12/13/2023 edoc

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, WALLA WALLA DISTRICT
201 NORTH 3RD AVENUE
WALLA WALLA, WA 99362-1876

December 11, 2023

Planning, Programs, and Project
Management Division

Washington State Department of Ecology
Northwest Region Office
Mr. Tomas Buroker, Director
15700 Dayton Avenue North
Shoreline, WA 98133-9716

Dear Mr. Buroker:

Pursuant to the Coastal Zone Management Act of 1972 (CZMA), as amended (16 U.S. Code [U.S.C.] § 1451 et seq.), the U.S. Army Corps of Engineers, Walla Walla District, (USACE) has prepared the enclosed Consistency Determination (CD). We request your review of the proposed High Cedars Levee Repair Project (Project), on the Puyallup River in Pierce County, Washington, under authority of Public Law 84-99. USACE has determined that the Project is consistent to the maximum extent practicable with the enforceable policies of the approved state Coastal Zone Management Programs.

The High Cedars Levee was damaged during a flood event in February 2020, creating an emergency or exigent circumstance due to the threat of flooding. It is important to complete the levee repairs before the next flood season starting in October. Construction work is scheduled to begin in July 2024 to allow repair work to be completed prior to the flood season, which may also allow all in-water work to be completed during the preferred in-water work window ending August 31st. The Project includes removing vegetation from damaged sections of the High Cedars Levee to allow access to and facilitate the repairs; reestablishing riverside slopes where erosion or riprap revetment displacement has occurred by installing large rock at the toe of the levee to support the slopes; placing willow bundles above the toe; placing large, dense riprap revetment along the riverside slopes; and grading slopes with suitable fill material along the Puyallup River.

If you have any questions or would like additional information about the Project, please contact Mr. Ben Tice at 509-527-7267, or by email at Ben.J.Tice@usace.army.mil.

Sincerely,

ERICKSON.MICHAEL.SCOTT.1151172349
Digitally signed by ERICKSON.MICHAEL.SCOTT.1151172349
Date: 2023.12.12 16:20:10 -08'00'

Michael S. Erickson
Chief, Environmental Compliance Section

Enclosure

COASTAL ZONE MANAGEMENT ACT CONSISTENCY DETERMINATION

High Cedars Non-Federal Levee Repair Project

Pierce County, Washington

Submitted by the U.S. Army Corps of Engineers,
Walla Walla District

December 2023

US Army Corps of Engineers ®
Walla Walla District
BUILDING STRONG®

1. INTRODUCTION

The Coastal Zone Management Act (CZMA) of 1972, as amended (16 U.S. Code [U.S.C.] § 1451 et seq.), requires Federal agencies to carry out their activities in a manner consistent to the maximum extent practicable with the enforceable policies of the approved state Coastal Zone Management (CZM) Programs.

In accordance with 15 CFR § 930.30, Federal agencies are required to determine if their actions/activities (1) may affect any coastal use or resource and (if so) whether the action/activity will be undertaken in a manner consistent to the maximum extent practicable with the enforceable policies of an approved management program. The High Cedars Levee Repair Project is an activity undertaken by a Federal agency (U.S. Army Corps of Engineers (USACE) and this document provides the Federal consistency determination with the enforceable provisions of the Washington CZM Program.

1.1. Project Location

The proposed repairs to the High Cedars levee are along the Puyallup River near the city of Orting in Pierce County, Washington (Figure 1). The repair sites are located within the jurisdiction of the Pierce County Shoreline Master Program (SMP).

