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COASTAL ZONE MANAGEMENT ACT CONSISTENCY DETERMINATION

Tukwila Non-Federal Levee Repair Project

King County, Washington

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

January 2024

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 Tukwila 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 Tukwila Levee are along the Green River near the city of Tukwila, Washington (Figure 1-1).

Figure 1-1. Location of the Tukwila Levee repair project on the Green River near Tukwila, WA.

1.2. Background

The Tukwila Levee is located along the left bank of the Green River, just upstream of its confluence with the Duwamish River at Tukwila, Washington. The Tukwila Levee is an urban flood control works that is typically 5 to 7 feet high on the landward side and constructed of earthen material, primarily sand and gravel. Riverward slopes are at 1.5 - 2.0H:1V, while landward slopes are at 2.0 - 5.0H:1V. Both slopes are covered with sod, and riprap armor is provided along the riverward slope. The Levee crest ranges from 12 to 20 feet wide and is surfaced with asphalt pavement or gravel. In an undamaged state, the Levee provides a 100-year level of protection against flooding to commercial and industrial properties and associated infrastructure. This levee system is a non-federally constructed, operated, and maintained levee system.

2. PURPOSE

The purpose of the proposed repairs is to restore the level of flood protection provided by the Tukwila Levee that existed prior to flood damage sustained by the levees during a 2015 flood event, potentially incorporating resiliency measures resulting from improved technology or construction methods. An assessment of the levees confirmed that there is an increased likelihood of damages or breaching of the levees in their current condition.

In an undamaged state, the Tukwila Levee provides a 100-year level of protection against flooding of commercial and residential properties. In its damaged state, the Levee provides a much smaller level of protection due to erosion at the toe of the Levee. Per PL 84-99, the USACE is authorized to repair damaged flood control works to the pre-flood level of protection.

The high river flows damaged the Tukwila Levee at two locations with a combined damage length of roughly 800 LF. At Site 1, approximately 200 linear feet (LF) of toe erosion and slope scour on the riverward slope resulted in vertical slopes including rock removal. Additional damage may extend beyond the observed extent due to water levels and accessibility during the initial survey. Such damage can also be obscured by thick blackberries on the slope. At Site 2, the levee prism experienced additional riverward toe erosion and scour damage. The scour resulted in damages extending approximately 600 LF. Additional damage may extend beyond the observed extent due to water levels and accessibility during the initial survey. In the damaged state, the level of protection is diminished from 1 percent (100-year) to 10 percent (10-year) AEP, thus levee repairs must be conducted as soon as possible before the next flood season.

3. PROPOSED ACTION

The repair sites for the Tukwila Levee are in Tukwila, Washington on the Green River. The total proposed repair for the Tukwila Levee is approximately 800 LF. Table 1-1 shows the approximate acreages of the work area.

Table 1-1. Approximate area in acres of each project component.

	Tukwila
Staging	1.4
Repair	0.6
Willow Plantings	0.11

The Federal action is to repair the damaged Tukwila Levee to its pre-flood event, as-designed level of protection. All repair work will occur within the existing levee prism.

The shoreline and river impacted by construction activities will be restricted to the damaged section of the levee, the transition to the undamaged upstream and downstream sections of the levee and the willow planting area. Some trees will be removed from the levee to facilitate the repair work. From start to completion, the levee repair is expected to take 7 to 11 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/discussions regarding in-water 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 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 a hydraulic excavator, dump truck, and bulldozer. Other equipment includes a grader, water truck, and a vibratory compactor. Construction vehicles will access from existing levee roads and paths (Appendix A). 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 2024 Tukwila Levee repairs.

Material	Quantity	Location	Use
Repair Length (feet)	800	Repair length includes 25 foot transitions upstream and downstream of repair.	NA
Quarry Spalls (CY)	927	levee slope between riprap and levee embankment material	bedding course
Class V Riprap (CY)	3278	levee slope	levee armor
Top Soil (CY)	As needed (approx. 40)	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)	80	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 2024 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	2	Throughout the repair	Workhorse of the	Move and place material	Only bucket and

	hydraulic excavator w/hydraulic thumb, min hp 200, min lbs 70,000, min reach 30 ft		footprint	repair. Manipulates materials. Move and place rock, vegetation, and other materials.		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

