after emerging, but rear in the estuary for several weeks to months, and 3) parr migrants, which rear for a couple of months in freshwater before moving through the estuary. The fourth life history strategy is the stream-type Chinook, or yearlings, which rear in freshwater for over 1 year. Spring runs of Chinook tend to have a higher proportion of stream-type Chinook, roughly 50 percent (SRSC and WDFW 2005). A study by Beamer et al. (2010) showed that the majority of juvenile Chinook rearing in freshwater portions of the Skagit River prefer pool, glide, and bank habitat. Smolt trap data in the mainstem of the lower Skagit River suggests that ocean-type populations dominate the juvenile out-migration (Seiler et al. 1995, Myers et al. 1998); however, stream-type Chinook are present as well.

Juvenile outmigration occurs from March through late July. Adult upstream migration occurs from February through July for spring and summer Chinook and July through November for fall Chinook (WDFW 2007). All Skagit River populations of Chinook transit the action area during migration. All the stocks could be present as upstream migrating adults when the upland levee repair work will occur. Outmigrating juveniles could be present during the months of June and July. Stream type juveniles could also be present during the upland levee repair work, albeit in low numbers.

The lower Skagit mainstem/tributaries Chinook stock spawning takes place in the mainstem Skagit River and tributaries downstream from the Sauk River typically in October (SRSC2005). However, the spawning area identified by WDFW does not overlap with, and is not adjacent to, upland repair work at the DD 17 and DD 22 repair sites (WDFW 2018b). All other populations of Skagit River Chinook spawn further upstream in the Skagit River and its tributaries.

3.4.1.2 Steelhead

The Puget Sound Steelhead distinct population segment (DPS) was listed in 2007 (NMFS 2007). Critical habitat for steelhead was designated in 2016 and includes the Skagit River in the project area (NMFS 2016).

Steelhead exhibit considerable diversity in age at smoltification, age at return or maturation, and spawning timing. Steelhead can also be repeat spawners (iteroparity). They generally reside longer in freshwater than salmon species (commonly 1 to 4 years) and use diverse tributary habitats with cool, clean water. Channel features such as side channels, adjacent small tributaries and floodplains, and abundant complex woody material and coarse substrate (boulders and cobble) provide important habitat for juvenile steelhead, including as cover from predators and as refuge from fall and winter floods (NMFS 2019).

Skagit River steelhead include a winter and summer run. The project area is a migration corridor for upstream migrating adults and downstream movement of juveniles migrating to saltwater

environments. Winter run steelhead enter the Skagit River as adults from November through April. Summer run steelhead return to freshwater from May to October (NMFS 2007 and WDFW 2007). The spawning area of the mainstem population extends from roughly one mile upstream of the I-5 Bridge (river mile 22.5) to the lower headwaters of the Skagit Basin (WDFW 2002). All other populations spawn in the headwaters of the river. Spawning typically occurs from March through June but can be as early as January (NMFS 2007 and WDFW 2007). Post-spawn adults exit the river from April through June. Summer steelhead reside for extended periods in deep pools (PSSTRT 2013). Most Skagit River steelhead migrate to the ocean after two years, with some doing so after one or three years (NMFS 2005c). Outmigration typically occurs from April to mid-May (NMFS 2007), although in the Skagit River system it has been shown to extend from March to August (WDFW 2007).

Juvenile steelhead may be present year-round since spawning areas are close in proximity and the juveniles spend multiple years in freshwater before migrating. Multiple age classes of juveniles may be present in the vicinity including fry and yearlings.

3.4.1.3 Bull Trout

The Coastal-Puget Sound bull trout DPS was listed as threatened on November 1, 1999 and is thought to contain the only anadromous form of bull trout in the coterminous U.S. (USFWS 1999). Critical habitat was originally designated for bull trout in 2005 and revised in 2010 and includes the Skagit River in the project area (USFWS 2010).

Bull trout prefer cold streams, but are occasionally found in larger, warmer river systems and may use certain streams and rivers in the fall and winter when water temperatures seasonally drop. Because bull trout inhabit side channels and the margins of streams, they are highly sensitive to flow patterns and channel structure. They need complex forms of cover such as complex woody material, undercut banks, boulders, and pools to protect them from predators and to provide prey. Unlike other salmonids such as Chinook salmon, bull trout survive to spawn year after year. Since many populations of bull trout migrate from their natal tributary streams to larger water bodies such as rivers, lakes and saltwater, bull trout require two-way passage for repeated spawning as well as foraging.

Bull trout express both resident and migratory life history strategies (Rieman and McIntyre 1993). Resident forms complete their entire life cycle in the tributary or nearby streams in which they spawn and rear. Migratory bull trout spawn in tributary streams, where juvenile fish rear before migrating to either a lake (adfluvial form; Downs et al. 2006), river (fluvial form; Fraley and Shepard 1989), or saltwater in certain coastal areas (amphidromous; Brenkman and Corbett 2005). Juvenile bull trout from fluvial populations spend 1 to 4 years in their natal streams and then migrate to larger streams or rivers (Goetz et al. 2004; Goetz 2016).

Bull trout in the Skagit Basin are known to migrate up to 121 miles between Puget Sound and headwater spawning grounds (USFWS 2004). Based on monitoring in the Skagit Basin, anadromous bull trout sub-adults (fish that are not sexually mature) first migrate to the estuary at the mouth of the Skagit River in April through June, then re-enter the river June through August. Most adult fish enter the estuary from February through May and return to the river from May through July. The anadromous and fluvial fish ascend the river to upstream spawning grounds beginning in May and continuing into July with a few migrants in August. The upstream movement of fish occurs as temperatures exceed 60-64 °F (Rieman and Chandler 1999). Sub-adults move between the estuary and the lower Skagit River throughout the year at similar times to the adults (Goetz 2016). The key spawning and early rearing habitat are found in the upper portion of the Skagit River basin outside of the project area (USFWS 2004, USFWS 2015).

Spawning occurs from late August to early or mid-November but is more typically seen between the first week in October and the first week in November when water temperature drops between 46.4 °F and 48.2 °F (WDFW 1998). After the fall rains, sub-adult and adult bull trout migrate downstream to the lower river to overwinter, with a small number migrating into Puget Sound.

3.4.1.4 Southern Resident Killer Whale

Southern Resident Killer Whales (SRKWs) were listed as endangered on February 16, 2006 (NMFS 2005d). Their customary range is thought to be primarily within Puget Sound, and through and within the Georgia and Johnstone Straits. SRKWs occasionally migrate as far south as Monterey Bay, California and as far north as northern Haida Gwaii (formerly named the Queen Charlotte Islands) in Canada (Krahn et al. 2004). Critical habitat was originally designated for the SRKW in 2005 (NMFS 2006) and revised in 2021 (NMFS 2021). The action area is not designated as SRKW critical habitat, but critical habitat is designated in the Puget Sound.

SRKWs are large mammals requiring abundant food sources to sustain metabolic processes throughout the year. Prey availability changes seasonally, and SRKWs appear to depend on different prey species and habitats throughout the year. The seasonal timing of salmon returns to southern Puget Sound River systems likely influences the movements of SRKWs out of core summer areas. Whales may travel significant distances to locate prey aggregations sufficient to support their numbers (NMFS 2006). SRKWs spend large amounts of time in “core” inland marine waters coinciding with congregations of migratory salmon returning from the Pacific Ocean to spawn in U.S. and Canadian Rivers (NMFS 2006). The topographic and oceanographic features in these core areas include channels and shorelines that congregate prey and assist with foraging. Their core range during the spring, summer, and fall includes the inland waterways of Puget Sound, Strait of Juan de Fuca, and Southern Georgia Strait. Little is known about the winter movements and range of the SRKWs (NMFS 2005d); however, recent observations revealed Columbia River Chinook stocks provide a majority of the SRKW winter diet indicating they are off the coast of Washington during winter (Hanson et al. 2021).

SRKWs do not use the Skagit River and even though SRKWs do not directly occupy the shallow waters of the river, they show a strong preference for Chinook salmon (primarily Fraser River Chinook salmon), with chum salmon as the second-most preferred (NMFS 2008). The survival of these whales has been shown to positively correlate with Chinook salmon abundance (Ford et al. 2010). Seventy-two percent of the 396 salmon taken by killer whales sampled from 1974 to 2004 were Chinook, despite the much higher abundance of the other species (Ford et al. 2005). SRKWs likely include Chinook salmon from the Skagit River basin in their diet.

3.4.2 No Action Alternative

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 with associated turbidity and potential pollution impacts to the river. A flood fight would likely be undertaken to prevent a breach and could require in-water work that could affect Chinook, steelhead, and bull trout. Emergency actions would entail more in-water work and could have greater impact on aquatic dependent ESA-listed species habitat than a scheduled repair 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 and possible channel migration could have considerable impacts on ESA-listed fish species, and possibly SRKWs.

3.4.3 Seepage Cutoff Trench on Riverward Side Alternative (Preferred Alternative)

3.4.3.1 Chinook, Steelhead, and Bull Trout

This alternative will have no effect on Chinook, steelhead, and bull trout. USACE made no effect determinations for these species because the proposed action does not entail any in-water work. Critical habitat for these species is designated within the Skagit River adjacent to the project areas but will not be affected by the levee repair work because there is no in-water work, no riparian vegetation clearing, and erosion control BMPs will be implemented to avoid water quality impacts. Access routes have been designated to avoid vegetation clearing along the bank of the Skagit River, and erosion and sediment control measures will be employed during construction to ensure there are no direct or indirect effects to the river channel, water column, or riparian vegetation. As such, USACE has made a determination of no effect for these species and their designated critical habitat.

3.4.3.2 Southern Resident Killer Whale

SRKWs do not enter the Skagit River and so will not be directly impacted by the repair activities proposed under this alternative. There would also be no indirect impacts to SRKWs via impacts to their prey, such as Chinook and chum salmon, because there is no in-water work associated with this alternative and no impact to riparian vegetation.

3.5 FISH AND WILDLIFE

3.5.1 Existing Conditions Pre-Flood (2021)

The Skagit River through the project reach provides migratory and rearing habitat for all the salmon species that use the Skagit River, as well as habitat for a diversity of other aquatic and terrestrial species. Salmonid species in the project area include Chinook, pink, chum, steelhead, coho, sockeye, bull trout, rainbow trout, cutthroat trout, and kokanee (WDFW 2018a). The Skagit River, with its 2,900 tributaries, is the only river system outside of Canada and Alaska that supports all five species of Pacific salmon (WDOE 2016).

The urban and rural areas surrounding the project sites are frequented by a variety of wildlife species. Mammals observed within the Skagit Wildlife Area downstream of the project site include black-tailed deer, coyote, raccoon, opossum, skunk, beaver, muskrat, river otter, red fox, and harbor seals (WDFW 2006).

The Skagit Delta is one of the major waterfowl wintering areas in the Pacific Flyway (WDFW 2006), the north-south migratory corridor used by birds to travel along western North and South America during their spring and fall migrations. At least 180 species of birds have been documented in the project area (Audubon 1997). A diverse group of shorebirds found near the project sites includes dunlin, western sandpiper, black-bellied plover, greater yellowlegs, Wilson's phalarope, and various waterfowl such as ducks, geese, and swans (Audubon 1997). Birds of prey include osprey, bald eagle, northern harrier, red-tailed and rough-legged hawks, short-eared and barn owls, and the occasional golden eagle. In addition, a diverse assemblage of smaller upland birds occurs in the project area.

Small rodents such as various species of mice, shrews, voles, and moles are numerous (WDFW 2006). Reptiles that occur in the area include garter snake and painted turtle, while amphibians include several species of frogs and salamanders.

3.5.2 No Action Alternative

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 with associated turbidity and potential pollution impacts to the river. A flood fight would likely be undertaken to prevent a breach. Such activities would likely cause fish and wildlife to leave and avoid the area. Emergency actions would likely entail more in-water work and vegetation clearing that would have a greater impact on fish and wildlife than a scheduled repair action. The effects to fish and wildlife associated with emergency flood actions is difficult to quantify or predict but does have the potential to be considerable if the flood event warrants repairs at a damaged site.

3.5.3 Seepage Cutoff Trench on Riverward Side Alternative (Preferred Alternative)

Repair work could impact wildlife in the vicinity of the project area during construction. Wildlife in and around the project area could be affected by increased noise, vibration, dust, and human activity associated with the proposed levee repair work. Impacts to wildlife could include area avoidance and disruptions to nesting, roosting, feeding, loafing, and movement through the area. Small burrowing animals, such as gophers and moles, could be displaced or injured by construction equipment during excavation of the seepage cutoff trench. No impacts to fish or other aquatic species are anticipated because no in-water work will occur, and BMPs will be employed during construction to prevent sediment and pollutants from entering the Skagit River. While the proposed project may result in disturbance or harm to terrestrial or avian wildlife in the vicinity of the project area, these impacts are anticipated to be minor.

3.6 AIR QUALITY AND NOISE

3.6.1 Existing Conditions Pre-flood (2021)

The Environmental Protection Agency's (EPA) 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 EPA sets *de minimis* thresholds for pollutants in nonattainment areas (40 CFR § 93.153). Once a nonattainment area has attained and maintained NAAQS, they may be redesignated as "maintenance areas". According to the Washington Department of Ecology (Ecology), all areas of Washington, except a small area in Whatcom County, currently meet air quality standards (Ecology 2022). No air quality exceedances exist in Skagit County within the project area.

The project sites and surrounding areas have been developed, with many human activities contributing to ambient noise levels. Human-related existing noise sources at the project site include traffic, construction, internal combustion engines, and agricultural activities.

3.6.2 No Action Alternative

The No Action Alternative would have no direct effect 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 similar air emissions and noise effects as the preferred alternative but could differ depending on the scope of the emergency action. Effects to air quality and noise would be

temporary and within the range of intensity of noise produced by on-going activities in the area. Effects on air quality and noise would be negligible.

3.6.3 Seepage Cutoff Trench on Riverward Side Alternative (Preferred Alternative)

Air Quality: Construction vehicles and heavy equipment used during the proposed repairs would generate increased gasoline and diesel exhaust fumes. The small area of construction and the short duration of the work would limit the impact to air quality. Emissions generated by the construction activity are expected to be minor, short-term, and well below the *de minimis* threshold. Unquantifiable but insignificant exacerbation of effects of carbon dioxide emissions on global climate change would be anticipated. Effects on air quality would be negligible.

Noise: The proposed repairs would generate localized and temporary increases in noise levels in excess of ambient sound levels in the project area. Equipment operators and construction workers in the project area would be required to use ear protection. Noise generated by the proposed levee repair work is not anticipated to reach harmful levels for members of the public outside the project area. No long-term change in sound levels would occur from the repairs. Effects on noise and air quality from this alternative will be minor.

3.7 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 (TCPs).

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 CFR § 1508.1). Similarly, under 36 CFR § 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). To be determined a historic property, the resource must meet one or more of the criteria established by the National Park Service, and outlined in 36 CFR § 60.4, that make the resource eligible for inclusion in the NRHP. Procedures for identification, evaluation, and treatment of cultural resources are contained in a series of Federal and state laws, regulations, and agency guidelines. Archaeological, architectural, and Native American resources are also protected by a variety of laws and their implementing regulations: the Archaeological and Historic Preservation Act of 1974, the Archaeological Resources Protection Act of 1979, the American Indian Religious Freedom Act of 1978, and the Native American Graves Protection and Repatriation Act (NAGPRA) of 1990 (all as amended).

As stipulated in 36 CFR § 800.8, Section 106 can be coordinated with the requirements of NEPA. Preparation of this EA can be sufficient in fulfilling the required determination of effects for Section 106 compliance. Section 106 requires Federal agencies to afford the Advisory Council on Historic Preservation (ACHP) and other interested parties a reasonable opportunity to comment.

Typically, cultural resources are subdivided into archaeological resources (pre-contact, contact, and post-contact sites where human activity has left physical evidence) or architectural

resources (buildings or other structures or groups of structures that are of historic or aesthetic significance). Archaeological resources comprise areas where human activity has measurably altered the earth or intact deposits of physical remains are found.

TCPs or sacred sites can include archaeological resources, structures, neighborhoods, prominent topographic features, habitats, or areas where plants, animals, or minerals exist that Native Americans or other cultural groups consider to be essential for the preservation of traditional cultural practices, as stated in National Register Bulletin 38.

To identify cultural resources that could be potentially affected by the Proposed Action, the area within the archaeological, architectural, and Native American resources that would have the potential to be affected must be determined. As defined by 36 CFR § 800.16(d), the area of potential effect (APE) represents the "... geographic area or areas within which an undertaking [i.e., Proposed Action] may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist." In delineating the APE, factors considered include the elements of the Proposed Action and the existence of buildings, vegetation, and terrain with respect to potential visual or audible impacts.

3.7.1 Existing Conditions Pre-flood (2021)

The Skagit Delta and adjacent uplands were used and occupied by human populations for a considerable span of time. Although the exact duration is unknown, evidence that supports an estimate of 12,000 years was discovered elsewhere in the Puget Sound region and on the Olympic Peninsula. However, within the Skagit Delta, the oldest cultural resources found date to less than 5,000 years ago.

Before the 1850s, the Skagit Delta constituted a part of the territory associated with several culturally similar Native American groups. The northern delta was occupied by the Swinomish and Samish. The North Fork and adjacent areas were inhabited by the Lower Skagit. The South Fork was Kikiallu territory. The Upper Skagit resided in the area north and east of Mount Vernon. European American (Euro-American) settlement and dislocation of the resident Native American populations began in the late 1850s. The Point Elliott Treaty of 1855 required most of the local Native Americans to resettle outside the delta on either the Swinomish or Tulalip Reservations.

The first Euro-Americans homesteaded along the Skagit River beginning in 1859. In 1863, the first trading post in the delta was opened at the point of divergence between the North and South Forks of the river. Six years later, the post became the site of Skagit City, the earliest river town. As the area's population grew, many additional towns were founded. Today, Mount Vernon, Burlington, and Sedro-Woolley remain important centers of population and commerce. The early settlers quickly recognized the need for dikes to protect their holdings against the Skagit River's frequent floods. Initially, levees were constructed and maintained individually by adjacent landowners, but the magnitude of the task soon prompted a collective action, thus forming the dike districts (DD) in the late 1800s and early 1900s.

USACE conducted a literature search and record review through the Washington State Department of Archaeology and Historic Preservation's (DAHPP) Washington Information System for Architectural and Archaeological Records Data (WISAARD) on February 15, 2023 for DD 17. The review indicated that there has been one previous cultural resources study within the proposed project area (Dailide 2015). DD 17 was built in 1895. The levee has experienced multiple modifications and repairs over the years. In the 1990s most of the Skagit levee system was completely rebuilt or upgraded. DD 17 was determined not eligible for listing on the NRHP

in 2015 (Property ID: 679028). Other than the levee, there are no other known historic properties in the APE.