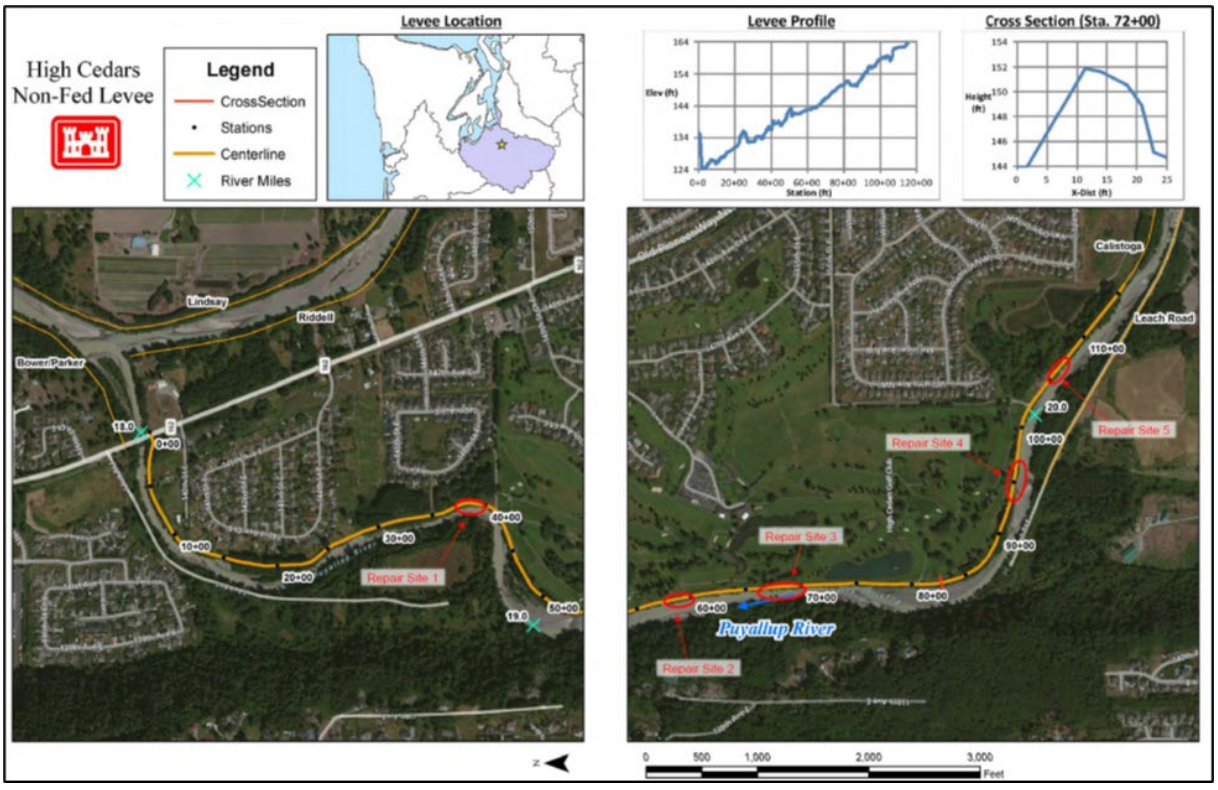


Figure 1. Location of the High Cedars Levee repair project on the Puyallup River near Orting, WA.

1.2. Background

The High Cedars Levee is located along the right bank of the Puyallup River, just upstream of its confluence with the Carbon River at Orting, Washington. The levee is one segment of a three-segment system, with the High Cedars segment running approximately 11,500 feet from River Mile 18.0 to 20.2. In its undamaged state, the levee provides a 3% AEP (33-year average recurrence interval) level of protection against flooding to public infrastructure and residential, commercial, and agricultural interests. Prior to the flood event that damaged the levee, the most recent levee inspection conducted by USACE was in August of 2019. The levee inspection resulted in a rating of minimally acceptable. The local sponsor for the proposed repair is Pierce County.

This levee system is a non-federally constructed, operated, and maintained levee system. It forms a complete system from river mile 18.0 to 23.2. Starting from upstream, Jones Levee ties into high ground at State Route 162 and ties into the Calistoga Levee at the Calistoga Street Bridge. Calistoga ties directly into High Cedars which ends at the State Route 162 bridge to make a complete system. The system was constructed primarily between the 1930s and 1960s by local entities, but the exact date for this system is unknown. Critical infrastructure within the leveed area includes the Orting Police Department, the Orting Fire Department, two schools, and a childcare center. The Calistoga Levee was setback recently in 2014-2015. Pierce County is the sponsor who is responsible for operations and maintenance of the levee system.

USACE rebuilt roughly 3,300 feet of the levee in 1996 when the project was adopted into the Federal program. The levee segment ties into high ground at the upstream and downstream ends (Appendix A). The levee embankment is constructed of silty sand and sand fill. Levee height is typically 6 feet above the landward toe. The crest width is typically 10 to 15 feet and is surfaced with crushed gravel. Riverward levee slopes are roughly 1.5H:1V, while landward slopes are typically 2H:1V. The riverward slope is typically armored with riprap. Areas repaired in 2006 included a launchable toe of riprap.

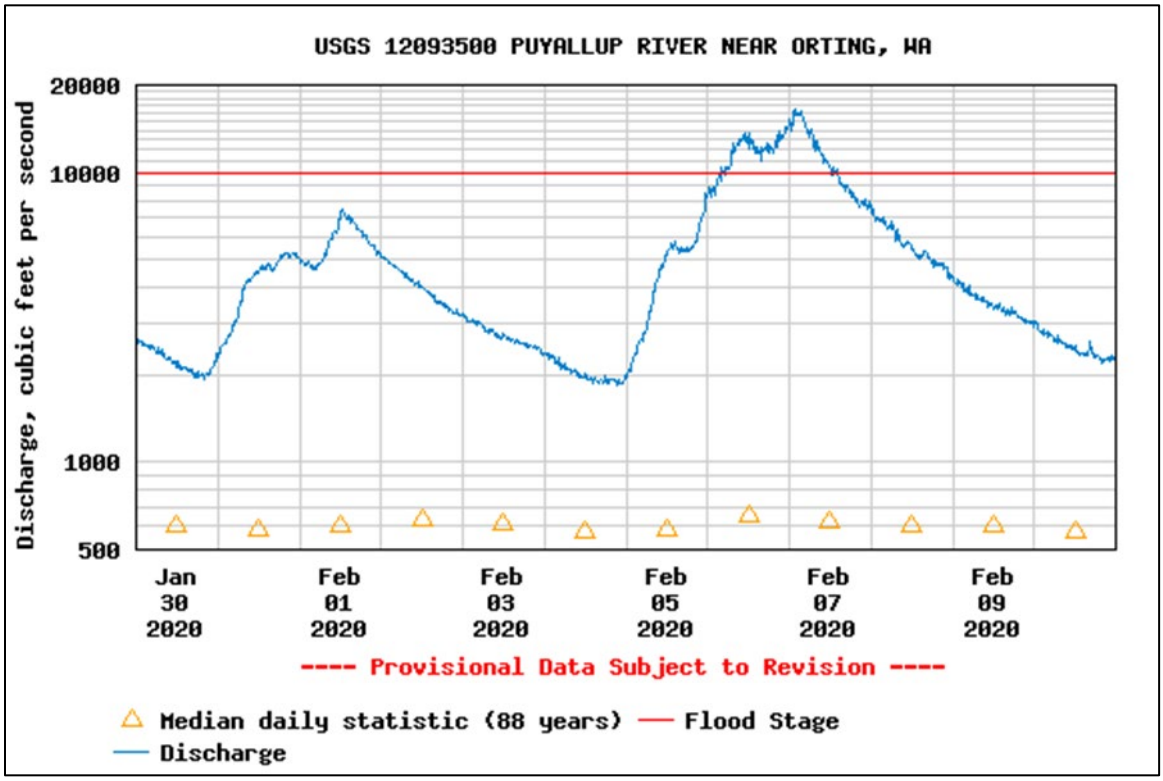


Figure 2. Flow Hydrograph, Puyallup River near Orting during damaging flooding in 2020

2. PURPOSE

The purpose of the proposed repairs is to restore the level of flood protection provided by the High Cedars Levee to that which existed prior to flood damage sustained by the levees during a 2020 flood event, potentially incorporating resiliency measures resulting from improved technology or construction methods. The levee has an increased likelihood of damage or breach in its current condition, as confirmed by a recent assessment.

