



US Army Corps
of Engineers
Seattle District



Joint Public Notice

Application for a Department of the Army Permit and a Washington Department of Ecology Water Quality Certification and/or Coastal Zone Management Consistency Concurrence

US Army Corps of Engineers
Regulatory Branch
Post Office Box 3755
Seattle, WA 98124-3755
Telephone: (206) 316-3822
ATTN: Andrew Shuckhart,
Project Manager

WA Department of Ecology
SEA Program
Post Office Box 47600
Olympia, WA 98504-7600
Telephone: (360) 407-6076
ATTN: SEA Program,
Federal Permit Coordinator

Public Notice Date: October 30, 2019
Expiration Date: November 29, 2019

Reference No: NWS-2019-108-WRD
Name: Union Slough 10 Year
Maintenance Dredge

Interested parties are hereby notified that the U.S. Army Corps of Engineers (Corps) and the Washington Department of Ecology (Ecology) have received an application to perform work in waters of the U.S. as described below and shown on the enclosed drawings dated February 2019.

The Corps will review the work in accordance with Section 404 of the Clean Water Act (CWA) and Section 10 of the Rivers and Harbors Act. Ecology will review the work pursuant to Section 401 of the CWA, with applicable provisions of State water pollution control laws and the Coastal Zone Management Act.

APPLICANT: Snohomish County Public Works
Attention: Julie Highton
Snohomish County Public Works
3000 Rockefeller Avenue, M/S 607
Everett, Washington 98201

Telephone: (425) 262-2341

LOCATION: In Union Slough near Everett, Snohomish County, Washington

WORK: Dredge up to 100,000 cubic yards of material over a ten year period.

PURPOSE: The purpose of this project is to maintain safe navigation.

DREDGED MATERIAL MANAGEMENT PROGRAM (DMMP):

Dredged Material Testing: The applicant has chosen not to complete the testing before this Public Notice was published. Prior to dredging, the proposed dredged material must be tested according to the procedures specified by the DMMP. The DMMP evaluation may include both chemical and biological testing of sediments. For this project, the DMMP agencies will determine whether the dredged material is suitable for disposal at a DMMP open-water disposal site or must be disposed of at an upland location. The sediment testing data will be available at the Corps, Seattle District, Dredged Material Management Office.

NWS-2019-108, Snohomish County Public Works (Union Slough 10 Year Maintenance Dredging)

Disposal Site Use Conditions: The following standard site-use conditions will be specified by the Corps and the Washington Department of Natural Resources as part of the Federal/State permitting processes if a permit is issued: (1) disposal operations must not interfere with Indian treaty fishing at the disposal site, including gill nets and other fishing gear; (2) the permittee must coordinate any nighttime disposal with the Corps, Seattle District, Regulatory Branch Project Manager; and (3) approval must be received from the District Engineer prior to conducting nighttime disposal. Other appropriate special conditions may be added as a result of comments received during the public review period for this public notice.

ADDITIONAL INFORMATION: Dredging in Union Slough near Smith Island in Everett, Washington. The upstream and downstream limits of the project area lie between Buse Cut and the Buse Timber log ramp, respectively. The project includes dredging of up to 100,000 cubic yards of sediment over a 10-year period to maintain navigation through the slough. Dredging is proposed to address potential future sedimentation within Union Slough resulting from the 2018 removal of portions of the Smith Island diking system that occurred as a component of the Smith Island Restoration project. The first dredging action is proposed for 2019 to address up to 10,000 cubic yards of sediment within the channel that may accumulate after winter storms.

As part of the Smith Island Restoration project, Snohomish County breached large portions of the existing Smith Island dike adjacent to Union Slough to re-establish historical tidal marshlands that provide critical habitat for threatened Chinook salmon, as well as other salmon species, in the Snohomish River Basin. The in-water work occurred from August 2018 to October 2018. Hydraulic modeling of Union Slough predicted that after the dikes were breached, sediments in the marshland could be eroded from the project area into the Union Slough channel during a 15-year recurrence interval flood event. The purpose of the project is to address potential future sedimentation through maintenance dredging and maintain adequate navigation depths within Union Slough for Buse Timber. Snohomish County Public Works is requesting a 10-year maintenance dredging permit to promote comprehensive management of navigation depths within the Union Slough and allow Snohomish County Public Works flexibility to quickly respond to potential future sloughing. The use of a 10-year permit also serves to streamline regulatory review and permitting in the long-term and more comprehensively address anticipated future maintenance events in a combined project instead of as discrete permitting events.

Dredging is proposed to occur if sedimentation exceeds an elevation of -2.5 North American Vertical Datum of 1988 (NAVD88; -0.5 feet mean lower low water [MLLW]) up to 100,000 cubic yards (cy). These sediment locations could occur over a 9,000-linear-foot area between the Buse Cut and the Buse Timber log ramp. Dredging would occur to a maximum depth of -8.5 feet NAVD88 (-6.5 feet MLLW) with a 2-foot allowable overdredge (to -10.5 feet NAVD88 [-8.5 feet MLLW]). Maintenance events would be scheduled as necessary and would maintain depths to the channel elevations recorded prior to the Union Slough dike removal. These maintenance events would be conducted in accordance with the notification procedures and conditions in the Federal, State, and local permits received for the project.

The dredging specifications for the project would be performance-based, such that the contractor would select the specific equipment and dredging methodology best suited to the project performance requirements. It is anticipated that sediment would be mechanically dredged to the required dredge elevations by a crane or excavator-operated clamshell bucket mounted on a barge.

Hydraulic dredging may also be conducted using a suction dredge or similar equipment mounted on a barge. Hydraulic dredging, if implemented, would be used for smaller volumes (less than 300 cy). The hydraulic dredge cutter head would be approximately 1-foot in diameter and would deposit dredged material to an adjacent barge for

NWS-2019-108, Snohomish County Public Works (Union Slough 10 Year Maintenance Dredging)

dewatering. The barge would be equipped with water quality Best Management Practices (BMPs) to filter effluent in compliance with State water quality standards prior to disposal.

Gravity dewatering of mechanically dredged sediment would occur on a flatdeck, sealed barge equipped with sideboards and scuppers within the vicinity of the project limits. The scuppers would be covered by a filter media, such as straw bales and/or geotextile fabric. Excess water from the dredged material would be conveyed to the scuppers and filtered to retain suspended sediment while allowing the filtered water to drain back into Union Slough. The dewatered material would be placed into a haul barge and disposed of at a permitted open-water location (the preferred method), or transferred to an upland transfer station approved to reuse or dispose of the material as described below. The material may be temporarily stockpiled prior to being sent to the transfer station.

The conceptual maintenance dredge design would be developed and submitted to the agencies prior to each event and would generally include restoring the channel to pre-August 2018 elevations with a 2-foot allowable overdredge. The volume of sediment to be removed during each event would be determined on a case-by-case basis. Open-water disposal is the preferred disposal method for the project. The most likely open-water disposal area for mechanically dredged material is the Port Gardner Open-Water Disposal Site located between the City of Everett and Whidbey Island. The Port Gardner Site is an approximately 318-acre site located at water depths of approximately 420 feet in the middle of Port Gardner. Hydraulically dredged material would likely be placed at the Rosario Strait dispersive site. The disposal site ultimately selected for the project would be determined in coordination with the Corps' Dredged Material Management Office. Material placement at an open-water disposal site would be conducted using a bottom-dump barge, which would be positioned over the center of the site and would release the dredged material in the target area in a controlled manner.