Tukwila Levee Repair: Repairs will occur at two sites for a total repair length of 800 feet including necessary transitions. The existing riverward slope will be regraded to a 2H:1V slope as shown on the design plans (Appendix B). A 12-inch layer of quarry spalls will be placed on the riverward embankment, and the slope will be armored with a 2-foot thick blanket of riprap. Some excavation and placement of repair materials will take place below the ordinary high water mark (OHWM). Slope armor will subsequently be placed and plated to the top of the riverward bench slope as indicated on the plans. Larger rock will either be placed and manipulated using the thumb attachment while the smaller rock will be transferred from the bucket to the levee slope using a pouring motion. The repair site will be transitioned to match the existing riverward slope alignment and elevation at the upstream and downstream ends. All construction work will adhere to the design plans. Willow bundles will be incorporated into the riprap above the OHWM in the repair areas (Appendix A).

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 including USACE and the contractor. 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, 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.

Mitigation Plantings: Mitigative vegetation plantings for this project will consist of about 80 willow bundles that will be planted within the levee in the disturbed areas. A shallow trench would be excavated in the levee, the willow bundles placed in the trench and would be covered with soil. The willows would grow and replace habitat lost when trees were removed during levee repairs.

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

The necessary repairs to the Tukwila 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 Tukwila 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.

4. JURISDICTION AND CONSISTENCY REQUIREMENTS

The USACE has determined the proposed PL 84-99 levee rehabilitation/repair project for the Tukwila levee in King 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 King 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 Tukwila Levee Repair Project, the local government is the City of Tukwila. Tukwila implements the SMA through the Tukwila Shoreline Master Program (SMP) (see, https://ecology.wa.gov/Water-Shorelines/Shoreline-coastal-management/Shoreline-coastal-planning/State-approved-Shoreline-Master-Programs#WW). Tukwila SMP designates the reach of the Green 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.

The USACE's statements of consistency are presented in bold italic text below:

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 projects are 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 4- to 8-inch quarry spalls. The materials will be purchased from local companies. All materials (e.g., riprap, topsoil, quarry spall) will be acquired from a borrow site, quarry, or gravel mine which is 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. 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. 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 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.

Note: Questions and comments posed by Ecology are shown in green text. USACE responses follow each question/comment.

Applicable WPCA WAC

1. Describe the potential impacts to **designated freshwater uses** described in WAC 173-201A-600 and WAC 173-201A-602. Be specific about which designated uses are applicable to the proposal.

Green River –

- Aquatic Life Uses – Spawning/Rearing. The key identifying characteristics of this use are spawning or early juvenile rearing by native char (bull trout and Dolly Varden), or use by other aquatic species similarly dependent on such cold water. Other common characteristic aquatic life uses for waters in this category

include summer foraging and migration of native char; and spawning, rearing, and migration by other salmonid species.

Water quality parameters are important to aquatic life. These parameters are temperature, dissolved oxygen, turbidity, total dissolved gas, and pH. The proposed levee repairs could have a slight impact on temperature due to the removal of trees. The effects would be mitigated by planting willow bundles within the levee above the ordinary high water mark. There could also be a short-term increase in turbidity during in-water work. Turbidity would be monitored to ensure levels stay within acceptable limits. The repairs would not affect dissolved oxygen, total dissolved gas, or pH levels.

- Recreation Uses – Primary Contact - *E. coli.*

The proposed levee repairs would not affect *E. coli* or any other bacteria levels.

- Water Supply Uses – All (domestic, agricultural, industrial, stock watering)

The proposed levee repairs would not impact water supply uses.

