August 4, 2021

TO: HOLDERS LIST

SUBJECT: Maintenance Dredging at Piers 3 & 4 and Washington United Terminals
NO. 201114.01 and 201114.02 | CONTRACT NO. 071540

ADDENDUM NUMBER # 01

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

- 00 01 10 – Table of Contents adds Appendix K to table of contents
- 00 11 13 – Advertisement for Bids deletes contradictory statement of bid security
- Appendix F – adds USACE permit
- Appendix H – adds DNR SUA permit
- Appendix K – adds biological evaluation

PROCUREMENT AND CONTRACTING REQUIREMENTS

SPECIFICATIONS

END OF SECTION

MAINTENANCE DREDGING AT PIERS 3 & 4 AND WASHINGTON UNITED TERMINALS

PROJECT NO. 201114.01 AND 201114.02 | CONTRACT NO. 071540

Scope of Work:	The Work required for this Project includes: maintenance dredging to address high spots impacting the berthing areas of Washington United Terminal (WUT) and Piers 3 & 4. All material is anticipated to be disposed of at the Commencement Bay open-water dredge material disposal site.
Bid Estimate:	Estimated cost range is $623,000 to $761,000, plus Washington State Sales Tax (WSST).
Sealed Bid Date/ Time/Location:	Bids will be received at the Front Reception Desk, Port Administration Office, One Sitcum Plaza, Tacoma, Washington 98421 until **2:00 P.M. on August 10, 2021**, at which time they will be publicly opened and read aloud and the apparent low bid will be determined.
Pre-Bid Conference:	A pre-Bid conference has been set for July 29, 2021 at 11:00 A.M. and will convene at the Port's Administrative building, located at One Sitcum Plaza. Attendees will be required to sign a Release and Acceptance of Responsibility and Acknowledgement of Risks Form prior to entering the site and shall provide their own Personal Protection Equipment (PPE) as required above.
Bid Security:	Each Bid must be accompanied by a Bid security in an amount equal to five (5) percent of the Base Bid in a form allowed by the Instructions to Bidders.
Bid Security:	~~A Bid Security Bond is not required for this project.~~
Contact Information:	Any questions to the Port may be emailed to procurement@portoftacoma.com. No oral responses will be binding by the Port. Questions will not be accepted after seven (7) days prior to the Bid Date.
Bidding Documents:	Plans, Specifications, Addenda, and Plan Holders List for this Project are available on-line through The Port of Tacoma's Website portoftacoma.com. Click on "Contracts," "Procurement," and then the Procurement Number 071540. Bidders must subscribe to the Holder's List on the right hand side of the screen in order to receive automatic email notification of future addenda and to be placed on the Holder's List.

Contact procurement@portoftacoma.com with questions. Holder’ s Lists will be updated regularly. Additional Instructions available in Section 00 21 00 - Instructions to Bidders.

Public Works Training Requirements:

Effective July 1, 2019, all businesses are required to have training before bidding on public works projects and prevailing wage under RCW 39.04.359 and RCW 39.12, or is on the list of exempt businesses maintained by the Department of Labor and Industries. The bidder must designate a person or persons to be trained on these requirements. The training will be provided by the Department of Labor and Industries or by a training provider whose curriculum is approved by the Department of Labor and Industries.

Please refer to Labor and Industries’ web site (https://www.lni.wa.gov/TradesLicensing/PrevWage/Contractors/Training.asp?utm_medium=email&utm_source=govdelivery) for more information and training dates, requirements, and exemptions. Failure to attend this training could result in a determination of “not responsible” and the bidder not being awarded a public works contract.

A. END OF SECTION

APPENDIX F

UNITED STATES ARMY CORP OF ENGINEERS

NWS-2020-1017-WRD

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, SEATTLE DISTRICT
P.O. BOX 3755
SEATTLE, WASHINGTON 98124-3755

Regulatory Branch July 27, 2021

Mr. Mark Rettmann
Port of Tacoma
P.O. Box 1837
Tacoma, Washington 98401

Reference: NWS-2020-1017-WRD
Tacoma, Port of
(Blair Waterway Dredging)

Dear Mr. Rettmann:

Enclosed is a Department of the Army permit which authorizes performance of the work described in your referenced application. You are cautioned that any change in the location or plans of the work will require submittal of revised plans to this office for approval prior to accomplishment. Deviation from the approved plans may result in imposition of criminal or civil penalties.

Your attention is drawn to General Condition 1 of the permit which specifies the expiration date for completion of the work. Upon completing the authorized work, please fill out and return the enclosed *Certificate of Compliance with Department of the Army Permit* form.

We are interested in your experience with our Regulatory Program and encourage you to complete a customer service survey form. This form and information about our program is available on our website at: www.nws.usace.army.mil select "Regulatory Branch, Permit Information" and then "Contact Us." If you have any questions please contact Mr. Jason Sweeney at jason.t.sweeney@usace.army.mil or at (206) 764-3450.

Sincerely,

Michelle Walker
Chief, Regulatory Branch

Enclosures

DEPARTMENT OF THE ARMY PERMIT

Permittee: Mark Rettmann, Port of Tacoma
Permit No: NWS-2020-1017-WRD

P.O. Box 1837
Tacoma, Washington 98401

Issuing Office: Seattle District

NOTE: The term "you" and its derivatives, as used in this permit, means the permittee or any future transferee. The term "this office" refers to the appropriate district or division office of the U.S. Army Corps of Engineers (Corps) having jurisdiction over the permitted activity or the appropriate official of that office acting under the authority of the commanding officer.

You are authorized to perform work in accordance with the terms and conditions specified below.

Project Description: To dredge the two terminals (Washington United Terminal (WUT) and Husky Terminal) to the previously authorized depth of -51 feet mean lower low water (MLLW), with a 1 foot over dredge allowance in accordance with the plans and drawings dated January 2021, attached hereto which are incorporated in and made a part of this permit. The purpose of the project is to maintain adequate navigation and moorage depths in the Washington United Terminal and Husky Terminal.

Project Location: In Blair Waterway at Tacoma, Pierce County, Washington.

Permit Conditions:

General Conditions:

1. The time limit for completing the work authorized ends on February 14, 2026. If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least 1 month before the above date is reached.

2. You must maintain the activity authorized by this permit in good condition and in accordance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted activity, although you may make a good faith transfer to a third party in compliance with General Condition 4 below. Should you wish to cease to maintain the authorized activity or should you desire to abandon it without a good faith transfer, you must obtain a modification to this permit from this office, which may require restoration of the area.

3. If you discover any previously unknown historic or archeological remains while accomplishing the activity authorized by this permit, you must immediately notify this office of what you have found. We will initiate the Federal and State coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

4. If you sell the property associated with this permit, you must obtain the signature of the new owner in the space provided and forward a copy of the permit to this office to validate the transfer of this authorization.

5. If a conditioned water quality certification has been issued for your project, you must comply with the conditions specified in the certification as special conditions to this permit. For your convenience, a copy of the certification is attached if it contains such conditions.

6. You must allow representatives from this office to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the terms and conditions of your permit.

7. After a detailed and careful review of all the conditions contained in this permit, the permittee acknowledges that, although said conditions were required by the Corps, nonetheless the permittee agreed to those conditions voluntarily to facilitate issuance of the permit; the permittee will comply fully with all the terms of all

the permit conditions.

Special Conditions:

a. You must provide a copy of the permit transmittal letter, the permit form, and drawings to all contractors performing any of the authorized work.

b. If future operations by the United States require the removal, relocation, or other alteration of the work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, you will be required, upon due notice from the U. S Army Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

c. By accepting this permit, you agree to accept such potential liability for response costs, response activity and natural resource damages as you would have under the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. 9601 et seq. (CERCLA) or the Model Toxics Control Act, R.C.W. 70.105 (MTCA) absent the issuance of this permit. Further, you agree that this permit does not provide you with any defense from liability under the CERCLA or the MTCA. Additionally, you shall be financially responsible for any incremental response costs attributable under CERCLA or MTCA to your activities under this permit in the Blair Waterway.

d. Permittee shall comply with the conditions specified in the Washington State Department of Ecology coastal zone management consistency determination dated June 15, 2021.

e. You must implement and abide by the Endangered Species Act (ESA) requirements and/or agreements set forth in the Biological Evaluation titled, Blair Waterway Berth Maintenance Dredging – Washington United Terminal and Husky Terminal, Port of Tacoma dated February 2021, in its entirety. The U.S. Fish and Wildlife Service (USFWS) provided the enclosed LOC with a finding of "may affect, not likely to adversely affect" based on this document on July 2, 2021 (USFWS Reference Number 01EWFW00-2021-I-0865). The USFWS will be informed of this permit issuance. Failure to comply with the commitments made in this consultation constitutes non-compliance with the ESA and your U.S. Army Corps of Engineers permit. The USFWS is the appropriate authority to determine compliance with ESA.

f. This U.S. Army Corps of Engineers (Corps) permit does not authorize you to take a threatened or endangered species, in particular the Puget Sound (PS) Chinook Salmon PS steelhead. In order to legally take a listed species, you must have a separate authorization under the Endangered Species Act (ESA; e.g., an ESA Section 10 permit, or ESA Section 7 consultation Biological Opinion (BO) with non-discretionary "incidental take" provisions with which you must comply). The enclosed BO(s) prepared by the National Marine Fisheries Service (NMFS) dated July 8, 2021, contains mandatory terms and conditions to implement the reasonable and prudent measures that are associated with the specified "incidental take" in the BO(s) (NMFS Reference Number WCRO-2021-00698). Your authorization under this Corps permit is conditional upon your compliance with all of the mandatory terms and conditions associated with incidental take of the enclosed BO(s). These terms and conditions are incorporated by reference in this permit. Failure to comply with the terms and conditions associated with incidental take of the BO(s), where a take of the listed species occurs, would constitute an unauthorized take, and it would also constitute non-compliance with your Corps permit. The NMFS is the appropriate authority to determine compliance with the terms and conditions of its BO and with the ESA.

g. In order to meet the requirements of the Endangered Species Act you may conduct the authorized activities from July 16 through February 14 in any year this permit is valid. You shall not conduct work authorized by this permit from February 15 through July 15 in any year this permit is valid.

h. In order to meet the requirements of Section 14 of the Rivers and Harbors Act, you must comply with the enclosed *Section 408 Standard Terms and Conditions* and Special Condition "l"

i. As-built drawings must be provided withing 60 days of completion of construction activities that clearly mark location of any utilities including depths to Seattle District Regulatory Branch at NWS-PermitApp@usace.army.mil.

j. At least 14 days prior to beginning the dredging and disposal work, you must notify the U.S. Army Corps of Engineers, Seattle District, Regulatory Branch Project Manager, by telephone at (206) 764-3450, or by e-mail at jason.t.sweeney@usace.army.mil to schedule a pre-dredge meeting.

k. At least 7 days prior to the scheduled pre-dredge meeting, you must submit to the U.S. Army Corps of Engineers, Seattle District, Regulatory Branch Project Manager, a quality control plan for dredging and disposal. This plan must include: the equipment and vessels to be used, operational controls to ensure dredging accuracy, disposal positioning procedures, spill control and response measures, water quality monitoring and contingency plans for exceeding water quality standards, debris management, personnel and responsibilities, dredging and disposal schedule, report submittals, agency contact information and coordination procedures. The plan must be approved by the U.S. Army Corps of Engineers, Washington State Department of Natural Resources and the Washington State Department of Ecology prior to commencement of open-water disposal.

l. At least 7 days prior to dredging and disposal, you, the dredging contractor's representative, and the dredging contractor's disposal positioning supervisor must attend a pre-dredge meeting to review the Department of the Army permit conditions, dredging and disposal quality control plan, Washington State Department of Natural Resources site-use authorization and water quality certification.

m. A pre-disposal dry run may be required by the U.S. Army Corps of Engineers (Corps). At the discretion of the Corps, the Regulatory Branch Project Manager may ride out to the disposal site during the predisposal dry run or the first disposal run to verify positioning accuracy.

n. Disposal must be by bottom-dump barge. Disposal by any other means is prohibited.

o. The U.S. Coast Guard must be notified by email at D13-PF-LNM@uscg.mil at least 14 days prior to commencing dredging operations, so the project information can be issued in the Local Notice to Mariners. Dredging operations north of a line between Bush Point on Whidbey Island and Nodule Point on Marrowstone Island must monitor VHF-FM Channels 13 and 5A. Dredging operations south of this line must monitor VHF-FM Channels 13 and 14.

p. The U.S. Coast Guard (USCG) Puget Sound Vessel Traffic Service (VTS), also known as "Seattle Traffic", must be contacted by radio prior to each disposal for positioning and verification of location within the disposal site target area. Disposal may not commence until verification is received from the USCG. Information required by the USCG must be provided for recording of the dump.

q. You must have a copy of this permit available on the vessel used for the authorized transportation and disposal of the dredged material.

r. All hopper dredges must be equipped with the National Dredging Quality Management (DQM) system for hopper dredge monitoring. The DQM system must have been certified by the U.S. Army Engineer Research and Development Center (ERDC) within the last year. Questions regarding certification should be addressed to the DMQ support team at (601) 634-2923. The data collected by the DQM system must, upon request, be made available to U.S. Army Corps of Engineers, Seattle District, Regulatory Branch.

s. Any deviations from the authorized dredging footprint or depths must be reported to the Regulatory Branch Project Manager within 24 hours of discovery.

t. Plotted results of the post-dredge bathymetric survey shall be submitted to the U.S. Army Corps of Engineers, Seattle District, Dredged Material Management Office and Regulatory Branch Project Manager in PDF format within 30 days of completion of dredging. Results must clearly display the post-dredge sediment surface in relation to the permitted dredge boundary and depth, as well as the location of project features such as docks, wharfs and other landmarks. The vertical datum must be clearly indicated. Full bathymetric survey data must be submitted upon request.

u. A post-dredge report shall be submitted to the U.S. Army Corps of Engineers, Seattle District, Dredged Material Management Office and Regulatory Branch Project Manager within 30 days of completion of dredging and include the volume and location(s) of in-water disposal and the volume and location(s) of material placed in uplands.

v. If dredging cannot be completed prior to the "Recency Determination" date specified in the Dredged Material Management Program (DMMP) suitability determination dated October 31, 2025, the U.S. Army Corps of Engineers, Seattle District, Dredged Material Management Office (DMMO) Project Manager must be contacted. The DMMO Project Manager will coordinate with the other DMMP agencies to determine whether an extension to the recency period can be granted.

Further Information:

1. Congressional Authorities. You have been authorized to undertake the activity described above pursuant to:

   ☒ Section 10 of the Rivers and Harbor Act of 1899 (33 United States Code (U.S.C.) 403).

   ☒ Section 404 of the Clean Water Act (33 U.S.C. 1344).

   ☐ Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (33 U.S.C 1413).

2. Limits of this authorization.

   a. This permit does not obviate the need to obtain other Federal, State, or local authorization required by law.

   b. This permit does not grant any property rights or exclusive privileges.

   c. This permit does not authorize any injury to the property or rights of others.

   d. This permit does not authorize interference with any existing or proposed Federal project.

3. Limits of Federal Liability. In issuing this permit, the Federal Government does not assume any liability for the following:

   a. Damages to the permitted project or uses thereof as a result of other permitted activities or from natural

causes.

b. Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the United States in the public interest.

c. Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.

d. Design or construction deficiencies associated with the permitted work.

e. Damage claims associated with any future modification, suspension, or revocation of this permit.

4. Reliance on Applicant's Data. The determination of this office that issuance of this permit is not contrary to the public interest was made in reliance on the information you provided.

5. Reevaluation of Permit Decision. This office may reevaluate its decision on this permit at any time the circumstances warrant. Circumstances that could require include, but are not limited to, the following:

a. You fail to comply with the terms and conditions of the permit.

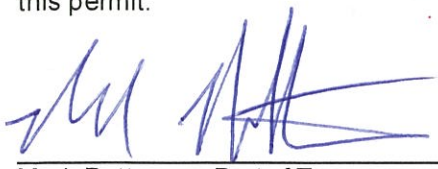
b. The information provided by you in support of your application proves to have been false, incomplete, or inaccurate (See 4 above).

c. Significant new information surfaces which this office did not consider in reaching the original public interest decision.

Such a reevaluation may result in a determination that it is appropriate to use the suspension, modification, and revocation procedures contained in 33 Code of Federal Regulations (CFR), Part 325.7 or enforcement procedures such as those contained in 33 CFR, Parts 326.4 and 326.5. The referenced enforcement procedures provide for the issuance of an administrative order requiring you to comply with the terms and conditions of your permit and for the initiation of legal action where appropriate. You will be required to pay for any corrective measures ordered by this office, and if you fail to comply with such directive, this office may in certain situations (such as those specified in 33 CFR, Part 209.170) accomplish the corrective measures by contract or otherwise and bill you for the cost.

6. Extensions. General condition 1 establishes a time limit for the completion of the activity authorized by this permit. Unless there are circumstances requiring either a prompt completion of the authorized activity or a reevaluation of the public interest decision, the Corps will normally give favorable consideration to a request for an extension of this time limit.

Your signature below, as permittee, indicates that you accept and agree to comply with the terms and conditions of this permit.



Mark Rettmann, Port of Tacoma

7/26/2021
(DATE)

This permit becomes effective when the Federal official, designated to act for the Secretary of the Army, has signed below.

7/27/2021

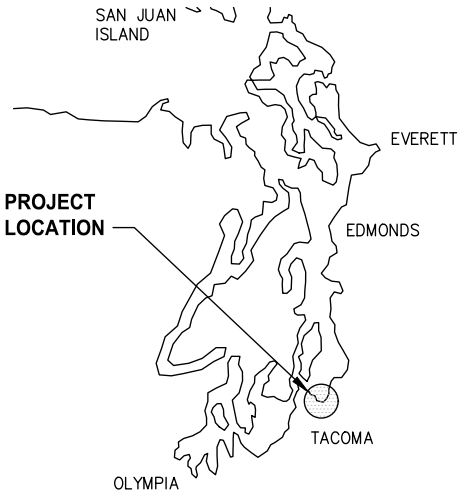
For Alexander L. Bullock
Colonel, Corps of Engineers
District Engineer

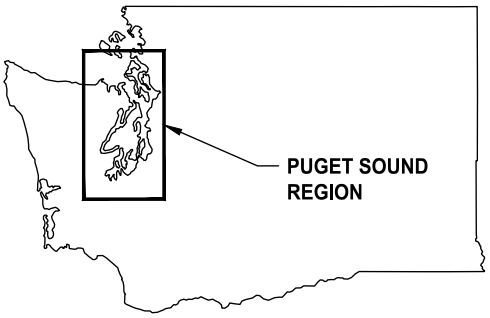
(DATE)

When the structures or work authorized by this permit are still in existence at the time the property is transferred, the terms and conditions of this permit will continue to be binding on the new owner(s) of the property. To validate the transfer of this permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.

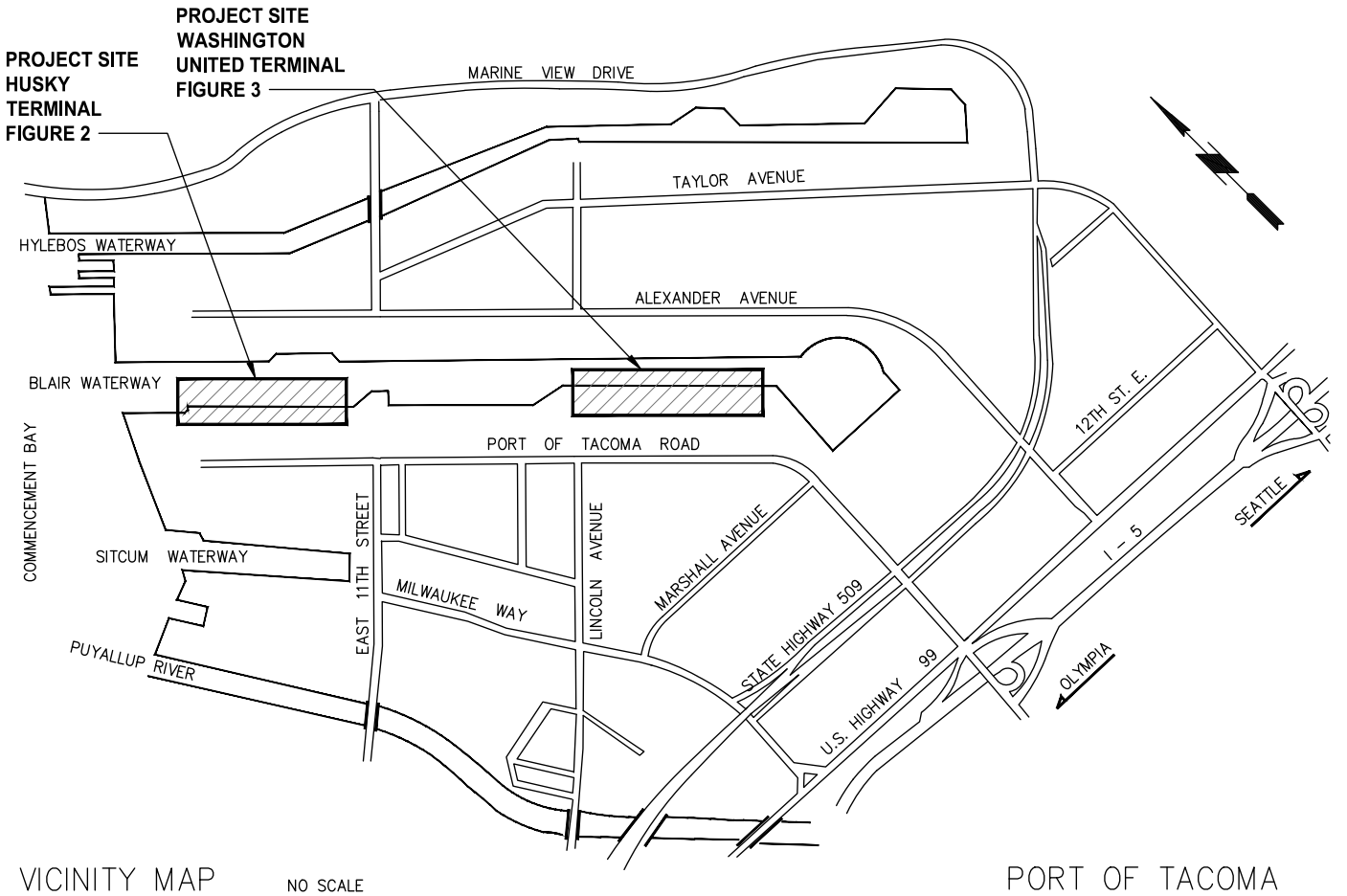
_____ _____

(TRANSFEREE) (DATE)





PUGET SOUND REGION MAP



VICINITY MAP NO SCALE PORT OF TACOMA

NOTES:

1. HIGH TIDE LINE (HTL) HAS NOT BEEN IDENTIFIED FOR THIS AREA. FOR THE PURPOSES OF THIS DOCUMENT HTL IS ASSUMED TO BE THE HIGHEST ASTRONOMICAL TIDE (HAT)

PURPOSE: TO PERFORM BERTH MAINTENANCE DREDGING AT THE PORT OF TACOMA HUSKY AND WASHINGTON UNITED TERMINALS

DATUM: VERTICAL PORT DATUM
HTL (HAT) = 13.78' SEE NOTE 1, FIGURE 1
MLLW = 0.00'

ADJACENT PROPERTY OWNERS:
PORT OF TACOMA, DNR/WASHINGTON STATE, TACOMA INDUSTRIAL PROPERTIES
USACE REF #: NWS-2020-1017-WRD

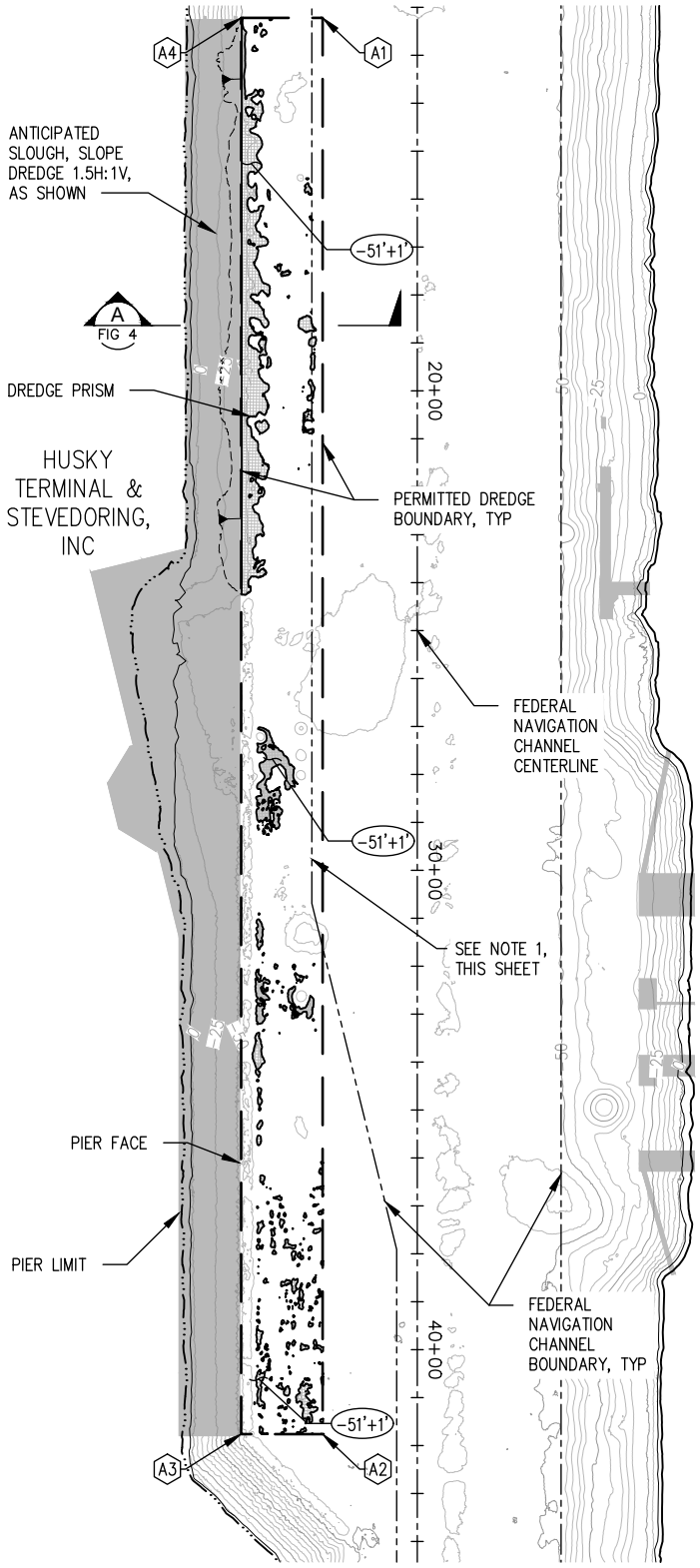
FIGURE 1 - VICINITY MAP

Port of Tacoma

P.O. BOX 1837 TACOMA, WA 98401 (253)383-5841

PROJECT: BLAIR WATERWAY MAINTENANCE DREDGE
ADDRESS: 1101 PORT OF TACOMA ROAD
TACOMA, WA 98421
PARCEL#: 2275200610, 0321353016, 0321353014, 0321353011, 0321354035
LAT/LONG: 47.263407N 122.391894W
SECT/TOWN/RANGE: SEC27, 35 T21N R3E
IN: BLAIR WATERWAY
COUNTY OF: PIERCE
STATE OF: WA
APPLICATION BY: PORT OF TACOMA
SHEET 1 OF 5 JANUARY 2021

Plotted: Jan 28, 2021 – 3:54pm fmendoza Layout: JARPA-1
N:\2020\2000178 POT Blair Waterway Maintenance Dredge\Drawings\JARPA-2021\FJM\JARPA-1 Title.dwg



NOTES

1. NAVIGATION CHANNEL PRIOR TO PIER 4 REDEVELOPMENT SHOWN, ADJUSTMENT TO BE MADE TO ALIGN WITH NEW PIER FACE

LEGEND

- PERMITTED DREDGE BOUNDARY
- ANTICIPATED DREDGE PRISM
- 20+00 — FEDERAL NAVIGATION CHANNEL CENTERLINE
- FEDERAL NAVIGATION CHANNEL BOUNDARY
- -X'+X' — DESIGN DREDGE DEPTH & OVERDREDGE, MLLW DATUM
- XX — UPLAND/BATHYMETRIC CONTOUR, MLLW DATUM
- PIER
- HIGH TIDE LINE (HTL)
- POTENTIAL SLOPE DREDGE/SLOUGH BOUNDARY

DREDGE BOUNDARY - HORIZONTAL CONTROL

POINT	NORTHING	EASTING
A1	N 714699.85	E 1165512.27
A2	N 712643.81	E 1167633.72
A3	N 712521.74	E 1167515.41
A4	N 714577.78	E 1165393.96

200' 0 200' 400'
100' 300'
SCALE: 1"=400'

PURPOSE: TO PERFORM BERTH MAINTENANCE DREDGING AT THE PORT OF TACOMA HUSKY AND WASHINGTON UNITED TERMINALS

DATUM: VERTICAL PORT DATUM
HTL (HAT) = 13.78' SEE NOTE 1, FIGURE 1
MLLW = 0.00'