A literature search and record review were conducted through WISAARD on February 15, 2023 for DD 22. The review indicates that there have been no previous historic property surveys within the APE. DD 22 was built in 1895. The levee has experienced multiple modifications and repairs over the years. In the 1990s, most of the Skagit levee system was completely rebuilt or upgraded. Research indicates that the DD 22 levee is over 50 years old. Since the proposed disturbance would not impact the levee directly, the resource and its defining features would remain intact as a flood control system. The DD 22 levee system has been subject to multiple rehabilitations, redesigns, and repairs. Because of these actions, there has been loss of character defining qualities and integrity. Based on the information available, the USACE archaeologist is recommending that the Skagit DD 22 levee is not eligible for listing on the NRHP.

USACE notified DAHP and affected Tribes regarding the proposed action in Washington State. In February 2023, USACE notified the DAHP, Samish Indian Nation, Sauk-Suiattle Indian Tribe, Swinomish Indian Tribal Community, Tulalip Tribes, and the Upper Skagit Indian Tribe that USACE planned to undertake the repair and install a seepage trench along the waterward toe of the DD 17 and DD 22 levees where seepage was identified in 2021.

USACE requested information on the presence of known historic properties within the emergency footprint. USACE received no comments from DAHP or the notified Tribes.

Based on the literature review and a records search, cultural resources survey, and coordination with DAHP and the contacted Tribes, USACE determined that the proposed repairs would have no adverse effect to historic properties within the APE that are listed in, or determined eligible for, listing in the NRHP. For DD 17 Sites 1 and 2, and DD 22, the DAHP concurred with the findings. A finding of No Adverse Effect was determined for DD 17 Sites 1 and 2 (DAHP Project: 2023-011-00532), and DD 22 (DAHP Log: 2023-02-00785). USACE does not anticipate that the proposed project will adversely affect any historic properties.

3.7.2 No Action Alternative

The No Action Alternative would result in continued degradation of the levees through natural processes. It is likely that at an unknown time the levees would fail causing irreparable damage to the structure in addition to potentially causing adverse effects to historic properties and unevaluated cultural resources the levees are currently protecting.

3.7.3 Seepage Cutoff Trench on Riverward Side Alternative (Preferred Alternative)

Under this alternative, the DD 17 and DD 22 levees would be repaired and would avoid adverse effects to historic properties and unevaluated cultural resources. Based on the literature review and a records search, cultural resource survey, and coordination with DAHP and the contacted Tribes, USACE determined that the proposed repairs would have no adverse effect on historic properties within the APE that are listed in or determined eligible for listing in the NRHP. Effects on cultural resources would be negligible.

3.8 ENVIRONMENTAL JUSTICE

The following Executive Orders (EO) are pertinent to environmental justice:

1. EO 12898: Environmental Justice in Minority Populations and Low-Income Populations,
2. EO 14008: Tackling the Climate Crisis,

3. EO 13985 & 14091: Advancing Racial Equity and Support for Underserved Communities Through the Federal Government
4. 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 race, color, national origin, or income regarding the development, implementation, and enforcement of environmental laws, regulations, and policies, with no group bearing a disproportionate burden of environmental harms and risks. 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.

3.8.1 Existing Conditions Pre-flood (2021)

USACE conducted an analysis of demographic data to derive information on the approximate locations of low-income and minority populations in the project area. Since the analysis considers disproportionate impacts, three areas were defined to compare the area affected by the project and a larger regional area that serves as a basis for comparison and includes the area affected. The larger regional area is defined as the smallest political unit that includes the affected area and is called the community of comparison. For purposes of the analysis, the affected area covers approximately 14-square-miles that include the areas that will experience the direct effects of construction and would also potentially be exposed to increased flood risk if the levees were to fail. Mount Vernon is the community of comparison. Demographic information was also compared against the State of Washington and United States for reference. The EPA's Environmental Justice (EJ) Screening and Mapping tool, also known as the EJScreen tool, was used to obtain the study area demographics (EPA 2023b, Appendix D).

The aggregate minority population is estimated at 45 percent in the affected area, 33 percent in the State of Washington, and 40 percent for the United States (EPA 2023b, Appendix D). The aggregate population percentage in the affected area does not exceed 50 percent and is more than the state average. The EO does not provide criteria to determine if an affected area consists of a low-income population. For purposes of the assessment, the Council on Environmental Quality (CEQ) criterion for defining low-income population was adopted to identify whether the population in an affected area constitutes a low-income population. An affected geographic area is considered to consist of a low-income population (i.e., below the poverty level, for purposes of this analysis) where the percentage of low-income persons: 1) is greater than 50 percent, or 2) is meaningfully greater than the low-income population percentage in the general population or other appropriate unit of geographic analysis. The U.S. Census Bureau poverty assessment weighs income before taxes and excludes capital gains and non-cash benefits (such as public housing, Medicaid, and food stamps). The aggregate

low-income population is estimated at 41 percent in the affected area, 24 percent in the state of Washington, and 30 percent for the United States (EPA 2023b, Appendix D). The percentage in the affected area (41 percent) does not exceed 50 percent. Therefore, the affected area is not considered to have a high concentration of low-income population.

The EPA's EJScreen tool also provides an index on environmental indicators (EPA 2023b). The EJ index is a combination of environmental and demographic information. There are 12 EJ Indices in EJScreen reflecting the 12 environmental indicators. The EJ Index uses the concept of "excess risk" by looking at how far above the national average the block group's demographics are. EPA considers a project to be in an area of potential EJ concern when an EJScreen analysis for the impacted area shows one or more of the 12 EJ Indices at or above the 80th percentile in the nation and/or state. The affected area is over the 80th percentile for 3 of the EJ indices. The Air Toxics Cancer Risk is between the 80th-90th percentile in the USA, the Air Toxics Respiratory Hazard Index (HI) is between the 80th-90th percentile in the USA, and the Wastewater Discharge is in the 85th percentile in Washington state (EPA 2023a, Appendix D). According to the EPA, air toxics are defined as airborne substances that cause or may cause serious health, environmental, or ecological effects (EPA 2023a). EPA has identified 188 pollutants as air toxics in Section 112 of the Clean Air Act (EPA 2023a).

USACE also examined the CEQ's Climate and Economic Justice Screening Tool for disadvantaged communities as part of the environmental justice analysis. 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. Two such census tracts were identified in the project area in Mount Vernon (Figure 4; Figure 5). Disadvantaged communities in the more northern tract (53057952200) include populations subject to the consequences of climate change, including populations in the 94th percentile for expected population loss rate (fatalities and injuries resulting from natural hazards each year), 96th percentile for projected flood risk (risk to properties from projected floods... within 30 years), 85th percentile for low income (people in households in which income is less than or equal to twice the Federal poverty level), and 90th percentile for proximity to risk management plan facilities (count of risk management plan [RMP] facilities within 5 kilometers) (CEQ 2023).

Disadvantaged communities in the southern tract (53057952500) also include populations subject to the consequences of climate change, including populations in the 96th percentile for expected population loss rate, 96th percentile for projected flood risk, 69th percentile for low income, 90th percentile for proximity to risk management plan facilities, 91st percentile for traffic proximity and volume (count of vehicles at major roads within 500 meters), and 91st percentile for underground storage tanks and releases (formula of the density of leaking underground storage tanks and number of all active underground storage tanks within 1500 feet of the census tract boundaries). The communities in both tracts are identified as disadvantaged because they have a high proportion of low-income households and have a high probability of being affected by flooding that is likely to be exacerbated by climate change.

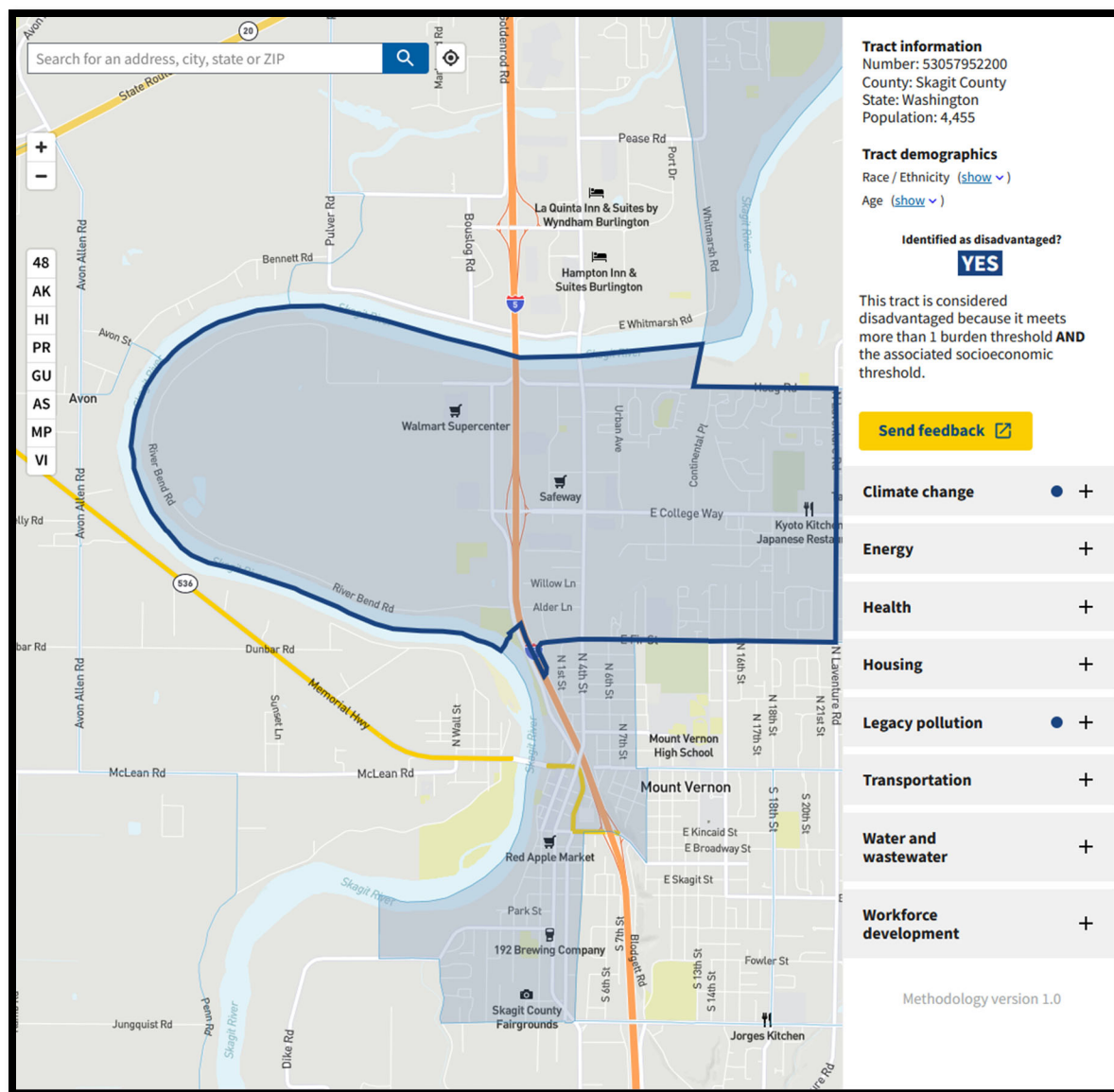


Figure 4. Census tract 53057952200 with disadvantaged communities in the affected area of the project.

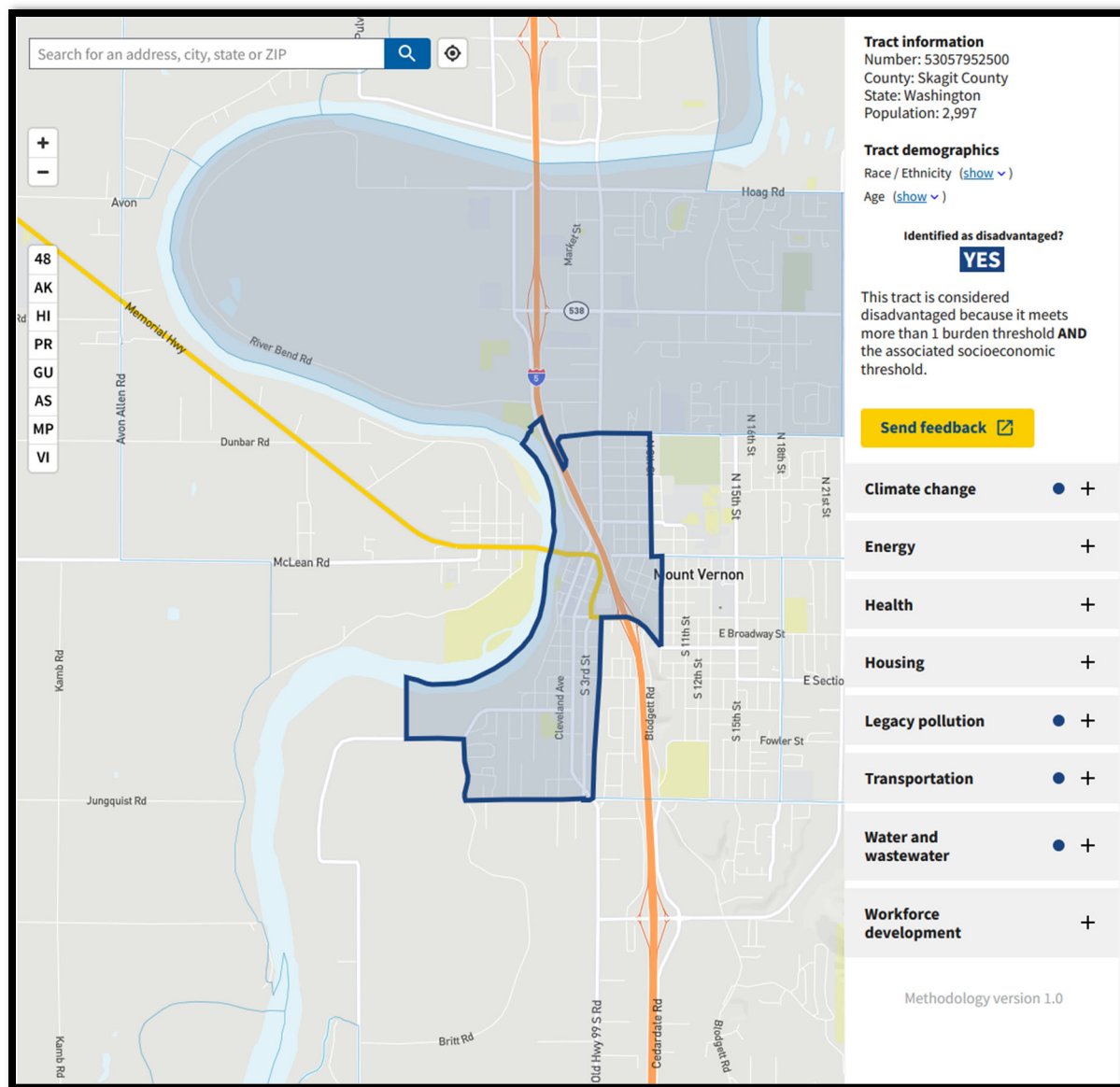


Figure 5. Census tract 53057952500 with disadvantaged communities in the affected area of the project.

3.8.2 No Action Alternative

The Skagit DD 17 and DD 22 levees provide a 50-year LOP in their undamaged condition to Mount Vernon and unincorporated Skagit County. In the damaged condition, the levees presently provide an approximate 1-year LOP. The levees would likely be further damaged in future flood events and could fail, which would endanger lives, homes, businesses, agricultural lands, public infrastructure, and other improved property. Disadvantaged communities in the affected area would be at an increased risk of flood-related impacts, as described in section 3.8.1.

3.8.3 Seepage Cutoff Trench on Riverward Side Alternative (Preferred Alternative)

The preferred alternative to repair the existing levee systems does not involve a facility siting decision and would not disproportionately affect minority or low-income populations nor have any adverse human health impacts. The area is over the 80th percentile for three of the EJ indices. The project would not cause long-term increases to any of the 12 EJ indices. Only minor and temporary increases related to construction equipment emissions are anticipated. Other EJ indices unrelated to emissions would remain unaffected (e.g., Superfund proximity, wastewater discharge indicator). The project maintains flood protection for the affected area. Communities, including disadvantaged communities, and would experience greater flood risk if the preferred alternative is not implemented. No interaction with other projects would result in disproportionate impacts. No cumulative impact to environmental justice is expected from interaction of the proposed levee repairs with other past, present, or reasonably foreseeable projects. Further, Tribal governments that are also environmental justice communities in the project area have been engaged and informed about the proposed action. The proposed action would not directly or through contractual or other arrangements, use criteria, methods, or practices that discriminate based on race, color, or national origin, nor would it have a disproportionate effect on minority or low-income communities.

The preferred alternative, which repairs the Skagit DD 17 and DD 22 levees to their pre-damage LOP, would provide a universal benefit to persons, including disadvantaged, minority, low-income, and Tribal communities, residing in the floodplain. Thus, there are no disproportionate adverse impacts imposed on those communities, as compared with the larger reference population, through implementation of the preferred alternative.

3.9 RECREATION

3.9.1 Existing Conditions Pre-flood (2021)

There are four outdoor recreational facilities near the DD 17 Site 1 repair site. Directly adjacent to the repair site is Lions Park. Lions Park is a 1.6-acre park with sheltered and unsheltered picnic areas, playground equipment, and public restrooms. A paved waterfront trail runs from Lions Park along the levee crest, through Skagit River Walk Park to the south, and on to downtown Mount Vernon. Across the river from the Skagit River Walk Park is Edgewater Park, a 54-acre riverfront park with a boat launch, playground, ball fields, and community event facilities. There are no recreational facilities near the DD 17 Site 2 or DD 22 repair sites. However, at all three repair site locations the levee top is used as an unofficial recreational trail. Both levees are used for river access and other recreational activities such as fishing, hiking, dog-walking, birdwatching, photography, and bicycling.

3.9.2 No Action Alternative

A higher risk exists for flood damage to recreation under the No Action Alternative. Recreational use and access behind the levee could be interrupted or damaged if the levees are not repaired and flooding occurs due to breaches in weak sections of the levee. Depending on the severity of flooding, emergency flood fight efforts may occur to protect lives and improved property. These activities and local efforts to maintain the levees are expected to be sufficient to maintain existing recreation. Effects on recreation would be negligible.

3.9.3 Seepage Cutoff Trench on Riverward Side Alternative (Preferred Alternative)

A temporary disruption would occur to recreational use at each levee repair site under this alternative. Access to the repair sites will be prohibited during construction to ensure public

safety. Access will be restored when repairs are complete with no long-term negative impacts to recreation anticipated. Effects to recreation would be negligible.

4 UNAVOIDABLE ADVERSE EFFECTS OF THE PREFERRED ALTERNATIVE

Unavoidable adverse effects associated with the preferred alternative at each site will include (1) temporary and localized increases in noise, activity, and emissions, which may affect terrestrial and avian wildlife in the area; (2) temporary and localized disruption of local traffic by construction vehicles and activity; and (3) irretrievable commitment of fuels and other materials for repairs.

5 CUMULATIVE EFFECTS

The CEQ regulations implementing NEPA define cumulative effects as the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency (Federal or non-Federal) or person undertakes such other actions (40 CFR § 1508.1(g)(3)).