An alternative to open-water disposal is to transfer the material to an upland disposal facility or a beneficial reuse site. This may require temporarily stockpiling the dewatered clean material before transferring it. A temporary stockpile area would be located at the north end of the project area on the area previously filled by Snohomish County for a toe berm that supports a new setback dike (raised to an elevation of +14 feet NAVD88 [+16 feet MLLW]) constructed as part of the Smith Island Restoration project. The location of the stockpile area is unvegetated. Only clean sediment would be placed in the stockpile area. A spill-prevention apron would be installed to prevent material from entering the water during transloading. The clean material stockpiled would be approximately 0.9 acres in size, no greater than 4 feet high, and have a maximum capacity of 5,000 cy. Stormwater would be managed through BMPs and existing stormwater infrastructure. Each time a temporary stockpile area is required, the clean material would be stockpiled for less than 6 months.

The dredged material may also be transported by tugboat and haul barge directly to a contractor-provided offloading site (the location would be determined for each maintenance event). At the site, the material would be removed from the haul barge by mechanical methods (e.g., land-based or barge-based excavator or derrick), and then transported by truck or rail to the appropriate upland disposal facility or beneficial reuse site.

The first maintenance dredging action is proposed in 2019 to remove up to 10,000 cy of sediment that may accumulate within the channel during winter storms. The specific location and volume associated with this maintenance action is not possible to accurately predict due to the unpredictable nature of sediment accumulation within a riverine environment. However, at present, small amounts of sediment have accumulated within the channel about -2.5 feet NAVD88 (-0.5 feet MLLW) near the potential stockpile location where a section of the dike was recently removed as part of the Smith Island Restoration project.

Instances of dredging would take up to 1 to 2 months to complete, depending on the level of sedimentation experienced within the channel. In-water work would be performed within the allowable in-water work windows

NWS-2019-108, Snohomish County Public Works (Union Slough 10 Year Maintenance Dredging)

established by regulatory agencies to minimize potential disturbance of sensitive fish and wildlife species. In Union Slough, the expected in-water work window occurs between July 15 of one year and February 15 of the following year (modified on a case by case basis with agency approval).

The project would have no impacts to wetlands from equipment staging or stockpiling.

The location of the ordinary high water mark shown on the project drawings has not yet been verified by the U.S. Army Corps of Engineers (Corps). If the Corps determines the boundaries of the waters are substantially inaccurate a new public notice may be published.

MITIGATION: The applicant has not proposed compensatory mitigation. The project has been designed to avoid and minimize adverse impacts to the aquatic environment by limiting dredging within Union Slough to maintenance actions, intended to address potential future sedimentation and maintain adequate navigation depths within union slough.

ENDANGERED SPECIES: The Endangered Species Act (ESA) requires Federal agencies to consult with the National Marine Fisheries Service (NMFS) and/or U.S. Fish and Wildlife Service pursuant to Section 7 of the ESA on all actions that may affect a species listed (or proposed for listing) under the ESA as threatened or endangered or any designated critical habitat.

After receipt of comments from this public notice, the U.S. Army Corps of Engineers will evaluate the potential impacts to proposed and/or listed species and their designated critical habitat.

ESSENTIAL FISH HABITAT: The Magnuson-Stevens Fishery Conservation and Management Act, as amended by the Sustainable Fisheries Act of 1996, requires all Federal agencies to consult with the NMFS on all actions, or proposed actions, permitted, funded, or undertaken by the agency, that may adversely affect Essential Fish Habitat (EFH). The proposed action would impact EFH in the project area.

If the U.S. Army Corps of Engineers (Corps) determines that the proposed action may adversely affect EFH for federally managed fisheries in Washington waters, the Corps will initiate EFH consultation with the NMFS. The Corps' final determination relative to project impacts and the need for mitigation measures is subject to review by and coordination with the NMFS.

CULTURAL RESOURCES: The Corps has reviewed the latest published version of the National Register of Historic Places, Washington Information System for Architectural and Archaeological Records Data and other sources of information. There are no recorded historic properties within the permit area. The permit area was created in modern times and there is little likelihood that the proposed project will impinge on any historic property. The Corps invites responses to this public notice from Native American Tribes or tribal governments; Federal, State, and local agencies; historical and archeological societies; and other parties likely to have knowledge of or concerns regarding historic properties and sites of religious and cultural significance at or near the project area. After receipt of comments from this public notice, the Corps will evaluate potential impacts and consult with the State Historic Preservation Officer and Native American Tribes in accordance with Section 106 of the National Historic Preservation Act, as appropriate.

PUBLIC HEARING: Any person may request, in writing, within the comment period specified in this notice, that a public hearing be held to consider this application. Requests for public hearings shall state, with particularity, the reasons for holding a public hearing.

NWS-2019-108, Snohomish County Public Works (Union Slough 10 Year Maintenance Dredging)

EVALUATION – CORPS: The decision whether to issue a permit will be based on an evaluation of the probable impacts, including cumulative impacts, of the proposed activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefits, which reasonably may be expected to accrue from the proposal, must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the proposal will be considered, including the cumulative effects thereof; among those are conservation, economics, aesthetics, general environmental concerns, wetlands, historic properties, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of property ownership, and, in general, the needs and welfare of the people.

The Corps is soliciting comments from the public; Native American Nations or tribal governments; Federal, State, and local agencies and officials; and other interested parties in order to consider and evaluate the impacts of this activity. Any comments received will be considered by the Corps to determine whether to issue, modify, condition or deny a permit for the work. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects, and the other public interest factors listed above. Comments are used in the preparation of an Environmental Assessment and/or an Environmental Impact Statement pursuant to the National Environmental Policy Act. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the activity.

The described discharge will be evaluated for compliance with guidelines promulgated by the Environmental Protection Agency under authority of Section 404(b)(1) of the CWA. These guidelines require an alternatives analysis for any proposed discharge of dredged or fill material into waters of the United States.

EVALUATION – ECOLOGY: Ecology is soliciting comments from the public; Federal, Native American Nations or tribal governments, State, and local agencies and officials; and other interested parties in order to consider and evaluate the impacts of this activity. Ecology will be considering all comments to determine whether to certify or deny certification for the proposed project.

ADDITIONAL EVALUATION: Snohomish County has issued an exemption from the requirement of obtaining a Shorelines Substantial Development permit for this project.

COMMENT AND REVIEW PERIOD: Conventional mail or e-mail comments on this public notice will be accepted and made part of the record and will be considered in determining whether authorizing the work would not be contrary to the public interest. In order to be accepted, e-mail comments must originate from the author's e-mail account and must include on the subject line of the e-mail message the permit applicant's name and reference number as shown below. Either conventional mail or e-mail comments must include the permit applicant's name and reference number, as shown below, and the commenter's name, address, and phone number. All comments whether conventional mail or e-mail must reach this office, no later than the expiration date of this public notice to ensure consideration.

