**December 4, 2024**

**TO:** **Holders List**

**SUBJECT:** **RFP NO. 071187 TOTE BERTH MAINTENANCE DREDGE**

**ADDENDUM NUMBER # 01**

This addendum is issued to add, remove, clarify, and amend the following:

**DIVISION 35 – WATERWAY AND MARINE CONSTRUCTION (SECTION 35 20 23 – DREDGING)**

3.07 DEBRIS MATERIAL

A. Anchors, chains, straps, and other articles or debris brought to the surface during the course of the dredging operations shall remain the property of the Contractor and shall be disposed of at an approved off-site location per Section 01 74 19 – Construction Waste Management and Disposal. Debris shall be washed onsite prior to upland disposal. Hazardous material/waste, consisting of creosote piles, batteries, PCB's and the like shall be disposed of in accordance with applicable Federal, State and local regulations. When such material/waste is encountered, the Contractor shall immediately notify the Engineer to determine the course of action to be taken. The Contractor will be compensated for costs associated with handling and disposal of debris encountered during dredging through Bid Item ~~#8~~ #5 – Dredge Debris Removal Allowance.

**Clarify Questions Due:** 11/28/24 @ 2:00 P.M.

**Supporting Documents called out in Table 1 of the Water Quality Certification:**

1. Joint Aquatic Resources Permit Application (JARPA) Form (Attachment A)
2. Biological Evaluation (Attachment B)
3. Dredge Plan* (Attachment C)
4. Water Quality Monitoring and Protection Plan (Attachment D)

* Dredge plan dated 8/30/2024 has been updated from the 8/14/2024 plan noted in Table 1 with revisions noted by Ecology.

**SECTION 00 72 00 – General Conditions**

3.05 CONTRACTOR WARRANTIES

Contractor Warranties does not apply to this work.

# Attachment A

n

# WASHINGTON STATE

US Army Corps of Engineers ®
Seattle District

## Joint Aquatic Resources Permit Application (JARPA) Form[1,2] [help]

**USE BLACK OR BLUE INK TO ENTER ANSWERS IN THE WHITE SPACES BELOW.**

AGENCY USE ONLY

**Date received:**

**Agency reference #:** _____

**Tax Parcel #(s):** _____

_____

## Part 1–Project Identification

| **1.** Project Name (A name for your project that you create. Examples: Smith's Dock or Seabrook Lane Development) [help] |
|---|
| Port of Tacoma (TOTE) Maritime Alaska Terminal Maintenance Dredging Project |

## Part 2–Applicant

The person and/or organization responsible for the project. [help]

| **2a.** Name (Last, First, Middle) | | | |
|---|---|---|---|
| Sasser, Stanley H. | | | |
| **2b.** Organization (If applicable) | | | |
| Port of Tacoma | | | |
| **2c.** Mailing Address (Street or PO Box) | | | |
| P.O. Box 1837 | | | |
| **2d.** City, State, Zip | | | |
| Tacoma, WA 98401-1837 | | | |
| **2e.** Phone (1) | **2f.** Phone (2) | **2g.** Fax | **2h.** E-mail |
| 253-383-9439 | | | ssasser@portoftacoma.com |

[1]Additional forms may be required for the following permits:
- If your project may qualify for Department of the Army authorization through a Regional General Permit (RGP), contact the U.S. Army Corps of Engineers for application information (206) 764-3495.
- Not all cities and counties accept the JARPA for their local Shoreline permits. If you need a Shoreline permit, contact the appropriate city or county government to make sure they accept the JARPA.

[2]To access an online JARPA form with [help] screens, go to http://www.epermitting.wa.gov/site/alias__resourcecenter/jarpa_jarpa_form/9984/jarpa_form.aspx.

For other help, contact the Governor's Office for Regulatory Innovation and Assistance at (800) 917-0043 or help@oria.wa.gov.

## Part 3–Authorized Agent or Contact

Person authorized to represent the applicant about the project. (Note: Authorized agent(s) must sign 11b of this application.) [help]

| **3a.** Name (Last, First, Middle) | | | |
|---|---|---|---|
| | | | |
| **3b.** Organization (If applicable) | | | |
| | | | |
| **3c.** Mailing Address (Street or PO Box) | | | |
| | | | |
| **3d.** City, State, Zip | | | |
| | | | |
| **3e.** Phone (1) | **3f.** Phone (2) | **3g.** Fax | **3h.** E-mail |
| | | | |

## Part 4–Property Owner(s)

Contact information for people or organizations owning the property(ies) where the project will occur. Consider both **upland and aquatic** ownership because the upland owners may not own the adjacent aquatic land. [help]

☒ Same as applicant. (Skip to Part 5.)

☐ Repair or maintenance activities on existing rights-of-way or easements. (Skip to Part 5.)

☐ There are multiple upland property owners. Complete the section below and fill out JARPA Attachment A for each additional property owner.

☐ Your project is on Department of Natural Resources (DNR)-managed aquatic lands. If you don't know, contact the DNR at (360) 902-1100 to determine aquatic land ownership. If yes, complete JARPA Attachment E to apply for the Aquatic Use Authorization.

| **4a.** Name (Last, First, Middle) | | | |
|---|---|---|---|
| | | | |
| **4b.** Organization (If applicable) | | | |
| | | | |
| **4c.** Mailing Address (Street or PO Box) | | | |
| | | | |
| **4d.** City, State, Zip | | | |
| | | | |
| **4e.** Phone (1) | **4f.** Phone (2) | **4g.** Fax | **4h.** E-mail |
| | | | |

## Part 5–Project Location(s)

Identifying information about the property or properties where the project will occur. [help]

☐ There are multiple project locations (e.g. linear projects). Complete the section below and use JARPA Attachment B for each additional project location.

**5a.** Indicate the type of ownership of the property. (Check all that apply.) [help]

☐ Private
☐ Federal
☒ Publicly owned (state, county, city, special districts like schools, ports, etc.)
☐ Tribal
☐ Department of Natural Resources (DNR) – managed aquatic lands (Complete JARPA Attachment E)

**5b.** Street Address (Cannot be a PO Box. If there is no address, provide other location information in 5p.) [help]

500 E Alexander Ave

**5c.** City, State, Zip (If the project is not in a city or town, provide the name of the nearest city or town.) [help]

Tacoma, WA 98421

**5d.** County [help]

Pierce

**5e.** Provide the section, township, and range for the project location. [help]

| ¼ Section | Section | Township | Range |
|---|---|---|---|
| NE | 27 | 21 | 03 |

**5f.** Provide the latitude and longitude of the project location. [help]

- Example: 47.03922 N lat. / -122.89142 W long. (Use decimal degrees - NAD 83)

47.27685 N lat. / -122.40665 long.

**5g.** List the tax parcel number(s) for the project location. [help]

- The local county assessor's office can provide this information.

500035011

**5h.** Contact information for all adjoining property owners. (If you need more space, use JARPA Attachment C.) [help]

| Name | Mailing Address | Tax Parcel # (if known) |
|---|---|---|
| Port of Tacoma | PO BOX 1837<br>Tacoma, WA 98401-1837 | 5000350013, 2275200610, 2275200321, 2275200322, 2275200330, 2275200340, 2275200350 |
| | | |

**5i.** List all wetlands on or adjacent to the project location. [help]

None

**5j.** List all waterbodies (other than wetlands) on or adjacent to the project location. [help]

Blair Waterway (Puget Sound)

**5k.** Is any part of the project area within a 100-year floodplain? [help]

☒ Yes ☐ No ☐ Don't know

**5l.** Briefly describe the vegetation and habitat conditions on the property. [help]

The Port waterways have been created and maintained as industrial waterways and do not have a vegetated riparian edge or functioning floodplain. Sediments in the channel consist of silt and sand. The upland area of the project has been paved and maintained as an industrial area. Upland and shoreline vegetation is absent or sparse, with only sporadic non-native or invasive present and is maintained regularly.

**5m.** Describe how the property is currently used. [help]

The property is currently leased by Totem Ocean Trailer Express (TOTE) Maritime Alaska as a marine cargo terminal. The terminal is used primarily for roll-on/roll-off (RO/RO) loading and unloading of marine cargo vessels, including flatbed and cargo trailers, automobiles, recreational vehicles (RVs), boats and military equipment.

**5n.** Describe how the adjacent properties are currently used. [help]

Adjacent properties are primarily industrial or commercial sites.

**5o.** Describe the structures (above and below ground) on the property, including their purpose(s) and current condition. [help]

Structures at the TOTE site include items typically associated with a marine terminal such as wharves, piers, armored shorelines, vessel berths, maintenance shops, warehouses, vehicles and other storage facilities. The site includes above and below ground utilities and private roads.

**5p.** Provide driving directions from the closest highway to the project location, and attach a map. [help]

From I-5 S, take exist 137 for WA-99 N toward Fife/Milton. Follow 54th Ave E and Taylor Way E to Alexander Ave E. Turn right onto WA-99 N/54th Ave E. Continue straight onto 54th Ave E. Continue onto Taylor Way E. Turn left onto E. 11th St. Turn right at the 1st cross street onto Alexander Ave E. TOTE Maritime Alaska Tacoma Terminal is at 500 E Alexander Ave, Tacoma, WA 98421

## Part 6–Project Description

**6a.** Briefly summarize the overall project. You can provide more detail in 6b. [help]

The Port of Tacoma is requesting authorization to dredge high spots created by propeller-wash in the TOTE berthing area in the Blair Waterway, Tacoma, Washington. The high spots pose navigation hazards to Port operations, which requires terminal operators to "light-load" vessels. The critical impairment to operations is causing economic losses for the Port and its tenants, and safety hazards for vessel and terminal operators; therefore, maintenance dredging to remove targeted high spots to restore terminal operations to full capacity must be completed as soon as possible. Removing these areas of material will alleviate safety hazards and allow the terminal operator to resume normal operations.

**6b.** Describe the purpose of the project and why you want or need to perform it. [help]

The Port of Tacoma needs to perform maintenance dredging at the TOTE facility located along the Blair Waterway in order to remove shoaling areas that are preventing vessels from being fully loaded with cargo. "Light loading" vessels is causing economic impacts and safety concerns. The proposed high spot removal maintenance dredging will remove shoaling caused by propwash along the TOTE berthing areas. Removing these areas of material will allow the terminal operators to resume normal operations.

The purpose of the proposed maintenance project is to restore the berthing areas at TOTE to the previously permitted depth of -40 feet MLLW, with an incidental 2-foot over-dredge allowance to cover potential over dredging by the contractor. Maintenance dredging is needed to allow normal operation at the terminals to resume. The current conditions do not allow for full vessel loading (economic impact) and could lead to grounding out of vessels (safety issue). To achieve this purpose, the Port must dredge up to 15,000 CY of sediments, of which up to roughly 5,000 CY is over dredge. The proposed maintenance dredging is the minimum work needed to return the terminal to normal operations.

**6c.** Indicate the project category. (Check all that apply) [help]

☐ Commercial ☐ Residential ☒ Institutional ☒ Transportation ☐ Recreational
☒ Maintenance ☐ Environmental Enhancement

**6d.** Indicate the major elements of your project. (Check all that apply) [help]

| | | | |
|---|---|---|---|
| ☐ Aquaculture | ☐ Culvert | ☐ Float | ☐ Retaining Wall (upland) |
| ☐ Bank Stabilization | ☐ Dam / Weir | ☐ Floating Home | ☐ Road |
| ☐ Boat House | ☐ Dike / Levee / Jetty | ☐ Geotechnical Survey | ☐ Scientific Measurement Device |
| ☐ Boat Launch | ☐ Ditch | ☐ Land Clearing | ☐ Stairs |
| ☐ Boat Lift | ☐ Dock / Pier | ☐ Marina / Moorage | ☐ Stormwater facility |
| ☐ Bridge | ☒ Dredging | ☐ Mining | ☐ Swimming Pool |
| ☐ Bulkhead | ☐ Fence | ☐ Outfall Structure | ☐ Utility Line |
| ☐ Buoy | ☐ Ferry Terminal | ☐ Piling/Dolphin | |
| ☐ Channel Modification | ☐ Fishway | ☐ Raft | |

☐ Other:

**6e.** Describe how you plan to construct each project element checked in 6d. Include specific construction methods and equipment to be used. [help]

- Identify where each element will occur in relation to the nearest waterbody.
- Indicate which activities are within the 100-year floodplain.

Maintenance dredging will be performed by mechanical dredging equipment. A crane mounted on a barge will be positioned at the terminal berthing area using a tug. The crane will be equipped with a clamshell bucket. During dredging operations, the crane operator will complete each pass with the clamshell. Dredged material will be placed on a barge for transportation to either the Commencement Bay open-water dredged material disposal site, or an upland site if the material is deemed to be unsuitable for open-water disposal by the Dredged Material Management Program (DMMP).

The sediments posing navigational hazards will be sampled and analyzed in Winter 2023 to evaluate whether TOTE sediments meet Dredged Material Management Program (DMMP) suitability criteria for open-water disposal at the Commencement Bay disposal site.

**6f.** What are the anticipated start and end dates for project construction? (Month/Year) [help]

- If the project will be constructed in phases or stages, use JARPA Attachment D to list the start and end dates of each phase or stage.

Start Date: As soon as permits received and within the authorized in-water work window End Date: 5-years from permit issuance ☐ See JARPA Attachment D

**6g.** Fair market value of the project, including materials, labor, machine rentals, etc. [help]

$750,000

**6h.** Will any portion of the project receive federal funding? [help]

- **If yes**, list each agency providing funds.

☐ Yes ☒ No ☐ Don't know

## Part 7–Wetlands: Impacts and Mitigation

☐ Check here if there are wetlands or wetland buffers on or adjacent to the project area. (If there are none, skip to Part 8.) [help]

**7a.** Describe how the project has been designed to avoid and minimize adverse impacts to wetlands. [help]

☒ Not applicable

**7b.** Will the project impact wetlands? [help]

☐ Yes ☐ No ☐ Don't know

**7c.** Will the project impact wetland buffers? [help]

☐ Yes ☐ No ☐ Don't know

**7d.** Has a wetland delineation report been prepared? [help]

- **If Yes**, submit the report, including data sheets, with the JARPA package.

☐ Yes ☐ No

**7e.** Have the wetlands been rated using the Western Washington or Eastern Washington Wetland Rating System? [help]

- **If Yes**, submit the wetland rating forms and figures with the JARPA package.

☐ Yes ☐ No ☐ Don't know

**7f.** Have you prepared a mitigation plan to compensate for any adverse impacts to wetlands? [help]

- **If Yes**, submit the plan with the JARPA package and answer 7g.
- **If No, or Not applicable**, explain below why a mitigation plan should not be required.

☐ Yes ☐ No ☐ Don't know

**7g.** Summarize what the mitigation plan is meant to accomplish, and describe how a watershed approach was used to design the plan. [help]

**7h.** Use the table below to list the type and rating of each wetland impacted, the extent and duration of the impact, and the type and amount of mitigation proposed. Or if you are submitting a mitigation plan with a similar table, you can state (below) where we can find this information in the plan. [help]

| Activity (fill, drain, excavate, flood, etc.) | Wetland Name[1] | Wetland type and rating category[2] | Impact area (sq. ft. or Acres) | Duration of impact[3] | Proposed mitigation type[4] | Wetland mitigation area (sq. ft. or acres) |
|---|---|---|---|---|---|---|
| | | | | | | |

[1] If no official name for the wetland exists, create a unique name (such as "Wetland 1"). The name should be consistent with other project documents, such as a wetland delineation report.
[2] Ecology wetland category based on current Western Washington or Eastern Washington Wetland Rating System. Provide the wetland rating forms with the JARPA package.
[3] Indicate the days, months or years the wetland will be measurably impacted by the activity. Enter "permanent" if applicable.
[4] Creation (C), Re-establishment/Rehabilitation (R), Enhancement (E), Preservation (P), Mitigation Bank/In-lieu fee (B)

Page number(s) for similar information in the mitigation plan, if available: _____

**7i.** For all filling activities identified in 7h, describe the source and nature of the fill material, the amount in cubic yards that will be used, and how and where it will be placed into the wetland. [help]

**7j.** For all excavating activities identified in 7h, describe the excavation method, type and amount of material in cubic yards you will remove, and where the material will be disposed. [help]

## Part 8–Waterbodies (other than wetlands): Impacts and Mitigation

In Part 8, "waterbodies" refers to non-wetland waterbodies. (See Part 7 for information related to wetlands.) [help]

☒ Check here if there are waterbodies on or adjacent to the project area. (If there are none, skip to Part 9.)

**8a.** Describe how the project is designed to avoid and minimize adverse impacts to the aquatic environment. [help]

☐ Not applicable

- Dredging actions will be conducted during the WDFW-approved in-water work window for Commencement Bay (July 16 – February 14 of each year), which is outside of times when juvenile salmonids are expected to be present based upon best available science.
- To minimize in-water impacts, dredging is intended to occur 24 hours a day to reduce the project duration.
- Upon advance notice, the Port will provide upland access to the work site to representatives from USACE, the Federal Services, Ecology, and WDFW during all hours when the proposed action is being conducted.
- No new upland construction will occur as part of the proposed action.
- Dredging will occur well below the high tide line (HTL), ordinary high water (OHW), and mean higher high water (MHHW). No additional or new habitat conversion will occur. There will be no dredging in intertidal or shallow subtidal habitat. No intertidal or shallow subtidal habit will be converted to deep subtidal. Dredging will only remove targeted high-spots to maintain berthing areas at previously-authorized and dredged depths. Tide conditions will not affect maintenance dredging activities.
- No dredging will occur in known sand lance, surf smelt or herring spawning areas.
- No dredging will occur in areas with submerged aquatic vegetation (SAV).
- The Port will request the contractor to utilize real-time positioning control when implementing dredging operations.
- The dredging contractor will not take multiple "bites" during a single clamshell cycle. When the clamshell bucket hits the bottom, it will close and be raised to the surface for disposal.
- The dredging contractor will not stockpile material on the bottom.
- The clamshell bucket will fully-close and move through the water column slowly to minimize turbidity.
- If water quality impacts are observed outside the action area, the dredging contractor will adjust operations as needed to meet water quality requirements per the issued permit requirements.
- Dredged material will be placed on a barge for transportation to an upland or open water disposal site. If water must be decanted from the barge, it will be filtered through straw bales or similar media.
- Dredged material will be disposed of at an approved in-water disposal site or in an approved upland location above OHW.
- The barge used to transport dredged material to the disposal site will have tightly sealing doors and compartments to minimize leakage during transit.
- No maintenance dredging will be performed in or within 25 ft of an existing or previously designated Washington State Model Toxics Control Act (MTCA) site.
- All work will occur from barges moored at the TOTE Terminal; therefore, spuds will not be required. No intertidal or shallow subtidal habitat exists in this area; therefore, barges can only be moored over subtidal substrate where grounding is not possible.
- A written spill prevention, control and countermeasures (SPCC) plan will be prepared by the contractor for activities that include the use of heavy equipment.
- No solvents or other chemicals will be used in or over the water during the construction or operation of the proposed action.
- A spill kit, to include an oil-adsorbing floating boom sized appropriately for the work area, will be available on-site during construction and stored in a location that facilitates immediate deployment if needed.

**8b.** Will your project impact a waterbody or the area around a waterbody? [help]

☒ Yes ☐ No

**8c.** Have you prepared a mitigation plan to compensate for the project's adverse impacts to non-wetland waterbodies? [help]

- **If Yes**, submit the plan with the JARPA package and answer 8d.
- **If No, or Not applicable,** explain below why a mitigation plan should not be required.

☐ Yes ☒ No ☐ Don't know

A mitigation plan has not been prepared for the proposed maintenance dredging. Since the purpose of the project is to remove minor accumulations of sediment from propwash and return to previously authorized depths, potential impacts will be temporary and de minimis. Avoidance and minimization techniques are proposed to achieve no-net-loss of habitat quality or function. Discussion on potential impacts, conservation measures and avoidance and minimization techniques can be found in the Biological Evaluation (BE).

If mitigation is required the value of the mitigation will be calculated using the updated Port specific calculator, when available.

**8d.** Summarize what the mitigation plan is meant to accomplish. Describe how a watershed approach was used to design the plan.

- If you already completed 7g you do not need to restate your answer here. [help]

**8e.** Summarize impact(s) to each waterbody in the table below. [help]

| Activity (clear, dredge, fill, pile drive, etc.) | Waterbody name[1] | Impact location[2] | Duration of impact[3] | Amount of material (cubic yards) to be placed in or removed from waterbody | Area (sq. ft. or linear ft.) of waterbody directly affected |
|---|---|---|---|---|---|
| Dredge TOTE to -40 ft MLLW | Blair Waterway | In | Permanent | Up to 10,000 CY removed, plus up to approx. 5,000 CY over dredge allowance (approx. 15,000 CY total) | Up to approx. 50,000 sq ft |
| | | | | | |
| | | | | | |

[1] If no official name for the waterbody exists, create a unique name (such as "Stream 1") The name should be consistent with other documents provided.
[2] Indicate whether the impact will occur in or adjacent to the waterbody. If adjacent, provide the distance between the impact and the waterbody and indicate whether the impact will occur within the 100-year flood plain.
[3] Indicate the days, months or years the waterbody will be measurably impacted by the work. Enter "permanent" if applicable.