In an undamaged state, the High Cedars Levee provides a 33-year level of protection against flooding of commercial and residential properties. In its damaged state, the levee provides a 5-year flood level of protection due to erosion at the toe of the levees (20 percent annual exceedance probability (AEP). Per PL 84-99, the USACE is authorized to repair damaged flood control works to the pre-flood level of protection.

The 2020 flood event damaged the High Cedars Levee at five locations with a combined damage length of roughly 1,870 linear feet (LF). At two locations (Sites 2 and 4), riprap from the riverward toe has also been eroded. There are several minor slope failures within the riverward slope, which have displaced the slope armor and exposed the levee embankment material. Site 2 is approximately 275 feet in length. Site 4 is approximately 425 feet in length.

Damage at Site 3 is similar to that observed at Sites 2 and 4. Riprap has been scoured

from the levee toe and slope failures on the riverward slope have displaced slope armor and exposed embankment material. However, the failures at this site extend to the edge of the riverside levee crest. Site 3 is approximately 600 feet in length.

In the damaged state, the level of protection is diminished from 3% AEP (33-year) to 20% AEP (5-year). The post-flood level of protection assessment tool included in the PL 84-99 Levee Rehabilitation Program Guidance Memorandum, dated 09 June 2017, was used in the evaluation of the High Cedars Levee damages. The memorandum provides specific instructions for determining the levels of protection for eligible levees and the processes for determining the damaged levels of protection.

3. PROPOSED ACTION

The repair sites for the High Cedars Levee are near Orting, Washington on the Puyallup River. The proposed repair for the High Cedars Levee is approximately 1,870 LF (Figure 1-4).

Table 1-1. Approximate area in acres of the overall project area

Site	Acres
Staging	2.4
Repair	1.7

The Federal action is to repair the damaged High Cedars Levee to its pre-flood event, as-designed level of protection. All repair work will occur within the existing levee prism with no riverward encroachment.

The shoreline and river impacted by construction activities will be restricted to the damaged sections of the levee, the transition to the undamaged upstream and downstream sections of the levee, and the willow planting area. Work will require removing streamside shrubs and trees from the levee within the construction project footprint. From start to completion, the repair to the levee is expected to take several weeks and any in-water work for the repairs are intended to occur within the approved in-water work window, which is from July 15 to August 31. If there are delays in construction, coordination regarding work past August 31 may be requested. A typical work week includes six days of construction, eight to ten hours a day, depending on available daylight.

Specific existing conditions for the location(s) where the fill material will be purchased are unknown, as the materials will be purchased from local, privately owned companies. All materials (e.g., riprap, clay-based embankment material, quarry spall) will be acquired from a borrow source, quarry, or gravel mine that is fully permitted by the state. Additionally, any on-site material suitable for reuse will be incorporated into the repair. Material that is not suitable for reuse will be disposed of off-site at an appropriately permitted location. Most work will be completed with hydraulic excavators, dump trucks, and a bulldozer. Other equipment includes a grader, water truck, and a vibratory

compactor. Construction vehicles will access the site from existing levee roads and paths (Appendix B). Equipment and materials, including those excavated from the repair site, will be staged within the levee footprint and at designated staging areas. Tables 2-1 and 2-2 list estimated materials and anticipated equipment involved in the repair.

Table 2-2. Estimated Materials and Quantities for the proposed 2023 repairs.

Material	**Quantity**	**Location**	**Use**
	High Cedars Levee		
Repair Length (feet)	1,870	Repair length includes 25-foot transitions upstream and downstream of repair.	
Quarry Spalls (CY)	1,074	levee slope between riprap and levee embankment material	bedding course
Class V Riprap (CY)	7,196	levee slope	levee armor
Topsoil (CY)	90	with willow stakes at existing vegetation line	soil medium for willows
Willows stakes in bundles of 6 (3-5 ft long, 6 ft on center)	189	As close to OHW as possible	riparian habitat
Quarry spalls are between 4-8 inches in diameter. Class V riprap is between 11-34 inches diameter, weight between 110-3,000 lbs.			

Table 2-3. Anticipated Equipment Utilized in the proposed 2023 repairs.

Equipment	**Equipment Notes**	**Number**	**Location**	**Activities**	**General Description**	**In-water?**
Bulldozer	Blade length 12 ft	1	Throughout the repair footprint	Manipulates materials. Move and place rock, vegetation, and other materials	Move and place material	No, placement from levee toe

Grader	min hp 140, min lbs 30,000, min blade length 12 ft	1	Haul route	Road grading, blade levels dirt or gravel for roads	Road construction	No
Excavator	Track-mounted hydraulic excavator w/hydraulic thumb, min hp 200, min lbs 70,000, min reach 30 ft	2	Throughout the repair footprint	Workhorse of the repair. Manipulates materials. Move and place rock, vegetation, and other materials.	Move and place material	Only bucket and thumb attachment
Vibratory Compactor		1	Levee top	Compact fill material	Compact material	No
Water truck	Holds up to 3,000 gal	1	Haul route Existing roads	Wets road surface to control dust	Dust control	No
Dump truck	10-12 CY Solo Dump truck, haul up to Class V riprap	Dependent on delivery	Haul route Existing roads	Transport of materials to and from the project	Material transport	No

High Cedars Levee Repair: Repairs will occur at five sites for a total repair length of 1,870 feet including necessary transitions. Construction will occur in a single construction period within the approved construction window and generally consists of the following major components described below. Specific existing conditions for the location(s) where the fill material will be purchased are unknown, as the materials will be purchased from local, privately owned companies. Any borrow site, quarry, or gravel mine will be fully permitted by the state.