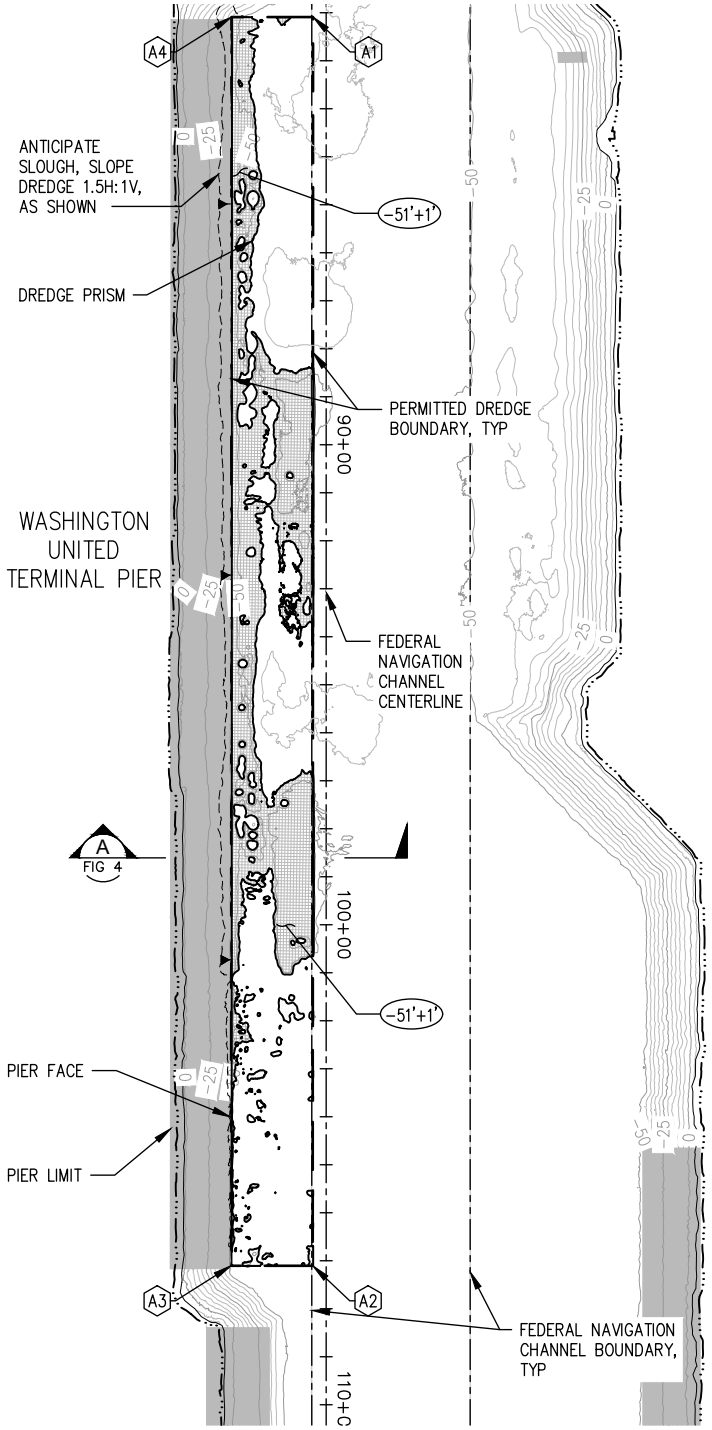
ADJACENT PROPERTY OWNERS:
PORT OF TACOMA, DNR/WASHINGTON STATE, TACOMA INDUSTRIAL PROPERTIES
USACE REF #: NWS-2020-1017-WRD

FIGURE 2 - SITE PLAN - HUSKY TERMINAL

Port of Tacoma
P.O. BOX 1837 TACOMA, WA 98401 (253)383-5841

PROJECT: BLAIR WATERWAY MAINTENANCE DREDGE
ADDRESS: 1101 PORT OF TACOMA ROAD
TACOMA, WA 98421
PARCEL#: 2275200610, 0321353016, 0321353014, 0321353011, 0321354035
LAT/LONG: 47.263407N 122.391894W
SECT/TOWN/RANGE: SEC27, 35 T21N R3E
IN: BLAIR WATERWAY
COUNTY OF: PIERCE
STATE OF: WA
APPLICATION BY: PORT OF TACOMA
SHEET 2 OF 5 JANUARY 2021

Plotted: Jan 28, 2021 – 3:56pm fmendoza Layout: JARPA-2
N:\2020\2000178 POT Blair Waterway Maintenance Dredge\Drawings\JARPA-2021\FJM\JARPA-2 Husky Terminal.dwg



LEGEND

- PERMITTED DREDGE BOUNDARY
- ANTICIPATED DREDGE PRISM
- 20+00 — FEDERAL NAVIGATION CHANNEL CENTERLINE
- FEDERAL NAVIGATION CHANNEL BOUNDARY
- -X'+X' — DESIGN DREDGE DEPTH & OVERDREDGE, MLLW DATUM
- XX — UPLAND/BATHYMETRIC CONTOUR, MLLW DATUM
- PIER
- HIGH TIDE LINE (HTL)
- POTENTIAL SLOPE DREDGE/SLOUGH BOUNDARY

DREDGE BOUNDARY - HORIZONTAL CONTROL

POINT	NORTHING	EASTING
A1	N 710030.42	E 1170578.80
A2	N 708219.44	E 1172446.27
A3	N 708097.39	E 1172327.93
A4	N 709908.38	E 1170460.46

200' 0 200' 400'
100' 300'
SCALE: 1"=400'

PURPOSE: TO PERFORM BERTH MAINTENANCE DREDGING AT THE PORT OF TACOMA HUSKY AND WASHINGTON UNITED TERMINALS

DATUM: VERTICAL PORT DATUM
HTL (HAT) = 13.78' SEE NOTE 1, FIGURE 1
MLLW = 0.00'

ADJACENT PROPERTY OWNERS:
PORT OF TACOMA, DNR/WASHINGTON STATE, TACOMA INDUSTRIAL PROPERTIES
USACE REF #: NWS-2020-1017-WRD

FIGURE 3 - SITE PLAN - WASHINGTON UNITED TERMINAL

Port of Tacoma
P.O. BOX 1837 TACOMA, WA 98401 (253)383-5841

PROJECT: BLAIR WATERWAY MAINTENANCE DREDGE
ADDRESS: 1101 PORT OF TACOMA ROAD
TACOMA, WA 98421
PARCEL#: 2275200610, 0321353016, 0321353014, 0321353011, 0321354035
LAT/LONG: 47.263407N 122.391894W
SECT/TOWN/RANGE: SEC27, 35 T21N R3E
IN: BLAIR WATERWAY
COUNTY OF: PIERCE
STATE OF: WA
APPLICATION BY: PORT OF TACOMA
SHEET 3 OF 5 JANUARY 2021

Plotted: Jan 28, 2021 - 3:58pm fmendoza Layout: JARPA-3
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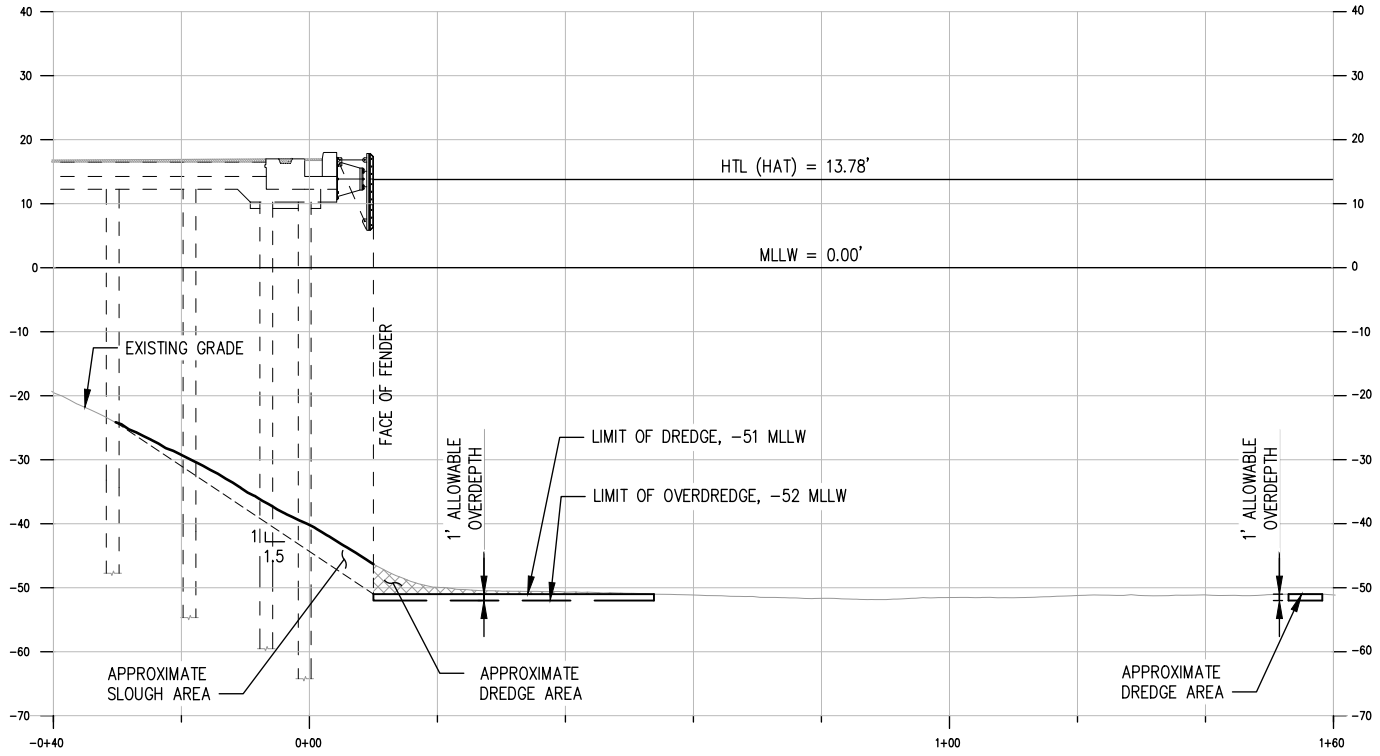

SECTION A - TYPICAL SLOPE

NOT TO SCALE

NOTES

1. ELEVATIONS SHOWN IN SECTIONS ARE BASED ON MEAN LOWER LOW WATER DATUM, MLLW.
2. DREDGE DEPTH SHALL NOT GO BEYOND LIMITS AND DEPTHS SHOWN. DREDGE DEPTH SHALL NOT GO BEYOND THE ALLOWABLE OVERDEPTH SHOWN, UNLESS APPROVED IN WRITING BY THE PORT.
3. DREDGE CUTS ARE ANTICIPATED TO RESULT IN SLOUGHING OF SLOPE MATERIAL FROM ABOVE.

PURPOSE: TO PERFORM BERTH MAINTENANCE DREDGING AT THE PORT OF TACOMA HUSKY AND WASHINGTON UNITED TERMINALS

DATUM: VERTICAL PORT DATUM
HTL (HAT) = 13.78' SEE NOTE 1, FIGURE 1
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ADJACENT PROPERTY OWNERS:
PORT OF TACOMA, DNR/WASHINGTON STATE, TACOMA INDUSTRIAL PROPERTIES
USACE REF #: NWS-2020-1017-WRD

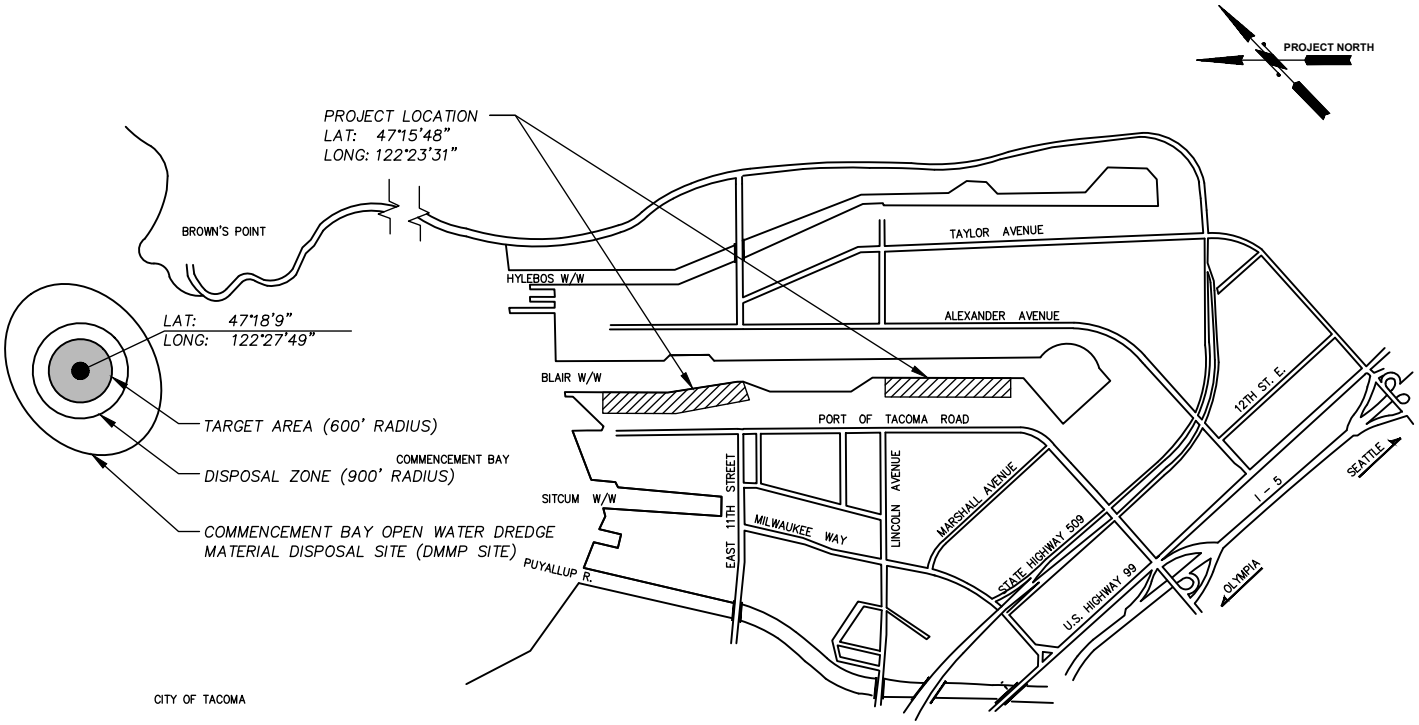
FIGURE 4 - TYPICAL SLOPE PROTECTION DETAIL

Port of Tacoma

P.O. BOX 1837 TACOMA, WA 98401 (253)383-5841

PROJECT: BLAIR WATERWAY MAINTENANCE DREDGE
ADDRESS: 1101 PORT OF TACOMA ROAD
TACOMA, WA 98421
PARCEL#: 2275200610, 0321353016, 0321353014, 0321353011, 0321354035
LAT/LONG: 47.263407N 122.391894W
SECT/TOWN/RANGE: SEC27, 35 T21N R3E
IN: BLAIR WATERWAY
COUNTY OF: PIERCE
STATE OF: WA
APPLICATION BY: PORT OF TACOMA
SHEET 4 OF 5 JANUARY 2021

Plotted: Jan 28, 2021 – 3:59pm fmendoza Layout: JARPA-4
N:\2020\2000178 POT Blair Waterway Maintenance Dredge\Drawings\JARPA-2021\FJM\JARPA-4 Typical Slope Protection Detail.dwg



NOTES:

1. THE DMMP DISPOSAL SITE IS SHOWN CLOSER THAN THE ACTUAL SITE DISTANCE.
2. COMMENCEMENT BAY IS A NON-DISPERSIVE, UNCONFINED, OPEN-WATER DREDGE MATERIAL DISPOSAL (DUMP) SITE.

DISPOSAL SITE NO SCALE

PORT OF TACOMA

PURPOSE: TO PERFORM BERTH MAINTENANCE DREDGING AT THE PORT OF TACOMA HUSKY AND WASHINGTON UNITED TERMINALS

DATUM: VERTICAL PORT DATUM
HTL (HAT) = 13.78' SEE NOTE 1, FIGURE 1
MLLW = 0.00'

ADJACENT PROPERTY OWNERS:
PORT OF TACOMA, DNR/WASHINGTON STATE, TACOMA INDUSTRIAL PROPERTIES
USACE REF #: NWS-2020-1017-WRD

FIGURE 5 - DISPOSAL SITE

Port of Tacoma

P.O. BOX 1837 TACOMA, WA 98401 (253)383-5841

PROJECT: BLAIR WATERWAY MAINTENANCE DREDGE
ADDRESS: 1101 PORT OF TACOMA ROAD
TACOMA, WA 98421
PARCEL#: 2275200610, 0321353016, 0321353014, 0321353011, 0321354035
LAT/LONG: 47.263407N 122.391894W
SECT/TOWN/RANGE: SEC27, 35 T21N R3E
IN: BLAIR WATERWAY
COUNTY OF: PIERCE
STATE OF: WA
APPLICATION BY: PORT OF TACOMA
SHEET 5 OF 5 JANUARY 2021

Plotted: Jan 28, 2021 - 4:00pm fmendoza Layout: JARPA-5
N:\2020\2000178 POT Blair Waterway Maintenance Dredge\Drawings\JARPA-2021\FJM\JARPA-5 Disposal Site.dwg

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
PO Box 47600 • Olympia, WA 98504-7600 • 360-407-6000
711 for Washington Relay Service • Persons with a speech disability can call 877-833-6341

June 15, 2021

Port of Tacoma
ATTN: Mark Rettmann
P.O. Box 1837
Tacoma, WA 98401-1837

RE: Coastal Zone Consistency for the Port of Tacoma, Blair Waterway Berth Maintenance Dredging, Washington United Terminal and Husky Terminal, located in Pierce County, Washington.

Dear Mark Rettmann,

On February 22, 2021, the Port of Tacoma submitted a Certification of Consistency with the Washington State Coastal Zone Management Program (CZMP) for the above project.

The proposed project includes maintenance dredging at the Port of Tacoma's Washington United and Husky Terminals, with in-water disposal at the Commencement Bay open water disposal site or upland disposal at a permitted facility. The project is located in the Blair Waterway, Pierce County, Washington.

Pursuant to Section 307(c)(3) of the Coastal Zone Management Act of 1972 as amended, Ecology concurs with the Port of Tacoma's determination that the proposed work is consistent with Washington's CZMP.

If you have any questions regarding Ecology's consistency determination, please contact Laura Inouye at (360) 407-6165.

YOUR RIGHT TO APPEAL

You have a right to appeal this decision to the Pollution Control Hearing Board (PCHB) within 30 days of the date of receipt of this decision. The appeal process is governed by Chapter 43.21B RCW and Chapter 371-08 WAC. "Date of receipt" is defined in RCW 43.21B.001(2).

To appeal you must do all of the following within 30 days of the date of receipt of this decision:

- File your appeal and a copy of this decision with the PCHB (see addresses below). Filing means actual receipt by the PCHB during regular business hours.

- Serve a copy of your appeal and this decision on Ecology in paper form - by mail or in person. (See addresses below.) E-mail is not accepted.

You must also comply with other applicable requirements in Chapter 43.21B RCW and Chapter 371-08 WAC.

ADDRESS AND LOCATION INFORMATION

Street Addresses	Mailing Addresses
Department of Ecology Attn: Appeals Processing Desk 300 Desmond Drive SE Lacey, WA 98503 **Pollution Control Hearings Board** 1111 Israel RD SW STE 301 Tumwater, WA 98501	**Department of Ecology** Attn: Appeals Processing Desk PO Box 47608 Olympia, WA 98504-7608 **Pollution Control Hearings Board** PO Box 40903 Olympia, WA 98504-0903

Sincerely,

Brenden McFarland, Section Manager
Environmental Review and Transportation Section
Shorelands and Environmental Assistance Program

e-cc: Jacalen Printz, Corps of Engineers
ECY RE FEDPERMITS
Loree' Randall – HQ, SEA

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
PO Box 47600 • Olympia, WA 98504-7600 • 360-407-6000
711 for Washington Relay Service • Persons with a speech disability can call 877-833-6341

June 1, 2021

Port of Tacoma
ATTN: Mark Rettmann
P.O. Box 1837
Tacoma, WA 98401-1837

RE: Water Quality Certification Order No. **20113** for Corps Reference No. **NWS-2020-1017-WRD**, Port of Tacoma, Blair Waterway Berth Maintenance Dredging, Washington United Terminal and Husky Terminal, Pierce County, Washington

Dear Mark Rettmann:

On February 23, 2021, the Port of Tacoma submitted a request for a Section 401 Water Quality Certification (WQC) under the federal Clean Water Act for the Blair Waterway Berth Maintenance Dredging, Washington United Terminal and Husky Terminal, Pierce County, Washington. The Department of Ecology considered the request valid on February 24, 2021.

On behalf of the state of Washington, the Department of Ecology certifies that the work described in the Section 401 Request and supporting documents complies with applicable provisions of Sections 301, 302, 303, 306, and 307 of the Clean Water Act, as amended, and applicable state laws. This WQC is subject to the conditions contained in the enclosed Order.

Please ensure that anyone doing work under this Order has read, is familiar with, and is able to follow all of the provisions within the attached Order.

If you have any questions about this decision, please contact Laura Inouye at (360) 515-8213. The enclosed Order may be appealed by following the procedures described within the Order.

Sincerely,

Brenden McFarland, Section Manager
Environmental Review and Transportation Section
Shorelands and Environmental Assistance Program

Enclosure

e-cc: Jacalen Printz, Corps of Engineers
Loree' Randall, Ecology, HQ SEA
ECY RE FEDPERMITS

IN THE MATTER OF GRANTING A WATER QUALITY CERTIFICATION TO Port of Tacoma pursuant to 33 U.S.C. 1341 (FWPCA § 401), RCW 90.48.120, RCW 90.48.260 and Chapter 173-201A WAC	)))))))	**ORDER # 20113** **Corps Reference No. NWS-2020-1017-WRD** Port of Tacoma, Blair Waterway Berth Maintenance Dredging, Washington United Terminal and Husky Terminal, located in Pierce County, Washington.

Port of Tacoma
ATTN: Mark Rettmann
PO Box 1837
Tacoma, WA 98401-1837

On September 15, 2020, Port of Tacoma submitted a pre-filing meeting request to the Department of Ecology (Ecology). The Port of Tacoma then on February 23, 2021, submitted a request for a Section 401 Water Quality Certification (WQC) under the federal Clean Water Act for the Blair Waterway Berth Maintenance Dredging, Pierce County, Washington. On February 24, 2021, the Port submitted additional information and Ecology considered the request valid on this date. The U.S. Army Corps of Engineers (Corps) issued a joint public notice with Ecology on March 16, 2021.

The proposed project entails dredging of an estimated 26,890 cy of sediment mounds (high spots) and shallower berth elevations to restore the authorized depths (-51 ft. MLLW plus 1 ft. incidental overdredge). This includes 8,080 cy from Husky Terminal, and 18,810 cy from Washington United Terminal. Material deemed suitable by the Dredge Material Management Program (DMMP) will be disposed of at the Commencement Bay open-water dredge material disposal site. Unsuitable material will be disposed of at a permitted upland location.

The project is located within the Blair Waterway in section SW35, Township 21, range 03, in WRIA No. 10 (Puyallup-White).

AUTHORITIES

In exercising authority under 33 U.S.C. § 1341, RCW 90.48.120, and RCW 90.48.260, Ecology has reviewed this WQC request pursuant to the following:

1. Conformance with applicable water quality-based, technology-based, and toxic or pretreatment effluent limitations as provided under 33 U.S.C. §§1311, 1312, 1313, 1316, and 1317;

2. Conformance with the state water quality standards contained in Chapter 173-201A WAC and authorized by 33 U.S.C. §1313 and by Chapter 90.48 RCW, and with other applicable state laws;

3. Conformance with the provision of using all known, available, and reasonable methods to prevent and control pollution of state waters as required by RCW 90.48.010; and,

4. Conformance with Washington's prohibition on discharges that cause or tend to cause pollution of waters of the state of Washington. RCW 90.48.080.

With this Water Quality Certification (WQC) Order, Ecology is granting with conditions, the Port of Tacoma's request for a Section 401 Water Quality Certification for the Blair Waterway Berth Maintenance Dredging project. Ecology has determined that the proposed discharges will comply with all applicable state water quality requirements, provided the project is conducted in accordance with the Section 401 Water Quality Certification Request Ecology received on February 23, 2021, and the supporting documentation referenced in the Table 1 below, **and the conditions of this Order**.

Table #1 – Supporting Documentation Received

Date Received	Document Type	Title & Date	Author
February 23, 2021	Joint Aquatic Resource Permit Application (JARPA)	*Washington State Joint Aquatic Resources Permit Application (JARPA) Form, February 22, 2021*	Port of Tacoma
March 8, 2021	SEPA DNS	*Determination of Nonsignificance WAC 197-11-970, signed March 5, 2021*	Port of Tacoma
February 22, 2021	Biological Evaluation	*Biological Evaluation, Blair Waterway Berth Maintenance Dredge, Washington United Terminal and Husky Terminal, Port of Tacoma, dated October 2020, revised February 2021*	Leon Environmental, LCC
February 24, 2021, March 16 and 18, 2021 (drafts), March 23, 2021 (final)	Water Quality Monitoring Plan	*Final Water Quality and Protection Plan, Blair Waterway Berth Maintenance Dredge, Washington United Terminal and Husky Terminal, dated March 22, 2021*	Port of Tacoma
April 16, 2021	Suitability Determination	*Suitability Determination and Antidegradation Assessment for Maintenance Dredging of the Port of Tacoma Blair Waterway Berth Areas in Tacoma, Washington (NWS-2020-1017-WRD), dated April 16, 2021*	DMMP

Issuance of this Section 401 Water Quality Certification for this proposal does not authorize the Port of Tacoma to exceed applicable state water quality standards (Chapter 173-201A WAC), ground water quality standards (Chapter 173-200 WAC) or sediment quality standards (Chapter 173-204 WAC). Furthermore, nothing in this Section 401 Water Quality Certification absolves the Port of Tacoma from liability for contamination and any subsequent cleanup of surface waters, ground waters, or sediments resulting from project construction or operations.

A. General Conditions

Clean Water Act (CWA) Section 401 certification is granted with conditions to the Port of Tacoma. Ecology has determined that any discharge from the proposed project will comply with water quality requirements, as defined by 40 CFR 121.1(n), subject to the following conditions pursuant to Section 33 USC §1341(d). Additionally, the following conditions shall be incorporated into the Corps permit and strictly adhered to by the Port of Tacoma. This WQC Order does not authorize direct, indirect, permanent, or temporary impacts to waters of the state or related aquatic resources, except as specifically provided for in conditions of this WQC Order.

Specific condition justifications and citations required by 40 CFR 121.7(d)(1) are provided below each condition in *italic text.*

1. In this WQC Order, the term "Project Proponent" shall mean the Port of Tacoma and its agents, assignees, and contractors.
   - *Justification – Ecology needs to identify that conditions of this WQC Order apply to anyone conducting work on behalf of the Project Proponent to ensure compliance with the water quality standards and other applicable state laws.*
   - *Citation – 40 CFR 121.1(j), Chapter 90.48 RCW, Chapter 90.48.080 RCW, Chapter 90.48.120 RCW, Chapter 90.48.260 RCW, Chapter 173-200 WAC, Chapter 173-201A WAC, and Chapter 173-225-010 WAC.*

2. All submittals required by this WQC Order shall be sent to Ecology Headquarters Office, Attn: Federal Permit Manager, via e-mail to fednotification@ecy.wa.gov and cc to laura.inouye@ecy.wa.gov. The submittals shall be identified with Order #20113 and include the Project Proponent's name, Corps reference number, project name, project contact, and the contact phone number.
   - *Justification – Ecology needs to identify where information and submittals are to be submitted to be in compliance with the requirements of this WQC Order.*
   - *Citation – 40 CFR 121, Chapter 90.48 RCW, Chapter 90.48.120 RCW, Chapter 90.48.260 RCW, Chapter 173-201A WAC, and Chapter 173-225-010 WAC.*

3. Work authorized by this WQC Order is limited to the work described in the WQC Request package received by Ecology on February 23, 2021, and the supporting documentation identified in Table 1 above.
   - *Justification – Ecology has the authority to prevent and control pollution of state waters. By authorizing a discharge into a water of the state, through a WQC,*

Ecology is certifying the project as proposed will not negatively impact our state's water quality. Therefore, it is imperative the project is conducted as it was presented during the review process. Any deviations from information within the WQC Request package and this WQC Order must be disclosed prior to the initiation of the planned work.