CORPS COMMENTS: All e-mail comments should be sent to

Conventional mail comments should be sent to: U.S. Army Corps of Engineers, Regulatory Branch, Attention: Andrew Shuckhart, P.O. Box 3755, Seattle, Washington 98124-3755. All comments received will become part of the administrative record and are subject to public release under the Freedom of Information Act including any personally identifiable information such as names, phone numbers, and addresses.

ECOLOGY COMMENTS: Any person desiring to present views on the project pertaining to a request for water quality certification under Section 401 of the CWA and/or Coastal Zone Management consistency concurrence,

NWS-2019-108, Snohomish County Public Works (Union Slough 10 Year Maintenance Dredging)

may do so by submitting written comments to the following address: Washington State Department of Ecology, Attention: Federal Permit Coordinator, Post Office Box 47600, Olympia, Washington 98504-7600, or at ecyrefedpermits@ecy.wa.gov

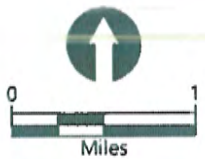
To ensure proper consideration of all comments, responders must include the following name and reference number in the text of their comments: Snohomish County (Union Slough 10YR Maint Dredge); NWS-2019-108-WRD

Encl: Figures (9)

K:\Projects\0723-Sr\ohcmish County\AM4-Union Slough Sampling and Analysis\0723-JARPA-001.dwg JARPA-1



SOURCE: Esri et al.
HORIZONTAL DATUM: Washington State Plane North, North American Datum (NAD83), U.S. Survey Feet
VERTICAL DATUM: North American Vertical Datum of 1988 (NAVD88)



NWS-2019-108-WRP

VICINITY MAP

<p>PURPOSE: MAINTAIN CHANNEL DEPTHS DATUM: MLLW and NAVD88 LATITUDE: 48.021086°N LONGITUDE: -122.158915°W S-T-R: 4-29N-5E, 3-29N-5E, 9-29N-5E, 10-29N-5E SITE LOCATION ADDRESS: 4315 (FORMERLY) 12TH STREET NE EVERETT, WA 98201</p>	<p>NAME: UNION SLOUGH 10-YEAR MAINTENANCE DREDGING PROGRAM ADJACENT PROPERTY OWNERS: 1 - BUSE TIMBER AND SALES INC 2 - PORT OF EVERETT 3 - KISAN ENTERPRISE LLC 4 - SNOHOMISH COUNTY 5 - WASHINGTON DEPT OF FISH AND WILDLIFE</p>	<p>PROPOSED: MAINTENANCE DREDGING IN: UNION SLOUGH NEAR/AT: EVERETT COUNTY OF: SNOHOMISH STATE: WASHINGTON DATE: FEBRUARY 2019</p>	<p>ANCHOR QEA 720 Olive Way, Suite 1900 Seattle, WA 98101 206-287-9130</p>
---	---	---	--

K:\Projects\0723-Snohomish County\TA\4-Union Slough Sampling and Analysis\0723-JARPA-002.dwg JARPA-2



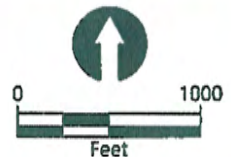
SOURCE: Google Earth, 2018

HORIZONTAL DATUM: Washington State Plane North, North American Datum of 1983 (NAD83) U.S. Survey Feet


VERTICAL DATUM: North American Vertical Datum of 1988 (NAVD88)

LEGEND:

④ Parcel Boundary and Key to Property Owner



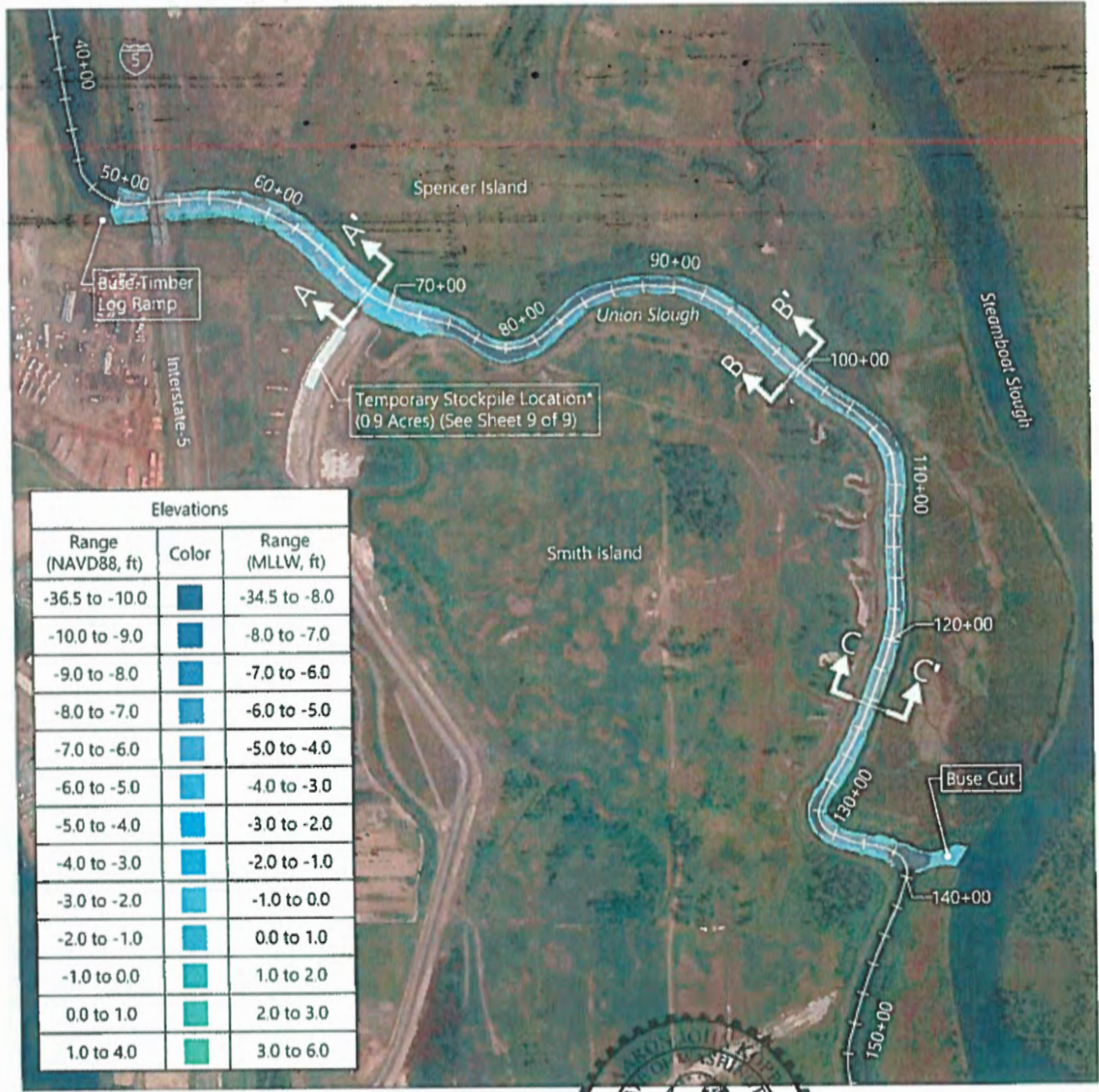
EXISTING CONDITIONS AND ADJACENT PROPERTY OWNERS