**8f.** For all activities identified in 8e, describe the source and nature of the fill material, amount (in cubic yards) you will use, and how and where it will be placed into the waterbody. [help]

No fill is proposed.

**8g.** For all excavating or dredging activities identified in 8e, describe the method for excavating or dredging, type and amount of material you will remove, and where the material will be disposed. [help]

Dredging will be conducted using a barge mounted crane with a clamshell bucket. Up to 10,000 CY will be targeted for dredging, plus an additional over dredge allowance of up to approximately 5,000 CY. Dredged material will be disposed at the Commencement Bay DMMP site if deemed suitable for open-water disposal by the DMMP; unsuitable material will be disposed at an approved upland location above OHW.

## Part 9–Additional Information

Any additional information you can provide helps the reviewer(s) understand your project. Complete as much of this section as you can. It is ok if you cannot answer a question.

**9a.** If you have already worked with any government agencies on this project, list them below. [help]

| Agency Name | Contact Name | Phone | Most Recent Date of Contact |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

**9b.** Are any of the wetlands or waterbodies identified in Part 7 or Part 8 of this JARPA on the Washington Department of Ecology's 303(d) List? [help]

- **If Yes,** list the parameter(s) below.
- If you don't know, use Washington Department of Ecology's Water Quality Assessment tools at: https://ecology.wa.gov/Water-Shorelines/Water-quality/Water-improvement/Assessment-of-state-waters-303d.

☐ Yes ☒ No

The Blair waterway is not on the Washington Department of Ecology's 303(d) list; however, nearby waterbodies are on the 303(d) list. Commencement Bay to the north of the project area is on the 303(d) list for arsenic, dieldrin, polychlorinated biphenyls (PCBs), chlorinated pesticides, DDT (and metabolites), high molecular weight polycyclic aromatic hydrocarbons (HPAH), dissolved oxygen, bis(2-ethylhexyl)phthalate, and bacteria. Wapato Creek, which enters the southeastern part of the Blair Waterway approximately 1.9 miles from TOTE, is on the 303(d) list for dissolved oxygen and bacteria.

**9c.** What U.S. Geological Survey Hydrological Unit Code (HUC) is the project in? [help]

- Go to http://cfpub.epa.gov/surf/locate/index.cfm to help identify the HUC.

171100190205

**9d.** What Water Resource Inventory Area Number (WRIA #) is the project in? [help]

- Go to https://ecology.wa.gov/Water-Shorelines/Water-supply/Water-availability/Watershed-look-up to find the WRIA #.

WRIA 10

**9e.** Will the in-water construction work comply with the State of Washington water quality standards for turbidity? [help]

- Go to https://ecology.wa.gov/Water-Shorelines/Water-quality/Freshwater/Surface-water-quality-standards/Criteria for the standards.

☒ Yes ☐ No ☐ Not applicable

**9f.** If the project is within the jurisdiction of the Shoreline Management Act, what is the local shoreline environment designation? [help]

- If you don't know, contact the local planning department.
- For more information, go to: https://ecology.wa.gov/Water-Shorelines/Shoreline-coastal-management/Shoreline-coastal-planning/Shoreline-laws-rules-and-cases.

☐ Urban ☐ Natural ☐ Aquatic ☐ Conservancy ☒ Other: High-Intensity

**9g.** What is the Washington Department of Natural Resources Water Type? [help]

- Go to http://www.dnr.wa.gov/forest-practices-water-typing for the Forest Practices Water Typing System.

☒ Shoreline ☐ Fish ☐ Non-Fish Perennial ☐ Non-Fish Seasonal

**9h.** Will this project be designed to meet the Washington Department of Ecology's most current stormwater manual? [help]

- **If No**, provide the name of the manual your project is designed to meet.

☒ Yes ☐ No

Name of manual: Stormwater Management Manual for Western Washington (Amended December 2014)

**9i.** Does the project site have known contaminated sediment? [help]

- **If Yes**, please describe below.

☒ Yes ☐ No

Sediment within the Blair Waterway, listed as Commencement Bay (Inner), have been classified by the Washington Department of Ecology as Waters of Concern (Category 2) for sediment bioassays. A small section of the waterway, outside the project area, has been classified as impaired waters that do not require a TMDL (Category 4b) for sediment bioassays.

The U.S Army Corps of Engineers (USACE), Seattle District and the Port conducted a feasibility study to investigate potential deepening and widening alternatives for the Blair Waterway federal navigation channel in 2019. A total of 25 locations were sampled throughout the waterway, including locations just outside TOTE Maritime Terminal. The sampling locations closest to the TOTE Maritime Terminal (C-2, C-4, C-5, and C-6) did not have concentrations of COCs that exceeded DMMP screening levels (SLs).

In 2017, the Port, Puget Sound Energy, and the Puyallup Tribe of Indians commissioned a shallow interval surface and subsurface sediment investigation in the southern portion of the TOTE Maritime berthing area in support of potential development of a Liquified Natural Gas (LNG) terminal at the site. A total of 21 samples were analyzed for total solids, total organic carbon (TOC), grain size, metals, organotins, SVOCs, polycyclic aromatic hydrocarbons (PAHs), pesticides, dioxins/furans, and PCB Aroclors. All chemical results were below the DMMP screening levels (SLs) with the following exceptions:

- Butylbenzyl phthalate in the deeper subsurface core sample interval from SC-05 (90-150 cm) exceeded the DMMP SL of 63 ug/kg DW.
- Dioxins/furans in two subsurface core sample intervals from SC-05 (30-90 cm and 90-150 cm) exceeded the dioxin/furan Disposal Site Management Objective of 4 ng/kg toxicity equivalence (TEQ) (for both 0 and ½ DL).

**9j.** If you know what the property was used for in the past, describe below. [help]

Historically, this site was used for heavy industrial and port work.

**9k.** Has a cultural resource (archaeological) survey been performed on the project area? [help]

- **If Yes**, attach it to your JARPA package.

☐ Yes ☒ No

**9l.** Name each species listed under the federal Endangered Species Act that occurs in the vicinity of the project area or might be affected by the proposed work. [help]

The following species are potentially found in Puget Sound, but not necessarily in Pierce County, the Blair Waterway, or surrounding area.

Bocaccio rockfish (*Sebastes paucispinis)* – Endangered
Bull trout (*Salvelinus confluentus*) - Threatened
Chinook salmon (*Oncorhynchus tshawytscha*) (Puget Sound) - Threatened
Humpback whale (*Megaptera novaeangliae*) - Endangered
Marbled murrelet (*Brachyramphus marmoratus*) - Threatened
Steelhead (*Oncorhynchus mykiss*) (Puget Sound DPS) – Threatened
Streaked Horned Lark (*Eremophila alpestris strigata*) – Threatened
Southern resident killer whale (*Orcinus orca*) (Southern Resident DPS) – Endangered
Yelloweye rockfish (*Sebastes ruberrimus*) – Threatened

**9m.** Name each species or habitat on the Washington Department of Fish and Wildlife's Priority Habitats and Species List that might be affected by the proposed work. [help]

According to WDFW's Priority Habitats and Species List Interactive Online Mapper, no species are mapped within 500 feet of the project area.

The WDFW SalmonScape mapper shows three (3) species in Wapato Creek, including: winter steelhead, fall Chum Salmon, and Coho Salmon. SalmonScape also identifies five (5) species, including: Pink Salmon (odd year), fall Chinook Salmon, winter steelhead (*O. mykiss*), fall Chum Salmon, and Coho Salmon in an unnamed drainage at the southwest end of the Blair Waterway. Both of these systems are mapped approximately 2 miles from the project area.

According to WDFW Forage Fish Map, there is no forage fish spawning on or adjacent to the site.

The Washington Department of Natural Resources has no eelgrass data for the Blair Waterway in the Puget Sound Seagrass Monitoring mapper.

## Part 10–SEPA Compliance and Permits

Use the resources and checklist below to identify the permits you are applying for.

- Online Project Questionnaire at http://apps.oria.wa.gov/opas/.
- Governor's Office for Regulatory Innovation and Assistance at (800) 917-0043 or help@oria.wa.gov.
- For a list of addresses to send your JARPA to, click on agency addresses for completed JARPA.

**10a.** Compliance with the State Environmental Policy Act (SEPA). (Check all that apply.) [help]

- For more information about SEPA, go to https://ecology.wa.gov/regulations-permits/SEPA-environmental-review.

☒ A copy of the SEPA determination or letter of exemption is included with this application.

☐ A SEPA determination is pending with Port of Tacoma (lead agency). The expected decision date is TBD.

☐ I am applying for a Fish Habitat Enhancement Exemption. (Check the box below in 10b.) [help]

☐ This project is exempt (choose type of exemption below).

☐ Categorical Exemption. Under what section of the SEPA administrative code (WAC) is it exempt? _____

☐ Other: _____

☐ SEPA is pre-empted by federal law.

**10b.** Indicate the permits you are applying for. (Check all that apply.) [help]

**LOCAL GOVERNMENT**

**Local Government Shoreline permits:**

☐ Substantial Development ☐ Conditional Use ☐ Variance

☒ Shoreline Exemption Type (explain): TMC 19.2.3.3.2

**Other City/County permits:**

☐ Floodplain Development Permit ☐ Critical Areas Ordinance

**STATE GOVERNMENT**

**Washington Department of Fish and Wildlife:**

☒ Hydraulic Project Approval (HPA) ☐ Fish Habitat Enhancement Exemption – Attach Exemption Form

**Washington Department of Natural Resources:**

☐ Aquatic Use Authorization

Complete JARPA Attachment E and submit a check for $25 payable to the Washington Department of Natural Resources. **Do not send cash.**

**Washington Department of Ecology:**

☒ Section 401 Water Quality Certification ☐ Non-Federally Regulated Waters

**FEDERAL AND TRIBAL GOVERNMENT**

**United States Department of the Army (U.S. Army Corps of Engineers):**

☒ Section 404 (discharges into waters of the U.S.) ☒ Section 10 (work in navigable waters)

**United States Coast Guard:**

For projects or bridges over waters of the United States, contact the U.S. Coast Guard at: d13-pf-d13bridges@uscg.mil

☐ Bridge Permit ☐ Private Aids to Navigation (or other non-bridge permits)

**United States Environmental Protection Agency:**

☐ Section 401 Water Quality Certification (discharges into waters of the U.S.) on tribal lands where tribes do not have treatment as a state (TAS)

**Tribal Permits:** (Check with the tribe to see if there are other tribal permits, e.g., Tribal Environmental Protection Act, Shoreline Permits, Hydraulic Project Permits, or other in addition to CWA Section 401 WQC)

☐ Section 401 Water Quality Certification (discharges into waters of the U.S.) where the tribe has treatment as a state (TAS).

## Part 11–Authorizing Signatures

Signatures are required before submitting the JARPA package. The JARPA package includes the JARPA form, project plans, photos, etc. [help]

**11a.** Applicant Signature (required) [help]

I certify that to the best of my knowledge and belief, the information provided in this application is true, complete, and accurate. I also certify that I have the authority to carry out the proposed activities, and I agree to start work only after I have received all necessary permits.

I hereby authorize the agent named in Part 3 of this application to act on my behalf in matters related to this application. _____ (initial)

By initialing here, I state that I have the authority to grant access to the property. I also give my consent to the permitting agencies entering the property where the project is located to inspect the project site or any work related to the project. _____ (initial)

| Stanley H. Sasser | Stanley H Sasser | 12/22023 |
|---|---|---|
| Applicant Printed Name | Applicant Signature | Date |

**11b.** Authorized Agent Signature [help]

I certify that to the best of my knowledge and belief, the information provided in this application is true, complete, and accurate. I also certify that I have the authority to carry out the proposed activities and I agree to start work only after all necessary permits have been issued.

| | | |
|---|---|---|
| Authorized Agent Printed Name | Authorized Agent Signature | Date |

**11c.** Property Owner Signature (if not applicant) [help]

Not required if project is on existing rights-of-way or easements (provide copy of easement with JARPA).

I consent to the permitting agencies entering the property where the project is located to inspect the project site or any work. These inspections shall occur at reasonable times and, if practical, with prior notice to the landowner.

| | | |
|---|---|---|
| Property Owner Printed Name | Property Owner Signature | Date |

18 U.S.C §1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States knowingly falsifies, conceals, or covers up by any trick, scheme, or device a material fact or makes any false, fictitious, or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious, or fraudulent statement or entry, shall be fined not more than $10,000 or imprisoned not more than 5 years or both.

If you require this document in another format, contact the Governor's Office for Regulatory Innovation and Assistance (ORIA) at (800) 917-0043. People with hearing loss can call 711 for Washington Relay Service. People with a speech disability can call (877) 833-6341. ORIA publication number: ORIA-16-011 rev. 09/2018

# Attachment B

# BIOLOGICAL EVALUATION

TOTE Maritime Alaska Terminal Maintenance Dredging

Port of Tacoma

Prepared by

LEON Environmental, LLC

Seattle, WA

February 2023

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## TABLES



## FIGURES

# ABBREVIATIONS AND ACRONYMS

| | |
|---|---|
| °C | degree Celsius |
| °F | degree Fahrenheit |
| BE | biological evaluation |
| BMP | best management practice |
| cy | cubic yards |
| dBA | A-weighted scale to measure in-air noise |
| DMMP | Dredged Material Management Program |
| DPS | Distinct Population Segment |
| Ecology | Washington Department of Ecology |
| EFH | Essential Fish Habitat |
| EPA | US Environmental Protection Agency |
| ESA | Endangered Species Act |
| ESU | Evolutionarily Significant Unit |
| FR | Functioning at Risk |
| ft | foot (feet) |
| HTL | high tide line |
| LTAA | Likely to Adversely Affect |
| LWM | large woody material |
| m | meter(s) |
| MHHW | mean higher high water |
| MLLW | mean lower low water |
| MTCA | Model Toxics Control Act |
| NE | No Effect |
| NLTAA | Not Likely to Adversely Affect |
| NMFS | National Marine Fisheries Service |
| NOAA | National Oceanic and Atmospheric Administration |
| NWFSC | Northwest Fisheries Science Center |
| NWP | Nationwide Permit |
| ODFW | Oregon Department of Fish and Wildlife |
| OHW | Ordinary High Water |
| PBF | physical and biological feature |

**Abbreviations and Acronyms (Continued)**

| | |
|---|---|
| PCE | primary constituent element |
| PHS | Priority Habitat and Species |
| Port | Port of Tacoma |
| Services | National Marine Fisheries Service and US Fish and Wildlife Service |
| SIP | Standard Individual Permit |
| SPCC | spill prevention, control and countermeasure |
| SSPS | Shared Strategy for Puget Sound |
| TOTE | Totem Ocean Trailer Expansion Maritime Alaska Terminal |
| USACE | US Army Corps of Engineers |
| USFWS | US Fish and Wildlife Service |
| WAC | *Washington Administrative Code* |
| WDFW | Washington Department of Fish and Wildlife |
| WNHP | Washington Natural Heritage Program |
| WSDOT | Washington State Department of Transportation |
| WUT | Washington United Terminal |
| y | yard(s) |

## EXECUTIVE SUMMARY

The proposed action consists of dredging sediment mounds and shallower berth elevations from the Totem Ocean Trailer Express (TOTE) Maritime Alaska Terminal along the northeast channel of the Blair Waterway. Maintenance dredging is needed as the mounds and high spots pose unacceptable safety and navigation hazards that may result in injuries, damage to vessels, and significant losses of property.

The mound and high spot sediments were sampled in December of 2023. Results will be presented to the Dredged Material Management Program (DMMP) in early Spring 2023 for evaluation for open-water disposal at the Commencement Bay disposal site.

The Port intends to dispose of dredged sediments at the Commencement Bay disposal site if the DMMP agencies determine that bioaccumulation testing results meet open-water disposal criteria; otherwise, they will be disposed of at an authorized upland location. The effects of disposal of suitable dredged material at the Commencement Bay open-water disposal site are evaluated in the U.S. Army Corps of Engineers' (USACE) 2015-2016 Endangered Species Act (ESA) documentation and are not duplicated in this document.

The action area includes the dredging footprint, the extent of temporarily elevated underwater and terrestrial noise levels, and the extent of temporarily increased turbidity associated with dredging. However, turbidity will remain within the natural turbidity range that commonly occurs in Commencement Bay during storm events and snow melt. The Puyallup River is a naturally high turbidity river that discharges turbid fresh water in a thin surface layer over much of Commencement Bay during storm events and snow melt.

ESA-listed species in the action area addressed in this document include Chinook salmon, steelhead, Bull Trout, bocaccio, yelloweye rockfish, humpback whales, Southern Resident killer whales, Streaked Horned lark, Taylor's Checkerspot, Yellow-billed cuckoo and marbled murrelet. Designated critical habitats in the action area addressed in this document include Puget Sound Evolutionarily Significant Unit (ESU) Chinook salmon, Puget Sound Distinct Population Segment (DPS) steelhead and Bull Trout, Puget Sound/Georgia Basin ESU Bocaccio and yelloweye rockfish, and Southern Resident killer whale.

This Biological Evaluation (BE) identifies various measures that will be implemented to avoid adverse impacts to listed species and their critical habitats Effects determinations to are summarized in Table 2-1. No ESA listed species are expected to be adversely affected by the proposed dredging.

# 1.0 INTRODUCTION

The Port of Tacoma (Port) proposes to conduct maintenance dredging in the berthing areas of TOTE Maritime Alaska Terminal (TOTE) in the Blair Waterway, Tacoma, Washington. This marine terminal has been dredged previously to an authorized depth of -40 feet (ft) mean lower low water (MLLW). However, sediment mounds and high spots produced by propeller-wash have accumulated causing safety hazards, risk of vessel damage, and economic losses for the Port and its tenants.

The project objective is to restore the previously dredged project depth of -40 ft MLLW within the TOTE terminal berth to reestablish authorized navigation depth and to maintain optimal facility operations. The Port proposes to dredge an estimated total volume of up to 15,000 cubic yards (cy) to restore the authorized depth of -40 ft MLLW, including the potential for an additional 2-foot over dredge.

The Port is requesting a Nationwide Permit (NWP) 35 (Maintenance Dredging of Existing Basins) for dredging and a Standard Individual Permit (SIP) to dispose suitable material at the Commencement Bay open-water disposal site; however, all material deemed unsuitable for open-water disposal will be disposed in an approved upland location.

Much of this BE relies on information provided by several prior BEs prepared for the Port:

- Biological Evaluation Port of Tacoma Pierce County Terminal Maintenance Dredging, 2022.
- Biological Evaluation Port of Tacoma Blair Waterway Maintenance Dredging, Washington United Terminal and Husky Terminal, 2021.
- Biological Evaluation Earley Business Center, Port Parcel 1B, 2019.
- Biological Evaluation Port of Tacoma Stormwater Outfall and Tide Structure Maintenance, Repair and Replacement Program, 2018.
- Biological Evaluation Port of Tacoma Programmatic Pile Repair/Replacement, 2017.

The effects of disposing suitable dredged material at the Commencement Bay open-water disposal site are evaluated in the U.S. Army Corps of Engineers' 2015-2016 ESA documentation:

- Biological Evaluation: Continued Use of Multiuser Dredged Material Disposal Sites in Puget Sound and Grays Harbor. June 2015
- USFWS Concurrence. July 28, 2015
- NMFS Rockfish Biological Opinion. December 17, 2015
- USACE response to NMFS BiOp. January 14, 2016

## 1.1 PROJECT LOCATION

The proposed dredge project includes deep subtidal areas of the TOTE berth (Figure 1).

## 1.2 PROJECT DESCRIPTION


**Figure 1. TOTE Maritime Alaska Terminal Action Area, Blair Waterway, Port of Tacoma (GoogleEarth).**

The proposed action is a maintenance dredging action to restore previously dredged depths (-40 ft MLLW) at TOTE (Figure 2) within the Blair Waterway.

The Port requests authorization to dredge an estimated volume of 10,000 cy to restore the authorized depth of -40 ft MLLW and up to approximately 5,000 cy for a 2-ft over dredge, if the entire over dredge volume were removed. . Although the Port will characterize all sediments that may potentially be dredged under the DMMP framework, it does not anticipate substantially exceeding the 10,000 cy dredge volume (Table 1-1) needed to restore authorized depths of -40 ft MLLW. The total volume proposed to be dredged from TOTE, including potential over dredge, is summarized in Table 1-1 below.

**Table 1-1. Project Dredged Material Volumes**

| Terminal | Authorized Depth (ft MLLW) | Proposed Dredging Volumes | | Total Vol. (cy) |
|---|---|---|---|---|
| | | Authorized Depth (cy) | 2-ft Over Depth (cy) | |
| TOTE | −40 | 10,000 | 5,000 | 15,000 |

Dredging will be performed with a clamshell bucket deployed from a barge operating in the deep subtidal water marine terminal areas. The Port will request the contractor utilize real-time positioning control when implementing dredging operations to minimize over dredging. Each dredging cycle will involve a single "bite" of the clamshell bucket. When the clamshell bucket hits the bottom, it will fully close, and will be raised through the water column carefully up to the surface for placement into a barge for transportation to an upland or open water disposal site. If water must be decanted from the barge, it will be filtered through straw bales or similar.

Dredged material to be disposed at the DMMP Commencement Bay open water disposal site will be placed in a split hull or pocket barge.

Material to be disposed upland will be placed in a barge with tightly sealing doors and compartments that have minimal leakage during transport to the transloading facility.

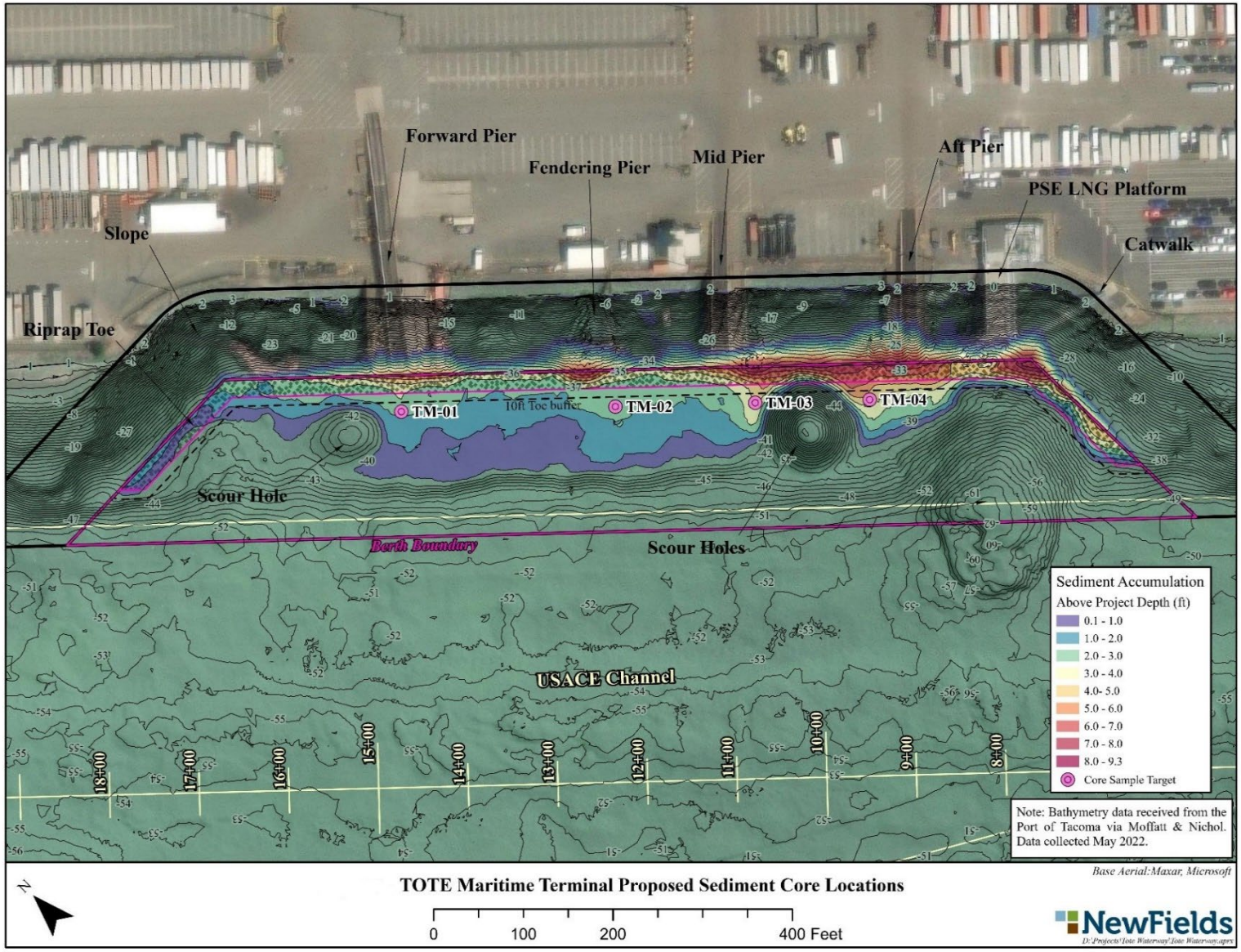



**Figure 2. TOTE Maritime Alaska Terminal Maintenance Dredging (NewFields 2023)**

## 2.0 EVALUATED ESA SPECIES

The ESA-listed species addressed in this document include Chinook Salmon, Steelhead, Bull Trout, Bocaccio, Yelloweye Rockfish, Humpback Whales, Southern Resident Killer Whales, Streaked Horned lark, Taylor's Checkerspot, Yellow-billed cuckoo and Marbled Murrelet. This document also addresses critical habitat for ESU Chinook Salmon; Puget Sound DPS Steelhead and Bull Trout; Puget Sound/Georgia Basin ESU Bocaccio, and Yelloweye Rockfish; and Southern Resident Killer Whale. Several species listed and protected by ESA are found in Pierce County and/or Washington, but are not found in or near the vicinity of the project area and will not be addressed in the Effects Determination section of this assessment. These species include Humpback Whales, Streaked Horned lark, Taylor's Checkerspot, and Yellow-billed cuckoo.

Effects of the proposed action to ESA-listed species include temporarily elevated levels of underwater and terrestrial noise, sedimentation, and turbidity during dredging.

Minimization measures and best management practices (BMPs) include, but are not limited to: dredging impact avoidance and minimization measures (described in Section 3); spill prevention and response requirements; reporting requirements; conducting work during the approved in-water work window; and site-specific conditional requirements for conducting the work.

Table 2-1 provides a summary of effect determinations to listed species and their critical habitats that may occur within the action area.

## 2.1 CONSULTATION HISTORY

The Port is requesting a NWP35 (Maintenance Dredging of Existing Basins) for dredging and a SIP to dispose suitable material at the Commencement Bay open-water disposal site.

The USACE will serve as the lead agency in this consultation. The purpose of this BE is to examine the effects of the proposed project on ESA-listed species, designated and proposed critical habitats, and Essential Fish Habitat (EFH) for purposes of consultation with the US Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS) (collectively, USFWS and NMFS are referenced as the Services) under Section 7 of the ESA and the Magnuson-Stevens Act.

Port projects with similar or larger dredging actions, and similar ESA-listed species, designated and proposed critical habitats, and EFH, which resulted in similar effect determinations as the proposed project BE are cited below:

- Pierce County Terminal Maintenance Dredge (NWS-2022-681-WRD)
- Blair Waterway Maintenance Dredge (NWS-2020-1017-WRD)
- Pier 4 Reconfiguration Project (NWS-2014-0456-WRD)
- Husky Terminal Maintenance Dredge (NWS-2010-1118-WRD)
- WUT Maintenance Dredge (NWS-2008-01128-WRD)

See the specific project permits, BEs, consultation letters, and Port response documents for additional details.

## 2.2 DURATION OF MAINTENANCE DREDGING

The proposed action will occur during the Washington Department of Fish and Wildlife (WDFW)-approved in-water work window for the waters of Commencement Bay (July 16 – February 14). Work will be conducted up to 24 hours a day, 7 days a week, as required to minimize the project duration and complete the project within the approved in-water work window.

No action other than maintenance dredging will occur for this project.

**Table 2-1. Summary of Effect Determinations to ESA-Listed Species Potentially Occurring in the Action Area and Critical Habitats.**

| Common Name | Scientific Name | ESU or DPS[1] | ESA Federal Status | ESA State Status | Critical Habitat | Species Effect Determination | CH Effect Determination |
|---|---|---|---|---|---|---|---|
| **Mammals** | | | | | | | |
| Killer Whale (Orca) | *Orcinus orca* | Southern Resident DPS | Endangered | Endangered | Designated | NLTAA | NLTAA |
| **Birds** | | | | | | | |
| Marbled Murrelet | *Brachyramphus marmoratus* | N/A | Threatened | Threatened | Designated (outside Commencement Bay) | NLTAA | NE |
| **Salmonids** | | | | | | | |
| Bull Trout | *Salvelinus confluentus* | Puget Sound DPS | Threatened | Candidate | Designated | NLTAA | NLTAA |
| Chinook Salmon | *Oncorhynchus tshawytscha* | Puget Sound ESU | Threatened | Candidate | Designated | NLTAA | NLTAA |
| Steelhead | *Oncorhynchus mykiss* | Puget Sound DPS | Threatened | Candidate | Designated (outside Commencement Bay) | NLTAA | NE |
| **Rockfish** | | | | | | | |
| Bocaccio | *Sebastes paucispinis* | Puget Sound/ Georgia Basin DPS | Endangered | Candidate | Designated | NLTAA | NE |
| Yelloweye Rockfish | *Sebastes ruberrimus* | Puget Sound/ Georgia Basin DPS | Threatened | Candidate | Designated | NLTAA | NE |

1 ESU: Evolutionary Significant Unit, DPS: Distinct Population Segment

2 NE: No Effect; NLTAA: Not Likely to Adversely Affect; LTAA: Likely to Adversely Affect; N/A: Not Applicable

## 3.0 IMPACT AVOIDANCE AND MINIMIZATION MEASURES

The contractor will avoid and minimize adverse impacts to the project area by working during the authorized regulatory agency "in-water work windows." The project is designed to minimize adverse impacts by working with equipment stationed on barges and working within the footprint of the previously dredged berths.

The Port will implement the following list of avoidance and minimization measures to reduce, eliminate, or minimize the effects of the proposed action to listed species or their habitat:

- Dredging actions will be conducted during the WDFW-approved in-water work window for Commencement Bay (July 16 – February 14 of each year) until project completion, when juvenile salmonids are not expected to be present based upon best available science.

- In-water work will comply with Washington State Water Quality Standards (Washington Administrative Code [WAC] 173-201A).

- To minimize the duration and extent of in-water impacts to species, dredging will be sequenced and phased to reduce the project duration and may occur for up to 24 hours a day.

- Upon advance notice, the Port will provide upland access to the work site to representatives from USACE, the Services, Washington Department of Ecology (Ecology), and WDFW during all hours when the proposed action is being conducted.

- No new upland construction will occur as part of the proposed action.

- Dredging will occur well below the high tide line (HTL), ordinary high water (OHW), and mean higher high water (MHHW). No additional or new habitat conversion will occur. There will be no dredging in intertidal or shallow subtidal habitat. No intertidal or shallow subtidal habit will be converted to deep subtidal.

- Dredging will only remove targeted high-spots in the deep subtidal zone to maintain berthing areas at previously-authorized and dredged depths. Dredging will not alter the character, scope, size, or location of the project area or previously authorized dredge prism.

- No dredging will occur in any known sand lance, surf smelt or herring spawning areas.

- No dredging will occur in areas with Submerged Aquatic Vegetation (SAV).

- No maintenance dredging will be performed in or within 25 ft of an existing or previously designated Washington State Model Toxics Control Act (MTCA) site.

- All work will occur from barges moored at the TOTE; therefore, spuds will not be required. No intertidal or shallow subtidal habitat exists in this area; therefore, barges can only be moored over deep subtidal substrate where grounding is not possible.

- The Port will request the contractor to utilize real-time positioning control when implementing dredging operations.

- The clamshell bucket will be covered and fully close, and move through the water column slowly to minimize turbidity. The dredging contractor will not take multiple "bites" during a single clamshell cycle. When the clamshell bucket hits the bottom, it will be closed as slowly as possible and will not be overfilled. It will be raised to the surface slowly for disposal of all material before returning for another bite.

- The dredging contractor will not stockpile material on the bottom.

- If water quality impacts are observed outside the action area, the dredging contractor will adjust operations as needed to meet water quality requirements.

- Dredged material will be placed on a barge for transportation to an upland or open water disposal site. If water must be decanted from the barge, it will be filtered through straw bales or similar media.

- Dredged material will be disposed of at an approved in-water disposal site in accordance with DMMP Site Management and Monitoring Plans developed under 40 CFR 228.9 and with use restrictions specified as part of the designation for the sites, or in an approved upland location above OHW and the HTL.

- The barge used to transport dredged material to the disposal site will have tightly sealing doors and compartments to minimize leakage during transit.

- A written spill prevention, control and countermeasures (SPCC) plan will be prepared by the contractor for activities that include the use of heavy equipment.

- No solvents or other chemicals will be used in or over the water during the operation of the proposed action.

- A spill kit, including an oil-absorbing floating boom sized appropriately for the work area, will be available on site whenever dredging equipment is operated. The boom will be stored in a location that facilitates immediate deployment if needed.

# 4.0 ACTION AREA

This section describes the action area for the proposed TOTE maintenance dredging action. The action area is the greatest extent of the defined geographic areas that could be affected by the direct and indirect effects of the proposed action. The action area (Figure 1) was established based on:

- The project footprint, which is limited to the immediate footprint where the proposed maintenance dredging will be conducted.

- The extent of temporarily elevated surface water turbidity associated with maintenance dredging.

## 4.1 PROJECT FOOTPRINT

The project footprint portion of the action area consists of the physical location of the TOTE berthing areas within the northeast channel of the Blair Waterway, as described in the Project Description.

The elements of the proposed action will restore authorized and previously dredged depths at the terminal berth within TOTE. Nevertheless, the action area (Figure 1) includes the physical footprints of the areas included in the project description (Figure 2). There will be no alterations of shallow subtidal, intertidal, or riparian habitats, because none exist within the action area.

## 4.2 UNDERWATER NOISE

The proposed action is not anticipated to produce elevated underwater noise above the existing ambient background levels. Underwater noise will be produced by common construction practices of dredging subtidal substrate. It is assumed that clamshell dredging would generate noise levels lower than 125 dBRMS (NMFS 2023). Vessel noise would be created by a survey vessel slowly transiting the area to measure dredging progress and one to two tugboats transiting between the waterway and the open-water disposal site (if open water disposal is approved). The survey vessel would generate noise levels typical of a single motorboat. Tugboats have a dominant frequency range of 100-500Hz with a peak output at 170 dBRMS, but would be transiting slowly and produce much less noise in the waterway. Underwater noise will be equal to or less than the ambient background underwater noise typically found at the Port of Tacoma.

## 4.3 TERRESTRIAL NOISE

The proposed action will produce temporarily elevated terrestrial noise levels; however, the noise levels will be equal or less than noise typically occurring at an industrial port. The loudest pieces of equipment anticipated for the proposed maintenance dredging is the power source for the barge mounted dredge.

No specific terrestrial noise data exists within the action area; therefore, for purposes of this terrestrial noise attenuation analysis, baseline noise levels have been assumed to be at least 78 dBA measured at 50 ft from the source. This estimate is based on data from Cavanaugh and Tocci (1998) as cited by the Washington State Department of Transportation (WSDOT 2017), that indicate that background sound levels in high density urban areas are approximately 78 dBA, while background sounds in urban areas adjacent to freeway traffic can be as high as 88 dBA. Because of the high

level of shipping and industrial traffic in and surrounding inner Commencement Bay and the Blair Waterway, baseline noise levels are estimated conservatively at 78 dBA measured at 50 feet, but may in fact be much higher. Hard site conditions were assumed for noise attenuation purposes because the surrounding landscape is largely open water or hardscape. Because there is no pile driving associated with this project, construction noise is expected to be generally consistent with background industrial noise levels.

## 4.4 SEDIMENTATION/TURBIDITY

Dredging has the potential to temporarily elevate levels of sedimentation and turbidity within the authorized zone of influence surrounding the dredge prism. The zone of influence for temporarily elevating levels of sedimentation and turbidity is based on the turbidity mixing zone standard for marine waters authorized by Ecology and defined in the WAC 173-201A-210 (1)I(i). For projects working within estuaries or marine waters, the point of compliance for a temporary area of mixing shall be at a radius of 150 ft from the activity causing the turbidity exceedance. This distance is well beyond the distance at which construction turbidity is likely in the highly turbid surface waters of Commencement Bay. The low current velocities within the waterway have little potential for distributing the turbidity outside the project footprint. In addition, the weak currents that occur within this port area are not likely to spread turbidity far from the source. Turbidity levels are anticipated to remain within the higher natural levels produced in this vicinity by the Puyallup River.

The intensity of turbidity is typically measured in Nephlometric Turbidity Units (NTUs) that describe the opacity caused by the suspended sediments, or by the concentration of total suspended sediment (TSS) as measured in milligrams per liter (mg/L). A strong positive correlation exists between NTUs and TSS concentrations. Depending on the particle sizes, NTUs roughly equal the same number of mg/L for TSS (i.e., 10 NTU = ~ 10 mg/L TSS, and 1,000 NTU = ~ 1,000 mg/L TSS) (Campbell Scientific Inc. 2008; Ellison et al. 2010). Therefore, the two units of measure are easily compared. The water quality standard for marine waters at the point of compliance is to not exceed 5 NTUs (~5 mg/L TSS) above background when ambient background turbidity is less than 50 NTUs, and no more than 10 NTUs (~10 mg/L TSS) above background when ambient turbidity is above 50 NTUs at a distance of 150 feet. If the dredge operation complies with the water quality standard for marine waters, the amount of turbidity and TSS will be negligible compared to ambient conditions.

Turbidity is a natural characteristic of estuarine habitats, particularly in Commencement Bay. Turbidity in Commencement Bay is primarily the product of fine sediment carried by the Puyallup River, which routinely distributes suspended sediments across the bay's surface waters. Turbidity is also a product of estuarine and marine primary production, combined with the effects of tidal flows, currents, storms, and the receipt of sediments and organic particulates from uplands and freshwater drainages. Suspended sediments, organic and inorganic, are an integral part of the estuarine and coastal habitat (Nightingale and Simenstad 2001). The life-history strategies of many larval and juvenile fishes, including salmonids, have evolved in response to these natural conditions (Birtwell et al. 1987; Dunford 1975; Levy and Northcote 1982; Gregory 1990 as cited in Nightingale and Simenstad 2001).

LeGore and Des Voigne (1973) conducted 96-hour bioassays on juvenile coho salmon using re-suspended Duwamish River sediments from five locations. Up to 5 percent sediment in suspension

(28,800 mg/l dry weight), well above levels expected to be suspended during dredging, had no acute effects.

Salo et al. (1979) reported a maximum of 94 mg/L of TSS in the immediate vicinity of a working dredge in the Hood Canal. TSS concentrations associated with mechanical clamshell bucket dredging operations have been shown to range from 105 mg/L in the middle of the water column to 445 mg/L near the bottom (210 mg/L, depth-averaged) (USACE 2001).

Studies show that salmonids have an ability to detect and distinguish turbidity and other water quality gradients (Quinn 2005; Simenstad 1988), and larger juvenile salmonids are more tolerant to suspended sediment than smaller juveniles (Servizi and Martens 1991; Newcombe and Jensen 1996). It is important to note that turbidity and TSS impacts are extremely temporary, with exposure times from dredging in the near-field zones seldom exceed an hour (Bridges et al., 2008).

Applicable studies (WDFW 2023) indicate consistently that juvenile salmon are unlikely to occur in the Blair Waterway during the in-water work window. Fish will avoid areas with elevated sediment and turbidity, which can occur during dredging. If fish happen to be in the area, recent NMFS Opinions (NMFS 2023) conclude that they will avoid the dredge operation due to elevated turbidity, and in the unlikely event that they may be present, they are unlikely to be entrained.

Since the proposed action is anticipated to occur during the approved in-water work window, migrating juvenile salmonids are not expected to be present to be exposed to the temporarily elevated turbidity.

## 4.5 BENTHIC IMPACTS

The basic biological impact of the maintenance dredging will be the removal of benthic fauna that resides on and within the heavily-disturbed deep subtidal substrate of the dredge footprint. Approximately one to four feet of sediment will be removed from each of the shoaled sediment mounds and high spots.

Although dredging activities cause a short-term change in the characteristics of the benthic in-faunal biota, recovery has been shown to occur within a few months to one year after dredging, based on the results of studies in Commencement Bay and other areas. For example, Romberg (1995), studying a subtidal sand cap placed to isolate contaminated sediments in Elliott Bay, identified 139 species of invertebrates five months after placement of the cap. The benthic community reached its peak population and biomass approximately two and one-half years after placement of the cap, and then decreased, while the number of species increased to 200 as long-lived species recruited to the population (Wilson and Romberg 1996). Repeated monitoring of DMMP open-water dredged material disposal sites throughout Puget Sound since 1988 provide substantial documentation demonstrating that benthic communities recover rapidly after significant disturbances from dredged material disposal (DMMP 2021a; 2021c; PSDDA 1988a; 1988b; 1988c; 1988d; 1989a; 1989b; 1989c; USACE 1993; 2005; WDNR 2007).

Sediments within the dredging areas are already highly-disturbed by propwash from routine vessel operations; therefore, any benthic organisms that exist in these locations repopulate rapidly. These organisms are expected to repopulate the maintenance dredge areas within the following year or less, as benthic invertebrates can produce more than one generation per year and thus have rapid

recolonization rates. The maintenance dredging is expected to expose the same sediment characteristics that were exposed by the original dredging of these locations (Bridges et al., 2008).

Long-term direct effects of proposed dredging are expected to be neutral to positive. Dredging and any post-dredging action that may be required by the DMMP agencies if bioaccumulation testing suggests that the post-dredge surface may exceed bioaccumulation standards will either removed or isolate sediments that may potentially contain bioaccumulative chemicals (dioxins/furans). Left in place, existing sediment may contribute to the bioaccumulation of dioxins/furans within upper trophic level species, depending upon the results of bioaccumulation testing. Removal of these sediments will likely allow the recolonization of a robust benthic community within the dredge footprint. It would also remove a potential source of bioaccumulation to higher trophic level animals.

## 4.6 ENTRAINMENT

Based on recent a NMFS Opinion issued to the Port for another maintenance dredge project (NMFS 2021c), NMFS considers possible entrainment from dredging a risk to ESA-listed species; however, there is little evidence of mechanical dredge entrainment of mobile organisms such as fish. This is substantiated by known salmonid Blair Waterway habitat use characteristics, avoidance of turbid water and elevated TSS concentrations, entrainment analyses, and other recent NMFS Opinions in the Puget Sound:

- Dredging is proposed to be performed between July 16 and February 14, which is outside of times when juvenile salmon are expected to be present based upon best available science.

- Dredging will take place at depths close to – 40 ft MLLW. Juvenile salmon prefer water depths of less than 25 ft MLLW (Shandra O'Haleck, personal communication, 2021).

- Studies in Commencement Bay have shown that there is a sharp increase in out-migrating juvenile Chinook salmon in early to mid-June, which rapidly decreases to near zero in early July (Duker et al. 1989, Weitkamp et al. 1981, Kerwin 1999).

- The majority of steelhead smolts migrate directly to the open ocean and do not rear extensively in the estuarine or coastal environments (Burgner et al. 1992).

- All shorelines are used by juvenile Chinook, but catches are typically higher near the mouths of the waterways than near the heads (Kerwin 1999). As suitable habitat is limited within the Blair Waterway, it is highly unlikely that fish would utilize the area in any significant numbers.

- Puget Sound ESU Chinook salmon have been documented in Hylebos Creek (via the Hylebos Waterway) and Commencement Bay (WDFW 2021b). Although Wapato Creek drains into the Blair Waterway, it has been highly altered and the Action Area is not fed by any substantial freshwater streams, and therefore is unlikely to have regular presence of either PS Chinook or steelhead in high numbers (NMFS 2021d).

- To the extent that juvenile and adult salmonids are present in the areas with elevated suspended sediment, they are expected to be of sufficient size to swim away from these areas, which would limit the potential for, and duration of, exposure (NMFS 2021d).

- There is little evidence of mechanical dredge entrainment of mobile organisms such as fish. In order to be struck by or entrained in a dredge bucket, an organism must be directly under the bucket when it drops. The small size of the bucket, compared against the distribution of the organisms across the available habitat make this situation very unlikely (NMFS 2021c).

- In a 2019 Opinion focused on the Seattle Harbor, NMFS stated that "Carlson et al. (2001 as cited in NMFS 2019) documented the behavioral responses of salmonids to dredging activities in the Columbia River using hydroacoustics. During dredging operations, out-migrating salmon smolt behavioral responses ranged from (1) salmon orienting to the channel margin move inshore when encountering the dredge, (2) most out-migrating salmon passing inshore moved offshore upon encountering the discharge plume, and (3) out-migrating salmon were observed to assume their distribution trends within a short time after encountering both the dredging activity and dredge plume. (Kjelland et al. 2015 as cited in NMFS 2019)." No "take" or restrictions were placed by the NMFS (2019) Opinion due to entrainment.

- In a Snohomish County 10-year maintenance dredge permit, NMFS (2021c) Opinion stated, "The documented occurrence of dredging-related entrainment and/or bucket strike of mobile fish are extremely rare. In the southeast region of the US, where closely monitored heavy dredging operations occur regularly in areas inhabited by sturgeon and sea turtles, only two live sturgeon (NMFS 2012) and two live sea turtles (NMFS 2011) are known to have been taken by clamshell dredging in over 30 years since 1990. NMFS (2021c) concluded, based on the best available information, the NMFS considers it extremely unlikely that any PS Chinook salmon and PS steelhead would be entrained or struck by the bucket during the planned maintenance dredging." Dredging was to take place in shallow depths (less than -10 ft MLLW) and within an active migration corridor of the Snohomish River. No "take" or restrictions were placed by NMFS (2021c) due to entrainment.

- In Bellingham, Washington, an Opinion for a project for the Sandy Point maintenance dredge did not address entrainment at all (NMFS 2020a). This BE assumes that the NMFS did not consider entrainment an issue of harm, injury, or death. The project took place in water depths of less than -10 ft MLLW, which is considered preferred habitat depth for juvenile salmon, unlike the depth of the Blair Waterway.

No documented evidence could be found for the preparation of this BE providing sufficient evidence that harm or injury considered "take" would be "reasonably certain to occur" due to entrainment or other reasons during project operations July 16 - February 14 in-water work window.

# 5.0 SPECIES AND HABITAT INFORMATION

Several federal and state ESA-listed fish, wildlife and plants, and critical habitats have the potential to occur within Pierce County and/or the project area. Information for this BE regarding listed species and critical habitat was obtained from USFWS websites (USFWS 2021a; 2021b) and the NMFS website (NMFS 2020b; 2021a; 2021d; 2021e). Additional information came from NatureServe (NatureServe 2020), Washington Department of Natural Resources Natural Heritage Program (WNHP 2017) and WDFW Priority Habitat and Species (PHS) lists and maps and SalmonScape (WDFW 2020; 2021a; 2021b). ESA status of listed species was determined by reviewing ESA lists on the NMFS and USFW web sites in late December 2022.

## 5.1 SPECIES AND CRITICAL HABITAT NOT ADDRESED

Table 5-1 presents several listed species that may occur within Pierce County that either have no documented occurrences within the action area, or no suitable habitat exists. Based on the lack of documented occurrences and suitable habitat for these species, it is determined that the project will have **No Effect** on them and they are not addressed further in this BE.

The Eastern Distinct Population Segment (DPS) of Steller sea lion (*Eumetopias jubatus*) was delisted in 2013 (78 FR 66140) and is not discussed under the ESA section of this BE; however, it is still protected under the Marine Mammal Protection Act.

The Puget Sound/Georgia Basin Evolutionary Significant Unit (ESU) of Canary Rockfish (*Sebastes pinniger*) was delisted in 2017 (82 FR 7711) after it was determined that the Puget Sound/Georgia Basin ESU of Canary Rockfish is not genetically discrete from the coastal population, and is not discussed further in this BE.

**Table 5-1. ESA-Listed Species Potentially Occurring in Pierce County, but Unlikely to Occur Within the Action Area**

| Common Name | Scientific Name | ESU or DPS[1] | ESA Federal Status | ESA State Status | Critical Habitat |
|---|---|---|---|---|---|
| Canada Lynx | *Lynx canadensis* | N/A | Threatened | Threatened | Designated |
| Golden Paintbrush | *Castilleja vivisect* | N/A | Threatened | Endangered | Not designated or proposed |
| Gray Wolf | *Canis lupis* | N/A | Endangered | Endangered | Not designated or proposed |
| Grizzly Bear | *Ursus arctos horribilis* | N/A | Threatened | Endangered | Proposed |
| Little brown bat | *Myotis lucifugus* | N/A | Under Review | Under Review | Not designated or proposed |
| Marsh Sandwort | *Arenaria paludicola* | N/A | Endangered | Extirpated | Not designated or proposed |
| North American Wolverine | *Gulo luscus* | Contiguous United States | Proposed Threatened | Species of Concern | Not designated or proposed |
| Northern Spotted Owl | *Strix occidentalis caurina* | N/A | Threatened | Threatened | Designated |
| Oregon Spotted Frog | *Rana pretiosa* | N/A | Threatened | Endangered | Designated |
| Pacific Eulachon | *Thaleichthys pacificus* | Southern DPS | Threatened | Candidate | Designated |
| Roy Prairie, Olympia, Tenino, and Yelm Pocket Gophers | *Thomomys mazama* ssp. | N/A | Threatened | Threatened | Designated |
| Streaked Horned Lark | *Eremophila alpestris strigata* | N/A | Threatened | Endangered | Designated |
| Taylor's Checkerspot | *Euphydryas editha taylori* | N/A | Endangered | Endangered | Designated |
| Water Howellia | *Howellia aquatilis* | N/A | Threatened | Threatened | Not designated or proposed |
| Whitebark pine | *Pinus albicaulis* | N/A | Threatened | Threatened | Not designated or proposed |
| Yellow-Billed Cuckoo | *Coccyzus americanus* | Western US DPS | Threatened | Candidate | Proposed |

[1] ESU: Evolutionary Significant Unit, DPS: Distinct Population Segment

## 5.2 SPECIES AND CRITICAL HABITAT ADDRESSED IN BE

This section discusses the ESA-listed species and critical habitat known to occur within Blair Waterway and potentially within the action area. The proposed maintenance dredging is located entirely within the Blair Waterway at TOTE.

Critical habitat has been designated within the action area for Puget Sound ESU Chinook, Puget Sound DPS Bull Trout, Puget Sound/Georgia Basin ESUs of rockfish, and Southern Resident killer whales. Critical habitat has also been designated for Puget Sound DPS steelhead, Marbled Murrelet, and Humpback Whales; however, no critical habitat occurs within the action area.

Table 5-2 presents the listing status of ESA-listed species that have a potential to occur within the action area and their critical habitat designation, and is followed by a brief discussion of each species, including the run timing, biological requirements, and factors affecting recovery.

**Table 5-2. ESA-Listed Species with a Potential to Occur in the Action Area**

| Common Name | Scientific Name | ESU or DPS[1] | ESA Federal Status | ESA State Status | Critical Habitat |
|---|---|---|---|---|---|
| Bocaccio | *Sebastes paucispinis* | Puget Sound/ Georgia Basin DPS | Endangered | Candidate | Designated |
| Bull Trout | *Salvelinus confluentus* | Puget Sound DPS | Threatened | Candidate | Designated |
| Chinook Salmon | *Oncorhynchus tshawytscha* | Puget Sound ESU | Threatened | Candidate | Designated |
| Humpback Whale | *Megaptera novaeangliae* | Central America & Mexico DPSs | Endangered | Endangered | Designated (outside Commencement Bay) |
| Marbled Murrelet | *Brachyramphus marmoratus* | N/A | Threatened | Threatened | Designated (outside Commencement Bay) |
| Southern Resident killer whale | *Orcinus orca* | Southern Resident DPS | Endangered | Endangered | Designated |
| Steelhead | *Oncorhynchus mykiss* | Puget Sound DPS | Threatened | Candidate | Designated (outside Commencement Bay) |
| Yelloweye Rockfish | *Sebastes ruberrimus* | Puget Sound/ Georgia Basin DPS | Threatened | Candidate | Designated |

[1] ESU: Evolutionarily Significant Unit; DPS: Distinct Population Segment

The NMFS and USFWS Threatened and Endangered Lists indicate there are five federally-listed Endangered or Threatened fish that could occur within the project study area: Chinook Salmon, Bull Trout, steelhead, Bocaccio, and Yelloweye Rockfish (NMFS 2021a, USFWS 2021). There are two marine mammals federally-listed as Endangered by the National Oceanic and Atmospheric Administration (NOAA) under the ESA: Humpback Whale and Southern Resident killer whale. There is one bird species that could potentially occur within the action area that is listed as threatened by USFWS under the ESA: Marbled Murrelet.

Table 5-3 shows the times of year that juvenile salmonids may be out-migrating within the action area, Table 5-4 shows the times of year for adult runs within the action area, and Table 5-5 shows the times of year that non-salmonid species may be present within the action area.

**Table 5-3. Timing of Juvenile Salmonid Downstream Migration within Action Area**

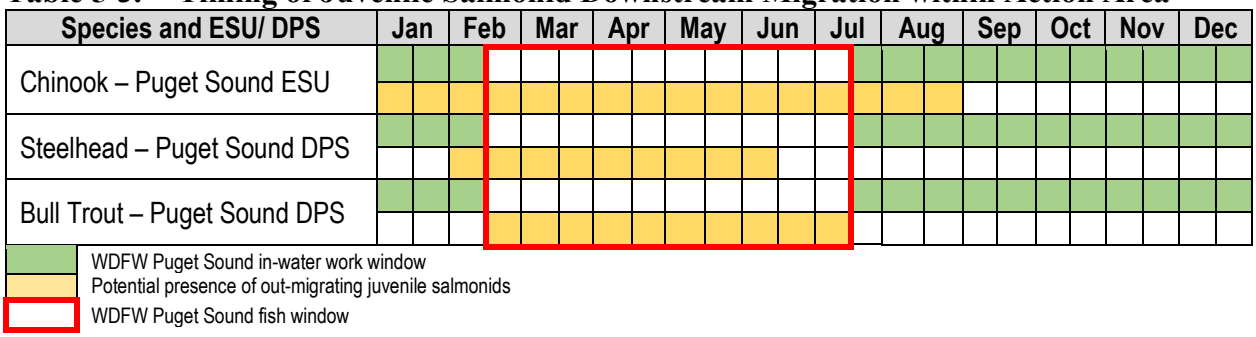



**Table 5-4. Timing of Adult Salmonid Migration within Action Area**

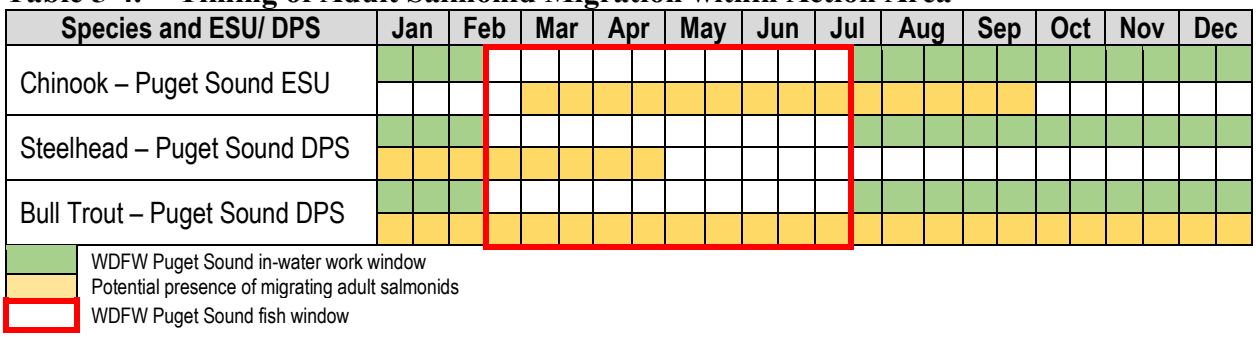
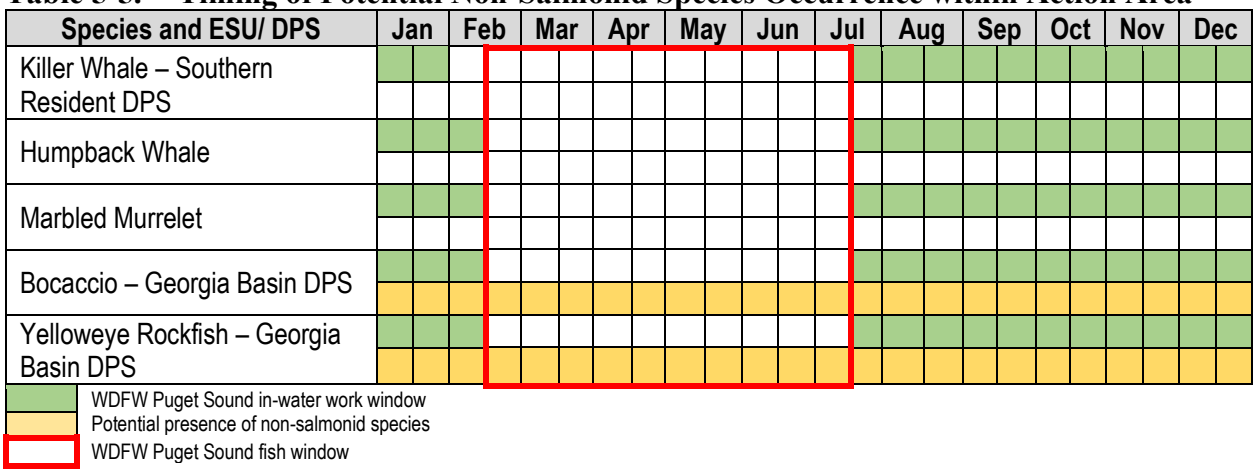



**Table 5-5. Timing of Potential Non-Salmonid Species Occurrence within Action Area**



### 5.2.1 Chinook Salmon

The Puget Sound ESU of Chinook Salmon includes all naturally spawning populations of Chinook Salmon from rivers and streams flowing into Puget Sound (70 FR 52630). Puget Sound ESU Chinook Salmon are listed as threatened by NMFS under the ESA and critical habitat has been designated (70 FR 52685). The recovery plan consists of two documents: the Puget Sound salmon recovery plan (Shared Strategy for Puget Sound [SSPS] 2007) and a supplement by NMFS (2006). The most recent 5 year review was published in 2017 (NMFS 2017a).

#### 5.2.1.1 Distribution and Habitat Requirements

Compared to the other Pacific salmon, Chinook Salmon have the most complex life history with a large variety of patterns (SSPS 2007). The length of freshwater and saltwater residency varies greatly for Chinook Salmon (Myers et al. 1998). Juvenile Chinook Salmon may move out of the freshwater area from the river of birth within one to ten days after emerging from the streambed gravel, and spend many months rearing in the estuary area before migrating to the marine environment. The majority of Puget Sound ESU Chinook Salmon leave the freshwater environment during their first year, making extensive use of protected estuarine and nearshore habitats (SSPS 2007). Although some Puget Sound Chinook Salmon apparently spend their entire life within Puget Sound, most migrate to the ocean and north along the Canadian coast (SSPS 2007). After 3-5 years in the ocean, Puget Sound stocks return to the Puyallup River to spawn in the spring and the fall (Myers et al. 1998).

#### 5.2.1.2 Presence in Action Area

Puget Sound ESU Chinook Salmon have been documented in Hylebos Creek (via the Hylebos Waterway) and Commencement Bay (WDFW 2021b). Based on the proximity of the action area to the Puyallup River and Hylebos Creek, and the presence of potential suitable habitat for adults and out-migrating juveniles, ESA-listed Chinook Salmon may migrate through the area; however, adult Chinook Salmon, if present within the action area, would most likely temporarily hold within the waters of Commencement Bay, or migrate to upstream spawning waters within the Puyallup Basin.

The Blair Waterway is not fed by any significant freshwater streams, and therefore is likely to have only occasional presence of Chinook in modest numbers during their usual period of presence in the bay. The land around the Blair Waterway has long been used for heavy industry. This industrial use has required the channel be deepened to its present level and has degraded nearshore conditions in the waterway. Because of this, it is unlikely Chinook would frequent areas that lack the resources they utilize.

This evaluation concludes that adult Chinook Salmon are not likely to be present within the Blair Waterway for an extended period of time, and if present, only in small numbers. Similarly, juvenile Chinook Salmon are not expected to spend significant time within the Blair Waterway, but could potentially rear within the nearshore waters of Commencement Bay. No part of the waterway within the action area provides suitable spawning habitat for Chinook Salmon, as the waterway is in a marine environment.

#### 5.2.1.3 Critical Habitat

The critical habitat for Chinook Salmon is designated for areas containing the physical and biological features (PBFs), or primary constituent elements (PCEs), essential for the conservation of the species or that require special management considerations. PBFs/PCEs include sites that are

essential to supporting one or more life stages of the ESU and that contain physical or biological features essential to the conservation of the ESU.

After emergence, Chinook fry generally search for suitable rearing habitat within side sloughs, side channels, spring-fed seep areas, and along the outer edges of the stream. These side margin, off-channel, and slough areas are vital for early juvenile habitat (Beechie et al. 2006). Deep subtidal habitats (-14 ft MLLW and deeper) provide fewer prey organisms and are not preferred habitats of juvenile salmon (NMFS 2021a; 2021d). Subadults and adult Chinook salmon in the marine environment feed on terrestrial and aquatic insects and crustaceans as well as larger prey including shrimp, squid, and a large array of fish species, especially Pacific Herring and Pacific Sand Lance (Pritchard and Tester, 1944, as cited in Scott and Crossman, 1973). Because dredging will occur at -40 ft MLLW, juvenile salmon will not be affected by any disturbance to subtidal aquatic life, because organisms at these depths are generally not preferred prey, and adult salmon feed on species other than benthic organisms.

The PCEs identified for ESA-listed Chinook Salmon and the potential for their presence within the action area are detailed below.

**PCE: Freshwater spawning sites with water quantity and quality conditions and substrate supporting spawning, incubation, and larval development.**

- This PCE is not present within the action area. The Blair Waterway, Commencement Bay, and adjacent waters of Puget Sound are saltwater tidal habitats.

**PCE: Freshwater rearing sites with water quantity and floodplain connectivity to form and maintain physical habitat conditions and support juvenile growth and mobility; water quality and forage supporting juvenile development; and natural cover such as shade, submerged and overhanging large wood, log jams and beaver dams, aquatic vegetation, large rocks and boulders, side channels, and undercut banks.**

- This PCE is not present within the action area. The Blair Waterway, Commencement Bay, and adjacent waters of Puget Sound are saltwater tidal habitats.

**PCE: Freshwater migration corridors free of obstruction with water quantity and quality conditions and natural cover such as submerged and overhanging large wood, aquatic vegetation, large rocks and boulders, side channels, and undercut banks supporting juvenile and adult mobility and survival.**

- This PCE is not present within the action area. The Blair Waterway, Commencement Bay, and adjacent waters of Puget Sound are saltwater tidal habitats.

**PCE: Estuarine areas free of obstruction with water quality, water quantity and salinity conditions supporting juvenile and adult physiological transitions between fresh-and saltwater; natural cover such as submerged and overhanging large wood, aquatic vegetation, large rocks and boulders, and side channels, and juvenile and adult forage, including aquatic invertebrates and fishes, supporting growth and maturation.**

- Given its proximity to the mouth of the Puyallup River, the action area does provide for saltwater transition/estuarine habitat for Chinook Salmon. The Puyallup River estuary has been significantly modified from its natural condition, as a result of decades of industrialization and commerce (Marks et al. 2016). Out of more than 5,900 acres of estuary habitat that historically existed at the head of Commencement Bay, only about 200 acres remain (SSPS 2007). The freshwater, tidal-brackish transition zone now occurs in a channelized river with heavily armored shorelines (Simenstad 2000). Several habitat restoration and conservation sites have been constructed and/or preserved in the nearshore and estuary areas, totaling almost 300 acres (J. Stebbings, personal communication, January 10, 2022); however, the degraded water quality conditions and the highly developed nature of the estuarine habitat within the action area severely limit the amount of critical habitat function provided.

**PCE: Nearshore marine areas free of obstruction with water quality and quantity conditions and forage, including aquatic invertebrates and fishes, supporting growth and maturation; and natural cover such as submerged and overhanging large wood, aquatic vegetation, large rocks and boulders and side channels.**

- The action area is within the Blair Waterway, which provides very little functional nearshore marine habitat for Chinook Salmon. Natural cover in the form of submerged and overhanging large wood, aquatic vegetation, large rocks and boulders, and side channels is lacking throughout the action area. Riprap, piling, and vertical bulkheads dominate the available cover.

- Outside the action area, the waters of Commencement Bay and adjacent waters of Puget Sound have been extensively hardened and modified, but do provide some functional nearshore rearing and foraging habitat for Chinook Salmon (Simenstad 2000). Much of the nearshore habitat in the action area has been artificially armored in association with road construction and residential development. Habitat complexity features such as overhanging vegetation and backwater areas are lacking. Large woody material (LWM) is frequently present at and above the MHHW line. Aquatic vegetation such as eelgrass and kelp beds are largely absent within the nearshore environment.

**PCE: Offshore marine areas with water quality conditions and forage, including aquatic invertebrates and fishes, supporting growth and maturation.**

- The action area is within the Blair Waterway, so it is not considered offshore marine area. The waters outside the action area, including Commencement Bay and adjacent Puget Sound provide offshore marine habitat for Chinook Salmon, and water quality and forage conditions suitable for growth and maturation of Chinook Salmon.

### 5.2.2 Steelhead

Puget Sound DPS steelhead are listed as threatened by NMFS and final rule on Puget Sound DPS steelhead critical habitat was issued in February 2016 (81 FR 9251). On December 27, 2019, NMFS published a recovery plan for PS steelhead (84 FR 71379) (NMFS 2019c). The most recent 5-year review was published in 2017 (NMFS 2017).

#### 5.2.2.1 Distribution and Habitat Requirements

The Puget Sound DPS steelhead is a more widely distributed anadromous trout than other salmonids, with a complex life history, involving repeated spawning and reversals of freshwater to ocean phases (71 FR 15667). Steelhead use a variety of habitats throughout the freshwater portion of their life history (Busby et al. 1996). After fry emerge from the freshwater substrate, they seek complex habitat of boulders, root wads, and woody material along the stream margins (Busby et al. 1996). Juvenile steelhead may stay in freshwater for up to three years before moving into estuarine habitat; however, once outmigration has begun, steelhead spend little time in estuaries prior to heading out to the marine environment (ODFW 1998; KCDNR 2001; City of Seattle 2007).

#### 5.2.2.2 Presence in Action Area

Similar to Chinook Salmon, the action area has some potentially suitable habitat for migrating adults and out-migrating juvenile Puget Sound DPS steelhead. Puget Sound DPS steelhead have been documented in Hylebos Creek (via the Hylebos Waterway), Wapato Creek (via the Blair Waterway), and Commencement Bay (WDFW 2021a; 2021b). However, data is limited (SalmonScape 2021) and NMFS is not aware of documented use of Puget Sound DPS steelhead within Wapato Creek within at least the past 25 years and does not consider Wapato Creek to provide suitable habitat for steelhead (Fisher personal communication April 16, 2013). Adult and juvenile steelhead most likely use the waterways as a migration corridor. Outmigration of juveniles could occur between approximately the middle of March through the middle of July.

This evaluation concludes that because the Blair Waterway is not fed by any significant freshwater streams, steelhead are not likely to be present for an extended period of time, and if present, only in small numbers. The land around the Blair Waterway has long been used for heavy industry. This industrial use has required the channel be deepened to its present level and has degraded nearshore conditions in the waterway. Because of this, it is unlikely steelhead would frequent areas that lack the resources they utilize.

#### 5.2.2.3 Critical Habitat

The critical habitat for steelhead is designated for freshwater rivers and streams. No freshwater habitat is present in the action area; therefore, there is no effect on Puget Sound steelhead DPS critical habitat.

### 5.2.3 Bull Trout

The Puget Sound DPS of Bull Trout includes the natural spawning populations in the Puget Sound Basin, including streams that flow into Puget Sound. Puget Sound DPS Bull Trout are listed as threatened by USFWS and critical habitat has been designated, including nearshore marine habitat within Puget Sound (70 FR 56212-56311). The recovery plan and most recent 5-year review were created in 2015 (FWS 2015b; FWS 2015c).

#### 5.2.3.1 Distribution and Habitat Requirements

Once widely distributed throughout the Pacific Northwest, Bull Trout have been reduced to approximately 44 % of their historical range (USFWS 2014). Compared to other salmonids, Bull Trout are thought to have more specific habitat requirements, and are most often associated with undisturbed habitat with diverse cover and structure. Spawning and rearing are thought to be primarily restricted to relatively pristine cold streams, often within headwater reaches, and water

temperature exceeding 59 °F is thought to be a limiting factor in their distribution (Rieman and McIntyre 1993). Adult Bull Trout can reside in lakes, reservoirs, and coastal areas, or they can migrate to saltwater (63 FR 31647). Juveniles are typically associated with shallow backwater or side-channel areas, while older individuals are often found in deeper pools sheltered by large organic debris, vegetation, or undercut banks (63 FR 31467).

#### 5.2.3.2 Presence in Action Area

Sparse suitable habitat within the Blair Waterway may deter the presence of Bull Trout in the immediate vicinity of the proposed project. Bull Trout have been documented in the adjacent Hylebos Waterway, but not in the Blair Waterway (WDFW 2021a; 2021b). The waterways provide only migratory habitat for Bull Trout migrating to areas higher in the Puyallup River Watershed. Most migratory Bull Trout leave freshwater and enter Puget Sound during late winter and spring, then return to freshwater during late spring and early summer (Goetz & Jeanes 2004). Migrating adult or subadult Bull Trout could potentially migrate within portions of the action area between approximately mid-February and mid-July. Adult and/or rearing juvenile Bull Trout could be present within Commencement Bay or adjacent waters of Puget Sound at any time of the year, but are unlikely to be present in the action area due to the absence of suitable habitat.

#### 5.2.3.3 Critical Habitat

The critical habitat for Puget Sound DPS Bull Trout is designated for areas containing the PCEs essential for the conservation of the species or that require special management considerations. The PCEs identified for ESA-listed Puget Sound DPS Bull Trout and the potential for their presence within the action area are detailed below.

**PCE: Springs, seeps, groundwater sources, and subsurface water connectivity (hyporheic flows) to contribute to water quality and quantity and provide thermal refugia.**

- This PCE is not present within the action area. There are no springs or seeps or significant groundwater sources in the action area, and the action area does not provide thermal refugia for Bull Trout.

**PCE: Migratory habitats with minimal physical, biological, or water quality impediments between spawning, rearing, overwintering, and freshwater and marine foraging habitats, including but not limited to permanent, partial, intermittent, or seasonal barriers.**

- In general, the action area provides migratory corridor habitat for Puget Sound DPS Bull Trout; however, the action area is within the Blair Waterway, which has been severely degraded due to the extent of development.

- Outside the action area, within the waters of Commencement Bay and adjacent waters of Puget Sound, riparian habitat and water quality are also degraded but to a lesser extent, which provides some suitable migratory and foraging habitat for Puget Sound DPS Bull Trout.

**PCE: An abundant food base, including terrestrial organisms of riparian origin, aquatic macroinvertebrates, and forage fish.**

- Aquatic macroinvertebrates and forage fish occur within the waters of Commencement Bay and adjacent waters of Puget Sound, and also occur to a lesser extent within the Blair Waterway. There is little habitat for terrestrial organisms of riparian origin located in the nearshore environment and Bull Trout are not known to forage in the waterways; however, the waterways do provide a moderate food base for Bull Trout. Outside the action area, nearshore habitat within Commencement Bay and adjacent waters of Puget Sound provide potentially suitable habitat for terrestrial organisms of riparian origin, and likely provide a more substantial food base for Bull Trout.

**PCE: Complex river, stream, lake, reservoir, and marine shoreline aquatic environments and processes with features such as large wood, side channels, pools, undercut banks and unembedded substrates, to provide a variety of depths, gradients, velocities, and structure.**

- Complex habitat features are non-existent within the TOTE action area. The action area is located in a heavily developed area with no undisturbed habitat. Throughout the action area, riprap, piling, and vertical bulkheads dominate the available cover; however, a few mitigation and restoration sites have been created within the waterways outside the action area, and these sites provide some habitat complexity.

- The waters of Commencement Bay and adjacent waters of Puget Sound have been extensively hardened and modified, but do provide some functional marine shoreline habitat (Simenstad 2000). Much of the nearshore habitat outside the action area has been artificially armored in association with road construction and residential development. Habitat complexity features such as overhanging vegetation and side channels are lacking; however, LWM is frequently present at and above the MHHW line and aquatic vegetation such as eelgrass and kelp beds are distributed patchily within the nearshore environment of some places in Commencement Bay, but aquatic vegetation and/or eelgrass are not present within the action area.

**PCE: Water temperatures ranging from 36 °F to 59 °F (2 °C to 15 °C), with adequate thermal refugia available for temperatures at the upper end of this range. Specific temperatures within this range will depend on Bull Trout life-history stage and form; geography; elevation; diurnal and seasonal variation; shading, such as that provided by riparian habitat; streamflow, and local groundwater influence.**

- Elevated temperatures are not typically a problem in marine environments such as the action area. At a minimum, the action area provides seasonally appropriate water temperatures suitable for Bull Trout migration.

**PCE: In spawning and rearing areas, substrate of sufficient amount, size, and composition to ensure success of egg and embryo overwinter survival, fry emergence, and young-of-the-year and juvenile survival. A minimal amount of fine sediment, generally ranging in size from silt to coarse sand, embedded in larger substrates, is characteristic of these conditions. The size and amounts of fine sediment suitable for Bull Trout will likely vary from system to system.**

- This PCE is not present within the action area. No population of Bull Trout is known to spawn within the action area.

**PCE: A natural hydrograph, including peak, high, low, and base flows within historic and seasonal ranges or, if flows are controlled, minimal flow departure from a natural hydrograph.**

- The hydrology/hydraulics within the action area are concurrent with the tides of Commencement Bay and Puget Sound.

- No substantial freshwater flows enter the Blair Waterway other than dispersed stormwater flowing from shoreline developments and Wapato Creek.

**PCE: Sufficient water quality and quantity such that normal reproduction, growth, and survival are not inhibited.**

- The Blair Waterway, Commencement Bay and adjacent waters of Puget Sound provide sufficient water quality and quantity conditions for Bull Trout migration; however, in general, water quality throughout the action area has been degraded. Commencement Bay and the adjacent waters of Puget Sound also provide suitable water quantity and quality for Bull Trout rearing. The action area does not provide water temperatures or water quality conditions suitable for Bull Trout reproduction, and no populations of Bull Trout are known to spawn within the action area.

**PCE: Sufficiently low levels of occurrence of nonnative predatory (e.g., Lake Trout, Walleye, Northern Pike, Smallmouth Bass), interbreeding (e.g., Brook Trout), or competing (e.g., brown trout) species that, if present, are adequately temporarily and spatially isolated from Bull Trout.**

- The action area is not known to have significant populations of nonnative predatory, interbreeding, or competing species.

### 5.2.4 Bocaccio and Yelloweye Rockfish

NMFS published a final determination in 2010 to list the Puget Sound/Georgia Basin DPSs of Bocaccio as endangered and Yelloweye Rockfish as threatened (75 FR 22276), and critical habitat for both species was finalized in 2014 (79 FR 68041, NMFS 2017).

#### 5.2.4.1 Distribution and Habitat Requirements

Bocaccio range extends from Baja California to the Gulf of Alaska, and within this range, they are most common between Oregon and northern Baja California (Love et al. 2002). They are most frequently found in water depths between 160 and 820 ft, but may be found as deep as 1,560 ft (Orr et al. 2000). Larvae and juvenile Bocaccio may remain pelagic for 3 - 6 months, often associated with floating kelp mats, before settling to deeper water habitats. While primarily bottom dwellers, Bocaccio can be found as much as 30 ft above the sea floor (Love et al. 2002).

Yelloweye Rockfish range from Baja California to the Aleutian Islands, but are most commonly found from central California north to the Gulf of Alaska (NMFS 2021a). They are among the largest of rockfish, weighing up to 25 lb (Love et al. 2002). They can live as long as 118 years, and are among the most long-lived rockfish (Love 1996). Yelloweye Rockfish occur in waters

between 80 to 1,560 ft deep, but are most commonly found between 300 and 590 ft deep. Yelloweye Rockfish are less frequently observed in South Puget Sound than in North Puget Sound, primarily because of the relative lack of rocky, high relief habitat (Miller and Borton 1980).

#### 5.2.4.2 Presence in the Action Area

Adult Bocaccio and Yelloweye Rockfish are not expected to occur within the action area, as water depths are too shallow, and substrates consist of silty sand and sandy silt. Nearshore habitat is lacking any eelgrass, kelp, or other aquatic vegetation that would be preferred by juvenile or larval Bocaccio, and high shipping activity and water quality conditions limit the habitat suitability within the action area. Juvenile or larval Yelloweye Rockfish are not likely to be present within the waterways as they do not frequently use nearshore habitat. Typically, they settle quickly to shallow, high relief areas and then move to deep-water habitat, and are most frequently found in association with floating kelp beds, which are not present within the action area (Love et al. 1991).

Deep water portions outside of the action area that extend into Commencement Bay provide some suitable habitat for adult and juvenile Bocaccio and Yelloweye Rockfish, and these species could be present within these areas at any time of the year.

#### 5.2.4.3 Critical Habitat

The critical habitat for Puget Sound/Georgia Basin DPS Bocaccio and Yelloweye Rockfish is designed for areas containing the PCEs essential for the conservation of the species or that require special management considerations. Critical habitat is not designated within the boundaries of the action area, or the nearshore of Commencement Bay. Deep water habitat (greater than -98 ft MLLW) is not present within the action area, and Bocaccio and Yelloweye Rockfish are not anticipated to be present within the action area; therefore, critical habitat PCEs are not addressed in this document.

### 5.2.5 Southern Resident Killer Whale (Orca)

The Southern Resident killer whale DPS population is the only known resident population to occur in the US and is comprised of three pods: J, K, and L pods. Southern Resident killer whales were listed as endangered by NMFS in 2005, with their own DPS (therefore, "species") under the ESA (70 FR 69903). Critical habitat was designated in 2006 (71 FR 69054). On April 22, 2021 the NMFS announced its intent to conduct a five-year Endangered Species Act (ESA) review of Southern Resident killer whales. Given the current level of Southern Resident killer whale abundance, the ESA status of the Southern Resident killer whale is unlikely to change as a result of this review. The recovery plan was written in 2008 (NMFS 2008), and the most recent 5-year review was written in 2021 (NMFS 2022).

#### 5.2.5.1 Distribution and Habitat Requirements

Southern Resident killer whales are highly social, living within matriarchal societies, and their distribution is closely tied to the peak abundance of various species of salmon, primarily Chinook Salmon (NMFS 2021e). They occur in large, stable pods with memberships ranging from 10 to approximately 60 whales per pod. Their range during the spring, summer, and fall includes the inland waterways of Puget Sound, the Strait of Juan de Fuca, and the Southern Georgia Strait. Southern Resident killer whales are currently comprised of about 74 whales between the three pods, and the population has declined over 10 % since 2005 (CWR 2021; NMFS 2020b). The three primary threats identified for the Southern Resident killer whale are insufficient prey, high levels of contaminants, and impacts from vessels and sound (NMFS 2021e).

#### 5.2.5.2 Presence in Action Area

Southern Resident killer whales are unlikely to be present in the action area. Instead, they would be limited to the waters of Commencement Bay and adjacent waters of Puget Sound. Southern Resident killer whales are most commonly observed in Commencement Bay between October and January, with the greatest potential for occurrence being between December and January (Osborne 2008). In 2014, one satellite-tracked Southern Resident killer whale was documented in Commencement Bay (NWFSC 2014); however, they have not been documented within the inner Commencement Bay or the Blair Waterway. The Blair Waterway does not provide suitable habitat, and Southern Resident killer whales are not expected to occur in the nearshore environment within the action area.

#### 5.2.5.3 Critical Habitat

Southern Resident killer whale designated critical habitat includes essentially all Puget Sound waters relative to a contiguous shoreline delimited by the line at a depth of 20 ft (6.1 m) relative to extreme high water. PCEs are requirements that include, but are not limited to, the following: (1) space for individual and population growth, and for normal behavior; (2) food, water, air, light, minerals, or other nutritional or physiological requirements; (3) cover or shelter; (4) sites for breeding, reproduction, rearing of offspring, germination, or seed dispersal; and generally, (5) habitats that are protected from disturbance or are representative of the historic geographical and ecological distributions of a species (71 FR 69054-69070). The critical habitat for Southern Resident DPS killer whales is designated for areas containing the PCEs essential for the conservation of the species or that require special management considerations. Based on the natural history of the Southern Resident killer whale and their habitat needs, PCEs identified for ESA-listed Southern Resident killer whales and the potential for their presence within the action area are detailed below.

**PCE: Water quality to support growth and development.**

- The Blair Waterway, particularly within and around the action area, does not provide suitable water quality conditions for Southern Resident killer whale growth or development due to the waterway's small, constrained size and high level of human activity and shipping activity and limited habitat supporting the adult salmonid prey of the Southern Resident killer whale.

**PCE: Prey species of sufficient quantity, quality and availability to support individual growth, reproduction and development, as well as overall population growth.**

- Chinook Salmon – the Southern Resident killer whale's primary prey species – migrates up and down the Puyallup River and may occasionally utilize the Blair Waterway during migration; however, as discussed above, the Blair Waterway is not suitable for Southern Resident killer whale presence and the whales are not expected to occur within the Blair Waterway.

**PCE: Passage conditions to allow for migration, resting and foraging.**

- The Blair Waterway, particularly within and around the action area, does not provide suitable passage conditions for Southern Resident killer whale migration, resting or foraging due to the waterway's small, constrained size and high level of human activity

and shipping. Outside the action area, extending into Commencement Bay and adjacent waters of Puget Sound does likely provide suitable passage conditions for Southern Resident killer whale migration, resting and foraging.

- NMFS is in the process of developing a proposed rule to revise the critical habitat for Southern Resident killer whales and was anticipated to be published for public comment in the Federal Register in 2017 (80 FR 9682); however, no revision to critical habitat has been finalized at the time of this Biological Evaluation. The revision may include an expansion in geographic area as well as potentially incorporating protective in-water sound levels. The petition to revise critical habitat requested NMFS adopt a fourth PCE for both existing and proposed critical habitat areas providing for in-water sound levels. As such this Biological Evaluation includes the proposed PCE and the potential for its presence within the action area. The NMFS announced its intent to conduct a five-year Endangered Species Act review of Southern Resident killer whales on April 22, 2021.

**PCE: Sound levels that do not exceed thresholds that inhibit communication or foraging activities, do not result in temporary or permanent hearing loss to whales, and do not result in the abandonment of critical habitat areas.**

- Southern Resident killer whales are unlikely to be present within the action area. If present outside the action area during the proposed action, they will not be subject to increased noise levels beyond background ambient noise levels. Underwater noise produced by this project is not anticipated to exceed the ambient background underwater noise commonly occurring at the Port of Tacoma.

- Southern Resident killer whales are unlikely to be present within Commencement Bay between July 16 and September 30. Maintenance dredging conducted during this time period would not be expected to produce noise levels that would impact any marine mammals (Osborne 2008; Mongillo 2012). Between October 1 and February 14, any Southern Resident killer whale within Commencement Bay will most likely be traveling through the area and not present within Blair Waterway. Satellite-tracking data show presence within Commencement Bay for less than one day (NWFSC 2014). Due to the limited availability of suitable habitat within the action area for Southern Resident killer whales and the anticipated limited amount of time spent within Commencement Bay, sound levels are not anticipated to inhibit communication or foraging, resulting in temporary or permanent hearing loss, or result in the abandonment of the critical habitat.

### 5.2.6 Humpback Whale

Humpback Whales were listed as endangered under the ESA in 1970 (35 FR 18319) and revised in 2016 to list four out of the 14 distinct population segments as endangered, and one as threatened (81 FR 62259; NMFS 2016). A proposed rule to designate critical habitat for the Central America and Mexico DPSs of humpback whales was published in 2019 and a final rule was published on April 21, 2021 (NMFS 2021f). No recovery plan or 5-year review has been released.

#### 5.2.6.1 Distribution and Habitat Requirements

Humpback Whales inhabit waters over continental shelves, along their edges, and around some oceanic islands (City of Seattle 2007). Humpback Whales winter in three separate wintering

grounds: 1) the coastal waters along Baja California and the mainland of Mexico; 2) the main islands of Hawaii; and 3) the islands south of Japan (NMFS 1991). During summer, Humpback Whales in the North Pacific migrate and feed over the continental shelf and along the coasts of the Pacific Rim; migrating considerable distances to waters with higher biological productivity, typically at higher latitudes (City of Seattle 2007). Sightings of Humpback Whales in the Salish Sea have increased greatly over the past 20 years, and estimates of Humpback Whale abundance off the Washington Coast and Southern British Columbia have increased from approximately 100 in 1997 to over 600 in 2013 (Cascadia Research Collective 2017).

#### 5.2.6.2 Presence in Action Area

While Humpback Whales are occasionally sighted in south Puget Sound, they have never been documented in the Blair Waterway. Humpback Whales would only be expected to occur in the waters of adjacent Puget Sound, and not within inner Commencement Bay or the Blair Waterway.

#### 5.2.6.3 Critical Habitat

Critical habitat was designated in 2021; however, it is located off the Washington Coast and Strait of Juan de Fuca, and not within the inner waters of Puget Sound (86 FR 21082).

### 5.2.7 Marbled Murrelet

The Marbled Murrelet was listed as threatened in California, Oregon, and Washington under the ESA in 1992 (57 FR 45328). Critical habitat was designated in 1996 and includes 3,887,000 acres of land in 32 Critical Habitat Units identified in the final rule (61 FR 26256); however, no critical habitat occurs in Commencement Bay. The recovery plan was created in 1997 (FWS 1997).

#### 5.2.7.1 Distribution and Habitat Requirements

The Marbled Murrelet is a small sea bird that feeds primarily on fish and invertebrates in nearshore marine waters (City of Seattle 2007). Marbled Murrelets nest in mature stands of coastal forest, typically closely associated with the marine environment, though Murrelets have been documented in forested stands at distances of up to 50 miles inland in Washington (City of Seattle 2007). Marbled Murrelets require forests with large, mature conifers (greater than 30 inches in diameter at breast height), multi-storied stands, and moderate canopy closure (City of Seattle 2007). The primary threat to Marbled Murrelets is the loss of suitable old-growth habitat adjacent to coastal foraging habitats (City of Seattle 2007).

#### 5.2.7.2 Presence in Action Areas

There is no mature forested habitat nearby, which is a nesting requirement for the Marbled Murrelet, and WDFW PHS data have no documented observations, habitat or nesting sites within the action area (WDFW 2021a). Due to the lack of nesting habitat, Marbled Murrelets are not likely to forage in inner Commencement Bay, and the Blair Waterway does not provide suitable foraging habitat due to shipping activity.

#### 5.2.7.3 Critical Habitat

The USFWS designated critical habitat in Washington, Oregon, and California in 1996, including 1.2 million acres of federal land, 421,500 acres of state forest land, and 2,500 acres of private land in Washington State (Federal Register Vol. 61, No. 102. p 26256). The closest designated critical habitat for Marbled Murrelets occurs on the west slopes of the Cascade Mountains, but this is more than 20 miles from the proposed action. Biological and physical features that determine the designation of critical habitat for Marbled Murrelet are space for growth and normal behavior,

nutritional or physiological requirements, cover or shelter, sites for breeding, reproduction, and rearing of offspring; and habitats that are protected from disturbance or are representative of the historic geographical and ecological distribution of a species. These features do not occur within the action area. Since there is no designated critical habitat for Marbled Murrelets present in the action area, critical habitat PCEs for the Marbled Murrelet are not discussed in this BE.

# 6.0 ENVIRONMENTAL SETTING/BASELINE

The environmental setting/baseline outlines the presence and condition of aquatic and terrestrial habitat features within the action area as they pertain to the species addressed in this BE. The general setting and baseline habitat conditions within the action area and at the watershed scale are summarized, as well as an analysis of the likely effects that the proposed action may have on the baseline conditions at both scales.

Development of Commencement Bay began in the late 19th century and has fragmented and altered the estuarine habitats contained therein ever since (USACE et al. 1993). By 1917, several waterways – including the Blair Waterway – had been constructed by dredging and filling mudflats in the Puyallup River delta and Commencement Bay. Industrial development and altered shorelines, consisting of vertical or steeply sloping bulkheads and piers, fragmented the remaining estuarine habitat (Kerwin 1999). Historical migrations of anadromous fish into side channels and sloughs have largely been eliminated. Saltwater transitions zones, an important ecological habitat for the development of juvenile salmonids, have all but disappeared. Although not present within the action area, chemical contamination of sediments within the bay has compromised the effectiveness of the remaining habitat (USACE et al. 1993; USFWS & NOAA 1997; Collier et al. 1998). Despite these extensive alterations to the natural habitat within Commencement Bay, some biological resources still use the remaining available habitat (USFWS & NOAA 1997).

Extensive intertidal mudflats once covered an estimated 2,100 acres of Commencement Bay. In 1992, approximately 180 acres remained (USACE et al. 1993). Dredging and other anthropogenic activity within Commencement Bay are responsible for this change in habitat. Several habitat mitigation and restoration sites have been established since the 1993 USACE report; the Port, City of Tacoma, and the Puyallup Tribe of Indians have participated in recreating and/or restoring approximately 300 additional acres of marine and estuarine habitat around the action area. The majority of the remaining mudflat habitat is located near the mouth of the Puyallup River, within the Hylebos, Middle, Milwaukee, St. Paul, and Wheeler-Osgood Waterways (USACE et al. 1993; USFWS & NOAA 1997).

## 6.1 TERRESTRIAL HABITAT

There is no natural terrestrial habitat within the action area. The terrestrial portions of the action area consist of manmade hardened shorelines with steep slopes, including bulkheads and riprap. The adjacent uplands are fully developed for industrial uses, and there is no suitable terrestrial habitat for any ESA-listed species within the action area.

## 6.2 RIPARIAN HABITAT

Riparian habitat is nonexistent within the action area, consisting of only hardened bulkhead and riprap. There is no natural vegetation to provide shade or natural bank stability within TOTE.

## 6.3 AQUATIC HABITAT

Aquatic habitat within the action area consists primarily of deep subtidal (-55 ft to -47 ft MLLW) conditions that are highly disturbed by marine traffic. An evaluation of the baseline aquatic habitat conditions within the action area was conducted according to the guidance outlined in Making Endangered Species Act Determinations of Effect for Individual or Grouped Actions at the

Watershed Scale (NMFS 1996). The evaluation assessed several baseline indicators of habitat quality and determined whether the proposed action would restore, maintain, or degrade existing baseline conditions at the action area level and the watershed level. Table 6-1 documents the results of this analysis (Matrix of Pathways and Indicators [MPI]).

In general, the environmental baseline conditions within the action area are severely degraded. As indicated in Table 6-1, most of the environmental condition indicators are not properly functioning or the function is at risk, both at the action area-level and the watershed scale. The Blair Waterway is maintained artificially as shipping channel. As a result, the natural functional processes of the waterway have been altered dramatically. There is no functioning floodplain within the action area, and sediments within the action area are predominantly silts and sands at the bottom of steep, hardened shorelines. Aquatic habitat conditions are better, though still degraded within the inner Commencement Bay and adjacent waters of Puget Sound, well outside the action area.

**Table 6-1. Summary of Aquatic Baseline Conditions: Action Area and Watershed Scales**

| Pathway/Indicators | Baseline Environmental Conditions[1] | | Effects of Proposed Action | |
|---|---|---|---|---|
| | Action Area | Watershed | Action Area | Watershed |
| **Water Quality** | | | | |
| Temperature | PF | FR | Maintain | Maintain |
| Sediment/Turbidity | NPF | NPF | Degrade (temporary) | Maintain |
| Chemical Contamination/Nutrients | NPF | NPF | Maintain | Maintain |
| **Habitat Access** | | | | |
| Physical Barriers | PF | NPF | Maintain | Maintain |
| **Habitat Elements** | | | | |
| Substrate | NPF | FR | Maintain | Maintain |
| Large Woody Debris | NPF | FR | Maintain | Maintain |
| Pool Frequency | N/A | N/A | N/A | N/A |
| Pool Quality | N/A | N/A | N/A | N/A |
| Off-Channel Habitat | N/A | FR | Maintain | Maintain |
| Refugia | NPF | FR | Maintain | Maintain |
| **Channel Conditions/Dynamics** | | | | |
| Width/Depth Ratio | NPF | NPF | Maintain | Maintain |
| Streambank Condition | N/A | NPF | Maintain | Maintain |
| Floodplain Connectivity | NPF | NPF | Maintain | Maintain |
| **Flow/Hydrology** | | | | |
| Change in Peak/Base Flows | PF | NPF | Maintain | Maintain |
| Increase in Drainage Network | NPF | NPF | Maintain | Maintain |
| **Watershed Conditions** | | | | |
| Road Density and Location | NPF | NPF | Maintain | Maintain |
| Disturbance History | NPF | NPF | Maintain | Maintain |
| Riparian Reserves | NPF | FR | Maintain | Maintain |

[1] PF – Properly Functioning; NPF – Not Properly Functioning; FR – Function at Risk

## 6.4 ANALYSIS OF INDICATORS POTENTIALLY AFFECTED BY PROPOSED ACTION

The site of the proposed action is a highly modified shoreline within the historic Puyallup River tideflats. The area has been highly modified by dredging of the Blair Waterway, other

Commencement Bay waterways, and filling for upland port activities. One indicator may be potentially affected by the proposed action within this highly modified habitat, which is discussed below.

### 6.4.1 Water Quality – Sediment/Turbidity

Sediments within the Blair Waterway within the action area are predominantly fine-grained, and generally consist of sand and silty sand, as well as organic sediments that enter the action area from the Puyallup River and Wapato Creek. Sediment characterization anticipated in late Winter or early Spring 2023 will measure actual sediment characteristics; however, a prior sediment characterization (Anchor QEA 2017) reported that TOTE sediments vary in grain size, ranging from approximately 8% to 26% fines.

High sediment and turbidity are major factors within the Blair Waterway, primarily due to propwash from vessel activities and turbidity from the Puyallup River, which enters the waterways on flood tides. High levels of turbidity in inner Commencement Bay occur routinely due to the naturally high turbidity of the Puyallup River. In the deep-water habitats, turbidity is generally lower than surface turbidity.

Sediments are primarily fine-grained and turbidity is elevated throughout much of the action area. Erosion in the upper Puyallup River watershed naturally contributes relatively high sediment loads to the Puyallup River, and elevated turbidity in the river is a natural condition. Baseline conditions for sediment and turbidity are elevated above the levels published by NMFS and levels necessary for proper functioning condition for salmonids, and are therefore determined to be **not properly functioning**. The proposed action has the potential to increase sediment and turbidity temporarily within the action area, but are likely to be within natural conditions. The proposed conservation measures will be sufficient to ensure there are no long-term impacts on sediment or turbidity within the action area or at the watershed scale. The proposed action may temporarily **degrade** this indicator, but will **maintain** it at both the action area and watershed scale in the long term.

## 7.0 ANALYSIS OF EFFECTS

Direct effects are defined as the potential direct or immediate impacts that federally listed species and their critical habitats could be exposed to as a result of the proposed action.

Indirect effects are defined as those effects that are caused by or result from the proposed action which are later in time but still reasonably certain to occur (50 CFR §402.02).

Interdependent actions are defined as those actions having no independent utility apart from the proposed action (50 CFR §402.02). Interdependent actions are typically “because of” the proposed action. Interrelated actions are defined as those actions that are part of a larger action and depend on the larger action for their justification (50 CFR §402.02). Interrelated actions are typically “associated with” the proposed action.

## 7.1 DIRECT EFFECTS

Effects will be localized to the area within 150 ft of the project dredge footprint. These areas do not provide suitable habitat for Southern Resident killer whales, humpback whales, or Marbled

Murrelets. As they are not expected to be present within the portion of the action area where effects occur, they would not be exposed to any direct effects.

The following ESA-listed species and designated critical habitat have the potential to be exposed to the direct effects that could occur within the action area during the proposed action.

- Puget Sound ESU Chinook Salmon
- Puget Sound DPS steelhead
- Puget Sound DPS Bull Trout
- Puget Sound/Georgia Basin DPS Bocaccio
- Puget Sound/Georgia Basin DPS Yelloweye Rockfish
- Designated critical habitat for Chinook Salmon and Bull Trout

### 7.1.1 Water Quality

As part of the proposed action, maintenance dredging will disturb sediments and temporarily increase turbidity within the action area. Temporarily increased turbidity would occur in the footprint of the dredge and areas within the point of compliance for a temporary area of mixing, or 150 ft from the activity. Increased levels of sedimentation and turbidity may have temporary negative impacts on habitat for listed fish species, and though unlikely, if any listed fish species are present within the action area during the time of the dredging, they could be directly affected. If exposed, elevated suspended sediments can have the following effects on aquatic species: 1) reduction in feeding rates and growth, (2) physical injury, (3) physiological stress, (4) behavioral avoidance, and (5) delayed migration.

However, the routine high turbidity produced in Commencement Bay by the Puyallup River creates a baseline condition that includes the range of potential increased turbidity produced by this action. Any temporary increase in turbidity as a result of the proposed action is not anticipated to measurably exceed levels caused by normal periodic increases due to industrial shipping traffic or turbid water from the Puyallup River within the waterways. The generally slow velocity of water movement within the action area will also greatly minimize the potential negative effects of temporarily increased turbidity because weak currents that occur within this action area are not likely to spread turbidity far from the source. Given the high rate of tidal exchange in the entrance channel and small affected area, any reductions in DO from dredging will be too small and short-lived to have detectable effects.

The proposed action is located within the Commencement Bay Nearshore/Tideflats (CB-NT) Superfund site; however, no action was required to be taken in the Blair Waterway other than those actions identified in the Puyallup Land Settlement Agreement. In 1996, EPA removed the Blair Waterway from the National Priorities List (NPL), as a result of cleanup actions that had been completed, or studies showing that this waterway did not require further cleanup. Water quality is already a limiting factor within the action area, and temporary increases in sedimentation and turbidity during the proposed action are not likely to result in an increased potential for negative effects.

To prevent water quality impacts, from leaks and spills of fuel, hydraulic fluids, lubricants, and other chemicals from equipment and storage containers associated with the proposed action, the

contractor will be required to provide and implement conservation measures including a SPCC plan (see Section 3 above). As part of the SPCC plan, a spill kit will be available on-site during construction and stored in a location that facilitates immediate deployment if needed. An oil-absorbing floating boom, appropriate for the size of the work area, will be available on site whenever dredging equipment is operated. The boom will be stored in a location that facilitates their immediate deployment in the event of a spill. Additional conservation measures have been included to avoid any potential negative impacts from hazardous materials. These measures include inspecting construction equipment daily to ensure there are no leaks of hydraulic fluids, fuel, lubricants, or other petroleum products.

During the in-water work period, and based on the poor habitat conditions in the action area, the likelihood of encountering juvenile fish in high numbers is greatly reduced. However, a small number of out-migrating juvenile and migrating adult salmon and steelhead may be present within the action area. Juvenile rockfish species could be present within the action area at any time during the year, though their presence is unlikely. Any of these species, if present, would likely be migrating through the action area and not be present for any substantial period of time.

It is possible that juvenile and/or adult Chinook Salmon, steelhead, and Bull Trout, as well as juvenile rockfish, if present within the action area, could be exposed to temporarily decreased water quality conditions, due to temporarily elevated turbidity. As detailed above, it is highly unlikely that salmon or steelhead would be in the vicinity during dredging due to the project timing and the absence of suitable rearing and migratory habitat.

Dredging is a temporary construction activity, conducted in deep water, which would be expected to have only minor, localized, and temporary effects. The geographic extent and duration of any potential short-term decrease in water quality is expected to be limited, and the conservation measures implemented for the proposed action (including the implementation of the SPCC plan) will be sufficient to minimize any effects. As water quality is already a limiting factor within the action areas, temporary increases in sedimentation and turbidity are limited in space and time and would not cause additional negative influences on species. It is anticipated that any species present would respond by temporary avoidance of, or more rapid migration through, the action area.

The portion of the action area that could be potentially affected by a temporary decrease in water quality is designated as critical habitat for Puget Sound ESU Chinook Salmon, Puget Sound DPS Bull Trout, and Southern Resident killer whale. Designated critical habitats within the action area may experience temporary increases in turbidity during the proposed action. The geographic extent and duration of any potential short-term increases in sedimentation or turbidity are anticipated to be limited, and are not expected to measurably exceed baseline turbidity conditions. Any temporarily elevated turbidity levels will not result in any significant effect to designated or proposed critical habitats due to the routine occurrence of naturally high turbidity within the action area. The SPCC plan and other conservation measures implemented as part of this proposed action will be sufficient to ensure that any potential water quality impacts will not result in any adverse effects to any of the designated critical habitats within the action area.

### 7.1.2 Noise

No ESA-listed species or designated critical habitats would be exposed to injurious noise levels because no construction activities will produce harmful noise levels within the action area. Since

the aquatic habitat in the waterway is 200 to 250 meters wide (650 to 820 feet wide), even when the dredge is in the center of the channel, there would be a large area available for avoidance of harassment noise levels. Additionally, given that listed species are only expected to be in the Blair Waterway in very low abundances, and any elevated noise would be temporary during the shortened duration of work, only a small number of fish would be at risk of exposure.

### 7.1.3 Benthic Impacts

Areas where sediment is removed by dredging will diminish benthic prey communities. In areas where suspended sediment settles on the bottom, some smothering can occur which also disrupts the benthic communities. These benthic impacts may occur within the turbidity area previously considered, or 150-ft of the dredge prism. The speed of recovery by benthic communities is affected by several factors, including the intensity of the disturbance, with greater disturbance increasing the time to recovery. These organisms are expected to repopulate the maintenance dredge areas within the following year or less. Sediments within the dredging areas are already highly-disturbed by propwash from routine vessel operations; therefore, any benthic organisms that exist in these locations repopulate rapidly.

It is possible but unlikely that prey for adult and juvenile Chinook Salmon and Bull Trout could be temporarily reduced by benthic impacts. The action area, including the sediment surface, is disturbed routinely due to container ship traffic. Dredging activities causes a short-term change in the characteristics of the benthic in-faunal biota, but benthic recovery occurs within a few months to one year after dredging. These short-term changes will not affect juvenile salmonids, because deep subtidal organisms at -40 ft MLLW are generally not preferred prey, and adult salmonids feed on species other than benthic organisms. Even though it is unlikely that salmonids would utilize benthic habitat in the deep waters of the Blair Waterway as a prey base, any effects to existing benthic habitat will recover quickly and would not rise to the level of harm for any species.

### 7.1.4 Entrainment

The probability of fish entrainment is largely dependent upon the likelihood of fish occurring within the dredge prism, dredge depth, fish densities, the entrainment zone (water column of the clamshell impact), location of dredging, type of equipment operations, time of year, and species life stage.

It is possible that juvenile and/or adult Chinook Salmon, steelhead, and Bull Trout, as well as juvenile rockfish, if present within the action area, could be exposed to the dredge equipment. As detailed above, it is highly unlikely that salmon or steelhead would be in the vicinity during dredging due to the project timing and the absence of suitable rearing and migratory habitat. Adult salmonids may pass through the area, but are strong swimmers that will likely to engage in avoidance behavior to avoid the noise and activity, which reduces the likelihood of entrainment or strike. Consequently, the risk of entrainment of any ESA-listed species by the dredge is extremely low.

### 7.1.5 Effects from Interdependent and Interrelated Actions

The proposed action has no interdependent or interrelated actions that could affect ESA-listed species.

## 7.2 INDIRECT EFFECTS

The proposed action will not result in any indirect effects that could affect ESA-listed species. There will be no changes to the ecological system that will result in an altered predator/prey relationship, no new changes resulting in long-term habitat alteration, and no anticipated changes to human activity, to include land use changes.

# 8.0 CONCLUSIONS AND EFFECT DETERMINATIONS

This section evaluates the proposed action and its potential effects on ESA-listed species.

The following effects determinations are preliminary, as they may be revised further based on discussions with the Services. These effects determinations are based on the assumption that the conservation measures identified in Section 3 will be as effective as described or any changes to BMPs will be at least as or more protective to ESA-listed species as the BMPs described in Section 3. Based on the description of the proposed action and the analysis provided in this document, Table 8-1 lists the effects determinations for ESA-listed species and Table 8-2 lists the effects determinations for designated critical habitats. A summary description detailing the rationale for how these effects determinations were reached for each species and critical habitat follows the tables.

**Table 8-1. Effects Determinations Summary Table for ESA-Listed Species**

| Species and ESU/DPS[1] | Scientific Name | ESA Federal Status | Species Effect Determination[2] |
|---|---|---|---|
| Chinook Salmon / Puget Sound ESU | *Oncorhynchus tshawytscha* | Threatened | NLTAA |
| Steelhead / Puget Sound DPS | *Oncorhynchus mykiss* | Threatened | NLTAA |
| Bull Trout / Puget Sound DPS | *Salvelinus confluentus* | Threatened | NLTAA |
| Bocaccio / Puget Sound/Georgia Basin DPS | *Sebastes paucispinis* | Endangered | NLTAA |
| Yelloweye Rockfish / Puget Sound/Georgia Basin DPS | *Sebastes ruberrimus* | Threatened | NLTAA |
| Humpback Whale | *Megaptera novaeangliae* | Endangered | NLTAA |
| Killer Whale (Orca) / Southern Resident DPS | *Orcinus orca* | Endangered | NLTAA |
| Marbled Murrelet | *Brachyramphus marmoratus* | Threatened | NLTAA |

[1] ESU: Evolutionarily Significant Unit; DPS: Distinct Population Segment
[2] NE: No Effect; NLTAA: Not Likely to Adversely Affect; LTAA: Likely to Adversely Affect; N/A: Not Applicable

**Table 8-2. Effects Determinations Summary Table for Critical Habitat**

| Species and ESU/DPS[1] | Critical Habitat Status in Action Area | Critical Habitat Effect Determination[2] |
|---|---|---|
| Chinook Salmon / Puget Sound ESU | Designated | NLTAA |
| Steelhead / Puget Sound DPS | Not Present | NE |
| Bull Trout / Puget Sound DPS | Designated | NLTAA |
| Bocaccio / Puget Sound/Georgia Basin DPS | Not Present | NE |
| Yelloweye Rockfish / Puget Sound/Georgia Basin DPS | Not Present | NE |
| Humpback Whale | Not Present | NE |
| Killer Whale (Orca) / Southern Resident DPS | Not Present /Designated | NE/NE |
| Marbled Murrelet | Not Present | NE |

[1] ESU: Evolutionarily Significant Unit; DPS: Distinct Population Segment
[2] NE: No Effect; NLTAA: Not Likely to Adversely Affect; LTAA: Likely to Adversely Affect; N/A: Not Applicable

## 8.1 SPECIES

### 8.1.1 Puget Sound ESU Chinook Salmon, Puget Sound DPS Steelhead, and Puget Sound DPS Bull Trout

The proposed action "**may affect, but is not likely to adversely affect**" the Puget Sound ESU Chinook Salmon, Puget Sound DPS steelhead, and Puget Sound DPS Bull Trout. A "**may affect**" determination is based on the following rationale:

- The project will require work below MHHW in portions of the Blair Waterway that represent migratory habitat for adult and juvenile Puget Sound ESU Chinook Salmon, Puget Sound DPS steelhead, and Puget Sound DPS Bull Trout.

- The proposed action will be conducted during the in-water work window, when migrating juvenile salmonids are less likely to be present in large numbers; however, a small number of Chinook Salmon, steelhead, and/or Bull Trout could be present in Commencement Bay and may migrate through the action area.

- The proposed action has the potential to result in temporarily elevated turbidity during dredging; however, turbidity levels are anticipated to remain within the natural turbidity range.

A "not likely to adversely affect" determination is based on the following rationale:

- Salmonid habitat within the portions of the action area that are within and adjacent to the project footprint is limited to low- to moderate-quality migration habitat. No freshwater rearing or spawning habitat occurs within the action area. Even under normal, non-project conditions, migrating adult and juvenile salmonids likely move through the action area rapidly.

- Bioassays (LeGore and Des Voigne 1973) demonstrate that juvenile salmonids experience no acute effects when exposed to suspended sediment concentrations measured well above levels expected to be suspended during dredging.

- Conservation measures identified in Section 3, including work within the approved in-water work window, will be sufficient to ensure that any temporary impacts are unlikely to result in adverse effects to Chinook Salmon, steelhead, or Bull Trout.

### 8.1.2 Puget Sound/Georgia Basin DPS Bocaccio and Yelloweye Rockfish

- The proposed action "**may affect, but is not likely to adversely affect**" Puget Sound/Georgia Basin DPS Bocaccio and Yelloweye Rockfish. A "**may affect**" determination is based on the following rationale:

- The project will require work below MHHW in portions of the Blair Waterway, which represent potentially marginal habitat for larval or juvenile Bocaccio and Yelloweye Rockfish.

- The proposed action has the potential to result in temporarily elevated turbidity during dredging; however, turbidity levels are anticipated to remain within the natural turbidity range.

A "**not likely to adversely affect**" determination is based on the following rationale:

- Habitat suitability for Bocaccio and Yelloweye Rockfish within the portions of the action area that are immediately adjacent to the project footprint is very low.

- Conservation measures described in Section 3, including work within the approved in-water work window will be sufficient to ensure that any temporary impacts will not result in any adverse effects to Bocaccio or Yelloweye Rockfish.

### 8.1.3 Humpback Whale

The proposed action "**may affect, but is not likely to adversely affect**" the Humpback Whale. A "**may effect**" determination is based on the following rationale:

- The proposed action will conduct work below MHHW in the Blair Waterway during the in-water work period, when Humpback Whales could potentially be present in Commencement Bay or adjacent waters of Puget Sound.

- The project has the potential to result in temporarily elevated turbidity during dredging; however, turbidity levels are anticipated to remain within the natural turbidity range.

A "**not likely to adversely affect**" determination is based on the following rationale:

- Humpback Whales are present only infrequently in the adjacent waters of Puget Sound, and are not expected to be present within the Blair Waterway at any time of the year, and will not be affected by activities conducted within the waterway.

- Conservation measures described in Section 3, including work within the approved in-water work window will be sufficient to ensure that any temporary impacts will not result in any adverse effects to Humpback Whales.

### 8.1.4 Southern Resident Killer Whales

The proposed action "**may affect, but is not likely to adversely affect**" Southern Resident killer whales. A "**may effect**" determination is based on the following rationale:

- The proposed action will conduct work during the in-water work period, when Southern Resident killer whales could potentially be present within Commencement Bay, but are unlikely to enter the Blair Waterway or the action area.

- The proposed action has the potential to result in temporarily elevated turbidity during dredging; however, turbidity levels are anticipated to remain within the natural turbidity range.

A "**not likely to adversely affect**" determination is based on the following rationale:

- Southern Resident killer whales are not expected to be present within the Blair Waterway at any time of the year, and will not be affected by activities conducted within those waterways.

- Southern Resident killer whales are present infrequently in Commencement Bay, and are only very rarely present in the months of July–September, but have been observed in the open waters of Commencement Bay for short periods of a few hours.

- Conservation measures described in Section 3, including work within the approved in-water work window and the use of only safe materials, will be sufficient to ensure that any temporary impacts will not result in any adverse effects to Southern Resident killer whales.

### 8.1.5 Marbled Murrelet

The proposed action "**may affect, but is not likely to adversely affect**" Marbled Murrelet. A "**may affect**" determination is based on the following rationale:

- The proposed action will conduct work during the in-water work period, when Marbled Murrelets could potentially be present within Commencement Bay, and could potentially enter the action area, but are unlikely to occur because of existing high levels of port activity.

A "**not likely to adversely affect**" determination is based on the following rationale:

- Marbled Murrelets are not expected to be present within the Blair Waterway at any time of the year, and will not be affected by activities conducted within the waterway.

- Marbled Murrelets are present infrequently in Commencement Bay, and are not normally observed in close proximity to the busy industrial area where dredging will occur.

- Action is not expected to produce noise levels above background/ambient terrestrial noise, and therefore will not exceed injury thresholds.

- Conservation measures described in Section 3 will be sufficient to ensure that any temporary impacts will not result in any adverse effects to Marbled Murrelets.

## 8.2 CRITICAL HABITATS

### 8.2.1 Critical Habitat for Puget Sound ESU Chinook Salmon and Puget Sound DPS Bull Trout

The Blair Waterway has been designated critical habitat for Puget Sound ESU Chinook Salmon and Puget Sound DPS Bull Trout. The proposed action "**may affect, but is not likely to adversely affect**" these designated critical habitats. A "**may affect**" determination is based on the following rationale:

- The proposed action will require work below MHHW in portions of the Blair Waterway that have been designated as critical habitat for the ESU/DPS Chinook Salmon and Bull Trout listed above.

- The action area provides low quality, but adequate estuarine, marine nearshore, and offshore marine critical habitat PCEs for Puget Sound ESU Chinook Salmon; and adequate migratory, food base, marine shoreline, water temperature, hydrologic, water quantity and quality, and competitive species critical habitat PCEs for Puget Sound DPS Bull Trout.

- The proposed action has the potential to result in temporarily elevated turbidity during dredging; however, turbidity levels are anticipated to remain within the natural turbidity range.

A "**not likely to adversely affect**" determination is based on the following rationale:

- Water quality impacts that may result during construction will be temporary and will result in no significant effects to the elements that would degrade any of the critical habitat PCEs for the ESU/DPS Chinook Salmon and Bull Trout listed above.

- Given the condition and degree of use of the habitat within the action area, the temporary water quality impacts will not result in any measurable effect on any of the critical habitat PCEs for the ESU/DPS Chinook Salmon and Bull Trout listed above.

### 8.2.2 Critical Habitat for Southern Resident DPS Killer Whale

The Blair Waterway has been designated critical habitat for Southern Resident DPS killer whales. The proposed action is **"not likely to adversely affect**" critical habitat for Southern Resident killer whales. A "**not likely to adversely affect**" determination is based on the following rationale:

- The proposed action will require work below MHHW in portions of the Blair Waterway that have been designated critical habitat for Southern Resident killer whales.

- The waters of Commencement Bay outside the action area provide adequate migratory and water quality, prey, and passage critical habitat PCEs for Southern Resident killer whales.

- The proposed action has the potential to result in temporarily elevated turbidity during dredging; however, turbidity levels are anticipated to remain within the natural turbidity range.

- Southern Resident killer whales are unlikely to enter the narrow confines of the Blair Waterway at any time.

A "**not likely to adversely affect**" determination is based on the following rationale:

- Water quality impacts that may result during the proposed action will be temporary and will result in no measurable or significant effects to the elements that would degrade the water quality, prey, or passage critical habitat PCEs for Southern Resident killer whales.

- The Blair Waterway does not provide suitable habitat, and Southern Resident killer whales are not expected to occur in the nearshore environment within the action area.

## 9.0 SUMMARY

The proposed action has the potential to affect ESA-listed species and their critical habitat. Project design, BMPs, and conservation measures will be used to reduce impacts. Any impacts not completely eliminated by BMPs are not likely to be experienced by ESA-listed species because of their limited use of the degraded habitat, and adverse effects are not of an extent and severity to cause injury to any ESA-listed species if encountered. Therefore, this BE concludes:

- Proposed action may affect, but is not likely to adversely affect Puget Sound ESU Chinook Salmon or their critical habitat;
- Proposed action may affect, but is not likely to adversely affect Puget Sound DPS steelhead and will have no effect on their critical habitat;
- Proposed action may affect, but is not likely to adversely affect Puget Sound DPS Bull Trout or their critical habitat;
- Proposed action may affect, but is not likely to adversely affect Puget Sound/Georgia Basin Bocaccio and will have no effect on their critical habitat;
- Proposed action may affect, but is not likely to adversely affect Puget Sound/Georgia Basin Yelloweye Rockfish and will have no effect on their critical habitat;
- Proposed action may affect, but is not likely to adversely affect Humpback Whales and will have no effect on their critical habitat;
- Proposed action may affect, but is not likely to adversely affect Southern Resident DPS killer whales and will have no effect on their critical habitat; and
- Proposed action may affect, but is not likely to adversely affect Marbled Murrelets and will have no effect on their critical habitat.

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# Draft Dredging Plan – Pierce County Terminal (PCT) Maintenance Dredging Project

**From:** Robert Brenner

**Date:** 08/30/2024

**Dredging Proponent:** Port of Tacoma

**Project Location:** 4015 SR-509 N. Frontage Rd; Tacoma, WA 98421. Section 2/Township 20/Range 03 & Section 1/Township 20/ Range 03

47.254465° N lat. / -122.378103° W long.

**Scope of the Project** The Port of Tacoma needs to perform maintenance dredging at the Pierce County Terminal (PCT) facility located along the Blair Waterway in order to remove shoaling areas that are preventing vessels from being fully loaded with cargo. "Light loading" vessels is causing economic impacts and safety concerns. The proposed high spot removal maintenance dredging will remove shoaling caused by propwash along the berthing areas at Pierce County Terminal. Removing these areas of material will allow the terminal operators to resume normal operations.

The purpose of the proposed project is to restore the berthing areas at PCT to the permitted depth of -51 feet MLLW, with an incidental 2-foot over-dredge allowance (with the first foot being paid) to cover potential over dredging by the contractor. Maintenance dredging is needed to allow normal operation at the terminals to resume. The current conditions do not allow for full vessel loading (economic impact) and could lead to grounding out of vessels (safety issue). To achieve this purpose, the Port must dredge up to 28,000 CY of sediments, of which up to roughly 13,000 CY is over dredge. The footprint of this project is approximately 176,000 square feet.

It is anticipated this dredge will be carried out using a clam shell bucket. The material was determined to be suitable for open-water disposal at the Commencement Bay Site by the DMMO. Dredge Sequencing: Because higher D/F concentrations were measured in DMMU PCT-2 sediments, dredging shall be sequenced so this DMMU is dredged and disposed first.

**Basic Dredging BMPs:**

Sequence or phase work activities to minimize the extent and duration of in- water disturbances

- Sequence or phase work activities to minimize the extent and duration of in- water disturbances
- Employ experienced operators.
- Complete a horizontal dredge pass across the dredge surface before moving to the next deeper pass.
- "Glory holing" is not allowed
- Eliminate multiple bites while the bucket is on the bottom of the waterbody
- Progress surveys
- During dredging, a boat will be available on site at all times to retrieve debris from the water.

- Caution shall be used when placing material from the bucket into the scow to limit splash and prevent spillage.
- Work within allowed work windows
- No stockpiling of dredged material on the bottom of the waterbody
- No leveling bottom of the waterbody (drag beam)
- No discharge in transiting barges (i.e. must be sealed prior to moving to disposal location)
- Employ approved WQM to inform need for additional BMPs
- Employ approved spills/pollution prevention plan
- Manage dredged material barges to prevent loss of material:
    - Do not overfill/no overtopping
    - Filter material over scuppers
    - No unfiltered discharge

**Additional BMPs, in case of WQ issues:**

- Slow dredging
- The dredge operator shall pause the bucket at the surface, after its ascent through the water column, to minimize turbidity by allowing free water to drain from the bucket prior to swinging the bucket to the scow
- Check the seal on the bucket. Remove any obstructions.
- Repair bucket if it does not fully close.
- Avoid critical tidal or current conditions.
- Increasing barge retention time (i.e., increasing the duration of time that water is held in the barge prior to discharge will reduce the turbidity of the return water).
- Modification of equipment to better control sediment resuspension
- Debris screens shall be used for this project unless it can be demonstrated that debris is unlikely to be present or that the debris is large woody debris that can be easily observed and removed by other means during dredging. Debris screen usage, or detailed justification for not using one, will be included in the dredging quality assurance plan.

**Additional Items to be provided after contract is awarded:**

- Personnel (staff involved, experience, and their responsibilities)
- contact information
- Schedule and hours of operation
- detailed methods including detailed horizontal and vertical controls
- Details on disposal location and associated BMPs

- dredge debris management
- equipment list
- Dredging QAQC
- Spills prevention (prevention, containment and response plan) including refueling BMPs
- Survey methods (pre and/or post dredge)
- Notification/reporting

# Draft Dredging Plan – TOTE Maintenance Dredging Project

**From:** Stanley Sasser

**Date:** 08/14/2024

**Dredging Proponent:** Port of Tacoma

**Project Location:** 500 E Alexander Ave; Tacoma, WA 98421. Section 27/Township 21/Range 03

47.27685° N lat. / -122.40665° W long.

**Scope of the Project**: The Port of Tacoma needs to perform maintenance dredging at the TOTE facility located along the Blair Waterway in order to remove shoaling areas that are preventing vessels from being fully loaded with cargo. "Light loading" vessels is causing economic impacts and safety concerns. The proposed high spot removal maintenance dredging will remove shoaling caused by propwash along the TOTE berthing areas. Removing these areas of material will allow the terminal operators to resume normal operations.

The purpose of the proposed maintenance project is to restore the berthing areas at TOTE to the previously permitted depth of -40 feet MLLW, with an incidental 2-foot over-dredge (first foot being paid) allowance to cover potential over dredging by the contractor. Maintenance dredging is needed to allow normal operation at the terminals to resume. The current conditions do not allow for full vessel loading (economic impact) and could lead to grounding out of vessels (safety issue). To achieve this purpose, the Port must dredge up to 15,000 CY of sediments, of which up to roughly 5,000 CY is over dredge. The proposed maintenance dredging is the minimum work needed to return the terminal to normal operations.

The footprint of this project is approximately 50,000 square feet.

It is anticipated this dredge will be carried out using a clam shell bucket. Material deemed eligible for open-water disposal by the DMMO will be taken to the Commencement Bay Disposal facility—all other material will be taken to an appropriate upland facility.

**Basic Dredging BMPs:**

Sequence or phase work activities to minimize the extent and duration of in- water disturbances

- Sequence or phase work activities to minimize the extent and duration of in- water disturbances
- Employ experienced operators.
- Complete a horizontal dredge pass across the dredge surface before moving to the next deeper pass.
- "Glory holing" is not allowed
- Eliminate multiple bites while the bucket is on the bottom of the waterbody
- Progress surveys
- During dredging, a boat will be available on site at all times to retrieve debris from the water.

- Caution shall be used when placing material from the bucket into the scow to limit splash and prevent spillage.
- Work within allowed work windows
- No stockpiling of dredged material on the bottom of the waterbody
- No leveling bottom of the waterbody (drag beam)
- No discharge in transiting barges (i.e. must be sealed prior to moving to disposal location)
- Employ approved WQM to inform need for additional BMPs
- Employ approved spills/pollution prevention plan
- Manage dredged material barges to prevent loss of material:
    - Do not overfill/no overtopping
    - Filter material over scuppers
    - No unfiltered discharge

**Additional BMPs, in case of WQ issues:**

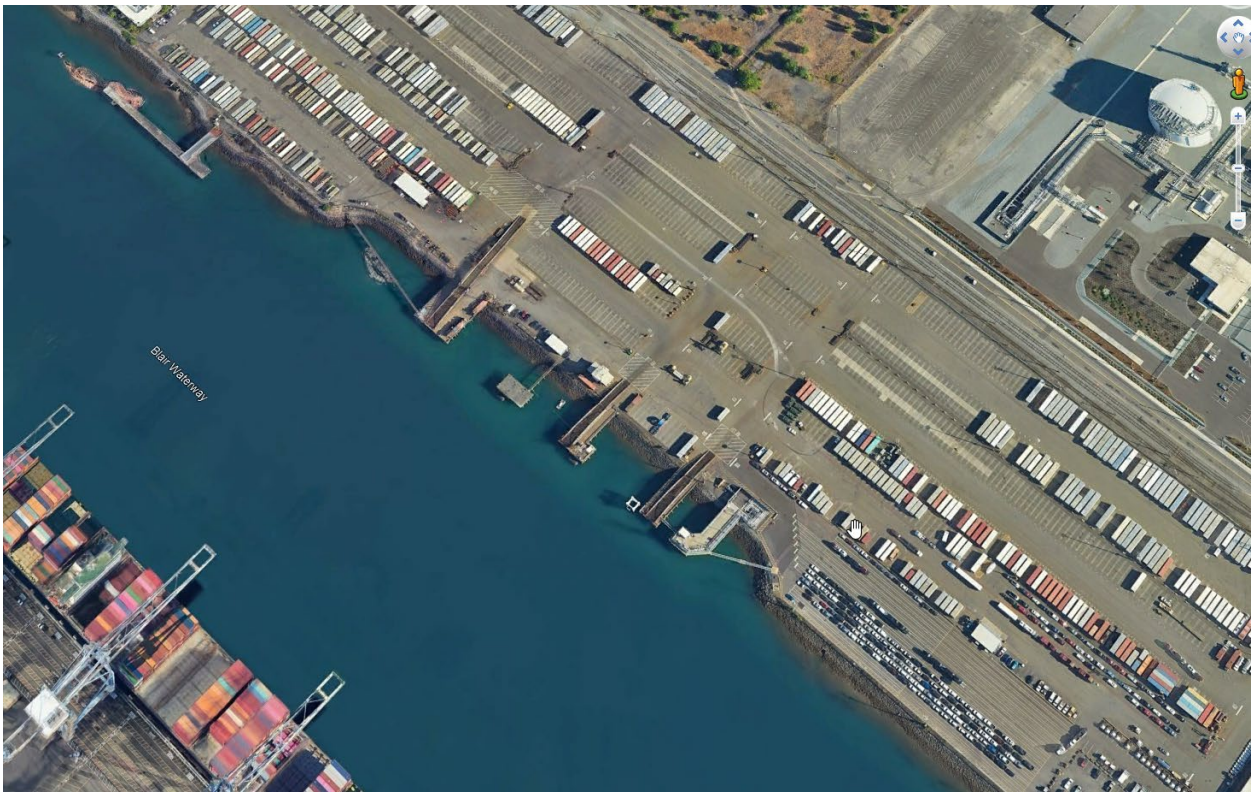
- Slow dredging
- The dredge operator shall pause the bucket at the surface, after its ascent through the water column, to minimize turbidity by allowing free water to drain from the bucket prior to swinging the bucket to the scow
- Check the seal on the bucket. Remove any obstructions.
- Repair bucket if it does not fully close.
- Avoid critical tidal or current conditions.
- Increasing barge retention time (i.e., increasing the duration of time that water is held in the barge prior to discharge will reduce the turbidity of the return water).
- Modification of equipment to better control sediment resuspension

**Additional Items to be provided after contract is awarded:**

- Personnel (staff involved, experience, and their responsibilities)
- contact information
- Schedule and hours of operation
- detailed methods including detailed horizontal and vertical controls
- Details on disposal location and associated BMPs
- dredge debris management
- equipment list
- Dredging QAQC
- Spills prevention (prevention, containment and response plan) including refueling BMPs

- Survey methods (pre and/or post dredge)
- Notification/reporting

**Attachment D**




# WATER QUALITY MONITORING & PROTECTION PLAN

## TOTE Maintenance Dredging

**Dec 28, 2023**

Port of Tacoma

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# List of Abbreviations

| Acronym/ Abbreviation | Definition |
|---|---|
| BMP | Best management practice |
| Corps | U.S. Army Corps of Engineers |
| CY | Cubic yards |
| DMMO | Dredged Material Management Office |
| GPS | Global positioning system |
| Ecology | Washington State Department of Ecology |
| HTL | High tide line |
| JARPA | Joint Aquatic Resources Permit Application |
| MLLW | Mean lower low water |
| NMFS | National Marine Fisheries Service |
| NPDES | National Pollutant Discharge Elimination System |
| NTU | Nephelometric turbidity units |
| OHWM | Ordinary high water mark |
| Port | Port of Tacoma |
| SWPPP | Stormwater Pollution Prevention Plan |
| USFWS | United States Fish and Wildlife Service |
| WAC | Washington Administrative Code |
| WDFW | Washington State Department of Fish and Wildlife |
| WQMPP | Water Quality Monitoring and Protection Plan |

# 1.0 Introduction

This Water Quality Monitoring and Protection Plan (WQMPP) identifies monitoring and best management practices (BMPs) for construction activities associated with the Port of Tacoma's (Port's) Totem Ocean Express (TOTE) Maintenance Dredging (Project). The Project location is the authorized berth area adjacent to the TOTE terminal, on the east side of the Blair Waterway. The Project lies within the Port's Industrial Development District, which is adjacent to Commencement Bay in Tacoma, Washington (Figure 1). The WQMPP, which is required by the Washington State Department of Ecology (Ecology), has been prepared to ensure compliance with Section 401 of the Clean Water Act, Washington State Water Quality Standards, Chapter 173-201A of the Washington Administrative Code (WAC). This plan describes water quality protection measures; monitoring parameters, methods, and evaluation criteria; and contingency response and notification procedures in the event a water quality criterion is exceeded during construction activities. The Project contractor selected to perform the construction activities will be subject to the requirements and procedures specified in this plan, as well as the contract specifications and other regulatory permits.

## 1.1 PROJECT DESCRIPTION

The purpose of the proposed maintenance project is to restore the berthing areas at TOTE to the previously permitted depth of -40 feet MLLW, with an incidental 2-foot over-dredge allowance to cover potential over dredging by the contractor. Maintenance dredging is needed to allow normal operation at the terminals to resume. The current conditions do not allow for full vessel loading (economic impact) and could lead to grounding out of vessels (safety issue). To achieve this purpose, the Port must dredge up to 15,000 CY of sediments, of which up to roughly 5,000 CY is over dredge. The proposed maintenance dredging is the minimum work needed to return the terminal to normal operations.

Based on recent sampling, it is anticipated that the dredged sediment will be eligible for open-water disposal. However, if the DMMO requires this material to go upland, the Port will submit a dewatering and disposal plan after the determination.

NMFS/USFWS have recognized that the current Nearshore Calculator does not sufficiently assess habitat values in estuaries, potential recovery in the Port environment, or the effects of Port repair and maintenance activities. To offset the impact of the Project, the Port will use the Port-specific mitigation calculator, currently under joint-development with NMFS and USFWS and anticipated to be completed in the Spring of 2024, to calculate the value of mitigation required.

Additional Project details are provided in the Joint Aquatic Resources Permit Application (JARPA) that was submitted to Ecology along with this WQMPP.

### 1.2 WATER QUALITY STANDARDS

The water quality monitoring turbidity standards applicable to this site per WAC 173-201A-210(1)(e) are as follows:

- Turbidity shall not exceed 10 nephelometric turbidity units (NTUs) over the background turbidity when the background turbidity is less than 50 NTUs.
- Turbidity shall not exceed a 20 percent increase in turbidity when the background turbidity is more than 50 NTUs.

The water quality standard for turbidity will need to be met at the compliance boundary at the edge of the authorized area of mixing for construction activities. The turbidity water quality standard includes an allowed 150-foot area of mixing that extends out from the in-water activity. The water quality monitoring for turbidity will be conducted at the 150-foot-radius point of compliance per the aquatic use criteria (WAC 173-201A-210(1)(e)(a)). In addition, visible turbidity greater than the background turbidity at or beyond the 150-foot-radius point of compliance is considered an exceedance of the water quality standard.

This Project will not impact waterway pH.

## 2.0 Water Quality Protection Measures

This section describes the protection measures that will be implemented during all in-water work to minimize impacts on water quality.

### 2.1 GENERAL WATER QUALITY PROTECTION MEASURES

The Project has been designed to avoid and minimize adverse impacts on the environment due to the Project activities. The following general water quality protection measures will be implemented on a project-wide basis to reduce, eliminate, or minimize the effects of the proposed action on water quality:

- All work in water will be done so as to minimize turbidity and other water quality impacts.
- To minimize in-water impacts, dredging is intended to occur 24 hours a day to reduce the project duration.
- No new upland construction will occur as part of the proposed action.
- Dredging will occur well below the high tide line (HTL), ordinary high water (OHW), and mean higher high water (MHHW). No additional or new habitat conversion will occur. There will be no dredging in intertidal or shallow subtidal habitat. No intertidal or shallow subtidal habit will be converted to deep subtidal. Dredging will only remove targeted high-spots to maintain berthing areas at previously authorized and dredged depths. Tide conditions will not affect maintenance dredging activities.
- No dredging will occur in known sand lance, surf smelt or herring spawning areas.
- No dredging will occur in areas with submerged aquatic vegetation (SAV).

- No maintenance dredging will be performed in or within 25 ft of an existing or previously designated Washington State Model Toxics Control Act (MTCA) site.
- All work will occur from barges moored at the TOTE Terminal; therefore, spuds will not be required. No intertidal or shallow subtidal habitat exists in this area; therefore, barges can only be moored over subtidal substrate where grounding is not possible.
- No solvents or other chemicals will be used in or over the water during the construction or operation of the proposed action.
- Upon advance notice, the Port will provide access to the construction site for representatives of U.S. Army Corps of Engineers (Corps), the U.S. Fish and Wildlife Service, the National Marine Fisheries Services, Ecology, and the Washington State Department of Fish and Wildlife (WDFW) during all hours when the proposed action is being conducted.
- The Port will prepare and implement this WQMPP, as required by the Ecology 401 water quality certification. Any changes to this plan will be provided to Ecology for review and approval prior to implementation.

## 2.2 MITIGATION MEASURES

To minimize the potential for any water quality impacts during construction activities, the following BMPs will be implemented:

- Dredging actions will be conducted during the WDFW-approved in-water work window for Commencement Bay (July 16 – February 14 of each year), which is outside of times when juvenile salmonids are expected to be present based upon best available science.
- A written spill prevention, control, and countermeasures (SPCC) plan will be prepared for activities that include the use of heavy equipment. The plan will describe measures to prevent or reduce impacts due to accidental leaks or spills, as well as all hazardous materials that will be used, their proper storage and handling, and the methods that will be used to monitor their use. A spill kit, to include an oil-adsorbing floating boom sized appropriately for the work area, will be available on-site during construction and stored in a location that facilitates immediate deployment if needed.
- The Port will request the contractor to utilize real-time positioning control when implementing dredging operations.
- The dredging contractor will not take multiple “bites” during a single clamshell cycle. When the clamshell bucket hits the bottom, it will close and be raised to the surface for disposal.
- The dredging contractor will not stockpile material on the bottom.
- The clamshell bucket will fully close and move through the water column slowly to minimize turbidity.
- If water quality impacts are observed outside the action area, the dredging contractor will adjust operations as needed to meet water quality requirements per the issued permit.

- Dredged material will be placed on a barge for transportation to an upland or open water disposal site. If water must be decanted from the barge, it will be filtered through straw bales or similar media.
- Dredged material will be disposed of at an approved in-water disposal site or in an approved upland location above OHW.
- If the dredged material is approved for in-water disposal, the barge used to transport dredged material to the disposal site will have tightly sealing doors and compartments to minimize leakage during transit.

# 3.0 Water Quality Monitoring Plan

The objective of water quality monitoring is to ensure that the Project activities do not result in exceedances of the applicable water quality standards at the point(s) of compliance. A combination of visual monitoring and contingency instrumented monitoring is proposed for this Project. Refer to Figure 2 for monitoring locations.

## 3.1 VISUAL MONITORING

Throughout all in-water work the contractor will conduct visual monitoring of turbidity. A turbidity plume is considered significant when it is above background and extends out the entire length of the mixing zone to 150 feet and is visible from the area of construction activity.

### 3.1.1 Monitoring Parameters

The following parameters will be observed during visual monitoring:

- Turbidity (visual indication of plume)
- Sheen, or oil
- Construction debris in water
- Distressed or dying fish
- Operation and effectiveness of BMPs

## 3.2 INSTRUMENTED MONITORING (TURBIDITY)

Instrumented monitoring for turbidity will also be implemented in response to visual observation of a significant turbidity plume, as described in Section 4.1 to better assess compliance with the water quality criteria and the effectiveness of any supplemental BMPs that may be implemented to control turbidity.

### 3.2.1 Monitoring Parameters

Real-time field measurements of turbidity water quality parameters (in NTUs) will be collected during instrumented monitoring.

### 3.2.2 Monitoring Schedule

During dredging, instrumented turbidity monitoring will be performed twice a day for the first 10 working days of the construction activity to establish baseline conditions and verify compliance with the water quality criteria. If no exceedance of the turbidity criteria is noted during the initial monitoring period, and the project has not been completed, and Ecology review and approval is received, the contractor will continue to monitor visually during the remainder of the respective construction activity, unless a visible turbidity plume triggers the return to instrumented monitoring, as described in Section 3.2 and 4.2.2.

### 3.2.3 Monitoring Locations And Depths

**Turbidity**

Monitoring locations will be measured directly from the point of construction activity. The monitoring locations will be identified in the field with the use of a global positioning system (GPS) on board the sampling vessel. Monitoring will be conducted at three depths at each of the following locations (Figure 2), which are described in more detail in Sections 3.2.4 through 3.4.6:

- Background monitoring location (300 feet upstream/upgradient prior to work)
- Compliance monitoring locations (150 feet downstream/downgradient during work)
- Early detection monitoring locations (100 feet downstream/downgradient during work)

Monitoring will be conducted at the below three depths in the water column at each monitoring location described above. Sample measurements from each of the three depths will be compared to each of the three corresponding depths at the background monitoring location.

- Surface—Within 3 feet (approximately 1 meter) of the water surface
- Middle—At mid-depth in the water column
- Bottom—Within 3 feet (approximately 1 meter) of the mudline

In addition to these, visual monitoring will be performed at the location of the active in-water work operation to monitor the effectiveness of BMPs.

### 3.2.4 Turbidity Background Monitoring Location

The background location will be positioned approximately 300 feet upstream (tide-dependents) of the point of construction and beyond the influence of construction activities. The monitoring location will typically be directly upstream/upgradient of the point of construction, although tidal reversals are possible during flood tide conditions, which will require the monitoring location to be shifted farther upstream. The background location will be in an area with similar physical characteristics similar to those of the main area of construction activity (i.e., water depth and slope). Background water quality monitoring will be conducted before in-water activity begins and during each monitoring event that turbidity is measured.

### 3.2.5 Turbidity Early Detection Monitoring Location

The early detection location will be positioned approximately 100 feet downstream/downgradient of the point of construction. The monitoring location will typically be directly downstream of the point of construction.

The objective of monitoring in the early detection location at 100 feet is to have an early indication of whether exceedances of the water quality standards may occur at the point of compliance (i.e., 150 feet) if construction activities continue without modification to the BMPs being implemented. It provides an adaptive management process to adjust the construction activities or BMPs prior to a water quality standard exceedance at the point of compliance.

### 3.2.6 Turbidity Compliance Monitoring Location

The compliance location is at the edge of the area of mixing, 150 feet downstream (tidal-dependent) of the point of the construction activity. The monitoring location will typically be directly downstream of the point of construction.

### 3.2.7 Monitoring Equipment

Equipment to be used for instrumented water quality monitoring will include the following:

- Turbidity Water quality meter: HACG 2100Q, Troll 9500, YSI 6920 Sonde (or other suitable equipment)
- Field logbook
- Deionized water for rinsing water quality monitoring equipment
- Personal protective equipment
- Camera
- GPS
- Cellular phone and Project contact phone numbers

Turbidity levels will be measured with a water quality meter, which will be properly operated, calibrated, and maintained by qualified personnel before each use according to the manufacturer's guidelines and recommendations. All field analyses will be recorded in a logbook and/or on the water quality monitoring form and the specific person who calibrated the equipment will be recorded.

## 3.3 DOCUMENTATION AND REPORTING

The contractor will prepare daily water quality monitoring reports detailing the monitoring data collection activities and results. The contractor shall submit the water quality monitoring reports to the Port by noon on the following Monday in which water quality monitoring occurred. The Port will verify the reports are filled out accurately and will submit the reports to the Ecology Federal Permit Manager within 1 week of the completion of each week of water quality monitoring. The Ecology template for the water quality monitoring form is included in Appendix A. These reports or forms will include the following information:

- Date and time of the monitoring at each location
- Turbidity measurement monitoring at each monitoring location (i.e., background, early detection, and compliance)
- Name of monitoring personnel

- Monitoring notes that may include:
  - Field conditions (weather, temperature, any prior disturbance of the water body, etc.)
  - Monitoring equipment calibration information.
  - Description of construction activity taking place and duration of activity

# 4.0 Contingency Response and Notification Plan

## 4.1 Turbidity Early Detection Monitoring Location

If a turbidity exceedance is visually observed or measured at the early detection monitoring location at the depths noted in Section 3.2.3, field personnel will assess the source/cause of the exceedance and implement BMPs to correct while continuing with monitoring as scheduled.

## 4.2 Turbidity Compliance Monitoring Location

### 4.2.1 Visual Monitoring

If visible turbidity greater than background turbidity at or beyond the 150-foot point of compliance is detected, a stop work must be issued. Visual turbidity beyond the compliance point is considered an exceedance of the turbidity water quality standard and requires a temporary stop work while BMPs are implemented to correct the issue. If a visible turbidity plume is evident at the compliance boundary it will be photo-documented and the extent of the plume delineated. Corrective actions will be taken to eliminate the source of the turbidity, and follow-up instrumented turbidity monitoring will be implemented to confirm the turbidity exceedance and will continue every 2 hours until the turbidity complies with the water quality standard (excluding during unsafe monitoring conditions such as darkness). Once compliance is met, monitoring twice per day will be re-initiated as described in Section 3.2.2.

If construction debris is observed in the waterway, effort will be made to retrieve the debris. If sheen or oil is observed in the waterway, the contractor will immediately cease operations. Corrective actions will be implemented to make repairs to equipment, address the spill, or modify construction activities or BMPs, and conduct appropriate notifications with the Port, Washington Military Department's Emergency Management Division at 1-800-258-5990, and permitting agencies, as appropriate. Work may resume after the corrective actions have been deemed effective, the turbidity complies with the water quality standard, and as directed by the Port or permitting agencies.

If distressed or dying fish are observed at the construction site that can be attributed to construction activities, work will stop immediately and the Port and Ecology will be notified as described in Section 4.3, as well as notifying other permitting agencies, as appropriate.

### 4.2.2 Instrumented Monitoring

The numerical water quality standard for turbidity must be met at the point of compliance 150-feet downstream/downgradient of the construction activity (or is shifted depending on the tides, as described in Section 3.2.6) and at the depths noted in Section 3.2.3. Turbidity outside this established area of mixing that is greater than 10 NTUs over the background turbidity when

turbidity in the background sample is 50 NTUs or less, or a 20 percent increase in turbidity when the background turbidity is more than 50 NTUs, is a violation of the turbidity water quality standard.

If there is an exceedance of turbidity noted during instrumented monitoring, a temporary stop work will be in effect until BMPs are implemented to correct the issue. The extent of the turbidity plume will be determined. Corrective actions will be taken to eliminate the source of the turbidity, and follow-up instrumented turbidity monitoring will be implemented to confirm the turbidity exceedance and will continue every 2 hours until the turbidity complies with the water quality standard (excluding during unsafe monitoring conditions such as darkness). Once compliance is met, monitoring twice per day will be re-initiated as described in Section 3.2.2.

## 4.3 NOTIFICATION

If compliance monitoring data indicate an exceedance of the water quality standard for turbidity or evidence of noncompliance, such as distressed or dying fish or a discharge of oil, is noted at the compliance monitoring location (i.e., 150 feet downstream), the Port will be notified by the contractor immediately. In turn, the Port will immediately notify Ecology's 24-hour Spill Response Team and, within 24 hours of the observed noncompliance, notify the Ecology federal permit manager (Laura Inouye) for all noncompliance conditions or spills.

Contact information for notifications:

- Port of Tacoma:
    - Dave Myers, Engineering Project Manager, office: (253) 428-8612
    - Mike Kisak, Inspector, work mobile: (253) 377-3342
    - Stanley Sasser, Environmental Project Manager, office/mobile: (253) 383-943
- Ecology's 24-hour Spill Response Team: (800) 258-5990
- Ecology federal permit manager:
    - Laura Inouye, work mobile: (360) 515-8213,
      email: lino461@ecy.wa.gov

The notification should include the following:

1. A description of the nature, extent, and cause of noncompliance.
2. The period of noncompliance, including the date, time, and anticipated time when the activity will return to compliance.
3. The steps taken to minimize, eliminate, and prevent a reoccurrence of the noncompliance action.
4. A written report to Ecology within 5 days of the noncompliance that provides a description of the nature of the violation, the sampling results and location, photographs, a description of the BMPs that were or will be implemented to prevent further violations, and any other pertinent information.

# Figures

# Appendix A

# Water Quality Monitoring Form