Site Preparation: The first component of construction includes the preparation of access routes and the existing levee prism 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. Any invasive vegetation will be disposed of off-site in a manner to prevent its spread. Staging activities will consist of temporarily stockpiling rock, supplies, equipment, and vehicles.

Deconstruct Damaged Levee: The damaged portion of the levee will be deconstructed by removing, salvaging, and stockpiling remnant riprap and other existing material as practicable. These materials will be stockpiled in approved areas for reuse in the repair or

disposed of off-site.

Construct Levee Repair: Construction will commence at the toe, starting upstream and working downstream, to deflect flows and minimize turbidity in the construction area. The construction will adhere to the construction documents. The buried toe, levee prism, and slope will be constructed per design requirements. The repair will smoothly transition at the upstream and downstream limits of construction into the adjacent slopes.

Complete Construction: Upon completion of all construction activities, areas disturbed by levee construction, staging activities, and road access will be restored to pre-construction condition as necessary. The USACE will complete willow plantings for High Cedars on site, as described below.

The necessary repairs to the High Cedars Levee are moderately substantial and repaired sites will take time to return to a more natural condition. It is generally against USACE policy, and PL 84-99 inspection requirements, to allow woody vegetation (i.e., trees) on flood levees, especially with root systems which might extend through the levee and offer seepage paths. 33 CFR § 208.10 (Local flood protection works; maintenance and operation of structures and facilities) states, "(b) Measures shall be taken to promote the growth of sod. . . [and] removal of wild growth and drift deposits[.]" The same regulation, however, states "Where practicable, measures shall be taken to retard bank erosion by planting of willows or other suitable growth on areas riverward of the levees." The USACE is, therefore, proposing willow plantings in an attempt to stabilize levee repairs and limit erosion at the levee repair site, avoid, minimize, or offset potential effects to ESA listed fish species and designated habitat, and limit water quality impacts associated with repair construction activities. Specially, the USACE is proposing the following:

> 189 willow bundles will be incorporated into the High Cedars Levee during repair/rehabilitation construction activities and turbidity monitoring would occur during in-water work.

4. JURISDICTION AND CONSISTENCY REQUIREMENTS

The USACE has determined the proposed PL 84-99 levee rehabilitation/repair projects for the High Cedars Levee in Pierce County will have an effect on the coastal use or resources, primarily the following: aquatic resources, and water quality.

Washington's CZM Program defines the State's coastal zone to include the 15 counties with marine shorelines, which includes Pierce County. Local governments hold the primary responsibility for the implementation of the Washington Shoreline Management Act (SMA), which is one of the enforceable policies of the approved CZM Program (see, https://ecology.wa.gov/Water-Shorelines/Shoreline-coastal-management/Coastal-zone-management/Federal-consistency).

In the case of the High Cedars Levee Repair Project, the local government is Pierce County. Pierce County implements the SMA through the Pierce County Shoreline Management Program (SMP) (see, https://ecology.wa.gov/Water-Shorelines/Shoreline-coastal-management/Shoreline-coastal-planning/State-approved-Shoreline-Master-Programs#WW). Pierce County SMP designates the reach of the Puyallup River that includes the project area as a shoreline because it is adjacent to a river that has greater than 20 cubic feet per second mean annual flow. Proposed Federal activities will occur within 200 feet of the regulated shoreline area.

4.1. Consistency Requirements

The USACE is seeking state concurrence with this Consistency Determination for the proposed repairs from Ecology per CZMA Section 307 (16 USC 1456 (c)(1)(A)) and 15 CFR 930 Subpart C under Washington's program. Federal projects that are reasonably anticipated to affect land use, water use, or natural resources of the coastal zone must demonstrate consistency with the following enforceable policies, to the maximum extent practicable.

4.1.1. Washington State Water Pollution Control Act (WPCA)

The proposed action is consistent to the maximum extent practicable with the State Water Pollution Control Act. The Washington Department of Ecology is responsible for participating fully, and meeting the requirements of, the Federal Clean Water Act through the State WPCA. The USACE reviewed the WPCA (Revised Code of Washington (RCW) 90.48) and its implementing regulations (Washington Administrative Code (WAC) 173-40 through 372-68) and has determined that the proposed levee repair project is consistent with the WPCA.

Applicable WPCA RCWs

The USACE has determined that the following RCWs are applicable to the proposed project:

RCW 90.48.080 Discharge of polluting matter in waters prohibited. It shall be unlawful for any person to throw, drain, run, or otherwise discharge into any of the waters of this state, or to cause, permit or suffer to be thrown, run, drained, allowed to seep or otherwise discharged into such waters any organic or inorganic matter that shall cause or tend to cause pollution of such waters according to the determination of the department, as provided for in this chapter.

Per RCW 90.48.020, "pollution" is defined as "contamination, or other alteration of the physical, chemical or biological properties, of any waters of the state, including change in temperature, taste, color, turbidity, or odor of the waters, or

such discharge of any liquid, gaseous, solid, radioactive, or other substance into any waters of the state as will or is likely to create a nuisance or render such waters harmful, detrimental or injurious to the public health, safety or welfare, or to domestic, commercial, industrial, agricultural, recreational, or other legitimate beneficial uses, or to livestock, wild animals, birds, fish or other aquatic life." The proposal to place riprap via heavy construction equipment below ordinary high water has the potential to cause short term localized turbidity.