- *Citation –40 CFR 121, Chapter 90.48 RCW, Chapter 90.48.030 RCW, Chapter 90.48.120 RCW, Chapter 90.48.260 RCW, Chapter 173-200 WAC, Chapter 173-201A WAC, Chapter 173-204 WAC, and Chapter 173-225-010 WAC.*

4. The Project Proponent shall send (per condition A.2 above) a copy of the final Corps permit to Ecology's Federal Permit Manager within two weeks of receiving it.
   - *Justification - This condition is needed to verify that the Corps completed the permit process and an authorization has been issued. Additionally, it allows Ecology to ensure that all of the conditions of this WQC Order have be incorporated into the Corps Permit to protect water quality.*
   - *Citation – 40 CFR 121.10, Chapter 90.48 RCW, Chapter 90.48.260 and Chapter 173-201A.*

5. The Project Proponent shall keep copies of this WQC Order on the job site and readily available for reference by Ecology personnel, the construction superintendent, construction managers and lead workers, and state and local government inspectors.
   - *Justification – All parties (including on-site contractors) must be aware of and comply with the WQC Order for the protection of water quality.*
   - *Citation – 40 CFR 121.3, Chapter 90.48 RCW, Chapter 90.48.030 RCW, Chapter 173-201A WAC, and Chapter 173-225-010 WAC.*

6. The Project Proponent shall provide access to the project site and all mitigation sites upon request by Ecology personnel for site inspections, monitoring, and/or necessary data collection, to ensure that conditions of this Order are being met.
   - *Justification - Ecology must be able to investigate and inspect construction sites and facilities for compliance with all state rules and laws.*
   - *Citation - Chapter 90.48 RCW, Chapter 90.48.030 RCW, Chapter 90.48.090 RCW, Chapter 173-201A WAC, and Chapter 173-225-010 WAC.48*

7. The Project Proponent shall ensure that all project engineers, contractors, and other workers at the project site with authority to direct work have read and understand relevant conditions of this Order and all permits, approvals, and documents referenced in this Order. The Project Proponent shall provide Ecology a signed statement (see Attachment A for an example) from each signatory that s/he has read and understands the conditions of this Order and the above-referenced permits, plans, documents and approvals. These statements shall be provided to Ecology before construction begins.
   - *Justification - Ecology needs to ensure that anyone conducting work at the project, on behalf of the Project Proponent, are aware of and understand the required conditions*

of this WQC Order to ensure compliance with the water quality standards and other applicable state laws.

- *Citation – 40 CFR 121.1(j), Chapter 90.48 RCW, Chapter 90.48.030 RCW, Chapter 173-201A WAC, and Chapter 173-225-010 WAC.*

8. This Order does not authorize direct, indirect, permanent, or temporary impacts to waters of the state or related aquatic resources, except as specifically provided for in conditions of this Order.
   - *Justification - Ecology has the authority to prevent and control pollution of state waters, and to protect designated uses. By authorizing a discharge into a water of the state, through a water quality certification, we are certifying the project as proposed will not negatively impact our state's water quality and will comply with the state's water quality requirements. Therefore, it is imperative the project is conducted as it was presented during the review process, and as conditioned herein.*
   - *Citation - Chapter 90.48 RCW, Chapter 90.48.030 RCW, Chapter 173-201A WAC, Chapter 173-201A-300(2)(e)(i) WAC, Chapter 173-201A-310 WAC, Chapter 173-204-120 WAC, and Chapter 173-225-010 WAC.*

9. Failure of any person or entity to comply with the WQC Order may result in the issuance of civil penalties or other actions, whether administrative or judicial, to enforce the terms of this Order.
   - *Justification - Ecology must protect waters of the state from all discharges and potential discharges of pollution that can affect water quality to protect aquatic life and beneficial uses; civil penalties and other enforcement actions are the primary means of securing compliance with water quality requirements.*
   - *Citation – Chapter 90.48 RCW, Chapter 90.48.030 RCW, Chapter 90.48.037 RCW, Chapter 90.48.080 RCW, Chapter 90.48.120 RCW, Chapter 90.48.142 RCW, Chapter 90.48.144 RCW, and Chapter 173-225-010 WAC.*

B. Notification Requirements

1. The following notification shall be made via phone or e-mail (e-mail is preferred) to Ecology's Federal Permit Manager via e-mail to fednotification@ecy.wa.gov and cc to Laura.Inouye@ecy.wa.gov. Notifications shall be identified with Order #20113 and include the Project Proponent's name, Corps reference #, project name, project location, project contact and the contact's phone number.

   a. Immediately following a violation of state water quality standards or when the project is out of compliance with any of this Orders conditions.
   b. At least ten (10) days prior to all pre-construction meetings
   c. At least ten (10) days prior to conducting initial in-water work activities for each in-water work window.
   d. At least seven (7) days within each in-water work window.

- *Justification - Ecology must be aware of when a project starts and ends and whether there are any issues. This allows Ecology to evaluate compliance with the state water quality requirements.*
- *Citation – Chapter 90.48 RCW, Chapter 90.48.030 RCW, Chapter 173-201A WAC, Chapter 173-201A-300–330 WAC, Chapter 173-204 WAC, and Chapter 173-225-010 WAC.*

2. In addition to the phone or e-mail notification required under B.1.a. above, the Project Proponent shall submit a detailed written report to Ecology within five (5) days that describes the nature of the event, corrective action taken and/or planned, steps to be taken to prevent a recurrence, results of any samples taken, and any other pertinent information.
   - *Justification - Ensure the Project Proponent remains in full compliance with state water quality requirements for the duration of the project.*
   - *Citation – Chapter 90.48 RCW, Chapter 90.48.120 RCW, Chapter 173-201A WAC, and Chapter 173-225-010 WAC.*

C. Timing

1. This Order will expire on June 1, 2026.
   - *Justification – Certifications are required for any license or permit that authorizes an activity that may result in a discharge. Ecology needs to be able to specify how long the WQC Order will be in effect.*
   - *Citation – 40 CFR 121 and Chapter 173-225-010 WAC.*

2. In-water work shall be conducted between July 15 through February 15 of any year.
   - *Justification – This condition is reaffirming the project will take place during a time period that will not harm fish or other aquatic species.*
   - *Citation – Chapter 77.55 RCW, Chapter 90.48 RCW, Chapter 90.48.030 RCW, Chapter 90.48.080 RCW, Chapter 173-201A WAC, Chapter 173-201A-300 WAC, Chapter 173-201A-330 WAC, Chapter 173-225-010 WAC, and Chapter 220-660 WAC.*

3. Any project change that requires a new or revised Hydraulic Project Approval (HPA) from the Department of Fish and Wildlife should be sent to Ecology for review.
   - *Justification - This condition is requiring notification of any project changes to ensure the project meet's the state's Water Quality Standards. Additionally, an HPA may include additional BMPs that Ecology needs to be aware of.*
   - *Citation – Chapter 77.55 RCW, Chapter 90.48 RCW, Chapter 90.48.030 RCW, Chapter 90.48.080 RCW, Chapter 173-201A WAC, Chapter 173-201A-300 WAC, Chapter 173-201A-330 WAC, Chapter 173-225-010 WAC, and Chapter 220-660 WAC.*

D. Water Quality Monitoring & Criteria

1. This Order does not authorize the Project Proponent to exceed applicable turbidity standards beyond the limits established in WAC 173-201A-210(1)(e)(i).
   - *Justification – This condition provides citation to the appropriate water quality standard criteria to protect surface waters of the state. Ecology must protect waters of the state from all discharges and potential discharges of pollution that can affect water quality to protect aquatic life and beneficial uses.*
   - *Citation – Chapter 90.48 RCW, Chapter 90.48.030 RCW, Chapter 90.48.080 RCW, Chapter 173-201A WAC, Chapter 173-201A-300–330 WAC, Chapter 173-204-120 WAC, and Chapter 173-225-010 WAC.*

2. The Project Proponent shall conduct water quality monitoring as described in the approved *Final Water Quality and Protection Plan, Blair Waterway Berth Maintenance Dredge, Washington United Terminal and Husky Terminal* (hereafter referred to as the WQMP) prepared by the Port of Tacoma dated March 22, 2021.
   - *Justification – This condition is necessary to ensure that the monitoring as proposed by the Project Proponent and authorized by Ecology is conducted to protect water quality. Ecology must protect waters of the state from all discharges and potential discharges of pollution that can affect water quality to protect aquatic life and beneficial uses.*
   - *Citation – Chapter 90.48 RCW, Chapter 90.48.030 RCW, Chapter 90.48.080 RCW, Chapter 173-201A WAC, Chapter 173-201A-300–330 WAC, Chapter 173-204-120 WAC, and Chapter 173-225-010 WAC.*

3. Monitoring results shall be submitted weekly to the Ecology Federal Permit Manager, per condition A.2.
   - *Justification – This information is necessary for Ecology to determine if the project was implemented as approved by the WQC Order and that no adverse impacts to water quality or beneficial uses occurred.*
   - *Citation – Chapter 90.48 RCW, Chapter 90.48.030 RCW, Chapter 90.48.080 RCW, Chapter 173-201A WAC, Chapter 173-201A-300–330 WAC, Chapter 173-204-120 WAC, and Chapter 173-225-010 WAC.*

4. Visible turbidity anywhere beyond the temporary area of mixing (point of compliance) from the activity shall be considered an exceedance of the standard.
   - *Justification – This condition specifically informs the Project Proponent of when they would be out of compliance with the water quality standards and an obvious sign of water quality degradation. Ecology must protect waters of the state from all discharges and potential discharges of pollution that can affect water quality to protect aquatic life and beneficial uses.*

- *Citation – Chapter 90.48 RCW, Chapter 90.48.030 RCW, Chapter 90.48.080 RCW, Chapter 173-201A WAC, Chapter 173-201A-300–330 WAC, Chapter 173-204-120 WAC, and Chapter 173-225-010 WAC.*

5. If water quality exceedances for turbidity are observed outside the point of compliance, the Project Proponent or the contractor shall assess the cause of the water quality problem and take immediate action to modify or stop, contain, and correct the problem and prevent further water quality turbidity exceedances.
   - *Justification – Ecology must protect waters of the state from all discharges and potential discharges of pollution and know if there are exceedances of the water quality standards that protect aquatic life and beneficial uses.*
   - *Citation – Chapter 90.48 RCW, Chapter 90.48.030 RCW, Chapter 90.48.080 RCW, Chapter 173-201A WAC, Chapter 173-201A-300–330 WAC, Chapter 173-204-120 WAC, and Chapter 173-225-010 WAC.*

E. <u>Dredging and Disposal</u>

1. All dredging is to be done using a mechanical (clamshell) dredge.
   - *Justification – Ecology has reviewed the project and the BMPs for a specific type of dredging. Changes to the dredging method would require different BMPs. If new dredging methods are proposed, a new WQC pre-filing meeting request, followed by a new WQC request (after requisite 30-days) is required.*
   - *Citation – 40 CFR 121, Chapter 90.48 RCW, Chapter 90.48.030 RCW, Chapter 90.48.080 RCW, Chapter 90.52-040 RCW, Chapter 90.54.020(2)(b) RCW, Chapter 173-201A WAC, Chapter 173-201A-240(5)(b) WAC, and Chapter 173-204-400(2).*

2. All suitable dredged material will be disposed of by bottom dump barge at the Commencement Bay open-water disposal site.
   - *Justification – Ecology has reviewed the project and the BMPs for a specific type of disposal technique and disposal location. If different in-water disposal sites are proposed, a new WQC pre-filing meeting request, followed by a new WQC request (after requisite 30-days) is required.*
   - *Citation – 40 CFR 121, Chapter 90.48 RCW, Chapter 90.48.030 RCW, Chapter 90.48.080 RCW, Chapter 90.52-040 RCW, Chapter 90.54.020(2)(b) RCW, Chapter 173-201A WAC, Chapter 173-201A-240(5)(b) WAC, and Chapter 173-204-400(2).*

3. All unsuitable material will be transloaded at a permitted facility and disposed of at a permitted upland disposal site.
   - *Justification – Use of a permitted transloading facility ensures that appropriate BMPs, including appropriate containment and spills plans, are implemented. Additionally, use of a permitted disposal location ensures appropriate BMPs will be implemented to prevent contaminants from migrating into groundwater or surface waters.*

- *Citation – 40 CFR 121, Chapter 90.48 RCW, Chapter 90.48.030 RCW, Chapter 90.48.080 RCW, Chapter 90.52-040 RCW, Chapter 90.54.020(2)(b) RCW, Chapter 173-200 WAC, Chapter 173-201A WAC, Chapter 173-201A-240(5)(b) WAC, and Chapter 173-204-400(2).*

4. Dredging operations shall be conducted in a manner that minimizes the disturbance and siltation of adjacent waters and prevents the accidental discharge of petroleum products, chemicals or other toxic or deleterious substances into state waters.
   - *Justification – Ecology must protect waters of the state from all discharges and potential discharges of pollution that can affect water quality to protect aquatic life and beneficial uses.*
   - *Citation – Chapter 90.48 RCW, Chapter 90.48.030 RCW, Chapter 90.48.080 RCW, Chapter 90.56 RCW, Chapter 173-201A WAC, Chapter 173-201A-300–330 WAC, Chapter 173-204-120 WAC, Chapter 173-225-010 WAC.*

5. Dredged material shall not be temporarily or permanently stockpiled below the OHWM.
   - *Justification – Stockpiles below the OHWM can discharge excess sediment to waters of the state and degrade water quality. Ecology must protect waters of the state from all discharges and potential discharges of pollution that can affect water quality to protect aquatic life and beneficial uses.*
   - *Citation – Chapter 90.48 RCW, Chapter 90.48.030 RCW, Chapter 90.48.080 RCW, Chapter 173-201A WAC, Chapter 173-201A-300–330 WAC, Chapter 173-204-120 WAC, and Chapter 173-225-010 WAC.*

6. All debris larger than two (2) feet in any dimension shall be removed from the dredged sediment prior to disposal at the open water site. Similar-sized debris floating in the dredging or disposal area shall be removed.
   - *Justification – Ecology must be assured that the Project Proponent is managing and disposing of material to protect waters of the state from all discharges and potential discharges of pollution that can affect water quality to protect aquatic life and beneficial uses.*
   - *Citation – Chapter 90.48 RCW, Chapter 90.48.030 RCW, Chapter 90.48.080 RCW, Chapter 173-201A WAC, Chapter 173-201A-300–330 WAC, Chapter 173-204-120 WAC, and Chapter 173-225-010 WAC.*

7. The *Dredging and Disposal Workplan* (Workplan) shall include the following:
   a. General information including schedule, primary contact, and hours of operation
   b. Dredged quantities and disposal location, including any upland locations.
   c. Dredging procedures and sequence
   d. Equipment list
   e. A description of the BMPs to be used for dredging, dewatering, transloading, and disposal.
   - *Justification - Ecology has reviewed the project and the BMP prior to the contractor being brought on board, therefore we need to obtain specific information regarding*

dredging and disposal plan to ensure that the specific type of dredging, disposal technique and disposal location within the Workplan. This information will allow Ecology to ensure the project will comply with water quality standards. Also if there have been major changes to the original proposed dredging and disposal, work must not proceed and a new WQC pre-filing meeting request, followed by a new WQC request (after requisite 30-days) is required.

- *Citation – CFR 121, Chapter 70A-200 RCW, Chapter 77.55 RCW, Chapter 79.02.30040 RCW, Chapter 90.48 RCW, Chapter 90.48.030 RCW, Chapter 90.48.080 RCW, Chapter 90.52-040 RCW, Chapter 90.54.020(2)(b) RCW, Chapter 173-201A WAC, Chapter 173-201A-240(5)(b)WAC, Chapter 173-201A-300 WAC, Chapter 173-201A-330 WAC, Chapter 173-204-400(2) WAC, Chapter 173-225-010 WAC, and Chapter 220-660 WAC.*

8. A pre-dredge meeting is required to be convened prior to the start of dredging. A **Dredging and Disposal Workplan** (Workplan) shall be submitted to Ecology to the address shown in Condition A2 two weeks prior to the pre-dredge meeting.
   - *Justification – Ecology would like to meet with the Project Proponent and contractor to go over the Workplan prior start of work to ensure that the plan reflects the project that has been authorized by this WQC Order. If there has been major changes work must not proceed and a new WQC pre-filing meeting request, followed by a new WQC request (after requisite 30-days) is required.*
   - *Citation – CFR 121, Chapter 70A-200 RCW, Chapter 77.55 RCW, Chapter 79.02.30040 RCW, Chapter 90.48 RCW, Chapter 90.48.030 RCW, Chapter 90.48.080 RCW, Chapter 90.52-040 RCW, Chapter 90.54.020(2)(b) RCW, Chapter 173-201A WAC, Chapter 173-201A-240(5)(b) WAC, Chapter 173-201A-300 WAC, Chapter 173-201A-330 WAC, Chapter 173-204-400(2) WAC, Chapter 173-225-010 WAC, and Chapter 220-660 WAC.*

9. All dredging and disposal shall have a valid suitability determination prior to in-water work. This area ranks moderate in potential for contamination and the recency determination extends through October 2025. Contact the DMMO for a possible extension on this suitability determination.
   - *Justification – The DMMP process confirms that material is suitable for in-water disposal and that the project meets state antidegradation regulations.*
   - *Citation – Chapter 173-201A WAC, Chapter 173-201A-230 WAC, Chapter 173-201A-240(1) WAC, Chapter 173-201A-240(2) WAC, Chapter 173-204 WAC, Chapter 173-204-110–120 WAC, Chapter 173-204-400(2) WAC, Chapter 173-204-410(7) WAC, Chapter 173-204-350(d), and Chapter 173-225 WAC.*

10. Only approximately 29,890 cubic yards of dredged material is allowed each maintenance dredge (8,080 cy for Husky, 18,810 CY for Washington United Terminal). Note: If additional material needs to dredging and dispose of, a new WQC pre-filing meeting request, followed by a new WQC request (after requisite 30-days) is required.

- *Justification – The volume of material is limited to what was characterized under the DMMP process.*
- *Citation – Chapter 173-201A WAC, Chapter 173-201A-230 WAC, Chapter 173-201A-240(1) WAC, Chapter 173-201A-240(2) WAC, Chapter 173-204 WAC, Chapter 173-204-110–120 WAC, Chapter 173-204-400(2) WAC, Chapter 173-204-410(7) WAC, Chapter 173-204-350(d), and Chapter 173-225 WAC.*

11. Barges shall not be allowed to ground-out during in-water construction.
    - *Justification – This condition protects shallow water habitat from damage.*
    - *Citation – Chapter 173-201A-300(2)(e)(i) WAC, Chapter 173-201A-310 WAC, and Chapter 173-204-120 WAC.*

12. Barges shall be kept free of material that could be blown into the water.
    - *Justification – Release of debris or garbage is considered polluting matter and prohibited from being discharged into waters of the state.*
    - *Citation – Chapter 90.48 RCW, Chapter 70A-200 RCW, and Chapter 79.02-300 RCW.*

F. Emergency/Contingency Measures

1. The Project Proponent shall develop and implement a spill prevention and containment plan for this project.
    - *Justification – Ecology must ensure that the Project Proponent has a plan to prevent pollution from entering waterways. Ecology must protect waters of the state from all discharges and potential discharges of pollution that can affect water quality to protect aquatic life and beneficial uses.*
    - *Citation – Chapter 90.48 RCW, Chapter 90.48.030 RCW, Chapter 90.48.080 RCW, Chapter 90.56 RCW, Chapter 90.56.280 RCW, Chapter 173-201A WAC, Chapter 173-201A-300–330 WAC, Chapter 173-204-120 WAC, Chapter 173-225-010 WAC, and Chapter 173-303-145 WAC.*

2. The Project Proponent shall have adequate and appropriate spill response and cleanup materials available on site to respond to any release of petroleum products or any other material into waters of the state.
    - *Justification – Ecology must have assurance that the Project Proponent has the material readily available in order to address any spills that might occur to protect waters of the state. Ecology must protect waters of the state from all discharges and potential discharges of pollution that can affect water quality to protect aquatic life and beneficial uses.*
    - *Citation – Chapter 90.48 RCW, Chapter 90.48.030 RCW, Chapter 90.48.080 RCW, Chapter 90.56 RCW, Chapter 90.56.280 RCW, Chapter 173-201A WAC, Chapter 173-201A-300–330 WAC, Chapter 173-204-120 WAC, Chapter 173-225-010 WAC, and Chapter 173-303-145 WAC.*

3. Fuel hoses, oil drums, oil or fuel transfer valves and fittings, etc., shall be checked regularly for drips or leaks, and shall be maintained and stored properly to prevent spills into state waters.
    - *Justification – Ecology must protect waters of the state from all discharges and potential discharges of pollution that can affect water quality to protect aquatic life and beneficial uses.*
    - *Citation – Chapter 90.48 RCW, Chapter 90.48.030 RCW, Chapter 90.48.080 RCW, Chapter 90.56 RCW, Chapter 90.56.280 RCW, Chapter 173-201A WAC, Chapter 173-201A-300–330 WAC, Chapter 173-204-120 WAC, Chapter 173-225-010 WAC, and Chapter 173-303-145 WAC.*

4. Work causing distressed or dying fish and discharges of oil, fuel, or chemicals into state waters or onto land with a potential for entry into state waters is prohibited. If such work, conditions, or discharges occur, the Project Proponent shall notify Ecology's Federal Permit Manager per condition A2 and immediately take the following actions:
    a. Cease operations at the location of the non-compliance.
    b. Assess the cause of the water quality problem and take appropriate measures to correct the problem and prevent further environmental damage.
    c. In the event of a discharge of oil, fuel, or chemicals into state waters, or onto land with a potential for entry into state waters, containment and cleanup efforts shall begin immediately and be completed as soon as possible, taking precedence over normal work. Cleanup shall include proper disposal of any spilled material and used cleanup materials.
    d. Immediately notify Ecology's Regional Spill Response Office and the Washington State Department of Fish & Wildlife with the nature and details of the problem, any actions taken to correct the problem, and any proposed changes in operation to prevent further problems.
    e. Immediately notify the National Response Center at 1-800-424-8802, for actual spills to water only.
    - *Justification – This condition is necessary to prevent oil and hazardous materials spills from causing environmental damage and to ensure compliance with water quality requirements. The sooner a spill is reported, the quicker it can be addressed, resulting in less harm. Ecology must protect waters of the state from all discharges and potential discharges of pollution that can affect water quality to protect aquatic life and beneficial uses.*
    - *Citation – Chapter 90.48 RCW, Chapter 90.48.030 RCW, Chapter 90.48.080 RCW, Chapter 90.56 RCW, Chapter 90.56.280 RCW, Chapter 173-201A WAC, Chapter 173-201A-300–330 WAC, Chapter 173-204-120 WAC, Chapter 173-225-010 WAC, and Chapter 173-303-145 WAC.*

5. Notify Ecology's Regional Spill Response Office immediately if chemical containers (e.g. drums) are discovered on-site or any conditions present indicating disposal or burial of chemicals on-site that may impact surface water or ground water.

- *Justification – Oil and hazardous materials spills cause environmental damage. The sooner a spill is reported, the quicker it can be addressed, resulting in less harm. Ecology must protect waters of the state from all discharges and potential discharges of pollution that can affect water quality to protect aquatic life and beneficial uses.*
- *Citation – Chapter 90.48 RCW, Chapter 90.48.030 RCW, Chapter 90.48.080 RCW, Chapter 90.56 RCW, Chapter 90.56.280 RCW, Chapter 173-201A WAC, Chapter 173-201A-300–330 WAC, Chapter 173-204-120 WAC, Chapter 173-225-010 WAC, and Chapter 173-303-145 WAC.*

YOUR RIGHT TO APPEAL

You have a right to appeal this Order to the Pollution Control Hearing Board (PCHB) within 30 days of the date of receipt of this Order. The appeal process is governed by Chapter 43.21B RCW and Chapter 371-08 WAC. "Date of receipt" is defined in RCW 43.21B.001(2).

To appeal you must do both of the following within 30 days of the date of receipt of this Order:

- File your appeal and a copy of this Order with the PCHB (see addresses below). Filing means actual receipt by the PCHB during regular business hours.
- Serve a copy of your appeal and this Order on Ecology in paper form - by mail or in person. (See addresses below.) E-mail is not accepted.

You must also comply with other applicable requirements in Chapter 43.21B RCW and Chapter 371-08 WAC.

ADDRESS AND LOCATION INFORMATION

Street Addresses	Mailing Addresses
Department of Ecology Attn: Appeals Processing Desk 300 Desmond Drive SE Lacey, WA 98503 **Pollution Control Hearings Board** 1111 Israel Road SW STE 301 Tumwater, WA 98501	**Department of Ecology** Attn: Appeals Processing Desk PO Box 47608 Olympia, WA 98504-7608 **Pollution Control Hearings Board** PO Box 40903 Olympia, WA 98504-0903

CONTACT INFORMATION

Please direct all questions about this Order to:

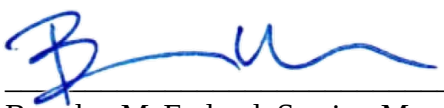
Laura Inouye
Department of Ecology
Headquarters Office
PO Box 67600
Olympia, WA 98504-7600
(360) 407-6165
Laura.inouye@ecy.wa.gov

MORE INFORMATION

- **Pollution Control Hearings Board Website**
  http://www.eluho.wa.gov/Board/PCHB
- **Chapter 43.21B RCW - Environmental and Land Use Hearings Office – Pollution Control Hearings Board**
  http://app.leg.wa.gov/RCW/default.aspx?cite=43.21B
- **Chapter 371-08 WAC – Practice And Procedure**
  http://app.leg.wa.gov/WAC/default.aspx?cite=371-08
- **Chapter 34.05 RCW – Administrative Procedure Act**
  http://app.leg.wa.gov/RCW/default.aspx?cite=34.05
- **Chapter 90.48 RCW – Water Pollution Control**
  http://app.leg.wa.gov/RCW/default.aspx?cite=90.48
- **Chapter 173.204 WAC – Sediment Management Standards**
  http://apps.leg.wa.gov/WAC/default.aspx?cite=173-204
- **Chapter 173-200 WAC – Water Quality Standards for Ground Waters of the State of Washington**
  http://apps.leg.wa.gov/WAC/default.aspx?cite=173-200
- **Chapter 173-201A WAC – Water Quality Standards for Surface Waters of the State of Washington**
  http://apps.leg.wa.gov/WAC/default.aspx?cite=173-201A

SIGNATURE

Dated this first day of June, 2021 at the Department of Ecology, Olympia, Washington



Brenden McFarland, Section Manager
Environmental Review and Transportation Section
Shorelands and Environmental Assistance Program

Attachment A
Statement of Understanding
Water Quality Certification Conditions

Blair Waterway Berth Maintenance Dredging, Washington United Terminal and Husky Terminal
Mark Rettmann, Port of Tacoma
Water Quality Certification Order No. **20113**
and
Corps Reference No. **NWS-2020-1017-WRD**

I, _____, state that I will be involved as an agent or contractor for The Port of Tacoma in the site preparation and/or construction of the Blair Waterway Berth Maintenance Dredging, Washington United Terminal and Husky Terminal located at Commencement Bay, Pierce County, Washington. I further state that I have read and understand the relevant conditions of Washington Department of Ecology Water Quality Certification Order No. 20113 and the applicable permits and approvals referenced therein which pertain to the project-related work for which I am responsible.

Signature	Date
Title	Phone
Company	

United States Department of the Interior
FISH AND WILDLIFE SERVICE
Washington Fish and Wildlife Office
510 Desmond Dr. S.E., Suite 102
Lacey, Washington 98503

In Reply Refer To:
01EWFW00-2021-I-0865

Michelle Walker, Chief Regulatory Branch
Seattle District, U.S. Army Corps of Engineers
ATTN: Jacalen Printz
P.O. Box 3755
Seattle, Washington 98124-3755

Dear Ms. Walker:

Subject: Port of Tacoma Blair Waterway Berth Maintenance Dredging (NWS-2020-1017-WRD)

This letter is in response to your March 30, 2021, request for consultation on the proposed action in Blair Waterway, Port of Tacoma, and Commencement Bay, Tacoma, Pierce County, Washington. The U.S. Army Corps of Engineers (Corps) has determined that this action "may affect, but is not likely to adversely affect" federally listed species. We received your letter, Biological Evaluation, and project drawings, providing information in support of "may affect, not likely to adversely affect" determinations, on March 30, 2021. Specifically, the Corps requested informal consultation pursuant to section 7(a)(2) of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq*.) (ESA) for bull trout (*Salvelinus confluentus*) and marbled murrelet (*Brachyrampus marmoratus*), as well as bull trout designated critical habitat.

Project Description:

The Corps proposes to issue a permit under Section 404 of the Clean Water Act to the Port of Tacoma for a Blair Waterway Maintenance Dredging project. The Port will restore previously dredged depths (-51 ft MLLW) within Blair Waterway by dredging approximately 27,000 cy of sediment. The dredging will use a crane or excavator-operated clamshell bucket, however, hydraulic dredging (suction dredging) may also be selected by the contractor. Dredging operations will occur during approved in-water work window (July 16 – February 14), and are expected to occur approximately one to two weeks at each location. The Port will dispose dredged material at the Commencement Bay open-water disposal site, which is managed under the Dredge Material Management Program (DMMP[1]).

[1] https://www.nws.usace.army.mil/Missions/Civil-Works/Dredging/.

Sufficient information has been provided to determine the effects of the proposed action and to conclude whether it would adversely affect federally listed species and/or designated critical habitat. Our concurrence is based on information provided by the action agency, best available science, and complete and successful implementation of the conservation measures included by the action agency.

EFFECTS

Bull Trout

Puget Sound marine waters are used by adult bull trout for feeding, migrating, and overwintering. However, low numbers of bull trout use the action area and, due to the project timing and localized effects, it is extremely unlikely that bull trout will be present during project activities. It is therefore extremely unlikely that bull trout will be exposed to stressors caused by the proposed action making adverse effects discountable. The U.S. Fish and Wildlife Service (USFWS) concurs with the determination that the proposed action is not likely to adversely affect bull trout.

Marbled Murrelet

The action will result in temporary impacts to water quality, including potential increases in levels of turbidity and contaminants, however these effects will be intermittent and limited in physical extent and duration. Effects will not be measureable (insignificant) and will not significantly disrupt normal behaviors (i.e., the ability to successfully feed, move, and/or shelter) and are therefore considered insignificant.