<p>PURPOSE: MAINTAIN CHANNEL DEPTHS</p> <p>DATUM: MLLW AND NAVD88 LATITUDE: 48.021086°N LONGITUDE: -122.158915°W S-T-R: 4-29N-5E, 3-29N-5E, 9-29N-5E, 10-29N-5E</p> <p>SITE LOCATION ADDRESS: 4315 (FORMERLY) 12TH STREET NE EVERETT, WA 98201</p>	<p>NAME: UNION SLOUGH 10-YEAR MAINTENANCE DREDGING PROGRAM</p> <p>ADJACENT PROPERTY OWNERS: 1 - BOSE TIMBER AND SALES INC. 2 - PORT OF EVERETT 3 - KISAN ENTERPRISE LLC 4 - SNOHOMISH COUNTY 5 - WASHINGTON DEPT OF FISH AND WILDLIFE</p>	<p>PROPOSED: MAINTENANCE DREDGING</p> <p>IN: UNION SLOUGH NEAR/AT: EVERETT COUNTY OF: SNOHOMISH STATE: WASHINGTON</p> <p>DATE: FEBRUARY 2019</p>	 <p>ANCHOR QEA 720 Olive Way, Suite 1900 Seattle, WA 98101 206-287-9130</p>
---	--	---	--

Jan 29, 2019 11:24am dholmer

NWS-2019-108-WRD

K:\Projects\0723-Snohomish County\TA#4-Union Slough Sampling and Analysis\0723-JARPA-003.dwg JARPA-3

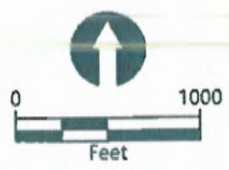


Elevations		
Range (NAVD88, ft)	Color	Range (MLLW, ft)
-36.5 to -10.0	Dark Blue	-34.5 to -8.0
-10.0 to -9.0	Blue	-8.0 to -7.0
-9.0 to -8.0	Light Blue	-7.0 to -6.0
-8.0 to -7.0	Very Light Blue	-6.0 to -5.0
-7.0 to -6.0	Lightest Blue	-5.0 to -4.0
-6.0 to -5.0	Lightest Blue	-4.0 to -3.0
-5.0 to -4.0	Lightest Blue	-3.0 to -2.0
-4.0 to -3.0	Lightest Blue	-2.0 to -1.0
-3.0 to -2.0	Lightest Blue	-1.0 to 0.0
-2.0 to -1.0	Lightest Blue	0.0 to 1.0
-1.0 to 0.0	Lightest Blue	1.0 to 2.0
0.0 to 1.0	Lightest Blue	2.0 to 3.0
1.0 to 4.0	Lightest Blue	3.0 to 6.0

SOURCE: Google Earth, 2018
HORIZONTAL DATUM: Washington State Plane North, North American Datum (NAD83) U.S. Survey Feet
VERTICAL DATUM: North American Vertical Datum of 1988 (NAVD88)

LEGEND:
 Cross Section Location (See Sheet 7 of 9)

NOTE: * The temporary stockpile area is located in an area that was previously filled by Snohomish County as a toe berm that supports the new setback dike that was constructed as part of the Smith Island Restoration Project. The area is unvegetated. The temporary stockpile area has capacity for up to 5,000 cubic yards.