Therefore, by the definition in RCW 90.48.020, the removal of damaged levee material, and placement of rock, below the water surface causing temporary increases in turbidity is considered a pollutant.

The proposed levee repair will include the placement of riprap and quarry spalls. The materials will be purchased from local companies. All materials (e.g., riprap, embankment, quarry spall) will be acquired from a borrow site, quarry, or gravel mine will be fully permitted by the State.

Construction methods have been designed to minimize potential for turbidity and oil leaks. Large rock will be placed and manipulated using the thumb attachment of the excavator, which will be positioned at the top of the bank. Small rock that cannot be manipulated with the thumb attachment, such as quarry spalls, will be transferred from the bucket to the levee slope using a pouring motion. Construction will commence at the toe, starting upstream and working downstream, to deflect flows and minimize turbidity in the construction area.

Additionally, a water quality monitoring plan (Appendix C) will be implemented during all in-water sediment generating activities to ensure that State standards are met. Multiple BMPs will be adhered to during construction to further minimize potential turbidity (Appendix B). Turbidity is expected to be minimal, localized, and short in duration.

BMPs include but are not limited to:

- All construction materials will be free of contaminants such as oils and excessive sediment.

- Drivetrains of equipment will not operate in moving water, and work will occur from the top of the bank where feasible. Only the excavator bucket with thumb attachment will extend into the water.

- Rock placement will occur only within the project footprint.

- Large rocks will be individually placed. No end dumping of rocks onto the levee slope or into the water will occur.

- Stormwater Pollution Prevention Plan will be followed along with corresponding BMPs included in said plan.

Several measures will be taken to minimize potential leaks from construction equipment used during the repair. A Fueling and Spill Recovery Plan will be developed prior to construction; the water quality monitoring plan includes monitoring for oil/grease (Appendix C); and the following BMPs will be adhered to during construction:

- Refueling will occur on the landside of the levee.

- At least one fuel spill kit with absorbent pads will be on site at all times.

- All construction materials will be free of contaminants such as oils and excessive sediment.

- Equipment used near the water will be cleaned prior to construction.

- Construction equipment shall be regularly checked for drips or leaks. Any leak will be fixed promptly, or the equipment will be removed from the project site.

RCW 90.48.445 Aquatic noxious weed control—Water quality permits—Definition. The director shall issue or approve water quality permits for use by federal, state, or local governmental agencies and licensed applicators for the purpose of using, for aquatic noxious weed control, herbicides and surfactants registered under state or federal pesticide control laws, and for the purpose of experimental use of herbicides on aquatic sites, as defined in 40 C.F.R. Sec. 172.3.

There are no known aquatic noxious weeds present at the repair site. A comprehensive list of BMPs is in Appendix B.

Applicable WPCA WAC

The USACE has determined that the following WAC is applicable to the proposed levee repair project:

WAC 173-201A Water Quality Standards for Surface Waters of the State of Washington. The purpose of this chapter is to establish water quality standards for surface waters of the state of Washington consistent with public health and public enjoyment of the waters and the propagation and protection of fish, shellfish, and wildlife, pursuant to the provisions of chapter 90.48 RCW. All actions must comply with this chapter.

Construction methods have been designed to minimize impacts to water quality. Additionally, water quality monitoring will be conducted during in-water work in a manner consistent with the WQMP to ensure that State standards are met

(Appendix C). Multiple BMPs will be adhered to during construction to further minimize impacts to water quality (Appendix B). Any impacts to water quality are expected to be minimal, localized, and short in duration.

BMPs include but are not limited to:

- All construction materials will be free of contaminants such as oils and excessive sediment.

- Drivetrains of equipment will not operate in moving water, and work will occur from the top of the bank. Only the excavator bucket with thumb attachment will extend into the water.

- Rock placement will occur only within the project footprint.

- Rocks will be individually placed. No end dumping of rocks into the water or levee slope will occur.

- Stormwater Pollution Prevention Plan will be followed along with corresponding BMPs included in said plan.

4.1.2. Washington State Clean Air Act (CAA)

USACE reviewed the State CAA (RCW 70.94) and its implementing regulations (WACs 173-400 through 495) and has determined that the proposed levee repair project is consistent with the State CAA to the maximum extent practicable. The USACE has determined that the following enforceable policies are applicable to the proposed levee repair project:

WAC 173-400-035 Nonroad Engines

WAC 173-400-035 (4) Projects that require the operation of nonroad engines with a cumulative maximum rated brake horsepower greater than 500 BHP and less than or equal to 2000 BHP, will require a “notification of intent to operate” as defined in this section.

USACE anticipates that the repair will require the use of several pieces of construction equipment. If the cumulative horsepower exceeds the 500 bhp threshold identified in WAC 173-400-035(1)(b), then the USACE will submit a “notification of intent to operate” to the appropriate regional air agency.

4.1.3. State Ocean Resources Management Act

The enforceable policies of the Ocean Resources Management Act (RCW 43.143) and

WAC 173-26- 360 Part IV: Ocean Use Guidelines (WAC 173-26- 360) do not apply to the project because the proposed action does not include sites adjacent to the Pacific Ocean. No significant long-term impacts to coastal or marine resources or uses of the Pacific Ocean will occur because of this project.

4.1.4 The Marine Spatial Plan for Washington Waters

The proposed project is not located in one of the four Pacific coastal counties covered by the Marine Spatial Plan (Clallam, Jefferson, Grays Harbor, and Pacific). Therefore, the proposed project is not subject to the enforceable policies of the Marine Spatial Plan.