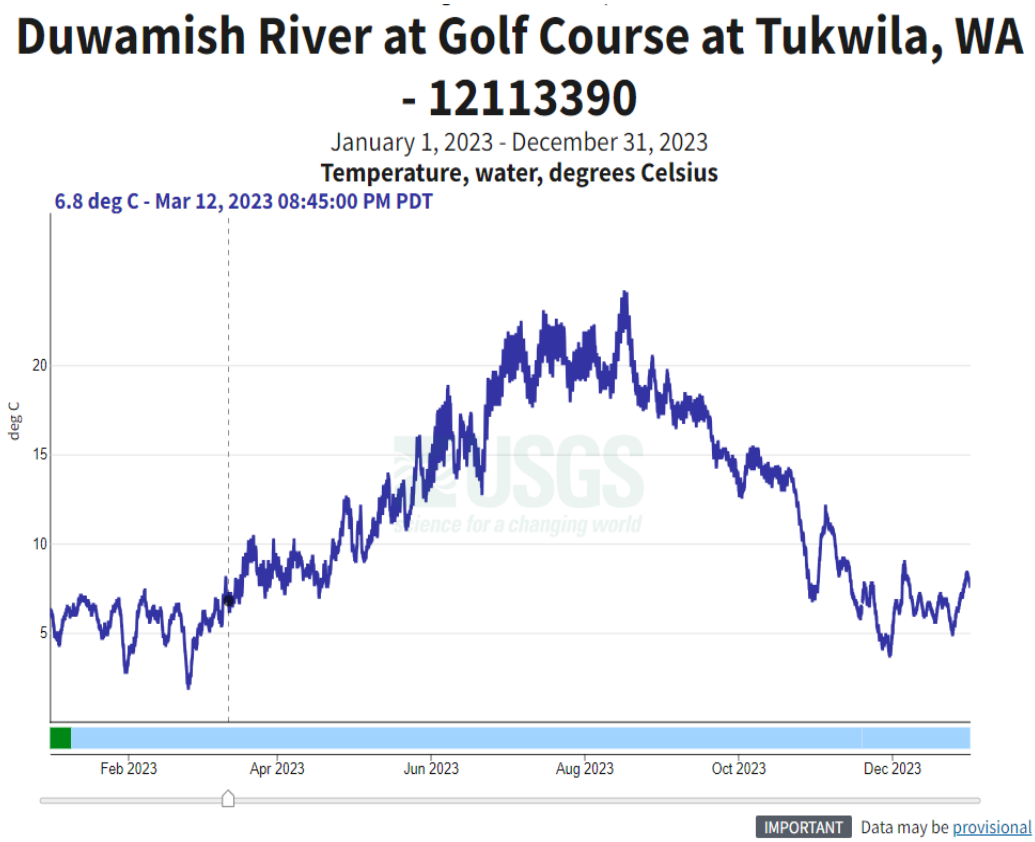
- Misc. Uses – All (wildlife habitat, harvesting, commerce, and navigation, boating, and aesthetics)

The proposed levee repairs could have a small, temporary impact on wildlife habitat. However, willow bundles would be planted within the levee to mitigate the potential impacts. The proposed levee repairs would not impact harvesting, commerce and navigation, boating, or aesthetics.

2. Demonstrate how the project is consistent with each of the following numerical water quality standards outlined in WAC 173-201A-200, including how the Federal Agency will be monitoring to ensure compliance:

2.1 Aquatic life temperature criteria [WAC 173-201A-200(1)(c)] char spawning and rearing – 12°C (53.6°F)

As seen in the figure below, the Green/Duwamish River at Tukwila does not meet the char or salmonid spawning and rearing criteria during the summer months. The proposed project would not have a measureable effect on average water temperatures. Removal of vegetation could cause a slight increase in temperature in the immediate repair area during summer, but could have a cooling effect during winter. The average temperature is not expected to change.



2.2 Aquatic life dissolved oxygen (D.O.) criteria [WAC 173-201A-200(1)(d)] 10 mg/L or 90% saturation.

In-water work would be conducted to reestablish the levee toe, but DO would not be affected by the work.

2.3 Aquatic life fine sediment criteria [WAC 173-201A-200(1)(h)] Turbidity shall not exceed: 5 NTU over background when the background is 50 NTU or less; or A 10 percent increase in turbidity when the background turbidity is more than 50 NTU.

Turbidity levees are sometimes high in the Green River after rain events during the proposed construction window. USACE plans on monitoring turbidity levels during any in-water work. Turbidity levels are not anticipated to exceed the water quality standards.

3. Please note if there are any Category 4a and 5 listings, using the Water Quality Atlas as a reference [choose “Assessed Water/Sediment” as the map layer]. Describe how the project will not exceed the TMDLs assigned to this area using the appropriate TMDL document as guidance. See below for instructions from the Water Quality team:

If the Corps identifies their project is within a TMDL project area on the Atlas and needs more info, by clicking on the WQI Project layer and selecting the "View" button next to the "Webpage" field will take them to the webpage for that project, which will have links to the TMDL documents and the contact information for that project's lead. If the project doesn't have it's own webpage, here is our directory of all of our TMDL projects along with the project lead. If the corps has issues identifying a TMDL lead or finding TMDL documents, they can reach out to our TMDL planner, Lara Henderson (lboy461@ecy.wa.gov), who should help get them on the right path.