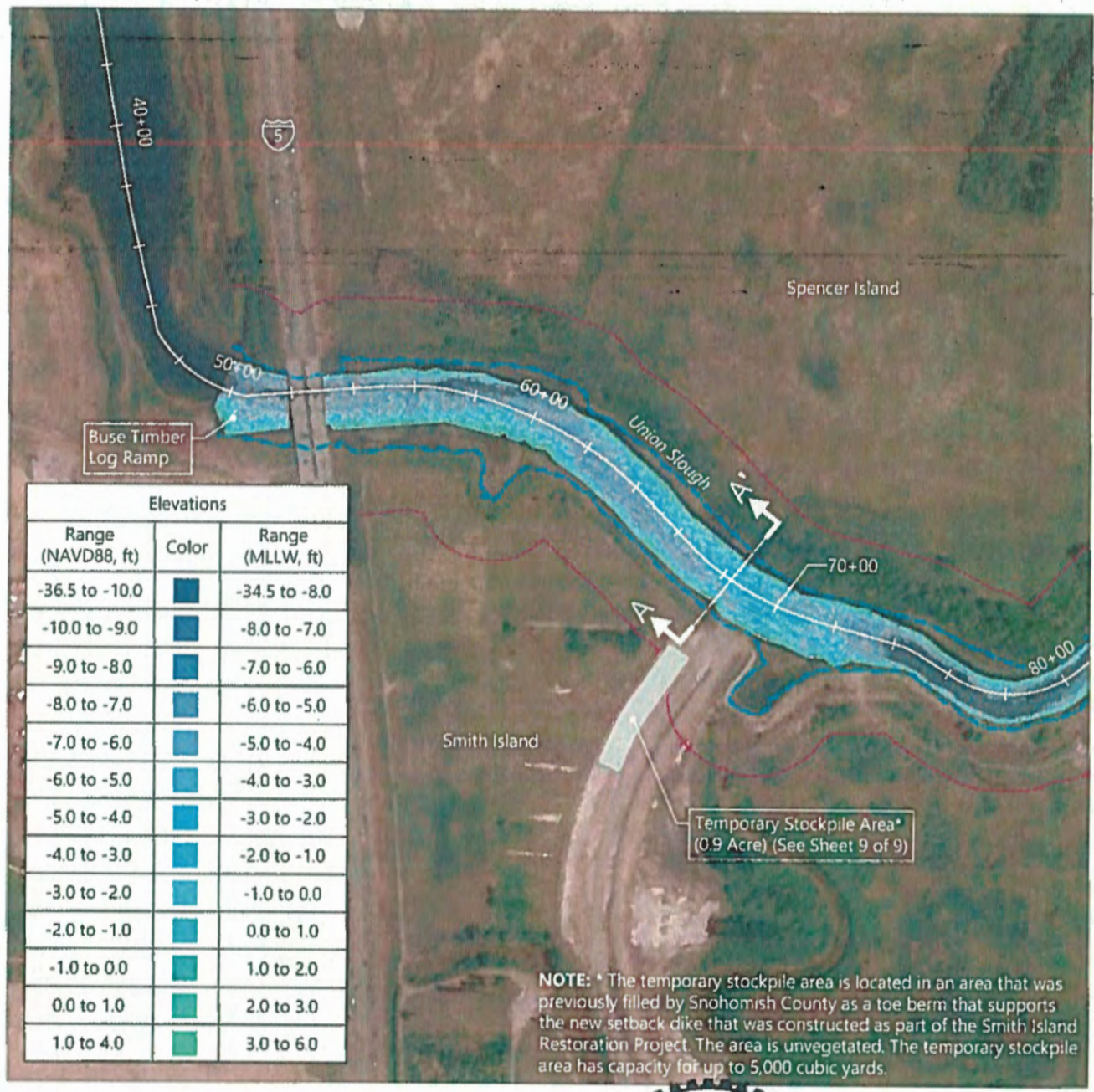
SITE PLAN AND CROSS SECTION LOCATIONS

<p>PURPOSE: MAINTAIN CHANNEL DEPTHS DATUM: MLLW AND NAVD88 LATITUDE: 48.021086°N LONGITUDE: -122.158915°W S-T-R: 4-29N-5E, 3-29N-5E, 9-29N-5E, 10-29N-5E SITE LOCATION ADDRESS: 4315 (FORMERLY) 12TH STREET NE EVERETT, WA 98201</p>	<p>NAME: UNION SLOUGH 10-YEAR MAINTENANCE DREDGING PROGRAM ADJACENT PROPERTY OWNERS: 1 - BUSE TIMBER AND SALES INC. 2 - PORT OF EVERETT 3 - KISAN ENTERPRISE LLC 4 - SNOHOMISH COUNTY 5 - WASHINGTON DEPT OF FISH AND WILDLIFE</p>	<p>PROPOSED: MAINTENANCE DREDGING IN: UNION SLOUGH NEAR/AT: EVERETT COUNTY OF: SNOHOMISH STATE: WASHINGTON DATE: FEBRUARY 2019</p>	<p>ANCHOR QEA 720 Olive Way, Suite 1900 Seattle, WA 98101 206-287-9130</p>
---	--	---	--

Jan 29, 2019 11:24am dholmer

NWS-2019-108-WRD

K:\Projects\0723-Snohomish County\TAP4-Union Slough Sampling and Analysis\0723-JARPA-003.dwg, JARPA-4
 Jan 29, 2019 11:24am dholmer



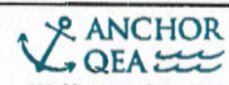
SOURCE: Google Earth, 2018
HORIZONTAL DATUM: Washington State Plane North, North American Datum of 1983
VERTICAL DATUM: North American Vertical Datum of 1988 (NAVD88)

LEGEND:

- Ordinary High Water Mark (OHWM) Boundary
- 200' Shoreline Buffer
- Cross Section Location (See Sheet 7 of 9)

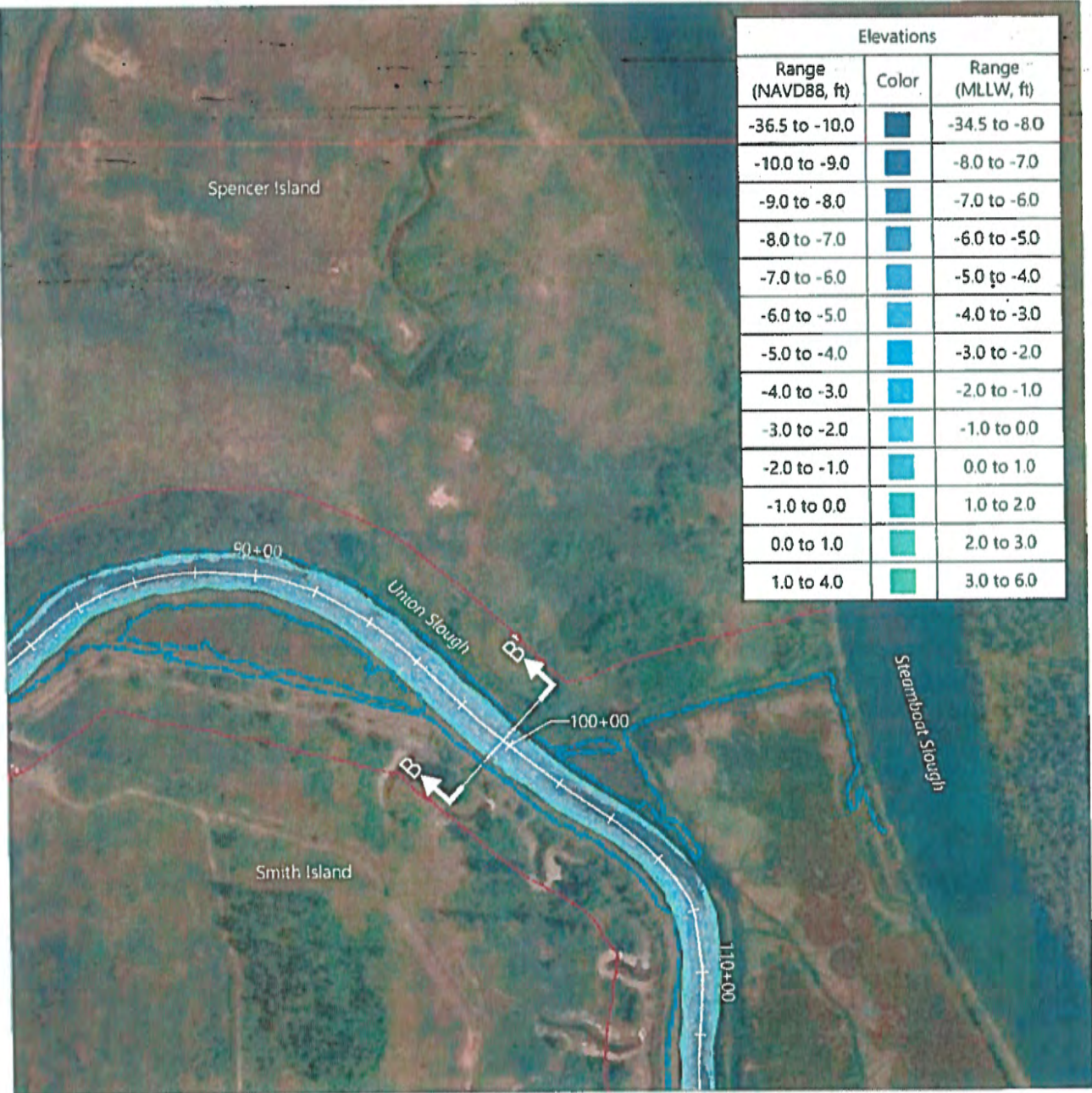


PLAN VIEW OF CROSS SECTION A-A'

<p>PURPOSE: MAINTAIN CHANNEL DEPTHS</p> <p>DATUM: MLLW AND NAVD88 LATITUDE: 48.021086°N LONGITUDE: -122.158915°W S-T-R: 4-29N-5E, 3-29N-5E, 9-29N-5E, 10-29N-5E</p> <p>SITE LOCATION ADDRESS: 4315 (FORMERLY) 12TH STREET NE EVERETT, WA 98201</p>	<p>NAME: UNION SLOUGH 10-YEAR MAINTENANCE DREDGING PROGRAM</p> <p>ADJACENT PROPERTY OWNERS: 1 - BUSE TIMBER AND SALES INC. 2 - PORT OF EVERETT 3 - KISAN ENTERPRISE LLC 4 - SNOHOMISH COUNTY 5 - WASHINGTON DEPT OF FISH AND WILDLIFE</p>	<p>PROPOSED: MAINTENANCE DREDGING</p> <p>IN: UNION SLOUGH NEAR/AT: EVERETT COUNTY OF: SNOHOMISH STATE: WASHINGTON</p> <p>DATE: FEBRUARY 2019</p>	 <p>ANCHOR QEA</p> <p>720 Olive Way, Suite 1900 Seattle, WA 98101 206-287-9130</p>
---	--	---	--