4.1.5 Shoreline Management Act (SMA) – RCW 90.58

4.1.5.1 WACs 173-15 thru 26. Ecology enforces the following policies under the State SMA (see, Ecology Publication No. 20-06-013, dated September 2020 (WA Coastal Zone Management Program Enforceable Policies -- http://ecyapfass/Biblio2/SummaryPages/2006013.html. The USACE's statements of consistency with the implementing WACs are presented in bold italic text below:

- WAC 173-15: Oil and Natural Gas Exploration Permits: ***This project does not include the exploration of oil or natural gas. Therefore, WAC 173-15 does not apply to the proposed action.***
- WAC 173-18: Rivers within Shoreline jurisdiction: ***The project area includes the shoreline and bank area of the Puyallup River. The purpose of this document is to demonstrate consistency with all enforceable policies and regulations, including the locally applicable Pierce County Shoreline Management Program, which is discussed in detail in the next section.***
- WAC 173-20: Lakes within Shoreline jurisdiction: ***This project does not include shoreline adjacent to a lake. Therefore, WAC 173-20 does not apply to the proposed action.***
- WAC 173-22: Wetlands: ***This project does not include activities in a wetland. Therefore, WAC 173-22 does not apply to the proposed action.***
- WAC 173-26 – Shoreline Management Act Regulations*:* ***This project falls within the boundary of the Pierce County SMP. The USACE is a federal agency and thus does not obtain local permits. However, the SMP was used to demonstrate consistency with all enforceable policies and regulations for shorelines of statewide significance.***

4.1.5.2 Pierce County SMP

The determination of consistency with the CZMA for this proposed action is based on review of the Pierce County SMP, as defined in RCW 90.58 and WAC Chapter 173-26. The High Cedars Levee Repair Project is within the coastal zone governed by the Pierce County SMP, which was approved by the Washington Department of Ecology (Ecology). Ordinance No. 2013-45s4.

Applicable sections of the Pierce County SMP are presented below.

Pierce County Shoreline Master Program:

The High Cedars levee repairs are located within the jurisdiction of the Pierce County SMP. The Pierce County SMP regulations were reviewed to determine compliance with the program. Section **18S.10.005 B** states, "…Existing legally established structures and uses may continue to exist, be used, maintained and repaired. That is the case even if the Master Program includes regulations that would not allow new uses or development to be configures or built as they exist."

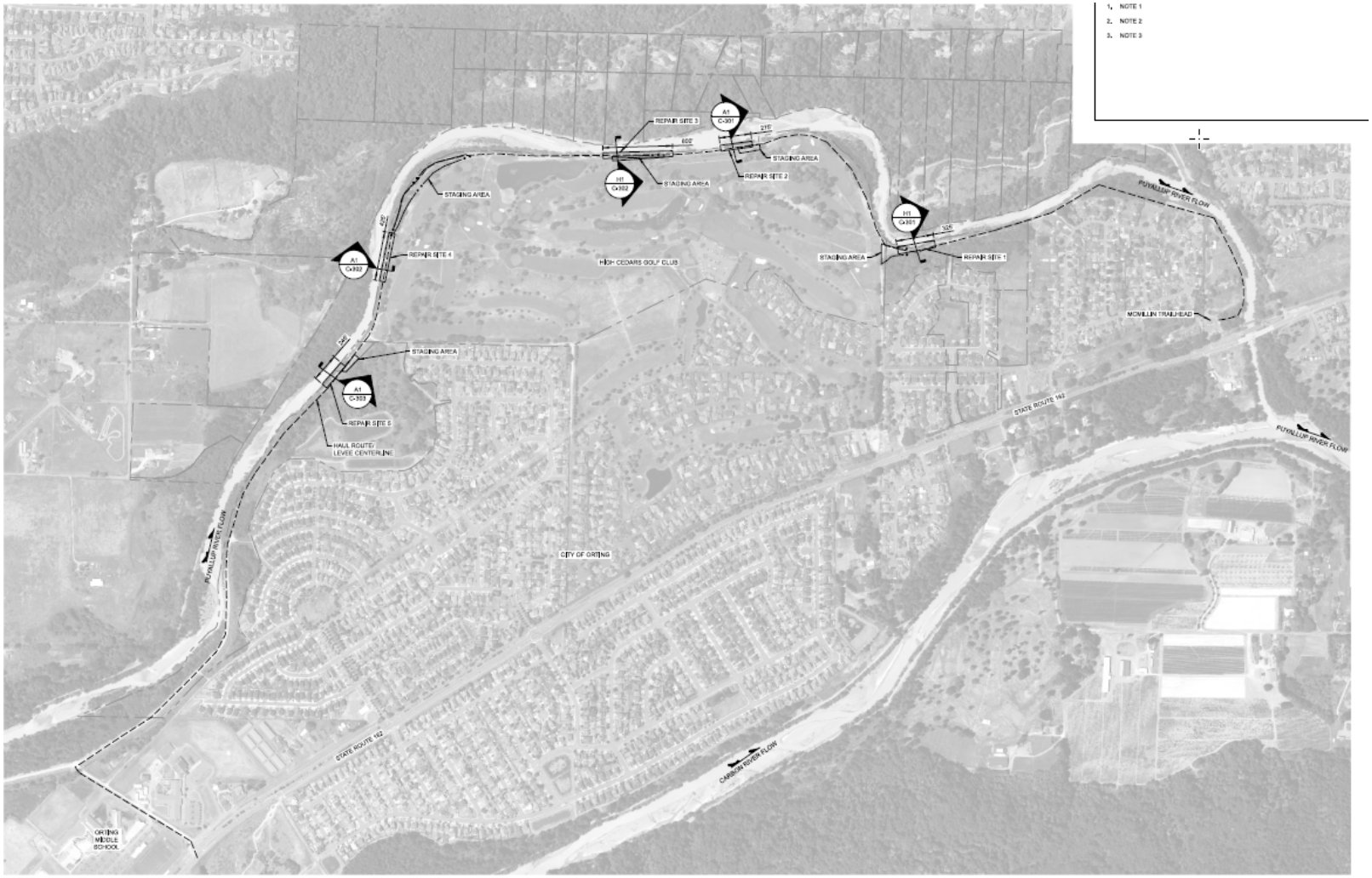
The High Cedars Levee is an existing legally established structure which will be repaired.