The Green River is listed as category 5 for dissolved oxygen and fecal coliform. It is listed as category 4A for temperature. The proposed levee repair would not affect dissolved oxygen or fecal coliform levels. There could be a slight, short-term increase in temperature. Effects to temperature would be mitigated by planting willow bundles above the ordinary high water mark.

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 Water Quality Monitoring Plan (Appendix C) to ensure that State standards are met. Multiple BMPs (Appendix B) will be adhered to during construction to further minimize impacts to water quality. 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 or a bench temporarily constructed at a lower level in order to be able to reach the toe of the levee. Only the excavator bucket with thumb attachment will extend into the water.

- Rock placement will occur only within the project footprint.

- Riprap rocks will be individually placed.

- 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:

Does the proposal include any activities that involve **fugitive dust**, as defined in WAC 173-400-030(40)? "Fugitive dust" means a particulate emission made airborne by forces of wind, man's activity, or both. Unpaved roads, construction sites, and tilled land are examples of areas that originate fugitive dust. Fugitive dust is a type of fugitive emission.

Yes

1.1. Demonstrate how the proposal is consistent with the requirements in WAC 173-400-040(9).

Fugitive dust.
(a) The owner or operator of a source or activity that generates fugitive dust must take reasonable precautions to prevent that fugitive dust from becoming airborne and must maintain and operate the source to minimize emissions.

USACE would implement dust control measures (wetting haul routes) to minimize fugitive dust generation.

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 (BHP) 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 Green River. The purpose of this document is to demonstrate consistency with all enforceable policies and regulations, including the locally applicable Tukwila Shoreline Master Program, which is discussed 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 Tukwila SMP. The USACE is a federal agency and thus does not obtain local permits. However, the Tukwila SMP was***

used to demonstrate consistency with all enforceable policies and regulations for shorelines of statewide significance.

The determination of consistency with the CZMA for this proposed action is based on review of the Tukwila SMP, as defined in RCW 90.58 and WAC Chapter 173-26. The Tukwila Levee Repair Project is within the coastal zone governed by the Tukwila SMP, which was approved by the Washington Department of Ecology (Ecology).

Applicable sections of the Tukwila SMP are presented below. Each relevant section of the SMP appears below with the USACE's description of how the proposed Federal action is consistent with the code in ***bold italic*** text.

4.1.5.2 Tukwila SMP

The levee repairs are located within the jurisdiction of the Tukwila SMP. The following standards apply to all shoreline development.

Note: There is some confusion on which SMP version currently applies. There is a version dated March 2, 2020, but it is not posted on the Ecology website where most others are located. The 2020 version has significant changes from the 2011 version.

The 2011 Tukwila SMP Section 9.5, Flood Hazard Reduction, Part B states, "Levees, berms and similar flood control structures, whether new or redeveloped, shall be designed in such a way as to ensure structural stability while incorporating mid-slope benches planted with native vegetation suitable for wildlife habitat wherever feasible. Where not feasible to incorporate a mid-slope bench with vegetation, other appropriate habitat improvements must be provided." ***The Tukwila levee repair design incorporates willows consistent with this requirement.***

The 2020 Tukwila SMP was a significant revision to the 2011 version with regard to Flood Hazard Reduction. The 2020 revision relies on the Tukwila Critical Areas Ordinance and refers to "special flood hazard areas" (Tukwila Municipal Code (TMC) 18.45.155, TMC Chapter 16.52).

TMC Section 16.52.100 part C reads as follows:

"**Green River**. In addition to the general and specific standards in the section, the following standards apply to all areas adjacent to the Green River:

1. Construction/Reconstruction of Dikes/Levees: As part of the flood-proofing for developments adjacent to the Green River through Tukwila, construction or reconstruction of the dike/levee system, in accordance with dike/levee plans and engineering studies, and in accordance with the Green River Management Agreement (AG No. 85-043), will be required as part of the plan submittal.
2. If dike/levee improvements are not required, and the natural riverbank is allowed as bank protection, then a riverbank stability analysis shall be provided to the Public Works Department for review as part of the plan submittal.

3. Dedication of levee/dike/riverbank access construction and maintenance easements on all properties adjacent to the Green River shall, as part of their development, dedicate construction and maintenance easements for access and maintenance of existing or future dikes/levees/riverbanks along the Green River as part of their plan submittal. These easements shall be provided in such a manner so that immediate access is allowed from other public rights-of-way for maintenance and construction of dikes/levees."