NWS-2019-108-WRD

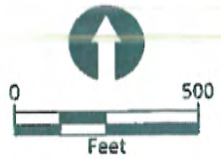
K:\Projects\10723-Sr-ahcmish County\TA#4-Union Slough Sampling and Analysis\10723-JARPA-003.dwg JARPA-5



Elevations		
Range (NAVD88, ft)	Color	Range (MLLW, ft)
-36.5 to -10.0	Dark Blue	-34.5 to -8.0
-10.0 to -9.0	Blue	-8.0 to -7.0
-9.0 to -8.0	Light Blue	-7.0 to -6.0
-8.0 to -7.0	Very Light Blue	-6.0 to -5.0
-7.0 to -6.0	Lightest Blue	-5.0 to -4.0
-6.0 to -5.0	Lightest Blue	-4.0 to -3.0
-5.0 to -4.0	Lightest Blue	-3.0 to -2.0
-4.0 to -3.0	Lightest Blue	-2.0 to -1.0
-3.0 to -2.0	Lightest Blue	-1.0 to 0.0
-2.0 to -1.0	Lightest Blue	0.0 to 1.0
-1.0 to 0.0	Lightest Blue	1.0 to 2.0
0.0 to 1.0	Lightest Blue	2.0 to 3.0
1.0 to 4.0	Lightest Blue	3.0 to 6.0

SOURCE: Google Earth, 2018
HORIZONTAL DATUM: Washington State Plane North, North American Datum of 1983
VERTICAL DATUM: North American Vertical Datum of 1988 (NAVD88)

LEGEND:
 Ordinary High Water Mark (OHWM) Boundary
 200' Shoreline Buffer
 Cross Section Location (See Sheet 7 of 9)



PLAN VIEW OF CROSS SECTION B-B'

<p>PURPOSE: MAINTAIN CHANNEL DEPTHS DATUM: MLLW AND NAVD88 LATITUDE: 48.021086°N LONGITUDE: -122.158915°W S-T-R: 4-29N-5E, 3-29N-5E, 9-29N-5E, 10-29N-5E SITE LOCATION ADDRESS: 4315 (FORMERLY) 12TH STREET NE EVERETT, WA 98201</p>	<p>NAME: UNION SLOUGH 10-YEAR MAINTENANCE DREDGING PROGRAM ADJACENT PROPERTY OWNERS: 1 - BUSE TIMBER AND SALES INC. 2 - PORT OF EVERETT 3 - KISAN ENTERPRISE LLC 4 - SNOHOMISH COUNTY 5 - WASHINGTON DEPT OF FISH AND WILDLIFE</p>	<p>PROPOSED: MAINTENANCE DREDGING IN: UNION SLOUGH NEAR/AT: EVERETT COUNTY OF: SNOHOMISH STATE: WASHINGTON DATE: FEBRUARY 2019</p>	<p> ANCHOR QEA 720 Olive Way, Suite 1900 Seattle, WA 98101 206-287-9130</p>
---	---	---	--

NWS-2019-108-WRD

K:\Projects\0723 - Snohomish County\TA#4-Union Slough Sampling and Analysis\0723-JARPA-003.dwg JARPA-6

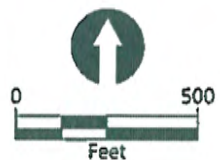


Elevations		
Range (NAVD88, ft)	Color	Range (MLLW, ft)
-36.5 to -10.0	Dark Blue	-34.5 to -8.0
-10.0 to -9.0	Blue	-8.0 to -7.0
-9.0 to -8.0	Light Blue	-7.0 to -6.0
-8.0 to -7.0	Lighter Blue	-6.0 to -5.0
-7.0 to -6.0	Very Light Blue	-5.0 to -4.0
-6.0 to -5.0	Lightest Blue	-4.0 to -3.0
-5.0 to -4.0	Lightest Blue	-3.0 to -2.0
-4.0 to -3.0	Lightest Blue	-2.0 to -1.0
-3.0 to -2.0	Lightest Blue	-1.0 to 0.0
-2.0 to -1.0	Lightest Blue	0.0 to 1.0
-1.0 to 0.0	Lightest Blue	1.0 to 2.0
0.0 to 1.0	Lightest Blue	2.0 to 3.0
1.0 to 4.0	Lightest Blue	3.0 to 6.0


SOURCE: Google Earth, 2018
HORIZONTAL DATUM: Washington State Plane North, North American Datum of 1983 (NAD83)
VERTICAL DATUM: North American Vertical Datum of 1988 (NAVD88)

LEGEND:

- Ordinary High Water Mark (OHWM) Boundary
- 200' Shoreline Buffer
- Cross Section Location (See Sheet 7 of 9)