Bull Trout Habitat and Prey

The final revised rule designating bull trout critical habitat (75 FR 63898 [October 18, 2010]) identifies nine Primary Constituent Elements (PCEs) essential for the conservation of the species. The 2010 designation of critical habitat for bull trout uses the term PCE. The new critical habitat regulations (81 FR 7214) replace this term with physical or biological features (PBFs). This shift in terminology does not change the approach used in conducting our analyses, whether the original designation identified PCEs, physical or biological features, or essential features. In this letter, the term PCE is synonymous with PBF or essential features of critical habitat.

The following PCEs are in the action area. Of the PCEs present, some will not be affected by the proposed action.

PCE 2: *Migration 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.*

- The action may temporarily introduce an impediment or barrier within migration habitat; however, it will not preclude bull trout movement through the area, either during or after construction, and any effects will be temporary. The migration habitat will not be permanently altered, destroyed, or degraded.

PCE 3: *An abundant food base, including terrestrial organisms of riparian origin, aquatic macroinvertebrates, and forage fish.*

- The action may temporarily reduce the food base via a small reduction of prey resources, degradation of aquatic habitat, and/or removal or alteration of riparian vegetation. However, the impacts will be temporary and/or components of the project design will avoid, reduce, or compensate for them.

PCE 4: *Complex river, stream, lake, reservoir, and marine shoreline aquatic environments, and processes that establish and maintain these aquatic environments, with features such as large wood, side channels, pools, undercut banks and unembedded substrates, to provide a variety of depths, gradients, velocities, and structure.*

- The action will have no effect on this PCE.

PCE 5: *Water temperatures ranging from 2 to 15 °C (36 to 59 °F), with adequate thermal refugia available for temperatures that exceed 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.*

- The action will have no effect on this PCE.

PCE 7: *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 action will have no effect on this PCE.

PCE 8: *Sufficient water quality and quantity such that normal reproduction, growth, and survival are not inhibited.*

- The action will result in temporary impacts to water quality, including potential increases in levels of turbidity and contaminants; however, it will not preclude bull trout movement through the area, either during or after construction, and any effects will be temporary.

PCE 9: *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 temporally and spatially isolated from bull trout.*

- The action will have no effect on this PCE.

CONCLUSION

This concludes consultation pursuant to the regulations implementing the ESA (50 CFR 402.13). Our review and concurrence with your effect determinations is based on implementation of the project as described. It is the responsibility of the federal action agency to ensure that the projects they authorize or carry out are in compliance with the regulatory permit and ESA. If a permittee or the federal action agency deviates from the measures outlined in a permit or project description, the federal action agency has the obligation to reinitiate consultation and comply with section 7(d).

This project should be re-analyzed and re-initiation may be necessary if 1) new information reveals effects of the action that may affect listed species or critical habitat in a manner, or to an extent, not considered in this consultation, 2) if the action is subsequently modified in a manner that causes an effect to a listed species or critical habitat that was not considered in this consultation, and/or 3) a new species is listed or critical habitat is designated that may be affected by this project.

This letter constitutes a complete response by the USFWS to your request for informal consultation. A record of this consultation is on file at the Washington Fish and Wildlife Office, in Lacey, Washington. If you have any questions about this letter, or our shared responsibilities under the ESA, please contact Stacey Kilarski-Jacobson (stacey_kilarski-jacobson@fws.gov) or Lee Corum (lee_corum@fws.gov).

Sincerely,

for Brad Thompson, State Supervisor
Washington Fish and Wildlife Office

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
West Coast Region
1201 NE Lloyd Boulevard, Suite 1100
PORTLAND, OR 97232-1274

Refer to NMFS No:
WCRO-2021-00698

July 8, 2021

Michelle Walker
Chief, Regulatory Branch
U.S. Army Corps of Engineers Seattle District
P.O. Box 3755
Seattle, Washington 98124-3755

Re: Endangered Species Act Section 7(a)(2) Biological Opinion, and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Response for the Port of Tacoma Blair Waterway Berth Maintenance Dredging Washington United Terminal and Husky Terminal Project, Tacoma, Pierce County, Washington (HUC 171100190204) (NWS-2020-1017-WRDA)

Dear Ms. Walker:

Thank you for your letter of March 30, 2021, requesting initiation of consultation with NOAA's National Marine Fisheries Service (NMFS) pursuant to section 7 of the Endangered Species Act of 1973 (ESA) (16 U.S.C. 1531 et seq.) for Blair Waterway Berth Maintenance Dredging – Washington Unites Terminal and Husky Terminal, Port of Tacoma (NWS-2020-1017-WRDA). This consultation was conducted in accordance with the 2019 revised regulations that implement section 7 of the ESA (50 CFR 402, 84 FR 45016).

Thank you, also, for your request for consultation pursuant to the essential fish habitat (EFH) provisions in Section 305(b) of the Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. 1855(b)) for this action.

In the attached biological opinion, NMFS concludes that the proposed action is not likely to jeopardize the continued existence of Puget Sound (PS) Chinook salmon (*Oncorhynchus tshawytscha*), PS steelhead (*Oncorhynchus mykiss*), PS/Georgia Basin bocaccio rockfish (*Sebastes paucispinis*), yelloweye rockfish (*Sebastes ruberrimus*), humpback whales (*Megaptera novaeangliae*), Southern Resident killer whales (*Orcinus orca*), or result in the destruction or adverse modification of designated critical habitats.

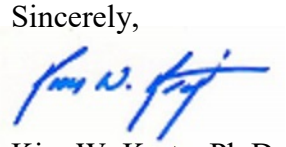
This document also includes the results of our analysis of the action's likely effects on essential fish habitat (EFH) pursuant to section 305(b) of the Magnuson-Stevens Fishery Conservation and Management Act (MSA), and includes two conservation recommendations to avoid, minimize, or otherwise offset potential adverse effects on EFH. These conservation recommendations are a subset of the ESA take statement's terms and conditions. Section 305(b) (4) (B) of the MSA requires Federal agencies to provide a detailed written response to NMFS within 30 days after receiving these recommendations.

In response to increased oversight of overall EFH program effectiveness by the Office of Management and Budget, NMFS established a quarterly reporting requirement to determine how many conservation recommendations are provided as part of each EFH consultation and how many are adopted by the action agency. Therefore, we request that in your statutory reply to the EFH portion of this consultation, you clearly identify the number of conservation recommendations accepted.

If the response is inconsistent with the EFH conservation recommendations, the Corps must explain why the recommendations will not be followed, including the scientific justification for any disagreements over the effects of the action and the recommendations.

Please contact Caitlin Imaki, of the Oregon Washington Coastal Office in Lacey, Washington, at caitlin.imaki@noaa.gov if you have any questions concerning this consultation, or if you require additional information.

Sincerely,



Kim W. Kratz. Ph.D
Assistant Regional Administrator
Oregon Washington Coastal Office

cc: Jacalen Printz, USACE

Endangered Species Act (ESA) Section 7(a)(2) Biological Opinion and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Response for the

Port of Tacoma Blair Waterway Berth Maintenance Dredging
Washington United Terminal and Husky Terminal Project
Tacoma, Pierce County, Washington
(HUC 171100190204) (NWS-2020-1017-WRDA)

NMFS Consultation Number: WCRO-2021-00698

Action Agency: U.S. Army Corps of Engineers – Seattle District

Affected Species and NMFS' Determinations:

ESA-Listed Species	ESA Status	Is the action likely to adversely affect the species?	Is the action likely to adversely affect the critical habitat?	Is the action likely to jeopardize the species?	Is the action likely to destroy or adversely modify critical habitat?
Puget Sound Chinook Salmon (*Oncorhynchus tshawytscha*)	T	Yes	Yes	No	No
Puget Sound Steelhead(*O. mykiss*)	T	Yes	Yes	No	No
Puget Sound/Georgia Basin boccacio rockfish (*Sebastes. paucispinis*)	E	No	NA	NA	NA
Puget Sound/Georgia Basin yelloweye rockfish (*S. ruberrimus*)	T	No	NA	NA	NA
Humpback whale, Central America DPS (*Megaptera novaeangliae*)	E	No	NA	NA	NA
Humpback whale, Mexico DPS (*Megaptera novaeangliae*)	T	No	NA	NA	NA
Southern Resident Killer Whale (*Orcinus orca*)	T	No	NA	NA	NA

Fishery Management Plan That Identifies EFH in the Project Area	Does Action Have an Adverse Effect on EFH?	Are EFH Conservation Recommendations Provided?
Pacific Coast Salmon	Yes	Yes
Pacific Coast Groundfish	Yes	No
Coastal Pelagics	Yes	No

Consultation Conducted By: National Marine Fisheries Service
West Coast Region

Issued By:

Kim W. Kratz, Ph.D
Assistant Regional Administrator
Oregon Washington Coastal Office

Date: July 8, 2021

TABLE OF CONTENTS

1. INTRODUCTION

This Introduction section provides information relevant to the other sections of this document and is incorporated by reference into Sections 2 and 3, below.

1.1 Background

The National Marine Fisheries Service (NMFS) prepared the biological opinion (opinion) and incidental take statement (ITS) portions of this document in accordance with section 7(b) of the Endangered Species Act (ESA) of 1973 (16 U.S.C. 1531 et seq.), and implementing regulations at 50 CFR 402, as amended.

We also completed an essential fish habitat (EFH) consultation on the proposed action, in accordance with section 305(b)(2) of the Magnuson-Stevens Fishery Conservation and Management Act (MSA) (16 U.S.C. 1801 et seq.) and implementing regulations at 50 CFR 600.

We completed pre-dissemination review of this document using standards for utility, integrity, and objectivity in compliance with applicable guidelines issued under the Data Quality Act (DQA) (section 515 of the Treasury and General Government Appropriations Act for Fiscal Year 2001, Public Law 106-554). The document will be available within two weeks at the NOAA Library Institutional Repository [https://repository.library.noaa.gov/welcome]. A complete record of this consultation is on file at the Oregon Washington Coastal Office in Lacey, Washington.

1.2 Consultation History

On March 20, 2021, NMFS received a request for informal consultation from the Seattle District, United States Army Corps of Engineers (USACE) on its proposal to authorize dredging by the Port of Tacoma, under its Section 404 Clean Water Act authority.

On April 21, 2021, NMFS received a change in request to formal consultation. Included in this request were a biological evaluation, and supplemental information from the applicant, Port of Tacoma, and their agent, Leon Environmental, LLC.

On April 26, 2021, after initial review of the consultation package by NMFS, and we determined it to be complete, and NMFS initiated formal consultation. NMFS evaluated the effects on seven listed species and determined five of the species and their designated critical habitat are not likely to be adversely affected. Species likely to be adversely affected are Puget Sound Chinook, and Puget Sound steelhead, and the effects are evaluated in the biological opinion. The basis for our determination on the remaining five species is presented in a separate section of the document.

1.3 Proposed Federal Action

Under the ESA, "action" means all activities or programs of any kind authorized, funded, or carried out, in whole or in part, by Federal agencies (50 CFR 402.02). Under MSA, Federal

action means any action authorized, funded, or undertaken, or proposed to be authorized, funded, or undertaken by a Federal Agency (50 CFR 600.910).

The USACE proposes to issue a permit under Section 404 of the Clean Water Act to the Port of Tacoma for a Blair Waterway Maintenance Dredging project. The Port intends to restore previously dredged depths (-51 feet MLLW) at two locations within Blair Waterway, Tacoma, Washington: Washington United Terminal (WUT) and Husky Terminal (Husky; Figure 1). Both locations are subtidal areas used to berth ships for the transfer of cargo into or out of the Port of Tacoma. At these two specific sites, sediment has accumulated and is interfering with safe navigation.

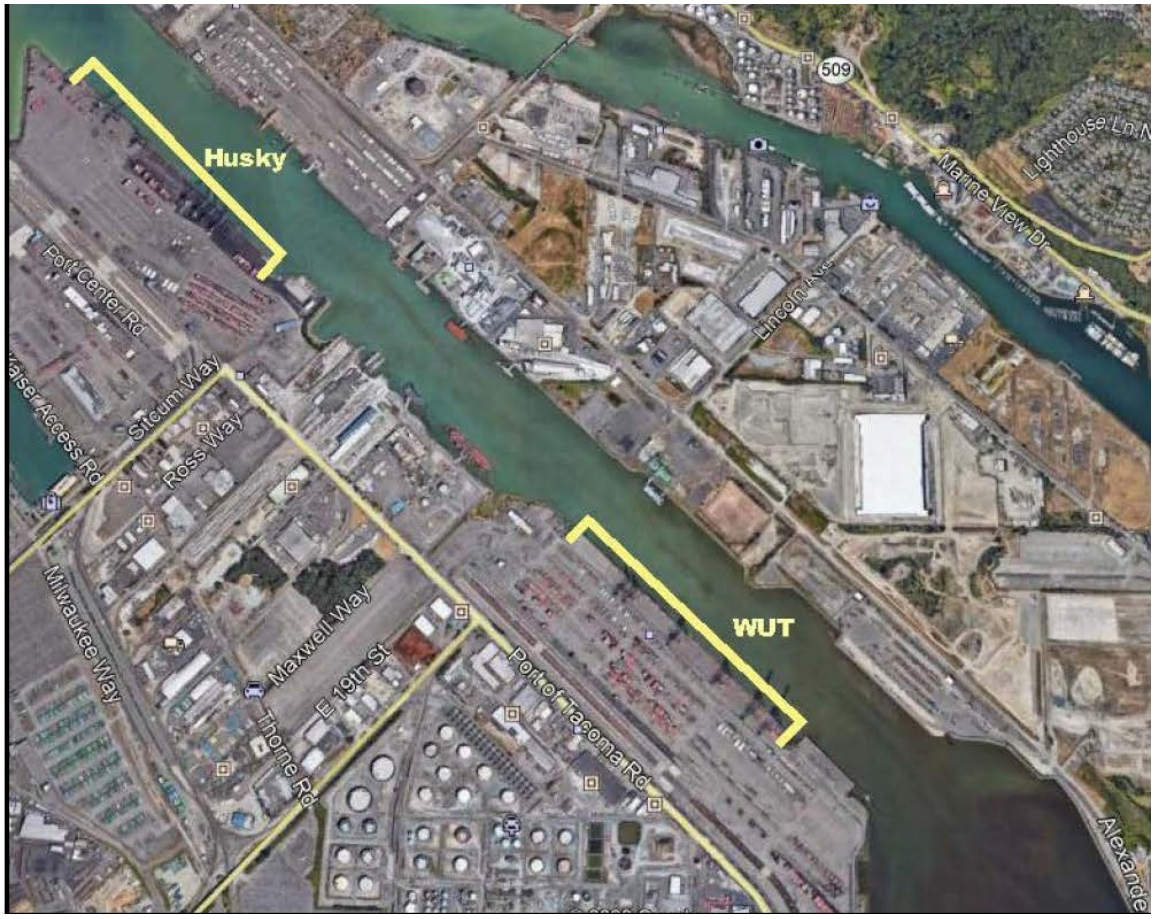


Figure 1. Location of dredging reaches (yellow for the 150-ft estimated maximum extent of effects outside of the dredging areas) at Husky and WUT terminals in Blair Waterway.

The Port intends to dispose of the dredged material at the Commencement Bay open-water disposal site, which is managed under the Dredge Material Management Program (DMMP[1]). The DMMP agencies have conclude that all of the material from Husky and WUT is suitable for

[1] https://www.nws.usace.army.mil/Missions/Civil-Works/Dredging/.

open-water disposal at Commencement Bay, as long as they are dredged together during the same dredge event (Blair Waterway SDM, 2021). The effects of sediment disposal at DMMP open-water disposal sites have already been considered in the programmatic formal consultation for their continued use through 2040 (NMFS 2015a), and as such, the use of DMMP open-water disposal sites for disposal of sediments are not evaluated as a part of the proposed action.

The Port is requesting to dredge an estimated area of 233,100 square feet (total volume of 27,000 cubic yards) from the two terminals to restore the authorized depth of -51 ft MLLW at each terminal, including a 1-ft over dredge (approximately 9,000 cy). The total volume proposed to be dredged from each terminal, including potential over dredge, is summarized in Table 1, below.

Table 1. Port of Tacoma Blair Waterway Project Dredged Material Volumes

Terminal	Authorized Depth (ft MLLW)	Proposed Dredge Volumes		Total Volume (cy)	Square feet (sf)
		Authorized Depth (cy)	1-ft Over Dredge (cy)		
Husky	-51	5,830	2,250	8,080	60,800
WUT	-51	12,440	6,370	18,810	172,300
Total		**18,270**	**8,620**	**26,890**	**233,100**

The Port proposes to conduct dredging using a crane or excavator-operated clamshell bucket, however, hydraulic dredging (suction dredging) may also be selected by the contractor. Each dredging cycle will involve a single "bite" by the clamshell bucket. When the clamshell bucket hits the seafloor, it will fully close and be slowly raised through the water column to the surface for placement onto a barge for transportation to the open water disposal site. Dredging operations are expected to occur approximately 1 to 2 weeks at each location. No other activity is included with the proposed maintenance dredging action.

Minimization measures and best management practices proposed by the applicant and described in the biological evaluation submitted by Port of Tacoma and its consultant, are considered parts of the proposed action to minimize adverse effects to ESA-listed species and their designated critical habitats. These measures and practices include the following:

- Dredging actions will be conducted during the Washington Department of Fish and Wildlife (WDFW)-approved in-water work window for Commencement Bay (July 16 – February 14), and will be conducted during standard daylight working hours.
- Upon advance notice, the Port will provide 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.
- Work dredging will occur well below MHHW. No additional or new habitat conversion will occur. There will be no dredging in intertidal or subtidal habitat. No intertidal or shallow subtidal habitat will be converted to deep subtidal. Dredging will remove targeted high-spots to maintain berthing areas at previously authorized and dredged depths.
- No dredging will occur in sand lance, surf smelt, or herring spawning beds.
- No dredging will occur in areas with seagrass or kelp.

- The Port will request the contractor utilize real-time positioning control during dredging operations to minimize over dredging.

A suite of best management practices (BMPs) will be employed to minimize sediment loss and turbidity generation during dredging and dewatering, including but not limited to the following:

- Elimination of multiple bites while the dredge bucket is on the bottom
- No stockpiling of dredge material below the ordinary high water line
- Use of spill plates or equivalent controls during transloading
- Slowing the velocity (i.e., cycle time) of the ascending loaded clamshell bucket through the water column
- Pausing the dredge bucket near the bottom while descending and near the water line while ascending
- The barge will be managed such that the dredged sediment load does not exceed the capacity of the barge. The load will be placed in the barge to maintain an even keel and avoid listing. Hay bales or filter fabric will be placed over the barge scuppers to filter suspended sediment from the return water.
- The barge used to transport dredged material to the disposal site will have tightly sealing doors and compartments and have minimal 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 two terminals. Barges will be moored over subtidal substrate avoiding grounding. No vegetated shallows exist within the vicinity of the proposed maintenance dredging locations.
- A written spill prevention, control and countermeasures (SPCC) plan will be prepared by the contractor for activities that include the use of heavy equipment. The plan will describe measures to prevent or reduce impacts from accidental leaks or spills, and will describe 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 will be available on-site during construction and stored in a location that facilitates immediate deployment, if needed.
- No solvents or other chemicals will be used in or over the water during the operation of the proposed action.
- 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 its immediate deployment in the event of a spill.

The proposed action includes all dredging operations, moving and handling of the dredged material, and open-water disposal of that material. Because the purpose of this dredge is to accommodate current vessels rather than to increase vessel use, we determined there are no new longer-term activities that would directly or indirectly affect ESA-listed species that would be considered actions caused by the proposed action, and we have not included any actions other than those described above in our ESA or EFH analyses. Effects of existing vessel use of the Blair Waterway are part of the environmental baseline, and are presented in that portion of the biological opinion that presents the baseline. No element of the action as we understand it will cause additional vessel-related effects at this location.

1.4 Action Area

"Action area" means all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action (50 CFR 402.02).

The action area is determined by the greatest extent of physical, chemical, and biological effects stemming from the project. For the proposed action, there is short-term construction- related effects. The greatest extent of physical, chemical or biological effects stemming from the proposed action is associated with proposed construction activities, in this case the area where elevated levels of turbidity from in-water work will be spread. The size of this area is estimated to be a 200-foot radius surrounding all proposed in-water activity, which is premised on suspended sediment meeting the point of compliance for aquatic life turbidity criteria set forth in the Washington State Water Quality Standards for estuarine waters (173-201A-400 Washington Administrative Code). However, the footprint of the dredged area is 233,100 square feet, and the turbidity pulses may reach up to 200 feet beyond that footprint, for a total action area 243,300 square feet (5.6 acres).

This action area is within designated critical habitat for PS Chinook, PS steelhead and is also within designated EFH for Chinook salmon and groundfish.

2. Endangered Species Act: Biological Opinion And Incidental Take Statement

The ESA establishes a national program for conserving threatened and endangered species of fish, wildlife, plants, and the habitat upon which they depend. As required by section 7(a)(2) of the ESA, each Federal agency must ensure that its actions are not likely to jeopardize the continued existence of endangered or threatened species, or adversely modify or destroy their designated critical habitat. Per the requirements of the ESA, Federal action agencies consult with NMFS and section 7(b)(3) requires that, at the conclusion of consultation, NMFS provide an opinion stating how the agency's actions would affect listed species and their critical habitats. If incidental take is reasonably certain to occur, section 7(b)(4) requires NMFS to provide an ITS that specifies the impact of any incidental taking and includes non-discretionary reasonable and prudent measures (RPMs) and terms and conditions to minimize such impacts.

2.1 Analytical Approach

This biological opinion includes both a jeopardy analysis and an adverse modification analysis. The jeopardy analysis relies upon the regulatory definition of "jeopardize the continued existence of" a listed species, which is "to engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species" (50 CFR 402.02). Therefore, the jeopardy analysis considers both survival and recovery of the species.

This biological opinion relies on the definition of "destruction or adverse modification," which "means a direct or indirect alteration that appreciably diminishes the value of critical habitat as a whole for the conservation of a listed species" (50 CFR 402.02).

The designation(s) of critical habitat for (species) use(s) the term primary constituent element (PCE) or essential features. The 2016 critical habitat regulations (50 CFR 424.12) replaced this term with physical or biological features (PBFs). The shift in terminology does not change the approach used in conducting a "destruction or adverse modification" analysis, which is the same regardless of whether the original designation identified PCEs, PBFs, or essential features. In this biological opinion, we use the term PBF to mean PCE or essential feature, as appropriate for the specific critical habitat.

The 2019 regulations define effects of the action using the term "consequences" (50 CFR 402.02). As explained in the preamble to the regulations (84 FR 44977), that definition does not change the scope of our analysis and in this opinion we use the terms "effects" and "consequences" interchangeably.

We use the following approach to determine whether a proposed action is likely to jeopardize listed species or destroy or adversely modify critical habitat:

- Evaluate the range-wide status of the species and critical habitat expected to be adversely affected by the proposed action.
- Evaluate the environmental baseline of the species and critical habitat.
- Evaluate the effects of the proposed action on species and their habitat using an exposure-response approach.
- Evaluate cumulative effects.
- In the integration and synthesis, add the effects of the action and cumulative effects to the environmental baseline, and, in light of the status of the species and critical habitat, analyze whether the proposed action is likely to: (1) directly or indirectly reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species, or (2) directly or indirectly result in an alteration that appreciably diminishes the value of critical habitat as a whole for the conservation of a listed species.
- If necessary, suggest a reasonable and prudent alternative to the proposed action.

2.2 Range-wide Status of the Species and Critical Habitat

This biological opinion examines the status of each species that would be adversely affected by the proposed action. The status is determined by the level of extinction risk that the listed species face, based on parameters considered in documents such as recovery plans, status reviews, and listing decisions. This informs the description of the species' likelihood of both survival and recovery. The species status section also helps to inform the description of the species' current "reproduction, numbers, or distribution" as described in 50 CFR 402.02. The opinion also examines the condition of critical habitat throughout the designated area, evaluates the conservation value of the various watersheds and coastal and marine environments that make up

the designated area, and discusses the current function of the essential PBFs that help to form that conservation value.

One factor affecting the status of ESA-listed species considered in this opinion, and aquatic habitat at large, is climate change. Climate change is likely to play an increasingly important role in determining the abundance and distribution of ESA-listed species, and the conservation value of designated critical habitats, in the Pacific Northwest. These changes will not be spatially homogeneous across the Pacific Northwest. The largest hydrologic responses are expected to occur in basins with significant snow accumulation, where warming decreases snow pack, increases winter flows, and advances the timing of spring melt (Mote et al. 2014; Mote et al 2016). Rain-dominated watersheds and those with significant contributions from groundwater may be less sensitive to predicted changes in climate (Tague et al. 2013; Mote et al. 2014).

During the last century, average regional air temperatures in the Pacific Northwest increased by 1-1.4°F as an annual average, and up to 2°F in some seasons (based on average linear increase per decade; Abatzoglou et al. 2014; Kunkel et al. 2013). Recent temperatures in all but two years since 1998 ranked above the 20th century average (Mote et al. 2014). Warming is likely to continue during the next century as average temperatures are projected to increase another 3 to 10°F, with the largest increases predicted to occur in the summer (Mote et al. 2014).

Decreases in summer precipitation of as much as 30 percent by the end of the century are consistently predicted across climate models (Mote et al. 2014). Precipitation is more likely to occur during October through March, less during summer months, and more winter precipitation will be rain than snow (ISAB 2007; Mote et al. 2013). Earlier snowmelt will cause lower stream flows in late spring, summer, and fall, and water temperatures will be warmer (ISAB 2007; Mote et al. 2014). Models consistently predict increases in the frequency of severe winter precipitation events (i.e., 20-year and 50-year events), in the western United States (Dominguez et al. 2012). The largest increases in winter flood frequency and magnitude are predicted in mixed rain-snow watersheds (Mote et al. 2014).

The combined effects of increasing air temperatures and decreasing spring through fall flows are expected to cause increasing stream temperatures; in 2015 this resulted in 3.5-5.3ºC increases in Columbia Basin streams and a peak temperature of 26ºC in the Willamette (NWFSC 2015). Overall, about one-third of the current cold-water salmonid habitat in the Pacific Northwest is likely to exceed key water temperature thresholds by the end of this century (Mantua et al. 2009).

Higher temperatures will reduce the quality of available salmonid habitat for most freshwater life stages (ISAB 2007). Reduced flows will make it more difficult for migrating fish to pass physical and thermal obstructions, limiting their access to available habitat (Mantua et al. 2010; Isaak et al. 2012). Temperature increases shift timing of key life cycle events for salmonids and species forming the base of their aquatic foodwebs (Crozier et al. 2011; Tillmann and Siemann 2011; Winder and Schindler 2004). Higher stream temperatures will also cause decreases in dissolved oxygen and may also cause earlier onset of stratification and reduced mixing between layers in lakes and reservoirs, which can also result in reduced oxygen (Meyer et al. 1999; Winder and Schindler 2004; Raymondi et al. 2013). Higher temperatures are likely to cause

several species to become more susceptible to parasites, disease, and higher predation rates (Crozier et al. 2008; Wainwright & Weitkamp 2013; Raymondi et al. 2013).

As more basins become rain-dominated and prone to more severe winter storms, higher winter stream flows may increase the risk that winter or spring floods in sensitive watersheds will damage spawning redds and wash away incubating eggs (Goode et al. 2013). Earlier peak stream flows will also alter migration timing for salmon smolts, and may flush some young salmon and steelhead from rivers to estuaries before they are physically mature, increasing stress and reducing smolt survival (McMahon and Hartman 1989; Lawson et al. 2004).

In addition to changes in freshwater conditions, predicted changes for coastal waters in the Pacific Northwest as a result of climate change include increasing surface water temperature, increasing but highly variable acidity, and increasing storm frequency and magnitude (Mote et al. 2014). Elevated ocean temperatures already documented for the Pacific Northwest are highly likely to continue during the next century, with sea surface temperature projected to increase by 1.0-3.7ºC by the end of the century (IPCC 2014). Habitat loss, shifts in species' ranges and abundances, and altered marine food webs could have substantial consequences to anadromous, coastal, and marine species in the Pacific Northwest (Tillmann and Siemann 2011; Reeder et al. 2013).

Moreover, as atmospheric carbon emissions increase, increasing levels of carbon are absorbed by the oceans, changing the pH of the water. A 38 percent to 109 percent increase in acidity is projected by the end of this century in all but the most stringent CO_2 mitigation scenarios, and is essentially irreversible over a time scale of centuries (IPCC 2014). Regional factors appear to be amplifying acidification in Northwest ocean waters, which is occurring earlier and more acutely than in other regions and is already impacting important local marine species (Barton et al. 2012; Feely et al. 2012). Acidification also affects sensitive estuary habitats, where organic matter and nutrient inputs further reduce pH and produce conditions more corrosive than those in offshore waters (Feely et al. 2012; Sunda and Cai 2012).

Global sea levels are expected to continue rising throughout this century, reaching likely predicted increases of 10-32 inches by 2081-2100 (IPCC 2014). These changes will likely result in increased erosion and more frequent and severe coastal flooding, and shifts in the composition of nearshore habitats (Tillmann and Siemann 2011; Reeder et al. 2013). Estuarine-dependent salmonids such as chum and Chinook salmon are predicted to be impacted by significant reductions in rearing habitat in some Pacific Northwest coastal areas (Glick et al. 2007). Historically, warm periods in the coastal Pacific Ocean have coincided with relatively low abundances of salmon and steelhead, while cooler ocean periods have coincided with relatively high abundances, and therefore these species are predicted to fare poorly in warming ocean conditions (Scheuerell and Williams 2005; Zabel et al. 2006). This is supported by the recent observation that anomalously warm sea surface temperatures off the coast of Washington from 2013 to 2016 resulted in poor coho and Chinook salmon body condition for juveniles caught in those waters (NWFSC 2015). Changes to estuarine and coastal conditions, as well as the timing of seasonal shifts in these habitats, have the potential to impact a wide range of listed aquatic species (Tillmann and Siemann 2011; Reeder et al. 2013).