The Green River Management Agreement AG No. 85-043 could not be located. It is not apparent why or how the rules and requirements in the 2020 Tukwila SMP changed regarding flood hazards.

Ecology was able to go through the 2020 Tukwila SMP and provide feedback on the sections that we think should be addressed for this levee repair project:

- **Chapter 7 – Environmental Designations**
  - 7.7 Urban Conservancy Designation

This section contains several references to allowing access for maintenance equipment and levee repair. Much of the SMP considers development behind the levee, not levee repairs themselves.

  - 7.9 Aquatic Environment Designation

This section deals with waterbodies waterward of the ordinary high water mark to protect the unique characteristics and resources of the aquatic environment. In order to properly repair the levee, it is necessary to repair the levee toe below the ordinary high water mark. Willow bundles will be planted above the ordinary high water mark to offset impacts and protect the characteristics of the aquatic environment.

- **Chapter 8 – Shoreline Use Regulations and Development Standards**
  - TMC section 18.44 (p. 101-128)
    - 18.44.010 – Purpose and Applicability
      - *How is the project consistent with the purpose of this chapter?*

The levee repair project is designed to protect the shoreline from further erosion and flooding impacts. Willow bundles would be planted to protect the resources and shoreline ecology. The project would not impact public access or recreation. Salmon habitat would be protected by planting willow bundles and leaving large woody debris on the waterward side of the levee.

    - 18.44.040 – Shoreline Buffers

The shoreline buffers are measured landward from the ordinary high water mark. The levee lies inside the recommended buffers and, therefore, the repairs to the levee will also lie within the buffers.

    - 18.44.050 – Development Standards:
      - E. Flood Hazard Reduction

The levee repairs are not a new flood hazard reduction structure. Willow bundles will be incorporated into the design and planted above the ordinary high water mark. Public access to the sites will not change from the existing condition. The

repair of the existing levee will not cause significant adverse ecological impacts to the shoreline.

In some areas, the levee toe has eroded. It will be necessary to replace the toe to support the levee embankment material above the toe.

- F. Shoreline Stabilization

This "shoreline stabilization" section is distinct from flood control structures such as levees. The proposed project is a levee repair project. This section does not appear to apply to the proposed project.

- G. Archaeological, Cultural and Historic Resources

Cultural resource effects of the proposed project were coordinated with the Muckleshoot, Snoqualmie, and Suquamish tribes, and the Washington State Historic Preservation Officer (Wisaard # 2023-08-04875-COE-WW). No substantive comments were received from the Tribes or SHPO.

- J. Land Altering Activities 1. Clearing, Grading and Landfill

The proposed levee repair work is the minimum necessary. Willow bundles will be planted to mitigate for impacts to the environment. Water quality monitoring will be performed to minimize effects to water quality. There would be no impacts to river flows. USACE has initiated ESA consultation with the U.S. Fish and Wildlife Service and the National Marine Fisheries Service. Public access and river navigation will not change from the current condition. There would be no net loss of ecological functions from the existing condition. The USACE contractor will be required to provide material for the repairs from a clean source.

- 18.44.060 – Vegetation Protection and Landscaping

Much of the shoreline in the repair area is covered with blackberries. There are also some willow trees growing on the levee. These trees threaten the integrity of the levee, hinder the ability to inspect the levee, and block access to repair the levee. The blackberries and some of the willow trees need to be removed to be able to properly inspect the levee and facilitate levee repairs. Willow bundles will be incorporated into the repair to mitigate for loss of the vegetation. Trees that are removed will be left on the landward side of the levee slope and become available as large woody debris.

- 18.44.080 – Public Access to Shoreline

The existing public access to the levees will not change from the current condition. The levee consists of a steep shoreline.