The Skagit River Basin has been substantially modified in the last 150 years. Dams, levees, irrigation projects, and other water extraction and control projects have confined the river, impacted water quality, and altered flows. Riparian habitat has been lost, side channel and other floodplain features have been disconnected from the river, and salmonid populations have steeply declined.

As the local non-Federal sponsors, Dike District 17 and Dike District 22 continue to maintain the levee system and conduct periodic repairs and vegetation maintenance to the levees. These actions by the local sponsors maintain the status quo. Future flooding on the Skagit River and its tributaries is likely to damage non-Federal structures. Non-Federal entities would likely undertake at least some repair actions under those circumstances and may seek Federal assistance with repairs or emergency responses. The Skagit River experienced record flooding in November 2021. It is possible that additional damaged sites were created by this event and the local sponsors could request Federal assistance from USACE for additional repairs. If USACE determines that the damages are eligible for assistance under the P.L. 84-99 Levee Rehabilitation Program, then additional repairs would take place. The scope and effects of those actions would likely be similar to those associated with the current proposed action.

Historical modifications within the watershed have included commercial and residential development, farming, and extensive road development, which have substantially modified the river, watershed hydrology and water quality, and habitat in the floodplain. Agricultural practices would continue to occur throughout the basin in the foreseeable future, consistent with current practices. Future development, including residential or commercial construction, road development, and expansion of water, sewer, and other utilities, is expected as the surrounding community and regional population grow, and these would add to the effects of past activities.

Repairs to the Skagit levees, as addressed in this EA, would maintain but not appreciably add an increment of ecological loss in the active floodplain at the repair sites. When evaluated in the context of past, present, and reasonably foreseeable future actions, the proposed repairs would not result in significant incremental detrimental effects when considered in conjunction with other past and present actions, and future proposals.

6 COMPENSATORY MITIGATION

The proposed Federal action described in section 2.5 will not result in the discharge of dredged or fill material into waters of the U.S., nor the loss of waters of the U.S. As such, no compensatory mitigation is required under the CWA, nor is any proposed.

7 COORDINATION

The following agencies and entities have been involved with the environmental coordination of the proposed project:

- Skagit County Dike District 17
- Skagit County Dike District 22
- Washington State Department of Ecology
- Washington State Department of Archaeology and Historic Preservation
- Samish Indian Nation
- Sauk-Suiattle Indian Tribe
- Skagit River System Cooperative
- Swinomish Indian Tribal Community
- Tulalip Tribes
- Upper Skagit Indian Tribe

USACE issued a Notice of Preparation (reference number PMP-23-02) for the proposed repairs of the Skagit DD 17 and DD 22 levees on April 5, 2023, for a 30-day public review and comment period. No public comments were received during the public comment period. Tribal comments received during the comment period are listed in Appendix H.

8 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.

8.1 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 or near the project areas.

8.2 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. Amendments in 1972 added to penalties for violations of the act or related regulations.

A USACE biologist attended a site visit during the alternatives formulation phase and did not observe any eagle nests at the project sites (USACE 2022a). Additionally, as recommended by

the U.S. Fish and Wildlife Service (USFWS), the biologist reviewed iNaturalist, which did not display any eagle nests within the project vicinity (iNaturalist 2023). No take of either bald or golden eagles is likely through the proposed action because there are no known nests near any of the project areas.

8.3 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. The operation of heavy equipment, removal and placement of rock, and the operation of vehicles during construction will result in increased vehicle emissions and a slight increase in fugitive dust. These effects would be localized and temporary. The project area is not part of a non-attainment area (Ecology 2022). USACE has determined that the emissions of the proposed repairs constitute a routine facility repair generating an increase in emissions that is clearly *de minimis*, and thus a conformity determination is not required, pursuant to 40 CFR 93.153(c)(2)(iv).

8.4 CLEAN WATER ACT – FEDERAL WATER POLLUTION CONTROL ACT

The Federal Water Pollution Control Act (33 U.S.C. § 1251 et seq.) is more commonly referred to as the Clean Water Act (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.

The proposed action will not result in a discharge of dredged or fill material into waters of the U.S. As such, the project does not require CWA review.

8.5 COASTAL ZONE MANAGEMENT ACT

The Coastal Zone Management Act (CZMA) 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 is substantively consistent with the enforceable policies of the Skagit County and city of Mount Vernon Shoreline Master Programs. USACE sent a CZMA Consistency Determination to Ecology requesting concurrence that the proposed repairs are consistent to the maximum extent practicable with the enforceable policies of the approved Coastal Zone Management Program on May 5, 2023 (Appendix E).

8.6 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 threatened and endangered species and their designated critical habitat and made determinations of no effect for all ESA-listed species and critical habitat in a memorandum for the record dated June 29, 2023. USACE made no effect determinations for North American wolverine, marbled murrelet, yellow-billed cuckoo, and Taylor’s checkerspot butterfly (**Error! Reference source not found.**). These determinations were made because these species do not have suitable habitat in the action area. The action

area also does not include habitat corridors that these species might use to transit between patches of suitable habitat. The proposed action would also not lead to a measurable reduction in the prey base for these species.

USACE evaluated potential effects to green sturgeon (Southern DPS), yelloweye rockfish (Puget Sound – Georgia Basin DPS), bocaccio (Puget Sound – Georgia Basin DPS), eulachon (Southern DPS), Coastal/Puget Sound bull trout, Chinook salmon (Puget Sound evolutionarily significant unit [ESU]), and steelhead (Puget Sound DPS), and made determinations of no effect for these species because the proposed action does not entail any in-water work. Designated critical habitat for these species is located within the Skagit River adjacent to the project areas but will not be affected by the levee repair work. Access routes have been chosen to avoid vegetation clearing along the bank of the Skagit River, and erosion and sediment control measures would be employed during construction to ensure there are no direct or indirect effects to the river channel, water column, or riparian vegetation. As such, USACE has made a determination of no effect for these species and their designated critical habitat.

USACE evaluated potential effects to SRKWs and made a determination of no effect for this species because the proposed action does not entail any in-water work and will not affect prey species such as Chinook, coho, or chum salmon. Designated critical habitat for this species is located throughout Puget Sound, up to the mouth of the Skagit River. The project will have no effect on SRKW designated critical habitat.

Table 1. ESA-listed species and effects determinations for the DD 17 and DD 22 levee repair projects.

Species (Common Name and Scientific Name)	Federal Listing	Effect Determination, Species and CH	Species Presence in Action Area
North American wolverine (<i>Gulo gulo luscus</i>)	Proposed Threatened; No CH Designated	No effect	Not present due to low abundance and habitat requirements.
Yellow-billed cuckoo (<i>Coccyzus americanus</i>)	Threatened; CH Designated	No effect	Not present due to low abundance and habitat requirements.
Marbled Murrelet (<i>Brachyramphus marmoratus</i>)	Threatened; CH Designated	No effect	Not present due to habitat requirements.
Streaked horned lark (<i>Eremophila alpestris strigata</i>)	Threatened; CH Designated	No effect	Not present due to habitat requirements.
Oregon spotted frog (<i>Rana pretiosa</i>)	Threatened; CH Designated	No effect	Not present due to habitat requirements.
Taylor's Checkerspot (<i>Euphydryas editha taylori</i>)	Endangered; CH Designated	No effect	Not present due to low abundance and habitat requirements.
Bull trout (<i>Salvelinus confluentus</i>) Coastal/Puget Sound DPS	Threatened; CH Designated	No effect	Present in the Skagit River; however, no in-water work is planned for these projects.

Chinook salmon (<i>Oncorhynchus tshawytscha</i>) Puget Sound Evolutionarily Significant Unit	Threatened; CH Designated	No effect	Present in the Skagit River; however, no in-water work is planned for these projects.
Steelhead (<i>O. mykiss</i>) Puget Sound DPS	Threatened; CH Designated	No effect	Present in the Skagit River; however, no in-water work is planned for these projects.
Green sturgeon (<i>Acipenser medirostris</i>) Southern DPS	Threatened; CH Designated	No effect	Unlikely presence in the Skagit River; however, no in-water work is planned for these projects.
Yelloweye rockfish (<i>Sebastes ruberrimus</i>) Puget Sound - Georgia Basin DPS	Threatened; CH Designated	No effect	Not present due to habitat requirements
Bocaccio (<i>S. paucispinis</i>) Puget Sound - Georgia Basin DPS	Endangered; CH Designated	No effect	Not present due to habitat requirements
Eulachon (<i>Thaleichthys pacificus</i>) Southern DPS	Threatened; CH Designated	No effect	Unlikely presence in the Skagit River; however, no in-water work is planned for these projects.
Southern Resident killer whale (<i>Orcinus orca</i>) DPS	Endangered; CH Designated	No effect	Not present due to habitat requirements

8.7 MAGNUSON-STEVENS FISHERY 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 (Public Law 104-267) requires Federal agencies to consult with the National Marine Fisheries Service (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 Skagit River is designated as EFH for Chinook, coho, and pink salmon and functions as a migration corridor, spawning habitat for adults, and rearing habitat for juveniles.

According to the NMFS EFH Mapper (NOAA 2021), the Skagit River adjacent to the project areas has been identified as EFH for groundfish, Chinook salmon, coho salmon, and pink salmon. However, there is no in-water work proposed for this project. All work would occur in uplands, landward of the OHWM. No riparian vegetation would be impacted (i.e., cleared) during access, staging, or construction activities. Vehicle fueling would occur well away from the

Skagit River, and erosion and sediment control measures would be employed during construction to ensure there are no direct or indirect effects to the river channel, water column, or riparian vegetation. USACE has determined the proposed action will not adversely affect EFH for federally managed fisheries in Washington based on the above facts and considerations. No EFH consultation with NMFS is required.

8.8 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. will take measures to protect identified ecosystems of special importance to migratory birds against pollution, detrimental alterations, and other environmental degradations. EO 13186 directs Federal agencies to evaluate the effects of their actions on migratory birds, with emphasis on species of concern, and inform the USFWS of potential negative effects to migratory birds.

Birds inhabit the riparian area of the Skagit River yearlong, and proposed work may overlap with some nesting seasons. Nesting seasons vary by species; however, the majority of local bird species nest from February through July (ESCP 2016). To minimize impacts on bird habitat, the project has been designed to avoid vegetation removal and land clearing to the greatest extent practicable. Implementation of the preferred alternative would not have any direct, affirmative and 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 for the “take” of migratory birds is required.

8.9 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 EA evaluates the environmental effects requiring NEPA compliance with the proposed 2023 repairs.

8.9.1 NEPA / Cooperation Agreement

USACE entered into a Cooperation Agreement with each of the Non-Federal Sponsors, the Skagit County Dike District 17 and Skagit County Dike District 22, on April 20, 2023. At that time, USACE had initiated but not yet concluded full NEPA compliance for the levee repair projects. The timing of signature of the Cooperation Agreements was critical, because it was the triggering event in a subsequent series of critical-path steps leading to repair project execution. The Determination of Practicability for NEPA Compliance dated April 20, 2023 articulated the minimum time intervals required for each step in the procurement and execution processes leading up to the deadline for completion of construction, some of which are necessarily sequential, and also took into account the resourcing and sequencing of milestones associated with conducting seven levee repair projects during the summer of 2023 in addition to the DD 17 and DD 22 levee repairs. If USACE had failed to timely execute the Cooperation Agreements and initiate a sequence of meeting the subsequent critical-path milestones, the DD 17 and DD

22 levee repairs would have been in jeopardy of delay, leaving the levees in their current damaged condition into a third flood season. Completion of the NEPA documentation prior to executing the Cooperation Agreements, while still fulfilling the agency's emergency levee rehabilitation authorities and responsibilities under PL 84-99, was determined to be not practicable. At the time of execution of the Cooperation Agreements, USACE complied with NEPA "to the fullest extent possible" under the circumstances, considering what was practicable given the exigency of the need of reducing the urgent risk presented by these damaged flood control structures before the next flood season.

8.9.2 NEPA / Proposed Action

The prospective Federal action evaluated in this EA is the proposed repair of the Skagit DD 17 and DD 22 levees as discussed in the body of this EA. This EA has been prepared pursuant to NEPA Sec. 102(C). Effects on the quality of the human environment because of the proposed levee repair are anticipated to be less than significant. The EA has incorporated any necessary and applicable modifications to the scope and/or nature of the project, any effects to the human environment resulting from these modifications, and the procedures and practices used to implement the project.

8.9.3 NEPA Summary

A Notice of Preparation (NOP) for the proposed project was made available for public review and comment on April 5, 2023. The comment period ended on May 5, 2023. No public comments were received during the comment period. Tribal comments received during the comment period are listed in Appendix H.

8.10 NATIONAL HISTORIC PRESERVATION ACT OF 1966

Section 106 of the NHPA (16 U.S.C. 470) 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.

USACE initiated consultation with SHPO and affected tribes on February 13, 2023. Initial concurrence with the APE for the undertaking was received from SHPO on February 16, 2023. To date USACE has received no comment on the Section 106 consultation from affected Indian Tribes. SHPO concurred with USACE determination of no historic properties effected on May 10, 2023.

Cultural Coordination documents can be found in Appendix G.

8.11 NATIVE AMERICAN TRIBAL TREATY RIGHTS AND 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 (DoDI) 4710.02, Section 3, Subject: DOD Interactions with federally Recognized Tribes (24 September 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 into 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” (U&A) within Puget Sound were delineated in a federal court adjudication, *U.S. 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” *U.S. v. Washington*, 384 F. Supp. 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 *Northwest Sea Farms v. USACE*, 931 F. Supp 1515 (W.D. Wash.1996).

For this proposed project, USACE evaluated impacts to fish and wildlife, and sent letters to the following Tribes: Samish Indian Nation, Sauk-Suiattle Indian Tribe, Skagit River System Cooperative, Swinomish Indian Tribal Community, Tulalip Tribes, and Upper Skagit Indian Tribe, requesting comments on the proposed project and providing the opportunity to initiate government-to-government consultation on April 4, 2023. USACE received a response letter from the Skagit River System Cooperative on behalf of the Sauk-Suiattle Indian Tribe and the Swinomish Indian Tribal Community on May 5, 2023. The USACE response is provided in Appendix H and in a forthcoming letter.

8.12 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 and modification of flood plains and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative. The proposed project will only repair existing facilities to pre-flood conditions and will not modify or change the existing floodplain, which is consistent with Executive Order 11988.

8.13 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. No wetlands will be destroyed, lost, or degraded by the proposed action.

9 SUMMARY OF ASSESSMENT

The No Action Alternative (Alternative 1) does not meet the project purpose and need. The preferred alternative (Alternative 5) fulfills the project purpose and need by repairing the DD 17 and DD 22 levees to the pre-damage LOP. Based on the above analysis, the proposed Skagit Levee Repair 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.

10 References

- Anchor Environmental, L.L.C. 2003. Fish distribution and periodicity in WRIA 1. Prepared for: City of Bellingham, Public Works Department Bellingham, WA.
- Audubon. 1997. Bird Checklist for Skagit County. <http://www.fidalgo.net/~audubon/Lists.htm>.
- Beamer, E, R. Henderson, and K. Wolf. 2010. Juvenile salmon, estuarine, and freshwater fish utilization of habitat associated with the Fisher Slough Restoration Project, Washington 2009. Unpublished report prepared for The Nature Conservancy, Washington. 63 p. Available at www.skagitcoop.org/.
- Brenkman, S.J. and S.C. Corbett. 2005. Extent of anadromy in Bull Trout and implications for conservation of a threatened species. *North American Journal of Fisheries Management* 25:1073-1081.
- CEQ (Council on Environmental Quality). 2023. Climate and Economic Justice Screening Tool. Accessed April 2023 online at: <https://screeningtool.geoplatform.gov/>.
- Downs, C.C., D. Horan, E. Morgan-Harris, and R. Jakubowski. 2006. Spawning demographics and juvenile dispersal of an adfluvial Bull Trout population in Trestle Creek, Idaho. *North American Journal of Fisheries Management* 26:190-200.
- Ecology. 2016. Washington State Water Quality Atlas. Accessed online at: <https://apps.ecology.wa.gov/waterqualityatlas/map.aspx>. Accessed on 19 November 2020.
- Ecology. 2022. Determining if areas in Washington meet national air quality standards. Accessed on April 1, 2022 online at: <https://ecology.wa.gov/Regulations-Permits/Plans-policies/Areas-meeting-and-not-meeting-air-standards>.
- ESCP (Environmental Services City of Portland). Version 2.1. March 2016. Avoiding Impacts on Nesting Birds, Best Management Practices, Vegetation and Construction Projects.
- EPA (Environmental Protection Agency). 2023a. AirToxScreen Frequently Asked Questions. Accessed April 2023 online at: <https://www.epa.gov/AirToxScreen/airtoxscreen-frequent-questions#emm13>
- EPA. 2023b. EJSCREEN: Environmental Justice Screening and Mapping Tool. Accessed April 2023 online at: <https://www.epa.gov/ejscreen>.
- Ford, J.K.B., G.M. Ellis, and P.F. Olesiuk. 2005. Linking prey and population dynamics: did food limitation cause recent declines of 'resident' killer whales (*Orcinus orca*) in British Columbia. Fisheries and Oceans Canada, Canadian Science Advisory Secretariat, Report no. 2005/042. 27 pp.
- Ford, J. K. B., B. M. Wright, G. M. Ellis, and J. R. Candy. 2010. Chinook salmon predation by resident killer whales: seasonal and regional selectivity, stock identity of prey, and consumption rates. DFO Canadian Science Advisory Secretariat Research Document 2009/101
- Fraleigh, J.J., and B.B. Shepard. 1989. Life history, ecology, and subpopulation status of migratory Bull Trout (*Salvelinus confluentus*) in the Flathead Lake and River system, Montana. *Northwest Science* 63:133-143.
- Goetz, F.A., E. Jeanes, and E. Beamer. 2004. Bull trout in the nearshore. Technical Report for the U.S. Army Corps of Engineers, Seattle District.
- Goetz, F.A. 2016. Migration and residence patterns of salmonids in Puget Sound, Washington. PhD dissertation, University of Washington, Seattle, Washington.
- Hanson, M.B., C.K. Emmons, M.J. Ford, M. Everett, K. Parsons, L.K. Park, J. Hempelmann, D.M. Van Doornik, G.S. Schorr, J.K. Jacobsen, M.F. Sears, M.S. Sears, J.G. Sneva, R.W. Baird, and L. Barre. 2021. Endangered predators and endangered prey: seasonal diet of Southern Resident killer whales.
- iNaturalist. 2023. Accessed April, 2023, <https://www.inaturalist.org/observations?nelat=48.46>