The adaptive ability of these threatened and endangered species is depressed due to reductions in population size, habitat quantity and diversity, and loss of behavioral and genetic variation. Without these natural sources of resilience, systematic changes in local and regional climatic conditions due to anthropogenic global climate change will likely reduce long-term viability and sustainability of populations in many of these ESUs (NWFSC 2015). New stressors generated by climate change, or existing stressors with effects that have been amplified by climate change, may also have synergistic impacts on species and ecosystems (Doney et al. 2012). These conditions will possibly intensify the climate change stressors inhibiting recovery of ESA-listed species in the future.

2.2.1 Status of ESA-Listed Fish Species

For Pacific salmon, steelhead, and certain other species, we commonly use the four "viable salmonid population" (VSP) criteria (McElhany et al. 2000) to assess the viability of the populations that, together, constitute the species. These four criteria (spatial structure, diversity, abundance, and productivity) encompass the species' "reproduction, numbers, or distribution" as described in 50 CFR 402.02. When these parameters are collectively at appropriate levels, they maintain a population's capacity to adapt to various environmental conditions and allow it to sustain itself in the natural environment.

"Spatial structure" refers both to the spatial distributions of individuals in the population and the processes that generate that distribution. A population's spatial structure depends on habitat quality and spatial configuration, and the dynamics and dispersal characteristics of individuals in the population.

"Diversity" refers to the distribution of traits within and among populations. These range in scale from DNA sequence variation in single genes to complex life history traits (McElhany et al. 2000).

"Abundance" generally refers to the number of naturally-produced adults (i.e., the progeny of naturally-spawning parents) in the natural environment (e.g., on spawning grounds).

"Productivity," as applied to viability factors, refers to the entire life cycle (i.e., the number of naturally-spawning adults produced per parent). When progeny replace or exceed the number of parents, a population is stable or increasing. When progeny fail to replace the number of parents, the population is declining. McElhany et al. (2000) use the terms "population growth rate" and "productivity" interchangeably when referring to production over the entire life cycle. They also refer to "trend in abundance," which is the manifestation of long-term population growth rate.

For species with multiple populations, once the biological status of a species' populations has been determined, we assess the status of the entire species using criteria for groups of populations, as described in recovery plans and guidance documents from technical recovery teams. Considerations for species viability include having multiple populations that are viable, ensuring that populations with unique life histories and phenotypes are viable, and that some viable populations are both widespread to avoid concurrent extinctions from mass catastrophes and spatially close to allow functioning as metapopulations (McElhany et al. 2000).

Status of PS Chinook Salmon

The Puget Sound Chinook salmon evolutionarily significant unit (ESU) was listed as threatened on June 28, 2005 (70 FR 37160). We adopted the recovery plan for this ESU in January 2007. The recovery plan consists of two documents: the Puget Sound salmon recovery plan (Shared Strategy for Puget Sound 2007) and a supplement by NMFS (2006). The recovery plan adopts ESU and population level viability criteria recommended by the Puget Sound Technical Recovery Team (PSTRT) (Ruckelshaus et al. 2002). The PSTRT's biological recovery criteria will be met when all of the following conditions are achieved:

- The viability status of all populations in the ESU is improved from current conditions, and when considered in the aggregate, persistence of the ESU is assured;
- Two to four Chinook salmon populations in each of the five biogeographical regions of the ESU achieve viability, depending on the historical biological characteristics and acceptable risk levels for populations within each region;
- At least one population from each major genetic and life history group historically present within each of the five biogeographical regions is viable;
- Tributaries to Puget Sound not identified as primary freshwater habitat for any of the 22 identified populations are functioning in a manner that is sufficient to support an ESU-wide recovery scenario; Production of Chinook salmon from tributaries to Puget Sound not identified as primary freshwater habitat for any of the 22 identified populations occurs in a manner consistent with ESU recovery; and
- Populations that do not meet the viability criteria for all VSP parameters are sustained to provide ecological functions and preserve options for ESU recovery.

Spatial Structure and Diversity. The Puget Sound Chinook salmon ESU includes all naturally spawning populations of Chinook salmon from rivers and streams flowing into Puget Sound including the Straits of Juan De Fuca from the Elwha River, eastward, including rivers and streams flowing into Hood Canal, South Sound, North Sound and the Strait of Georgia in Washington. The ESU also includes the progeny of numerous artificial propagation programs (NWFSC 2015). The PSTRT identified 22 extant populations, grouped into five major geographic regions, based on consideration of historical distribution, geographic isolation, dispersal rates, genetic data, life history information, population dynamics, and environmental and ecological diversity. The PSTRT distributed the 22 populations among five major biogeographical regions, or major population groups (MPG), that are based on similarities in hydrographic, biogeographic, and geologic characteristics.

Between 1990 and 2014, the proportion of natural-origin spawners has trended downward across the ESU, with the Whidbey Basin the only MPG with consistently high fractions of natural-origin spawner abundance. All other MPG have either variable or declining spawning populations with high proportions of hatchery-origin spawners (NWFSC 2015). Overall, the new information on abundance, productivity, spatial structure and diversity since the 2010 status review supports no change in the biological risk category (NWFSC 2015; NMFS, 2017).

Abundance and Productivity. Available data on total abundance since 1980 indicate that although abundance trends have fluctuated between positive and negative for individual

populations, there are widespread negative trends in natural-origin Chinook salmon spawner abundance across the ESU (NWFSC 2015). Productivity remains low in most populations, and hatchery-origin spawners are present in high fractions in most populations outside of the Skagit watershed. Available data now shows that most populations have declined in abundance over the past 7 to 10 years. Further, escapement levels for all populations remain well below the TRT planning ranges for recovery, and most populations are consistently below the spawner-recruit levels identified by the TRT as consistent with recovery (NWFSC 2015; NMFS, 2017).

Limiting Factors. Limiting factors for this species include:

- Degraded floodplain and in-river channel structure
- Degraded estuarine conditions and loss of estuarine habitat
- Riparian area degradation and loss of in-river large woody debris
- Excessive fine-grained sediment in spawning gravel
- Degraded water quality and temperature
- Degraded nearshore conditions
- Impaired passage for migrating fish
- Altered flow regime

Status of PS Steelhead

The PS Steelhead TRT produced viability criteria, including population viability analyses (PVAs), for 20 of 32 demographically independent populations (DIPs) and three major population groups (MPGs) in the DPS (Hard 2015). It also completed a report identifying historical populations of the DPS (Myers et al. 2015). The DIPs are based on genetic, environmental, and life history characteristics. Populations display winter, summer, or summer/winter run timing (Myers et al. 2015). The TRT concludes that the DPS is currently at "very low" viability, with most of the 32 DIPs and all three MPGs at "low" viability.

The designation of the DPS as "threatened" is based upon the extinction risk of the component populations. Hard 2015, identify several criteria for the viability of the DPS, including that a minimum of 40 percent of summer-run and 40 percent of winter-run populations historically present within each of the MPGs must be considered viable using the VSP-based criteria. For a DIP to be considered viable, it must have at least an 85 percent probability of meeting the viability criteria, as calculated by Hard (2015).

On December 27, 2019, we published a recovery plan for PS steelhead (84 FR 71379) (NMFS 2019a). The plan indicates that within each of the three MPGs, at least fifty percent of the populations must achieve viability, *and* specific DIPs must also be viable:

Central and South Puget Sound MPG: Green River Winter-Run; Nisqually River Winter-Run; Puyallup/Carbon Rivers Winter-Run, or the White River Winter-Run; and at least one additional DIP from this MPG: Cedar River, North Lake Washington/Sammamish Tributaries, South Puget Sound Tributaries, or East Kitsap Peninsula Tributaries.

Hood Canal and Strait of Juan de Fuca MPG: Elwha River Winter/Summer-Run; Skokomish River Winter-Run; One from the remaining Hood Canal populations: West Hood Canal Tributaries WinterRun, East Hood Canal Tributaries Winter-Run, or South Hood Canal Tributaries WinterRun; and One from the remaining Strait of Juan de Fuca populations: Dungeness Winter-Run, Strait of Juan de Fuca Tributaries Winter-Run, or Sequim/Discovery Bay Tributaries Winter-Run.

North Cascades MPG: Of the eleven DIPs with winter or winter/summer runs, five must be viable: One from the Nooksack River Winter-Run; One from the Stillaguamish River Winter-Run; One from the Skagit River (either the Skagit River Summer-Run and Winter-Run or the Sauk River Summer-Run and Winter-Run); One from the Snohomish River watershed (Pilchuck, Snoqualmie, or Snohomish/Skykomish River Winter-Run); and One other winter or summer/winter run from the MPG at large.

Of the five summer-run DIPs in this MPG, three must be viable representing in each of the three major watersheds containing summer-run populations (Nooksack, Stillaguamish, Snohomish Rivers); South Fork Nooksack River Summer-Run; One DIP from the Stillaguamish River (Deer Creek Summer-Run or Canyon Creek Summer-Run); and One DIP from the Snohomish River (Tolt River Summer-Run or North Fork Skykomish River Summer-Run)

Spatial Structure and Diversity**.** The PS steelhead DPS is the anadromous form of *O. mykiss* that occur in rivers, below natural barriers to migration, in northwestern Washington State that drain to Puget Sound, Hood Canal, and the Strait of Juan de Fuca between the U.S./Canada border and the Elwha River, inclusive. The DPS also includes six hatchery stocks that are considered no more than moderately diverged from their associated natural-origin counterparts: Green River natural winter-run; Hamma Hamma winter-run; White River winter-run; Dewatto River winter-run; Duckabush River winter-run; and Elwha River native winter-run (USDC 2014).. Non-anadromous ‘‘resident’’ *O. mykiss* occur within the range of PS steelhead but are not part of the DPS due to marked differences in physical, physiological, ecological, and behavioral characteristics (Hard et al. 2007).

DIPs can include summer steelhead only, winter steelhead only, or a combination of summer and winter run timing (e.g., winter run, summer run or summer/winter run). Most DIPs have low viability criteria scores for diversity and spatial structure, largely because of extensive hatchery influence, low breeding population sizes, and freshwater habitat fragmentation or loss (Hard et al. 2007). In the Central and South Puget Sound and Hood Canal and Strait of Juan de Fuca MPGs, nearly all DIPs are not viable (Hard 2015). More information on PS steelhead spatial structure and diversity can be found in NMFS’ technical report (Hard 2015).

Abundance and Productivity. Abundance of adult steelhead returning to nearly all Puget Sound rivers has fallen substantially since estimates began for many populations in the late 1970s and early 1980s. Smoothed trends in abundance indicate modest increases since 2009 for 13 of the 22 DIPs. Between the two most recent five-year periods (2005-2009 and 2010-2014), the geometric mean of estimated abundance increased by an average of 5.4 percent. For seven populations in the Northern Cascades MPG, the increase was 3 percent; for five populations in the Central & South Puget Sound MPG, the increase was 10 percent; and for six populations in the Hood Canal

& Strait of Juan de Fuca MPG, the increase was 4.5 percent. However, several of these upward trends are not statistically different from neutral, and most populations remain small. Inspection of geometric means of total spawner abundance from 2010 to 2014 indicates that 9 of 20 populations evaluated had geometric mean abundances fewer than 250 adults and 12 of 20 had fewer than 500 adults. Between the most recent two five-year periods (2005-2009 and 2010-2014), several populations showed increases in abundance between 10 and 100 percent, but about half have remained in decline. Long-term (15-year) trends in natural spawners are predominantly negative (NWFSC 2015; NMFS, 2017).

There are some signs of modest improvement in steelhead productivity since the 2011 review, at least for some populations, especially in the Hood Canal & Strait of Juan de Fuca MPG. However, these modest changes must be sustained for a longer period (at least two generations) to lend sufficient confidence to any conclusion that productivity is improving over larger scales across the DPS. Moreover, several populations are still showing dismal productivity, especially those in the Central & South Puget Sound MPG (NWFSC 2015).

Little or no data is available on summer-run populations to evaluate extinction risk or abundance trends. Because of their small population size and the complexity of monitoring fish in headwater holding areas, summer steelhead have not been broadly monitored.

Limiting factors. In our 2013 proposed rule designating critical habitat for this species (USDC 2013b), we noted that the following factors for decline for PS steelhead persist as limiting factors:

- The continued destruction and modification of steelhead habitat
- Widespread declines in adult abundance (total run size), despite significant reductions in harvest in recent years
- Threats to diversity posed by use of two hatchery steelhead stocks (Chambers Creek and Skamania)
- Declining diversity in the DPS, including the uncertain but weak status of summer run fish
- A reduction in spatial structure
- Reduced habitat quality through changes in river hydrology, temperature profile, downstream gravel recruitment, and reduced movement of large woody debris
- In the lower reaches of many rivers and their tributaries in Puget Sound where urban development has occurred, increased flood frequency and peak flows during storms and reduced groundwater-driven summer flows, with resultant gravel scour, bank erosion, and sediment deposition
- Dikes, hardening of banks with riprap, and channelization, which have reduced river braiding and sinuosity, increasing the likelihood of gravel scour and dislocation of rearing juveniles

2.2.2 Status of Critical Habitat

This section describes the status of designated critical habitat affected by the proposed action by examining the condition and trends of the essential physical and biological features (PBFs) that

are essential to the conservation of the listed species throughout the designated areas. These features are essential to the conservation of the ESA-listed species because they support one or more of the species' life stages (e.g., sites with conditions that support spawning, rearing, migration and foraging).

Salmon and Steelhead. For salmon and steelhead, NMFS ranked watersheds within designated critical habitat at the scale of the fifth-field hydrologic unit code (HUC_5) in terms of the conservation value they provide to each listed species they support.[2] The conservation rankings are high, medium, or low. To determine the conservation value of each watershed to species viability, NMFS's critical habitat analytical review teams (CHARTs) evaluated the quantity and quality of habitat features (for example, spawning gravels, wood and water condition, side channels), the relationship of the area compared to other areas within the species' range, and the significance to the species of the population occupying that area (NOAA Fisheries 2005). Thus, even a location that has poor quality of habitat could be ranked with a high conservation value if it were essential due to factors such as limited availability (*e.g.*, one of a very few spawning areas), a unique contribution of the population it served (*e.g.*, a population at the extreme end of geographic distribution), or if it serves another important role (*e.g.*, obligate area for migration to upstream spawning areas).

The physical or biological features of freshwater spawning and incubation sites, include water flow, quality and temperature conditions and suitable substrate for spawning and incubation, as well as migratory access for adults and juveniles. These features are essential to conservation because without them the species cannot successfully spawn and produce offspring. The physical or biological features of freshwater migration corridors associated with spawning and incubation sites include water flow, quality and temperature conditions supporting larval and adult mobility, abundant prey items supporting larval feeding after yolk sac depletion, and free passage (no obstructions) for adults and juveniles. These features are essential to conservation because they allow adult fish to swim upstream to reach spawning areas and they allow larval fish to proceed downstream and reach the ocean.

Puget Sound Chinook Salmon and Steelhead

In designating critical habitat for PS Chinook and PS Steelhead in estuarine and nearshore marine areas, NMFS determined that the area from extreme high water extending out to the maximum depth of the photic zone (no greater than 30 meters relative to mean lower low water; MLLW) contain essential features that require special protection. For nearshore marine areas, NMFS designated the area inundated by extreme high tide because it encompasses habitat areas typically inundated and regularly occupied during the spring and summer when juvenile salmon are migrating in the nearshore zone and relying heavily on forage, cover, and refuge qualities provided by these occupied habitats.

All physical and biological features (or primary constituent elements) of estuarine, and nearshore marine critical habitat for the affected salmonid species and critical habitat have been degraded

[2] The conservation value of a site depends upon "(1) the importance of the populations associated with a site to the ESU [or DPS] conservation, and (2) the contribution of that site to the conservation of the population through demonstrated or potential productivity of the area" (NOAA Fisheries 2005).

throughout the PS region. The causes for these losses of critical habitat value include human development, including diking, filling of wetlands and bays, channelization, nearshore and floodplain development. The continued growth contributes to the anthropogenic modification of the PS shorelines and is the major factor in the cumulative degradation and loss of nearshore and estuarine habitat. The development of shorelines includes bank hardening and the introduction of obstructions in the nearshore, each a source of structure and shade which can interfere with juvenile salmonid migration, diminish aquatic food supply, and is a potential source of water pollution from boating uses (Shipman et al. 2010; Morley et al. 2012; Fresh et al. 2011).

Critical habitat for Puget Sound Chinook salmon (70 FR 52630, designated 9/02/2005) includes 1,683 miles of streams, 41 square miles of lakes, and 2,182 miles of nearshore marine habitat in Puget Sound. The Puget Sound Chinook salmon Evolutionarily Significant Unit (ESU) has 61 freshwater and 19 marine areas within its range. Of the freshwater watersheds, 41 are rated high conservation value, 12 low conservation value, and 8 received a medium rating. Of the marine areas, all 19 are ranked with high conservation value. PBFs relevant for this consultation include: (1) Estuarine areas free of obstruction with water quality and aquatic vegetation to support juvenile transition and rearing; and (2) nearshore marine areas free of obstruction with water quality conditions, forage, submerged and overhanging large wood, and aquatic vegetation to support growth and maturation.

Critical habitat for Puget Sound Steelhead (81 FR 9252, designated 2/24/2016) includes 2,031 stream miles. Nearshore and offshore marine waters were not designated for this species. There are 66 watersheds within the range of this DPS. Nine watersheds received a low conservation value rating, 16 received a medium rating, and 41 received a high rating to the DPS.

The degradation of multiple aspects of PS Chinook and PS steelhead critical habitat indicates that the conservation potential of the critical habitat is not being reached, even in areas where the conservation value of habitat is ranked high.

2.3 Environmental Baseline

The "environmental baseline" refers to the condition of the listed species or its designated critical habitat in the action area, without the consequences to the listed species or designated critical habitat caused by the proposed action. The environmental baseline includes the past and present impacts of all Federal, State, or private actions and other human activities in the action area, the anticipated impacts of all proposed Federal projects in the action area that have already undergone formal or early section 7 consultations, and the impact of State or private actions which are contemporaneous with the consultation in process. The consequences to listed species or designated critical habitat from ongoing agency activities or existing agency facilities that are not within the agency's discretion to modify are part of the environmental baseline (50 CFR 402.02).

2.3.1 Habitat Conditions in the Action Area

The action area includes two highly industrialized locations within the Blair Waterway, Tacoma, Washington: Washington United Terminal (WUT) and Husky Terminal. Both locations are subtidal areas used to berth ships for the transfer of cargo into and out of the Port of Tacoma.

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, and both sites are located within areas that are currently or were formerly within the Commencement Bay Nearshore/Tideflats Superfund site.

Development of Commencement Bay began in the late 19th century and has fragmented 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 areas, 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 has participated in recreating and/or restoring approximately 80 additional acres of marine and estuarine habitat within the action areas since the 1993 USACE report. 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).

The Port of Tacoma is a large, integrated system. It is comprised of several waterways, berth areas, pier structures, terminal backlands, and road and rail systems. The waterways are themselves large engineered structures generally with 2:1 heavily armored slopes. These structural components all rely on each other for the system to work. No one component has much value without the others. Import cargo is brought in through a waterway to a berth area, discharged across a dock, staged in a terminal backland, and placed on a rail car to be hauled across the country or trucked to a transload facility, and distributed locally. Local import containers (those not going elsewhere) are then ideally filled with export goods. Export goods from the Pacific Northwest are generally agricultural products and machinery—both of which are heavier than most import goods.

The Blair Waterway is a permanent component of this integrated system. The Blair Waterway was first constructed prior to 1920 by private interests. Over the last 100 years, at least 14 different dredge/cleanup projects have shaped the waterway to its current configuration. It has been at its current length since the mid-1960s. In the last 25 years, there have been several deepening actions, some conducted as part of the Commencement Bay Nearshore/Tideflats

(CB/NT) Superfund cleanup; at least five different cutback actions for widening the waterway; bridge abutment fill removal; slip fills; and pier realignments. During this same 25-year period, there have been numerous pier redevelopments, realignments, expansions, and new construction.

The Blair Waterway has a long history as an integral structure to support marine cargo shipping. Since its creation, the Blair Waterway has been actively operated, managed, and maintained as an industrial and commercial navigable waterway. From its initial construction prior to 1920 to 1956, the Blair Waterway (first named Wapato Waterway and then Port Industrial Waterway), was incrementally deepened, widened and lengthened through actions under the River and Harbors Act of 1935, and the Rivers and Harbors Act of 1954. In 1956, the waterway was approximately 800 feet wide, and -30 feet MLLW, from the mouth to approximately Lincoln Avenue. The Rivers and Harbors and Flood Control Act of 1962 approved the waterway to be lengthened to its present configuration (approximately 2.6 miles), with a turning basin at the head of the navigation channel. The project was completed in 1969 and the waterway was renamed the Blair Waterway. In 1983-1984, investigations showed concentrations of arsenic, copper, lead, and zinc in surface water runoff from the site exceeded federal and state marine water quality criteria. In the mid-1990s, the Blair Waterway navigation channel and berth areas were dredged as part of the Sitcum Waterway Remediation Project under the CB/NT Superfund cleanup. The waterway was deepened from -30 feet to approximately -48 feet MLLW from the mouth to approximately 1,000 feet upstream of Lincoln Avenue, and to approximately -45 feet MLLW for the remainder of the waterway, including the turning basin. However, after cleanup, concentrations of metals (arsenic and lead) in soil exceeded MTCA (Model Toxics Control Act) Method A cleanup levels for industrial sites. In addition arsenic concentrations in stormwater exceeded water quality criteria (surface water runoff at the site discharges to the Blair Waterway). When an environmental covenant exists for a cleanup site, Ecology reviews site conditions about every five years to ensure the long-term effectiveness of the cleanup action. Ecology inspected the site on April 3, 2019, and investigated current conditions of the cap and the stormwater collection system. Conditions of the cap continues to prevent direct contact with contaminated soil and prevent stormwater from contacting or infiltrating the capped soils.

Sediment within the Blair Waterway have been classified by the Washington Department of Ecology as Waters of Concern (Category 2) for hexachlorobenzene and sediment bioassays. A small section of the waterway has also been classified as impaired waters that do not require a TMDL (Category 4b) for sediment bioassays. Soil, groundwater, and near shore sediment in the uplands around the Blair Waterway are potentially contaminated with residual hazardous materials including total petroleum hydrocarbons, metals, volatile organic compounds (VOCs), semi-volatile organic compounds and polychlorinated biphenyls (PCBs).

In 1999, the USACE evaluated the Blair Waterway and determined deepening the navigation channel from -48 feet and -45 feet MLLW to -51 feet MLLW in its entirety would eliminate navigation inefficiencies for post-Panamax shipping vessels and would not result in significant environmental impacts. The entire Blair Waterway navigation channel was dredged in 2000 to its current depth of -51 feet MLLW. Two pier realignments and two maintenance dredges have occurred in the Blair Waterway in the last 15 years. First, 600 feet of the Blair Terminal was demolished, the bank cutback to align with WUT and 600 feet of new pier was added to the south end of WUT. A small maintenance dredge (approximately 3,300 cubic yards) was

performed at WUT in 2009. Next, a maintenance dredge was conducted at Husky Terminal (approximately 42,100 cubic yards) around 2011 to remove high spots from shoaling and sloughed material. Finally, most of Pier 4 at Husky Terminal was demolished and the bank cutback to align with Pier 3 starting in 2014. Part of that action was conducted as an emergency cleanup coordinated by the EPA due to very high levels of Tributyltin found during sediment characterization.

Sediments within the Blair Waterway within the action areas are predominantly fine-grained, and generally consist of sand and silty sand, as well as organic sediments that enter the action areas from the Puyallup River and Wapato Creek. 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.

The existing Port facilities is a mix of commercial fishing and vessel infrastructure as well as commercial development landward of HAT that degrade habitat conditions for listed species in their nearshore marine lifestage, and have long-term effects on the estuarine and marine nearshore environment. These effects result in obstruction of fish movement and potential reduction in food supply from over-water structures and shoreline modifications. They mostly apply to juvenile PS Chinook salmon which migrate or rear in the nearshore area. These habitat changes, which will persist for the duration the Port is in place, will result in an incremental increase in stress and reduction in foraging success. The existing structures will permanently and incrementally degrade nearshore habitat conditions and restoration of the channel dredge depth will extend the continuation of this degraded habitat. The past and ongoing anthropogenic impacts described above have reduced the action area's ability to support migrating PS Chinook salmon. NMFS expects that the existing facilities would persist as a feature in the nearshore and aquatic environment and affect fish habitat for a period of several decades or longer. This expectation is based on the fact that the facilities are primarily constructed of concrete, asphalt, and steel, which degrades slowly.

2.3.2 Species in the Action Area

Two ESA-listed fish could occur within the action area: Puget Sound (PS) Chinook salmon (*Oncorhynchus tshawytscha*), and PS steelhead (*Oncorhynchus mykiss*). Puget Sound ESU Chinook salmon have been documented in Hylebos Creek (via the Hylebos Waterway) and Commencement Bay, but not the Blair Waterway (WDFW 2020b). The Blair Waterway is not fed by any freshwater streams, and therefore is unlikely to have regular presence of either PS Chinook or steelhead in high numbers. However, based on the proximity of the action area to the natal streams and migration corridors such as the Puyallup River and Hylebos Creek, and the presence of potential suitable habitat for adults and out-migrating juveniles, ESA-listed Chinook salmon may occur in the area either as adults or juveniles of the following specific populations: Puyallup, White, Carbon, and Hylebos. Adult Chinook salmon, if present within the action areas, would most likely temporarily hold within the waters of Commencement Bay before they migrate to upstream spawning waters within the Puyallup Basin. Adult Chinook salmon are not likely to be present within the Blair Waterway for an extended period of time. Furthermore,

Chinook salmon use of the Blair Waterway is up to three times greater near the mouth of the waterway than near the head, where they are found in very low numbers (Duker et al. 1989). 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 areas provide suitable spawning habitat for Chinook salmon, as the waterway is in a marine environment.

Similar to Chinook salmon, the action area has some potentially suitable habitat for return 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 2017b). However, NMFS is not aware of documented use of Puget Sound DPS steelhead within Wapato Creek within at least the past 20 years and does not consider Wapato Creek to provide suitable habitat for steelhead (Leon Environmental LLC., 2021). Adult and juvenile steelhead most likely use the waterways holding area before they enter migration corridors. Puget Sound DPS steelhead could be present at all times of the year and migrate through Commencement Bay and the Puyallup River, or within the Hylebos Waterway to Hylebos Creek. Outmigration of juveniles typically occurs between approximately the middle of March through the middle of July, and rearing juveniles could be present in Commencement Bay or adjacent waters of Puget Sound at any time of the year, including in the action area.

2.4 Effects of the Action

Under the ESA, "effects of the action" are all consequences to listed species or critical habitat that are caused by the proposed action, including the consequences of other activities that are caused by the proposed action. A consequence is caused by the proposed action if it would not occur but for the proposed action and it is reasonably certain to occur. Effects of the action may occur later in time and may include consequences occurring outside the immediate area involved in the action (see 50 CFR 402.17). In our analysis, which describes the effects of the proposed action, we considered 50 CFR 402.17(a) and (b).

As described in Section 1.3, the Port of Tacoma proposes to conduct maintenance dredging at two locations in Blair Waterway. Mechanical dredging with a barge-mounted clamshell bucket would be the predominant method.

Temporary effects of the proposed action are reasonably certain to include: 1) reduction in water quality from suspended sediment; 2) reduction in available prey from disturbed benthic conditions; and 3) entrainment. These changes in the environment will affect PBFs of critical habitat, and the species that are present when these effects occur.

The proposed action will extend the life of the channel for a period of time until dredging will again be required, thereby continuing the existence of the degraded habitat and effects to species in the area during that time.

2.4.1 Effects on Critical Habitat

The action falls within the critical habitat of PS Chinook salmon and PS steelhead. The action does not fall within the critical habitat of PS/GB bocaccio, PS/GB yelloweye rockfish, SRKW, or humpback whales, therefore effects on critical habitat PBFs are not evaluated here.

Features of critical habitat for salmonids in the action area are:

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

The dredging will disturb bottom substrates, causing temporary effects to physical and biological features of critical habitat for PS Chinook and PS steelhead salmon. Those effects are:

1. *Water Quality/Turbidity and Dissolved Oxygen (DO)* - Dredging will degrade water quality in the berth and a 200-foot area surrounding the berth by elevating suspended sediments for up to 20 working days (4 weeks) within the in-water work window, and which will return to baseline levels within hours after work ceases. Water quality conditions for juvenile maturation will be disrupted by the water quality degradation during this period. Maintenance dredging would cause no measurable changes in water temperature and salinity, but mobilized contaminants and suspended sediments into the water column, can reduce DO. Both turbidity and DO are expected to return to baseline within hours (turbidity) to days (DO) after work ceases. Based on these factors, and the brevity of the in-water work, the impairment of this PBF will only briefly diminish the water quality conditions necessary to support juvenile salmonids during their transition to saline habitat.