- **Chapter 9 – Environmentally Critical Areas within the Shoreline Jurisdiction**
  - *How does the project help protect critical areas?*

The levee repairs would protect the public against avoidable losses caused by flooding and erosion. Environmental impacts would be mitigated by planting willow bundles above the ordinary high water mark. In addition, any trees that must be

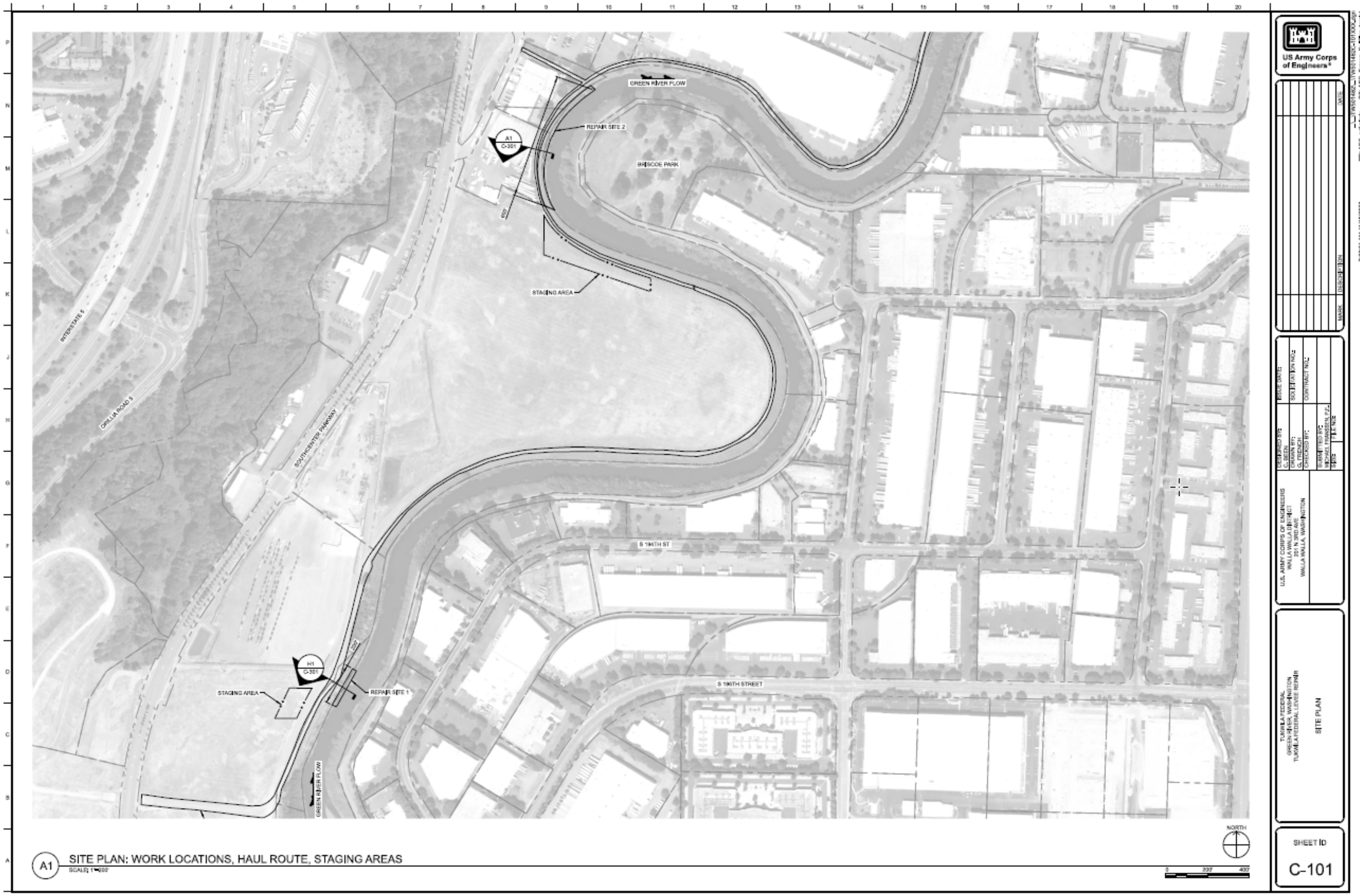
removed to facilitate the levee repairs will be placed above the ordinary high water mark to be incorporated in to the river system as large woody debris.