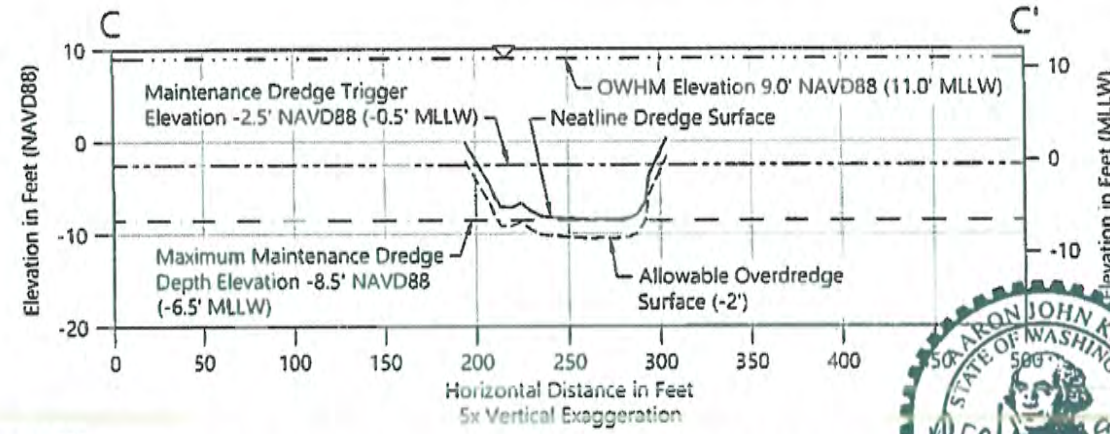
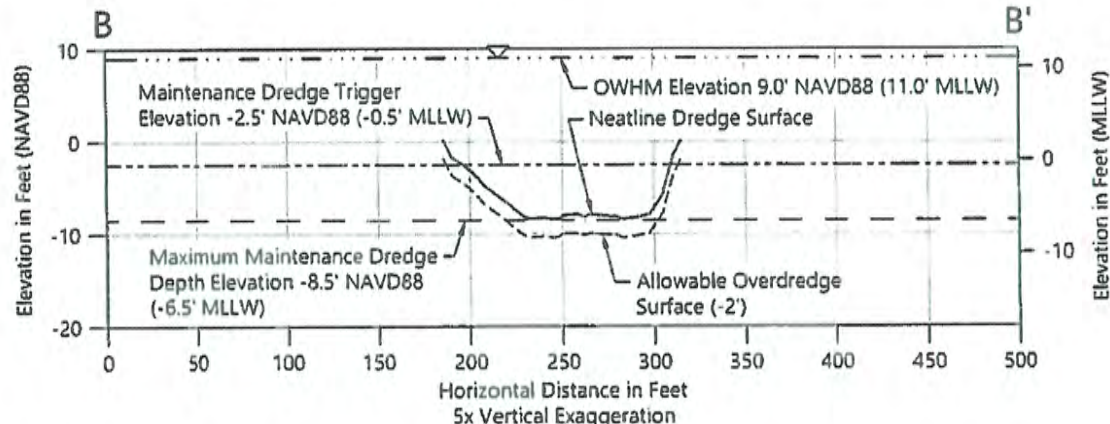
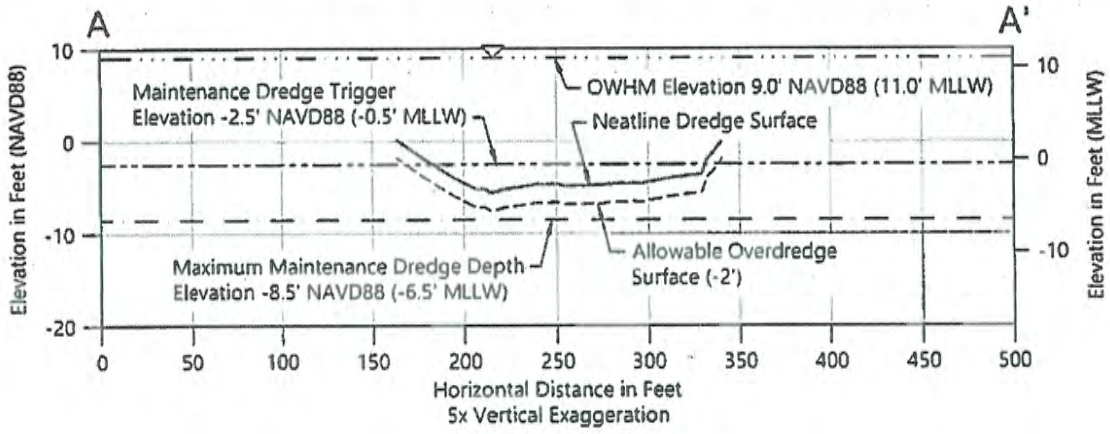


PLAN VIEW OF CROSS SECTION C-C'

<p>PURPOSE: MAINTAIN CHANNEL DEPTHS</p> <p>DATUM: MLLW AND NAVD88 LATITUDE: 48.021086°N LONGITUDE: -122.158915°W S-T-R: 4-29N-5E, 3-29N-5E, 9-29N-5E, 10-29N-5E</p> <p>SITE LOCATION ADDRESS: 4315 (FORMERLY) 12TH STREET NE EVERETT, WA 98201</p>	<p>NAME: UNION SLOUGH 10-YEAR MAINTENANCE DREDGING PROGRAM</p> <p>ADJACENT PROPERTY OWNERS: 1 - BUSE TIMBER AND SALES INC. 2 - PORT OF EVERETT 3 - KISAN ENTERPRISE LLC 4 - SNOHOMISH COUNTY 5 - WASHINGTON DEPT OF FISH AND WILDLIFE</p>	<p>PROPOSED: MAINTENANCE DREDGING</p> <p>IN: UNION SLOUGH NEAR/AT: EVERETT COUNTY OF: SNOHOMISH STATE: WASHINGTON</p> <p>DATE: FEBRUARY 2019</p>	 <p>ANCHOR QEA 720 Olive Way, Suite 1900 Seattle, WA 98101 206-287-9130</p>
---	--	---	--

NWS-2019-108-WRD

K:\Projects\0723-5 Snohomish County\TA#4-Union Slough Sampling and Analysis\0723-JARPA-003.dwg JARPA-7



- NOTES:**
1. These cross sections represent a typical section within Union Slough where sediment accumulation may occur. Specific area to be maintained through dredging will be coordinated with the agencies on a case-by-case basis, prior to any maintenance dredging of the channel.
 2. Neatline dredge surface based on 2016 and 2018 pre-breach bathymetric surveys.