2. *Water Quality/Pollutants* – Increased levels contaminants re-suspended in the water column could co-occur with the dredging, a following briefly after the commencement of activity. This aspect of water quality degradation could temporarily impair the value of critical habitat for growth and maturation of juvenile salmon by exposing them to pollutants with both immediate and latent health effects, and could incrementally impair forage/prey communities that are exposed to the contaminants, delaying the speed that these communities re-establish after being physically disrupted by dredging. This impairment of the water quality PBF for juvenile transition to the saltwater environment is also constrained in space and by the brevity of the work window.

3. *Forage and Prey/Reduced prey abundance from dredging* – Removing bottom substrate will simultaneously remove the benthic communities that live within those sediments, reducing prey availability in the footprint of the dredge. Among prey fishes, short-term and intermittent exposure to reduced water quality could result in minor reductions in

forage species via gill damage of forage fishes. Suspended sediment will eventually settle in the area adjacent to the dredge prism, which can disrupt benthic prey species, and if the sediments are contaminated, then sublethal toxicity of benthic prey species could occur within 200 feet of dredging activities. These prey then can become a source of bioaccumulation, which degrades the quality of the prey. Prey will be reduced in total abundance and in quality, and this diminishment will persist for weeks to months.

2.4.2 Species Effects

Effects of the proposed action on species are based, in part, on exposure of species to the effects to features of habitat, as described above. Adult PS Chinook and PS steelhead will be exposed to temporary diminishment of water quality from elevated suspended sediment and contaminants, and modified benthic prey. Entrainment and strike during the operation of the dredge equipment might also occur. No permanent pathways of fish exposure to effects are expected as a result of the proposed dredging.

Salmonid Response to Reduced Water Quality/Turbidity and Dissolved Oxygen (DO)
As part of the proposed action, maintenance dredging will disturb sediments and temporarily increase turbidity within the action areas. Dredging will cause 4 weeks of localized increases in turbidity and total suspended solids (TSS). Increased turbidity is anticipated to be limited to the area within 200 feet of dredging. Elevated suspended sediments affect ESA-listed species in several ways, including: (1) reduction in feeding rates and growth, (2) physical injury, (3) physiological stress, (4) behavioral avoidance, and (5) delayed migration.

Laboratory studies have consistently found that the 96-hour median lethal concentration of fine sediments for juvenile salmonids is above 6,000 mg/L (Stober et al. 1981) and 1,097 mg/L for 1 to 3-hour exposure (Newcombe and Jensen 1996). Lethal concentrations and duration of exposure are not likely to occur for several reasons. LaSalle et al. (1991) determined that, within 300 feet of bucket dredging fine silt or clay, the expected concentrations of suspended sediment would be about 700 and 1,100 mg/L at the surface and bottom of the water column, respectively. Lower concentrations are expected at the project location, because the sediment consists primarily of sand. Additionally, because the dredging occurs in open water, we expect juvenile salmonids to be able to detect and avoid areas with high levels of suspended sediment (Armstrong et al., 2003, Ayllón et al., 2010), as cited in Berli et al 2014, reducing duration and intensity of exposure.

In addition to this behavioral response, however some exposure to suspended sediments is likely and can elicit an array of responses. Even moderate levels of suspended sediment exposure not associated with gill damage can affect the respiratory ability of salmonids (Waters, 1995) and trigger an acute stress response (Michel et al., 2013). Some sediment-associated stress responses include elevated plasma glucose and plasma cortisol (Redding and Schreck, 1982, Servizi and Martens, 1992), increased cardiac output (Bunt et al., 2004), and changes in hematological parameters (Lake and Hinch, 1999, Michel et al., 2013). Suspended solids are also known to impact fish's feeding ability (e.g. due to impaired spotting of prey), routine activity, and stress levels (Berg and Northcote, 1985, Sweka and Hartman, 2001, De Robertis et al., 2003, Robertson et al., 2007, Awata et al., 2011). Behavioral responses (e.g., alarm reaction and avoidance of the plume) can occur with only six minutes of exposure (Newcombe and Jensen

1996). Physiological effects (e.g., gill flaring and coughing) may occur with 15 minutes of exposure, temporary reduced feeding rates and success with 1 hour of exposure, and moderate levels of stress with 3 hours of exposure (Newcombe and Jensen 1996). The number of individuals that would be affected by this stressor is unquantifiable with any degree of certainty. However, the small affected area suggests that any individuals that may be affected would likely comprise extremely small subsets of the cohorts from their respective populations, and the numbers of exposed fish would be too low to cause any detectable population-level effects.

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.

Both sites of the proposed action are located within areas that are currently or were formerly within the Commencement Bay Nearshore/Tideflats (CB-NT) Superfund site. The Blair Waterway has been cleaned up and removed from the Superfund. Water quality is already a limiting factor within the action areas, and temporary increases in sedimentation and turbidity during the proposed action are not likely to result in an increased potential for negative effects.

Mobilization of anaerobic sediments can decrease dissolved oxygen (DO) levels (Hicks et al. 1991; Morton 1976). 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 on the behaviors or fitness of any PS Chinook salmon or PS steelhead exposed. Shipping traffic throughout the action areas routinely disturbs sediments. 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 this industrial traffic or highly turbid water from the Puyallup River within the waterways. The generally slow velocity of water movement within the action areas will also greatly minimize the potential negative effects of temporarily increased turbidity.

Response to reduced prey

Essentially, the effect of dredging activities on macrofauna assemblage recovery depends on the methods used, duration and frequency of dredging, the area and amount of material to be dredged, substrate characteristics, resulting sedimentary profile of the affected seabed, local hydrology, seasonal effects (Barrio Froján et al., 2011, Newell et al., 1998) and biotic interactions (Ólfasson et al., 1994). 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. 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 (Dernie et al., 2003). Additionally, the ability of a disturbed site to recolonize is affected by whether or not adjacent benthic communities are nearby that can recolonize the affected area, and the composition of the species that recolonize the area may differ from a less frequently perturbed area, as disturbances caused by dredging may lead to a decline in sensitive species, to be subsequently replaced by more tolerant species (Ceia et al. 2013). Lastly, suspended sediment will eventually settle in the area adjacent to the dredge prism, which can disrupt benthic prey species, and if the sediments are

contaminated, then sublethal toxicity of benthic prey species could occur. These prey then can become a source of bioaccumulation, which degrades the quality of the prey.

Entrainment and trike during Dredging

In this context, entrainment refers to the uptake of aquatic organisms by dredge equipment (i.e., the dredge bucket). Dredge buckets entrain slow-moving and sessile benthic epifauna along with burrowing infauna that are removed with the sediments. They also entrain algae and aquatic vegetation. 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. That likelihood would decrease after the first few bucket cycles, because mobile organisms are most likely to move away from the disturbance. Further, dredges move very slowly during dredging operations, with the excavator typically staying in one location for many minutes to several hours, while the bucket is repeatedly lowered and raised within an area limited to the range of the crane arm.

While the in-water work window of July 16-February 14 reduces the likelihood of juvenile fish presence in high numbers (peak outmigration of Green River PS Chinook is in June, for example and outmigration is March to July for steelhead), it does not avoid the presence of juvenile salmonids. Based on information provided to the USACE in 2018, juvenile fish, particularly steelhead, are likely to be present during the entire work window though based on the poor habitat conditions, we expect presence to be in relatively low numbers at any given time.

Adult PS Chinook and PS steelhead may pass through the area during migration to their natal streams. Adult PS Chinook salmon, adult PS steelhead, are strong swimmers that are likely to engage in avoidance behavior to avoid the noise and activity, which reduces the likelihood of entrainment or strike. Based on the best available information described above (NMFS 2012), NMFS considers it highly unlikely that adult PS Chinook salmon or adult PS steelhead, would be struck or entrained by the dredging equipment.

Summary of Effects to Salmonid Population Viability

We assess the importance of habitat effects in the action area to the ESUs by examining the relevance of those effects to the characteristics of VSPs. The characteristics of VSPs are sufficient abundance, population growth rate (productivity), spatial structure, and diversity. While these characteristics are described as unique components of population dynamics, each characteristic exerts significant influence on the others. For example, declining abundance can reduce spatial structure of a population; and when habitats are less varied, then diversity among the population declines.

There are no streams that feed into the Blair Waterway, so we expect that populations most likely to be present in the action area come from the Hylebos and Puyallup River, and tributaries to the Puyallup, such as White River and Carbon. A 2012 analysis by the Puget Sound Ecosystem Monitoring Program (PSEMP) identified VSP scores for both salmonid species of concern. PS Chinook Puyallup population received a score of 70 out of 100. The PS steelhead Puyallup river population received a score of 59 out of 100. Scores above 69 are considered good, 69 to 50 moderate, and less than 49 are considered inadequate. The 2015 salmon status

update (NWFSC, 2015) reportedthat the Puyallup river Chinook population has dropped by 25% between the years 2005-2009 and 2010-2014. The report identifies several stressors likely causing the decline including; by catch, limited riverine habitat, and poor ocean conditions.

Abundance. As discussed in Section 2.3.2, the existing Port facilities have long-term effects on the estuarine and marine nearshore environment. Effects to individual fishes will occur among an undetermined percentage of all future cohorts of the two populations that use the action area. While we cannot quantify these long-term structure-related effects, we believe them to be limited and proportional to the size of affected habitat. We expect this degradation in habitat to result in a long-term, but very small decrease in abundance among the two populations of PS Chinook that encounter the dredged area. Because PS steelhead do not use the estuarine or marine nearshore habitat, we do not expect the proposed project to effect the abundance of PS steelhead.

Productivity. In response to the existing degraded habitat, we expect juvenile salmonids will experience reduced foraging success and increased energy expenditure. All these effects, independently or in combination, are likely to lead to proportional decreases in individual fitness and survival. The permanent changes to the nearshore environment are expected to exert a sustained downward pressure on estuarine habitat function in the PS and, proportionally to the relatively small amount of habitat affected, reduce the rearing and foraging capacity of the action area. Because PS steelhead do not use the estuarine or marine nearshore habitat, we do not expect the proposed project to affect the productivity of PS steelhead.

Spatial Structure. We do not expect the proposed project to affect the spatial structure of the PS Chinook ESUs or PS steelhead. Salmonid populations spread across the nearshore and mix when they enter tidal waters. This project will likely not disproportionately affect any one population.

Diversity. Salmon have complex life histories and changes in the estuarine environment will have a greater effect on specific life history traits that make prolonged use of this habitat. This will likely result in a slight, proportional to the limited habitat alteration, decline in PS Chinook diversity by differentially affecting specific populations that encounter the developed area in greater frequency during their early estuarine life history. We do not expect the proposed project to affect the diversity of PS steelhead.

2.5 Cumulative Effects

"Cumulative effects" are those effects of future state or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation (50 CFR 402.02 and 402.17(a)). Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the ESA.

Some continuing non-Federal activities are reasonably certain to contribute to climate effects within the action area. However, it is difficult if not impossible to distinguish between the action area's future environmental conditions caused by global climate change that are properly part of the environmental baseline *vs.* cumulative effects. Therefore, all relevant future climate-related environmental conditions in the action area are described in the environmental baseline (Section

2.4). We could expect over the 10-year period of the proposed action that some climate effects, described in the baseline, such as warming water temperatures, or increasing variability of volume (low flows, high flows) become more pronounced. These effects could increase food web disruptions, migration success, or other stresses on any or all of the listed species that rely on the action area.

The current condition of ESA-listed species and designated critical habitat within the action area are described in the Status of the Species and Critical Habitat and the Environmental Baseline sections above. The contribution of non-federal activities to those conditions include past and on-going shoreline development, vessel activities, and upland urbanization. Those actions were driven by a combination of economic conditions that characterized traditional natural resource-based industries, general resource demands associated with settlement of local and regional population centers, and the efforts of social groups dedicated to restoration and use of natural amenities, such as cultural inspiration and recreational experiences.

NMFS is aware of the future "Tacoma Harbor Navigation Improvement Project" that is reasonably certain to affect the action area, however this action will have a federal nexus triggering specific evaluation and therefore it is not considered as a cumulative effect under the ESA. Continued habitat loss and degradation of water quality from development and chronic low-level inputs of non-point source pollutants will likely continue into the future. Recreational and commercial use of nearshore waters within the action area is also likely to increase as the human population grows.

The intensity of these influences depends on many social and economic factors, and therefore is difficult to predict. Further, the adoption of more environmentally acceptable practices and standards may gradually reduce some negative environmental impacts over time. Interest in restoration activities has increased as environmental awareness rises among the public. State, tribal, and local governments have developed plans and initiatives to benefit ESA-listed species in the action area. However, the implementation of plans, initiatives, and specific restoration projects are often subject to political, legislative, and fiscal challenges that increase the uncertainty of their success.

2.6 Integration and Synthesis

The Integration and Synthesis section is the final step in our assessment of the risk posed to species and critical habitat as a result of implementing the proposed action. In this section, we add the effects of the action (Section 2.5) to the environmental baseline (Section 2.4) and the cumulative effects (Section 2.6), taking into account the status of the species and critical habitat (Section 2.2), to formulate the agency's biological opinion as to whether the proposed action is likely to: (1) Reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing its numbers, reproduction, or distribution; or (2) appreciably diminish the value of designated or proposed critical habitat as a whole for the conservation of the species.

The species considered in this Opinion have been listed under the ESA, based on declines from historic levels of abundance and productivity, loss of spatial structure and diversity, and an array

of limiting factors as a baseline habitat condition. Each species will be affected over time by cumulative effects, some positive—as recovery plan implementation and regulatory revisions increase habitat protections and restoration, and some negative—as climate change and unregulated or difficult to regulate sources of environmental degradation persist or increase. Overall, to the degree that habitat trends are negative, as described below, effects on viability parameters of each species are also likely to be negative. In this context we consider the effects of the proposed action's effect on individuals of the listed species at the population scale. The action area provides habitat for nearshore marine life histories of PS Chinook salmon and PS steelhead, although at a degraded state.

Within the action area there are sources of noise and shade (vessels), water quality impairments (nonpoint sources), and artificial light (marinas and fishing piers). To this context of species status and baseline conditions of the existing degraded habitat of the Port facilities, we add the temporary effects of the proposed action, the long term effects of extending the life of the channel, together with cumulative effects (which are anticipated to be future nonpoint sources of water quality impairment associated with development and stressors associated with climate change), in order to determine the effect of the project on the likelihood of species' survival and recovery. We also evaluate if the project's habitat effects will appreciably diminish the value of designated critical habitat for the conservation of the listed species. Such alterations may include, but are not limited to, those that alter the physical or biological features essential to the conservation of a species or that preclude or significantly delay development of such features.

Chinook Salmon

The action area supports PS Chinook salmon adult and juvenile migration, and juvenile rearing. The long-term trend in abundance of the PS Chinook salmon ESU is slightly negative. Reduced or eliminated accessibility to historically important habitat, combined with degraded conditions in available habitat appear to be the greatest threats to the recovery of PS Chinook salmon. Degraded water quality and temperature, degraded nearshore conditions, and impaired passage for migrating fish also continue to impact this species.

During the in-water work period, out-migrating juvenile and migrating adult salmon and steelhead could be present within the action areas. Any of these species, if present, would likely be migrating through the action areas and not be present for any significant period of time. As adults are likely to swim away to avoid dredging noise and activity, it is highly unlikely that they would be struck or entrained by dredging equipment. Individual fish present may be exposed to sediment concentrations that are expected to elicit temporary behavioral effects (e.g., avoidance of the plume), temporary physiological effects (e.g., gill flaring), temporary reduced feeding rates and success, and moderate levels of stress, which may affect the fitness of the exposed individual.

The environmental baseline within the action area has been degraded by the effects shoreline development and vessel activities. The baseline has also been degraded by nearby industry, urbanization, agriculture, forestry, water diversion, and road building and maintenance. Dredging-related impacts are likely to cause a range of effects that both individually and collectively would cause altered behaviors, reduced fitness, and possible mortality in some

juveniles. However, the annual numbers of individuals that are likely to be impacted by action-related stressors would be extremely low.

Based on the best available information, the scale of the direct and indirect effects of the proposed action, when considered in combination with the degraded baseline, cumulative effects, and the impacts of climate change, will be too small to cause any population level impacts on PS Chinook salmon. Therefore, the proposed action will not appreciably reduce the likelihood of survival and recovery of this listed species.

Steelhead

The action area supports adult and juvenile migration. The DPS is currently at very low viability, and long-term abundance trends have been predominantly negative or flat across the DPS. Continued destruction and modification of habitat, widespread declines in adult abundance, and declining diversity appear to be the greatest threats to the recovery of PS steelhead. Reduced habitat quality and urbanization also continue to impact this species. The environmental baseline within the action area has been degraded from the creation of the entrance channel, shoreline development, and maritime activities. However, despite this degraded condition, the area remains supportive of PS steelhead.

Project-related work will overlap with the presence of out-migrating juvenile PS steelhead, and returning adults. Very low numbers of adult PS steelhead may be displaced due to noise from dredging and vessel activity. As adults are likely to swim away to avoid dredging noise and activity, it is highly unlikely that they would be struck or entrained by dredging equipment. Adults present may be exposed to sediment concentrations that are expected to elicit temporary behavioral effects (e.g., avoidance of the plume), temporary physiological effects (e.g., gill flaring), temporary reduced feeding rates and success, and moderate levels of stress, which may affect the fitness of the exposed individuals. The effects of this exposure are uncertain, but not expected to result in injury to individual fish.

The number of juveniles that are likely to be injured or killed by action-related stressors is unknown, but is expected to be extremely low because they are not expected to be present, and such a small fraction of a cohort that it will have no detectable effect on any of the characteristics of a VSP, abundance, productivity, distribution, or genetic diversity) for the affected population(s).

Based on the best available information, the scale of the direct and indirect effects of the proposed action, when considered in combination with the degraded baseline, cumulative effects, and the impacts of climate change, will be too small to cause any population level impacts on PS steelhead. Therefore, the proposed action will not appreciably reduce the likelihood of survival and recovery of this listed species.

2.7 Conclusion

After reviewing and analyzing the current status of the listed species and critical habitat, the environmental baseline within the action area, the effects of the proposed action, the effects of other activities caused by the proposed action, and cumulative effects, it is NMFS' biological opinion that the proposed action is not likely to jeopardize the continued existence of PS Chinook salmon, or PS steelhead or adversely modify designated critical habitat for PS Chinook salmon, or PS steelhead.

2.8 Incidental Take Statement

Section 9 of the ESA and Federal regulations pursuant to section 4(d) of the ESA prohibit the take of endangered and threatened species, respectively, without a special exemption. "Take" is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. "Harm" is further defined by regulation to include significant habitat modification or degradation that actually kills or injures fish or wildlife by significantly impairing essential behavioral patterns, including breeding, spawning, rearing, migrating, feeding, or sheltering (50 CFR 222.102). "Incidental take" is defined by regulation as takings that result from, but are not the purpose of, carrying out an otherwise lawful activity conducted by the Federal agency or applicant (50 CFR 402.02). Section 7(b)(4) and section 7(o)(2) provide that taking that is incidental to an otherwise lawful agency action is not considered to be prohibited taking under the ESA if that action is performed in compliance with the terms and conditions of this ITS.

2.8.1 Amount or Extent of Take

In the biological opinion, NMFS determined that incidental take is reasonably certain to occur as follows:

- Incidental take in the form of injury or death due to entrainment or strike during clamshell dredging,
- Incidental take in the form of harm from diminished water quality and diminished prey availability.

The distribution and abundance of fish that occur within an action area are affected by habitat quality, competition, predation, and the interaction of processes that influence genetic, population, and environmental characteristics. These biotic and environmental processes interact in ways that may be random or directional, and may operate across far broader temporal and spatial scales than are affected by the proposed action. Thus, the distribution and abundance of fish within the action area cannot be attributed entirely to habitat conditions, nor can NMFS precisely predict the number of fish that are reasonably certain to be injured or killed if their habitat is modified or degraded by the proposed action.

Therefore, we cannot predict with meaningful accuracy the number of PS Chinook salmon and PS steelhead that are reasonably certain to be injured or killed by exposure to any of these stressors. Additionally, NMFS knows of no device or practicable technique that would yield

reliable counts of individuals that experience these impacts. In such circumstances, NMFS uses the causal link established between the activity and the likely extent and duration of changes in habitat conditions to describe the extent of take as a numerical level of habitat disturbance. The most appropriate surrogates for take are action-related parameters that are directly related to the magnitude of the expected take.

For this proposed action, the potential for occurrences of 1) injury or death from entrainment, and 2) harm from being exposed to elevated turbidity and reductions in forage for juvenile salmonids, is directly related to the amount of time that the dredge is in operation, and the timing of the dredge operation.

Injury or Death from entrainment - Since the potential for ESA listed fish to be entrained is most directly determined by the amount of time the dredge is actively operating and the timing of the operation, the extent of take identified for the proposed action is related to the number of days of dredging within a timeframe that anticipates the lowest presence of vulnerable lifestages of listed fish. Therefore, the extent of take is a maximum of 20 days of dredging, to occur between July 16 – February 14. Exceeding this indicator for extent of take will trigger the reinitiation provisions of this opinion.

Harm from turbid conditions – Habitat modified temporarily by suspended solids and contaminants will actually injure fish by impairing normal patterns of behavior including rearing and migrating in the action area, and causing potential health effects. Take in the form of harm from these causes cannot be accurately quantified as a number of fish. The distribution and abundance of fish within the action area cannot be predicted based on existing habitat conditions, and because of temporal and dynamic variability in population dynamics in the action area, nor can NMFS precisely predict the number of fish that are reasonably certain to respond adversely to habitat modified by the proposed action. When NMFS cannot quantify take in numbers of affected animals, instead we consider shifts to the likely extent of changes in habitat quantity and quality to indicate the extent of take.

Because injury to individuals can occur when exposed to high levels of suspended sediment, or as a result of avoiding areas affected with high levels of sediment, the extent of take is measured as the anticipated area where suspended sediment will be present. The levels of suspended contaminants are expected to be proportional to the amount of injury that the proposed action is likely to cause through physiological stress from elevated suspended sediments and contaminants throughout the duration of the projects' in water activities and potentially throughout the compliance boundary of 200 feet from ongoing activities.

The maximum extent of take is defined by the compliance area for turbidity monitoring within the 200 foot buffer around the project (action area). Within the compliance boundary, injury may occur to listed species present in the area due to increased contaminant exposure. In this case, the point of compliance for a temporary area of mixing shall be at a radius of 200 feet from the activity causing the turbidity exceedance, resulting in an area of 243,300 square feet. This distance is well beyond the distance at which construction turbidity is likely to be visible in the highly turbid surface waters of Commencement Bay.

Harm from diminished prey availability – Reductions in fitness among juveniles are likely when prey availability is decreased and competition increases for prey resources. The extent of take is therefore measured as the area of harbor bottom where dredging will remove substrate and the benthic prey communities (233,100 square feet between the two terminals).

Exceedance of any of the exposure limits described above would constitute an exceedance of authorized take that would trigger the need to reinitiate consultation.

Although these take surrogates could be construed as partially coextensive with the proposed action, they still function as effective reinitiation triggers because the Corps has authority to conduct compliance inspections and to take actions to address non-compliance (33 CFR 326.4).

2.8.2 Effect of the Take

In this biological opinion, NMFS determined that the amount or extent of anticipated take, coupled with other effects of the proposed action, is not likely to result in jeopardy to the species or destruction or adverse modification of critical habitat.

2.8.3 Reasonable and Prudent Measures

"Reasonable and prudent measures" are nondiscretionary measures that are necessary or appropriate to minimize the impact of the amount or extent of incidental take (50 CFR 402.02). The USACE shall require any permittee or contractor performing the work described in this document to:

1. Minimize incidental take from entrainment and strike during dredging;
2. Minimize incidental take from turbidity and suspended sediments during dredging; and
3. Ensure completion of an annual monitoring and reporting program to confirm the take exemption for the proposed action is not exceeded, and that the terms and conditions in this incidental take statement are effective in minimizing incidental take.

2.8.4 Terms and Conditions

The terms and conditions described below are non-discretionary, and the USACE or the Port of Tacoma must comply with them in order to implement the RPMs (50 CFR 402.14). The USACE or the Port of Tacoma has a continuing duty to monitor the impacts of incidental take and must report the progress of the action and its impact on the species as specified in this ITS (50 CFR 402.14). If the entity to whom a term and condition is directed does not comply with the following terms and conditions, protective coverage for the proposed action would likely lapse.

The following terms and conditions implement RPM 1, minimize entrainment and strike during dredging:

a. The applicant, Port of Tacoma, shall ensure that during dredging operations, the clamshell bucket is lowered to the bottom as slowly as possible to allow ESA listed fish the opportunity to escape.

The following terms and conditions implement RPM 2, minimize turbidity during dredge operation:

a. The applicant, Port of Tacoma, shall ensure turbidity remains at background levels at a radius of (200 feet) from the activity during dredging operations by adhering to dredge management protocols including monitoring and compliance reporting of turbidity levels observed during dredging operations.
    i. Limit sediment removal to no more than 26,890 cubic yards; and
    ii. Adjust dredging operations to ensure that visible turbidity plumes do not exceed 200 feet from the project site, and to halt work should the visible turbidity plume approach and that range; and
    iii. If turbidity levels are exceed the standards as described in the Water Quality Certification for this project, install a floating silt curtain around the in-water dredge area to minimize the dispersion of suspended sediment thereby reducing turbidity.
b. USACE and the applicant shall ensure in-water work will be performed in accordance with permit conditions, which set timing restriction so in-water work occurs during the period of July 16 to February 14.

The following terms and conditions implement RPM 3, monitoring and reporting:

a. Action Monitoring. The applicant shall submit a monitoring report to NMFS by March 31 summarizing the following for the previous calendar year:
    i. Hours of dredging for each day dredging occurred;
    ii. The number of days dredging occurred each month;
    iii. The number of days of dredging occurred for the previous calendar year;
    iv. The daily and cumulative sediment removal totals Turbidity levels from monitoring and whether turbidity compliance was met.
    v. Monitoring reports shall be submitted to:
        projectsreports.wcr@noaa.gov
        Include WCRO-2021-00698 in the subject line.

2.9 Conservation Recommendations

Section 7(a)(1) of the ESA directs Federal agencies to use their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of the threatened and endangered species. Specifically, conservation recommendations are suggestions regarding discretionary measures to minimize or avoid adverse effects of a proposed action on listed species or critical habitat or regarding the development of information (50 CFR 402.02). The following three conservation recommendations are discretionary measures that NMFS believes are consistent with this obligation and therefore should be carried out by the USACE:

1. Regularly require use of floating silt curtains around the in-water dredge area in the Blair Waterway to minimize the dispersion of suspended sediment thereby reducing turbidity.
2. Narrow the conditions under which maintenance dredging is allowed so that habitat values can more completely recover between dredge occurrences, for example dredging would not

be allowed annually, without a showing that sediment accumulation is occurring or has occurred that threatens to impair navigation or berthing.

3. The USACE should consult with NMFS under Section 7(a)(1) to create a mitigation bank to offset impacts associated with the regular exercise of its authority allowing impacts to the nations waters.

Please notify NMFS if the USACE or the applicant carries out this recommendation so that we will be kept informed of actions that are intended to improve the conservation of listed species or their designated critical habitats.

2.10 Species and Critical Habitats Not Likely to be Adversely Affected

The applicable standard to find that a proposed action is not likely to adversely affect listed species or critical habitat is that all of the effects of the action are expected to be discountable, insignificant, or completely beneficial. Beneficial effects are contemporaneous positive effects without any adverse effects to the species or critical habitat. Insignificant effects relate to the size of the impact and should never reach the scale where take occurs. Discountable effects are those extremely unlikely to occur.

Adult Bocaccio and Yelloweye Rockfish are not expected to occur within the action areas, as water depths are too shallow, and substrates consist of silty sand and sandy silt. These fish species are associated with deepwater habitats of Puget Sound and typically breed and forage near the ocean floor. The nearshore habitat in the action area 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 areas. 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 areas (Love et al. 1991). Deep water portions outside of the action areas that extend into Commencement Bay provide some suitable habitat for adult and juvenile Bocaccio and Yelloweye Rockfish, and these species could be present within those areas at any time of the year. Larvae and small juveniles located within the greater Puget Sound during the spring and summer months are subject to currents that may potentially drift the fish into the Project action area, but because the abundance of mature breeding fish in adjacent areas is likely to be very low based on poor habitat conditions, we do not expect presence of larvae or juveniles during the work window even though the work window overlaps peak larval presence generally. Because effects of the proposed action (water quality reductions) are unlikely to reach areas where either species of rockfish are present, nor the areas designated as critical habitat, we consider effects of the proposed action are discountable and therefore not likely to adversely affect either individuals of these species or their critical habitat.

Southern Resident killer whales are unlikely to be present in the action areas. 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 in 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 areas.

Southern resident killer whales will not be exposed to the short term water quality effects of the action because the area affected by water quality disturbance will not disperse into areas they could be found. It is very unlikely that SR killer whales would be present within the Blair Waterway where disturbance effects would occur. Thus, water quality effects on SR killer whale growth or development will be insignificant. The proposed action may affect the quantity of their preferred prey, Chinook salmon. Any salmonid take will be very minor and the extent of take would result in an insignificant reduction in adult equivalent prey resources for SR killer whales that may intercept these species within their range. Finally, the dredging will not affect migration.

While PS Chinook salmon are prey, a PBF of SRKW designated critical habitat, juvenile chinook are not likely to be affected by reduction in abundance to the degree that returning adult fish (the lifestage upon which SRKW prey) will be diminished. Because SRKW prey and water quality will not be altered by the proposed action, we consider all effects to SRKW critical habitat insignificant or discountable.