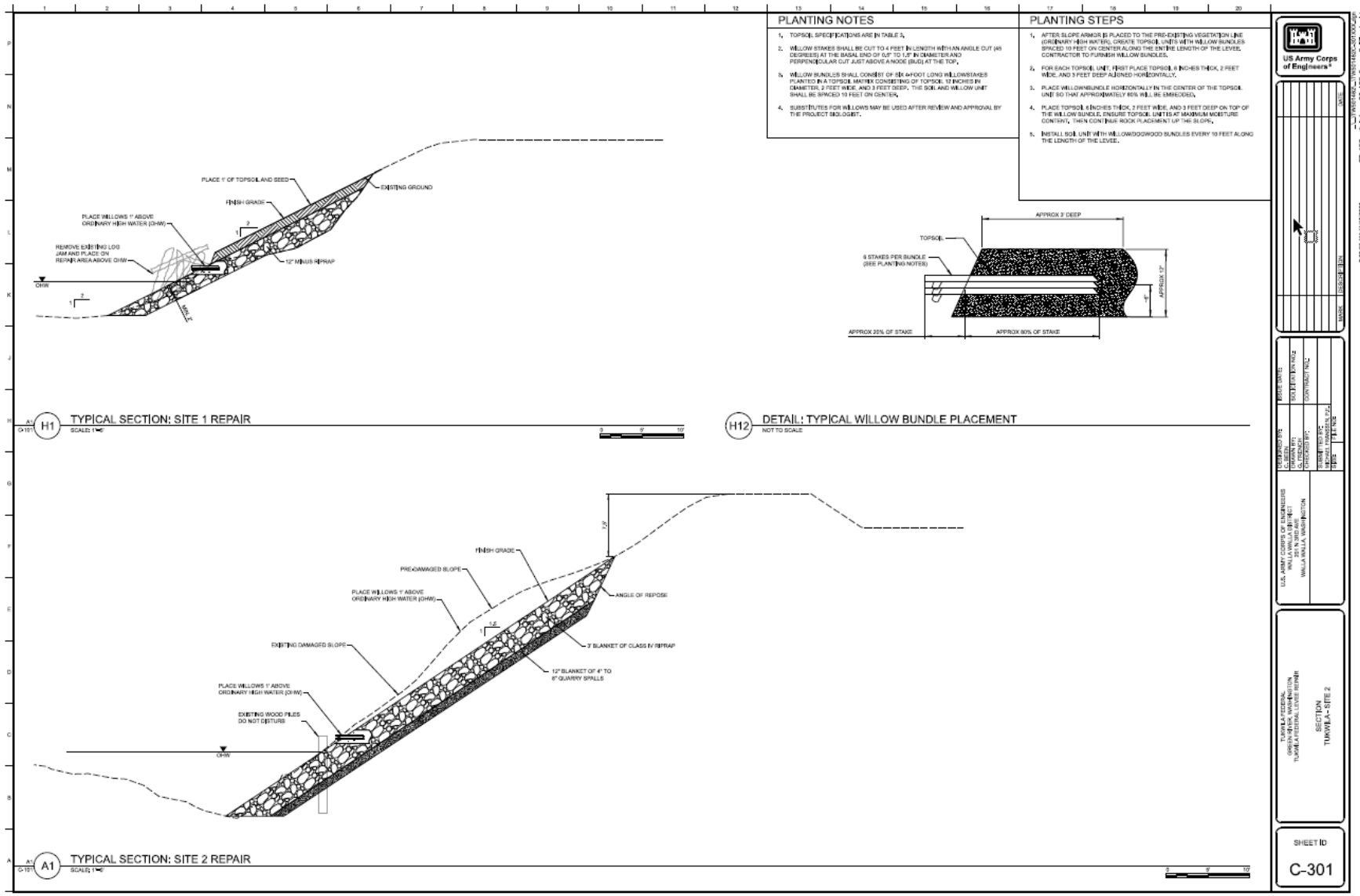
5. STATEMENT OF CONSISTENCY

Based on the above evaluation, the USACE has determined that the proposed repair of the Tukwila Levee is consistent with the applicable laws, policies and regulations specified in the WA Coastal Zone Management Program, the applicable RCWs and WACs, and the Tukwila 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


GREEN RIVER FLOW
REPAIR SITE 2
BRISCOE PARK
STAGING AREA
INTERSTATE 5
SOUTHCENTER PARKWAY
S 194TH ST
S 196TH STREET
STAGING AREA
REPAIR SITE 1
GREEN RIVER FLOW
NORTH
A1
SITE PLAN: WORK LOCATIONS, HAUL ROUTE, STAGING AREAS
US Army Corps of Engineers
U.S. ARMY CORPS OF ENGINEERS
WALLA WALLA DISTRICT
WALLA WALLA, WASHINGTON
TUKWILA FEDERAL
GREEN RIVER, WASHINGTON
TUKWILA FEDERAL LEVEE REPAIR
SITE PLAN
SHEET ID
C-101


PLANTING NOTES
1. TOPSOIL SPECIFICATIONS ARE IN TABLE 3.
2. WILLOW STAKES SHALL BE CUT TO 4 FEET IN LENGTH WITH AN ANGLE CUT (45 DEGREES) AT THE BASAL END OF CUT TO 1.5" IN DIAMETER AND PERPENDICULAR CUT JUST ABOVE A NODE (BUD) AT THE TOP.
3. WILLOW BUNDLES SHALL CONSIST OF SIX 4-FOOT LONG WILLOWSTAKES PLANTED IN A TOPSOIL MATRIX CONSISTING OF TOPSOIL 12 INCHES IN DIAMETER, 2 FEET WIDE, AND 3 FEET DEEP. THE SOIL AND WILLOW UNIT SHALL BE SPACED 10 FEET ON CENTER.
4. SUBSTITUTES FOR WILLOWS MAY BE USED AFTER REVIEW AND APPROVAL BY THE PROJECT BIOLOGIST.
PLANTING STEPS
1. AFTER SLOPE ARMOR IS PLACED TO THE PRE-EXISTING VEGETATION LINE (ORDINARY HIGH WATER), CREATE TOPSOIL UNITS WITH WILLOW BUNDLES SPACED 10 FEET ON CENTER ALONG THE ENTIRE LENGTH OF THE LEVEE. CONTRACTOR TO FURNISH WILLOW BUNDLES.
2. FOR EACH TOPSOIL UNIT, FIRST PLACE TOPSOIL 6 INCHES THICK, 2 FEET WIDE, AND 3 FEET DEEP ALIGNED HORIZONTALLY.
3. PLACE WILLOWBUNDLE HORIZONTALLY IN THE CENTER OF THE TOPSOIL UNIT SO THAT APPROXIMATELY 80% WILL BE EMBEDDED.
4. PLACE TOPSOIL 6 INCHES THICK, 2 FEET WIDE, AND 3 FEET DEEP ON TOP OF THE WILLOW BUNDLE. ENSURE TOPSOIL UNITS AT MAXIMUM MOISTURE CONTENT. THEN CONTINUE ROCK PLACEMENT UP THE SLOPE.
5. INSTALL SOIL UNIT WITH WILLOWDOGWOOD BUNDLES EVERY 10 FEET ALONG THE LENGTH OF THE LEVEE.
PLACE 1' OF TOPSOIL AND SEED
EXISTING GROUND
FINISH GRADE
PLACE WILLOWS 1' ABOVE ORDINARY HIGH WATER (OHW)
REMOVE EXISTING LOG JAM AND PLACE ON REPAIR AREA ABOVE OHW
OHW
12" MINUS RIPRAP
H1
TYPICAL SECTION: SITE 1 REPAIR
SCALE: 1"=5'
APPROX 3' DEEP
TOPSOIL
6 STAKES PER BUNDLE (SEE PLANTING NOTES)
APPROX 12"
APPROX 25% OF STAKE
APPROX 80% OF STAKE
H12
DETAIL: TYPICAL WILLOW BUNDLE PLACEMENT
NOT TO SCALE
FINISH GRADE
PRE-DAMAGED SLOPE
PLACE WILLOWS 1' ABOVE ORDINARY HIGH WATER (OHW)
ANGLE OF REPOSE
EXISTING DAMAGED SLOPE
3' BLANKET OF CLASS IV RIPRAP
12" BLANKET OF 4" TO 6" QUARRY SPALLS
PLACE WILLOWS 1' ABOVE ORDINARY HIGH WATER (OHW)
EXISTING WOOD PILES DO NOT DISTURB
OHW
A1
TYPICAL SECTION: SITE 2 REPAIR
SCALE: 1"=5'
US Army Corps of Engineers
DESIGNED BY:
DRAWN BY:
CHECKED BY:
SUBMITTED BY:
DATE:
CONTRACT NO.:
U.S. ARMY CORPS OF ENGINEERS
WALLA WALLA DISTRICT
201 N 3RD AVE
WALLA WALLA, WASHINGTON
TUKWILA FEDERAL
GREEN RIVER, WASHINGTON
TUKWILA FEDERAL LEVEE REPAIR
SECTION
TUKWILA - SITE 2
SHEET ID
C-301

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: **Green River - Tukwila 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 C).

Attachment B - Sample Monitoring 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