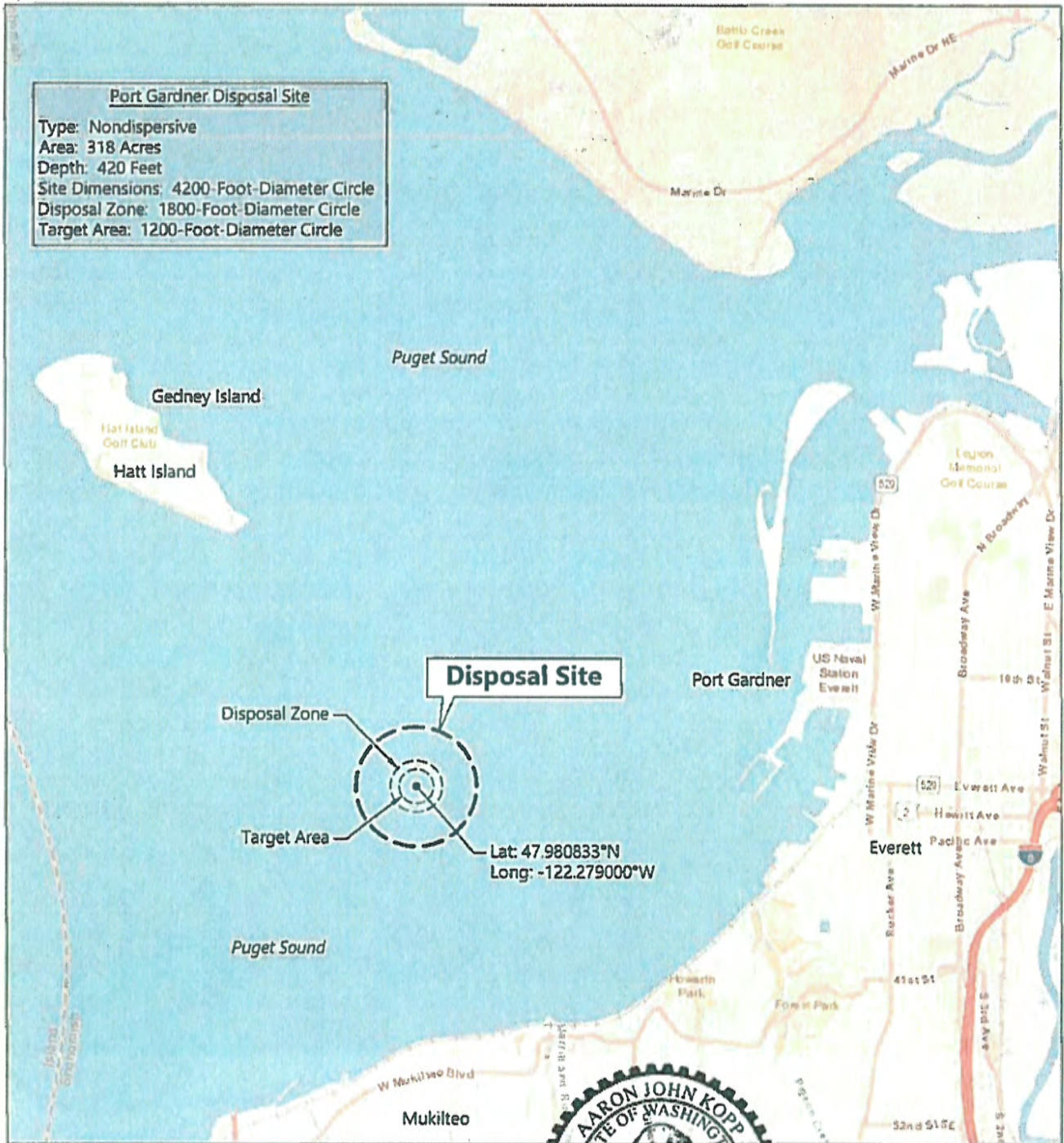
CROSS SECTIONS

<p>PURPOSE: MAINTAIN CHANNEL DEPTHS</p> <p>DATUM: MLLW AND NAVD88</p> <p>LATITUDE: 48.021086°N</p> <p>LONGITUDE: -122.158915°W</p> <p>S-T-R: 4-29N-5E, 3-29N-5E, 9-29N-5E, 10-29N-5E</p> <p>SITE LOCATION ADDRESS 4315 (FORMERLY) 12TH STREET NE EVERETT, WA 98201</p>	<p>NAME: UNION SLOUGH 10-YEAR MAINTENANCE DREDGING PROGRAM</p> <p>ADJACENT PROPERTY OWNERS:</p> <ol style="list-style-type: none"> 1 - BUSE TIMBER AND SALES INC. 2 - PORT OF EVERETT 3 - KISAN ENTERPRISE LLC 4 - SNOHOMISH COUNTY 5 - WASHINGTON DEPT OF FISH AND WILDLIFE 	<p>PROPOSED: MAINTENANCE DREDGING</p> <p>IN: UNION SLOUGH</p> <p>NEAR/AT: EVERETT</p> <p>COUNTY OF: SNOHOMISH</p> <p>STATE: WASHINGTON</p> <p>DATE: FEBRUARY 2019</p>	<p>ANCHOR QEA</p> <p>720 Olive Way, Suite 1900 Seattle, WA 98101 206-287-9130</p>
--	---	---	--

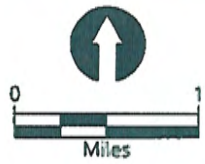
Jan 29, 2019 11:25am dholmer

NWS-2019-108-WRD

K:\Projects\0723-Snohomish County\TA#4-Union Slough Sampling and Analysis\0723-JARPA-004.dwg JARPA-B



SOURCE: Esri et al.
HORIZONTAL DATUM: Washington State Plane North, North American Datum (NAD83), U.S. Survey Feet
VERTICAL DATUM: North American Vertical Datum of 1988 (NAVD88)



PORT GARDNER DISPOSAL SITE

<p>PURPOSE: MAINTAIN CHANNEL DEPTHS</p> <p>DATUM: MLLW AND NAVD88 LATITUDE: 48.021086°N LONGITUDE: -122.158915°W S-T-R: 4-29N-5E, 3-29N-5E, 9-29N-5E, 10-29N-5E</p> <p>SITE LOCATION ADDRESS: 4315 (FORMERLY) 12TH STREET NE EVERETT, WA 98201</p>	<p>NAME: UNION SLOUGH 10-YEAR MAINTENANCE DREDGING PROGRAM</p> <p>ADJACENT PROPERTY OWNERS: NOT APPLICABLE</p>	<p>PROPOSED: MAINTENANCE DREDGING</p> <p>IN: UNION SLOUGH NEAR/AT: EVERETT COUNTY OF: SNOHOMISH STATE: WASHINGTON</p> <p>DATE: FEBRUARY 2019</p>	<p>ANCHOR QEA</p> <p>720 Olive Way, Suite 1900 Seattle, WA 98101 206-287-9130</p>
---	---	---	--

Jan 29, 2019 11:25am dholmer

NWS-2019-108-WRD

K:\Projects\0723-Snohomish County\TA44-Union Slough Sampling and Analysis\0723-JARPA-005.dwg JARPA-9




SOURCE: Google Earth, 2018
HORIZONTAL DATUM: Washington State Plane North, North American Datum (NAD83), U.S. Survey Feet
VERTICAL DATUM: North American Vertical Datum of 1988 (NAVD88)

NOTES:

1. Immediately following clean dredged material placement, cover stockpile with plastic sheeting consistent with BMP 123 (Snohomish County Drainage Manual Volume II).
2. OHW line shown at approximately elevation 9.0' NAVD88 (elevation 11.0' MLLW).
3. Minimum requirements 1, 2, and 4 (SSC 30.63A.440, 30.63A.445, and 30.63A.520) apply to this project.
4. This project is exempt from minimum requirement 7 (SCC 30.63A.550)
5. Minimum requirements 3, 5, 6, 8, and 9 (SCC 30.63A515, 30.63A525, 30.63A530, 30.63A570, and 30.63A575) do not apply to this project.



TEMPORARY STOCKPILE AREA/STORMWATER SITE PLAN

<p>PURPOSE: MAINTAIN CHANNEL DEPTHS</p> <p>DATUM: MLLW AND NAVD88 LATITUDE: 48.021086°N LONGITUDE: -122.158915°W S-T-R: 4-29N-5E, 3-29N-5E, 9-29N-5E, 10-29N-5E</p> <p>SITE LOCATION ADDRESS 4315 (FORMERLY) 12TH STREET NE EVERETT, WA 98201</p>	<p>NAME: UNION SLOUGH 10-YEAR MAINTENANCE DREDGING PROGRAM</p> <p>ADJACENT PROPERTY OWNERS: 1 - BUSE TIMBER AND SALES INC. 2 - PORT OF EVERETT 3 - KISAN ENTERPRISE LLC 4 - SNOHOMISH COUNTY 5 - STATE DEPARTMENT OF GAME</p>	<p>PROPOSED: MAINTENANCE DREDGING</p> <p>IN: UNION SLOUGH NEAR/AT: EVERETT COUNTY OF: SNOHOMISH STATE: WASHINGTON</p> <p>DATE: FEBRUARY 2019</p>	 <p>720 Olive Way, Suite 1900 Seattle, WA 98101 206-287-9130</p>
--	--	---	---

Jan 29, 2019 11:25am dholiner

NWS-2019-108-WRD