- 368891449153&nelng=-122.2643809837261&place_id=any&swlat=48.38253596141131&swlng=-122.357356058069&taxon_id=5305
- Krahn, M.M., M.J. Ford, W.F. Perrin, P.R. Wade, R.P. Angliss, M.B. Hanson, B.L. Taylor, G.M. Ylitalo, M.E. Dalheim, J.E. Stein, & R. S. Waples. 2004. 2004 status review of southern resident killer whales (*Orcinus orca*) under the Endangered Species Act. U.S. Dept. Commerce. NOAA Technical Memo. NMFS-NWFSC 62, 73pp.
- Myers, J.M., R.G. Kope, G.J. Bryant, D. Teel, L.J. Lierheimer, T.C. Wainwright, W.S. Grand, F.W. Waknotz, K. Neely, S.T. Lindley, and R.S. Waples. 1998. Status review of Chinook salmon from Washington, Idaho, Oregon, and California. NOAA Technical Memorandum. NMFS-NWFSC-35. Northwest Fisheries Science Center, Seattle, WA.
- NMFS (National Marine Fisheries Service). 1999. Endangered and Threatened Species: Threatened Status for Three Chinook Salmon Evolutionarily Significant Units (ESUs) in Washington and Oregon, and Endangered Status of One Chinook Salmon ESU in Washington; Final Rule, Title 50 CFR Part 17. Federal Register 65, No. 56., 14308-14328.
- NMFS. 2005a. Endangered and Threatened Species: Final Listing Determinations for 16 ESUs of West Coast Salmon, and Final 4(d) Protective Regulations for Threatened Salmonid ESUs: Final rule. Federal Register 70(123):37160-37204.
- NMFS. 2005b. Critical habitat for 12 Evolutionarily Significant Units (ESUs) of salmon and steelhead (*Oncorhynchus* spp.) in Washington, Oregon and Idaho. 50 Federal Register 52629 – 52858.
- NMFS. 2005c. Status Review Update for Puget Sound Steelhead. Updated July 26, 2005. Northwest Fisheries Science Center. Seattle, WA.
- NMFS. 2005d. Endangered and threatened wildlife and plants: Endangered status for southern resident killer whales. 70 Federal Register 69903 – 69912.
- NMFS. 2006. Endangered and Threatened Species; Designation of Critical Habitat for Southern Resident Killer Whale. 71 Federal Register 69054 – 69070.
- NMFS. 2007. Endangered and Threatened Species: Final Listing Determination for Puget Sound Steelhead; Final Rule. 72 FR 26722-26735.
- NMFS. 2008. Recovery Plan for Southern Resident Killer Whales (*Orcinus orca*). National Marine Fisheries Service Northwest Regional Office. Seattle, WA. 251 pages.
- NMFS. 2016. Endangered and Threatened Species: Designation of Critical Habitat for Lower Columbia River Coho Salmon and Puget Sound Steelhead; Final Rule. 81 FR 9252 – 9325.
- NMFS. 2019. Final recovery plan for the Puget Sound steelhead Distinct Population Segment (*Oncorhynchus mykiss*). National Marine Fisheries Service. Seattle, WA. 291 pp.
- PSSTRT (Puget Sound Steelhead Technical Recovery Team). 2013. Identifying historical populations of steelhead within the Puget Sound Distinct Population Segment. Final Review Draft. 149 p.
- Rieman, B.E., and J.D. McIntyre. 1993. Demographic and habitat requirements for conservation of bull trout. USDA Forest Service, Intermountain Research Station. General Technical Report INT-302.
- Rieman, B.E. Rieman and G.L. Chandler. 1999. *In*, Empirical evaluation of temperature effects on bull trout distribution in the Northwest. Final report to U.S. Environmental Protection Agency, Boise, Idaho. Seiler, D., P. Hanratty, S. Neuhauser, P. Topping, M. Ackley, and L. Kishimoto. 1995. Wild Salmon Production and Survival Evaluation Annual Performance Report, October 1993 – September 1994. Progress Report F-122-R-2. Washington Department of Fish and Wildlife, Olympia.
- Skagit County. 2008. Skagit County Monitoring Program, Annual Report 2007 Water Year. Accessed online at: www.skagitcounty.net/SCMP.

- Skagit River System Cooperative (SRSC) and WDFW (Washington Department of Fish and Wildlife). 2005. Skagit Chinook Recovery Plan.
- USACE-NOAA. 2022. Memorandum Between the Department of The Army (Civil Works) and The National Oceanic and Atmospheric Administration
- USFWS. 1999. Endangered and threatened wildlife and plants; determination of threatened status for bull trout in the coterminous United States. Final rule. Federal Register 64(210):58910-58933.
- USFWS. 2004. Draft Recovery Plan for the Coastal-Puget Sound Distinct Population Segment of Bull Trout (*Salvelinus confluentus*). Volume I (of II): Puget Sound Management Unit. Portland, Oregon.
- USFWS. 2010. Endangered and Threatened Wildlife and Plants; Revised Designation of Critical Habitat for Bull Trout in the Coterminous United States. Final Rule. Federal Register 75: 63898 – 64070.
- USFWS. 2015. Coastal Recovery Unit Implementation Plan for Bull Trout (*Salvelinus confluentus*). Lacey, Washington. 160 pages.
- WDFW. 1998. Salmonid Stock Inventory, Appendix: Bull Trout and Dolly Varden. Olympia, WA: Washington Department of Fish and Wildlife, Fish Program.
- WDFW. 2002. Salmonid Stock Inventory (SaSI) 2002. Olympia, WA.
<http://wdfw.wa.gov/fish/sasi/>.
- WDFW. 2006. Skagit Wildlife Area Management Plan. Wildlife Management Program, Washington Department of Fish and Wildlife, Olympia. 140pp.
- WDFW. 2007. Excel spreadsheet received from Jeff Kamps via email.
- WDFW. 2018a. Priority Habitats and Species. Online at: <https://wdfw.wa.gov/mapping/phs/>. Accessed 4 November 2020.
- WDFW. 2018b. SalmonScape. Online at: <http://apps.wdfw.wa.gov/salmonscape/map.html>. Accessed 25 April 2018.

11 APPENDICES

- (A) Site Photographs
- (B) Design Plans
- (C) Wetland Report
- (D) Environmental Justice Analysis
- (E) CZMA Coordination
- (F) Public Comments
- (G) Cultural Resources Coordination
- (H) Tribal Coordination

Appendix A – Site Photographs



Photograph 1. Typical landward slope of the DD 17 Levee at Site 1, upstream oriented near STA 30+00.



Photograph 2. View of the seepage berm placed at STA 121+00 on the landward side of the DD 17 levee during the November 2021 flood event.



Photograph 3. Typical landward slope of the DD 17 levee, upstream oriented near STA 120+00. The seepage berm was placed on the landward side of the levee during the November 2021 flood event.



Photograph 4. View of Sand boils near the landward toe of the DD 22 levee at STA 357+00.



Photograph 5. Typical levee section from the top of the DD 22 levee crest looking towards the landward side, downstream oriented.

Appendix B – Design Plans

FY22 P2-503041
DIKING DISTRICT 17 (DD17)
LEVEE REHAB 2022
MT VERNON, WASHINGTON



SHEET ID	TITLE
GENERAL	
G-001	TITLE, VICINITY MAP, PROJECT MAP, AND INDEX
CIVIL	
CS101	ACCESS AND HAUL ROUTE
CS102	SITE PLAN 1
CS103	SITE PLAN 2
C-301	CROSS SECTIONS



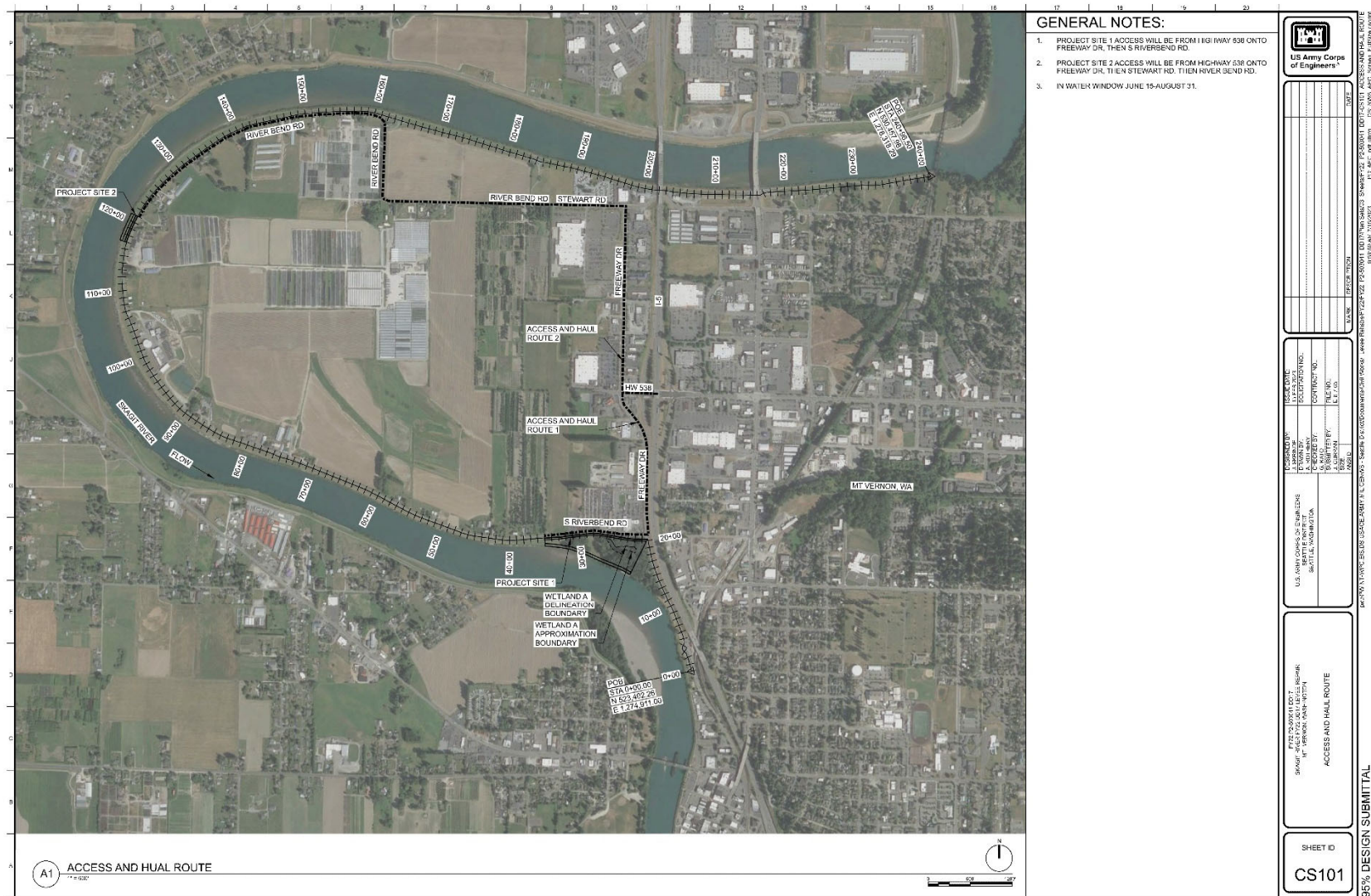
Date: 15 FEBURARY 2023

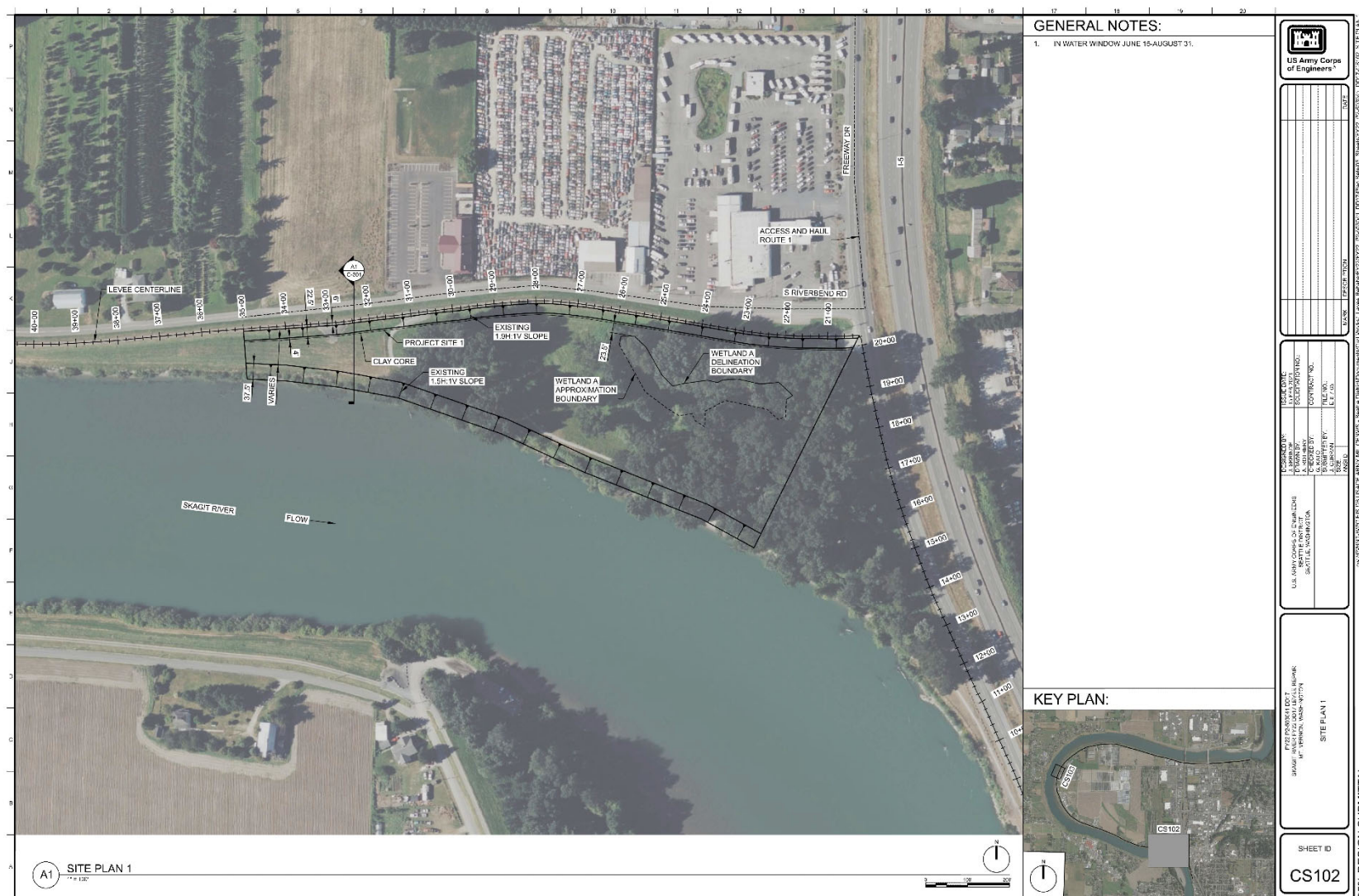
Recommended by:	02/15/2023
GUY L. GREEN, P.E., Chief, Design Branch	Date
Approved by:	02/15/2023
CATHERINE M. PETROFF, PAO, P.E. Chief, Engineering Div.	Date

U.S. ARMY CORPS OF ENGINEERS STATE OF DISTRICT SEATTLE, WASHINGTON	Submitted by: JANET CURRAN Project Manager	02/15/2023 Date
Prepared by: JENNIFER L. WEST Chief, Preparing Section	Reviewed by: ANIL L. NISARGANDU Chief, Specs. and Tech Review	02/15/2023 Date

FV22 P2 303641 D017
 SHACUT RIVER FV22 D017 LEVEL REPAIR
 M11, VENGUIN, WASHINGTON
 TITLE, VICINITY MAP, PROJECT
 MAP, AND INDEX

SHEET
IDENTIFICATION
G-001





DD 22:

	US Army Corps of Engineers Seattle District			US Army Corps of Engineers Seattle District														
<h1> FY22 P2-503028 DIKING DISTRICT 22 (DD22) LEVEE REHAB 2022 MT VERNON, WASHINGTON </h1>																		
		<h2>INDEX OF DRAWINGS</h2> <table border="1"> <thead> <tr> <th>SHEET ID</th> <th>TITLE</th> </tr> </thead> <tbody> <tr> <td colspan="2">GENERAL</td> </tr> <tr> <td>G-001</td> <td>TITLE, VICINITY MAP, PROJECT MAP, AND INDEX</td> </tr> <tr> <td colspan="2">CIVIL</td> </tr> <tr> <td>CS101</td> <td>ACCESS AND HAUL ROUTE</td> </tr> <tr> <td>CS102</td> <td>SITE PLAN</td> </tr> <tr> <td>C-301</td> <td>CROSS SECTIONS</td> </tr> </tbody> </table>			SHEET ID	TITLE	GENERAL		G-001	TITLE, VICINITY MAP, PROJECT MAP, AND INDEX	CIVIL		CS101	ACCESS AND HAUL ROUTE	CS102	SITE PLAN	C-301	CROSS SECTIONS
SHEET ID	TITLE																	
GENERAL																		
G-001	TITLE, VICINITY MAP, PROJECT MAP, AND INDEX																	
CIVIL																		
CS101	ACCESS AND HAUL ROUTE																	
CS102	SITE PLAN																	
C-301	CROSS SECTIONS																	
<p>PROJECT VICINITY MAP NTS</p>		<p>PROJECT LOCATION MAP NTS</p>																
<p>IF SHEET MEASURES LESS THAN 22" X 34" IT IS A REDUCED PRINT. REDUCE SCALE ACCORDINGLY.</p>																		
<p>DATE: 15 FEBRUARY 2023 FILE NO.: E-4-7-46 SUBMISSION NO.: 1</p>			<p>Recommended by: [Signature] Checked by: [Signature] Approved by: [Signature] Date: 02/15/2023</p>	<p>Submitted by: [Signature] Checked by: [Signature] Approved by: [Signature] Date: 02/15/2023</p>														
<p>U.S. ARMY CORPS OF ENGINEERS SEATTLE DISTRICT PROJECT: MT VERNON LEVEE REHAB 2022 TITLE: VICINITY MAP, PROJECT MAP, AND INDEX PREPARED BY: JENNIFER L. WEST DATE: 02/15/2023</p>			<p>SHEET IDENTIFICATION G-001</p>															



Appendix C – Wetland Report

Wetland and Stream Delineation Report

DD17 and DD22 Levee Rehabilitation Project

Skagit County, Washington

MEMORANDUM FOR RECORD

Prepared For:

Civil Works, Seattle District
U.S. Army Corps of Engineers
Contact: Janet Curran

Prepared By:

Kaitlyn Kiehart, PWS
USACE-NWS-PMP
kaitlyn.m.kiehart@usace.army.mil

Date:

February 2023



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APPENDICES

- Appendix A. Site Photographs
- Appendix B. Background Maps
- Appendix C. Sample Plot Data Forms

1.0 INTRODUCTION

In 2020, the U.S. Army Corps of Engineers (USACE) Seattle District staff completed wetland and stream delineations on the DD17 and DD22 Levee Rehabilitation Project sites located along the Skagit River in Skagit County, Washington. Figures 1 depicts the location of the DD17 and DD22 Levee repair sites and the area of investigation (AOI) at each site. The primary purpose of the delineation site visit was to document vegetation, soil and hydrology to (1) confirm the presence of potential wetlands subject to federal jurisdiction, (2) determine wetland boundaries, and (3) characterize wetland functions.

2.0 PROJECT LOCATION AND SITE DESCRIPTION

The DD17 Levee repair sites are located on a non-federally constructed, operated, and maintained levee that runs along the left bank of the Skagit River near the town of Mount Vernon in Skagit County, Washington. Site 1 extends from station (STA) 20+00 to STA 35+00, and site 2 extends from STA 122+00 to 126+00. The upstream end of the project ties to high ground, runs adjacent to the river over its length, and ties into the shoulder of a county road. The county road then functions as a levee for an additional ¼ mile at Site 1. The AOI encompassed a portion of the levee repair at Site 1 and the adjacent forested area. The DD17 AOI is shown in Figure 2.

The DD22 levee repair site is located on a non-federally constructed, operated, and maintained complete levee system protecting Fir Island in Skagit County, WA. The levee was constructed in the late 1800s or early 1900s by the local residents and farmers. The levee is located on the left bank of the North Fork Skagit River from river mile 7.6 to 2.5 and the right bank of the Skagit River (and Freshwater Slough) from river mile 8.1 to 1.0. It is located approximately 5 miles southwest of the City of Mount Vernon. The levee does not tie into the high ground; the system forms a ring around the island where the sea dikes along Skagit Bay. The levee was constructed of earthen materials with Class V riprap for erosion protection. Riverward of the levee, an approximately 75-foot-wide bench exists that leads to the riverbank. Other levee vegetation consists of brush and trees. The AOI encompassed a portion of the levee repair site and the adjacent forested area. The DD22 AOI is shown in Figure 3.

The two AOIs are located on the riverward sides of the DD17 and DD22 Levees. The levee slopes consist of mowed grass with some Himalayan blackberry (*Rubus armeniacus*) present. Upland forested areas are, in general, dominated by cottonwood (*Populus balsamifera*), big leaf maple (*Acer macrophyllum*), red alder (*Alnus rubra*), snowberry (*Symphoricarpos albus*), salmonberry (*Rubus spectabilis*), Himalayan blackberry, and sword fern (*Polystichum munitum*) in the understory. Douglas fir (*Pseudotsuga menziesii*) and Sitka spruce (*Picea sitchensis*) are also found in upland forested areas at the DD22 Levee repair site. See Appendix A for site photographs.

3.0 DESKTOP REVIEW

Environmental maps of the AOIs were collected and reviewed as part of a desktop review. The United States Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) online

mapper (USFWS 2023) shows one wetland mapped at the DD22 Levee repair site and none at the DD17 Levee repair site. The wetland shown near the DD22 Levee repair site is listed as a Palustrine, Forested, Temporary Flooded-Tidal (PFOS) wetland. The United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Web Soil Survey indicates two soil types at the DD17 area of investigation: Pilchuck variant fine sandy loam, 0 to 3 percent slopes, and Urban land-Mt. Vernon-Field complex, 0 to 3 percent slopes (USDA-NRCS 2023). One soil type is mapped at the DD22 area of investigation: Pilchuck variant fine sandy loam, 0 to 3 percent slopes (USDA-NRCS 2023). Both of these soil types have a hydric rating of 0, indicating they are not considered hydric soils (USDA-NRCS 2023). The Washington State Department of Natural Resources (DNR) Forest Practices Application Mapping Tool (FPAMT) depicts no features within the areas of investigation (DNR 2023). NWI, soil survey, and FPAMT maps are included in Appendix B.

4.0 FIELD INVESTIGATION

USACE biologists conducted a field assessment on 27 January 2023 to delineate and characterize wetland and stream features within the two AOIs. Representative photographs have been included within this report (Appendix A). Sample plot datasheets can be found in Appendix C.

5.0 METHODOLOGY

Wetlands were identified using the *USACE Wetlands Delineation Manual* (1987 Manual, Environmental Laboratory 1987), and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains Valleys and Coast, Version 2.0* (WMVC Supplement, USACE 2010).

The ordinary high water marks (OHWM) of streams were evaluated and delineated by examining breaks in the topography, shifts in vegetation and signs of water marks, according to USACE protocol as referenced from *Regulatory Guidance Letter (No. 05-05), Ordinary High Water Mark Identification*, December 7, 2005 and according to the Washington State Department of Ecology 2016 guidance (Anderson et al., 2016).

6.0 RESULTS


A total of two wetlands (Wetlands A and B) and zero streams were delineated during the field investigation. USACE biologists took geographic coordinates of the wetland boundaries and sample plots using a hand-held global positioning system (GPS) device. One Palustrine scrub-shrub wetland is located in a depression within a wooded area between the DD17 levee at Site 1 and the Skagit River. A second Palustrine scrub-shrub wetland is located in a depression at the base of the DD22 levee slope on the edge of a wooded area. Figures 2 and 3 depict the results of the delineation at the DD17 and DD22 Levee repair sites, respectively. Appendix C includes the sample plot data forms. Tables 1 and 2 on the following pages summarize information regarding the wetland features delineated within the AOIs.

TABLE 1. WETLAND A

Wetland A - Information	
Location	South of DD17 Levee crest
WRIA	3 – Lower Skagit / Samish
Local Jurisdiction	Skagit County
Size (including approximated boundary)	0.64 acres
Cowardin Class	Palustrine Scrub-shrub
HGM Class	Depressional & Riverine
Description Summary	
Sample Plot	SP01 wetland plot; SP02 associated upland plot
Vegetation	<u>Scrub-shrub</u> : <i>Salix lasiandra</i> , <i>Populus balsamifera</i> , <i>Cornus alba</i> <u>Tree</u> : <i>Populus balsamifera</i>
Soils	Meets criteria for hydric soil indicators Depleted Matrix (F3) and Redox Depressions (F8).
Hydrology	<u>Indicators</u> : High water table, saturation, oxidized rhizospheres along living roots, water-stained leaves, geomorphic position, and FAC-Neutral test.



TABLE 2. WETLAND B

Wetland B - Information		
Location	North of DD22 Levee crest	
WRIA	3 – Lower Skagit / Samish	
Local Jurisdiction	Skagit County	
Size (including approximated boundary)	3.24 acres	
Cowardin Class	Palustrine Scrub-shrub	
HGM Class	Depressional	
Description Summary		
Sample Plot	SP03 wetland plot; SP04 associated upland plot	
Vegetation	<u>Herbaceous:</u> <i>Epilobium ciliatum</i> <u>Scrub-shrub:</u> <i>Cornus alba</i> <u>Tree:</u> <i>Alnus rubra</i>	
Soils	Meets criteria for hydric soil indicator Depleted Matrix (F3)	
Hydrology	<u>Indicators:</u> Oxidized rhizospheres along living roots, water-stained leaves, geomorphic position, and FAC-Neutral test.	

6.0 SUMMARY

USACE performed wetland and stream delineations within portions of the DD17 and DD22 Levee Rehabilitation Project. A total of two wetlands (Wetlands A and B) were identified and delineated during the field investigation. Delineations activities were performed outside of the growing season; therefore, a spring recheck is recommended to verify wetland boundaries.

7.0 REFERENCES

Anderson, Paul, S. Meyer, P. Olson and E. Stockdale. 2016. Determining the Ordinary High Water Mark for Shoreline Management Act Compliance in Washington State. Washington State Department of Ecology Publication No. 16-06-029. Available at: <https://fortress.wa.gov/ecy/publications/documents/1606029.pdf>

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of Wetland and Deep Water Habitats of the United States. Performed for Office of Biological Services, Fish and Wildlife Service, U.S. Department of the Interior, Washington, D.C.

Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual. Technical Report Y-87-1, U.S. Army Engineer Waterways Experiment Station, Vicksburg, Mississippi.

Munsell Color. 2009. Munsell Soil Color Charts. Grand Rapids, Michigan.

Riley, Don T. 2005. Ordinary High Water Mark Identification. United States Army Corps of Engineers (USACE), Regulatory Guidance Letter, No. 05-05.

United States Army Corps of Engineers (USACE). 2010. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region, ed. J.S. Wakeley, R. W. Lichvar, and C.V. Noble. ERDC/EL TR-10-3. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

United States Department of Agriculture – National Resource Conservation Service (USDA-NRCS). 2023. Web Soil Survey. <http://websoilsurvey.nrcs.usda.gov/app/>.

United States Fish and Wildlife Service (USFWS). 2023. Wetlands Mapper. <http://www.fws.gov/wetlands/Data/mapper.html>.

Washington State Department of Natural Resources (DNR). 2023. Forest Practices Application Mapping Tool (FPAMT). Available at: <https://fpamt.dnr.wa.gov/default.aspx#>

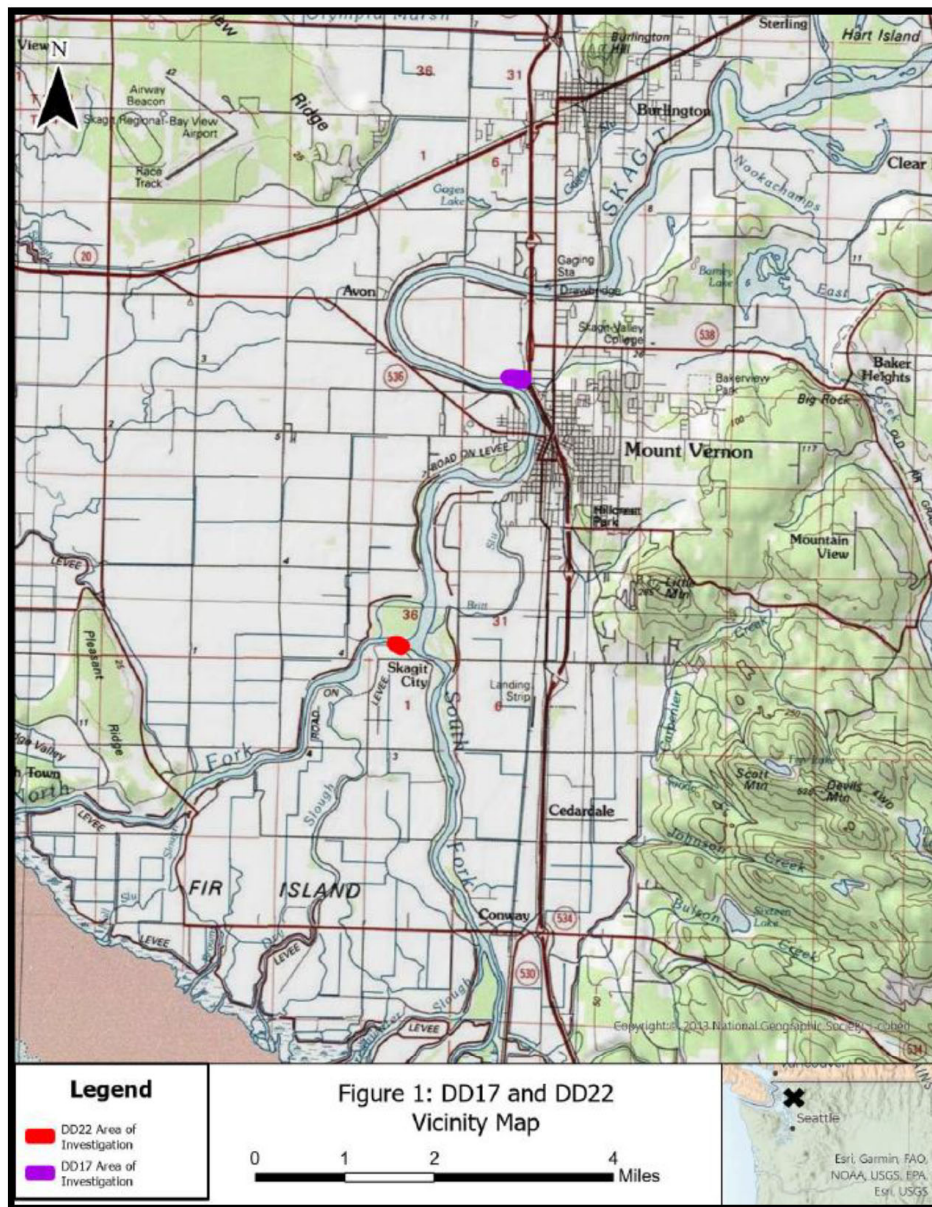


Figure 1. DD17 and DD22 Vicinity Map.

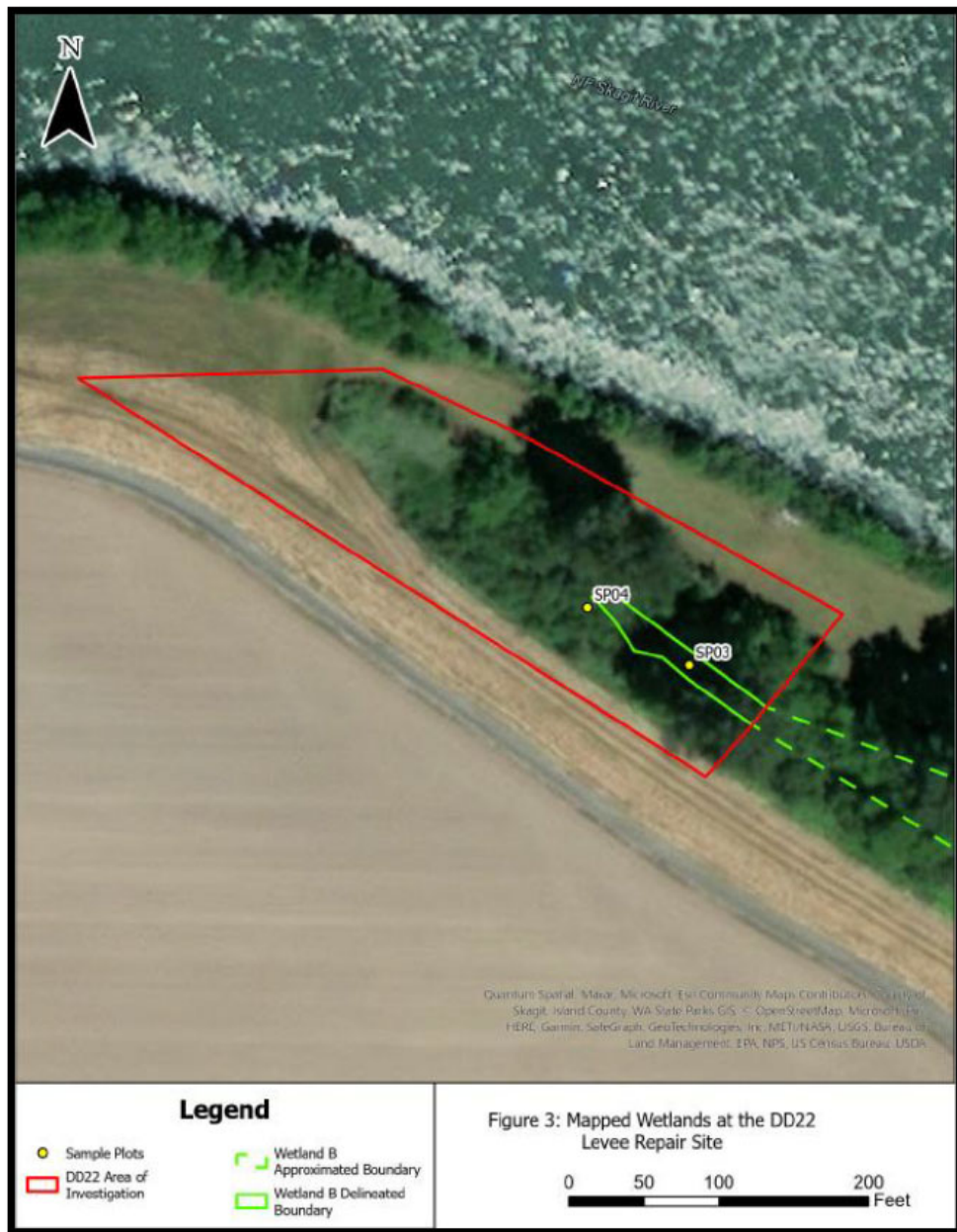


Figure 3. Mapped Wetlands at the DD22 Levee Repair Site

APPENDIX A
PHOTOGRAPHS

DRAFT



Photo 1: View of the DD17 Levee upslope of Wetland A, facing Southwest.



Photo 2: View of Wetland A from SP01 at the DD17 levee repair site 1, facing South.



Photo 3: View of Wetland A boundary from SP01 at the DD17 levee repair site 1, facing East.



Photo 4: View from upland SP02 at the DD17 levee repair site 1, facing West.



Photo 5: View from upland SP02 at the DD17 levee repair site 1, facing East.



Photo 6: View of DD22 Levee upslope from Wetland B, facing Northeast.



Photo 7: View of Wetland B from SP03 at the DD22 levee repair site, facing West.



Photo 8: View of Wetland B from SP03 at the DD22 levee repair site, facing East.



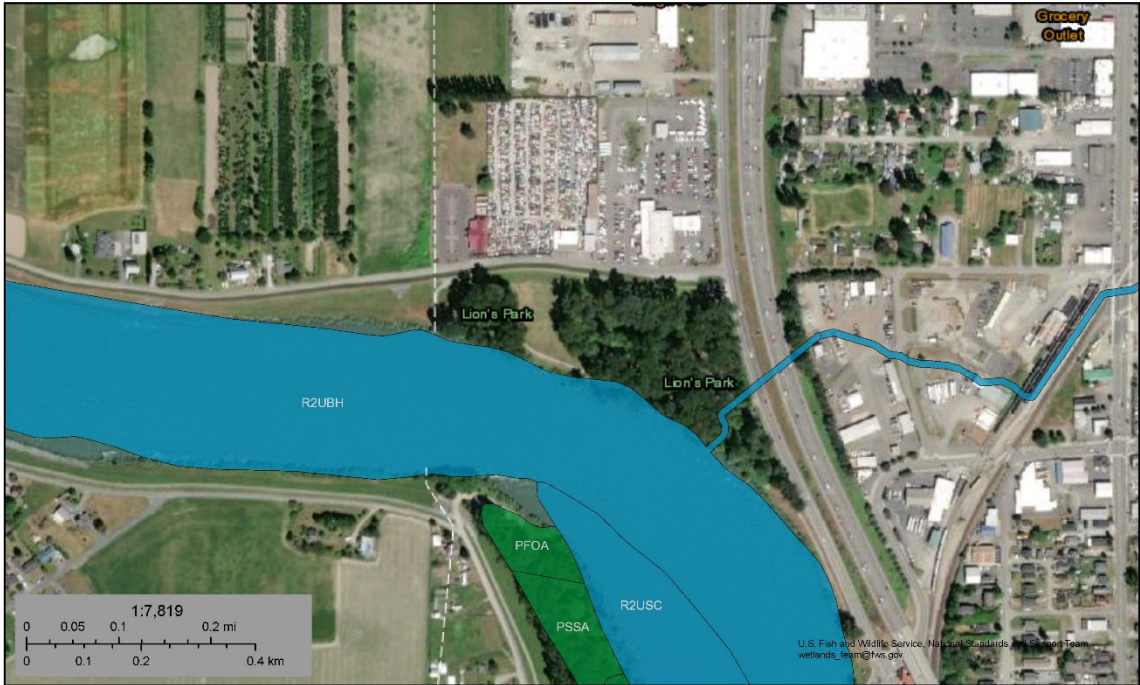
Photo 9: View of the Wetland B boundary from upland SP04 at the DD22 levee repair site, facing East.



Photo 10: View from upland SP04 at the DD22 levee repair site, facing West.

APPENDIX B
BACKGROUND MAPS

DRAFT

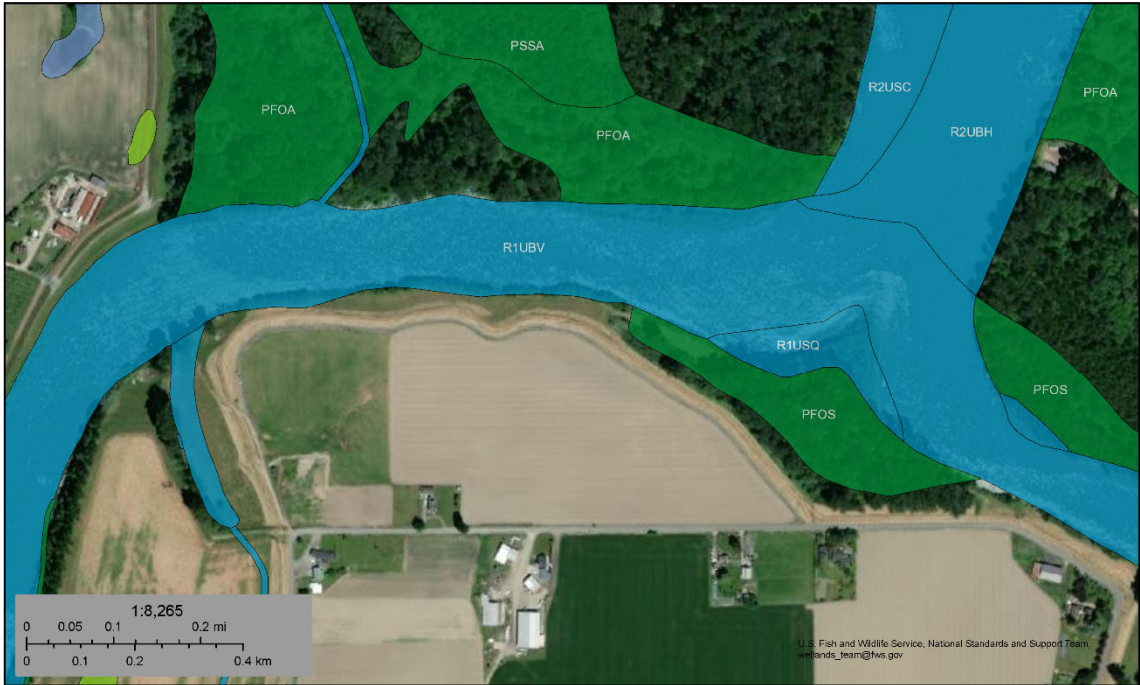


February 9, 2023

Wetlands

- | | | |
|--|---|--|
|  Estuarine and Marine Deepwater |  Freshwater Emergent Wetland |  Lake |
|  Estuarine and Marine Wetland |  Freshwater Forested/Shrub Wetland |  Other |
| |  Freshwater Pond |  Riverine |

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.



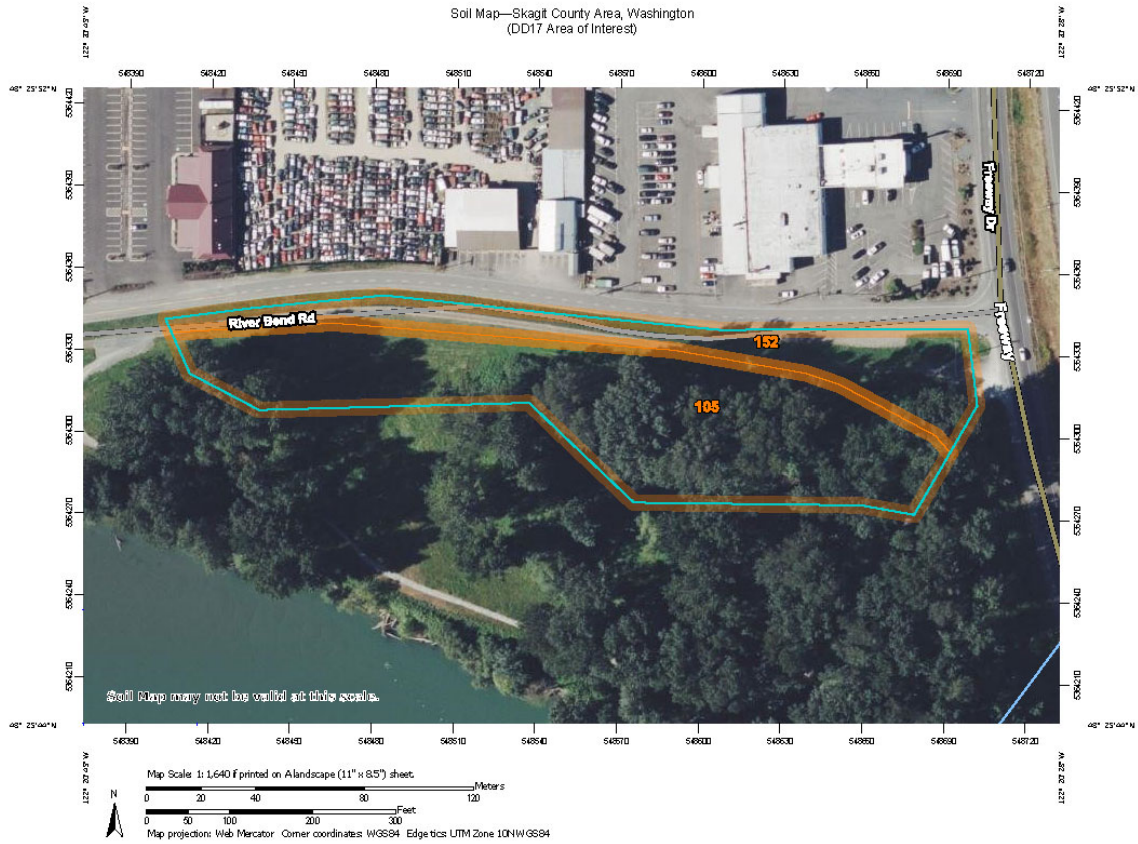
February 9, 2023

Wetlands

- | | | |
|--|---|--|
|  Estuarine and Marine Deepwater |  Freshwater Emergent Wetland |  Lake |
|  Estuarine and Marine Wetland |  Freshwater Forested/Shrub Wetland |  Other |
| |  Freshwater Pond |  Riverine |

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

Soil Map—Skagit County Area, Washington
(DD17 Area of Interest)







































USDA
Natural Resources
Conservation Service

Web Soil Survey
National Cooperative Soil Survey

2/9/2023
Page 1 of 3

Soil Map—Skagit County Area, Washington
(DD17 Area of Interest)

MAP LEGEND

Area of Interest (AOI)			Spoil Area
	Area of Interest (AOI)		Stony Spot
Soils			Very Stony Spot
	Soil Map Unit Polygons		Wet Spot
	Soil Map Unit Lines		Other
	Soil Map Unit Points		Special Line Features
Special Point Features		Water Features	
	Blowout		Streams and Canals
	Borrow Pit	Transportation	
	Clay Spot		Rails
	Closed Depression		Interstate Highways
	Gravel Pit		US Routes
	Gravelly Spot		Major Roads
	Landfill		Local Roads
	Lava Flow	Background	
	Marsh or swamp		Aerial Photography
	Mine or Quarry		
	Miscellaneous Water		
	Perennial Water		
	Rock Outcrop		
	Saline Spot		
	Sandy Spot		
	Severely Eroded Spot		
	Sinkhole		
	Slide or Slip		
	Sodic Spot		

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Skagit County Area, Washington
Survey Area Data: Version 22, Sep 8, 2022

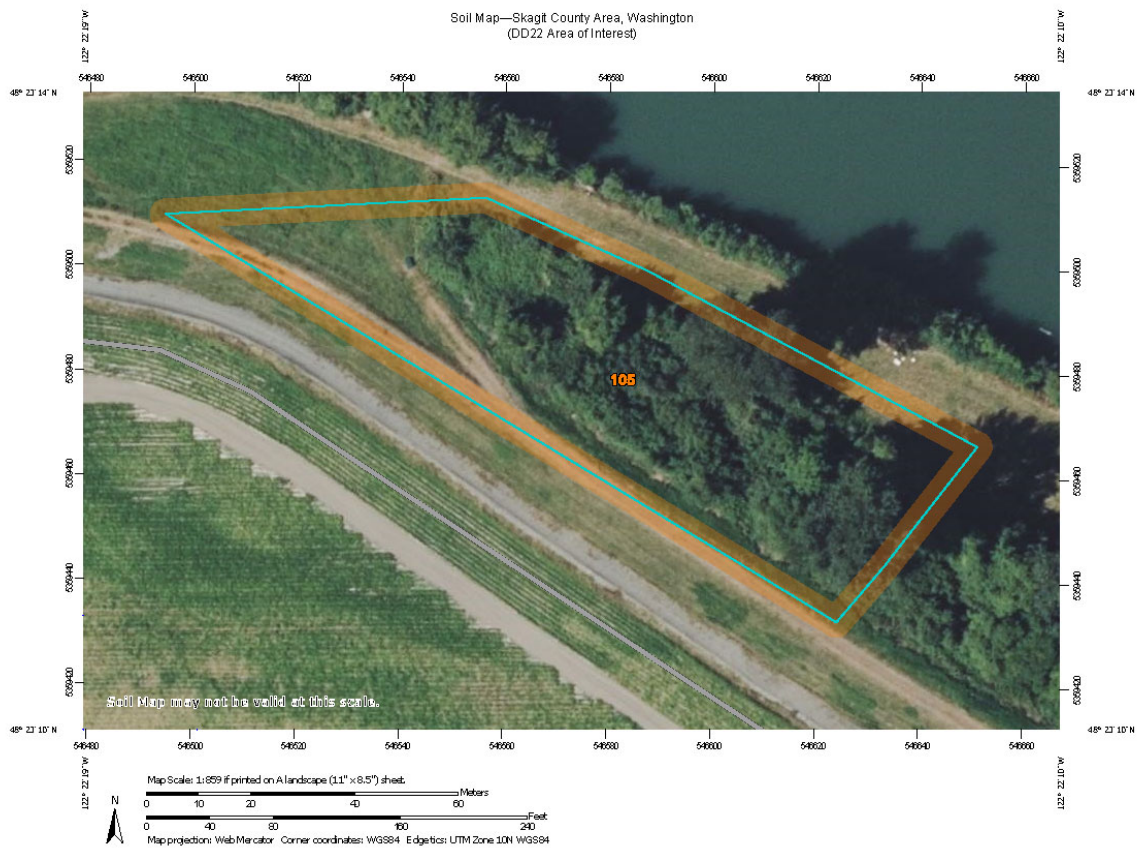
Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jul 25, 2020—Jul 28, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.





































Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
105	Pilchuck variant fine sandy loam	2.5	71.4%
152	Urban land-Mt. Vernon-Field complex	1.0	28.6%
Totals for Area of Interest		3.5	100.0%



Soil Map—Skagit County Area, Washington
(DD22 Area of Interest)

MAP LEGEND

Area of Interest (AOI)	 Area of Interest (AOI)	 Spoil Area
Soils	 Soil Map Unit Polygons	 Stony Spot
	 Soil Map Unit Lines	 Very Stony Spot
	 Soil Map Unit Points	 Wet Spot
Special Point Features		 Other
 Blowout		 Special Line Features
 Borrow Pit	Water Features	
 Clay Spot	 Streams and Canals	
 Closed Depression	Transportation	
 Gravel Pit	 Rails	
 Gravelly Spot	 Interstate Highways	
 Landfill	 US Routes	
 Lava Flow	 Major Roads	
 Marsh or swamp	 Local Roads	
 Mine or Quarry	Background	
 Miscellaneous Water	 Aerial Photography	
 Perennial Water		
 Rock Outcrop		
 Saline Spot		
 Sandy Spot		
 Severely Eroded Spot		
 Sinkhole		
 Slide or Slip		
 Sodic Spot		

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

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Survey Area Data: Version 22, Sep 8, 2022

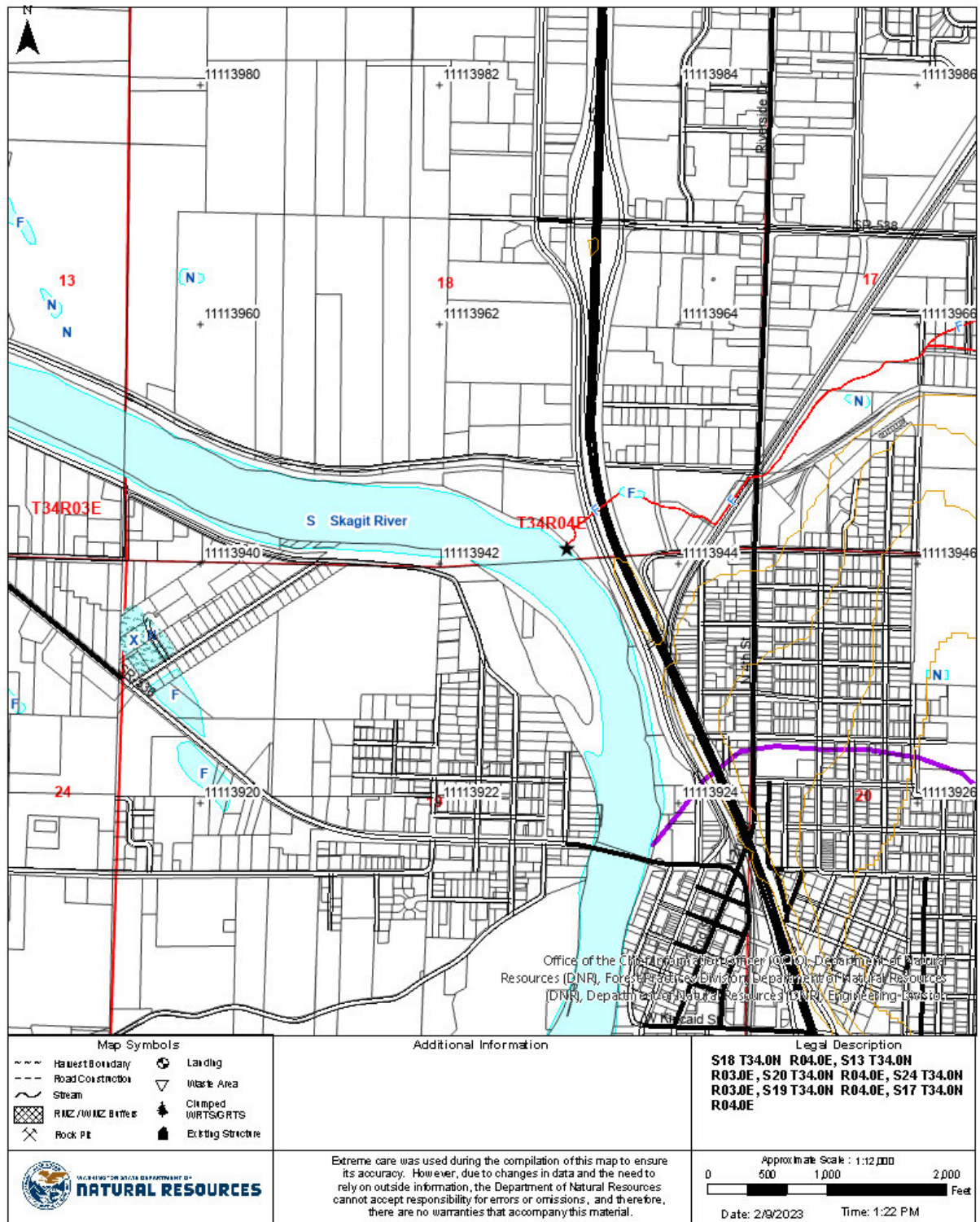
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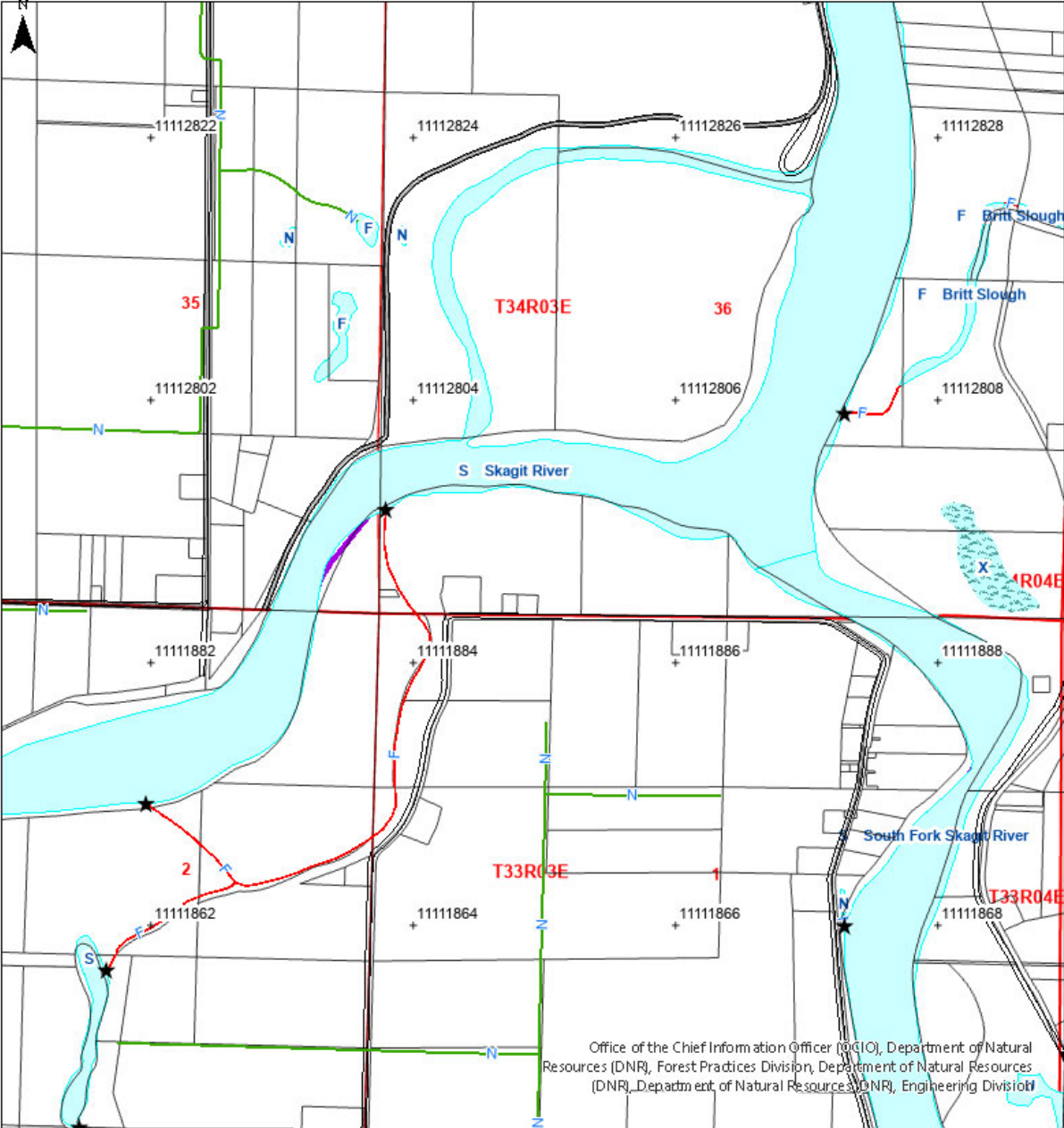
Date(s) aerial images were photographed: Jul 25, 2020—Jul 28, 2020











The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
105	Pilchuck variant fine sandy loam	1.2	100.0%
Totals for Area of Interest		1.2	100.0%





<div>Map Symbols</div> <div><div><div></div><div>Highest Boundary</div></div><div><div></div><div>Road Construction</div></div><div><div></div><div>Stream</div></div><div><div></div><div>RME/WME Battle</div></div><div><div></div><div>Rock Pit</div></div><div><div></div><div>Landing</div></div><div><div></div><div>Waste Area</div></div><div><div></div><div>Clipped WRTS/ORTS</div></div><div><div></div><div>Existing Structure</div></div></div>	<div>Additional Information</div>	<div>Legal Description</div> <div>S36 T34.0N R03.0E, S02 T33.0N R03.0E, S35 T34.0N R03.0E, S01 T33.0N R03.0E</div>
<div><div>U.S. DEPARTMENT OF THE INTERIOR NATURAL RESOURCES</div></div>	<div>Extreme care was used during the compilation of this map to ensure its accuracy. However, due to changes in data and the need to rely on outside information, the Department of Natural Resources cannot accept responsibility for errors or omissions, and therefore, there are no warranties that accompany this material.</div>	<div>Approximate Scale: 1:12,000</div> <div><div>05001,0002,000</div><div>Feet</div></div> <div><div>Date: 2/9/2023</div><div>Time: 1:19 PM</div></div>

APPENDIX C
SAMPLE PLOT DATA FORMS

DRAFT

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Western Mountains, Valleys, and Coast Region See ERDC/EL TR-10-3; the proponent agency is CECW-CO-R	OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
---	---

Project/Site: DD17 Levee Repair	City/County: Skagit	Sampling Date: 1/27/2023
Applicant/Owner: Diking District 17	State: WA	Sampling Point: SP01
Investigator(s): Kaitlyn Kiehart	Section, Township, Range: S18 T34 R04E	
Landform (hillside, terrace, etc.): Floodplain terrace	Local relief (concave, convex, none): Concave	Slope (%): 5
Subregion (LRR): LRR A, MLRA 2	Lat: 48.4301242188	Long: -122.343788476
Soil Map Unit Name: Pilchuck variant fine sandy loam	Datum: NAD83	NWI classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> (If no, explain in Remarks.)		
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> significantly disturbed? Are "Normal Circumstances" present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> naturally problematic? (If needed, explain any answers in Remarks.)		

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Remarks: This sample plot is representative of Wetland A, a Palustrine scrub-shrub wetland located in a depression within a wooded area between the DD17 levee at Site 1 and the Skagit River.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A) Total Number of Dominant Species Across All Strata: 4 (B) Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)
1. <i>Populus balsamifera</i>	20	Yes	FAC	
2.				
3.				
4.				
	20	=Total Cover		Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species x 1 = FACW species x 2 = FAC species x 3 = FACU species x 4 = UPL species x 5 = Column Totals: (A) (B) Prevalence Index = B/A =
Sapling/Shrub Stratum (Plot size: 15 feet)				
1. <i>Salix lasiandra</i>	30	Yes	FACW	
2. <i>Populus balsamifera</i>	20	Yes	FAC	
3. <i>Cornus alba</i>	15	Yes	FACW	
4.				Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0 ¹ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) 5 - Wetland Non-Vascular Plants ¹ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
5.				
	65	=Total Cover		
Herb Stratum (Plot size: 5 feet)				
1.				
2.				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
		=Total Cover		
Woody Vine Stratum (Plot size: 30 feet)				
1.				
2.				
		=Total Cover		
% Bare Ground in Herb Stratum 100				

Remarks: Vegetation met the criteria to be considered hydrophytic.	ENG FORM 6116-9, JUL 2018	Western Mountains, Valleys, and Coast – Version 2.0
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Sampling Point: SP01

HYDROLOGY

Western Mountains, Valleys, and Coast – Version 2.0

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Western Mountains, Valleys, and Coast Region See ERDC/EL TR-10-3; the proponent agency is CECW-CO-R	OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
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Project/Site: DD17 Levee Repair	City/County: Skagit	Sampling Date: 1/27/2023
Applicant/Owner: Diking District 17	State: WA	Sampling Point: SP02
Investigator(s): Kaitlyn Kiehart	Section, Township, Range: S18 T34 R04E	
Landform (hillside, terrace, etc.): Floodplain terrace	Local relief (concave, convex, none): Concave	Slope (%): 5
Subregion (LRR): LRR A, MLRA 2	Lat: 48.4301114429	Long: -122.345169053
Soil Map Unit Name: Pilchuck variant fine sandy loam	Datum: NAD83	NWI classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> (If no, explain in Remarks.)		
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> significantly disturbed? Are "Normal Circumstances" present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> naturally problematic? (If needed, explain any answers in Remarks.)		

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Remarks: This sample plot is representative of the upland areas surrounding the DD17 Levee and Wetland A.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A) Total Number of Dominant Species Across All Strata: 4 (B) Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)
1. <i>Populus balsamifera</i>	60	Yes	FAC	
2. <i>Alnus rubra</i>	10	No	FAC	
3.				
4.				
	70 =Total Cover			Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species 0 x 1 = 0 FACW species 0 x 2 = 0 FAC species 85 x 3 = 255 FACU species 55 x 4 = 220 UPL species 0 x 5 = 0 Column Totals: 140 (A) 475 (B) Prevalence Index = B/A = 3.39
Sapling/Shrub Stratum (Plot size: 15 feet)				
1. <i>Symphoricarpos albus</i>	40	Yes	FACU	
2. <i>Rubus armeniacus</i>	15	Yes	FAC	
3.				
	55 =Total Cover			Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0 ¹ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) 5 - Wetland Non-Vascular Plants ¹ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Herb Stratum (Plot size: 5 feet)				
1. <i>Taraxacum officinale</i>	15	Yes	FACU	
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
	15 =Total Cover			
Woody Vine Stratum (Plot size: 30 feet)				
1.				
2.				
	=Total Cover			
% Bare Ground in Herb Stratum 85				

Remarks: Vegetation did not meet the criteria to be considered hydrophytic.	ENG FORM 6116-9, JUL 2018	Western Mountains, Valleys, and Coast – Version 2.0
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Sampling Point: SP02

HYDROLOGY

ENG FORM 6116-9, JUL 2018

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Western Mountains, Valleys, and Coast Region See ERDC/EL TR-10-3; the proponent agency is CECW-CO-R	OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
---	---

Project/Site: DD22 Levee Repair	City/County: Skagit	Sampling Date: 1/27/2023
Applicant/Owner: Diking District 22	State: WA	Sampling Point: SP03
Investigator(s): Kaitlyn Kiehart	Section, Township, Range: S36 T34 R03E	
Landform (hillside, terrace, etc.): Levee Hillslope	Local relief (concave, convex, none): Concave	Slope (%): 0
Subregion (LRR): LRR A, MLRA 2	Lat: 48.3865351931	Long: -122.370304143
Soil Map Unit Name: Pilchuck variant fine sandy loam	Datum: NAD83	NWI classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> (If no, explain in Remarks.)		
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> significantly disturbed? Are "Normal Circumstances" present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> naturally problematic? (If needed, explain any answers in Remarks.)		

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Remarks: This sample plot is representative of Wetland B, a Palustrine scrub-shrub wetland located in a depression at the base of the DD22 levee slope on the edge of a wooded area.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A) Total Number of Dominant Species Across All Strata: 3 (B) Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)
1. <i>Alnus rubra</i>	20	Yes	FAC	
2.				
3.				
4.				
	20	=Total Cover		Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species x 1 = FACW species x 2 = FAC species x 3 = FACU species x 4 = UPL species x 5 = Column Totals: (A) (B) Prevalence Index = B/A =
Sapling/Shrub Stratum (Plot size: 15 feet)				
1. <i>Cornus alba</i>	40	Yes	FACW	
2.				
3.				
4.				Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0 ¹ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) 5 - Wetland Non-Vascular Plants ¹ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
5.				
	40	=Total Cover		
Herb Stratum (Plot size: 5 feet)				
1. <i>Epilobium ciliatum</i>	10	Yes	FACW	
2.				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
	10	=Total Cover		
Woody Vine Stratum (Plot size: 30 feet)				
1.				
2.				
		=Total Cover		
% Bare Ground in Herb Stratum	90			

Remarks: Vegetation met the criteria to be considered hydrophytic.	ENG FORM 6116-9, JUL 2018	Western Mountains, Valleys, and Coast – Version 2.0
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Sampling Point: SP03

HYDROLOGY

ENG FORM 6116-9, JUL 2018

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Western Mountains, Valleys, and Coast Region See ERDC/EL TR-10-3; the proponent agency is CECW-CO-R	OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
---	---

Project/Site: DD22 Levee Repair	City/County: Skagit	Sampling Date: 1/27/2023
Applicant/Owner: Diking District 22	State: WA	Sampling Point: SP04
Investigator(s): Kaitlyn Kiehart	Section, Township, Range: S36 T34 R03E	
Landform (hillside, terrace, etc.): Levee Hillslope	Local relief (concave, convex, none): None	Slope (%): 3
Subregion (LRR): LRR A, MLRA 2	Lat: 48.3866368594	Long: -122.37058691
	Datum: NAD83	
Soil Map Unit Name: Pilchuck variant fine sandy loam	NWI classification: N/A	
Are climatic / hydrologic conditions on the site typical for this time of year? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> (If no, explain in Remarks.)		
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> significantly disturbed? Are "Normal Circumstances" present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> naturally problematic? (If needed, explain any answers in Remarks.)		

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Remarks: This sample plot is representative of the upland areas surrounding the DD22 levee and Wetland B.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A) Total Number of Dominant Species Across All Strata: 5 (B) Percent of Dominant Species That Are OBL, FACW, or FAC: 80.0% (A/B)
1. <i>Alnus rubra</i>	10	Yes	FAC	
2.				
3.				
4.				
	10	=Total Cover		Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <input type="checkbox"/> x 1 = <input type="checkbox"/> FACW species <input type="checkbox"/> x 2 = <input type="checkbox"/> FAC species <input type="checkbox"/> x 3 = <input type="checkbox"/> FACU species <input type="checkbox"/> x 4 = <input type="checkbox"/> UPL species <input type="checkbox"/> x 5 = <input type="checkbox"/> Column Totals: (A) (B) Prevalence Index = B/A = <input type="checkbox"/>
Sapling/Shrub Stratum (Plot size: 15 feet)				
1. <i>Cornus alba</i>	30	Yes	FACW	
2. <i>Rubus armeniacus</i>	15	Yes	FAC	
3. <i>Symphoricarpos albus</i>	15	Yes	FACU	
4.				Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0 ¹ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) 5 - Wetland Non-Vascular Plants ¹ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
5.				
	60	=Total Cover		
Herb Stratum (Plot size: 5 feet)				
1. <i>Epilobium ciliatum</i>	10	Yes	FACW	
2.				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
	10	=Total Cover		
Woody Vine Stratum (Plot size: 30 feet)				
1.				
2.				
		=Total Cover		
% Bare Ground in Herb Stratum 90				
Remarks: Vegetation met the criteria to be considered hydrophytic.				

Sampling Point: SP04

HYDROLOGY

ENG FORM 6116-9, JUL 2018

Appendix D - Environmental Justice Analysis



EJScreen Report (Version 2.11)



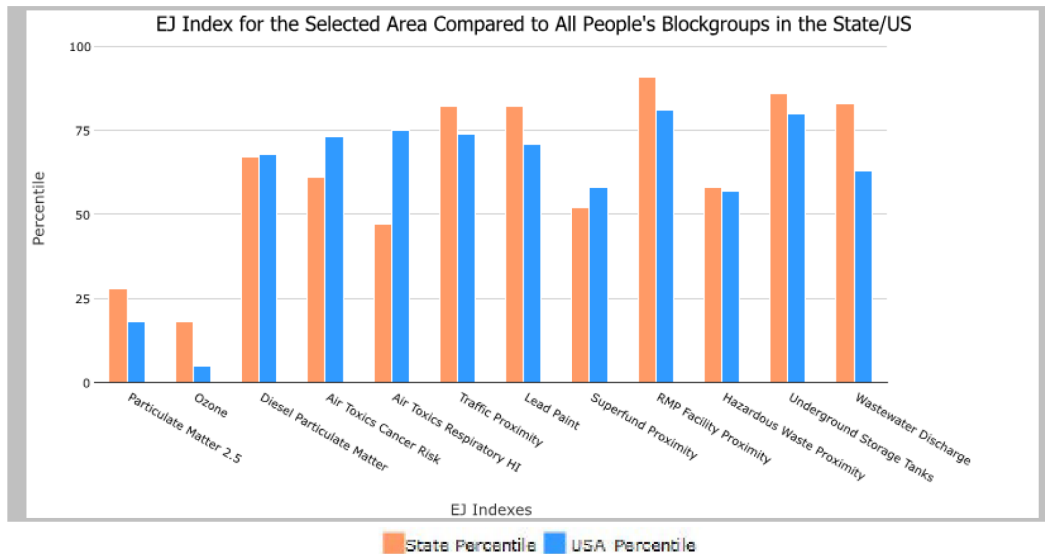
the User Specified Area, WASHINGTON, EPA Region 10

Approximate Population: 14,229

Input Area (sq. miles): 14.02

Selected Variables	State Percentile	USA Percentile
Environmental Justice Indexes		
Particulate Matter 2.5 EJ index	28	18
Ozone EJ index	18	5
Diesel Particulate Matter EJ index*	67	68
Air Toxics Cancer Risk EJ index*	61	73
Air Toxics Respiratory HI EJ index*	47	75
Traffic Proximity EJ index	82	74
Lead Paint EJ index	82	71
Superfund Proximity EJ index	52	58
RMP Facility Proximity EJ index	91	81
Hazardous Waste Proximity EJ index	58	57
Underground Storage Tanks EJ index	86	80
Wastewater Discharge EJ index	83	63

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.

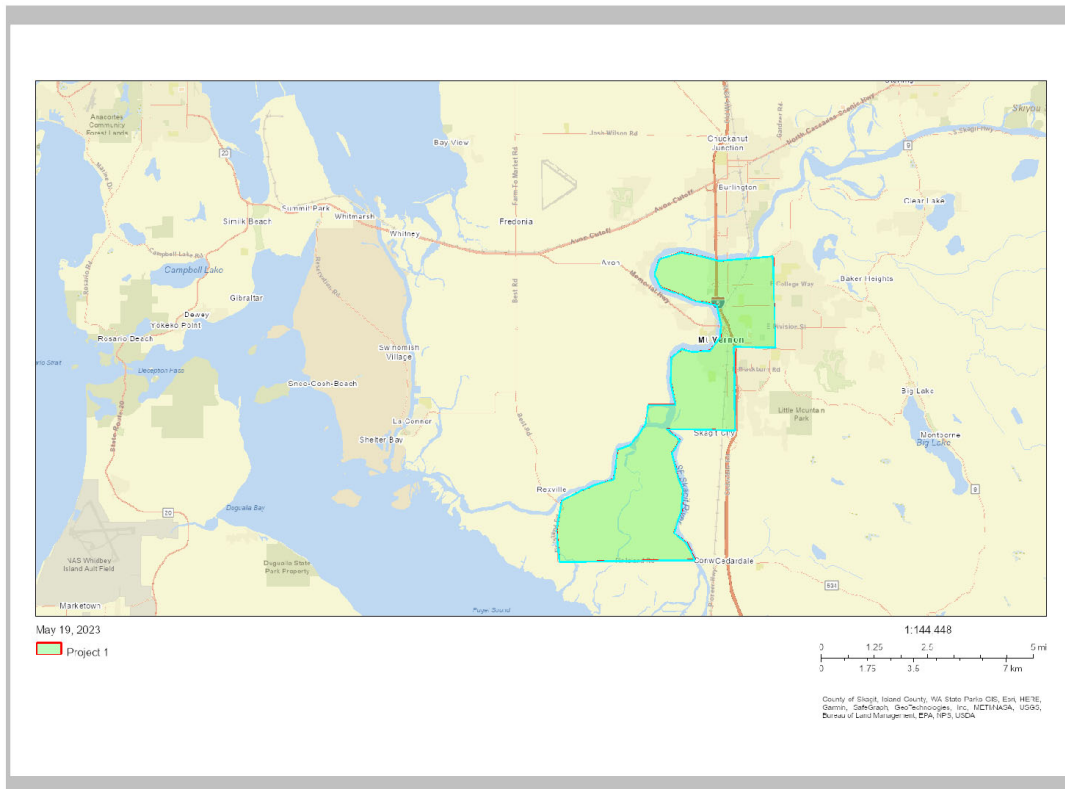


*Diesel particulate matter, air toxics cancer risk, and air toxics respiratory hazard index are from the EPA's Air Toxics Data Update, which is the Agency's ongoing, comprehensive evaluation of air toxics in the United States. This effort aims to prioritize air toxics, emission sources, and locations 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. Cancer risks and hazard indices from the Air Toxics Data Update are reported to one significant figure and any additional significant figures here are due to rounding. More information on the Air Toxics Data Update can be found at: <https://www.epa.gov/haps/air-toxics-data-update>.

the User Specified Area, WASHINGTON, EPA Region 10

Approximate Population: 14,229

Input Area (sq. miles): 14.02



Sites reporting to EPA	
Superfund NPL	0
Hazardous Waste Treatment, Storage, and Disposal Facilities (TSDF)	0

EJScreen Report (Version 2.11)
the User Specified Area, WASHINGTON, EPA Region 10
Approximate Population: 14,229
Input Area (sq. miles): 14.02



Selected Variables	Value	State Avg.	%ile in State	USA Avg.	%ile in USA
Pollution and Sources					
Particulate Matter 2.5 ($\mu\text{g}/\text{m}^3$)	6.47	7.85	11	8.67	7
Ozone (ppb)	30.2	35.3	8	42.5	2
Diesel Particulate Matter* ($\mu\text{g}/\text{m}^3$)	0.251	0.334	40	0.294	50-60th
Air Toxics Cancer Risk* (lifetime risk per million)	30	35	47	28	80-90th
Air Toxics Respiratory HI*	0.4	0.51	32	0.36	80-90th
Traffic Proximity (daily traffic count/distance to road)	810	740	76	760	77
Lead Paint (% Pre-1960 Housing)	0.35	0.22	73	0.27	61
Superfund Proximity (site count/km distance)	0.038	0.18	25	0.13	35
RMP Facility Proximity (facility count/km distance)	1.6	0.64	89	0.77	86
Hazardous Waste Proximity (facility count/km distance)	0.3	2.2	33	2.2	38
Underground Storage Tanks (count/km ²)	8.9	6.3	78	3.9	87
Wastewater Discharge (toxicity-weighted concentration/m distance)	0.0039	0.021	95	12	61
Socioeconomic Indicators					
Demographic Index	43%	28%	83	35%	68
Supplemental Demographic Index	18%	12%	85	15%	72
People of Color	45%	33%	76	40%	63
Low Income	41%	24%	82	30%	70
Unemployment Rate	7%	5%	71	5%	69
Limited English Speaking Households	6%	4%	80	5%	79
Less Than High School Education	15%	8%	83	12%	71
Under Age 5	8%	6%	73	6%	73
Over Age 64	16%	15%	56	16%	53
Low Life Expectancy	19%	18%	61	20%	47

EJScreen is a screening tool for pre-decisional use only. It can help identify areas that may warrant additional consideration, analysis, or outreach. It does not provide a basis for decision-making, but it may help identify potential areas of EJ concern. Users should keep in mind that screening tools are subject to substantial uncertainty in their demographic and environmental data, particularly when looking at small geographic areas. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJScreen documentation for discussion of these issues before using reports. This screening tool does not provide data on every environmental impact and demographic factor that may be relevant to a particular location. EJScreen outputs should be supplemented with additional information and local knowledge before taking any action to address potential EJ concerns.

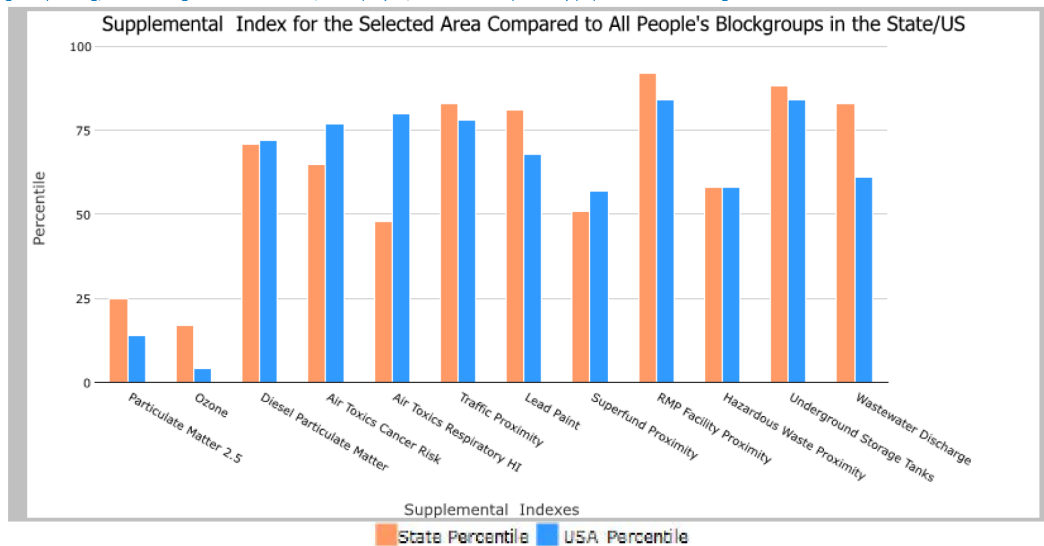
the User Specified Area, WASHINGTON, EPA Region 10

Approximate Population: 14,229

Input Area (sq. miles): 14.02

Selected Variables	State Percentile	USA Percentile
Supplemental Indexes		
Particulate Matter 2.5 Supplemental Index	25	14
Ozone Supplemental Index	17	4
Diesel Particulate Matter Supplemental Index*	71	72
Air Toxics Cancer Risk Supplemental Index*	65	77
Air Toxics Respiratory HI Supplemental Index*	48	80
Traffic Proximity Supplemental Index	83	78
Lead Paint Supplemental Index	81	68
Superfund Proximity Supplemental Index	51	57
RMP Facility Proximity Supplemental Index	92	84
Hazardous Waste Proximity Supplemental Index	58	58
Underground Storage Tanks Supplemental Index	88	84
Wastewater Discharge Supplemental Index	83	61

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



This report shows the values for environmental and demographic indicators, EJScreen indexes, and supplemental indexes. It shows environmental and demographic raw data (e.g., the estimated concentration of ozone in the air), and also shows what percentile each raw data value represents. These percentiles provide perspective on how the selected block group or buffer area compares to the entire state, EPA region, or nation. For example, if a given location is at the 95th percentile nationwide, this means that only 5 percent of the US population has a higher block group value than the average person in the location being analyzed. The years for which the data are available, and the methods used, vary across these indicators. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJScreen documentation for discussion of these issues before using reports. For additional information, see: www.epa.gov/environmentaljustice.

Appendix E – Coastal Zone Management Act Coordination



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

May 5, 2023

Planning, Environmental, and Cultural Resources Branch

Loreé Randall
Federal Consistency Coordination
Washington Department of Ecology
P.O. Box 47600
Olympia, Washington 98504

RE: Coastal Zone Management Act Consistency Determination for Levee Repairs in Skagit Dike Districts 17 and 22 at Mount Vernon and in Skagit County, Washington

Dear Ms. Randall:

The Seattle District, U.S. Army Corps of Engineers (Corps) is proposing to repair levees in the Skagit Dike Districts (DDs) 17 and 22 in the city of Mount Vernon and in unincorporated Skagit County, Washington. Repair of these levees is authorized by Public Law 84-99 (33 U.S.C. Section 701n, Emergency Response to Natural Disasters). The Corps' repair work under this authority is limited to the repair of 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 local non-federal sponsors for the projects are the respective DDs.

The purpose of the project is to repair the levees to their pre-damage levels of flood protection. In November 2021, a flood event damaged a total of approximately 1,900 linear feet (LF) at two locations along the DD 17 Levee and 800 LF of the DD 22 Levee. The repairs will restore flood protection to the same levels provided by the levees prior to the damaging flood event. The Corps plans to repair the levees within their pre-damage footprints and existing alignments. The repair technique involves construction of a clay core (i.e., clay-filled trench) to create an impermeable layer that will reduce seepage that is undermining the levee foundations. The clay core will be constructed in the upland bench at the toe of the upper slope of the levees. No work will be conducted below and waterward of the ordinary high water mark (OHWM) of the Skagit River. The proposed work will occur 50-130 feet landward from the OHWM. Construction will occur during the summer low-flow period. Wetlands on two sites (DD 17 Site 1 and DD 2) have been delineated and will be avoided. The Corps has determined that no impacts regulated under Section 404 of the Clean Water Act will occur. The Corps has also determined the project will have no effect on species listed under the Endangered Species Act.

The enclosed Consistency Determination (CD) documents consistency to the maximum extent practicable with the enforceable policies of the approved Washington State Coastal Zone Management Program.

This letter and CD is being sent via e-mail to you and
ecyreczmafedconsistency@ecy.wa.gov.

If you have any questions or need additional information, Ms. Kylie Webb is the Environmental Coordinator for this project and can be reached at (206) 764-5531 or kylie.m.webb@usace.army.mil; and Ms. Caren Crandell is the Clean Water Act Coordinator for Corps civil works projects and can be reached at 206-764-6169 or caren.j.crandell@usace.army.mil. I may also be contacted at (206) 764-6761 or laura.a.boerner@usace.army.mil.

Sincerely,

For:

PUNKE.MATTHEW. Digitally signed by
M.1151361001 PUNKE.MATTHEW.M.1151361001
Date: 2023.05.05 16:40:05 -0700
Laura A. Boerner, LG, LHG
Chief, Planning, Environmental and
Cultural Resources Branch

Enclosure

Appendix F - Public Comments

Public Comments for the NOP:

No public comments were received during the comment period.

Appendix G - Cultural Resources Coordination



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

February 16, 2023

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

Re: Skagit County Diking District No. 17 Site 1 and 2 Main Levee Left Bank
Non-Federal Levee Rehabilitation 2022 Project
Log No.: 2023-01-00532-COE-S

Dear Laura Boerner:

Thank you for contacting our department. We have reviewed the materials you provided for the Area of Potential Effect (APE) for the proposed *Skagit County Diking District No. 17 Site 1 and 2 Main Levee Left Bank Non-Federal Levee Rehabilitation 2022 Project*, Mount Vernon, Skagit County, Washington

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

We look forward to further consultations as you consult with the concerned tribal governments, 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

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





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

February 16, 2023

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

Re: Skagit County Diking District No. 22 Levee Left Bank Non-Federal Levee
Rehabilitation 2022 Project
Log No.: 2023-02-00785-COE-S

Dear Laura Boerner:

Thank you for contacting our department. We have reviewed the materials you provided for the Area of Potential Effect (APE) for the proposed *Skagit County Diking District No. 22 Levee Left Bank Non-Federal Levee Rehabilitation 2022 Project* near Fir Island, Skagit County, Washington

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

We look forward to further consultations as you consult with the concerned tribal governments, 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

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





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

May 10, 2023

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

Re: PL 84-99 Skagit County Diking District No. 17 Site 1 and 2 Main Levee Left
Bank Non-Federal Levee Rehabilitation 2022 Project
Log No.: 2023-01-00532-COE-S

Dear Laura A. Boerner:

Thank you for contacting our department. We have reviewed the information you provided for the proposed *PL 84-99 Skagit County Diking District No. 17 Site 1 and 2 Main Levee Left Bank Non-Federal Levee Rehabilitation 2022 Project* near the City of Mount Vernon, Washington, in Skagit County, Washington.

We concur with your Determination of No Adverse Effect with the stipulation for an unanticipated find plan.

We would appreciate receiving any correspondence or comments from concerned tribes or other parties that you receive as you consult under the requirements of 36CFR800.4(a)(4). In the event that archaeological or historic materials are encountered during project activities, work in the immediate vicinity must stop, the area secured, and the concerned tribe's cultural staff and cultural committee and this department notified.

These comments are based on the information available at the time of this review and on behalf of the State Historic Preservation Officer in compliance with the Section 106 of the National Historic Preservation Act, as amended, and its implementing regulations 36CFR800.4. Should additional information become available, our assessment may be revised, including information regarding historic properties that have not yet been identified. Thank you for the opportunity to comment and a copy of these comments should be included in subsequent environmental documents.

Sincerely,

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

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

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





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

May 10, 2023

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

Re: PL 84-99 Skagit County Diking District No. 22 Main Levee Left Bank Non-Federal Levee Rehabilitation 2022 Project
Log No.: 2023-02-00785-COE-S

Dear Laura A. Boerner:

Thank you for contacting our department. We have reviewed the information you provided for the proposed *PL 84-99 Skagit County Diking District No. 22 Main Levee Left Bank Non-Federal Levee Rehabilitation 2022 Project* near the City of Mount Vernon, Washington, in Skagit County, Washington.

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

We would appreciate receiving any correspondence or comments from concerned tribes or other parties that you receive as you consult under the requirements of 36CFR800.4(a)(4). In the event that archaeological or historic materials are encountered during project activities, work in the immediate vicinity must stop, the area secured, and the concerned tribe's cultural staff and cultural committee and this department notified.

These comments are based on the information available at the time of this review and on behalf of the State Historic Preservation Officer in compliance with the Section 106 of the National Historic Preservation Act, as amended, and its implementing regulations 36CFR800.4. Should additional information become available, our assessment may be revised, including information regarding historic properties that have not yet been identified. Thank you for the opportunity to comment and a copy of these comments should be included in subsequent environmental documents.

Sincerely,

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

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Appendix H - Tribal Coordination



Skagit River System Cooperative

11426 Moorage Way • P.O. Box 368 La Conner, WA 98257-0368
Phone: 360-466-7228 • Fax: 360-466-4047 • www.skagitcoop.org

May 5, 2023

U.S. Army Corps of Engineers
Attn: Kylie Webb
Planning, Environmental, and Cultural Resources Branch
4735 East Marginal Way S
Seattle, WA 98134

RE: PMP-23-02 Skagit County Dike District 17 and Dike District 22 Levee PL 84-99 Repairs
(Submitted electronically)

Dear Kylie,

These comments are offered on behalf of the Sauk-Suiattle Indian Tribe and the Swinomish Indian Tribal Community. They are in response to PMP-23-02 for Levee Repair Projects by Diking Districts 17 and 22 along the Skagit River. Levees along the Skagit River have an outsized impact on resources important to these tribes. Measures implemented in the interest of their maintenance and repair affect fish habitat directly and indirectly. We appreciate the opportunity to provide the following comments.

We understand that this work is aimed to restore the AEP protection level and geographic extent of flood protection provided by the levees to that which existed prior to damage incurred in November 2021. We understand that this is proposed to be accomplished through the preferred alternative, the installation of a clay seepage berm 4 ft wide and 20 feet deep at the three sites.

Flood events of the scale of November 2021—and considerably larger – are anticipated to occur more frequently in the coming decades due to the climatological changes that will bring more intense winter storms and larger atmospheric rivers compounded by higher marine tides. The present-day configuration of the levee system is simply not the best way to manage the anticipated large floods. A broader perspective to floodplain management and levee setbacks must be considered to avoid ongoing ad-hoc emergency measures, levee overtopping, and catastrophic failure. This shift in strategy in flood risk management has been adopted by the Army Corps of Engineers flood risk management (FRM) priorities.

Fisheries and Environmental Services Management for the Sauk-
Suiattle and Swinomish Indian Tribes

We strongly advocate for the ACOE consider and pursue a combination of Alternative 2 – Nonstructural Strategies and Alternative 3 – Levee Setback Alternative to ensure that impacts to Tribally-important and ESA-protected fisheries resources are minimally impacted and potentially enhanced while also accomplishing the ACOE goals for FRM.

We recognize that the ACOE Flood Risk Management Priorities have evolved to emphasize Climate Resilience and Natural and Nature-Based Approaches to FRM. This Skagit River levee system is highly exposed to climate impacts, with significant increases in both hydrologic peaks and sea levels being described by local and regional experts. The Corps must support implementation of climate-resilient and nature-based solutions to floodplain management in the Skagit delta.

This approach may provide myriad benefits to ESA-protected Chinook salmon and steelhead habitat through floodplain and habitat restoration; vulnerable communities in flood-prone areas; floodplain-based and floodplain-dependent economic sectors including agriculture; and the thousands of residents and businesses located within flood prone areas. In-kind repair and status quo management of the levee system risks inadequate flood protection with immense detrimental impacts to habitat essential to ESA-protected and tribally-important fisheries resources.

We have concerns about the installation of the seepage berm and potential effects on important riparian vegetation at the toe of the levee at District 17 Site 1. The riparian forest is one of the limited areas of robust riparian vegetation in this highly developed reach of the Skagit River, and impacts to the existing vegetation would be concerning.

We acknowledge that the Corps does not anticipate any impacts to vegetation and has stated that vegetation impacts will be negligible. However, we also recognize that the work corridor between the toe of the levee and standing trees and shrubs within the Park is quite narrow for installation of a 20-foot deep trench that is 4-feet wide, and construction methods are not described fully in the NOP. We request that any impact to vegetation is carefully monitored and tracked during construction and for the following three growing seasons. Should any vegetation be directly impacted (through removal or damage during construction activities) or indirectly impacted (such as through root damage from trench excavation that is not evident until subsequent growing seasons), that damage should be quantified and fully mitigated. We request that the Corps consult with us to discuss impacts and mitigation should this unanticipated outcome occur.

We are additionally concerned about the perpetuation of the levee system and the associated impacts to the Skagit River and its habitats that are essential to ESA-protected salmon and important tribal resources. Levees serve to isolate the floodplain from its river. We are concerned that the Corps has not proposed any mitigation for actions that serve to reestablish, strengthen, and sustain that disconnection of the river from floodplain habitats, and request that the Corps propose mitigation for impacts to floodplain habitats and connectivity.

As always, Skagit River System Cooperative appreciates the opportunity to review and comment on this permit application. If you have any questions or would like to discuss further, please contact me at 360-391-8472 or nkammer@skagitcoop.org.

Sincerely,

A handwritten signature in cursive script, appearing to read "Nora Kammer".

Nora Kammer
Environmental Protection Ecologist

Response: Thank you for your comments. Public Law 84-99, as provided by Congress, authorizes the U.S. Army Corps of Engineers (USACE) to act and react to emergencies caused by floods, contaminated water sources, drought, or dam failures. This authority allows USACE to repair and/or rehabilitate any qualified flood control project (e.g., levees) whether it is federally constructed or privately owned. The authority provided by the PL 84-99 program is limited to restoration of the pre-flood level of protection for life and property using the least cost alternative that restores the level of protection while fulfilling all legal, technical, and environmental requirements. Improvements or betterments beyond this are possible under the PL 84-99 program but are limited to those supported by the non-Federal sponsor.

Both a nonstructural and setback levee alternative were considered for these projects (Section 2). The cost and logistical time needed to implement a nonstructural or setback alternative makes it unviable given both the PL 84-99 program's requirement to implement repairs with a favorable benefit-to-cost ratio and emergency need for repair. These alternatives would also require participation of the non-federal sponsors to implement, and the non-federal sponsors have not agreed to meet their various obligations for these projects, including land acquisition and additional cost share funding in executing a setback alternative.

The Skagit DD 17 and DD 22 levees are likely to remain in their current alignment for the foreseeable future. Roads, railroads, bridges, trails, business, agriculture, and utilities are located immediately near the levees. Substantial resources and support are necessary to setback the entirety of the Skagit levee system, more than is available to repair the comparatively small, damaged sites on the DD 17 and DD 22 levees. Setbacks or improvements can be evaluated through other USACE programs, each of which also require the sharing of implementation and operation/maintenance responsibilities, including sharing cost, with a non-Federal partner. If a non-Federal sponsor is interested in setbacks or other levee improvements USACE has a variety of programs with authorities to pursue, including aquatic habitat ecosystem restoration (Continuing Authorities Program [CAP] Section 206), restoration of degraded ecosystems through the modification of existing USACE's projects (CAP Section 1135), or construction or improvement of flood control works (CAP Section 205). This is not an exhaustive list and other programs are available.

USACE includes mitigation as part of a proposed Federal action when there is a statutory or regulatory requirement to do so. Because the proposed rehabilitation of the DD 17 and DD 22 levees would not result in impacts to ESA-listed species or designated critical habitat, essential fish habitat, or waters of the U.S., USACE is not proposing any mitigation for the project at this time. At DD 17 Site 1, USACE does not anticipate damage to trees or shrubs, or indirect root impacts. USACE will monitor vegetation impacts at DD17 Site 1 and notify the SRSC if damage to trees and shrubs occurs.

Comment: April 28, 2023; The Suquamish Tribe contacted USACE via email stating that they had no comment on the proposed project.

Response: Thank you for your response.