5. STATEMENT OF CONSISTENCY

Based on the above evaluation, the USACE has determined that the proposed repair of the High Cedars Levee is consistent with the applicable laws, policies and regulations specified in the WA Coastal Zone Management Program, the applicable RCWs and WACs, and Pierce County SMP, and with other applicable state laws and regulations discussed above. Thus, the USACE considers the proposed action to be consistent to the maximum extent practicable with the enforceable policies of the approved State of Washington CZM Program.

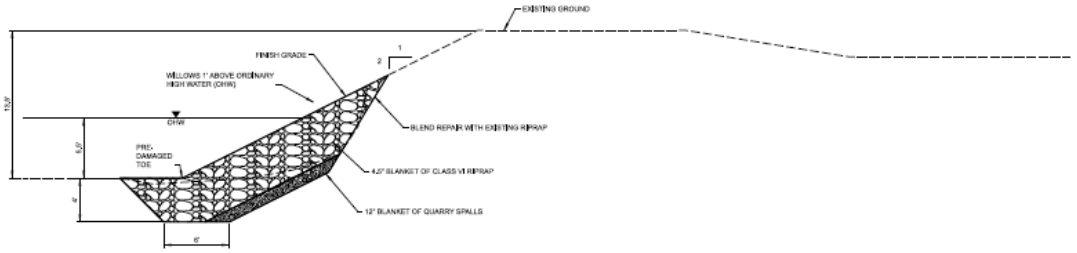
APPENDIX A

Design Plans



A1 SITE PLAN: HIGH CEDARS LEVEE

SCALE: 1"=800'



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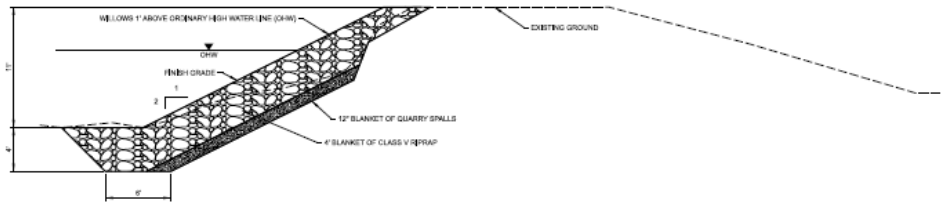
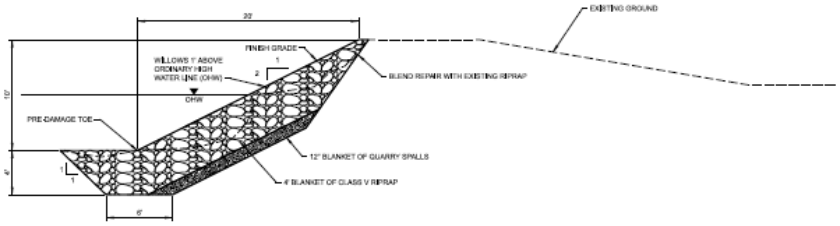
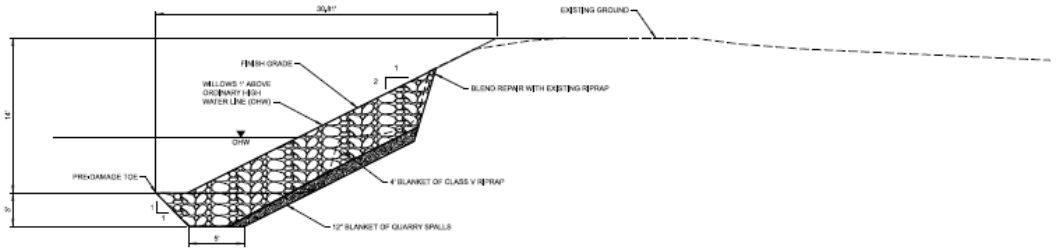
SCALE: 1"=6'



A1 G-101 A1 TYPICAL SECTION: SITE 2 (STATION 56+00)
SCALE: 1"=6'



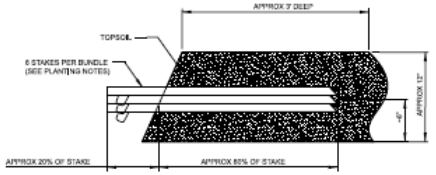
H1 TYPICAL SECTION: SITE 3 (STATION 64+00)
SCALE: 1"=5'



A1 TYPICAL SECTION: SITE 4 (STATION 91+00)
SCALE: 1"=5'

GENERAL SHEET NOTES

1. PLACE WILLOW BUNDLES EVERY 10 FEET ALONG REPAIR AREAS.



H14 DETAIL: TYPICAL WILLOW BUNDLE PLACEMENT
NOT TO SCALE

A1 TYPICAL SECTION: SITE 5 (STATION 104+00)
SCALE: 1"=5'

APPENDIX B

Best Management Practices

Best Management Practices (BMPs)

5.1. All construction activities will occur during daylight hours to minimize noise impacts to the surrounding community.