Based on this analysis, NMFS determined the action is not likely to adversely affect the Southern resident killer whales or their critical habitat.

Humpback whales are occasionally sighted in south Puget Sound, but they have never been documented in the Blair Waterway. Humpback whales, if present in the project vicinity, would only be expected to occur in the waters of adjacent Puget Sound, and not within inner Commencement Bay. Humpback whales will not be exposed to the short term water quality effects of the action because the area affected by water quality disturbance will not disperse into areas they could be found. Humpback whales are present only infrequently in the adjacent waters of Puget Sound, and are not expected to be present within the Blair Waterways at any time of the year, and will not be affected by activities conducted within the waterway. Thus, water quality effects on humpback whale growth or development will be insignificant. Finally, the dredging will not affect migration.

Based on this analysis, NMFS concurs with COE that the proposed action is not likely to adversely affect the subject listed humpback whales.

2.11 Reinitiation of Consultation

This concludes the ESA section 7 consultation for Blair Waterway Maintenance Dredging Project.

As 50 CFR 402.16 states, reinitiation of consultation is required and shall be requested by the Federal agency or by the Service where discretionary Federal agency involvement or control

over the action has been retained or is authorized by law and if: (1) The amount or extent of incidental taking specified in the ITS is exceeded, (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion, (3) the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in the biological opinion, or (4) a new species is listed or critical habitat designated that may be affected by the action.

3.MAGNUSON-STEVENS FISHERY CONSERVATION AND MANAGEMENT ACT ESSENTIAL FISH HABITAT RESPONSE

Section 305(b) of the MSA directs Federal agencies to consult with NMFS on all actions or proposed actions that may adversely affect EFH. Under the MSA, this consultation is intended to promote the conservation of EFH as necessary to support sustainable fisheries and the managed species' contribution to a healthy ecosystem. For the purposes of the MSA , EFH means "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity", and includes the physical, biological, and chemical properties that are used by fish (50 CFR 600.10). Adverse effect means any impact that reduces quality or quantity of EFH, and may include direct or indirect physical, chemical, or biological alteration of the waters or substrate and loss of (or injury to) benthic organisms, prey species and their habitat, and other ecosystem components, if such modifications reduce the quality or quantity of EFH. Adverse effects on EFH may result from actions occurring within EFH or outside of it and may include site-specific or EFH-wide impacts, including individual, cumulative, or synergistic consequences of actions (50 CFR 600.810). Section 305(b) of the MSA also requires NMFS to recommend measures that can be taken by the action agency to conserve EFH. Such recommendations may include measures to avoid, minimize, mitigate, or otherwise offset the adverse effects of the action on EFH [50 CFR 600.905(b)]

This analysis is based, in part, on the EFH assessment provided by the USACE and descriptions of EFH for Pacific Coast salmon (PFMC 2014), and Pacific Coast groundfish (PFMC 2005) contained in the fishery management plans developed by the PFMC and approved by the Secretary of Commerce.

3.1 Essential Fish Habitat Affected by the Project

As part of the information provided in the request for ESA concurrence, the USACE determined that the proposed action may have an adverse effect on EFH designated for Pacific Coast salmon, Pacific Coast groundfish, and coastal pelagic species.

3.2 Adverse Effects on Essential Fish Habitat

The proposed action will temporarily diminish water quality, disturb benthic habitat and bottom sediments, and resuspend contaminated sediments contemporaneously with pulses of turbidity. Because the action is a maintenance dredge area of disturbance is relatively small, and the

disturbance will be short-lived, will maintain current conditions, and will not change the functional characteristics of the habitat.

3.3 Essential Fish Habitat Conservation Recommendations

The proposed action includes conservation measures, BMP and design features to reduce construction-related impacts on the quantity and quality of EFH for Pacific Coast Salmon (Chinook Salmon, coho salmon and pink Salmon), Pacific Coast Groundfish (e.g. flounder, sole),. The effects of the proposed action will be minimized by use of clamshell dredge. With the exception of the following conservation recommendation to reduce impacts on water quality and prey availability, NMFS knows of no other reasonable measures to further reduce effect on EFH.

To reduce adverse impacts on water quality and prey availability, the USACE should require the applicant to:

1. Require that the contractor use a floating silt curtain during dredging to reduce the likelihood of extensive fine sediments plume; and
2. Require vessel operators to operate at the lowest safe maneuvering speeds and power settings when maneuvering in waters close to the shoreline.

3.4 Statutory Response Requirement

As required by section 305(b)(4)(B) of the MSA, USACE must provide a detailed response in writing to NMFS within 30 days after receiving an EFH Conservation Recommendation. Such a response must be provided at least 10 days prior to final approval of the action if the response is inconsistent with any of NMFS' EFH Conservation Recommendations unless NMFS and the Federal agency have agreed to use alternative time frames for the Federal agency response. The response must include a description of measures proposed by the agency for avoiding, minimizing, mitigating, or otherwise offsetting the impact of the activity on EFH. In the case of a response that is inconsistent with the Conservation Recommendations, the Federal agency must explain its reasons for not following the recommendations, including the scientific justification for any disagreements with NMFS over the anticipated effects of the action and the measures needed to avoid, minimize, mitigate, or offset such effects (50 CFR 600.920(k)(1)).

3.5 Supplemental Consultation

The USACE must reinitiate EFH consultation with NMFS if the proposed action is substantially revised in a way that may adversely affect EFH, or if new information becomes available that affects the basis for NMFS' EFH Conservation Recommendations (50 CFR 600.920(l)).

4.DATA QUALITY ACT DOCUMENTATION AND PRE-DISSEMINATION REVIEW

The Data Quality Act (DQA) specifies three components contributing to the quality of a document. They are utility, integrity, and objectivity. This section of the opinion addresses these

DQA components, documents compliance with the DQA, and certifies that this opinion has undergone pre-dissemination review.

4.1 Utility

Utility principally refers to ensuring that the information contained in this consultation is helpful, serviceable, and beneficial to the intended users. The intended users of this opinion are USACE and the Port of Tacoma. Individual copies of this opinion were provided to the USACE. The document will be available within two weeks at the NOAA Library Institutional Repository [https://repository.library.noaa.gov/welcome]. The format and naming adheres to conventional standards for style.

4.2 Integrity

This consultation was completed on a computer system managed by NMFS in accordance with relevant information technology security policies and standards set out in Appendix III, 'Security of Automated Information Resources,' Office of Management and Budget Circular A-130; the Computer Security Act; and the Government Information Security Reform Act.

4.3 Objectivity

Information Product Category: Natural Resource Plan

Standards: This consultation and supporting documents are clear, concise, complete, and unbiased; and were developed using commonly accepted scientific research methods. They adhere to published standards including the NMFS ESA Consultation Handbook, ESA regulations, 50 CFR 402.01 et seq., and the MSA implementing regulations regarding EFH, 50 CFR 600.

Best Available Information: This consultation and supporting documents use the best available information, as referenced in the References section. The analyses in this opinion and EFH consultation contain more background on information sources and quality.

Referencing: All supporting materials, information, data and analyses are properly referenced, consistent with standard scientific referencing style.

Review Process: This consultation was drafted by NMFS staff with training in ESA and MSA implementation, and reviewed in accordance with West Coast Region ESA quality control and assurance processes.

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APPENDIX H

DEPARTMENT OF NATURAL RESOURCES SITE USE AUTHORIZATION

20-520043

HILARY S. FRANZ
COMMISSIONER OF PUBLIC LANDS

OPEN WATER DISPOSAL SITE USE AUTHORIZATION NO. 20-520043

The STATE OF WASHINGTON, acting by and through the Department of Natural Resources ("State"), does hereby permit the PORT OF TACOMA, a Washington municipal corporation ("Grantee"), to use certain lands owned by the state of Washington situated in Pierce County and designated as follows:

That area encompassed within a 600 foot radius of a point which is 47° 18.145 North Latitude and 122° 27.815 West Longitude NAD'83, also known as the Commencement Bay non-dispersive VTS open water disposal site.

SECTION 1 TERMS

1.01 Term. The term of this Use Authorization shall begin August 9, 2021 (the "Commencement Date"), and will expire at 11:59 pm on February 15, 2022 (the "Termination Date"), or as otherwise specified herein. Whenever the phrase "termination of this Authorization" or "termination of the Authorization" is used in this Agreement, it shall refer to the ending, termination, cancellation, or expiration of the Use Authorization.

1.02 Extension. State may extend this Use Authorization upon whatever terms and conditions it may prescribe, or if providing an extension is in the public interest.

1.03 Breach. Grantee is in breach of this Use Authorization on the occurrence of any of the following:

(a) Failure to pay fees or other expenses when due;
(b) Failure to comply with any law, regulation, policy, or order of any lawful governmental authority;
(c) Failure to comply with any other provision of this Use Authorization.

SECTION 2 USE OF PREMISES

2.01 Permitted Use. Grantee shall have non-exclusive use of the premises only for the disposal of approved dredged material of a volume not to exceed twenty six thousand eight

hundred ninety (26,890) cubic yards, as authorized by federal, state, and local regulatory agencies, and as specifically described in US Army Corps of Engineers Permit No. NWS-2020-1017-WRD for the Port of Tacoma Blair Waterway Terminal Dredging. This volume will be determined based on pre- and post- dredging site measurements using procedures established by State. If such procedures are not established by State, then volume will be based on the barge volume times the number of trips to the site.

2.02 Positioning. Grantee, its contractor, or operator shall fix and record exact position (latitude and longitude to the nearest one-thousandths of a minute) at the initiation and completion of discharge and shall concentrate the dumping of material at the center of the site, unless otherwise specified. The vessel's position shall be fixed by using a global positioning system (GPS), the Coast Guard Puget Sound Vessel Traffic Service (PSVTS), Radar, LORAN-C, SATNAV, or any other methods approved by State. Grantee, its contractor, or operator shall also record the reading on the vessel's fathometer at the time of discharge of the material. In areas where the Coast Guard PSVTS is available, Grantee, its contractor, or operator shall notify PSVTS ("Seattle Traffic" on VHF-FM Channel 14) prior to arriving at the disposal site and shall obtain US Coast Guard notification that the barge is on site at the time of dumping. If such notification is not received the material shall not be dumped. Position and fathometer recordings shall be made on Disposal Site Use Report forms (see Paragraph 4.02) provided by State.

2.03 Cleanup. All floatable debris coming from material disposed of at the site shall be collected and disposed of on land by Grantee. Grantee shall comply with all federal, state, and local laws, regulations, rules or ordinances in disposing of any such debris.

2.04 Other. From time-to-time, if it is determined that additional environmental conditions or benefits to the public are necessary, State reserves the right to amend this Use Authorization to include such conditions.

2.05 Disposal Method. All disposals of approved dredged materials shall be done in accordance with the specifications set forth in the Plan of Operations (Attachment A). In addition to any requirements described in the Plan of Operations, .

SECTION 3 PAYMENT

The payment of these fees to State is the essence of this Use Authorization, and the same shall be, and is, a condition precedent to the execution and continuance of this Use Authorization or any rights thereunder.

3.01 Minimum Fee. Grantee shall pay State a minimum, nonrefundable fee of $2,000.00 . In addition, any disposal materials calculated at $0.45 for each cubic yard dumped, in excess of the minimum fee, as provided in WAC 332-30-166(9), shall also be paid to State.

3.02 Payment. Failure to pay any required fees in addition to the minimum, nonrefundable fee shall be considered a breach of this Use Authorization under Paragraph 1.03. Payment is to

be made to the Department of Natural Resources, Financial Management Division, PO Box 47041, Olympia, Washington 98504-7041, in the following manner:
$2,000.00 is due and payable at time of application. Additional payments, as provided by Paragraph 3.01; if any, due monthly not more than thirty (30) days after completion of each calendar month's dredging. Payments to be based on either actual amounts dumped or estimates based on barge volume.

3.03 Records. Grantee shall keep an accurate record and account of all materials deposited at the above described site, including but not limited to those records required by Paragraph 2.02 of this Use Authorization on the Disposal Site Use Report (see Paragraph 4.02). State shall be allowed to inspect and audit books, contracts, and accounts of Grantee to determine whether State is being paid the full amount payable to State for the disposal of such material, and to ensure that the material discharged at the open water disposal site originated at an approved dredging site.

3.04 Application Fee Adjustments. The fees stated herein may be reviewed and adjusted annually or more often as needed in accordance with WAC 332-30-166(9).

SECTION 4 REQUIREMENTS

4.01 Notification. Grantee shall observe the completed Plan of Operation (Attachment A) submitted in writing to State at least five (5) working days in advance of first use. State must be notified of, and approve, any changes in the Plan of Operations at least twenty-four (24) hours before the changes are implemented. Notification by Grantee, and subsequent approval by State, may be made verbally. However, the verbal notification must be followed by submission of a revised Plan of Operation within five (5) working days. State shall be notified by telephone at (360) 902-1735, twenty-four (24) hours prior to each startup of dredging operations. Grantee also shall notify State by letter immediately upon completing use of the site.

4.02 Disposal Site Use Report. The tug captain shall fill out a Disposal Site Use Report (provided by State) at the time of each disposal event. It is the responsibility of Grantee to ensure that the completed forms are forwarded to State at the completion of each week's disposal operations.

4.03 Volume Reporting. Within twenty (20) days of completing dredging operations for a calendar month, Grantee shall forward a summary of that month's disposal information to State. The summary shall include the volumes of material deposited at the site or volumes estimated from barge volume, and shall be provided on a Monthly Disposal Statement form provided by State.

4.04 Compliance. Grantee shall conform to any applicable law, regulation, permit, or license of any public authority affecting the disposal site premises and the use thereof, and shall correct, at Grantee's own expense, any failure of compliance created through Grantee's fault or by reason

of Grantee's use. If any other permit or license condition changes during the term of this Use Authorization, those changed conditions shall apply to Grantee.

4.05 Permits. Procurement of the necessary permits and licenses, shall be solely the responsibility of Grantee.

4.06 Indemnity. Grantee shall indemnify and save harmless State, its employees, officers, officials, and agents from any and all liability; damages (including environmental damages, damages to land, aquatic life, and other natural resources); expenses; causes of action; suits; claims; costs; fees (including attorneys' fees and costs); penalties (civil or criminal); response; clean-up; and habitat restoration costs assessed, imposed or incurred as a result of the use, occupation or control of the site by Grantee's employees, agents, assigns, contractors, subcontractors, licensees, or invitees. This indemnity shall not extend to liability arising solely out of the willful or grossly negligent act of State or State's employees, officers, officials, or agents.

4.07 Damages. In addition to other remedies available to State under the law, State may charge Grantee a fee of $5.00 per cubic yard for all dumping not in conformance with this Use Authorization, WAC 332-30-166 or other statute, rule, regulation or ordinance governing the activity, including, but not limited to, materials not approved for open water disposal, failure to give proper notification, dumping without valid permits and/or dumping outside the disposal zone.

4.08 Statutory Reference. Any reference to a statute or rule means that statute or rule as presently enacted or hereafter amended or superseded.

4.09 Remedies. In addition to any other remedies available, if any condition of this Use Authorization is violated under Paragraph 1.03, State may suspend or terminate this Use Authorization. Any action by a contractor, operator, or agent of Grantee may be imputed to Grantee.

4.10 Applicable Law and Venue. This Use Authorization is to be interpreted and construed in accordance with the laws of the State of Washington. Venue for any action arising out of or in connection with this Use Authorization is in the Superior Court for Thurston County, Washington.

4.11 Survival. Any obligations of Grantee not fully performed upon termination of this Use Authorization do not cease, but continue as obligations of the Grantee until fully performed.

Grantee expressly agrees to all covenants herein and binds itself for the payment hereinbefore specified.

PORT OF TACOMA

Dated: _____, 20__ _____

By: MARK RETTMANN
Title: Project Manager II
Address: PO Box 1837
Tacoma, WA 98401-1837

Phone: 253-592-6716

STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES

Dated: _____, 20__

_____
By: KATRINA LASSITER
Title: Assistant Division Manager
Address: 1111 Washington St. SE
MS 470207
Olympia, WA 98504-7027

APPENDIX K
BIOLOGICAL EVALUATION

BIOLOGICAL EVALUATION

Blair Waterway Berth Maintenance Dredging
Washington United Terminal and Husky Terminal

Port of Tacoma

Prepared by

LEON Environmental, LLC

Seattle, WA

October 2020
Revised February 2021

TABLE OF CONTENTS

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	Evolutionary Significant Unit
FR	Functioning at Risk
ft	foot (feet)
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
ODFW	Oregon Department of Fish and Wildlife
OHW	Ordinary High Water
PCE	primary constituent element
PHS	Priority Habitat and Species

Abbreviations and Acronyms (Continued)

Port	Port of Tacoma
SIP	Standard Individual Permit
SPCC	spill prevention, control and countermeasure
SSPS	Shared Strategy for Puget Sound
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 October 2020 Biological Evaluation was revised February 2021 to remove the Pierce County Terminal (PCT) from the Blair Waterway Berth Maintenance Dredging Project and this Biological Evaluation.

The proposed action will consist of dredging sediment mounds and shallower berth elevations at two locations along the Blair Waterway. Maintenance dredging is urgently needed to restore terminal operations to full capacity at Washington United Terminal (WUT) and Husky Terminal (Husky) prior to the next peak export season (e.g., August 2021). The mounds and high spots pose navigation hazards to Port operations, requiring some terminal operators to "light-load" vessels and others may have to begin light loading vessels soon. Shoaling is an unacceptable safety hazard, significant loss of property (damage to vessels) is likely, and the Port and tenants are experiencing economic hardship due to "light loading".

The volume of sediment to be dredged at each terminal is summarized in Table 1. The sediment is assumed to be clean based on prior testing throughout the Blair Waterway. The Port is completing a sediment characterization study, in consultation with the Dredged Material Management Program (DMMP) to evaluate material suitability for disposal at the Commencement Bay open-water disposal site. This sediment characterization is a chemistry-only evaluation. If the chemistry for a dredged material management unit (DMMU) fails DMMP criteria, the Port may decide to conduct toxicity testing under the DMMP framework to determine whether the DMMU meets DMMP criteria for open-water disposal. Preliminary data as of February 2021 indicate all dredged material may be suitable for open water disposal. Unsuitable materials will be disposed 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' 2015-2016 ESA documentation and are not duplicated in this document.

The action areas include the dredging footprints, the extent of temporarily elevated underwater and terrestrial noise levels, and 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 highly turbid fresh water in a thin surface layer over much of Commencement Bay during storm events and snow melt.

Listed species addressed in this document include Chinook salmon, steelhead, bull trout, bocaccio, canary rockfish, yelloweye rockfish, humpback whales, Southern Resident killer whales, and marbled murrelet. Critical habitat addressed in this document include designated critical habitat for Puget Sound ESU Chinook salmon; Puget Sound DPS steelhead and bull trout; Puget Sound/Georgia Basin bocaccio, canary rockfish, and yelloweye rockfish; and Southern Resident killer whale.

Effects determinations to listed species and critical habitats that may occur within the action areas are summarized in Table 2. No ESA listed species are expected to be adversely affected by the proposed dredging. This BE identifies various measures that will be implemented to avoid adverse impacts.

1.0 INTRODUCTION

The Port of Tacoma (Port) proposes to conduct maintenance dredging in the berthing areas of Washington United Terminal (WUT) and Husky Terminal (Husky) in the Blair Waterway, Tacoma, Washington. These marine terminals have each been dredged previously to an authorized depth of -51 ft MLLW. However, sediment mounds and high spots produced by propeller-wash have recently accumulated at critical locations throughout both terminals. The mounds pose navigation hazards to Port operations, requiring terminal operators to "light-load" vessels. The critical impairment to operations is causing unacceptable safety hazards, risk of significant damage to vessels, and severe economic losses for the Port and its tenants; therefore, dredging to restore terminal operations to full capacity is required as soon as possible and is urgently needed prior to the next peak export season (e.g., August 2021).

The existing accumulations of sediment have been displaced from adjacent areas of Blair Waterway by routine docking maneuvers of cargo vessels at the Blair Waterway terminals. The Blair Waterway and terminals have previously been dredged to a depth of -51 ft MLLW. The project objective is to restore the previously dredged project depth of -51 ft MLLW within the terminal berths to maintain the previously established navigation depths to the Blair Waterway to maintain the facilities operation.

The Port proposes to dredge a total volume estimated at nearly 27,000 cubic yards (cy) to restore the authorized depth of -51 ft Mean Lower Low Water (MLLW), including authorization for a 1-foot over dredge. The Port does not anticipate dredging to substantially exceed the approximately 18,000 cy targeted volume needed to restore authorized depths of -51 ft.

The Port is requesting a NWP35 (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 by the Port:

- 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.
- Biological Evaluation Earley Business Center, Port Parcel 1B

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 two locations within Blair Waterway, Tacoma, Washington: Washington United Terminal (WUT) and Husky Terminal (Husky) (Figure 1). Both locations are subtidal areas used to berth ships for the transfer of cargo into or out of the Port of Tacoma.

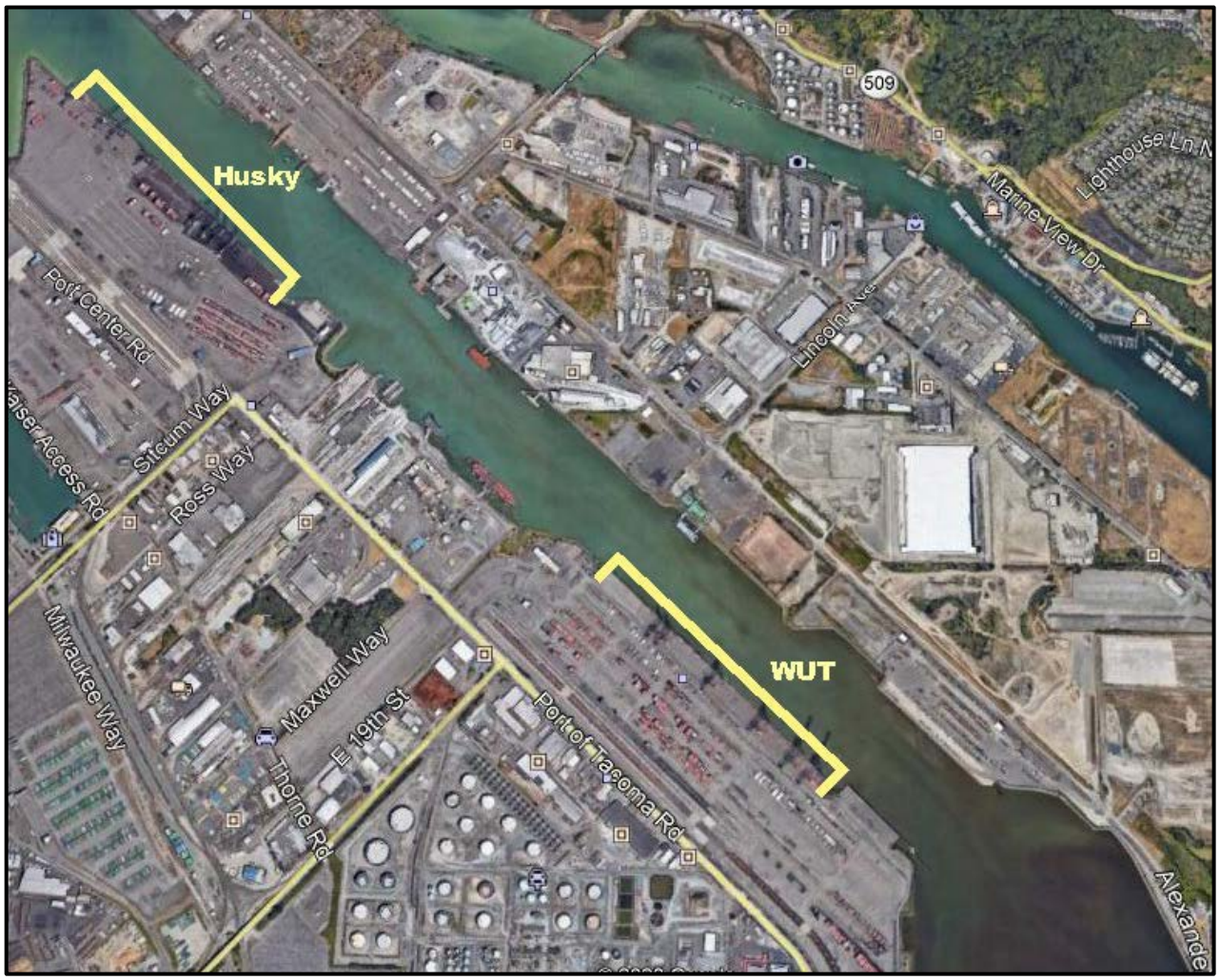


Figure 1. Blair Waterway, Port of Tacoma (Google Earth)

1.2 PROJECT DESCRIPTION

The proposed action is a maintenance dredging action to restore previously dredged depths (-51 ft MLLW) at WUT (Figure 2) and Husky (Figure 3) within the Blair Waterway. The proposed action includes these two specific sites where sediment has accumulated and is interfering with safe navigation.

The Port proposes to dredge a total volume estimated at ≈ 27,000 cy from the two terminals (WUT, Husky) to restore the authorized depth of -51 ft MLLW at each terminal, including a 1-ft over dredge (≈ 9,000 cy). Although the Port will characterize sediments within the 1-ft over dredge under the DMMP framework, it does not anticipate dredging to substantially exceed the 18,000 cy dredge volume (Table 1) needed to restore authorized depths of -51 ft. The total volume proposed to be dredged from each terminal, including potential over dredge, is summarized in the table below.

Table 1. Blair Waterway Project Dredged Material Volumes

Terminal	Authorized Depth (ft MLLW)	Proposed Dredging Volumes		Total Vol. (cy)
		Authorized Depth (cy)	1-ft Over Depth (cy)	
Husky	−51	5,830	2,250	8,080
WUT	−51	12,440	6,370	18,810
Total Volume (cy)		18,270	8,620	26,890

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 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 Commencement Bay DMMP 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. No water will be allowed to return to waters of the U.S., including during offloading at an upland transloading facility.

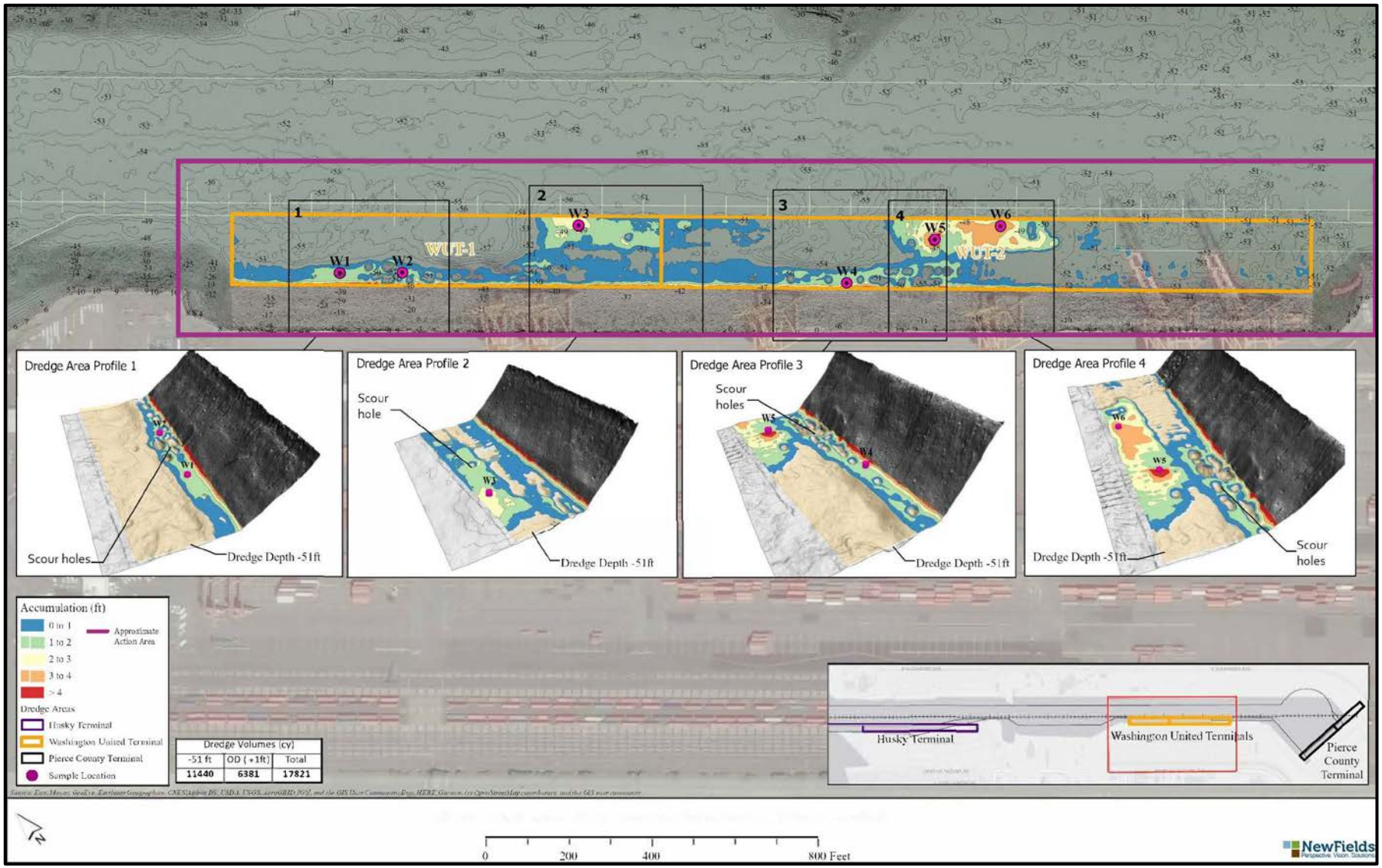


Figure 2. Action Area, Washington United Terminal

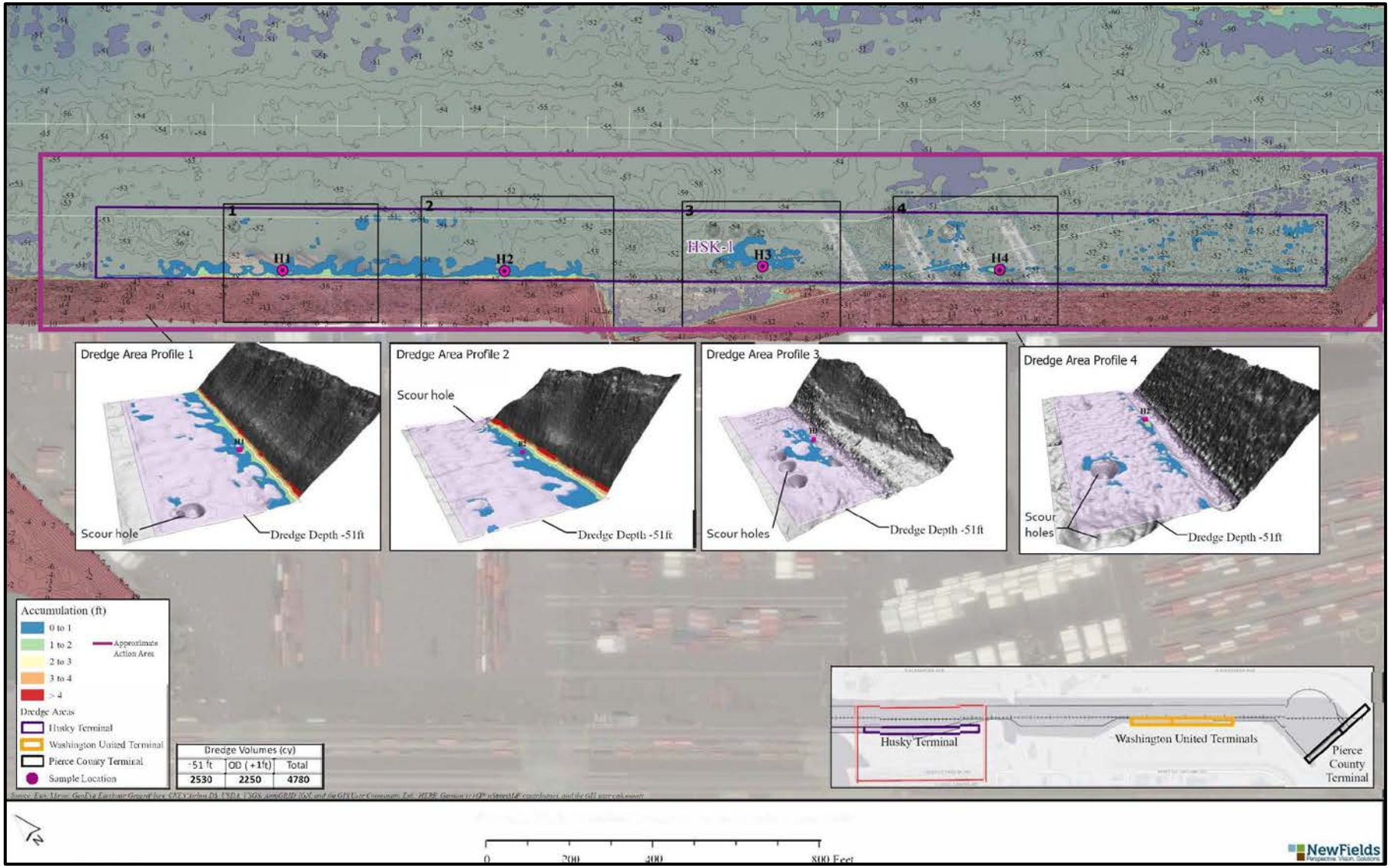


Figure 3. Action Area, Husky Terminal

2.0 EVALUATED ESA SPECIES

The Endangered Species Act (ESA)-listed species addressed in this document include Chinook Salmon, Steelhead, Bull Trout, Bocaccio, Yelloweye Rockfish, Humpback Whales, Southern Resident Killer Whales, and Marbled Murrelet. This document also addresses critical habitat for Chinook Salmon; Puget Sound DPS Steelhead and Bull Trout; Puget Sound/Georgia Basin Bocaccio, and Yelloweye Rockfish; and Southern Resident Killer Whale.

Effects of the proposed action to ESA-listed species potentially include temporarily elevated levels of 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 7); 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 provides a summary of effect determinations to listed species and critical habitats that may occur within the action areas.

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 biological evaluation (BE) is to examine the effects of the proposed project on ESA-listed species, designated and proposed critical habitats, and EFH for purposes of consultation with the Federal Services (USFWS/NMFS) under Section 7 of the ESA and the Magnuson-Stevens Act.

Port projects with similar or larger dredging actions, with similar ESA-listed species, designated and proposed critical habitats, and EFH which resulted in similar effect determinations as the proposed BE include the following projects. See the specific project permits, BEs, and consultation letters for additional details.

- Pier 4 Reconfiguration Project (NWS-2014-0456-WRD)
- Husky Terminal Maintenance Dredge (NWS-2010-1118-WRD)
- WUT Maintenance Dredge (NWS-2008-01128-WRD)

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 typically be conducted during standard daylight working hours, roughly 8–10 hours each day.

At each location maintenance dredging is anticipated to occur over periods of one to two weeks. No action other than maintenance dredging will occur as part of this project.

Table 2. Summary of Effect Determinations to ESA-Listed Species Potentially Occurring in the Action Areas 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							
Humpback Whale	*Megaptera novaeangliae*	N/A	Endangered	Endangered	Not designated or proposed	NLTAA	N/A
Killer Whale (Orca)	*Orcinus orca*	Southern Resident DPS	Endangered	Endangered	Designated	NLTAA	NLTAA
Birds							
Marbled Murrelet	*Brachyramphus marmoratus*	N/A	Threatened	Threatened	Not Designated 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	NLTAA	NLTAA
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 "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 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. Sediment will be removed from about one to four feet within each of the dredge locations. Sediments with the dredging areas are disturbed by propwash from routine vessel operations; therefore, benthic organisms that exist in these locations repopulate rapidly. These organisms are expected to repopulate the maintenance dredge areas within the following year as benthic invertebrates 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.

Table 3. Impacts Summary

Activity/Location	Waterbody Name	Impact Location	Duration of Impact	Total Amount to be Dredged
Husky Dredge	Blair Waterway	In waterway	Temporary (~1 year)	8,080 cy
WUT Dredging	Blair Waterway	In waterway	Temporary (~1 year)	18,810 cy

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).

- Upon advance notice, the Port will provide 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.

- Work dredging will occur well below 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 sand lance, surf smelt or herring spawning beds

- No dredging will occur in areas with seagrass or kelp.

- 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 carefully.

- If water quality impacts are observed outside the action areas, 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.

- 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 and have minimal 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 two terminals. Barges will be moored over subtidal substrate avoiding grounding. No vegetated shallows exist within the vicinity of the proposed maintenance dredging.

- A written spill prevention, control and countermeasures (SPCC) plan will be prepared by the contractor for activities that include the use of heavy equipment. The plan will describe measures to prevent or reduce impacts from accidental leaks or spills, and will describe 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 will be available on-site during construction and stored in a location that facilitates immediate deployment if needed.

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

- 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.

4.0 ACTION AREAS

This section describes the action areas for the proposed Blair Waterway berth maintenance dredging action. The action areas are the defined geographic areas that could be affected by the direct and indirect effects of the proposed action. The action areas (Figures 2 & 3) have been 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 areas consists of the physical location of both marine terminals within Blair Waterway, as described in the Project Description.

The elements of the proposed action will restore previously dredged depths at the terminal berths within Blair Waterway and will not result in any additional impacts to existing benthic habitat. For this reason, direct impacts to benthic habitat associated with the proposed action are considered insignificant. Nevertheless, the action areas include the physical footprints of the areas included in the project description (Figure 2 & 3). There will be no alterations of intertidal or riparian habitat.

4.2 Underwater Noise

The proposed action is not anticipated to produce substantially elevated underwater noise. No piles will be driven as part of the project. Underwater noise will be produced only by common construction practices of dredging subtidal substrate. 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. 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 areas; 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

The proposed action has the potential to temporarily elevate levels of sedimentation and turbidity. 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)(e)(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 to be visible in the highly turbid surface waters of Commencement Bay. 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 plume.

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 United States Fish and Wildlife Service (USFWS) websites (USFWS 2020; 2020) and the National Marine Fisheries Service (NMFS) website (NMFS 2020; 2020a). Additional information came from NatureServe (NatureServe 2017), Washington Department of Natural Resources Natural Heritage Program (WNHP 2017) and WDFW Priority Habitat and Species (PHS) lists and maps (WDFW 2020; 2020a; 2020b).

5.1 Species and Critical Habitat Occurrence

Table 4 presents several listed species that may occur within Pierce County that either have no documented occurrences within the action areas, 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.

Table 4. ESA-Listed Species Potentially Occurring in Pierce County, but Unlikely to Occur Within the Action Areas

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
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
Yellow-Billed Cuckoo	*Coccyzus americanus*	Western US DPS	Threatened	Candidate	Proposed

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

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.

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 areas. Each portion of the proposed maintenance dredging is located within the Blair Waterway.

Critical habitat has been designated within the action areas for Puget Sound ESU Chinook, Puget Sound DPS steelhead, Puget Sound DPS Bull Trout, Puget Sound/Georgia Basin ESUs of rockfish, and Southern Resident killer whales. Critical habitat has also been designated for Marbled Murrelet; however, no critical habitat occurs within the action areas. Critical habitat has neither been designated nor proposed for the Humpback Whale.

Table 5 presents the listing status of ESA-listed species that have a potential to occur within the action areas 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. ESA-Listed Species with a Potential to Occur in the Action Areas

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*	N/A	Endangered	Endangered	Not designated or proposed
Marbled Murrelet	*Brachyramphus marmoratus*	N/A	Threatened	Threatened	Not designated Commencement Bay
Southern Resident killer whale	*Orcinus orca*	Southern Resident DPS	Endangered	Endangered	Designated
Steelhead	*Oncorhynchus mykiss*	Puget Sound DPS	Threatened	Candidate	Designated
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 2020, USFWS 2020). 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 areas that is listed as threatened by USFWS under the ESA: Marbled Murrelet.

Table 6 shows the times of year that juvenile salmonids may be out-migrating within the action areas, Table 7 shows the times of year for adult runs within the action areas, and Table 8 shows the times of year that non-salmonid species may be present within the action areas.

Table 6. Timing of Juvenile Salmonid Downstream Migration within Action Areas

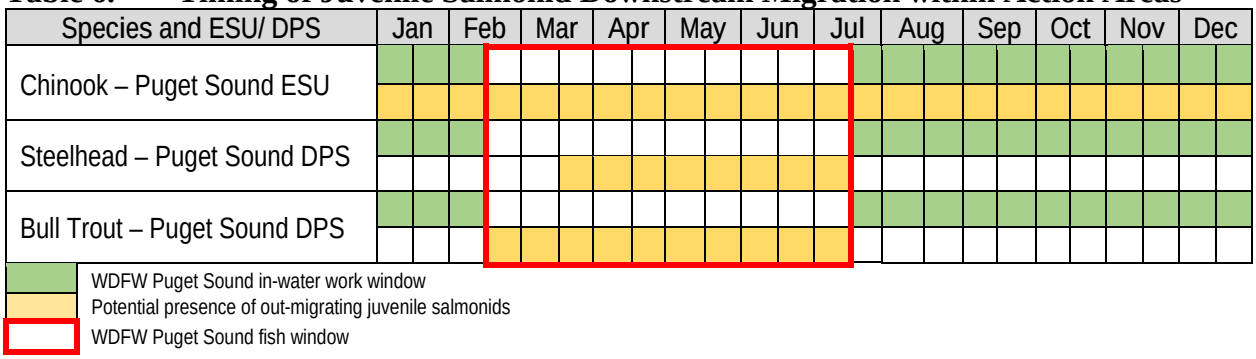


Table 7. Timing of Adult Salmonid Migration within Action Areas

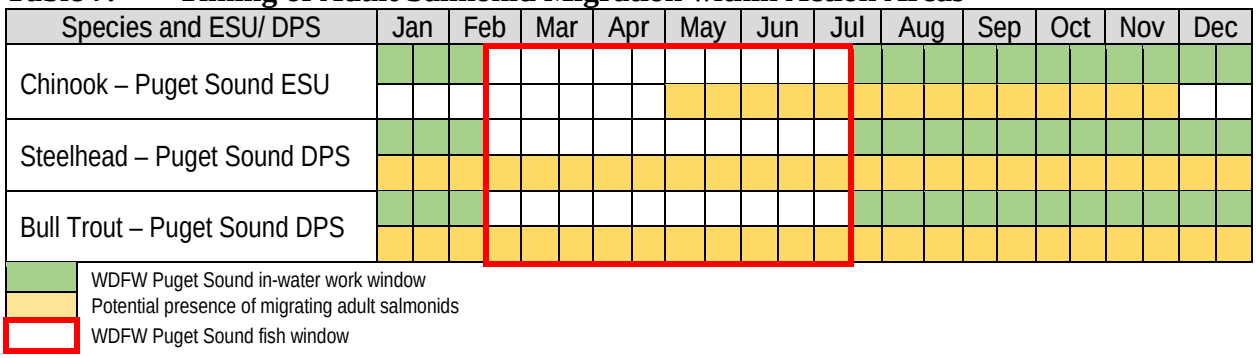
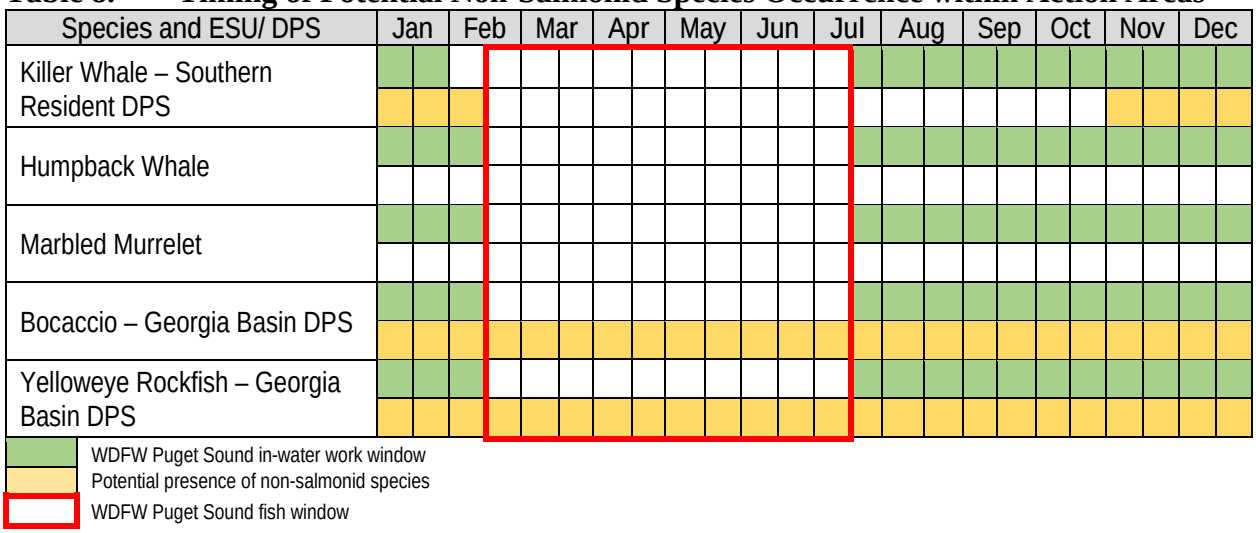


Table 8. Timing of Potential Non-Salmonid Species Occurrence within Action Areas



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).

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 Areas

Puget Sound ESU Chinook Salmon have been documented in Hylebos Creek (via the Hylebos Waterway) and Commencement Bay, but not the Blair Waterway (WDFW 2020b). Based on the proximity of the action areas 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 areas, would most likely temporarily hold within the waters of Commencement Bay, or migrate to upstream spawning waters within the Puyallup Basin. Adult Chinook Salmon are not likely to be present within the Blair Waterway for an extended period of time. 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 areas provide 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 habitat features, or primary constituent elements (PCEs), essential for the conservation of the species or that require special management considerations. 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. The PCEs identified for ESA-listed Chinook Salmon and the potential for their presence within the action areas 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 areas. The Blair Waterway, Commencement Bay, and adjacent waters of Puget Sound are saltwater tidal habitats.

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 areas. 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 areas. 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 areas do 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). The degraded water quality conditions and the highly developed nature of the estuarine habitat within the action areas 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 areas are within the Blair Waterway, which provides very little functional nearshore marine habitat for Chinook Salmon. Natural cover in the form of submerged and overhanding large wood, aquatic vegetation, large rocks and boulders, and side channels is lacking throughout the action areas. Riprap, piling, and vertical bulkheads dominate the available cover.

- Outside the action areas, 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 areas 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 debris (LWM) is frequently present at and above the MHHW line. Aquatic vegetation such as eelgrass and kelp beds are 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 areas are within the Blair Waterway so they are not considered offshore marine areas. The waters of Commencement Bay and adjacent Puget Sound do provide offshore marine habitat for Chinook Salmon, and do provide 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).

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 Areas

Similar to Chinook Salmon, the action areas have 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 2017b). However, NMFS is not aware of documented use of Puget Sound DPS steelhead within Wapato Creek within at least the past 20 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. Puget Sound DPS steelhead could be present at all times of the year and migrate through Commencement Bay and the Puyallup River, or within the Hylebos Waterway to Hylebos Creek. Outmigration of juveniles could occur between approximately the middle of March through the middle of July, and rearing juveniles could be present in Commencement Bay or adjacent waters of Puget Sound at any time of the year.

5.2.2.3 Critical Habitat

The critical habitat for steelhead 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 steelhead are identical to those of Chinook Salmon and are addressed under Section 5.2.1.3 of this document.

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).

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 the 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 Areas

Sparse suitable habitat and water quality issues within the Blair Waterway may deter the presence of Bull Trout in the immediate vicinity of the proposed project; however, Bull Trout have been documented in the adjacent Hylebos Waterway, but not in the Blair Waterway (WDFW 2017b). 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 areas 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.

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 areas 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 areas. There are no springs or seeps or significant groundwater sources in the action areas, and the action areas do 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 areas do provide migratory corridor habitat for Puget Sound DPS Bull Trout; however, the action areas are within the Blair Waterway, which has been severely degraded due to the extent of development.

- 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. 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 Blair Waterway action areas. The waterways are located in a heavily developed area with no undisturbed habitat. Throughout the action areas, riprap, piling, and vertical bulkheads dominate the available cover; however, a few mitigation and restoration sites have been created within the waterways and these sites do provide for 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 areas 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 not the project site.

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 areas. At a minimum, the action areas do provide 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 areas. No population of Bull Trout is known to spawn in the action areas.

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 areas are concurrent with the tides of Commencement Bay and Puget Sound.

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 areas 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 areas do 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 areas.

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 areas are 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).

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 off 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 2017a). 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 Areas

Adult Bocaccio and Yelloweye Rockfish are not expected to occur within the action areas, 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 areas. 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 areas (Love et al. 1991).

Deep water portions outside of the action areas 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 areas, or the nearshore of Commencement Bay. Deep water habitat (greater than -98 ft MLLW) is not present within the action areas, and Bocaccio and Yelloweye Rockfish are not anticipated to be located within the action areas; 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).

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 2017b). 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 76 whales between the three pods, and the population has declined over 10 % since 2005 (CWR 2019; NMFS 2017b). 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 2017b).

5.2.5.2 Presence in Action Areas

Southern Resident killer whales are unlikely to be present in the action areas. 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 in 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 areas.

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 areas are detailed below.

PCE: Water quality to support growth and development.

- The Blair Waterway does not provide suitable water quality conditions for Southern Resident killer whale growth or development due to the waterways' small, constrained size and high level of human activity and shipping activity.

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 does not provide suitable passage conditions for Southern Resident killer whale migration, resting or foraging due to the waterways' small, constrained size and high level of human activity and shipping. Outside the action areas, 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 areas.

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 is not anticipated to exceed the ambient background underwater noise commonly occurring at the Port of Tacoma as part of this project.

  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 areas 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). Critical habitat for Humpback Whales has not been designated or proposed.

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 Areas

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

5.2.6.3 Critical Habitat

Since critical habitat has not been designated or proposed for the Humpback Whale, no PCEs have been identified.

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.

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 areas (WDFW 2017a). Due to the lack of nesting habitat, Marbled Murrelets are not

likely to forage in inner Commencement Bay, and the Blair Waterway do 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 areas. Since there is no designated critical habitat for Marbled Murrelets present in the action areas, 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 areas as they pertain to the species addressed in this BE. The general setting and baseline habitat conditions within the action areas 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 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 areas, 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 has participated in recreating and/or restoring approximately 80 additional acres of marine and estuarine habitat within the action areas since the 1993 USACE report. 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 areas. The terrestrial portions of the action areas consist of manmade hardened shoreline, 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 areas.

6.2 Riparian Habitat

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

6.3 Aquatic Habitat

Aquatic habitat within the action areas 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 areas 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 areas level and the watershed level. Table 9 documents the results of this analysis (Matrix of Pathways and Indicators [MPI]).

In general, the environmental baseline conditions within the action areas are severely degraded. As indicated in Table 9, 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 areas, and sediments within the action areas are predominantly silts and sands. Aquatic habitat conditions outside the action areas extending into inner Commencement Bay and adjacent waters of Puget Sound are better, though still degraded.

Table 9. Summary of Aquatic Baseline Conditions at Action Areas and Watershed Scales

Pathway/Indicators	Baseline Environmental Conditions[1]		Effects of Proposed Action	
	Action Areas	Watersheds	Action Areas	Watersheds
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 areas are predominantly fine-grained, and generally consist of sand and silty sand, as well as organic sediments that enter the action areas from the Puyallup River and Wapato Creek. While no specific data are available regarding substrate composition, fine-grained materials are certainly present in high quantities within the waterways and, to a lesser extent, within inner Commencement Bay.

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 areas. 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 areas, but are likely to be within the higher natural conditions. The proposed conservation measures will be sufficient to ensure there are no long-term impacts on sediment or turbidity within the action areas or at the watershed scale. The proposed action may temporarily **degrade** this indicator, but will **maintain** it at both the action areas 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

7.1.1 Water Quality

Temporarily increased turbidity and sedimentation will result from dredging but will likely be within natural background. As part of the proposed action, maintenance dredging will disturb sediments and temporarily increase turbidity within the action areas. Increased levels of sedimentation and turbidity may have temporary negative impacts on habitat for listed fish species, and if any listed fish species are present within the action areas during the time of the dredging, they could be directly affected. However, the routine high turbidity produced in Commencement Bay by the Puyallup River plume is likely to produce baseline conditions within a range that includes increased turbidity produced by this action.

Both sites of the proposed action are located within areas that are currently or were formerly within the Commencement Bay Nearshore/Tideflats (CB-NT) Superfund site. The Blair Waterway has been cleaned up and removed from the Superfund. Water quality is already a limiting factor within the action areas, and temporary increases in sedimentation and turbidity during the proposed action are not likely to result in an increased potential for negative effects.

Shipping traffic throughout the action areas routinely disturbs sediments. 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 this industrial traffic or highly turbid water from the Puyallup River within the waterways. The generally slow velocity of water movement within the action areas will also greatly minimize the potential negative effects of temporarily increased turbidity.

During work activities, there is the potential for construction debris to enter the waterway. There is also slight potential for 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.

The following ESA-listed species and designated critical habitat have the potential to be exposed to the direct effects of temporarily decreased water quality conditions that could occur within the action areas during the proposed action.

- Puget Sound ESU Chinook Salmon
- Puget Sound DPS steelhead
- Puget Sound DPS Bull Trout
- Georgia Basin DPS Bocaccio
- Georgia Basin DPS Yelloweye Rockfish
- Designated critical habitat for Southern Resident killer whale
- Designated critical habitat for Chinook Salmon, steelhead, and Bull Trout

Southern Resident killer whale and Marbled Murrelet are not expected to be present within the portion of the action areas where water quality conditions could be temporarily affected; therefore, they would not be exposed to any direct effects of temporarily decreased water quality. Temporary water quality effects will be localized to the area within 150 ft of the project footprint, and these areas do not provide suitable habitat for Southern Resident killer whales or Marbled Murrelets.

During the in-water work period, out-migrating juvenile and migrating adult salmon and steelhead could be present within the action areas. Juvenile rockfish species could be present within the action areas at any time during the year, though their presence is unlikely. Any of these species, if present, would likely be migrating through the action areas and not be present for any significant period of time.

It is possible that juvenile and/or adult Chinook Salmon, steelhead, and Bull Trout, as well as juvenile rockfish that are present within the action areas could be exposed to temporarily decreased water quality conditions, due to temporarily elevated turbidity. 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. It is anticipated that any juvenile salmonids present would respond by temporary avoidance of, or more rapid migration through, the action areas.

The portion of the action areas 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 areas 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 areas. 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 areas.

The long-term effect on water quality within the action areas will be a net improvement because contaminated materials and debris will be removed.

7.1.2 Noise

No construction activities are proposed for this action that would produce noise levels harmful to ESA species potentially present.

7.1.2.1 ESA-Listed Species

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 areas.

7.1.2.2 Critical Habitats

The action areas have been designated as critical habitat for Puget Sound ESU Chinook Salmon; Puget Sound DPS steelhead and Bull Trout; and Southern Resident DPS killer whales.

7.1.3 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 10 lists the effects determinations for ESA-listed species and Table 11 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 10. 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 11. Effects Determinations Summary Table for Critical Habitat

Species and ESU/DPS[1]	Critical Habitat Status	Critical Habitat Effect Determination[2]
Chinook Salmon / Puget Sound ESU	Designated	NLTAA
Steelhead / Puget Sound DPS	Designated	NLTAA
Bull Trout / Puget Sound DPS	Designated	NLTAA
Bocaccio / Puget Sound/Georgia Basin DPS	Designated	NE
Yelloweye Rockfish / Puget Sound/Georgia Basin DPS	Designated	NE
Humpback Whale	Not Designated or Proposed	N/A
Killer Whale (Orca) / Southern Resident DPS	Designated	NLTAA
Marbled Murrelet	Not Designated in Commencement Bay	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 period, when small numbers of Chinook Salmon, steelhead, and/or Bull Trout could be migrating in Commencement Bay and may migrate through the action areas.

- The proposed action has the potential to result in temporarily impaired water quality within the action areas, including temporarily elevated turbidity during dredging.

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

- Salmonid habitat within the portions of the action areas 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 areas. Even under normal, non-project conditions, migrating adult and juvenile salmonids likely move through the action areas rapidly.

- 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 impaired water quality within the action areas, including 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 areas that are immediately adjacent to the project footprint is very low.

- Bocaccio and Yelloweye Rockfish habitat within the Blair Waterway within the action areas are limited to low- to moderate-quality habitat for larval and juvenile rockfish, and there is no habitat for adult rockfish within the action areas.

- 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 impaired water quality within the action areas, including temporarily elevated turbidity during dredging.

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 Waterways 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 areas.

- The proposed action has the potential to result in temporarily impaired water quality within the action areas, including temporarily elevated turbidity during dredging.

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 the waterway.

- 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 areas, 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 Waterways at any time of the year, and will not be affected by activities conducted within those waterways.

- Marbled Murrelets are present infrequently in Commencement Bay, and are not normally observed in close proximity to the busy industrial areas 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, Puget Sound DPS Steelhead, and Puget Sound DPS Bull Trout

The Blair Waterway has been designated critical habitat for 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**" 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, steelhead, and Bull Trout listed above.

- The action areas provide adequate estuarine, marine nearshore, and offshore marine critical habitat PCEs for Puget Sound ESU Chinook Salmon and Puget Sound DPS steelhead; 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 impaired water quality within the action areas, including temporarily elevated turbidity during dredging.

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, steelhead and Bull Trout listed above.

- Given the condition and degree of use of the habitat within the action areas, 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, steelhead and Bull Trout listed above.

8.2.2 Critical Habitat for Puget Sound/Georgia Basin DPS Bocaccio and Yelloweye Rockfish

The Blair Waterway is not within the designated critical habitat for Bocaccio and Yelloweye Rockfish; therefore, the proposed action will have "**no effect**" on critical habitat for Puget Sound/Georgia Basin Bocaccio and Yelloweye Rockfish.

8.2.3 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 **"may affect, but is not likely to adversely affect**" critical habitat for Southern Resident killer whales. 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 critical habitat for Southern Resident killer whales.

- The waters of Commencement Bay outside the action areas provide for 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 impaired water quality within the action areas, including temporarily elevated turbidity during dredging.

- 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 areas.

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; therefore, this BE reaches the following conclusions:

- 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 or 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;
- Proposed action may affect, but is not likely to adversely affect Southern Resident DPS killer whales or their critical habitat; and
- Proposed action may affect, but is not likely to adversely affect Marbled Murrelets and have no effect on their critical habitat.

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