5.2. In-water work will be limited to the in-water work window (July 15 – August 31) and minimized to the extent possible (unless an extension is requested from the National Marine Fisheries Service).

5.3. Water quality monitoring for turbidity will be performed as outlined in the Water Quality Monitoring Plan. If an exceedance is detected, on-site personnel will evaluate construction activities and take measures to minimize turbidity generation. Examples include slowing down a specific in-water activity and changing the amount of material that is moved below the waterline.

5.4. Temporary erosion control measures will be installed for all phases of work as required to prevent the discharge or accumulation of sediment into the river or offsite. USACE will choose and install erosion control materials for specific site conditions as necessary. These may include silt fencing, mats, blankets, check dams, bonded fiber matrix, and straw. Accumulation of sediment in any adjacent swales or storm drains will be monitored daily and cleared to ensure continued service throughout construction.

5.5. Vegetation removal will be limited to the repair sites.

5.6. Should any LWM be generated or found on site during repairs, it shall be salvaged and placed along the shoreline above the OHWM for habitat improvement. This includes any tree trunks, rootwads, and large shrubs. The LWM may be placed after a section of levee is completed or after the entire repair. Depending on the water height, the material may be placed above or below the willow stakes. Rootwads will be oriented upstream (into the flow).

5.7. Equipment that will be used near or in the water will be cleaned prior to construction.

5.8. Drive trains will not operate in the water. Only the excavator bucket with thumb attachment will extend into the water.

5.9. Fueling will occur on the back side of the levee 100 feet away from the waterline. A Fueling and Spill Recovery Plan will be developed prior to construction and will include specific BMPs to prevent spills and react quickly should a spill occur.

5.10. Construction equipment will be regularly checked for vehicle-fluid drips or leaks, and immediately removed from service until corrected.

5.11. At least one fuel spill kit with absorbent pads will be on site at all times.

5.12. Material placed into the water will be placed individually or in small bucket loads. No end dumping of rock into the water or on the levee slope will occur.

5.13. Rock placement will occur only within the project footprint. Repairs will not expand the footprint of the levee riverward or below OHWM.

5.14. Rock placement and underwater excavation will occur from the upstream end of the project to the downstream end. Rock is placed shortly after excavation so it will act as a localized flow deflector and help manage flows in the installation areas.

5.15. All trash and unauthorized fill will be removed from the project and staging area, including concrete blocks or pieces, bricks, asphalt, metal, treated wood, glass, floating debris, and paper that is waterward of the ordinary high-water line, and disposed of properly after work is completed.

5.16. A pre-construction meeting will be conducted. The pre-construction meeting may include outside resource agencies.

Appendix C

Water Quality Monitoring Plan

WATER QUALITY MONITORING PLAN

Project: **Puyallup River High Cedars Levee Repair**

Date: **November 17, 2023**

Water quality monitoring will occur during in-water sediment-generating activities. Each new type of sediment generating activity will be monitored.

Sediment-generating Activities Triggering Monitoring Efforts

- In-water toe or bank excavation
- Rock placement for toe rock

Monitoring Frequency/Duration

- Point of Compliance monitoring will occur once per hour for the first three hours after the start of each new sediment-generating activity and then once every three hours, if no exceedance is noted, until the end of the workday.
- The following will be taken at the same frequency as the Point of Compliance samples:
    - Background sample
- If, after a minimum of one full day, the monitoring results verify that turbidity levels from a certain sediment-generating activity are remaining consistently below the stated water quality standards, physical monitoring may be reduced or stopped for that activity. Physical monitoring will be resumed during new sediment-generating activities or if precipitation events or any other changes will result in higher or lower project-related turbidity. Sampling will resume if visual monitoring indicates possible exceedance at the Point of Compliance sample locations. BMPs will be evaluated to see if additional steps can be taken to reduce and control turbidity.
- Visual monitoring will be done continuously for all in-water work.
- Maximum turbidity levels will meet WAC 173-201A-200. Turbidity must not exceed 5 NTU over background when the background is 50 NTU or less; or a 10 percent increase in turbidity when the background turbidity is more than 50 NTU.

Sampling Locations

Sampling locations would be located at the following points:

- Background – 100 feet upstream of the repair site or the closest safe accessible location
- Point of Compliance – 300 feet downstream of the project site

Sampling Procedures

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

- Continuous visual monitoring will occur to identify the presence of oil or grease on the water's surface.
- Turbidity will be monitored using a Hach turbidimeter or equivalent.
- The following protocol will be used to ensure a representative sample is analyzed:
    - Use a clean container to obtain a sample from the source.
    - Collect the sample with care to avoid disturbance of sediments and collecting surface contaminants.
    - Gently but thoroughly mix the sample before pouring it into the small vial used to read the sample in the turbidimeter.
    - Without allowing the sample to settle, take turbidity reading according to turbidimeter manufacturer's instructions.
    - Several measurements can be taken, with the average used as the data for comparison.

A calibration check of the turbidimeter using secondary standards will be carried out regularly

(at least once per week). The instrument will be recalibrated using primary standards if necessary if a calibration check indicates there is a problem. The manufacturer's calibration procedures will be followed.

Contingency Sampling

If sample results confirm that water quality is out of compliance with water quality standards, the USACE will modify or stop the activity causing the problem and commence the contingency sampling requirements. Contingency Monitoring will also commence if visual monitoring indicates possible exceedances at the Point of Compliance. The USACE shall return to standard sampling procedures after two consecutive sample periods show compliance with water quality standards.

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

Reporting

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

Attachment A - Sample Monitor Results Reporting Form

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

Notes: