APPENDIX A

PERMITTING AND SUBSTANTIVE REQUIREMENTS DOCUMENTATION

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

August 11, 2014

Laurie Olin
Port of Ridgefield
111 W Division St
Ridgefield, WA 98642-3834

RE: Coverage under the Construction Stormwater General Permit

Permit number:	**WAR302135**
Site Name:	**Carty Lake & Lake River in Water Sediment Remediation**
Location:	**111 W Division St**
	Ridgefield **County: Clark**
Disturbed Acres:	**8.2**

Dear Ms. Olin:

The Washington State Department of Ecology (Ecology) received your Notice of Intent for coverage under Ecology's Construction Stormwater General Permit (permit). This is your permit coverage letter. Your permit coverage is effective on August 11, 2014. **Please retain this permit coverage letter with your permit (enclosed), stormwater pollution prevention plan (SWPPP), and site log book. These materials are the official record of permit coverage for your site.**

Please take time to read the entire permit and contact Ecology if you have any questions.

Additional Monitoring
Please refer to the enclosed Administrative Order number 10830 for additional monitoring requirements.

Appeal Process
You have a right to appeal coverage under the general permit to the Pollution Control Hearing Board (PCHB) within 30 days of the date of receipt of this letter. This appeal is limited to the general permit's applicability or non-applicability to a specific discharger. 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 the following within 30 days of the date of receipt of this letter:

- File your appeal and a copy of the permit cover page with the PCHB (see addresses below). Filing means actual receipt by the PCHB during regular business hours.
- Serve a copy of your appeal and the permit cover page 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	Department of Ecology Attn: Appeals Processing Desk PO Box 47608 Olympia, WA 98504-7608
Pollution Control Hearings Board (PCHB) 1111 Israel Road SW, Suite 301 Tumwater, WA 98501	Pollution Control Hearings Board PO Box 40903 Olympia, WA 98504-0903

Electronic Discharge Monitoring Reports (WQWebDMR)
This permit requires that Permittees submit monthly discharge monitoring reports (DMRs) electronically using Ecology's secure online system, WQWebDMR. To sign up for WQWebDMR go to: www.ecy.wa.gov/programs/wq/permits/paris/webdmr.html. If you have questions, contact Tonya Wolfe at (360) 407-7097 (Olympia area), or (800) 633-6193/option 3, or email WQWebPortal@ecy.wa.gov.

Ecology Field Inspector Assistance
If you have questions regarding stormwater management at your construction site, please contact Sheila Pendleton-Orme of Ecology's Vancouver Field Office at sheila.pendleton-orme@ecy.wa.gov, or (360) 690-4787.

Questions or Additional Information
Ecology is committed to providing assistance. Please review our web page at: www.ecy.wa.gov/programs/wq/stormwater/construction/. If you have questions about the construction stormwater general permit, please contact Joyce Smith at joyce.smith@ecy.wa.gov, or (360) 407-6858.

Sincerely,

Bill Moore, P.E., Manager
Program Development Services Section
Water Quality Program

Enclosure

WAR302135
Carty Lake & Lake River in Water Sediment Remediation
111 W Division St
Ridgefield Clark

Issuance Date: December 1, 2010
Effective Date: January 1, 2011
Expiration Date: December 31, 2015

CONSTRUCTION STORMWATER GENERAL PERMIT

National Pollutant Discharge Elimination System (NPDES) and State Waste Discharge General Permit for Stormwater Discharges Associated with Construction Activity

State of Washington
Department of Ecology
Olympia, Washington 98504

In compliance with the provisions of
Chapter 90.48 Revised Code of Washington
(State of Washington Water Pollution Control Act)
and
Title 33 United States Code, Section 1251 et seq.
The Federal Water Pollution Control Act (The Clean Water Act)

Until this permit expires, is modified or revoked, Permittees that have properly obtained coverage under this general permit are authorized to discharge in accordance with the special and general conditions that follow.

Kelly Susewind, P.E., P.G.
Water Quality Program Manager
Washington State Department of Ecology

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

REPLY TO
ATTENTION OF

August 19, 2014

Regulatory Branch

Mr. Brent Grening
Port of Ridgefield
Post Office Box 55
Ridgefield, Washington 98642

Reference: NWS-2013-1209
Port of Ridgefield
(Carty Lake Remedial Action)

Dear Mr. Grening:

We have reviewed your application to place fill in 0.23 acres of wetlands to stabilize a bulkhead, and excavate and place fill in up to 1.5 acres of Carty Lake, to remediate contaminated soil, adjacent to Lake River, in the city of Ridgefield, Washington. Based on the information you provided to us, Nationwide Permit (NWP) 38, Cleanup of Hazardous and Toxic Waste (Federal Register February 21, 2012, Vol. 77, No. 34), authorizes your proposal as depicted on the enclosed drawings dated January 29, 2014.

In order for this authorization to be valid, you must ensure the work is performed in accordance with the enclosed *NWP 38 Terms and Conditions,* and the following special conditions:

a. You shall implement and abide by the bank use plan titled "Draft Carty Lake Bank Use Plan" and dated January 30, 2014, and obtain mitigation bank credits from the Columbia River Mitigation Bank, in accordance with Section 9 of the Bank Use Plan.

b. You shall obtain from the Columbia River Mitigation Bank sponsor documentation of the completed mitigation bank transaction. You shall submit to the U.S. Army Corps of Engineers, Seattle District Regulatory Branch, documentation of the completed mitigation bank transaction, within 45 days of initiating work in waters of the United States authorized by this permit. All submittals must prominently display the reference number NWS-2013-1209.

c. You shall implement and abide by the mitigation plan, "Draft Carty Lake Mitigation Plan, Addendum to the Joint Aquatic Resources Permit Application No. NWS-2013-1209", dated January 30, 2014. Mitigation plantings shall be installed within 6 months of

completing work authorized by the permit.

d. An as-built mitigation construction report and as-built drawings of the onsite mitigation area shall be submitted upon completion of mitigation construction. This report must be submitted to the U.S. Army Corps of Engineers (Corps), Seattle District, Regulatory Branch for review and approval and must prominently display the reference number NWS-2013-1209. The year mitigation construction is completed, as determined by the Corps, represents Year 0 for mitigation monitoring.

e. Mitigation monitoring reports for the onsite mitigation shall be submitted annually for 5 years to the U.S. Army Corps of Engineers (Corps), Seattle District, Regulatory Branch by December 31of each monitoring year. Year 1 monitoring will occur at least one year after completion of the mitigation site as determined by the Corps. All reports must prominently display the reference number NWS-2013-1209.

f. Your responsibility to complete the required compensatory mitigation as set forth in Special Conditions "a" through "e" will not be considered fulfilled until you have demonstrated mitigation success and have received written verification from the U.S. Army Corps of Engineers Seattle District, Regulatory Branch.

The United States Fish and Wildlife Service (USFWS) completed National Historic Preservation Act, Section 7 Endangered Species Act (ESA) consultation, and Magnuson Stevens Act essential fish habitat consultation (EFH) for its involvement in the proposed activity. For the purpose of this Department of the Army authorization, we have determined this project will comply with the requirements of these laws provided you comply with all of the permit general and special conditions. We have determined the permit action is sufficiently addressed in their ESA and EFH consultation documents. By this letter we are advising you and the Services, in accordance with 50 CFR 402.07 and 50 CFR 600.920(b), that this agency has served as the lead Federal agency for the ESA and EFH consultation responsibilities for the activity described above.

Please note that Seattle District NWP Regional General Condition 6, Cultural Resources and Human Burials, found in the *Nationwide Permit Terms and Conditions* enclosure, details procedures should an inadvertent discovery occur. You must ensure that you comply with this condition during the construction of your project.

The authorized work complies with the Washington State Department of Ecology's (Ecology) Water Quality Certification requirements for this NWP. No further coordination with Ecology is required.

We have prepared and enclosed a *Preliminary Jurisdictional Determination* (JD) dated December 31, 2013, which is a written indication that wetlands and waterways within your

project area may be waters of the United States. Such waters will be treated as jurisdictional waters of the U.S. for purposes of computation of impact area and compensatory mitigation requirements associated with your permit application. If you believe the Preliminary JD is inaccurate, you may request an Approved JD, which is an official determination regarding the presence or absence of waters of the United States. If one is requested, please be aware that we may require the submittal of additional information to complete an approved JD and work authorized in this letter may not occur until the approved JD has been finalized.

Our verification of this NWP authorization is valid until March 18, 2017, unless the NWP is modified, reissued, or revoked prior to that date. If the authorized work has not been completed by that date and you have commenced or are under contract to commence this activity before March 18, 2017, you will have until March 18, 2018, to complete the activity under the enclosed terms and conditions of this NWP. Failure to comply with all terms and conditions of this NWP verification invalidates this authorization and could result in a violation of Section 404 of the Clean Water Act and/or Section 10 of the Rivers and Harbors Act. You must also obtain all local, State, and other Federal permits that apply to this project.

Upon completing the authorized work, you must fill out and return the enclosed *Certificate of Compliance with Department of the Army Permit* form. Thank you for your cooperation during the permitting process. 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." A copy of this letter with enclosures will be furnished to Ms. Madi Novak of Maul Foster & Alongi, Inc., 2001 NW 19th Avenue, Suite 200, Portland, Oregon 97209. If you have any questions, please contact me at Steven.W.Manlow@usace.army.mil or (206) 316-3047.

Sincerely,

Steve Manlow, Project Manager
Regulatory Branch

Enclosures

cc: letter only via email to Washington Department of Ecology, Federal Permit Coordinator at: ecyrefedpermits@ecy.wa.gov

CARTY LAKE REMEDIAL ACTION

REFERENCE: NWS-2013-1209

APPLICANT: PORT OF RIDGEFIELD

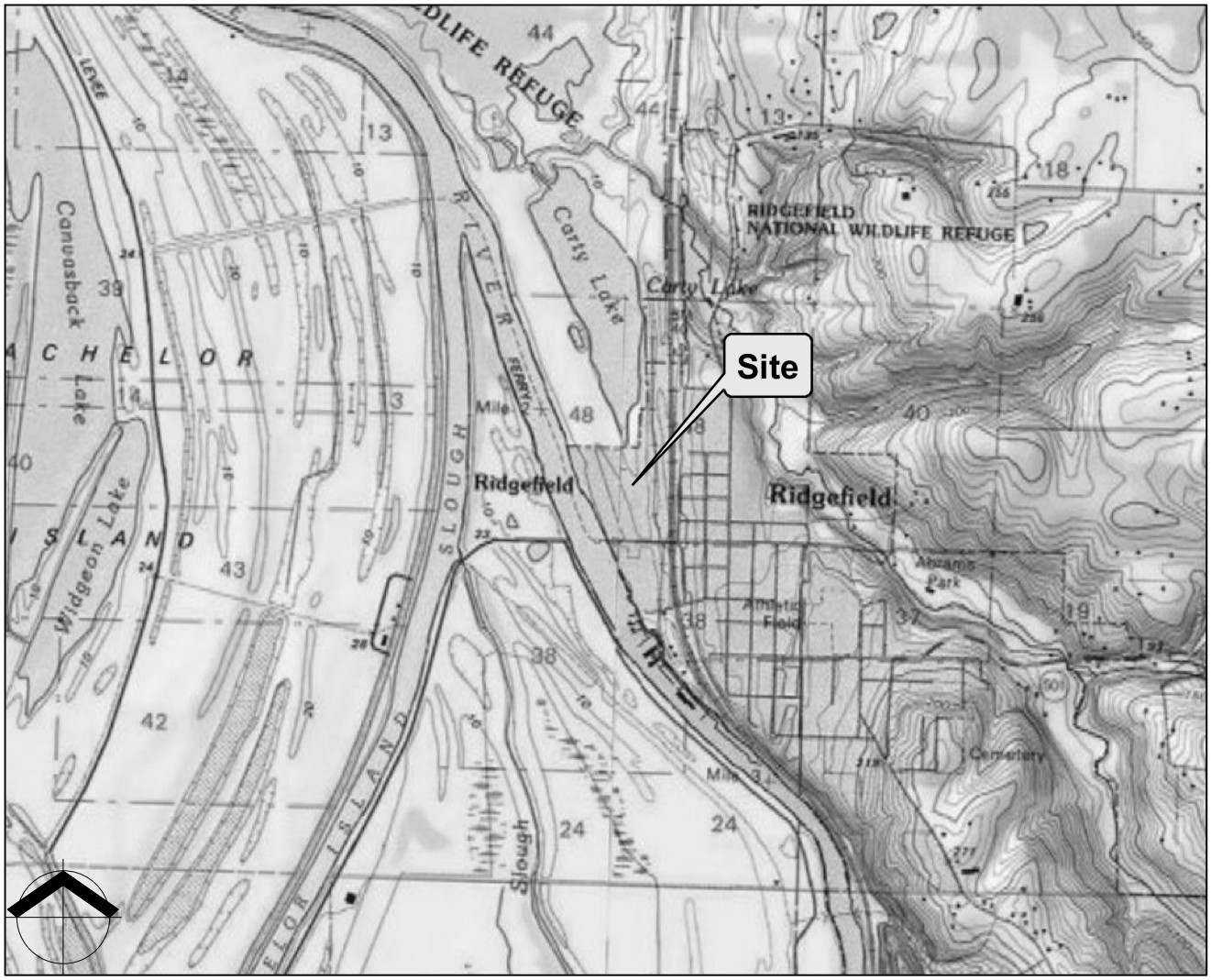
LAT/LONG: Lat: 45.82207 Long: -122.75094
45Å 49' 18.8" N, 122Å 45' 3.4" W

SECTION: 24 TOWNSHIP: 4N RANGE: 1W OF WILLAMETTE MERIDIAN

PROJECT DESCRIPTION: REMEDIATION OF DIOXIN CONTAMINATED SEDIMENT, BANK STABILIZATION.

IN: CARTY LAKE
NEAR/AT: RIDGEFIELD
COUNTY: CLARK
STATE: WASHINGTON

ADJACENT PROPERTY OWNERS:
1. PORT OF RIDGEFIELD
2. UNITED STATES OF AMERICA
3. CITY OF RIDGEFIELD



PERMIT DOCUMENT

MFA JOB #:	9003.01.40
ISSUE DATE:	01/29/2014
CHECKED:	E. BAKKOM
DRAWN:	J. ELLIOTT

MAUL FOSTER ALONGI
400 E Mill Plain Blvd., Suite 400
Vancouver, WA 98660
360.694.2691 (p) 360.906.1958 (f)
www.maulfoster.com

COVER & VICINITY MAP

CARTY LAKE REMEDIAL ACTION
PORT OF RIDGEFIELD
RIDGEFIELD, WA

REFERENCE #: NWS-2013-1209

SHEET
C0

PROJECT CONTROLS ARE ESTABLISHED ON THE FOLLOWING VERTICAL AND HORIZONTAL DATUMS:

VERTICAL DATUM: NGVD 29
HORIZONTAL DATUM: NAD83 WASHINGTON STATE PLANE, SOUTH ZONE, US FOOT

Sheet List Table	
Sheet Number	Sheet Title
C0	COVER & VICINITY MAP
C1	SHEET LIST
C2	EXISTING CONDITIONS OVERVIEW
C3	EXISTING CONDITIONS
C4	REMEDY OVERVIEW
C5	DREDGE REMEDY PLAN
C6	ACCESS AND STAGING PLAN
C7	TYPICAL SECTIONS
C8	TEMPORARY ISOLATION BARRIER DETAIL
L0	PLANTING OVERVIEW
L1	ENLARGED PLANTING PLAN 1
L2	ENLARGED PLANTING PLAN 2
L3	ENLARGED PLANTING PLAN 3
L4	ENLARGED PLANTING PLAN 4

PERMIT DOCUMENT

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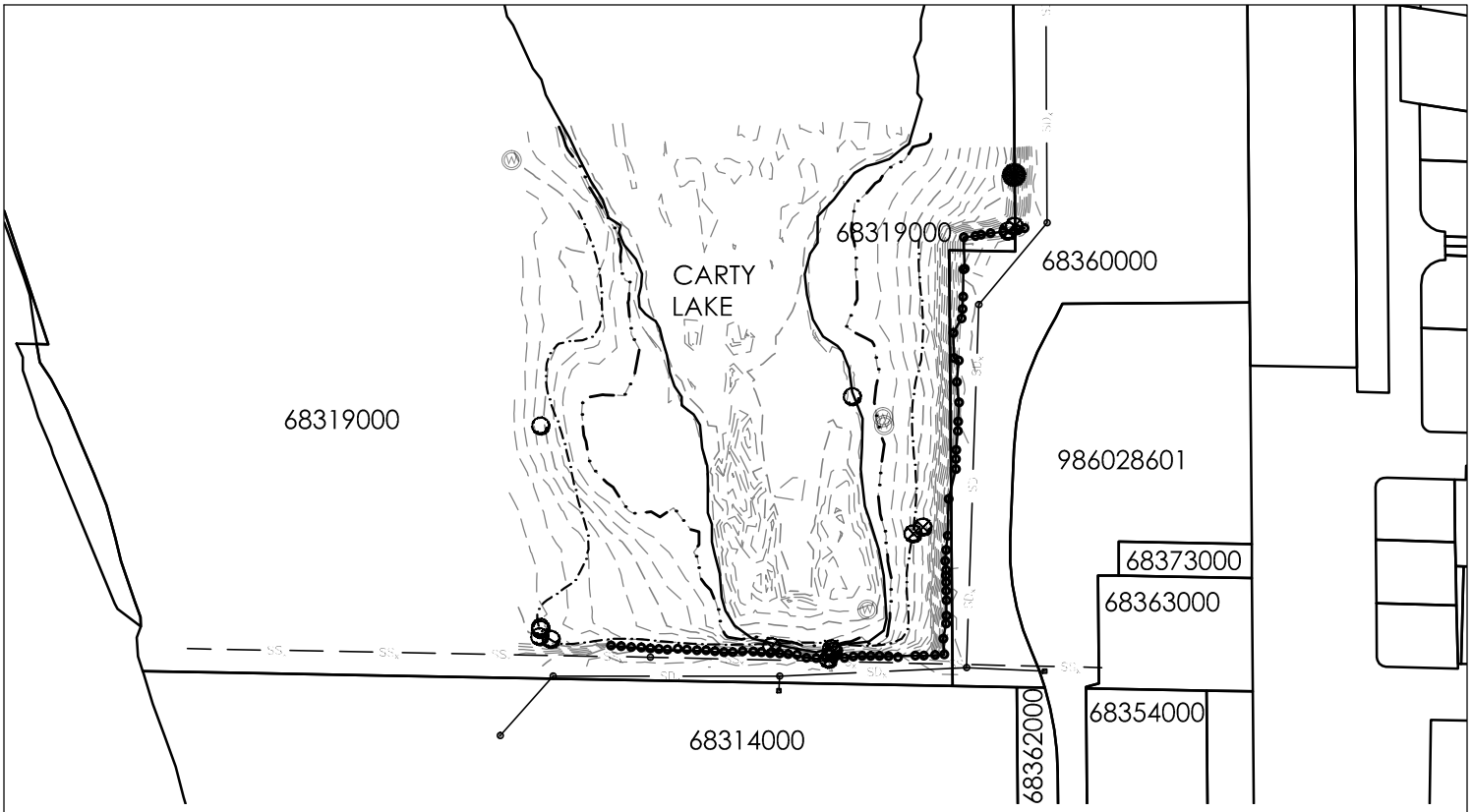
SHEET LIST

CARTY LAKE REMEDIAL ACTION

PORT OF RIDGEFIELD
RIDGEFIELD, WA

REFERENCE #: NWS-2013-1209

SHEET
C1



NOTE: BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY.

EXISTING CONDITIONS LEGEND

- EXISTING LOT LINE
- EXISTING CONTOUR LINE
- EXISTING WETLAND BOUNDARY
- EXISTING ORDINARY HIGH WATER MARK
- EXISTING BULKHEAD AND PILES
- EXISTING STORM LINE
- EXISTING SANITARY SEWER LINE
- EXISTING DECIDUOUS TREE
- EXISTING DECIDUOUS TREE TO BE REMOVED
- EXISTING CONIFEROUS TREE
- EXISTING MONITORING WELL
- EXISTING PILE
- EXISTING STORMWATER INLET

PERMIT DOCUMENT

MFA JOB #:	9003.01.40
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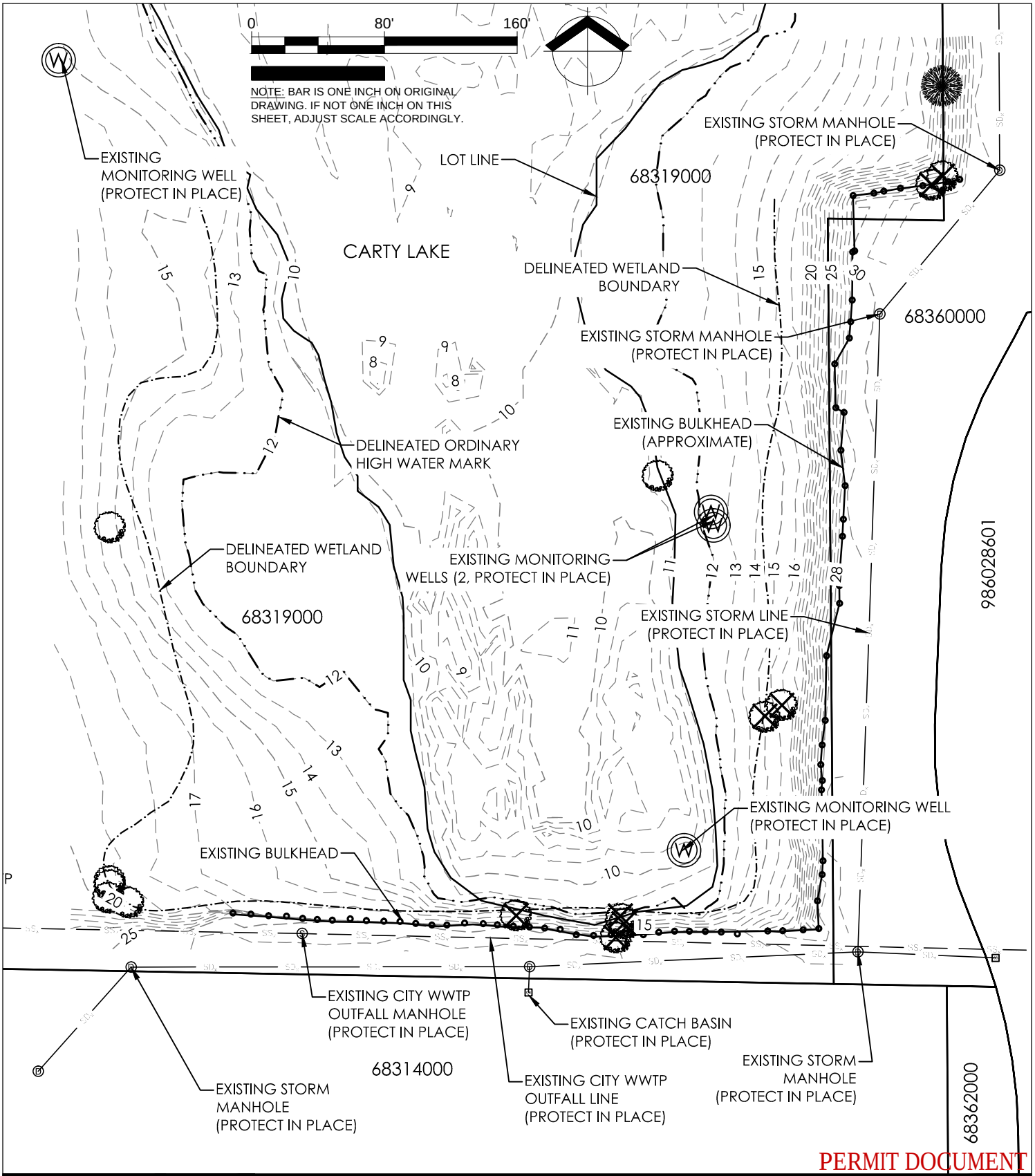
EXISTING CONDITIONS OVERVIEW

CARTY LAKE REMEDIAL ACTION

PORT OF RIDGEFIELD
RIDGEFIELD, WA

REFERENCE #: NWS-2013-1209

SHEET
C2



PERMIT DOCUMENT

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Date: 1/29/2014 8:26:23 AM

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EXISTING CONDITIONS

CARTY LAKE REMEDIAL ACTION

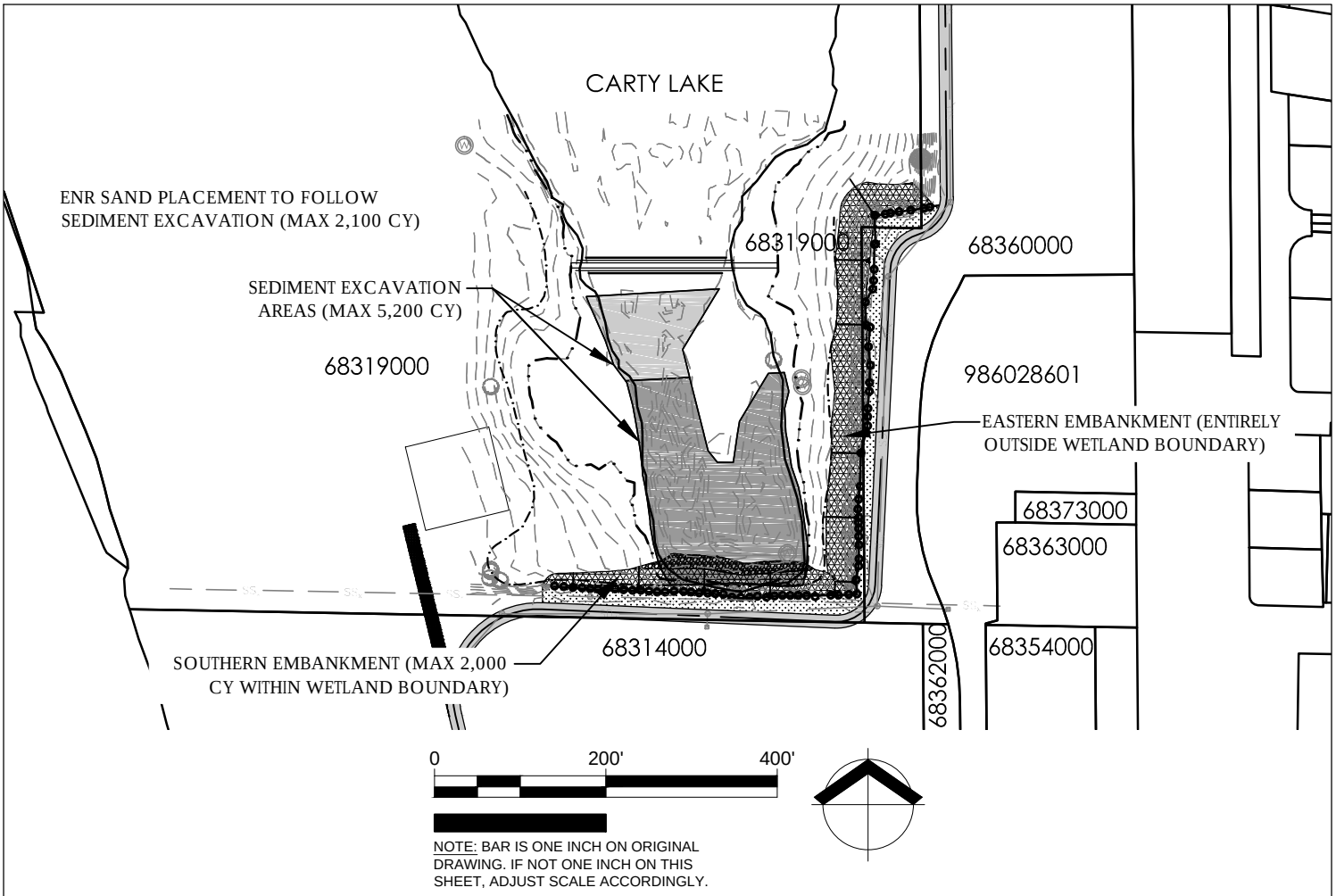
PORT OF RIDGEFIELD

RIDGEFIELD, WA

REFERENCE #: NWS-2013-1209

SHEET

C3



PROPOSED REMEDY PLAN LEGEND

- EXISTING WETLAND BOUNDARY
- EXISTING LOT LINE
- EXISTING CONTOUR LINE (10)
- PROPOSED CONTOUR LINE (10)
- EXISTING BULKHEAD AND PILES
- EXISTING STORM LINE
- EXISTING SANITARY SEWER LINE
- PROPOSED FISH MIX TOE
- PROPOSED EMBANKMENT, SLOPE AS INDICATED
- UPLAND PLANTING AREA
- PROPOSED SEDIMENT EXCAVATION AREA (1.5 FT)
- PROPOSED SEDIMENT EXCAVATION AREA (2 FT)
- EXISTING DECIDUOUS TREE (PROTECT IN PLACE)
- EXISTING CONIFEROUS TREE (PROTECT IN PLACE)
- EXISTING MONITORING WELL
- EXISTING PILE
- EXISTING STORMWATER INLET

PERMIT DOCUMENT

MFA JOB #:	9003.01.40
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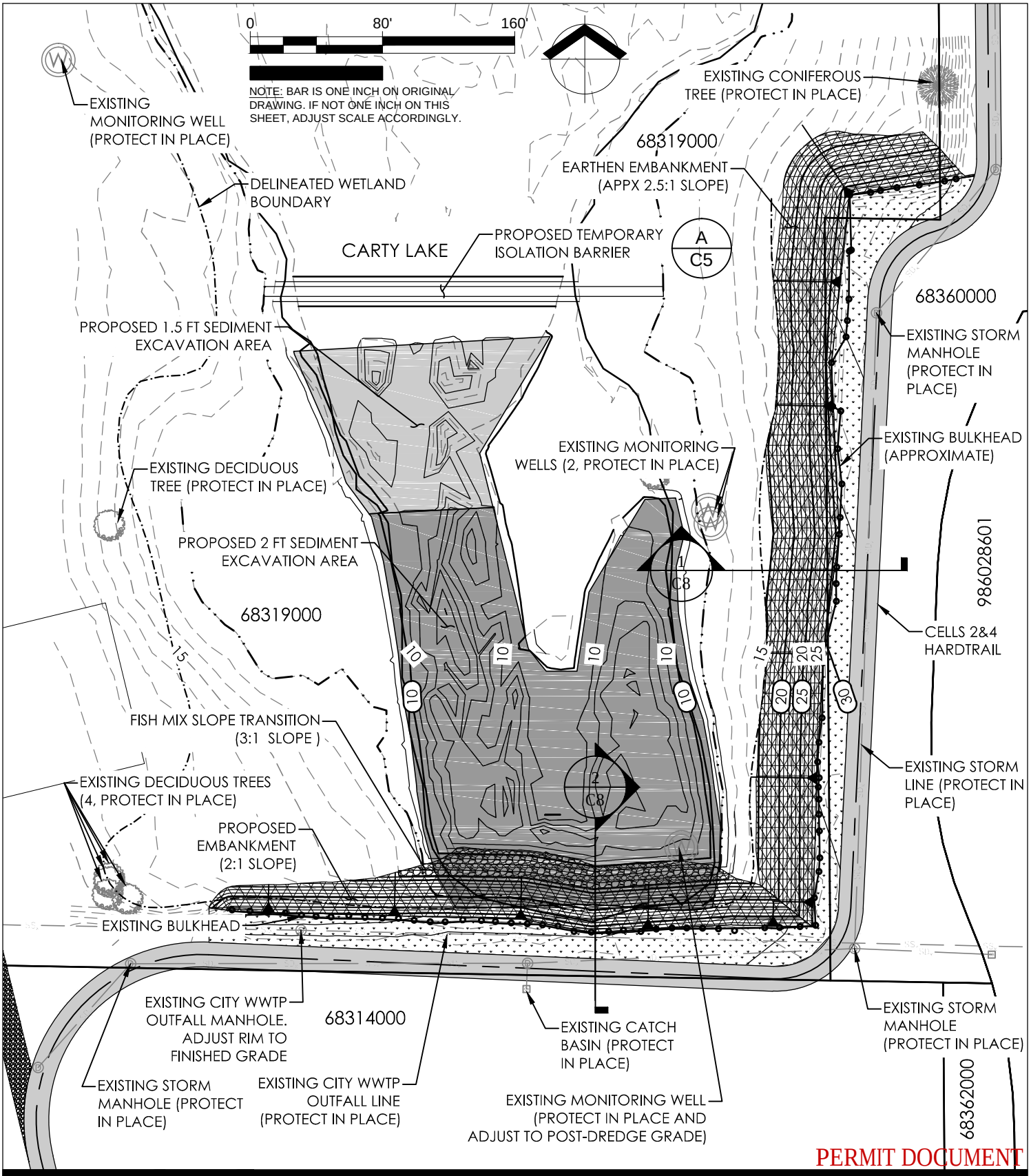
REMEDY OVERVIEW

CARTY LAKE REMEDIAL ACTION

PORT OF RIDGEFIELD
RIDGEFIELD, WA

REFERENCE #: NWS-2013-1209

SHEET
C4



PERMIT DOCUMENT

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Date: 1/29/2014 8:26:54 AM

MFA JOB #:	9003.01.40
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DRAWN:	J. ELLIOTT

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DREDGE REMEDY PLAN

CARTY LAKE REMEDIAL ACTION

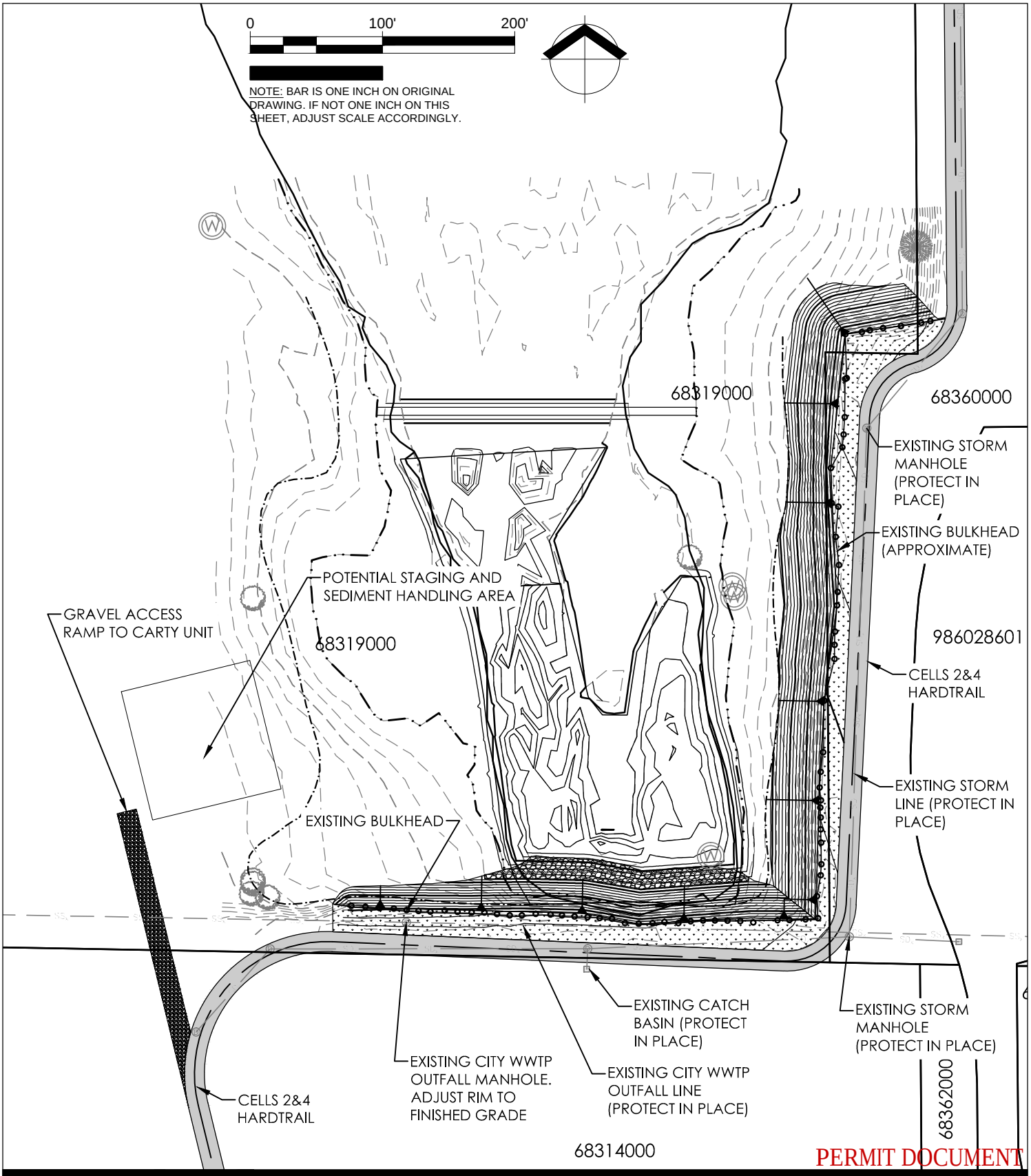
PORT OF RIDGEFIELD

RIDGEFIELD, WA

REFERENCE #: NWS-2013-1209

SHEET

C5



PERMIT DOCUMENT

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Printed by: Josh Elliott

Date: 1/30/2014 9:39:08 AM

MFA JOB #:	9003.01.40
ISSUE DATE:	01/29/2014
CHECKED:	E. BAKKOM
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ACCESS AND STAGING PLAN

CARTY LAKE REMEDIAL ACTION

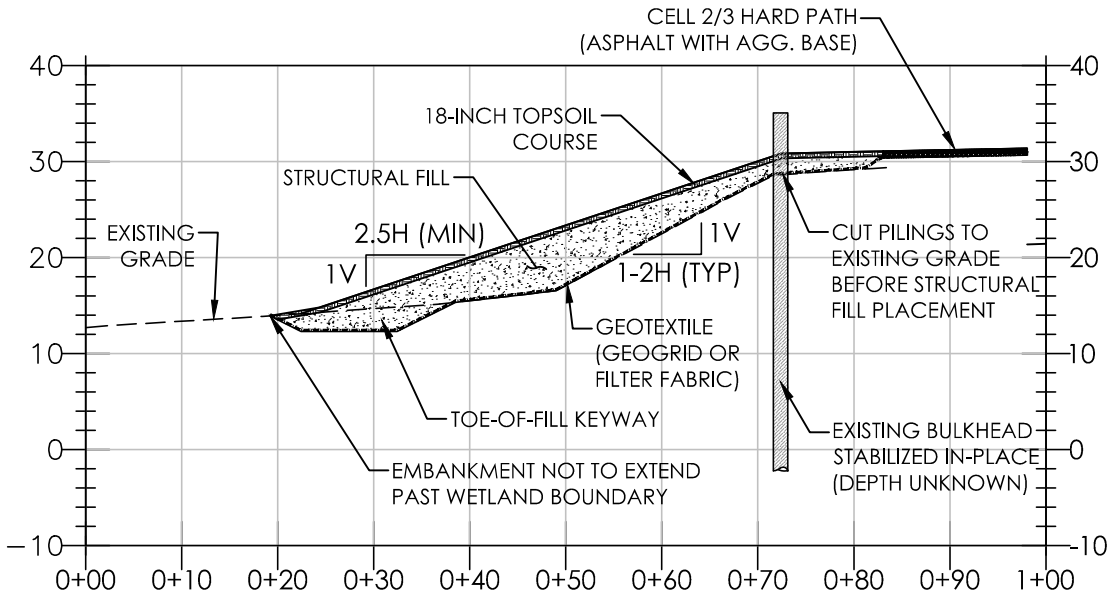
PORT OF RIDGEFIELD

RIDGEFIELD, WA

REFERENCE #: NWS-2013-1209

SHEET

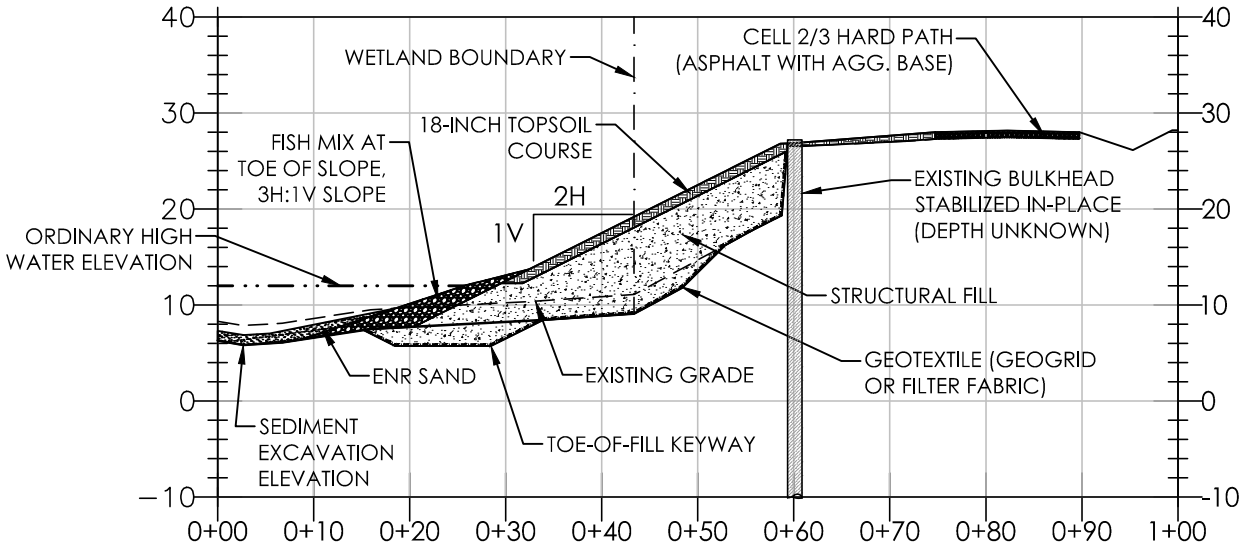
C6



1
C5/6

TYPICAL SECTION 1 - SOIL BERM TYPICAL SECTION (EAST BANK)

SCALE: 1" = 20' H
1" = 20' V



2
C5/6

TYPICAL SECTION 1 - SOIL BERM TYPICAL SECTION (SOUTH BANK)

SCALE: 1" = 20' H
1" = 20' V

PERMIT DOCUMENT

MFA JOB #:	9003.01.40
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TYPICAL SECTIONS

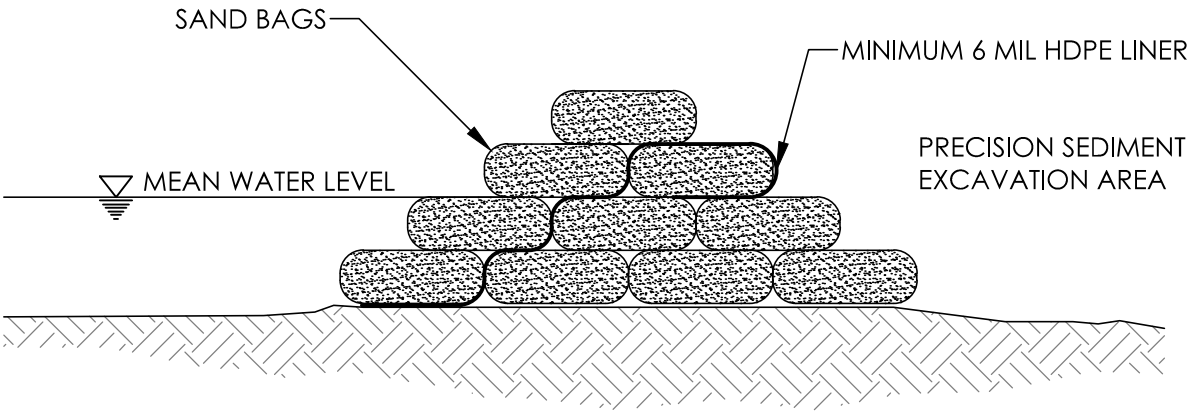
CARTY LAKE REMEDIAL ACTION

PORT OF RIDGEFIELD

RIDGEFIELD, WA

REFERENCE #:
NWS-2013-1209

SHEET
C7



A/C5 TYPICAL SECTION THROUGH TEMPORARY ISOLATION BARRIER

PERMIT DOCUMENT

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TEMPORARY ISOLATION BARRIER DETAIL

CARTY LAKE REMEDIAL ACTION

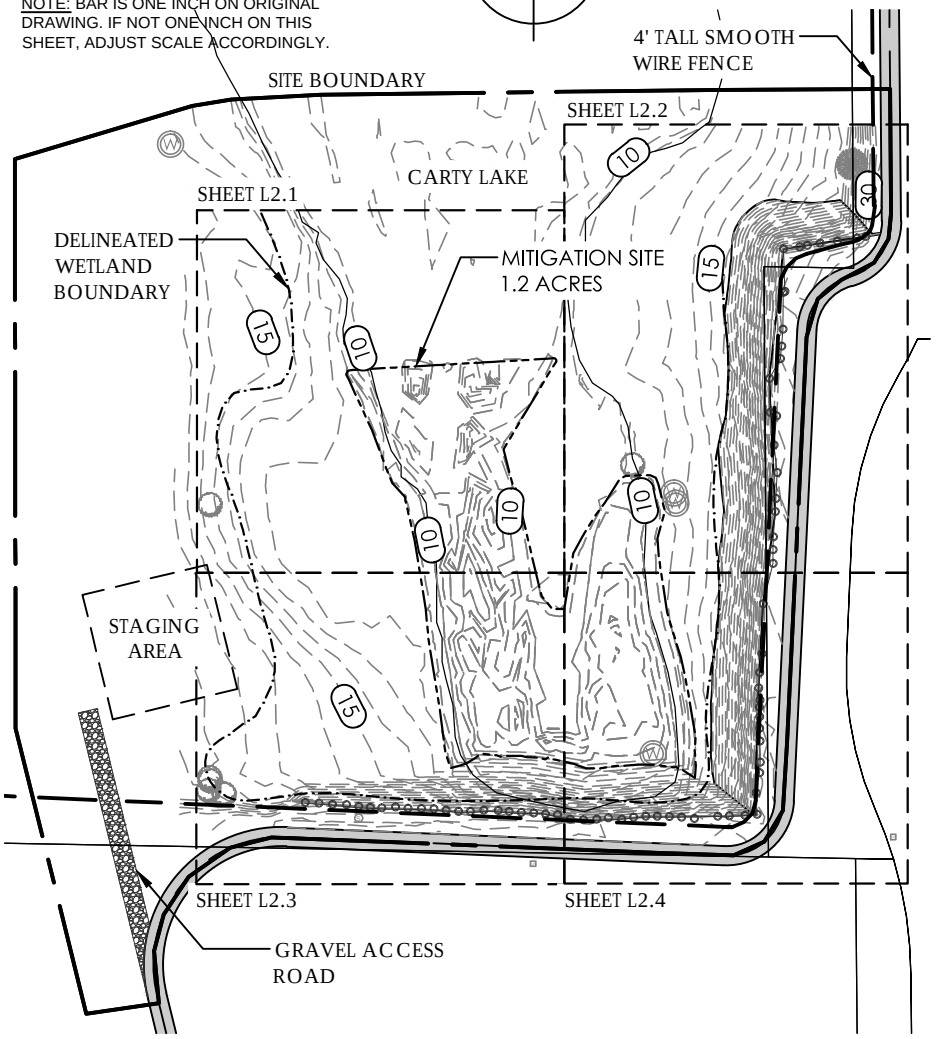
PORT OF RIDGEFIELD
RIDGEFIELD, WA

REFERENCE #: NWS-2013-1209

SHEET
C8

0 150' 480'

NOTE: BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY.



PLANT MATERIAL SCHEDULE

SYM	COMMON NAME	SPACING
	PACIFIC WILLOW	15'-0", O.C
	SANDBAR WILLOW	12'-0", O.C
	SITKA WILLOW	10'-0", O.C
	TWINBERRY	8'-0", O.C.
	PACIFIC NINEBARK	8'-0", O.C.
	RED TWIG DOGWOOD	6'-0", O.C.
	OCEAN SPRAY	6'-0", O.C.
	WESTERN VIBURNUM	5'-0", O.C.
	SNOWBERRY	4'-0", O.C.
	DOUGLAS' SPIRAEA	4'-0", O.C.
	RED FLOWERING CURRANT	4'-0", O.C.
	TALL OREGON GRAPE	4'-0", O.C.
	NOOTKA ROSE	3'-0", O.C.
	CLUSTER ROSE	3'-0", O.C.

GROUNDCOVER

FISH MIX W/ LIVE STAKES
(ELEV. 9 TO 14)
LIVE STAKES INCLUDE:
NINEBARK
REDTWIG DOGWOOD
DOUGLAS' SPIRAEA

IN-WATER PLANTING

IN-WATER MIX 1
(APPROX. ELEV. 7 & BELOW)
AMERICAN WATERPLANTAIN
WAPATO
WATER SMARTWEED
FLOATING-LEAF PONDWEED
BUR-REED

IN-WATER MIX 2
(APPROX. ELEV. 7 TO 10)
AMERICAN WATERPLANTAIN
WAPATO
SMALL-FRUITED BULRUSH
HARDSTEM BULRUSH

UPLAND GRASS MIX
ROEMER'S FESCUE
BLUE WILDRYE
SPIKE BENTGRASS
CALIFORNIA BROME

ECO GRASS MIX
IDAHO FESCUE
CALIFORNIA OATGRASS
SLENDER HAIRGRASS
PINE BLUEGRASS

IN-WATER EDGE MIX
(APPROX. ELEV. 10 TO 11)
COLUMBIA SEDGE
SLOUGH SEDGE
TUFTED HAIRGRASS
OVATE SPIKERUSH
SOFT RUSH

TRANSITIONAL FRINGE MIX
(APPROX. ELEV. 11 TO 14)
MANNAGRASS
BLUE WILDRYE
TUFTED HAIRGRASS
MEADOW BARLEY
PATH RUSH

NOTE:
REFER TO CARTY LAKE MITIGATION PLAN (01/29/2014) FOR GROUNDCOVER PLANT SPACING

PERMIT DOCUMENT

MFA JOB #:	9003.01.40
ISSUE DATE:	01/29/2014
CHECKED:	J. ELLIOTT
DRAWN:	C. RILEY

MAUL FOSTER ALONGI
400 E Mill Plain Blvd., Suite 400
Vancouver, WA 98660
360.694.2691 (p) 360.906.1958 (f)
www.maulfoster.com

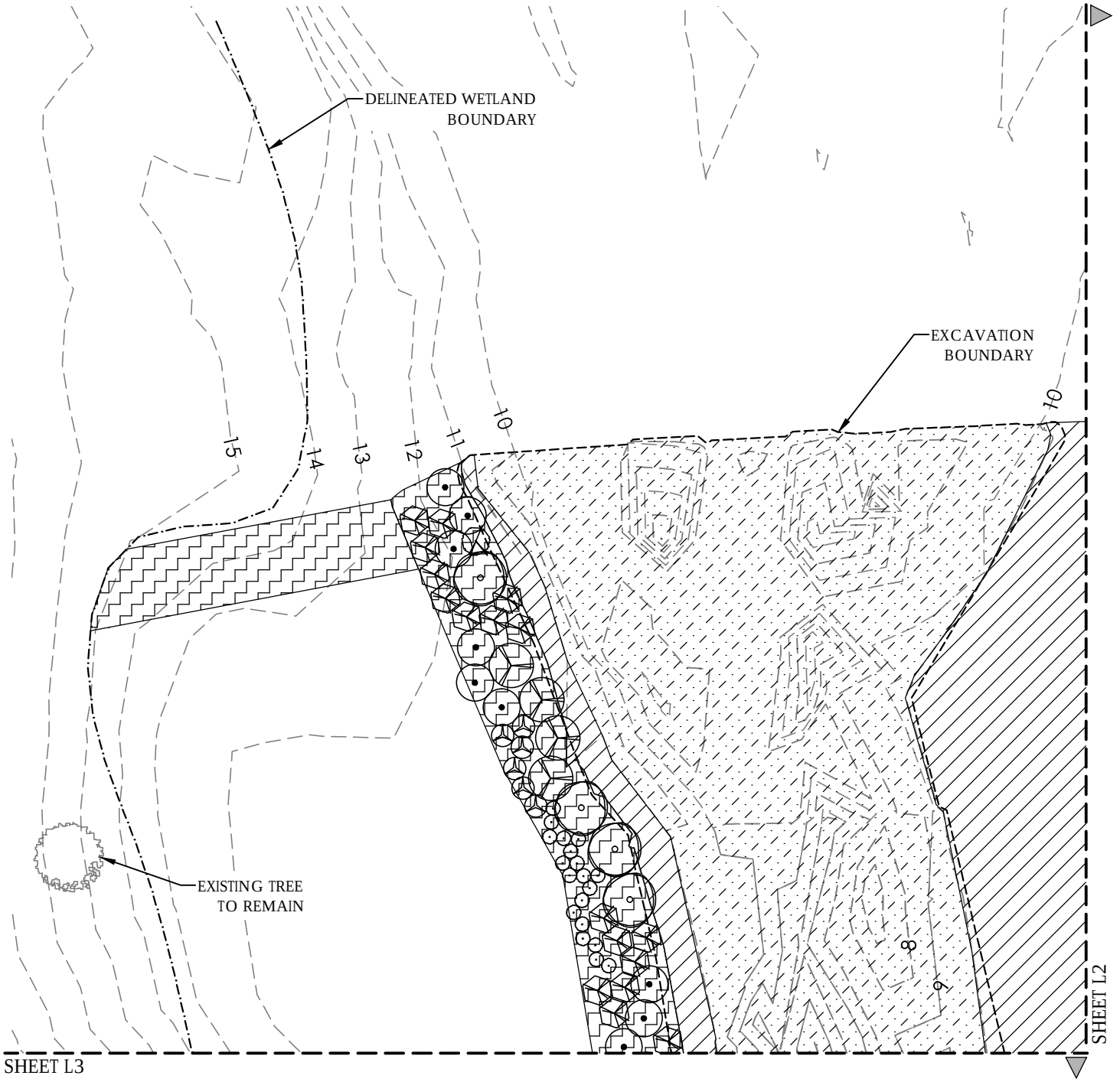
PLANTING OVERVIEW

CARTY LAKE REMEDIAL ACTION

PORT OF RIDGEFIELD
RIDGEFIELD, WA

REFERENCE #: NWS-2013-1209

SHEET
L0



PERMIT DOCUMENT

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ENLARGED PLANTING PLAN 1

CARTY LAKE REMEDIAL ACTION

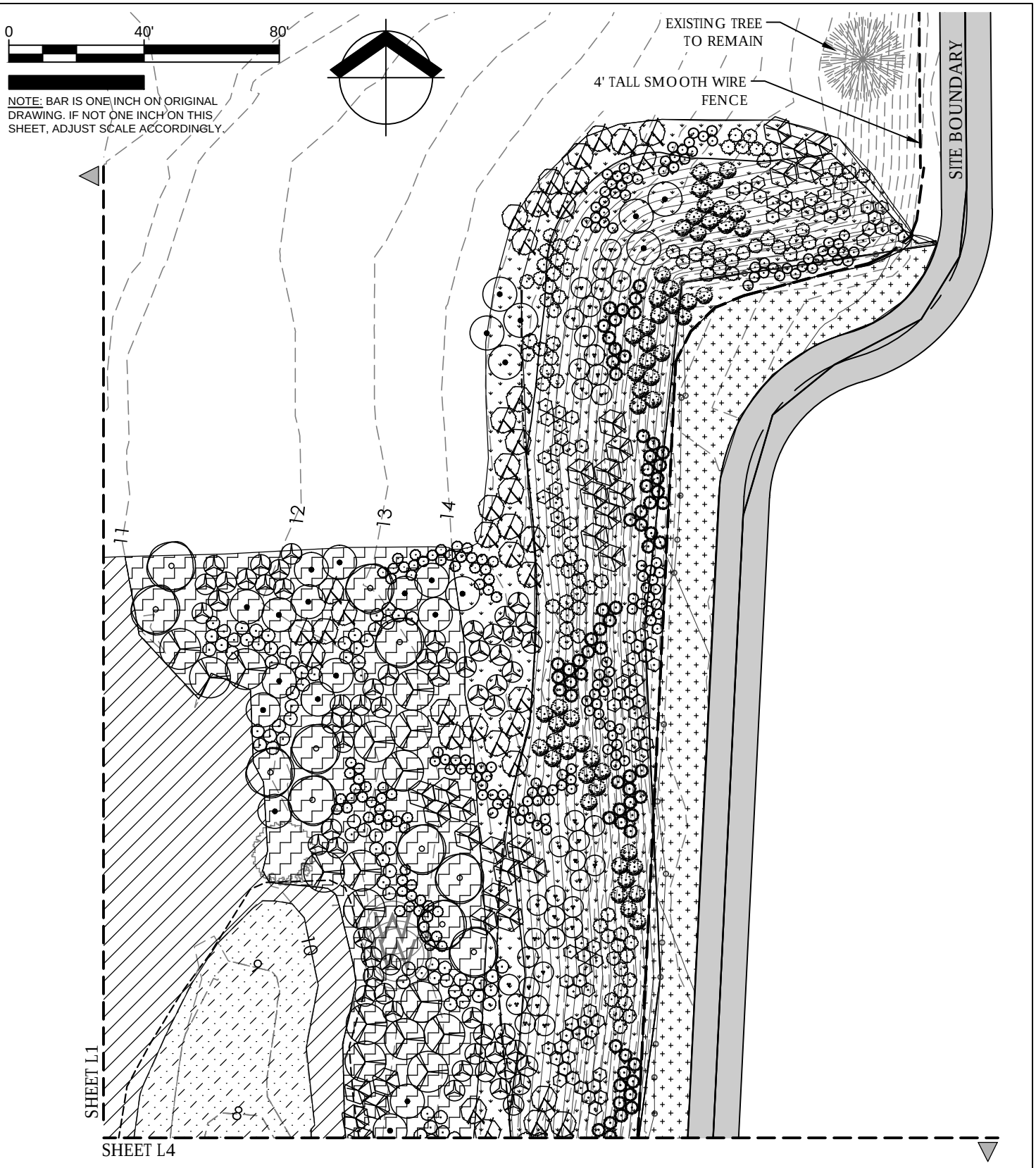
PORT OF RIDGEFIELD

RIDGEFIELD, WA

REFERENCE #: NWS-2013-1209

SHEET

L1



PERMIT DOCUMENT

Filepath: G:\00_MFA Civil 3D\00_PROJECTS\9003.01.40 - Port of Ridgefield\Carty Lake Initial Design\PLANS\1ARPA - Jan 2014\1-LANDSCAPE (1ARPA_8.5x11).dwg

Printed by: Josh Elliott

Date: 01/28/2014

MFA JOB #:	9003.01.40
ISSUE DATE:	01/29/2014
CHECKED:	J. ELLIOTT
DRAWN:	C. RILEY

MAUL FOSTER ALONGI
400 E Mill Plain Blvd., Suite 400
Vancouver, WA 98660
360.694.2691 (p) 360.906.1958 (f)
www.maulfoster.com

ENLARGED PLANTING PLAN 2

CARTY LAKE REMEDIAL ACTION

PORT OF RIDGEFIELD

RIDGEFIELD, WA

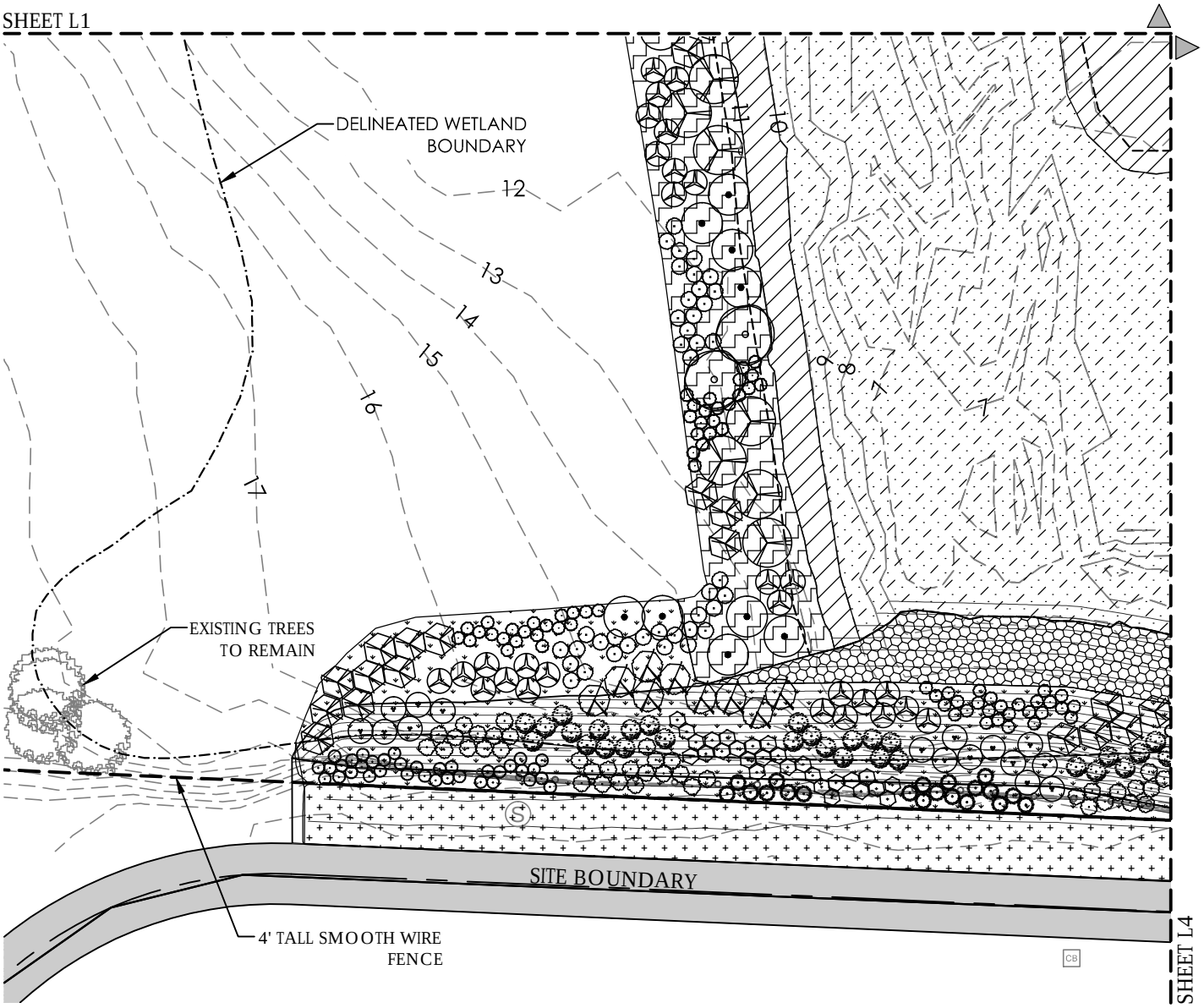
REFERENCE #: NWS-2013-1209

SHEET

L2

0 40' 80'

NOTE: BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY.



PERMIT DOCUMENT

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ENLARGED PLANTING PLAN 3

CARTY LAKE REMEDIAL ACTION

PORT OF RIDGEFIELD

RIDGEFIELD, WA

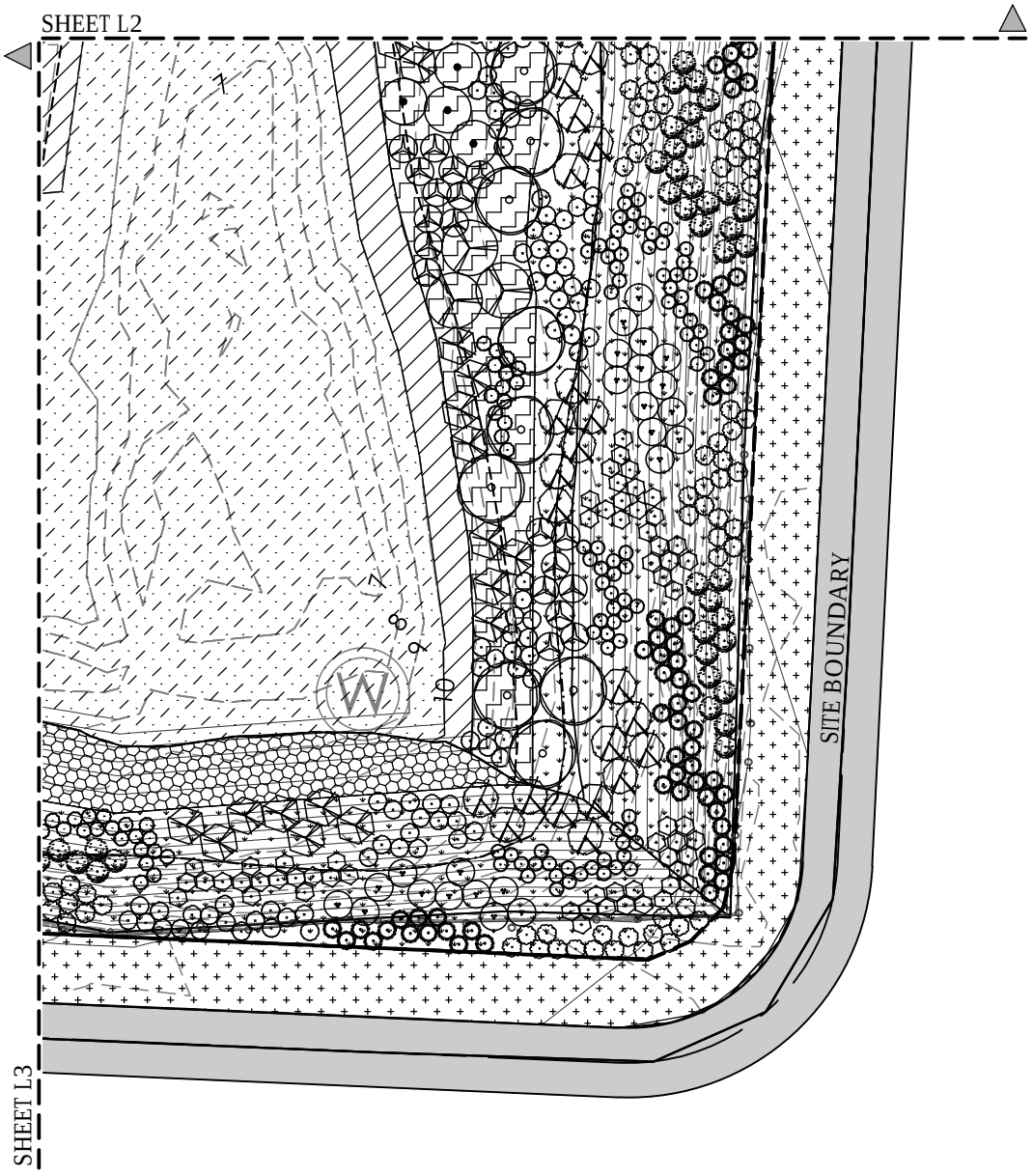
REFERENCE #: NWS-2013-1209

SHEET

L3

0 40' 80'

NOTE: BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY.



PERMIT DOCUMENT

MFA JOB #:	9003.01.40
ISSUE DATE:	01/29/2014
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ENLARGED PLANTING PLAN 4

CARTY LAKE REMEDIAL ACTION

PORT OF RIDGEFIELD

RIDGEFIELD, WA

REFERENCE #: NWS-2013-1209

SHEET

L4

PRELIMINARY JURISDICTIONAL DETERMINATION FORM

BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR PRELIMINARY JURISDICTIONAL DETERMINATION (JD): December 31, 2013

B. NAME AND ADDRESS OF PERSON REQUESTING PRELIMINARY JD:
Brent Grening, Port of Ridgefield, Post Office Box 55, Ridgefield, Washington 98642

C. DISTRICT OFFICE, FILE NAME, AND NUMBER: Seattle District, Port of Ridgefield (Carty Lake Remediation); NWS-2013-1209

D. PROJECT LOCATION(S) AND BACKGROUND INFORMATION:
State: WA County: Clark City: WA
Center coordinates of site (lat/long in degree decimal format): Lat. 45.82207°N, Long. -122.75103°W
Name of nearest waterbody: Carty Lake and Lake River
Name of any water bodies on the site, in the review area, that have been identified as Section 10 waters:
Tidal: Lake River
Non-Tidal: ____

Identify (estimate) amount of waters in the review area (if there are multiple sites, use the table instead):
Non-wetland waters (total for site): linear feet 2000 and width (ft) 350 or _____ acres.
Stream Flow : RPW Flow path: The onsite wetlands are adjacent to and drain into Lake River. Lake River is a Section 10 Navigable Water
Wetlands: 52 acres (total for site).
Cowardin Class(es): PEM; L1UB

Site number	Latitude	Longitude	Cowardin Class	Estimated amount of aquatic resource in review area	Class of aquatic resource

E. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):
☒ Office (Desk) Determination. Date: December 31, 2013
☐ Field Determination. Date(s): _____

SUPPORTING DATA. Data reviewed for preliminary JD (check all that apply - checked items should be included in case file and, where checked and requested, appropriately reference sources below):
☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: Wetland Delineation entitled "Critical Areas Report for Carty Lake, Ridgefield, Washington", prepared by Ecological Land Services, Inc., and dated August 2, 2013.
☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
☒ Office concurs with data sheets/delineation report.
☐ Office does not concur with data sheets/delineation report. Explain: _____
☐ Data sheets prepared by the Corps: _____.
☒ Corps navigable waters' study: Corps Seattle District list of Section 10 Navigable Waters .
☐ U.S. Geological Survey Hydrologic Atlas: _____.
☐ USGS NHD data. ☐ USGS 8 and 12 digit HUC maps.
☐ U.S. Geological Survey map(s). Cite scale & quad name: _____.
☐ USDA Natural Resources Conservation Service Soil Survey. Citation: _____.
☐ National wetlands inventory map(s). Cite name: _____.
☐ State/Local wetland inventory map(s): _____.
☐ FEMA/FIRM maps: _____.
☐ 100-year Floodplain Elevation is: _____(National Geodetic Vertical Datum of 1929)
☐ Photographs: ☐ Aerial (Name & Date): _____.
☒ Photographs: ☐ Other (Name & Date): Photos submitted with "Detailed Project Description, Attachment 1 of the Joint Aquatic Resources Permit Application, Carty Lake Remedial Action, 111 W Division Street, Ridgefield, Washington", prepared by Maul Foster & Alongi, dated November 12, 2013.
.

☐ Previous determination(s). File no., date (and findings) of response letter (determination and coordination): _____.
☐ Other information (please specify): _____.

1. The Corps of Engineers believes that there may be jurisdictional waters of the United States on the subject site, and the permit applicant or other affected party who requested this preliminary JD is hereby advised of his or her option to request and obtain an approved jurisdictional determination (JD) for that site. Nevertheless, the permit applicant or other person who requested this preliminary JD has declined to exercise the option to obtain an approved JD in this instance and at this time.

2. In any circumstance where a permit applicant obtains an individual permit, or a Nationwide General Permit (NWP) or other general permit verification requiring "pre-construction notification" (PCN), or requests verification for a non-reporting NWP or other general permit, and the permit applicant has not requested an approved JD for the activity, the permit applicant is hereby made aware of the following: (1) the permit applicant has elected to seek a permit authorization based on a preliminary JD, which does not make an official determination of jurisdictional waters; (2) that the applicant has the option to request an approved JD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an approved JD could possibly result in less compensatory mitigation being required or different special conditions; (3) that the applicant has the right to request an individual permit rather than accepting the terms and conditions of the NWP or other general permit authorization; (4) that the applicant can accept a permit authorization and thereby agree to comply with all the terms and conditions of that permit, including whatever mitigation requirements the Corps has determined to be necessary; (5) that undertaking any activity in reliance upon the subject permit authorization without requesting an approved JD constitutes the applicant's acceptance of the use of the preliminary JD, but that either form of JD will be processed as soon as is practicable; (6) accepting a permit authorization (e.g., signing a proffered individual permit) or undertaking any activity in reliance on any form of Corps permit authorization based on a preliminary JD constitutes agreement that all wetlands and other water bodies on the site affected in any way by that activity are jurisdictional waters of the United States, and precludes any challenge to such jurisdiction in any administrative or judicial compliance or enforcement action, or in any administrative appeal or in any Federal court; and (7) whether the applicant elects to use either an approved JD or a preliminary JD, that JD will be processed as soon as is practicable. Further, an approved JD, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 C.F.R. Part 331, and that in any administrative appeal, jurisdictional issues can be raised (see 33 C.F.R. 331.5(a)(2)). If, during that administrative appeal, it becomes necessary to make an official determination whether CWA jurisdiction exists over a site, or to provide an official delineation of jurisdictional waters on the site, the Corps will provide an approved JD to accomplish that result, as soon as is practicable. This preliminary JD finds that there *"may be"* waters of the United States on the subject project site, and identifies all aquatic features on the site that could be affected by the proposed activity, based on the information in this document.

IMPORTANT NOTE: The information recorded on this form has not necessarily been verified by the Corps and should not be relied upon for later jurisdictional determinations.

Signature:

December 31, 2013

_____ _____
Regulatory Project Manager Date

_____ _____
Person[1] Requesting Preliminary JD Date

[1] Permit applicant, landowner, a lease, easement or option holder, or individual with identifiable and substantial legal interest in the property; this signature is not required for preliminary JDs associated with enforcement actions.

US Army Corps of Engineers ®
Seattle District

NATIONWIDE PERMIT 38
Terms and Conditions

Effective Date: June 15, 2012

In addition to any special condition that may be required on a case-by-case basis by the District Engineer, the following terms and conditions must be met, as applicable, for a Nationwide Permit authorization to be valid in Washington State.

A. DESCRIPTION OF AUTHORIZED ACTIVITIES

38. Cleanup of Hazardous and Toxic Waste. Specific activities required to effect the containment, stabilization, or removal of hazardous or toxic waste materials that are performed, ordered, or sponsored by a government agency with established legal or regulatory authority. Court ordered remedial action plans or related settlements are also authorized by this NWP. This NWP does not authorize the establishment of new disposal sites or the expansion of existing sites used for the disposal of hazardous or toxic waste.

Notification: The permittee must submit a pre-construction notification to the district engineer prior to commencing the activity. (See general condition 31.) (Sections 10 and 404)

Note: Activities undertaken entirely on a Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) site by authority of CERCLA as approved or required by EPA, are not required to obtain permits under Section 404 of the Clean Water Act or Section 10 of the Rivers and Harbors Act.

B. CORPS NATIONAL GENERAL CONDITIONS FOR ALL NWPs

Note: To qualify for NWP authorization, the prospective permittee must comply with the following general conditions, as applicable, in addition to any regional or case-specific conditions imposed by the division engineer or district engineer. Prospective permittees should contact the appropriate Corps district office to determine if regional conditions have been imposed on an NWP. Prospective permittees should also contact the appropriate Corps district office to determine the status of Clean Water Act Section 401 water quality certification and/or Coastal Zone Management Act consistency for an NWP. Every person who may wish to obtain permit authorization under one or more NWPs, or who is currently relying on an existing or prior permit authorization under one or more NWPs, has been and is on notice that all of the provisions of 33 CFR § 330.1 through 330.6 apply to every NWP authorization. Note especially 33 CFR § 330.5 relating to the modification, suspension, or revocation of any NWP authorization.

1. Navigation. (a) No activity may cause more than a minimal adverse effect on navigation.

(b) Any safety lights and signals prescribed by the U.S. Coast Guard, through regulations or otherwise, must be installed and maintained at the permittee's expense on authorized facilities in navigable waters of the United States.

(c) The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or 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, the permittee will be required, upon due notice from the 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.

2. Aquatic Life Movements. No activity may substantially disrupt the necessary life cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area, unless the activity's primary purpose is to impound water. All permanent and temporary crossings of waterbodies shall be suitably culverted, bridged, or otherwise designed and constructed to maintain low flows to sustain the movement of those aquatic species.

3. Spawning Areas. Activities in spawning areas during spawning seasons must be avoided to the maximum extent practicable. Activities that result in the physical destruction (e.g., through excavation, fill, or downstream smothering by substantial turbidity) of an important spawning area are not authorized.

4. Migratory Bird Breeding Areas. Activities in waters of the United States that serve as breeding areas for migratory birds must be avoided to the maximum extent practicable.

5. Shellfish Beds. No activity may occur in areas of concentrated shellfish populations, unless the activity is directly related to a shellfish harvesting activity authorized by NWPs 4 and 48, or is a shellfish seeding or habitat restoration activity authorized by NWP 27.

6. Suitable Material. No activity may use unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.). Material used for construction or discharged must be free from toxic pollutants in toxic amounts (see Section 307 of the Clean Water Act).

7. Water Supply Intakes. No activity may occur in the proximity of a public water supply intake, except where the activity is for the repair or improvement of public water supply intake structures or adjacent bank stabilization.

8. Adverse Effects From Impoundments. If the activity creates an impoundment of water, adverse effects to the aquatic system due to accelerating the passage of water, and/or restricting its flow must be minimized to the maximum extent practicable.

9. Management of Water Flows. To the maximum extent practicable, the pre-construction course, condition, capacity, and location of open waters must be maintained for each activity, including stream channelization and storm water management activities, except as provided below. The activity must be constructed to withstand expected high flows. The activity must not restrict or impede the passage of normal or high flows, unless the primary purpose of the activity is to impound water or manage high flows. The activity may alter the pre-construction course, condition, capacity, and location of open waters if it benefits the aquatic environment (e.g., stream restoration or relocation activities).

10. Fills Within 100-Year Floodplains. The activity must comply with applicable FEMA-approved state or local floodplain management requirements.

11. Equipment. Heavy equipment working in wetlands or mudflats must be placed on mats, or other measures must be taken to minimize soil disturbance.

12. Soil Erosion and Sediment Controls. Appropriate soil erosion and sediment controls must be used and maintained in effective operating condition during construction, and all exposed soil and other fills, as well as any work below the ordinary high water mark or high tide line, must be permanently stabilized at the earliest practicable date. Permittees are encouraged to perform work within waters of the United States during periods of low-flow or no-flow.

13. Removal of Temporary Fills. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The affected areas must be revegetated, as appropriate.

14. Proper Maintenance. Any authorized structure or fill shall be properly maintained, including maintenance to ensure public safety and compliance with applicable NWP general conditions, as well as any activity-specific conditions added by the district engineer to an NWP authorization.

15. Single and Complete Project. The activity must be a single and complete project. The same NWP cannot be used more than once for the same single and complete project.

16. Wild and Scenic Rivers. No activity may occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status, unless the appropriate Federal agency with direct management responsibility for such river, has determined in writing that the proposed activity will not adversely affect the Wild and Scenic River designation or study status. Information on Wild and Scenic Rivers may be obtained from the appropriate Federal land management agency responsible for the designated Wild and Scenic River or study river (e.g., National Park Service, U.S. Forest Service, Bureau of Land Management, U.S. Fish and Wildlife Service).

17. Tribal Rights. No activity or its operation may impair reserved tribal rights, including, but not limited to, reserved water rights and treaty fishing and hunting rights.

18. Endangered Species. (a) No activity is authorized under any NWP which is likely to directly or indirectly jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act (ESA), or which will directly or indirectly destroy or adversely modify the critical habitat of such species. No activity is authorized under any NWP which "may affect" a listed species or critical habitat, unless Section 7 consultation addressing the effects of the proposed activity has been completed.

(b) Federal agencies should follow their own procedures for complying with the requirements of the ESA. Federal permittees must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will review the documentation and determine whether it is sufficient to address ESA compliance for the NWP activity, or whether additional ESA consultation is necessary.

(c) Non-federal permittees must submit a pre-construction notification to the district engineer if any listed species or designated critical habitat might be affected or is in the vicinity of the project, or if the project is located in designated critical habitat, and shall not begin work on the activity until notified by the district engineer that the requirements of the ESA have been satisfied and that the activity is authorized. For activities that might affect Federally-listed endangered or threatened species or designated critical habitat, the pre-construction notification must include the name(s) of the endangered or threatened species that might be affected by the proposed work or that utilize the designated critical habitat that might be affected by the proposed work. The district engineer will determine whether the proposed activity "may affect" or will have "no effect" to listed species and designated critical habitat and will

notify the non-Federal applicant of the Corps' determination within 45 days of receipt of a complete pre-construction notification. In cases where the non-Federal applicant has identified listed species or critical habitat that might be affected or is in the vicinity of the project, and has so notified the Corps, the applicant shall not begin work until the Corps has provided notification the proposed activities will have "no effect" on listed species or critical habitat, or until Section 7 consultation has been completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps.

(d) As a result of formal or informal consultation with the FWS or NMFS the district engineer may add species-specific regional endangered species conditions to the NWPs.

(e) Authorization of an activity by a NWP does not authorize the "take" of a threatened or endangered species as defined under the ESA. In the absence of separate authorization (e.g., an ESA Section 10 Permit, a Biological Opinion with "incidental take" provisions, etc.) from the U.S. FWS or the NMFS, The Endangered Species Act prohibits any person subject to the jurisdiction of the United States to take a listed species, where "take" means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. The word "harm" in the definition of "take" means an act which actually kills or injures wildlife. Such an act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering.

(f) Information on the location of threatened and endangered species and their critical habitat can be obtained directly from the offices of the U.S. FWS and NMFS or their world wide web pages at http://www.fws.gov/ or http://www.fws.gov/ipac and http://www.noaa.gov/fisheries.html respectively.

19. Migratory Birds and Bald and Golden Eagles. The permittee is responsible for obtaining any "take" permits required under the U.S. Fish and Wildlife Service's regulations governing compliance with the Migratory Bird Treaty Act or the Bald and Golden Eagle Protection Act. The permittee should contact the appropriate local office of the U.S. Fish and Wildlife Service to determine if such "take" permits are required for a particular activity.

20. Historic Properties. (a) In cases where the district engineer determines that the activity may affect properties listed, or eligible for listing, in the National Register of Historic Places, the activity is not authorized, until the requirements of Section 106 of the National Historic Preservation Act (NHPA) have been satisfied.

(b) Federal permittees should follow their own procedures for complying with the requirements of Section 106 of the National Historic Preservation Act. Federal permittees must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will review the documentation and determine whether it is sufficient to address section 106 compliance for the NWP activity, or whether additional section 106 consultation is necessary.

(c) Non-federal permittees must submit a pre-construction notification to the district engineer if the authorized activity may have the potential to cause effects to any historic properties listed on, determined to be eligible for listing on, or potentially eligible for listing on the National Register of Historic Places, including previously unidentified properties. For such activities, the pre-construction notification must state which historic properties may be affected by the proposed work or include a vicinity map indicating the location of the historic properties or the potential for the presence of historic properties. Assistance regarding information on the location of or potential for the presence of historic resources can be sought from the State Historic Preservation Officer or Tribal Historic Preservation Officer, as appropriate, and the National Register of Historic Places (see 33 CFR 330.4(g)). When reviewing pre-construction notifications, district engineers will comply with the current procedures for addressing the requirements of Section 106 of the National Historic Preservation Act. The district engineer shall make a reasonable and good faith effort to carry out appropriate identification efforts, which may include background research, consultation, oral history interviews, sample field investigation, and field survey. Based on the information submitted and these efforts, the district engineer shall determine whether the proposed

activity has the potential to cause an effect on the historic properties. Where the non-Federal applicant has identified historic properties on which the activity may have the potential to cause effects and so notified the Corps, the non-Federal applicant shall not begin the activity until notified by the district engineer either that the activity has no potential to cause effects or that consultation under Section 106 of the NHPA has been completed.

(d) The district engineer will notify the prospective permittee within 45 days of receipt of a complete pre-construction notification whether NHPA Section 106 consultation is required. Section 106 consultation is not required when the Corps determines that the activity does not have the potential to cause effects on historic properties (see 36 CFR §800.3(a)). If NHPA section 106 consultation is required and will occur, the district engineer will notify the non-Federal applicant that he or she cannot begin work until Section 106 consultation is completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps.

(e) Prospective permittees should be aware that section 110k of the NHPA (16 U.S.C. 470h-2(k)) prevents the Corps from granting a permit or other assistance to an applicant who, with intent to avoid the requirements of Section 106 of the NHPA, has intentionally significantly adversely affected a historic property to which the permit would relate, or having legal power to prevent it, allowed such significant adverse effect to occur, unless the Corps, after consultation with the Advisory Council on Historic Preservation (ACHP), determines that circumstances justify granting such assistance despite the adverse effect created or permitted by the applicant. If circumstances justify granting the assistance, the Corps is required to notify the ACHP and provide documentation specifying the circumstances, the degree of damage to the integrity of any historic properties affected, and proposed mitigation. This documentation must include any views obtained from the applicant, SHPO/THPO, appropriate Indian tribes if the undertaking occurs on or affects historic properties on tribal lands or affects properties of interest to those tribes, and other parties known to have a legitimate interest in the impacts to the permitted activity on historic properties.

21. Discovery of Previously Unknown Remains and Artifacts. If you discover any previously unknown historic, cultural or archeological remains and artifacts while accomplishing the activity authorized by this permit, you must immediately notify the district engineer of what you have found, and to the maximum extent practicable, avoid construction activities that may affect the remains and artifacts until the required coordination has been completed. The district engineer will initiate the Federal, Tribal and state coordination required to determine if the items or remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

22. Designated Critical Resource Waters. Critical resource waters include, NOAA-managed marine sanctuaries and marine monuments, and National Estuarine Research Reserves. The district engineer may designate, after notice and opportunity for public comment, additional waters officially designated by a state as having particular environmental or ecological significance, such as outstanding national resource waters or state natural heritage sites. The district engineer may also designate additional critical resource waters after notice and opportunity for public comment.

(a) Discharges of dredged or fill material into waters of the United States are not authorized by NWPs 7, 12, 14, 16, 17, 21, 29, 31, 35, 39, 40, 42, 43, 44, 49, 50, 51, and 52 for any activity within, or directly affecting, critical resource waters, including wetlands adjacent to such waters.

(b) For NWPs 3, 8, 10, 13, 15, 18, 19, 22, 23, 25, 27, 28, 30, 33, 34, 36, 37, and 38, notification is required in accordance with general condition 31, for any activity proposed in the designated critical resource waters including wetlands adjacent to those waters. The district engineer may authorize activities under these NWPs only after it is determined that the impacts to the critical resource waters will be no more than minimal.

23. Mitigation. The district engineer will consider the following factors when determining appropriate and practicable mitigation necessary to ensure that adverse effects on the aquatic environment are minimal:

(a) The activity must be designed and constructed to avoid and minimize adverse effects, both temporary and permanent, to waters of the United States to the maximum extent practicable at the project site (i.e., on site).

(b) Mitigation in all its forms (avoiding, minimizing, rectifying, reducing, or compensating for resource losses) will be required to the extent necessary to ensure that the adverse effects to the aquatic environment are minimal.

(c) Compensatory mitigation at a minimum one-for-one ratio will be required for all wetland losses that exceed 1/10-acre and require pre-construction notification, unless the district engineer determines in writing that either some other form of mitigation would be more environmentally appropriate or the adverse effects of the proposed activity are minimal, and provides a project-specific waiver of this requirement. For wetland losses of 1/10-acre or less that require pre-construction notification, the district engineer may determine on a case-by-case basis that compensatory mitigation is required to ensure that the activity results in minimal adverse effects on the aquatic environment. Compensatory mitigation projects provided to offset losses of aquatic resources must comply with the applicable provisions of 33 CFR part 332. (1) The prospective permittee is responsible for proposing an appropriate compensatory mitigation option if compensatory mitigation is necessary to ensure that the activity results in minimal adverse effects on the aquatic environment. (2) Since the likelihood of success is greater and the impacts to potentially valuable uplands are reduced, wetland restoration should be the first compensatory mitigation option considered. (3) If permittee-responsible mitigation is the proposed option, the prospective permittee is responsible for submitting a mitigation plan. A conceptual or detailed mitigation plan may be used by the district engineer to make the decision on the NWP verification request, but a final mitigation plan that addresses the applicable requirements of 33 CFR 332.4(c)(2) – (14) must be approved by the district engineer before the permittee begins work in waters of the United States, unless the district engineer determines that prior approval of the final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation (see 33 CFR 332.3(k)(3)). (4) If mitigation bank or in-lieu fee program credits are the proposed option, the mitigation plan only needs to address the baseline conditions at the impact site and the number of credits to be provided. (5) Compensatory mitigation requirements (e.g., resource type and amount to be provided as compensatory mitigation, site protection, ecological performance standards, monitoring requirements) may be addressed through conditions added to the NWP authorization, instead of components of a compensatory mitigation plan.

(d) For losses of streams or other open waters that require pre-construction notification, the district engineer may require compensatory mitigation, such as stream rehabilitation, enhancement, or preservation, to ensure that the activity results in minimal adverse effects on the aquatic environment.

(e) Compensatory mitigation will not be used to increase the acreage losses allowed by the acreage limits of the NWPs. For example, if an NWP has an acreage limit of 1/2-acre, it cannot be used to authorize any project resulting in the loss of greater than 1/2-acre of waters of the United States, even if compensatory mitigation is provided that replaces or restores some of the lost waters. However, compensatory mitigation can and should be used, as necessary, to ensure that a project already meeting the established acreage limits also satisfies the minimal impact requirement associated with the NWPs.

(f) Compensatory mitigation plans for projects in or near streams or other open waters will normally include a requirement for the restoration or establishment, maintenance, and legal protection (e.g., conservation easements) of riparian areas next to open waters. In some cases, riparian areas may be the only compensatory mitigation required. Riparian areas should consist of native species. The width of the required riparian area will address documented water quality or aquatic habitat loss concerns. Normally, the riparian area will be 25 to 50 feet wide on each side of the stream, but the district engineer may require slightly wider riparian areas to address documented water quality or habitat loss concerns. If it is not possible to establish a riparian area on both sides of a stream, or if the waterbody is a lake or coastal waters, then restoring or establishing a riparian area along a single bank or shoreline may be sufficient. Where both wetlands and open waters exist on the project site, the district engineer will determine the appropriate compensatory mitigation (e.g., riparian areas and/or wetlands compensation) based on what is

best for the aquatic environment on a watershed basis. In cases where riparian areas are determined to be the most appropriate form of compensatory mitigation, the district engineer may waive or reduce the requirement to provide wetland compensatory mitigation for wetland losses.

(g) Permittees may propose the use of mitigation banks, in-lieu fee programs, or separate permittee-responsible mitigation. For activities resulting in the loss of marine or estuarine resources, permittee-responsible compensatory mitigation may be environmentally preferable if there are no mitigation banks or in-lieu fee programs in the area that have marine or estuarine credits available for sale or transfer to the permittee. For permittee-responsible mitigation, the special conditions of the NWP verification must clearly indicate the party or parties responsible for the implementation and performance of the compensatory mitigation project, and, if required, its long-term management.

(h) Where certain functions and services of waters of the United States are permanently adversely affected, such as the conversion of a forested or scrub-shrub wetland to a herbaceous wetland in a permanently maintained utility line right-of-way, mitigation may be required to reduce the adverse effects of the project to the minimal level.

24. Safety of Impoundment Structures. To ensure that all impoundment structures are safely designed, the district engineer may require non-Federal applicants to demonstrate that the structures comply with established state dam safety criteria or have been designed by qualified persons. The district engineer may also require documentation that the design has been independently reviewed by similarly qualified persons, and appropriate modifications made to ensure safety.

25. Water Quality. Where States and authorized Tribes, or EPA where applicable, have not previously certified compliance of an NWP with CWA Section 401, individual 401 Water Quality Certification must be obtained or waived (see 33 CFR 330.4(c)). The district engineer or State or Tribe may require additional water quality management measures to ensure that the authorized activity does not result in more than minimal degradation of water quality.

26. Coastal Zone Management. In coastal states where an NWP has not previously received a state coastal zone management consistency concurrence, an individual state coastal zone management consistency concurrence must be obtained, or a presumption of concurrence must occur (see 33 CFR 330.4(d)). The district engineer or a State may require additional measures to ensure that the authorized activity is consistent with state coastal zone management requirements.

27. Regional and Case-By-Case Conditions. The activity must comply with any regional conditions that may have been added by the Division Engineer (see 33 CFR 330.4(e)) and with any case specific conditions added by the Corps or by the state, Indian Tribe, or U.S. EPA in its section 401 Water Quality Certification, or by the state in its Coastal Zone Management Act consistency determination.

28. Use of Multiple Nationwide Permits. The use of more than one NWP for a single and complete project is prohibited, except when the acreage loss of waters of the United States authorized by the NWPs does not exceed the acreage limit of the NWP with the highest specified acreage limit. For example, if a road crossing over tidal waters is constructed under NWP 14, with associated bank stabilization authorized by NWP 13, the maximum acreage loss of waters of the United States for the total project cannot exceed 1/3-acre.

29. Transfer of Nationwide Permit Verifications. If the permittee sells the property associated with a nationwide permit verification, the permittee may transfer the nationwide permit verification to the new owner by submitting a letter to the appropriate Corps district office to validate the transfer. A copy of the nationwide permit verification must be attached to the letter, and the letter must contain the following statement and signature:

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

_____
(Transferee)

_____
(Date)

30. Compliance Certification. Each permittee who receives an NWP verification letter from the Corps must provide a signed certification documenting completion of the authorized activity and any required compensatory mitigation. The success of any required permittee-responsible mitigation, including the achievement of ecological performance standards, will be addressed separately by the district engineer. The Corps will provide the permittee the certification document with the NWP verification letter. The certification document will include: (a) A statement that the authorized work was done in accordance with the NWP authorization, including any general, regional, or activity-specific conditions; (b) A statement that the implementation of any required compensatory mitigation was completed in accordance with the permit conditions. If credits from a mitigation bank or in-lieu fee program are used to satisfy the compensatory mitigation requirements, the certification must include the documentation required by 33 CFR 332.3(l)(3) to confirm that the permittee secured the appropriate number and resource type of credits; and (c) The signature of the permittee certifying the completion of the work and mitigation.

31. Pre-Construction Notification. (a) Timing. Where required by the terms of the NWP, the prospective permittee must notify the district engineer by submitting a pre-construction notification (PCN) as early as possible. The district engineer must determine if the PCN is complete within 30 calendar days of the date of receipt and, if the PCN is determined to be incomplete, notify the prospective permittee within that 30 day period to request the additional information necessary to make the PCN complete. The request must specify the information needed to make the PCN complete. As a general rule, district engineers will request additional information necessary to make the PCN complete only once. However, if the prospective permittee does not provide all of the requested information, then the district engineer will notify the prospective permittee that the PCN is still incomplete and the PCN review process will not commence until all of the requested information has been received by the district engineer. The prospective permittee shall not begin the activity until either: (1) He or she is notified in writing by the district engineer that the activity may proceed under the NWP with any special conditions imposed by the district or division engineer; or (2) 45 calendar days have passed from the district engineer's receipt of the complete PCN and the prospective permittee has not received written notice from the district or division engineer. However, if the permittee was required to notify the Corps pursuant to general condition 18 that listed species or critical habitat might be affected or in the vicinity of the project, or to notify the Corps pursuant to general condition 20 that the activity may have the potential to cause effects to historic properties, the permittee cannot begin the activity until receiving written notification from the Corps that there is "no effect" on listed species or "no potential to cause effects" on historic properties, or that any consultation required under Section 7 of the Endangered Species Act (see 33 CFR 330.4(f)) and/or Section 106 of the National Historic Preservation (see 33 CFR 330.4(g)) has been completed. Also, work cannot begin under NWPs 21, 49, or 50 until the permittee has received written approval from the Corps. If the proposed activity requires a written waiver to exceed specified limits of an NWP, the permittee may not begin the activity until the district engineer issues the waiver. If the district or division engineer notifies the permittee in writing that an individual permit is required within 45 calendar days of receipt of a complete PCN, the permittee cannot begin the activity until an individual permit has been obtained. Subsequently, the permittee's right to proceed under the NWP may be modified, suspended, or revoked only in accordance with the procedure set forth in 33 CFR 330.5(d)(2).

(b) Contents of Pre-Construction Notification: The PCN must be in writing and include the following information: (1) Name, address and telephone numbers of the prospective permittee; (2) Location of the proposed project; (3) A description of the proposed project; the project's purpose; direct and indirect adverse environmental effects the project would cause, including the anticipated amount of loss of water of the United States expected to result from the NWP activity, in acres, linear feet, or other appropriate unit of measure; any other NWP(s), regional general permit(s), or individual permit(s) used or intended to be used to authorize any part of the proposed project or any related activity. The description should be sufficiently detailed to allow the district engineer to determine that the adverse effects of the project will be minimal and to determine the need for compensatory mitigation. Sketches should be provided when necessary to show that the activity complies with the terms of the NWP. (Sketches usually clarify the project and when provided results in a quicker decision. Sketches should contain sufficient detail to provide an illustrative description of the proposed activity (e.g., a conceptual plan), but do not need to be detailed engineering plans); (4) The PCN must include a delineation of wetlands, other special aquatic sites, and other waters, such as lakes and ponds, and perennial, intermittent, and ephemeral streams, on the project site. Wetland delineations must be prepared in accordance with the current method required by the Corps. The permittee may ask the Corps to delineate the special aquatic sites and other waters on the project site, but there may be a delay if the Corps does the delineation, especially if the project site is large or contains many waters of the United States. Furthermore, the 45 day period will not start until the delineation has been submitted to or completed by the Corps, as appropriate; (5) If the proposed activity will result in the loss of greater than 1/10-acre of wetlands and a PCN is required, the prospective permittee must submit a statement describing how the mitigation requirement will be satisfied, or explaining why the adverse effects are minimal and why compensatory mitigation should not be required. As an alternative, the prospective permittee may submit a conceptual or detailed mitigation plan. (6) If any listed species or designated critical habitat might be affected or is in the vicinity of the project, or if the project is located in designated critical habitat, for non-Federal applicants the PCN must include the name(s) of those endangered or threatened species that might be affected by the proposed work or utilize the designated critical habitat that may be affected by the proposed work. Federal applicants must provide documentation demonstrating compliance with the Endangered Species Act; and (7) For an activity that may affect a historic property listed on, determined to be eligible for listing on, or potentially eligible for listing on, the National Register of Historic Places, for non-Federal applicants the PCN must state which historic property may be affected by the proposed work or include a vicinity map indicating the location of the historic property. Federal applicants must provide documentation demonstrating compliance with Section 106 of the National Historic Preservation Act.

(c) Form of Pre-Construction Notification: The standard individual permit application form (Form ENG 4345) may be used, but the completed application form must clearly indicate that it is a PCN and must include all of the information required in paragraphs (b)(1) through (7) of this general condition. A letter containing the required information may also be used.

(d) Agency Coordination: (1) The district engineer will consider any comments from Federal and state agencies concerning the proposed activity's compliance with the terms and conditions of the NWPs and the need for mitigation to reduce the project's adverse environmental effects to a minimal level. (2) For all NWP activities that require pre-construction notification and result in the loss of greater than 1/2-acre of waters of the United States, for NWP 21, 29, 39, 40, 42, 43, 44, 50, 51, and 52 activities that require pre-construction notification and will result in the loss of greater than 300 linear feet of intermittent and ephemeral stream bed, and for all NWP 48 activities that require pre-construction notification, the district engineer will immediately provide (e.g., via e-mail, facsimile transmission, overnight mail, or other expeditious manner) a copy of the complete PCN to the appropriate Federal or state offices (U.S. FWS, state natural resource or water quality agency, EPA, State Historic Preservation Officer (SHPO) or Tribal Historic Preservation Office (THPO), and, if appropriate, the NMFS). With the exception of NWP 37, these agencies will have 10 calendar days from the date the material is transmitted to telephone or fax the district engineer notice that they intend to provide substantive, site-specific comments. The comments must explain why the agency believes the adverse effects will be more than

minimal. If so contacted by an agency, the district engineer will wait an additional 15 calendar days before making a decision on the pre-construction notification. The district engineer will fully consider agency comments received within the specified time frame concerning the proposed activity's compliance with the terms and conditions of the NWPs, including the need for mitigation to ensure the net adverse environmental effects to the aquatic environment of the proposed activity are minimal. The district engineer will provide no response to the resource agency, except as provided below. The district engineer will indicate in the administrative record associated with each pre-construction notification that the resource agencies' concerns were considered. For NWP 37, the emergency watershed protection and rehabilitation activity may proceed immediately in cases where there is an unacceptable hazard to life or a significant loss of property or economic hardship will occur. The district engineer will consider any comments received to decide whether the NWP 37 authorization should be modified, suspended, or revoked in accordance with the procedures at 33 CFR 330.5. (3) In cases of where the prospective permittee is not a Federal agency, the district engineer will provide a response to NMFS within 30 calendar days of receipt of any Essential Fish Habitat conservation recommendations, as required by Section 305(b)(4)(B) of the Magnuson-Stevens Fishery Conservation and Management Act. (4) Applicants are encouraged to provide the Corps with either electronic files or multiple copies of pre-construction notifications to expedite agency coordination.

District Engineer's Decision

1. In reviewing the PCN for the proposed activity, the district engineer will determine whether the activity authorized by the NWP will result in more than minimal individual or cumulative adverse environmental effects or may be contrary to the public interest. For a linear project, this determination will include an evaluation of the individual crossings to determine whether they individually satisfy the terms and conditions of the NWP(s), as well as the cumulative effects caused by all of the crossings authorized by NWP. If an applicant requests a waiver of the 300 linear foot limit on impacts to intermittent or ephemeral streams or of an otherwise applicable limit, as provided for in NWPs 13, 21, 29, 36, 39, 40, 42, 43, 44, 50, 51 or 52, the district engineer will only grant the waiver upon a written determination that the NWP activity will result in minimal adverse effects. When making minimal effects determinations the district engineer will consider the direct and indirect effects caused by the NWP activity. The district engineer will also consider site specific factors, such as the environmental setting in the vicinity of the NWP activity, the type of resource that will be affected by the NWP activity, the functions provided by the aquatic resources that will be affected by the NWP activity, the degree or magnitude to which the aquatic resources perform those functions, the extent that aquatic resource functions will be lost as a result of the NWP activity (e.g., partial or complete loss), the duration of the adverse effects (temporary or permanent), the importance of the aquatic resource functions to the region (e.g., watershed or ecoregion), and mitigation required by the district engineer. If an appropriate functional assessment method is available and practicable to use, that assessment method may be used by the district engineer to assist in the minimal adverse effects determination. The district engineer may add case-specific special conditions to the NWP authorization to address site-specific environmental concerns.

2. If the proposed activity requires a PCN and will result in a loss of greater than 1/10-acre of wetlands, the prospective permittee should submit a mitigation proposal with the PCN. Applicants may also propose compensatory mitigation for projects with smaller impacts. The district engineer will consider any proposed compensatory mitigation the applicant has included in the proposal in determining whether the net adverse environmental effects to the aquatic environment of the proposed activity are minimal. The compensatory mitigation proposal may be either conceptual or detailed. If the district engineer determines that the activity complies with the terms and conditions of the NWP and that the adverse effects on the aquatic environment are minimal, after considering mitigation, the district engineer will notify the permittee and include any activity-specific conditions in the NWP verification the district engineer deems necessary. Conditions for compensatory mitigation requirements must comply with the appropriate provisions at 33 CFR 332.3(k). The district engineer must approve the final mitigation plan

before the permittee commences work in waters of the United States, unless the district engineer determines that prior approval of the final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation. If the prospective permittee elects to submit a compensatory mitigation plan with the PCN, the district engineer will expeditiously review the proposed compensatory mitigation plan. The district engineer must review the proposed compensatory mitigation plan within 45 calendar days of receiving a complete PCN and determine whether the proposed mitigation would ensure no more than minimal adverse effects on the aquatic environment. If the net adverse effects of the project on the aquatic environment (after consideration of the compensatory mitigation proposal) are determined by the district engineer to be minimal, the district engineer will provide a timely written response to the applicant. The response will state that the project can proceed under the terms and conditions of the NWP, including any activity-specific conditions added to the NWP authorization by the district engineer.

3. If the district engineer determines that the adverse effects of the proposed work are more than minimal, then the district engineer will notify the applicant either: (a) That the project does not qualify for authorization under the NWP and instruct the applicant on the procedures to seek authorization under an individual permit; (b) that the project is authorized under the NWP subject to the applicant's submission of a mitigation plan that would reduce the adverse effects on the aquatic environment to the minimal level; or (c) that the project is authorized under the NWP with specific modifications or conditions. Where the district engineer determines that mitigation is required to ensure no more than minimal adverse effects occur to the aquatic environment, the activity will be authorized within the 45-day PCN period, with activity-specific conditions that state the mitigation requirements. The authorization will include the necessary conceptual or detailed mitigation or a requirement that the applicant submit a mitigation plan that would reduce the adverse effects on the aquatic environment to the minimal level. When mitigation is required, no work in waters of the United States may occur until the district engineer has approved a specific mitigation plan or has determined that prior approval of a final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation.

Further Information

1. District Engineers have authority to determine if an activity complies with the terms and conditions of an NWP.
2. NWPs do not obviate the need to obtain other federal, state, or local permits, approvals, or authorizations required by law.
3. NWPs do not grant any property rights or exclusive privileges.
4. NWPs do not authorize any injury to the property or rights of others.
5. NWPs do not authorize interference with any existing or proposed Federal project.

C. CORPS SEATTLE DISTRICT REGIONAL GENERAL CONDITIONS

1. Aquatic Resources Requiring Special Protection. Activities resulting in a loss of waters of the United States in a mature forested wetland, bog, bog-like wetland, aspen-dominated wetland, alkali wetland, wetlands in a dunal system along the Washington coast, vernal pools, camas prairie wetlands, estuarine wetlands, and wetlands in coastal lagoons cannot be authorized by a NWP, except by the following NWPs:

NWP 3 – Maintenance
NWP 20 – Oil Spill Cleanup
NWP 32 – Completed Enforcement Actions
NWP 38 – Cleanup of Hazardous and Toxic Waste

In order to use one of the above-referenced NWPs in any of the aquatic resources requiring special protection, you must submit a pre-construction notification to the District Engineer in accordance with Nationwide Permit General Condition 31 (Pre-Construction Notification) and obtain written approval before commencing work.

2. Commencement Bay. The following NWPs may not be used to authorize activities located in the Commencement Bay Study Area (see Figure 1 at www.nws.usace.army.mil, select Regulatory Permits then Permit Guidebook, then Nationwide Permits) requiring Department of the Army authorization:

NWP 12 – Utility Line Activities (substations)
NWP 13 – Bank Stabilization
NWP 14 – Linear Transportation Projects
NWP 23 – Approved Categorical Exclusions
NWP 29 – Residential Developments
NWP 39 – Commercial and Institutional Developments
NWP 40 – Agricultural Activities
NWP 41 – Reshaping Existing Drainage Ditches
NWP 42 – Recreational Facilities
NWP 43 – Stormwater Management Facilities

3. New Bank Stabilization Prohibition Areas in Tidal Waters of Puget Sound. Activities involving new bank stabilization in tidal waters in Water Resource Inventory Areas (WRIAs) 8, 9, 10, 11, and 12 (within the specific area identified on Figure 2 at www.nws.usace.army.mil, select Regulatory Permits then Permit Guidebook, then Nationwide Permits) cannot be authorized by a NWP.

4. Bank Stabilization. Any project including new or maintenance bank stabilization activities requires pre-construction notification to the District Engineer in accordance with Nationwide Permit General Condition 31 for Pre-Construction Notification. This requirement does not apply to maintenance work exempt by 33 CFR 323.4 (a)(2). Each notification must also include the following information:

a. Need for the work, including the cause of the erosion and the threat posed to structures, infrastructure, and/or public safety. The notification must also include a justification for the need to place fill or structures waterward of the line of the Corps' jurisdiction (typically, the ordinary high water mark or mean higher high water mark).

b. Current and expected post-project sediment movement and deposition patterns in and near the project area. In tidal waters, describe the location and size of the nearest bluff sediment sources (feeder bluffs) to the project area and current and expected post-project nearshore drift patterns in the project area.

c. Current and expected post-project habitat conditions, including the presence of fish, wildlife and plant species, submerged aquatic vegetation, spawning habitat, and special aquatic sites (e.g., vegetated shallows, riffle and pool complexes, or mudflats) in the project area.

d. In rivers and streams, an assessment of the likely impact of the proposed work on upstream, downstream and cross-stream properties (at a minimum the area assessed should extend from the nearest upstream bend to the nearest downstream bend of the watercourse). Discuss the methodology used for determining effects. The Corps reserves the right to request an increase in the reach assessment area to fully address the relevant ecological reach and associated habitat.

e. For new bank stabilization activities in rivers and streams, describe the type and length of existing bank stabilization within 300 feet up and downstream of the project area. In tidal areas, describe the type and length of existing bank stabilization within 300 feet along the shoreline on both sides of the project area.

f. Demonstrate the proposed project incorporates the least environmentally damaging practicable bank protection methods. These methods include, but are not limited to, the use of bioengineering, biotechnical design, root wads, large woody material, native plantings, and beach nourishment in certain circumstances. If rock must be used due to site erosion conditions, explain how the bank stabilization structure incorporates elements beneficial to fish. If the Corps determines you have not incorporated the least environmentally damaging practicable bank protection methods and/or have not fully compensated for impacts to aquatic resources, you must submit a compensatory mitigation plan to compensate for impacts to aquatic resources.

g. A planting plan using native riparian plant species unless the applicant demonstrates a planting plan is not appropriate or not practicable.

5. Crossings of Waters of the United States. Any project including installing, replacing, or modifying crossings of waters of the United States, such as culverts, requires pre-construction notification to the District Engineer in accordance with Nationwide Permit General Condition 31 for Pre-Construction Notification. This requirement does not apply to maintenance work exempt by 33 CFR 323.4 (a)(2). Each notification must also include the following information:

a. Need for the crossing.

b. Crossing design criteria and design methodology.

c. Rationale behind using the specific design method for the crossing.

6. Cultural Resources and Human Burials. Permittees must immediately stop work and notify the District Engineer within 24 hours if, during the course of conducting authorized work, human burials, cultural resources, or historic properties, as identified by the National Historic Preservation Act, are discovered. Failure to stop work in the area of discovery until the Corps can comply with the provisions of 33 CFR 325 Appendix C, the National Historic Preservation Act, and other pertinent laws and regulations could result in a violation of state and federal laws. Violators are subject to civil and criminal penalties.

7. Essential Fish Habitat. An activity which may adversely affect essential fish habitat, as identified under the Magnuson-Stevens Fishery Conservation and Management Act (MSA), may not be authorized by NWP until essential fish habitat requirements have been met by the applicant and the Corps. Non-federal permittees shall notify the District Engineer if essential fish habitat may be affected by, or is in the vicinity of, a proposed activity and shall not begin work until notified by the District Engineer that the requirements of the essential fish habitat provisions of the MSA have been satisfied and the activity is authorized. The notification must identify the type(s) of essential fish habitat (e.g., Pacific salmon, groundfish, and/or coastal-pelagic species) managed by a Fishery Management Plan that may be affected. Information about essential fish habitat is available at www.nwr.noaa.gov/.

8. Vegetation Protection and Restoration. Permittees must clearly mark all construction area boundaries before beginning work. The removal of native vegetation in riparian areas and wetlands, and the removal of submerged aquatic vegetation in estuarine and tidal areas must be avoided and minimized to the maximum extent practicable. Areas subject to temporary vegetation removal shall be replanted with

appropriate native species by the end of the first planting season following the disturbance except as waived by the District Engineer. If an aquaculture area is permitted to impact submerged aquatic vegetation under NWP 48, the aquaculture area does not need to be replanted with submerged aquatic vegetation.

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

10. Contractor Notification of Permit Requirements. The permittee must provide a copy of the nationwide permit verification letter, conditions, and permit drawings to all contractors involved with the authorized work, prior to the commencement of any work in waters of the U.S.

D. CORPS REGIONAL SPECIFIC CONDITIONS FOR THIS NWP: NONE

E. STATE 401 CERTIFICATION GENERAL CONDITIONS:

1. **For in-water construction activities**. Individual 401 review is required for projects or activities authorized under NWPs that will cause, or be likely to cause or contribute to an exceedence of a State water quality standard (WAC 173-201A) or sediment management standard (WAC 173-204).

   Note: *State water quality standards are posted on Ecology's website: http://www.ecy.wa.gov/programs/wq/swqs/. Click "Surface Water Criteria" for freshwater and marine water standards. Sediment management standards are posted on Ecology's website: http://www.ecy.wa.gov/biblio/wac173204.html. Information is also available by contacting Ecology's Federal Permit staff.*

2. **Projects or Activities Discharging to Impaired Waters**. Individual 401 review is required for projects or activities authorized under NWPs if the project or activity will occur in a 303(d) listed segment of a waterbody or upstream of a listed segment and may result in further exceedences of the specific listed parameter.

   Note: *To determine if your project or activity is in a 303(d) listed segment of a waterbody, visit Ecology's Water Quality Assessment webpage for maps and search tools, http://www.ecy.wa.gov/programs/wq/303d/2008/. Information is also available by contacting Ecology's Federal Permit staff.*

3. **Notification**. For projects or activities that will require Individual 401 review, applicants must provide Ecology with the same documentation provided to the Corps (as described in Corps Nationwide Permit General Condition 31, Pre-Construction Notification), including, when applicable:

   (a) A description of the project, including site plans, project purpose, direct and indirect adverse environmental effects the project would cause, and any other Department of the Army permits used or intended to be used to authorize any part of the proposed project or any related activity.

   (b) Delineation of special aquatic sites and other waters of the United States. Wetland delineations must be prepared in accordance with the current method required by the Corps and shall include Ecology's Wetland Rating form. Wetland rating forms are subject to review and verification by Ecology staff.

   Note: *Wetland rating forms are available on Ecology's Wetlands website:*

http://www.ecy.wa.gov/programs/sea/wetlands/ratingsystems or by contacting Ecology's Federal Permit staff.

(c) A statement describing how the mitigation requirement will be satisfied. A conceptual or detailed mitigation or restoration plan may be submitted.

Mitigation plans submitted for Ecology review and approval shall be based on the guidance provided in Wetland Mitigation in Washington State, Parts 1 and 2 (Ecology Publications #06-06-011a and #06-06-011b).

(d) Coastal Zone Management Program "Certification of Consistency" Form if the project is located within a coastal county (Clallam, Grays Harbor, Island, Jefferson, King, Kitsap, Mason, Pacific, Pierce, San Juan, Skagit, Snohomish, Thurston, Wahkiakum, and Whatcom counties).

***Note**: CZM Certification of Consistency forms are available on Ecology's Federal Permit website: http://www.ecy.wa.gov/programs/sea/fed-permit/index.html or by contacting Ecology's Federal Permit staff.*

(e) Other applicable requirements of Corps Nationwide Permit General Condition 31, Corps Regional Conditions, or notification conditions of the applicable NWP.

***Note**: Ecology has 180 days from receipt of applicable documents noted above **and** a copy of the final authorization letter from the Corps providing coverage for a proposed project or activity under the NWP Program to issue a WQC and CZM consistency determination response. If more than 180 days pass after Ecology's receipt of these documents, your requirement to obtain an individual WQC and CZM consistency determination response becomes waived.*

4. **Aquatic resources requiring special protection**. Certain aquatic resources are unique, difficult-to-replace components of the aquatic environment in Washington State. Activities that would affect these resources must be avoided to the greatest extent possible. Compensating for adverse impacts to high value aquatic resources is typically difficult, prohibitively expensive, and may not be possible in some landscape settings.

Individual 401 review is required for activities in or affecting the following aquatic resources (and not prohibited by Regional Condition 1):

(a) Wetlands with special characteristics (as defined in the Washington State Wetland Rating Systems for western and eastern Washington, Ecology Publications #04-06-025 and #04-06-015):

- Estuarine wetlands
- Natural Heritage wetlands
- Bogs
- Old-growth and mature forested wetlands
- Wetlands in coastal lagoons
- Interdunal wetlands
- Vernal pools
- Alkali wetlands

(b) Fens, aspen-dominated wetlands, camas prairie wetlands, and marine water with eelgrass (*Zostera marina*) beds (except for NWP 48).

(c) Category 1 wetlands

(d) Category II wetlands with a habitat score ≥ 29 points. This State General Condition does not apply to the following Nationwide Permits:

NWP 20 – Response Operations for Oil and Hazardous Substances
NWP 32 – Completed Enforcement Actions

5. **Mitigation.** For projects requiring Individual 401 review, adequate compensatory mitigation must be provided for wetland and other water quality-related impacts of projects or activities authorized under the NWP Program.

(a) Mitigation plans submitted for Ecology review and approval shall be based on the guidance provided in Wetland Mitigation in Washington State, Parts 1 and 2 (Ecology Publications #06-06-011a and #06-06-011b) and shall, at a minimum, include the following:

i. A description of the measures taken to avoid and minimize impacts to wetlands and other waters of the U.S.

ii. The nature of the proposed impacts (i.e., acreage of wetlands and functions lost or degraded)

iii. The rationale for the mitigation site that was selected

iv. The goals and objectives of the compensatory mitigation project

v. How the mitigation project will be accomplished, including construction sequencing, best management practices to protect water quality, proposed performance standards for measuring success and the proposed buffer widths

vi. How it will be maintained and monitored to assess progress towards goals and objectives. Monitoring will generally be required for a minimum of five years. For forested and scrub-shrub wetlands, 10 years of monitoring will often be necessary.

vii. How the compensatory mitigation site will be legally protected for the long term.

Refer to Wetland Mitigation in Washington State – Part 2: Developing Mitigation Plans (Ecology Publication #06-06-011b) for guidance on developing mitigation plans.

Ecology encourages the use of alternative mitigation approaches, including advance mitigation and other programmatic approaches such as mitigation banks and programmatic mitigation areas at the local level. If you are interested in proposing use of an alternative mitigation approach, consult with the appropriate Ecology regional staff person. (see http://www.ecy.wa.gov/programs/sea/wetlands/contacts.htm)

Information on the state wetland mitigation banking program is available on Ecology's website: http://www.ecy.wa.gov/programs/sea/wetlands/mitigation/banking/index.html

6. **Temporary Fills.** Individual 401 review is required for any project or activity with temporary fill in wetlands or other waters of the State for more than 90 days, unless the applicant has received written approval from Ecology.

***Note**: This State General Condition does not apply to projects or activities authorized under NWP 33, Temporary Construction, Access, and Dewatering*

7. **Stormwater discharge pollution prevention**: All projects that involve land disturbance or impervious surfaces must implement prevention or control measures to avoid discharge of pollutants in stormwater runoff to waters of the state. For land disturbances during construction, the permittee must obtain and implement permits where required and follow Ecology's current stormwater manual.

   ***Note**: Stormwater permit information is available at Ecology's Water Quality website: http://www.ecy.wa.gov/programs/wq/stormwater/index.html. Ecology's Stormwater Management and Design Manuals are available at: http://www.ecy.wa.gov/programs/wq/stormwater/municipal/StrmwtrMan.html. Information is also available by contacting Ecology's Federal Permit staff.*

8. **State Certification for PCNs not receiving 45-day response.** In the event the U.S. Army Corps of Engineers does not respond to a complete pre-construction notification within 45 days, the applicant must contact Ecology for Individual 401 review.

F. STATE 401 CERTIFICATION SPECIF**IC CONDITIONS FOR THIS NWP:** Certified subject to conditions. Permittee must meet Ecology 401 General Conditions. Individual 401 review is required for projects or activities authorized under this NWP if:

1. The project or activity involves fill in tidal waters.
2. The project or activity affects ½ acre or more of wetlands.

G. EPA 401 CERTIFICATION GENERAL CONDITIONS:

A. Any activities in the following types of wetlands and waters of the United States will need to apply for an individual 401 certification: Mature forested wetlands, bogs, bog-like wetlands, wetlands in dunal systems along the Washington coast, coastal lagoons, vernal pools, aspen-dominated wetlands, alkali wetlands, camas prairie wetlands, estuarine wetlands, including salt marshes, and marine waters with eelgrass or kelp beds.

B. A 401 certification determination is based on the project or activity meeting established turbidity levels. The EPA will be using as guidance the state of Washington's water quality standards [WAC 173-201a] and sediment quality standards [WAC 173-204]. Projects or activities that are expected to exceed these levels or that do exceed these levels will require an individual 401 certification.

The water quality standards allow for short-term turbidity exceedances after all necessary Best Management Practices have been implemented (e.g., properly placed and maintained filter fences, hay bales and/or other erosion control devices, adequate detention of runoff to prevent turbid water from flowing off-site, providing a vegetated buffer between the activity and open water, etc.), and only up to the following limits:

Wetted Stream Width at Discharge Point	Approximate Downstream Point for Determining Compliance
Up to 30 feet	50 feet
>30 to 100 feet	100 feet
>100 feet to 200 feet	200 feet

>200 feet	300 feet
LAKE, POND, RESERVOIR	Lesser of 100 feet or maximum surface dimension

C. 401 certification of projects and activities under NWPs will use Washington State Department of Ecology's most recent stormwater manual or an EPA approved equivalent manual as guidance in meeting water quality standards.

D. For projects and activities requiring coverage under an NPDES permit, certification is based on compliance with the requirements of that permit. Projects and activities not in compliance with NPDES requirements will require individual 401certification.

E. Individual 401certification is required for projects or activities authorized under NWPs if the project will discharge to a waterbody on the list of impaired waterbodies (the 303(d) List) and the discharge may result in further exceedance of a specific parameter the waterbody is listed for. The EPA shall make this determination on a case-by-case basis.

For projects or activities that will discharge to a 303(d)-listed waterbody that does not have an approved Total Maximum Daily Load (TMDL) or an approved water quality management plan, the applicant must provide documentation for EPA approval showing that the discharge will not result in further exceedance of the listed contaminant or impairment.

For projects or activities that will discharge to a 303(d)-listed waterbody that does not have an approved TMDL, the applicant must provide documentation for EPA approval showing that the discharge is within the limits established in the TMDL. The current list of 303(d)-listed waterbodies in Washington State will be consulted in making this determination and is available on Ecology's web site at: www.ecy.wa.gov/programs/wq/303d/2012/index.html

The EPA may issue 401 certification for projects or activities that would result in further exceedance or impairment if mitigation is provided that would result in a net decrease in listed contaminants or less impairment in the waterbody. This determination would be made during individual 401 certification review.

F. For projects requiring individual 401 certification, applicants must provide the EPA with the same documentation provided to the Corps, (as described in Corps' National General Condition 31, Pre-Construction Notification), including, when applicable:

(a) A description of the project, including site plans, project purpose, direct and indirect adverse environmental effects the project would cause, any other U.S. Department of the Army permits used or intended to use to authorize any part of the proposed project or any related activity.

(b) Delineation of special aquatic sites and other waters of the United States. Wetland delineations must be prepared in accordance with the current method required by the Corps.

(c) A statement describing how the mitigation requirement will be satisfied. A conceptual or detailed mitigation or restoration plan may be submitted.

(d) Other applicable requirements of Corps National General Condition 31, Corps Regional Conditions, or notification conditions of the applicable NWP.

A request for individual 401 certification- review is not complete until the EPA receives the applicable documents noted above and the EPA has received a copy of the final authorization letter from the Corps providing coverage for a proposed project or activity under the NWP Program.

G. No activity, including structures and work in navigable waters of the United States or discharges of dredged or fill material, may consist of unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.) and material used for construction or discharged must be free from toxic pollutants in toxic amounts (see Section 307 of the Clean Water Act).

H. An individual 401 certification is based on adequate compensatory mitigation being provided for aquatic resource and other water quality-related impacts of projects or activities authorized under the NWP Program.

A 401 certification is contingent upon written approval from the EPA of the compensatory mitigation plan for projects and activities resulting in any of the following:

- impacts to any aquatic resources requiring special protection (as defined in EPA General Condition A or Corps General Regional Condition 1)
- any impacts to tidal waters or non-tidal waters adjacent to tidal waters (applies to NWP 14)
- Or, any impacts to aquatic resources greater than ¼ acre.

Compensatory mitigation plans submitted to the EPA shall be based on the Joint Agency guidance provided in *Wetland Mitigation in Washington State, Parts 1 and 2* (Ecology Publication #06-06-011a and #06-06-011b) and shall, at a minimum, include the following:

(1) A description of the measures taken to avoid and minimize impacts to wetlands and other waters of the U.S.
(2) The nature of the proposed impacts (i.e., acreage of wetlands and functions lost or degraded)
(3) The rationale for the mitigation site that was selected
(4) The goals and objectives of the compensatory mitigation project
(5) How the mitigation project will be accomplished, including proposed performance standards for measuring success (including meeting planting success standard of 80 percent survival after five years), evidence for hydrology at the mitigation site, and the proposed buffer widths;
(6) How it will be maintained and monitored to assess progress towards goals and objectives.
(7) Completion and submittal of an "as-built conditions report" upon completion of grading, planting and hydrology establishment at the mitigation site;
(8) Completion and submittal of monitoring reports at years 3 and 5 showing the results of monitoring for hydrology, vegetation types, and aerial cover of vegetation.
(9) For forested and scrub-shrub wetlands, 10 years of monitoring will often be necessary.
(10) Documentation of legal site protection mechanism (covenant or deed restriction) to show how the compensatory mitigation site will be legally protected for the long-term.

I. An individual 401 certification is required for any activity where temporary fill will remain in wetlands or other waterbodies for more than 90 days. The 90 day period begins when filling activity starts in the wetland or other waterbody.

J. An individual 401 is required for any proposed project or activity in waterbodies on the most current list of the following Designated Critical Resource Waters (per Corps General Condition 22).

K. An individual 401 certification is required for any proposed project that would increase permanent, above-grade fill within the 100-year floodplain (including the floodway and the flood fringe).

> [***Note:*** The 100-year floodplain is defined as those areas identified as Zones A, A1-30, AE, AH, AO, A99, V, V1-30, and VE on the most current Federal Emergency Management Agency Flood Rate Insurance Maps, or areas identified as within the 100-year floodplain on applicable local Flood Management Program maps. The 100-year flood is also known as the flood with a 100-year recurrence interval, or as the flood with an exceedance probability of 0.01.]

H. EPA 401 CERTIFICATION SPECIFIC CONDITIONS FOR THIS NWP: Partially denied without prejudice. Permittee must meet EPA 401 General Conditions. Individual 401 review is required for projects authorized under this NWP if the project or activities are not part of an EPA ordered cleanup.

I. COASTAL ZONE MANAGEMENT CONSISTENCY RESPONSE FOR THIS NWP: Concur subject to the following condition: When individual 401 review by Ecology is triggered, a CZM Certification of Consistency form must be submitted for projects located within the 15 coastal counties (see State General 401 Condition 3 (Notification)).

US Army Corps of Engineers ®
Seattle District

CERTIFICATE OF COMPLIANCE WITH DEPARTMENT OF THE ARMY PERMIT

Permit Number: NWS-_____

Name of Permittee: _____

Date of Issuance: _____

Upon completion of the activity authorized by this permit, please check the applicable boxes below, date and sign this certification, and return it to the following address:

Department of the Army
U.S. Army Corps of Engineers
Seattle District, Regulatory Branch
Post Office Box 3755
Seattle, Washington 98124-3755

Please note that your permitted activity is subject to a compliance inspection by a U.S. Army Corps of Engineers representative. If you fail to comply with the terms and conditions of your authorization, your permit may be subject to suspension, modification, or revocation.

☐	The work authorized by the above-referenced permit has been completed in accordance with the terms and conditions of this permit. Date work complete: _____
	☐ Photographs and as-built drawings of the authorized work (OPTIONAL, unless required as a Special Condition of the permit).

☐	If applicable, the mitigation required (e.g., construction and plantings) in the above-referenced permit has been completed in accordance with the terms and conditions of this permit (not including future monitoring). Date work complete: _____
	☐ Photographs and as-built drawings of the mitigation (OPTIONAL, unless required as a Special Condition of the permit).

Printed Name: _____

Signature: _____

Date: _____

U. S. Department of the Interior
Fish and Wildlife Service
Region 1, Portland, Oregon

FINDING OF NO SIGNIFICANT IMPACT

Carty Lake Remedial Action at Ridgefield National Wildlife Refuge

Clark County, Washington

The Port of Ridgefield (the Port) proposes to remediate sediment in the southern end of Carty Lake. Carty Lake is located at Ridgefield National Wildlife Refuge (Refuge), adjacent to the former Pacific Wood Treating Co. (PWT) site in Ridgefield, Washington. PWT operated a wood-treating facility from 1964 to 1993 at the Port's Lake River Industrial Site (LRIS); historical PWT activities impacted sediments in the southern end of Carty Lake.

The purpose of this remedial action is to address the presence of chemicals above screening criteria or cleanup levels, including chlorinated dibenzo-p-dioxins and dibenzofurans (dioxins), pentachlorophenol, and metals (arsenic and chromium) found in sediment in the southern portion of Carty Lake. Dioxins were identified as the primary chemical of concern. The remedial action was selected by Washington State Department of Ecology [Ecology], (Ecology, 2013b) in accordance with Washington Administrative Code (WAC) 173-340-380.

The proposed Carty Lake remedial action involves mechanical sediment excavation, the placement of a clean layer of sand to manage residuals, and stabilization of a treated-wood bulkhead (Ecology, 2013b). The action includes in-water and upland components; the proposed actions are conducted primarily on Refuge property, with some upland project components extending to the LRIS. Construction is proposed to take place over a two-month period in summer 2014.

The Refuge proposes to issue a Special Use Permit to the Port and its agents to implement remedial actions on the Carty Lake Unit of the Refuge. The Refuge developed an Environmental Assessment (EA) to meet National Environmental Policy Act (NEPA) requirements associated with the issuing a Special Use Permit.

Alternatives Considered

Following is a brief description of the range of alternatives considered, including the selected alternative (Alternative B). The EA describes the range of alternatives in detail.

Alternative A. No Action

Under the No Action Alternative, the Port would not conduct the remedial action required by Ecology in Carty Lake. The existing contaminated sediments would remain in Carty Lake, non-native vegetation would remain in the project footprint, and additional components associated

with the project would not be constructed. The vegetated upland footprint and the wetland footprint would not be modified in the Carty Unit.

Alternative B. Carty Lake Remedial Action (Preferred Alternative)

Under Alternative B, the Port would conduct cleanup actions and construct associated components. The Alternative consists of in-water and upland components, the details of which are described in the EA and supporting documents.

Alternative B is one of four alternative remedial actions considered during a feasibility study (MFA, 2013) conducted for Carty Lake as part of the remediation planning process in accordance with the Model Toxics Control Act. The feasibility study evaluated a range of potential remediation options against a set of criteria defined in state regulations (WAC 173-340-350). The feasibility study was reviewed and approved by Ecology, and Alternative B was selected as the preferred remediation option. Other feasibility study Alternatives are briefly summarized in the EA; details are provided in the cleanup action plan for the former PWT Site (Ecology, 2013b).

Decision

The feasibility study Alternatives assessed protection of human health and the environment, removal and capping of impacted sediment, and/or institutional controls to manage the potential for exposure to impacted sediment. A No Action Alternative was considered, but was dismissed from further evaluation, as it is not protective of human health and the environment. The selected Alternative B provides a high degree of certainty for long-term protectiveness, provides immediate short-term reductions in surface concentrations (including achieving concentrations protective of ecological receptors upon implementation), avoids unnecessary short-term habitat disturbance by minimizing the project footprint, and is proportionately cost effective when the benefits are considered. All alternatives require institutional controls to continue to limit consumption of fish from Carty Lake. As such, the Refuge decision is to issue a Special Use Permit to the Port and its agents to implement remedial actions on the Carty Lake Unit of the Refuge.

Public Review

Ecology and the Port have addressed community concerns throughout the history of former PWT site cleanup actions. Consistent with WAC 173-340-600, Ecology provided public notice for the cleanup action plan, and public comments on the project were solicited from the community during the formal comment period (July 25, 2013, through August 23, 2013). A public participation plan describing the tools that Ecology uses to inform the public about site activities has been developed (Ecology, 2013a). In addition, a public open house was held in February 2012 at the Ridgefield Community Center, 210 N. Main Avenue, Ridgefield, Washington, in an effort to inform interested parties of the cleanup actions related to the former PWT site.

In addition, the Refuge posted the Environmental Assessment and draft Compatibility Determination on the Refuge website from December 10, 2013 to December 27, 2013 for public comment and review. No comments were received on either document.

Conclusions

Based on review and evaluation of the information contained in the supporting references, I have determined that issuing a Special Use Permit for remedial actions at Carty Lake is not a major Federal action that would significantly affect the quality of the human environment, within the meaning of section 102(2)(c) of the National Environmental Policy Act of 1969, as amended. Accordingly, the Service is not required to prepare an environmental impact statement.

This Finding of No Significant Impact and supporting references are on file at the U.S. Fish and Wildlife Service, Ridgefield National Wildlife Refuge Complex, 28908 NW Main Avenue Ridgefield, WA 98642 (telephone 360-887-4106). These documents are available to the public and can be found on the internet at: http://www.fws.gov/ridgefieldrefuges/

Supporting References

Ecology. 2013a. Public participation plan, former Pacific Wood Treating Co. site. Washington State Department of Ecology. July.

Ecology. 2013b. Cleanup action plan, former Pacific Wood Treating Co. site. Washington State Department of Ecology. November 5.

MFA. 2013. Former PWT site remedial investigation and feasibility study. Prepared for the Port of Ridgefield. Maul Foster & Alongi, Inc., Vancouver, Washington. July 1.

USFWS. 2013. Draft Environmental Assessment, Proposed Carty Lake Remedial Action at Ridgefield National Wildlife Refuge. U.S. Fish and Wildlife Service. November.

Ted L. West

Regional Chief,
National Wildlife Refuge System
Region 1

1-14-14

Date

INTER-AGENCY SECTION 7 BIOLOGICAL EVALUATION FORM

Originating Person: Christopher Lapp, Project Leader, Ridgefield NWRC
Telephone Number: 360-887-4106
Date: January 21, 2014

I **Region:** 1

II **Service Activity:** The U.S. Fish and Wildlife Service (Service), Ridgefield National Wildlife Refuge (Refuge), will issue the Port of Ridgefield and its agents a Special Use Permit (SUP) to implement a remediation action to dredge approximately 5,200 cubic yards of contaminated sediment from the southern portion of Carty Lake. The proposed remedial action will remove chemicals in sediment exceeding levels protective of fish and wildlife. As a result, contamination will not be available for potential future exposure or transport, benefitting ecological receptors that may come in contact with these sediments or ingest prey items that may accumulate chemicals in sediment.

III. **Pertinent Species and Habitat:**

Listed Species within the Ridgefield NWRC Action Area:

Columbian White-tailed Deer (*Odocoileus virginianus leucurus*) Lower Columbia River DPS (Endangered)

Chinook Salmon (*Oncorhynchus kisutch)*

Snake River Fall-run (Threatened)
Snake River Spring/Summer-run (Threatened)
Lower Columbia River (Threatened)
Upper Columbia River Spring-run (Endangered)

Coho Salmon (*Oncorhynchus mykiss*)
Lower Columbia River/Southwest Washington

Steelhead (*Oncorhynchus nerka*)
Snake River Basin (Threatened)
Upper Columbia River (Endangered)
Middle Columbia River (Threatened)
Lower Columbia River (Threatened)

Chum salmon (*Oncorhynchus keta*)
Columbia River (Threatened)

Eulachon (*Thaleichthys pacificus*)
Southern DPS (Threatened)

Proposed Species for listing within the Action Area:
None at this time.

Candidate Species for listing within the Ridgefield NWR Action Area:
None at this time.

IV. **Geographic Area or Station Name and Action:**

North Pacific Coast Ecoregion
Ridgefield National Wildlife Refuge Complex
P.O. Box 457
Ridgefield, Washington 98642

V. **Location:**

A. North Pacific Coast Ecoregion
B. County and State: Clark County, Washington
C. Distance and direction to nearest town:
Ridgefield NWR is located less than 3 miles east of Ridgefield, Washington.
D. Species/habitat occurrence: Species present seasonally in Gee Creek, Middle Lake and Carty Lake. No critical habitat occurs in the action area.

VI. **Description of proposed action:**

Background: The Pacific Wood Treating Company operated a wood-treating facility from 1964 to 1993 at the Port's Lake River Industrial Site, now known as Miller's Landing. Through the completion of a remedial investigation and feasibility study (MFA, 2013) conducted under an Agreed Order, it was determined that Carty Lake sediments are contaminated at levels that present unacceptable risk to human health and to ecological receptors. The SUP authorizes the proposed project cleanup is designed to reduce contaminated sediment and improve wetland habitat for fish and wildlife species native to the Refuge. The selected cleanup for Carty Lake involves mechanical sediment excavation paired with the placement of a clean layer of sand to manage residuals. Construction is proposed to take place over a two-month period in summer 2014. The remedial action for Carty Lake includes the following components:

- Removal of up to 5,200 cubic yards of sediment with concentrations exceeding cleanup levels protective of ecological receptors. This will result in immediate elimination of unacceptable risk to ecological receptors, as well as reduction of potential contaminant transport, and will significantly decrease area wide chemical concentrations.

- Placement of a layer of clean sand as a cap over sediments in the excavation footprint to reduce exposure to any residual contaminants. Note that the water of Carty Lake in the sediment removal area will be at least 6 inches deeper than current conditions as a measure to inhibit colonization of nonnative, invasive plants. The excavation area will be planted with native vegetation selected in consultation with the Refuge.
- Bank stabilization on the southern boundary of Carty Lake. An existing failing retaining wall constructed with treated lumber will be stabilized with a rock and soil slope and will be planted with native vegetation selected in consultation with Refuge. This bank stabilization is required in order to ensure long-term containment of residual contamination in soils south of Carty Lake.
- Bank stabilization on the eastern boundary of Carty Lake. The existing treated-lumber retaining wall will be stabilized with a more gradual, vegetated transition between the wetland and the upland. The purpose of this element of the remedial action is to ensure long-term containment of residual contamination in soils east of Carty Lake.
- Maintenance of plantings to ensure long-term success.

VII. **Determination of effects:**

A) Explanation of impacts of actions:

Work will be done in the dry (no standing water) so no fish species should be in the project area during project activities until the area is planted and stabilized. Fish species will not be affected by planting activities.

Columbian white-tailed deer are found in the general vicinity of the project area, but have not been recorded not within the project site. Observations of Columbian white-tailed deer have been made within ¼ mile of the project site. There is a low potential for some displacement of individual animals during construction activities. However, given the abundance of suitable habitat including mixed deciduous habitat with oak savannah in some areas and other of moderate to sparse reed canary grass with upland meadows supporting a variety of grasses and forbs, disturbance to individual CWTD are extremely unlikely to occur. Habitat disturbances will be local and short-duration (less than three months).

The remedial action will provide environmental benefits to the action area by reducing unacceptable risks to ecological receptors by removing contaminated sediment. With the above actions in place, Refuge staff believes that there will be minimal effects to listed species or their critical habitat.

VIII. Effects determination and response requested:

A) Listed species/critical habitat:

Determination

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May affect; not likely to adversely affect:

Species:
Columbian White-tailed Deer (*Odocoileus virginianus leucurus*)

No Effect:

Species:
Chinook Salmon (*Oncorhynchus kisutch)*

Snake River Fall-run (Threatened)
Snake River Spring/Summer-run (Threatened)
Lower Columbia River (Threatened)
Upper Columbia River Spring-run (Endangered)

Coho Salmon (*Oncorhynchus mykiss*)
Lower Columbia River/Southwest Washington

Steelhead (*Oncorhynchus nerka*)
Snake River Basin (Threatened)
Upper Columbia River (Endangered)
Middle Columbia River (Threatened)
Lower Columbia River (Threatened)

Chum salmon (*Oncorhynchus keta*)
Columbia River (Threatened)

Eulachon (*Thaleichthys pacificus*)
Southern DPS (Threatened)

B) Proposed species/proposed critical habitat: None at this time.

C) Candidate species/proposed critical habitat: None at this time.

--

IX. Signature Page

Project Leader _____ Date 2/3/14

✓ Concur _____ Do Not Concur

Comments:

Literature Cited

MFA. 2013. Former PWT site remedial investigation and feasibility study. Prepared for the Port of Ridgefield. Maul Foster & Alongi, Inc., Vancouver, Washington. July 1.

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Washington Fish and Wildlife Office
510 Desmond Dr. SE, Suite 102
Lacey, Washington 98503

JUL 30 2014

In Reply Refer To:
01EWFW00-2014-I-0563

Peter D. Olmstead, Project Manager
U.S. Army Corps of Engineers
Seattle District, Regulatory Branch
Southwest Washington Field Office
Vancouver, Washington 98661

Dear Mr. Olmstead:

Subject: Ridgefield NWRC Contaminants Removal from Carty Lake

This letter is in response to your request for informal consultation on the Ridgefield National Wildlife Refuge Complex (NWRC) contaminants removal from Carty Lake located on the Ridgefield NWRC, in Clark County, Washington. We are writing this letter based on an email message and Biological Evaluation (BE) from Project Leader Christopher Lapp of the Ridgefield NWR, dated January 21, 2014, and received in our office on July 15, 2014. The message requests the U.S. Fish and Wildlife Service's (Service) concurrence with the determination of "may affect, not likely to adversely affect" for the effect of your proposed action on the Columbian white-tailed deer (*Odocoileus virginianus leucurus*) (CWTD). The CWTD is currently listed as "endangered" under the Endangered Species Act of 1973. Your request for consultation was submitted by NWRC staff on behalf of the U.S. Army Corps of Engineers. This informal consultation was conducted in accordance with Section 7(a)(2) of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et. seq.*) (Act).

The Ridgefield NWRC determined that the project will have "no effect" on Chinook Salmon (*Oncorhynchus tshawytscha*), Snake River Fall run (threatened), Snake River Spring/Summer run (Threatened), Lower Columbia River (Threatened), and Upper Columbia River Spring run (Endangered); Coho Salmon (*Oncorhynchus kisutch*), Lower Columbia River /Southwest Washington; Steelhead (*Oncorhynchus mykiss*), Snake River Basin (Threatened), Upper Columbia River (Endangered), Middle Columbia River (Threatened), and Lower Columbia River (threatened); Columbia River Chum Salmon (*Oncorhynchus keta*) (Threatened); Snake River ESU Sockeye Salmon (*Oncorhychus nerka*) (Endangered); and Euchalon (*Thaleichthys pacificus*) Southern DPS (Threatened). No Proposed, or Candidate species, or their critical

habitat is known to occur in the action area. There is no requirement for Service concurrence on "no effect" determinations. The determination that the proposed project will have no effect on Chinook salmon, Coho Salmon, Steelhead, Chum Salmon, and Euchalon rest with the action agency.

The email request and Inter-Agency Section 7 BE describe a project to dredge approximately 5,200 cubic yards of contaminated sediment from southern Carty Lake. Removal of this sediment will result in the immediate elimination of an unacceptable risk to ecological receptors and to human health, reduce the potential for contaminant transport, and significantly decrease area-wide chemical concentrations. All work will be conducted during the dry season when no fish species should be found in the action area. Upon completion of dredging, the project area will be planted with native vegetation to stabilize the disturbed area. Fish will not be affected by the planting.

A single CWTD has been observed in the general vicinity of the project area, but no CWTD have been observed within approximately 0.25 mile (400 meters) of the project area. Animals may be displaced during the construction window, beginning July 28. The actual sediment removal would occur during August and September, 2014. Restoration plantings within the riparian footprint of the project area would take place during October when rains had commenced to improve the survival of the plant materials used in restoration. There is abundant suitable habitat including mixed deciduous vegetation with oak savannah outside of the action area, and a large proportion of the action area is dominated by reed canary grass, which tends to deter CWTD from the project vicinity. Refuge staff have observed a single individual CWTD more than 0.25 mile from Carty Lake in two years of observation and they have determined that disturbance to an individual CWTD is extremely unlikely to occur and is therefore discountable. Any disturbance to habitat from the proposed action will be short in duration (less than three months).

The expected result of the action will provide environmental benefits to the action area by reducing the unacceptable risks to ecological receptors through the removal of contaminated sediment.

We believe that sufficient information was provided to determine the effects of the prosed action on CWTD and to conclude whether this action is likely to adversely affect the species. Our concurrence with your "may affect, not likely to adversely affect" determination is based on complete and successful implementation of the conservation measures included in the BE and the following rationale.

Columbian White-Tailed Deer

CWTD inhabit riparian forests, shrub-dominated wetlands, and uplands (including pastures) and some islands of the lower Columbia River. Today, only a few populations remain. Historically their distribution was more widespread and extended from Olympia, Washington in the north, south through the Chehalis lowlands into Clark County, Washington, and south into the Willamette Valley, and as far south as Roseburg, Oregon. The Columbia River Distinct Population Segment of CWTD in Washington is now centered around the Julia Butler Hansen National Wildlife Refuge (JBHNWR), Puget Island, and smaller islands where the species was reintroduced or dispersed, and adjacent mainland uplands. After reintroductions in 2013, and

2014, when CWTD were moved from JBHNWR and Puget Island to Ridgefield NWRC, the estimated population on the Ridgefield NWRC is at least 25 individuals (Alex Chmielewski, pers. Comm., Wildlife Biologist, Ridgefield NWRC, July 18, 2014).

The BE presents information indicating CWTD utilize the project area infrequently; a single individual CWTD has been observed approximately 0.25 mile from the project area. If CWTD are present in the action area at the time of construction, they are likely dispersing, moving through the area browsing on herbaceous or shrub vegetation, or moving to areas with higher quality browse habitat in the surrounding areas.

If CWTD are found within the project area, they would experience temporary increases in sound disturbance and visual disturbance during the dredging and hauling of the sediments away from Carty Lake to a secure disposition site off the refuge. Because CWTD (deer in general) are more active at dawn and dusk, we do not expect the removal and hauling of sediments to cause measureable changes in their normal behavior. Any CWTD that may be temporarily displaced from browsing in the project area will find suitable habitat and browse material elsewhere on the NWRC, resulting in no measureable change in energy expenditure or food availability. Any direct effect on CWTD behavior is expected to be highly localized and temporary within the action area during the project implementation. Therefore, we expect that direct effects to CWTD associated with sediment removal from Carty Lake will be insignificant.

Because all of the effects of the project on CWTD are likely to be discountable the U.S. Fish and Wildlife Service concurs with your determination that the project "may effect but is not likely to adversely affect" the CWTD.

This concludes informal consultation pursuant to the regulations implementing the Act (50 CFR 402.13). The project should be reanalyzed if 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. The project should also be reanalyzed if the actions are 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 an additional species or critical habitat is listed that may be affected by this project.

If you have any questions about this letter or our joint responsibilities under the Act, please contact Theodore Thomas at (360) 753-4327 or via electronic mail at ted_thomas@fws.gov.

Sincerely,

FOR Thomas L. McDowell, Acting Manager
Washington Fish and Wildlife Office

cc:
Ridgefield NWRC, Ridgefield, WA (C. Lapp)
Ridgefield NWRC, Ridgefield, WA (A. Chmielewski)

United States Department of the Interior

FISH AND WILDLIFE SERVICE
20555 SW Gerda Lane
Sherwood, Oregon, 97140
Phone: (503) 625-4377 FAX: (503) 625-4887

In Reply Refer To:
NWRS/DNCR/CRT

16 June 2014

Memorandum

To: Christopher Lapp, Project Leader,
Ridgefield NWR

From: Nick Valentine
NWRS/NCR/Cultural Resources Team

Subject: Section 106 Compliance: **Carty Lake Remediation**

Thank you for requesting our assistance in fulfilling the U.S. Fish and Wildlife Service's (Service) Section 106 compliance responsibilities for the Carty Lake Remedial Action Project, Pacific Wood Treating Sediment Cleanup Project being conducted by the Washington Department of Ecology (WADOE) in cooperation with the Port of Ridgefield, US Army Corps of Engineers (ACOE), and the US Fish and Wildlife Service (USFWS)..

This project is located in Clark County, in T4N, R1W, Sections 13 and 24.

Cultural resource consultation was completed on 12 June 2014.
Full compliance will be achieved with the completion of the project and associated archaeological monitoring efforts discussed below.

Undertaking and Area of Potential Effects:
The Service is working with the Port of Ridgefield, ACOE, WADOE, and Washington Department of Fish and Wildlife to effect remediation of contaminates that have migrated from the former Pacific Wood Treatment Company(PWT). The Project will require construction of a temporary berm across Carty Lake to allow for dewatering of the contaminated portion, excavation of the contaminated soil, placement of a clean sand cap, enhancement of an existing bulkhead separating the Refuge property from the former PWT property and construction staging area.

The Area of Potential Effects (APE) is approximately five and one half (5.5) acres in and around the southern tip of Carty Lake (Figure 1). Soil removal will occur over one and one half (1.5) acres. The archaeological site 45CL4, also known as Wapato Portage is reported to the immediate west of the APE.

Tribal Consultation
The remediation of contaminates from the Pacific Wood Treatment Plant has been in the planning process for several years. Various meeting to discuss the process have occurred with Native American tribes present. The latest general project meeting was held on June 5, 2013. No comments regarding cultural resources have been provided directly to FWS. Indirect and informal comments about the proximity to known resources and the potential for new discovery have been received. None of the early meetings specifically addressed Section 106 of the National Historic Preservation Act (NHPA).

Copies of the professional archaeological survey report were supplied to the tribal chairs and cultural resource professionals of the Cowlitz Indian Tribe, Confederated Tribes of Grand Ronde and the Yakama Nation on January 27, 2014.

A letter offering Government to Government consultations specific to NHPA were sent out on April 15, 2014 to the Cowlitz Indian Tribe, Confederated Tribes of Grand Ronde and the Yakama Nation. Briece Edwards of the Confederated Tribes of Grand Ronde requested additional information. He was supplied with the IDP and the survey report on May 1, 2014. On June 1, 2014 dAVe Burlingame requested a site visit during the week of June 16, 2014. Arrangements are being made for the site visit.

DAHP Consultation
The FWS is requesting that the WA DAHP concur that isolate 12-35-1-IF is *not eligible* for listing on the NRHP and that the project activities in the APE as described above will therefore have a "No Historic Properties Effected" outcome. Further FWS stipulates that activities will be monitored by a professional archaeologist and a IDP will be in place.

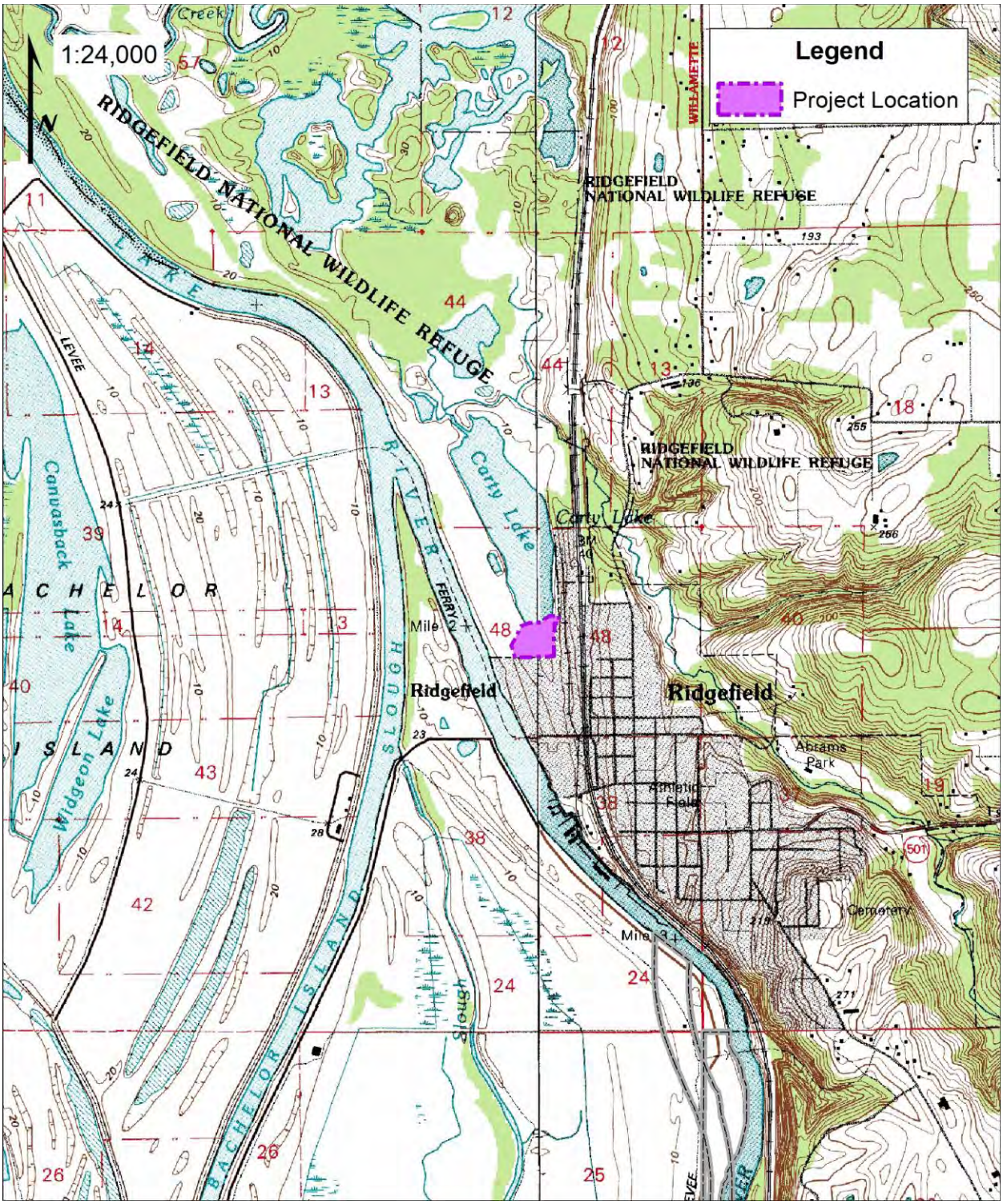
Monitoring
Following the consultations with SHPO the Service will have a professional archaeologist, one that meets the Secretary of Interior Standards for Historic Preservation, on site to recognize if and when a buried archaeological site is discovered during construction.

Should a discovery be made all work in the immediate vicinity will cease. The archaeologist will review the find and determine a buffer zone. The buffer zone will vary with the nature of the find, the location and the specific action occurring, but will be sufficient to protect the find from further disturbance. The archaeologist will contact consulting parties and otherwise begin to implement the Inadvertent Discovery Plan.

Attachment:
DAHP Response letter
APE Map

Carty Lake Remedial Action. Ridgefield, NWR

Area of Potential Effects



DEPARTMENT OF
ARCHAEOLOGY &
HISTORIC PRESERVATION
Protect the Past, Shape the Future

Allyson Brooks Ph.D., Director
State Historic Preservation Officer

June 12, 2014

Mr. Anan Raymond
US Fish & Wildlife Service
20555 Gerda Lane
Sherwood, Oregon 97140

Re: Carty Lake Remedial Action Project
Log No: 092512-03-USFWS

Dear Mr. Raymond:

Thank you for contacting our department. We have reviewed the professional archaeological survey report you provided for the proposed Carty Lake Remedial Action Project within the Ridgefield National Wildlife Refuge, Clark County, Washington.

We concur with the determination of No Adverse Effect and the stipulation for professional archaeological monitoring. Please provide the monitoring report when available.

We would appreciate receiving any correspondence or comments from concerned tribes or other parties that you receive as you consult under the requirements of 36CFR800.4(a)(4).

In the event that archaeological or historic materials are discovered during project activities, work in the immediate vicinity must stop, the area secured, and the concerned tribes and this department notified

These comments are based on the information available at the time of this review and on the behalf of the State Historic Preservation Officer in conformance with Section 106 of the National Historic Preservation Act and its implementing regulations 36CFR800. Should additional information become available, our assessment may be revised.

Thank you for the opportunity to comment and a copy of these comments should be included in subsequent environmental documents.

Sincerely,

Robert G. Whitlam, Ph.D.
State Archaeologist
(360) 586-3080
email: *rob.whitlam@dahp.wa.gov*

United States Department of the Interior
U.S. Fish and Wildlife Service

National Wildlife Refuge System General Special Use Application and Permit

OMB Control Number 1018-0102
Expiration Date: 06/30/2014

Name of Refuge: Ridgefield NWR

Address: 28908 NW Main Ave.

Attn: (Refuge Official): Christopher Lapp

Phone #: 360-887-4106 E-mail: christopher_lapp@fws.

Application

(To be filled out by applicant. Note: Not all information is required for each use. See instructions at the end of the notice.)

1) (●) New ( ) Renewal ( ) Modification ( ) Other _____

Applicant Information

2) Full Name: Port of Ridgefield

3) Organization: _____

4) Address: 111 W Division Street

5) City/State/Zip: Ridgefield, WA 98642

6) Phone #: 360-887-3873

7) Fax #: _____

8) E-mail: _____

9) Assistants/Subcontractors/Subpermittees: (List full names, addresses and phone #'s and specifically describe services provided if subcontractors are used.)

Madi Novak, Maul Foster Alongi, Inc., 400 E Mill Plain Blvd Suite 400, Vancouver, WA 98660. Phone # 503-501-5212

Activity Information

10) Activity type: ( ) Event ( ) Wood Cutting ( ) Group Visit ( ) Cabin/Subsistence Cabin ( ) Educational Activity
(●) Other Site remediation and infrastructure repair

11) Describe Activity: (Specifically identify timing, frequency, and how the event is expected to proceed.)

Project would include: 1) removal of contaminated soils from 1.2 ac of Carty Lake, 2) capping remediated area with 12" of clean sand, and 3) repairing the Port's failing bulkhead with a berm on Refuge lands, 4) planting of native vegetation. See Engineering Design Report for full project description and actions.

12) Activity/site occupancy timeline: (Specifically identify beginning and ending dates, site occupation timeline, hours, clean-up and other major events.)

Remediation and infrastructure repair work will occur between June 30 and October 30, 2014 as described in the Engineers Design Report. Planting of native species may occur through June of 2015.

OMB Control Number 1018-0102
Expiration Date: 06/30/2014

For Official Use Only (This section to be filled out by refuge personnel only.) 13551-14-0016

Special Use Permit

July16, 2014

13551-14-0016

Permit #: ~~13551~~

1) Date: July16, 2014

2) (●) Permit Approved ( ) Permit Denied

3) Station #: 13551

4) Additional special conditions required: (Special conditions may include activity reports, before and after photographs, and other conditions.)
(●) Yes ( ) No ( ) N/A

Additional sheets attached:
(●) Yes ( ) No

5) Other licenses/permits required:
(●) Yes ( ) No ( ) N/A

Verification of other licenses/permits, type:
Refuge will verify all permits before work is initiated
Refuge will verify all permits before work is initiated

6) Insurance/certifications required:
( ) Yes ( ) No ( ) N/A

Verification of insurance/certification, type:

7) Record of Payments: (●) Exempt ( ) Partial ( ) Full

Amount of payment: _____ Record of partial payment: _____

8) Bond posted: ( ) Yes ( ) No

This permit is issued by the U.S. Fish and Wildlife Service and accepted by the applicant signed below, subject to the terms, covenants, obligations, and reservations, expressed or implied herein, and to the notice, conditions, and requirements included or attached. A copy of this permit should be kept on hand so that it may be shown at any time to any refuge staff.

Permit approved and issued by (Signature and title):

_____ Date: 7/21/14

Permit accepted by (Signature of applicant):

_____ Date: 7-16-14

Notice

In accordance with the Privacy Act (5 U.S. C. 552a) and the Paperwork Reduction Act (44 U.S. C. 3501), please note the following information:

1. The issuance of a permit and collection of fees on lands of the National Wildlife Refuge System are authorized by the National Wildlife Refuge System Administration Act (16 U.S. C. 668dd-ee) as amended, and the Refuge Recreation Act (16 U.S. C. 460k-460k-4).

2. The information that you provide is voluntary; however submission of requested information is required to evaluate the qualifications, determine eligibility, and document permit applicants under the above Acts. It is our policy not to use your name for any other purpose. The information is maintained in accordance with the Privacy Act. All information you provide will be considered in reviewing this application. False, fictitious, or fraudulent statements or representations made in the application may be grounds for revocation of the Special Use Permit and may be punishable by fine or imprisonment (18 U.S.C. 1001). Failure to provide all required information is sufficient cause for the U.S. Fish and Wildlife Service to deny a permit.

3. No Members of Congress or Resident Commissioner shall participate in any part of this contract or to any benefit that may arise from it, but this provision shall not pertain to this contract if made with a corporation for its general benefit.

4. The Permittee agrees to be bound by the equal opportunity "nondiscrimination in employment" clause of Executive Order 11246.

5. Routine use disclosures may also be made: (a) to the U.S. Department of Justice when related to litigation or anticipated litigation; (b) of information indicating a violation or potential violation of a statute, rule, order, or license to appropriate Federal, State, local or foreign agencies responsible for investigating or prosecuting the violation or for enforcing or implementing the statute, rule, regulations, order, or license; (c) from the record of the individual in response to an inquiry from a Congressional office made at the request of the individual (42 FR 19083; April 11,1977); and (d) to provide addresses obtained from the Internal Revenue Service to debt collection agencies for purposes of locating a debtor to collect or compromise a Federal Claim against the debtor, or to consumer reporting agencies to prepare a commercial credit report for use by the Department (48 FR 54716; December 6, 1983).

6. An agency may not conduct or sponsor and a person is not required to respond to a collection of information unless it displays a currently valid OMB control number. This information collection has been approved by OMB and assigned control number 1018-0102. The public reporting burden for this information collection varies based on the specific refuge use being requested. The relevant public reporting burden for the General Use Special Use Permit Application form is estimated to average 30 minutes per response, including time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Comments on this form should be mailed to the Information Collection Clearance Officer, U.S. Fish and Wildlife Service, 4401 N. Fairfax Drive, MS 2042-PDM, Arlington, Virginia, 22203.

General Conditions and Requirements

1. Responsibility of Permittee: The permittee, by operating on the premises, shall be considered to have accepted these premises with all facilities, fixtures, or improvements in their existing condition as of the date of this permit. At the end of the period specified or upon earlier termination, the permittee shall give up the premises in as good order and condition as when received except for reasonable wear, tear, or damage occurring without fault or negligence. The permittee will fully repay the Service for any and all damage directly or indirectly resulting from negligence or failure on his/her part, and/or the part of anyone of his/her associates, to use reasonable care.

2. Operating Rules and Laws: The permittee shall keep the premises in a neat and orderly condition at all times, and shall comply with all municipal, county, and State laws applicable to the operations under the permit as well as all Federal laws, rules, and regulations governing national wildlife refuges and the area described in this permit. The permittee shall comply with all instructions applicable to this permit issued by the refuge official in charge. The permittee shall take all reasonable precautions to prevent the escape of fires and to suppress fires and shall render all reasonable assistance in the suppression of refuge fires.

3. Use Limitations: The permittee's use of the described premises is limited to the purposes herein specified and does not, unless provided for in this permit, allow him/her to restrict other authorized entry onto his/her area; and permits the Service to carry on whatever activities are necessary for: (1) protection and maintenance of the premises and adjacent lands administered by the Service; and (2) the management of wildlife and fish using the premises and other Service lands.

4. Transfer of Privileges: This permit is not transferable, and no privileges herein mentioned may be sublet or made available to any person or interest not mentioned in this permit. No interest hereunder may accrue through lien or be transferred to a third party without the approval of the Regional Director of the Service and the permit shall not be used for speculative purposes.

5. Compliance: The Service's failure to require strict compliance with any of this permit's terms, conditions, and requirements shall not constitute a waiver or be considered as a giving up of the Service's right to thereafter enforce any of the permit's terms or conditions.

6. Conditions of Permit not Fulfilled: If the permittee fails to fulfill any of the conditions and requirements set forth herein, all money paid under this permit shall be retained by the Government to be used to satisfy as much of the permittee's obligation as possible.

7. Payments: All payment shall be made on or before the due date to the local representative of the Service by a postal money order or check made payable to the U.S. Fish and Wildlife Service.

8. Termination Policy: At the termination of this permit the permittee shall immediately give up possession to the Service representative, reserving, however, the rights specified in paragraph 11. If he/she fails to do so, he/she will pay the government, as liquidated damages, an amount double the rate specified in this permit for the entire time possession is withheld. Upon yielding possession, the permittee will still be allowed to reenter as needed to remove his/her property as stated in paragraph 11. The acceptance of any fee for the liquidated damages or any other act of administration relating to the continued tenancy is not to be considered as an affirmation of the permittee's action nor shall it operate as a waiver of the Government's right to terminate or cancel the permit for the breach of any specified condition or requirement.

9. Revocation Policy: This permit may be revoked by the Regional Director of the Service without notice for noncompliance with the terms hereof or for violation of general and/or specific laws or regulations governing national wildlife refuges or for nonuse. It is at all times subject to discretionary revocation by the Director of the Service. Upon such revocation the Service, by and through any authorized representative, may take possession of the said premises for its own and sole use, and/or may enter and possess the premises as the agent of the permittee and for his/her account.

10. Damages: The United States shall not be responsible for any loss or damage to property including, but not limited to, growing crops, animals, and machinery or injury to the permittee or his/her relatives, or to the officers, agents, employees, or any other who are on the premises from instructions or by the sufferance of wildlife or employees or representatives of the Government carrying out their official responsibilities. The permittee agrees to save the United States or any of its agencies harmless from any and all claims for damages or losses that may arise to be incident to the flooding of the premises resulting from any associated Government river and harbor, flood control, reclamation, or Tennessee Valley Authority activity.

11. Removal of Permittee's Property: Upon the expiration or termination of this permit, if all rental charges and/or damage claims due to the Government have been paid, the permittee may, within a reasonable period as stated in the permit or as determined by the refuge official in charge, but not to exceed 60 days, remove all structures, machinery, and/or equipment, etc. from the premises for which he/she is responsible. Within this period the permittee must also remove any other of his/her property including his/her acknowledged share of products or crops grown, cut, harvested, stored, or stacked on the premises. Upon failure to remove any of the above items within the aforesaid period, they shall become the property of the United States.

Instructions for Completing Application

You may complete the application portion verbally, in person or electronically and submit to the refuge for review. Note: Please read instructions carefully as not all information is required for each activity. Contact the specific refuge headquarters office where the activity is going to be conducted if you have questions regarding the applicability of a particular item.

1. Identify if permit application is for new, renewal or modification of an existing permit. Permit renewals may not need all information requested. Contact the specific refuge headquarters office where the activity is going to be conducted if you have questions regarding the applicability of a particular item.

2-8. Provide full name, organization (if applicable), address, phone, fax, and e-mail.

9. Provide names and addresses of assistants, subcontractors or subpermittees. Names and address are only required if the assistants, subcontractors or subpermittees will be operating on the refuge without the permittee being present. Volunteers, assistants, subcontractors or subpermittees that are accompanied by the permittee need not be identified.

10. Activity type: check one of the following categories:

a. Event;

b. Wood cutting;

c. Group visit;

d. Cabin/Subsistence cabin;

e. Educational activity; or

f. Other—any other activity(s) not mentioned above. Please describe "other" activity.

11. Describe Activity: provide detailed information on the activity, including times, frequency and how the activity is expected to proceed, etc. Permit renewals may not need activity description, if the activity is unchanged from previous permit. Most repetitive activities, such as group visits, do not require an activity description for each visit. Contact the specific refuge headquarters office where the activity is going to be conducted to determine if an activity description is required.

12. Activity/site occupancy timeline: identify beginning and ending dates, site occupation timeline, hours, clean-up and other major events. Permit renewals may not need an activity/site occupancy timeline, if the activity is unchanged from previous permit. Most repetitive activities, such as group visits, do not require an activity/site occupancy timeline for each visit. Contact the specific refuge headquarters office where the activity is going to be conducted to determine if an activity/site occupancy timeline is required.

13-14 Expected number of participants: Provide an estimate of the number of adults, and children and grade level of group, if applicable.

15. Identify if onsite refuge staff will be required for group activities and anticipated time frame, if applicable.

16a-16b. Identify and attach Plan of Operation, if required. Most repetitive activities, such as group visits, do not require Plans of Operations for each visit. In addition, permit renewals may not require Plans of Operations if the activity is essentially unchanged from the previous permit. Contact the specific refuge headquarters office where the activity is going to be conducted to determine if a Plan of Operations is required.

17. Location: identify specific location (GPS coordinates preferred), if not a named facility. Most repetitive activities, such as group visits, do not require a location. In addition, permit renewals may not require a location if the activity is essentially unchanged from the previous permit. Contact the specific refuge headquarters office where the activity is going to be conducted to determine if a location is required.

18a-18b. Attach a map of location, if required and not conducted at a named facility. Most repetitive activities, such as group visits, do not require a map. In addition, permit renewals may not require a map if the activity is essentially unchanged from the previous permit. Contact the specific refuge headquarters office where the activity is going to be conducted to determine if a map is required.

19a-19b. Provide name, type and carrier of insurance, if required. Contact the specific refuge headquarters office where the activity is going to be conducted to determine if insurance and type of insurance are required.

20. Specifically identify types and numbers of other licenses, certifications or permits, if required. Contact the specific refuge headquarters office where the activity is going to be conducted to determine the types of licenses, certifications or permits required, and to coordinate the simultaneous application of several types of licenses, certifications or permits. This Special Use Permit (SUP) may be processed while other certifications are being obtained.

21-22. Provide name(s) of any personnel required to stay overnight, if applicable.

23. Identify all equipment and materials, which will be used, if required. Most repetitive events, such as group visits, do not require a list of equipment. In addition, permit renewals may not require a list of equipment if the event is essentially unchanged from the previous permit. Contact the specific refuge headquarters office where the activity is going to be conducted to determine if a list of equipment is required.

24. Describe and provide vehicle descriptions and license plate or identification numbers of all vehicles, including boats and airplanes, if required. Motor vehicle descriptions are only required for permittee vehicle, and/or if the vehicle will be operated on the refuge without the permittee being present. Motor vehicles that are accompanied by the permittee as part of a group (convoy) activity need not be identified if cleared in advance by refuge supervisor. Specifically describe ship-to-shore, intersite (between islands, camps, or other sites) and onsite transportation mechanisms, and license plate or identification numbers, if required.

25. Specifically describe onsite work and/or living accommodations, if applicable.

26. Specifically describe onsite hazardous material storage, or other onsite material storage space (including on and offsite fuel caches).

27. Sign, date, and print the application. Click on the Print button to print the application (if using the fillable version). The refuge official will review and, if approved, fill out the remaining information, sign, and return a copy to you for signature and acceptance.

The form is not valid as a permit unless it includes refuge approval, a station number, a refuge-assigned permit number, and is signed by a refuge official.

Special Conditions

Applicant must conform to all Best Management Practices described in the Final Engineering and Design Report as well as all State and Federal permit requirements.

Work shall be restricted to daylight hours only.

Applicant must contact the Refuge Office 24 hours prior to conducting on-Refuge work. Contacts include Alex Chmielewski (360-887-3883) or Chris Lapp (360-887-4106).

All gates that are opened by applicant must be immediately closed and locked following entry/exit through the gate.

All data collected from the site will be shared with Ridgefield NWR.

All materials will be removed from the site at the end of the permit period, unless otherwise negotiated with the Refuge Manager prior to October 31, 2014.

Any keys that have been assigned to this project must be returned at the end of the permit period.

This agreement does not imply or establish a use precedent. Future programs will be based upon the satisfactory use of the land for wildlife benefits, permittee performance, and administrative needs.

State of Washington
Department of Fish and Wildlife
2108 Grand Blvd. Vancouver WA 98661 (360) 696-6211

MEMORANDUM

Date: June 4, 2014

TO: Joyce Mercuri, Washington Department of Ecology

FROM: Dave Howe for Anne Friesz, Assistant Regional Habitat Program Manager

SUBJECT: Carty Lake Remedial Action

According to RCW 70.104D.090, this project is exempt from a Hydraulic Project Approval (HPA). Therefore, this memo to Ecology gives provisions that WDFW encourages to be implemented for the duration of the project.

- Dredging equipment shall be well-maintained and in good repair to prevent the loss of lubricants, grease, and any other deleterious materials from entering the lake.
- All containers storing fuel or other deleterious substances shall be secured during dredging operations to prevent incidental spills.
- If at any time, as a result of project activities, fish are observed in distress, a fish kill occurs, or water quality problems develop (including equipment leaks or spills), immediate notification shall be made to the Washington Military Department's Emergency Management Division at 1-800-258-5990, and to Anne Friesz, Assistant Regional Habitat Program Manager at 360-906-6764.
- Every effort shall be taken during all phases of this project to ensure that sediment-laden water is not allowed to enter the lake.
- Extreme care shall be taken to ensure that no petroleum products, hydraulic fluid, fresh cement, sediments, chemicals, or any other toxic or deleterious materials are allowed to enter or leach into the lake.
- Bulkhead stabilization work shall be restricted to work necessary to protect the eroding bank.
- Placement of vegetated earthen material embankments against the bulkhead structure water ward of the ordinary high water line shall be restricted to the minimum amount necessary and per the construction documents to protect the toe of the bank or for installation of mitigation features.
- Fish-mix rock (7-inch median, rounded rock) may be placed at the toe of the southern embankment to resist erosion. Angular rock may be used in the foundation of the embankment but will not be exposed.

The southern embankment will be constructed at a maximum nominal 2H:1V slope. The eastern embankment will be constructed at a maximum 2.5:1V slope and will avoid wetland impact.

- Pile and portions of the existing treated-wood bulkhead shall be disposed of at a municipal solid waste landfill, per WAC 173-351.

cc: Madi Novak – Maul Foster & Alongi, Inc.
Brent Grening – Port of Ridgefield
David Howe – WDFW

May 21, 2014

Ms. Joyce Mercuri, Site Manager (Sediments)
Southwest Regional Office, Toxics Cleanup Program
WA Department of Ecology
PO Box 47775
Olympia, WA 98504-7775

Re: Port of Ridgefield Lake River and Carty Lake Dredging – Substantive Local Requirements

Dear Ms. Mercuri:

This letter is written in response to the Port of Ridgefield's proposal to dredge and clean contaminated sediments from Lake River and Carty Lake during the summer of 2014 as part of the Pacific Wood Treating cleanup program.

The City met in consultation with your office and with representatives of the Port of Ridgefield in the fall of 2013. On January 3, 2014 the City provided your office with a letter describing the substantive city requirements applicable to the Lake River and, by extension, the Carty Lake dredging projects described in the Washington State JARPA Form for the Carty Lake Remedial Action and the Lake River Remedial Action. On April 4, 2014 the Department of Ecology issued a SEPA Determination of Nonsignificance relative to the two remediation projects. The public comment period closed on April 25, 2014 and the threshold determination was not altered or appealed.

The City has reviewed the SEPA checklists for both projects. The City also reviewed the SEPA checklist attachments:

- Department of Ecology, SEPA Determination for Carty Lake Remedial Action, Pacific Wood Treatment Site, Substantive Requirements of Local and State Permits, City of Ridgefield Permits and Washington Department of Fish and Wildlife Hydraulic Project Approval, and
- Department of Ecology, SEPA Determination for Lake River Remedial Action, Pacific Wood Treatment Site, Substantive Requirements of Local and State Permits, City of Ridgefield Permits and Washington Department of Fish and Wildlife Hydraulic Project Approval.

It is the City's opinion that the applicant has demonstrated that its proposals will meet the substantive requirements of the applicable Ridgefield Development Regulations and Ridgefield Shoreline Master Program.

Prior to commencement of work, the City requests, that the applicant provide the Department of Public Works with construction specifications and engineering and erosion control plans, consistent with RMC 18.755 and the City of Ridgefield Standards for Public Works Construction (Standards), Volumes 1-3. If the transport of dredging equipment or materials over Mill or Division Streets causes the condition of a street to fall below City standards, the applicant shall be responsible to restore the portions of the subject streets damaged or degraded by transport of equipment or dredging materials to City standards.

Please contact me directly if you have any additional questions.

Sincerely,

Eric Eisemann

Consulting Ridgefield Planner
e.eisemann@e2landuse.com
360.750.0038

Carty Lake

COMMERCIAL GRADING

230 Pioneer Street P.O. Box 608

Ridgefield, WA 98462

Phone: (360) 887-8610 Fax: (360) 887-2507

www.ci.ridgefield.wa.us

Project Information

Permit Type	Commercial Grading	**Permit #**	**PUW-14-0023**
Site Address	111 W DIVISION ST	**Project Name**	Clearing and grubbing; access improvements
		Parcel #	068314000

Project Description

Access Improvements

Names Associated with this Project

Type	Name	Contact	Phone #	License Type	License #	Exp Date
Applicant	Port Of Ridgefield					
Owner	Port Of Ridgefield					

Fee Information

CITY OF RIDGEFIELD
PUBLIC WORKS DEPT.
APPROVED

JUL 0 8 2014

BY: BK AW

Project Valuation

Grading Permit Fee	$	549.60
Grading Plan Review	$	329.76
Total Fees Paid	**$**	**879.36**

Conditions

1. Cell 2 Access Road ro be maintained/graded as necessary during construction. Once construction is complete, road shall be re-graded and re-rocked to restore.

****** SEE ATTACHED CONDITIONS ******

This permit becomes null and void if work or construction is not commenced within 180 days, or construction is suspended or abandoned for 180 days at any time after work is commenced.

I hereby certify that I have examined this application and know the same to be true and correct. All provisions of laws and ordinance governing this type of work will be complied with whether specified herein or not. The granting of a permit does not presume to give authority to violate or cancel the provisions of any other state or local law regulating construction or performance of construction.

Print Name Mike Reiter

Signature _____ **Date** 7/15/14

Date Issued:
Issued By:
Date Expires: 12/30/2014

WAC 197-11-970
DETERMINATION OF NONSIGNIFICANCE
CARTY LAKE SEDIMENT REMEDIATION
RIDGEFIELD, WA

Description of proposal:

Under a Consent Decree between the Department of Ecology (Ecology), Port of Ridgefield (Port), and City of Ridgefield, the Port proposes to remediate sediment in the southernmost end of Carty Lake. Carty Lake is located adjacent to the Pacific Wood Treating toxic cleanup site in Ridgefield, Washington, and is within the Ridgefield National Wildlife Refuge (Refuge). Operations of the former Pacific Wood Treating company, which operated from 1964 to 1993, contaminated sediments within the lake.

The remedial action will remove sediments containing chlorinated dibenzo-p-dioxins and dibenzofurans (dioxins), pentachlorophenol, arsenic, and chromium that are present above levels considered safe for ecological health. Ecology selected the remedial action in accordance with the Model Toxics Control Act, Washington Administrative Code 173-340-380. The design and details for the basis of the remedial action are provided in the Pacific Wood Treating Cleanup Action Plan from November 5, 2013.

The selected cleanup for Carty Lake includes mechanical sediment excavation, paired with the placement of a clean sand layer over the excavated areas to stabilize any loose sediments remaining after excavation. A temporary isolation barrier will be applied across the southern end of the lake and water remaining within the work area (if any) will be removed so that excavation work can occur under dry conditions, which will reduce the amount of dewatering needed for the excavated sediments. Sediments will be removed from the wetland area and placed in a previously constructed sediment handling area on adjacent Port property. Sediments will be dewatered if needed before loading into trucks for disposal at a permitted nonhazardous waste landfill.

There are currently two failing retaining walls to the south and to the east of the construction area, at the border between the Refuge and Port property. An earthen and rock embankment will be constructed to stabilize the failing walls. Following construction, the excavated area of the wetland and the newly placed earthen embankment will be planted with appropriate plant communities to restore native conditions. Mitigation for permanent impact to a maximum of 0.23 acres of wetlands beneath the new embankment will be undertaken through purchasing mitigation bank credits. In-water work will be performed under the U.S. Army Corps of Engineers, Nationwide Permit #38.

Work in the uplands adjacent to the lake and on the neighboring Port property will include creating a gravel ramp from the Port property to access the Carty Lake lowlands. The project also includes temporarily removing and stockpiling part of the soil cap that was placed on the Port property under previous cleanup work and constructing a staging and sediment handling area at that location. Construction and excavation work is planned for a two-month period in late summer 2014. Best management practices will be applied to all aspects of the project, under Ecology oversight, to protect water quality and prevent discharges of contaminated sediments or waters. The Port will obtain a construction stormwater general permit.

Project proponent:
Port of Ridgefield, under Consent Decree with Ecology (Consent Decree No. 13-2-03830-1, filed in Clark County Superior Court, November 5, 2013).

Location of proposal
Carty Lake, within Ridgefield National Wildlife Refuge, in the SE ¼, Section 48, Township 4 north, Range 1 west, and Port property located at 111 Division Street, Ridgefield, WA 98642.

Lead Agency
Washington State Department of Ecology

The lead agency for this proposal has determined that it does not have a probable significant adverse impact on the environment. An environmental impact statement (EIS) is not required under RCW 43.21C.030 (2)(c). A federal Environmental Assessment (EA) was prepared for this project by the U. S. Fish and Wildlife Service (USFWS) because of their role in permitting the action on refuge property. A Finding of No Significant Impact was issued by USFWS on 1/14/14. Ecology has adopted the Final Environmental Assessment, Proposed Carty Lake Remedial Action at Ridgefield National Wildlife Refuge (February 5, 2014) in lieu of preparing a SEPA checklist. Ecology's decision was made after review of the EA and other information developed under the cleanup consent decree. This information is on file with Ecology and available to the public on request.

Compliance with requirements of local and state permits
Because the project is being completed under a Model Toxics Control Act Consent Decree, the Port is not required to obtain local or state permits that would otherwise be required for this type of work. However, Ecology must ensure that the project meets the substantive requirements of local and state permits. The applicable local and state permits for which this project must meet substantive requirements are the Washington Department of Fish and Wildlife Hydraulic Project Approval, the City of Ridgefield Shoreline Management Permit, and the City of Ridgefield grading permit. Attachment A provides a description of the substantive requirements for each of these permits.

☐ There is no comment period for this DNS.

☐ This DNS is issued after using the optional DNS process in WAC 197-11-355. There is no further comment period on the DNS.

☒ This DNS is issued under WAC 197-11-340(2); the lead agency will not act on this proposal for 14 days from the date below. Comments must be submitted by April 25, 2014.

Comments should be directed to Joyce Mercuri, Site Manager, at Joyce.Mercuri@ecy.wa.gov, or P. O. Box 47775, Olympia, WA 98504-7775

Responsible official: Rebecca Lawson, P.E., LHG
Position/title: Section Manager, Toxic Cleanup Program/Southwest Regional Office
Phone: (360) 407-6241
Address: P.O. Box 47775, Olympia, WA 98504-7775

Date 4/10/14 Signature Rebecca S. Lawson

FINAL ENVIRONMENTAL ASSESSMENT
Proposed Carty Lake Remedial Action at Ridgefield National Wildlife Refuge

Prepared for
U.S. FISH AND WILDLIFE SERVICE
February 5, 2014
Project No. 9003.01.40

MAUL FOSTER ALONGI

Prepared by
Maul Foster & Alongi, Inc.
2001 NW 19th Avenue, Suite 200, Portland OR 97209

CONTENTS

ACRONYMS AND ABBREVIATIONS

BMP	best management practice
CCP	Comprehensive Conservation Plan
EA	Environmental Assessment
Ecology	Washington State Department of Ecology
LPP	Land Protection Plan
LRIS	Lake River Industrial Site
MBCA	Migratory Bird Conservation Act of 1929
MBCC	Migratory Bird Conservation Commission
NEPA	National Environmental Policy Act
NWRS	National Wildlife Refuge System
Port	Port of Ridgefield
PWT	Pacific Wood Treating Co.
Refuge	Ridgefield National Wildlife Refuge
USFWS	U.S. Fish and Wildlife Service
WAC	Washington Administrative Code
WillametteCRA	Willamette Cultural Resources Associates, Ltd.

1 PURPOSE AND NEED FOR ACTION

1.1 Background

The Ridgefield National Wildlife Refuge (Refuge) is managed by the U.S. Fish and Wildlife Service (USFWS) under the U.S. Department of the Interior and is a unit of the National Wildlife Refuge System (NWRS).

The mission of the NWRS is:

> To administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans. (National Wildlife System Administration Act of 1966, as amended [16 U.S.C. 668dd-668ee])

The goals of the NWRS are (601 FW 1):

- Conserve a diversity of fish, wildlife, and plants and their habitats, including species that are endangered and threatened with becoming endangered.
- Develop and maintain a network of habitats for migratory birds, anadromous and interjurisdictional fish, and marine mammal populations that is strategically distributed and carefully managed to meet important life history needs of these species across their ranges.
- Conserve those ecosystems, plant communities, wetlands of national or international significance, and landscapes and seascapes that are unique, rare, declining, or underrepresented in existing protection efforts.
- Provide and enhance opportunities to participate in compatible wildlife-dependent recreation (hunting, fishing, wildlife observation and photography, and environmental education and interpretations).
- Foster understanding and instill appreciation of the diversity and interconnectedness of fish, wildlife, and plants and their habitats.

RIDGEFIELD NATIONAL WILDLIFE REFUGE PURPOSES AND OBJECTIVES

On May 18, 1965, the Migratory Bird Conservation Commission (MBCC), under the authority of the Migratory Bird Treaty Act (MBCA) of 1929, approved the establishment of the Refuge and identified a 6,130.8-acre acquisition boundary for the Refuge. The stated purpose of the new Refuge, from Memorandum 1 of the MBCC, was to "provide wintering habitat for dusky Canada goose and other waterfowl." The memorandum also specified peak populations of migratory waterfowl, including 3,000 geese and 125,000 ducks, and required that the Refuge also provide for "breeding and migration use" for waterfowl.

The importance of the Refuge to dusky Canada geese was explicitly recognized in the Memorandum:

> The dusky Canada goose has an extremely limited winter range, concentrated along the Willamette and lower Columbia rivers. This subspecies is limited in numbers and requires protection and habitat to insure its continued existence.

The Memorandum also specifically mentioned that the Refuge would provide "substantial public shooting" and "[a] portion of the area in line with management findings, not to exceed 40 percent, will be considered for waterfowl hunting in the future." A number of tracts on the River S and Carty units, totaling 2483.03 acres, were acquired under this purchasing authority using Migratory Bird Conservation funds. Tract 21-I on the Carty Unit (24.99 acres) was also donated to the USFWS under authority of MBCA.

Subsequent MBCC memoranda (Memorandum 4, dated August 5, 1965; Memorandum 6, dated January 22, 1974; and Memorandum 8, dated February 5, 1985) reapproved the purchase price of remaining acreage within the acquisition boundary because of increased land values. In all of these memoranda, the justification for acquisition was "to provide resting and wintering area for migratory waterfowl." Tracts on the Roth Unit, totaling 510.4 acres, were acquired under this purchasing authority using Migratory Bird Conservation funds.

The Environmental Impact Statement, Land Acquisition—Zimmerly Tract for Addition to Ridgefield National Wildlife Refuge, Washington, dated March 1980, covered the acquisition of 1,610 acres of Bachelor Island within the approved refuge boundary. In the environmental impact statement, the USFWS stated that its objective for the acquisition was "to preclude uses that would be incompatible with wildlife use, such as industrial, commercial, or residential development, and to gain the capability to manage land for increased wildlife benefits." The environmental impact statement mentioned the following species and species groups as priorities for management: wintering waterfowl, bald eagle, sandhill crane, and great blue heron.

The Environmental Assessment (EA), Acquisition of Remaining Tracts, Ridgefield NWR, Clark County, Washington, dated December 1983, applied to 1,609.97 acres of Bachelor Island and 589.31 acres of the Ridgeport Dairy, the remaining tracts within the approved refuge boundary. In the EA, the USFWS stated that its objectives for the acquisition were:

> To preclude activities, such as industrial, commercial, and residential development, that would be incompatible with wildlife use; to prevent changes in the present pattern of land use; and to gain authority to manage the lands for increased wildlife benefits…To increase overwintering carrying capacity for dabbling ducks…To maintain current capacity in support of existing overwintering use by Canada geese, swans, and diving ducks.

The Land Protection Plan (LPP) for Proposed Acquisitions to the Ridgefield NWR, dated November 1984, covered the same areas identified in the December 1983 EA. The LPP mentioned the following species and groups as priorities for management: wintering waterfowl, bald eagle, sandhill crane, and great blue heron. In February 1985, Tracts 23 and 23a (1,609.97 acres) on Bachelor Island were purchased from Bachelor Island Ranch, Inc. with Migratory Bird Conservation funds.

The Preliminary Project Proposal (May 1989) and the Decision Document (Categorical Exclusion), Acquisition of Port of Vancouver Tract, Ridgefield NWR, Clark County, Washington (October, 1989) acquired 520.81 acres (Tract 12) of the Ridgeport Dairy Unit. Described in the Categorical Exclusion for the property transfer, the USFWS stated its objectives for the acquisition:

> To preclude human activities, such as land development and commercial enterprise (both with potential for altering habitat and polluting areas) that would be incompatible with wildlife use; to prevent major changes in the present pattern of wildlife use; and to manage added refuge land for increased wildlife benefits.

The Categorical Exclusion mentioned the following species and species groups as priorities for management:

> over 20 species of waterfowl wintering along the lower Columbia River including mallard, pintail, and blue winged teal…; six subspecies of Canada geese (Taverner's, dusky, western, cackling, lesser, and the endangered Aleutian [the Aleutian is no longer listed as an endangered species]); bald eagle; peregrine falcon; tundra swan; sandhill crane; shorebirds; marshbirds; and songbirds.

It should be noted that the status of some of these species has since changed (e.g., because of recovery, the Aleutian Canada goose has been removed from the federal list of threatened and endangered species) and the taxonomy of Canada geese has changed (e.g., the various types are now included in two different species). Tract 12 was purchased from the Port of Vancouver in March 1991, using Land and Water Conservation Funds, under the authority of the Fish and Wildlife Act of 1956. This is the only portion of the Refuge for which this funding source was used, all other tracts being purchased with Migratory Bird Conservation funds.

The MBCC's Memorandum 10, dated March 1995, approved the purchase price for 68.5 acres (Tracts 14 and 14a) of the Ridgeport Dairy Unit. The purpose of this acquisition was "to preserve a major wintering area for migratory waterfowl along the Pacific Coast."

These tracts were purchased on September 5, 1995, with Migratory Bird Conservation funds.

SUMMARY OF PURPOSES AND MANAGEMENT DIRECTION FOR REFUGE

The purposes for the Refuge have been identified in legal documentation establishing and adding to the Refuge's lands. Because the Refuge was originally established to preserve migration and wintering habitat for dusky Canada geese and other migratory waterfowl in the Pacific Flyway, this represents a priority for managing to achieve refuge purposes. In accordance with Director's Order No. 132, all lands acquired since the original establishment of the Refuge retain this purpose. Along with specifying management approaches for achieving refuge purposes specifically as they pertain to dusky Canada geese and other migratory waterfowl, legal documentation regarding adding lands to the Refuge identified managing habitats for the following species or species groups as management priorities:

- Bald eagle
- Sandhill crane

- Great blue heron
- Peregrine falcon
- Shorebirds
- Marshbirds
- Songbirds

The Refuge has developed a Comprehensive Conservation Plan (CCP), finalized in 2010, that provides a 15-year management plan that is consistent with USFWS policy and legal mandates. The CCP establishes operational goals and objectives for wildlife, habitat, and public use. The goals are to:

- Protect, maintain, and, where feasible, restore habitat for priority species, including dusky Canada geese and other waterfowl, and imperiled federal and state-listed species
- Meet Pacific Flyway management plan goals for dusky Canada geese and cackling geese
- Maintain high-quality green forage for geese in improved pastures and wet meadows, and increase cropland and wet meadow acreage
- Manage wetlands to increase productivity and reduce water pumping costs
- Manage invasive species and state- and county-listed noxious weeds
- Increase enhancement and restoration of bottomland forest and oak woodland habitats
- Conduct habitat assessments to guide stream and tidally influenced wetland restorations
- Increase inventory and monitoring efforts
- Conduct studies to assess the feasibility of reintroducing native species such as Columbian white-tailed deer and western pond turtle
- Maintain current public use areas and closures
- Maintain the current waterfowl hunt area
- Develop a new access point to the Refuge's River "S" Unit, including a two-lane bridge and 1-mile entrance road
- Shorten the auto tour route slightly to provide habitat for dusky Canada geese and cranes
- Construct a new 1.5-mile dike top walking trail

REGULATORY CONTEXT

A Special Use Permit enables non-NWRS entities to engage in activities on a national wildlife refuge, including implementation of environmental remedial action. Issuing a Special Use Permit is a federal action that triggers the need for the USFWS to address several environmental compliance requirements, including an EA to meet National Environmental Policy Act (NEPA) requirements.

1.2 Proposed Action

The Port of Ridgefield (the Port) proposes to remediate sediment in the southern end of Carty Lake. Carty Lake is located in the Refuge, adjacent to the former Pacific Wood Treating Co. (PWT) site in Ridgefield, Washington (see Figure 1-1). PWT operated a wood-treating facility from 1964 to 1993 at the Port's Lake River Industrial Site (LRIS); historical PWT activities impacted sediments in the southern end of Carty Lake. The proposed Carty Lake remedial action involves mechanical sediment excavation, the placement of a clean layer of sand to manage residuals, and stabilization of a treated-wood bulkhead (Washington State Department of Ecology [Ecology], 2013b). The action includes in-water and upland components; the proposed actions are conducted primarily on Refuge property, with some upland project components extending to the LRIS (see Figure 1-2). Construction is proposed to take place over a two-month period in summer 2014.

1.3 Need and Purpose for the Proposed Action

The project purpose is to conduct remedial actions required by Ecology to address legacy contamination in sediments in Carty Lake, as described in the Ecology-issued cleanup action plan for the former PWT site (Ecology, 2013b). Through the completion of a remedial investigation and feasibility study conducted consistent with an Agreed Order between the Port and Ecology, it was determined that Carty Lake sediments are contaminated at levels that present unacceptable risk both to human and to ecological receptors, including benthic organisms and fish.

The purpose of this remedial action is to address the presence of chemicals above screening criteria or cleanup levels, including chlorinated dibenzo-p-dioxins and dibenzofurans (dioxins), pentachlorophenol, and metals (arsenic and chromium) found in sediment in the southern portion of Carty Lake. Dioxins were identified as the primary chemical of concern. The remedial action was selected by Ecology (Ecology, 2013b) in accordance with Washington Administrative Code (WAC) 173-340-380.

1.4 Public Involvement

Ecology and the Port have addressed community concerns throughout the history of former PWT site cleanup actions. Consistent with WAC 173-340-600, Ecology provided public notice for the cleanup action plan, and public comments on the project were solicited from the community during the formal comment period (July 25, 2013, through August 23, 2013). A public participation plan describing the tools that Ecology uses to inform the public about site activities has been developed (Ecology, 2013a). In addition, a public open house was held in February 2012 at the Ridgefield Community Center, 210 N. Main Avenue, Ridgefield, Washington, in an effort to inform interested parties of the cleanup actions related to the former PWT site.

Public comment was solicited by USFWS on the draft EA document at http://www.fws.gov/ridgefieldrefuges/ridgefield/. Comments were requested by December 27, 2013. No comments were received and formal responses are therefore not included in this final EA document.

2 ALTERNATIVES, INCLUDING PREFERRED ACTION

2.1 Alternative A—No Action

Under the No Action Alternative, the Port would not conduct the remedial action required by Ecology in Carty Lake. The existing contaminated sediments would remain in Carty Lake, non-native vegetation would remain in the project footprint, and additional components associated with the project would not be constructed. The vegetated upland footprint and the wetland footprint would not be modified in the Carty Unit.

2.2 Alternative B—Carty Lake Remedial Action (Preferred Alternative)

Under Alternative B, the Port would conduct cleanup actions and construct associated components. The Alternative consists of in-water and upland components. The in-water components would consist of:

- Removal of up to 5,200 cubic yards (area of up to 1.5 acres) of contaminated sediment via mechanical sediment excavation conducted in the dry, and placement of an approximately 1-foot-thick, clean sand layer (up to 2,100 cubic yards).
- Installation of a temporary isolation barrier to facilitate dewatering of the sediment excavation area.
- Restoration of the wetland habitat by removal of non-native plants and planting of native wetland plant communities in the construction area.
- Evaluation and implementation of best management practices (BMPs); BMPs may include operational controls, excavation methods, and construction dewatering of the south end of Carty Lake.
- Disposal of excavated material as nonhazardous material waste at a Subtitle D landfill facility.
- Implementation of a long-term institutional control on fish consumption to protect human health; an updated characterization of sediment conditions may be needed before initiation of any future activities, such as in-water construction or sediment excavation that may result in significant sediment disturbance.

Upland actions would include the following:

- Access improvements, e.g., clearing and grubbing, construction of a permanent access ramp from the Port's property to the Carty Unit, and construction of a staging area.

- Construction of an earth and rock embankment to permanently stabilize the soils behind the existing treated-wood bulkhead. Embankments will be planted with native vegetation selected in consultation with the USFWS.
- Evaluation and implementation of BMPs.
- Paving of a portion of the Cell 2 hard trail on Port property (work delayed from a previous upland remedial action to provide better construction access for the Carty Lake remedial action).

2.3 Other Alternatives—Alternatives Considered but Eliminated from Further Study

- The USFWS agrees that Alternative B is consistent with the goals of the Refuge and minimizes environmental impacts. The USFWS and the Port coordinated design of Alternative B, including the following elements:
- Sediment excavation is designed to result in a leave surface that is a minimum of 6 inches deeper than the existing elevation. The depth increase will suppress red canary grass reestablishment.
- Bank stabilization on the southern side of the wetland is designed at a 2:1 slope. This slope was selected as the preferred alternative among several design options because it minimizes encroachment into the wetland. Other evaluated stabilization designs (e.g., 3:1 slope, ecology blocks) would result in greater encroachment or were infeasible.
- Bank stabilization along the eastern side of the wetland was redesigned from a 3:1 soil slope to a 2.5:1 (minimum) slope to avoid wetland encroachment.
- A native planting plan consistent with USFWS objectives is in development.

Alternative B[1] is one of four alternative remedial actions considered during a feasibility study (MFA, 2013) conducted for Carty Lake as part of the remediation planning process in accordance with the Model Toxics Control Act. The feasibility study evaluated a range of potential remediation options against a set of criteria defined in state regulations (WAC 173-340-350). The feasibility study was reviewed and approved by Ecology, and Alternative B was selected as the preferred remediation option. Other feasibility study Alternatives are not evaluated further for the EA but are briefly summarized below; details are provided in the cleanup action plan for the former PWT Site (Ecology, 2013b).

The feasibility study Alternatives assessed protection of human health and the environment, removal and capping of impacted sediment, and/or institutional controls to manage the potential for exposure to impacted sediment. A No Action Alternative was considered, but was dismissed from further evaluation, as it is not protective of human health and the environment. Alternative 1 (Monitored Natural Recovery) was not selected because it is less protective of human health and the environment over the short and long terms, as high chemical concentrations would remain (i.e.,

[1] Alternative B is called "Alternative 2" in the feasibility study.

there would be no removal) and the remedy would require a prolonged restoration time frame. The other Alternatives all include the same amount of sediment removal, with varying amounts of clean sand placement. Alternatives 3 (Focused Dredge and Expanded Residuals Cap) and 4 (Focused Dredge and Full Residuals Cap) achieve a level of protectiveness similar to that of the selected Alternative (Alternative B; see Section 2.2), with a higher level of disturbance to sediments (e.g., Alternative 4 includes covering all of Carty Lake with a clean sand layer) and with a significantly higher cost. The selected Alternative B provides a high degree of certainty for long-term protectiveness, provides immediate short-term reductions in surface concentrations (including achieving concentrations protective of ecological receptors upon implementation), avoids unnecessary short-term habitat disturbance by minimizing the project footprint, and is proportionately cost effective when the benefits are considered. All alternatives require institutional controls to continue to limit consumption of fish from Carty Lake.

3 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

3.1 Habitat, Wildlife, and Fish

This section presents a general description of the plant communities, wildlife, and fish that may be present near the project area and that have the potential to be influenced by project activities. Following these descriptions, an analysis of how project Alternatives may impact valued ecological entities is presented.

HABITAT

Oregon ash, black cottonwood, and several willow species comprise the vast majority of the canopy cover in forested habitat of the Refuge. The understory is typical of lower Columbia River floodplain habitats, with nettles, red-osier dogwood, and non-native Himalayan blackberry providing the bulk of the shrub and forb layer. Remnant stands of western red cedar and Douglas fir occur on the highest portions of the Carty Unit, with species such as snowberry and Himalayan blackberry dominating the understory. Oregon white oak woodlands (Washington State priority designated habitat) occur to the east and north of Carty Lake but not near the project area at the southern end of Carty Lake.

Virtually all of the grasslands in the Refuge have been impacted by past agricultural activities, including row crop and field crop production and grazing. Near Carty Lake, non-native reed canary grass is ubiquitous and generally dominates the shoreline, forming dense monocultures; Himalayan blackberry is dominant along the bulkhead separating the Carty Unit and the LRIS.

Carty Lake is a 52-acre lake in the Carty Unit "lowlands." The National Wetlands Inventory classifies much of Carty Lake as a lacustrine, limnetic, unconsolidated bottom, permanently tidal. The southern portion of the lake is classified as palustrine, emergent and persistent; the western side

is subdesignated as temporarily or seasonally flooded; and the eastern side is subdesignated as temporary-tidal. Washington State priority designated palustrine aquatic habitats are present within 0.15 mile of the project area. Because Carty Lake lacks a consistent connection with the Columbia River system, the lake's functionality has been reduced, particularly with respect to anadromous fish-rearing habitat and native mussel beds. As with similar wetlands on the Refuge, water quality and aquatic plants have been negatively impacted by introduced carp. The southern end of Carty Lake is underwater for most of the year or exists as a wetland at the margin of the lake. Aquatic plants, including wapato (*Sagittaria latifolia*), occur in the lake, and the fringe wetland is dominated by non-native, invasive reed canary grass (ELS, 2013).

A western Washington wetlands delineation and rating for the southern end of Carty Lake in the project area was conducted in 2013 (ELS, 2013). The project area is classified as a Category II lake fringe wetland; the wetland boundary is shown in Figure 1-2. The assessment found that water quality functions scored high, with the vegetation exceeding 33 feet in width and herbaceous plants covering more than 90 percent of the area. The hydrologic functions scored low, receiving 4 out of the possible 12 for lake-fringe. The wetland scored 25 out of 48 in habitat functions, based on the high species diversity and complex habitat structure. However, species evenness is relatively low, with reed canary grass widespread. In addition, the standard wetland rating system is limited in its application to this site because it does not account for contamination impacts in scoring habitat quality. Carty Lake is not designated as federal critical habitat.

ENDANGERED SPECIES ACT SPECIES

The Columbian white-tailed deer (*Odocoileus virginianus leucurus*) is federally designated as endangered and historically occurred in Clark County. Columbian white-tailed deer were recently transplanted from Julia Butler Hansen National Wildlife Refuge to the Refuge (USFWS, 2012) and are present in the Carty Unit. Other federally designated species are not known to occur in or near the project area. Because Carty Lake does not maintain connectivity with Gee Creek (a 4th order tributary of the Columbia River located north and east of Carty Lake) or the Columbia River, federally listed anadromous species are unlikely to utilize Carty Lake; in addition, the proposed project would be conducted in the dry. In the Blackwater Island Research Natural Area (located in the Carty Unit), there are three sites where the federally listed threatened plant water howellia (*Howellia aquatilis*) is known to occur; however, the Natural Area is more than 1 mile north of the project area. The Refuge will perform an intraservice consultation pursuant to Section 7 of the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.) regarding the proposed remedial action.

3.1.1 Wildlife

Surveys and incidental observations have documented over 200 species of birds utilizing the Refuge either seasonally or on a permanent basis (USFWS, 2009, 2010). Over 30 species of waterfowl have been observed, and the Refuge provides important wintering habitat for Canada geese, cackling geese, and tundra swans. Washington State priority designated waterfowl habitat and purple martin foraging areas occur in the vicinity of Carty Lake; priority bald eagle breeding areas are located over 0.5 mile northeast of the project area. Sandhill cranes use the Refuge during migrations, and small numbers overwinter on the Refuge, primarily roosting along the shore of Campbell Lake. These

cranes forage in pastures maintained in the Bachelor Island, River S, and Ridgeport Units. Over 40 species of neotropical migrants either visit during migrations or remain to breed at the Refuge.

Twenty-three species of mammals have been verified on the Refuge (USFWS, 2009, 2010). Common species include the Townsend vole, beaver, raccoon, eastern cottontail, coyote, and black-tailed deer. Non-native nutria (*Myocastor coypus*) are commonly observed in Carty Lake. In December 2012, the USFWS proposed an emergency translocation of rare Columbian white-tailed deer (*Odocoileus virginianus leucurus*) from Julia Butler Hansen Refuge near Cathlamet, Washington, to the Refuge (USFWS, 2012). Emergency relocation of the deer to the Refuge began in January 2013. Surveys conducted on the Refuge during the mid-1990s identified eight species of amphibians and five species of reptiles. Common species include western painted turtles, Pacific tree frogs, bullfrogs, red-legged frogs, and western garter snakes.

An extensive survey of invertebrates on the Refuge has not been conducted (USFWS, 2010). However, the USFWS is concerned about protecting pollinators, given the apparent declines in the populations of several types of pollinating insects. Historical flood events have deposited sandy soils on portions of the Carty Unit. These sandy areas provide burrowing sites for native bees such as the miner bee (Andrena aculeate), and the project is sited such that these areas would not be disturbed.

3.1.2 Fish

The Columbia River and its tributaries support a diversity of anadromous and resident fish species. It also hosts a variety of introduced warm-water fish such as bluegill, largemouth bass, and walleye. More than 40 species of fish have been documented in the Refuge and in the waterways that flow in and around it. Fish found in Carty Lake include primarily warm-water fish: introduced common carp and largescale sucker. Other fish commonly found in the Refuge where Carty Lake lies include introduced goldfish, longnose dace, largescale sucker, brown bullhead, mosquitofish, three-spine stickleback, introduced largemouth bass, introduced black crappie, introduced white crappie, introduced bluegill, and introduced yellow perch. Because Carty Lake does not maintain connectivity with the Columbia River, state-listed and federally listed anadromous species are unlikely to use Carty Lake for spawning or rearing habitat (USFWS, 2010).

Pacific salmon critical habitat is identified in Gee Creek to the northeast of Carty Lake; coastal cutthroat trout (federally designated as threatened), coho salmon (federally designated as threatened), and Pacific smelt (eulachon) (federally designated as threatened) may occur in Gee Creek, based on surveys conducted in the last ten years (USFWS, 2010). If a Gee Creek connection is constructed in the future, salmonids and eulachon may access Carty Lake. Other salmonid populations listed as threatened or endangered (e.g., sockeye) may pass by the Refuge in the Columbia River during migrations.

3.1.3 Environmental Consequences

Under Alternative A, no proposed remedial action would occur and therefore impacts to habitat, wildlife, or fish associated with the action would not occur. Existing wetland habitat would not be covered or converted. However, habitat in the proposed project area is currently severely degraded,

as sediment conditions are not protective of benthos and species that rely on benthos. Several other factors currently negatively impact habitat conditions in the remedy area. While the wetland hosts a relatively high numeric species diversity, species composition is dominated by two non-native invasives (reed canary grass and Himalayan blackberry). The south end of Carty Lake is shallow or seasonally inundated, supporting establishment and propagation of reed canary grass, which outcompetes native species. The buffer habitat around the wetland is characterized by a failing treated-wood retaining wall that is covered with Himalayan blackberry.

Under Alternative B, sediment excavation, clean sand placement, and bulkhead stabilization would take place in the southeastern portion of the Carty Unit. The area surrounding Carty Lake has a long history of agricultural practices; both the upland and the wetland areas in the project area are dominated with non-native plants and provide only modest food and cover resources for native wildlife. Wildlife species that are likely to use the upland areas include Townsend's vole, deer mouse, eastern cottontail, red-tailed hawk and American kestrel, among others. The construction would temporarily disturb wildlife because of increased noise, traffic, and lighting; however, similar available habitat for these species is relatively common in the region. Many species temporarily displaced should return once construction is completed.

Columbian white-tailed deer are present in the Carty Unit but are not known to occur regularly near the project area. If deer are present, the project construction is expected to have a minor, short-term impact on deer feeding and traveling through the site. It is anticipated that the deer likely would avoid the site during construction activity. Once the project was completed, the deer would be expected to return to former uses of the area.

Construction would take place in summer, when water levels are typically lowest and the southern end is not inundated. If surface water is present in the project area, it will be pumped from the excavation area to the main body of Carty Lake. This would result in a temporary reduction of available habitat for fish and other mobile, aquatic-dependent species. Similar aquatic habitat is available near the project area, and the excavation footprint in the 52-acre lake is minimal (approximately 1.5 acres).

Removal of sediment and placement of clean sand would temporarily decrease the abundance of benthic infauna in the excavation footprint. Although benthic prey species would be displaced, populations are expected to fully recover after sediment removal activities are completed; Bolam and Rees (2003) reviewed literature on macrofaunal recovery at coastal dredge sites and found that, generally, recovery took between one and four years in unstressed sites and nine months or less in naturally stressed sites. Adjacent undisturbed habitat north of the project area would provide an established source of benthic invertebrates to colonize the surface substrate. Since new invertebrate communities would recolonize the excavation area, no long-term loss of biological productivity or prey base for fish is expected.

Construction would eliminate existing vegetation in the project footprint, primarily non-native and some native species. The project area would be revegetated with a diverse palette of native species suited for particular habitat zones (e.g., upland and wetland) following construction, improving habitat structure and habitat quality for associated wildlife. Up to 0.23 acre of existing wetland habitat would be covered by the southern bulkhead stabilization embankment and rounded

gravel/rock fish mix stabilization material. However, the revegetated, stabilized embankments would improve wetland buffer habitat. A plant monitoring and maintenance plan would be implemented to ensure long-term success. A permanent gravel access ramp from Port-owned property to the Carty Unit would be constructed, covering some upland habitat on the Refuge consisting of reed canary grass.

The primary environmental consequence of Alternative B is a reduction in fish and wildlife exposure to a continued release of a suite of contaminants into the aquatic environment. The proposed sediment removal would immediately reduce contaminants to below levels protective of ecological receptors. The sand layer would enhance contaminant sequestration in the short term and would provide a clean substrate for benthic community colonization and native plantings.

In summary, Alternative B would result in temporary disturbance of wildlife during construction activities, a temporary decrease in benthic populations, and some loss of degraded habitat. Over the long term, habitat quality would be significantly enhanced because of contaminant removal, removal of non-native invasive species, deepening of the wetland bottom to encourage suppression of invasive species, and planting and maintenance of native vegetation. Wildlife and fish would benefit from removal of sediment contamination to levels protective of ecological receptors and native plantings.

3.2 Physical Environment

The approximately 8.6-acre site is situated in and adjacent to Carty Lake in the southeast corner of the Refuge Carty Unit "lowlands" (see Figure 3-1). The Carty Unit contains forested lands, wetlands, and pasture areas that historically were used for agricultural production. The Carty Unit is bordered by the Port-owned property immediately south and east, Lake River to the west, privately owned farmland and natural areas to the north, and Burlington Northern-Santa Fe railroad tracks to the east. A portion of the Port property is separated from the southern portion of Carty Lake by a treated wooden soldier pile and lagging bulkhead. This bulkhead is approximately 1,800 feet long and between 7 and 10 feet tall.

With the exception of the existing treated-wood bulkhead and the associated grade change, the topography of the project area consists of gently rolling terrain with elevations ranging from 7 feet to 34 feet National Geodetic Vertical Datum of 1929/1947. The 100-year floodplain elevation of Gee Creek (located to the north and east of Carty Lake) is approximately 23.8 feet at the Burlington Northern Santa Fe railroad culvert (see Figure 3-1); this portion of Gee Creek and large portions of the Carty Unit function as a backwater of the Columbia River during the 100-year flood. The 100-year floodplain elevation of Carty Lake is, therefore, approximately 23.8 feet.

Grain size distribution and hydrodynamics indicate that Carty Lake features a low-energy, depositional environment (MFA, 2013). Percent fines in Carty Lake are uniformly high, generally over 75 percent fines. During the rainy season, Gee Creek and Carty Lake can be hydraulically connected at the lake's northern end. During most of the year, Carty Lake has no outlet. Water fluctuations are generally muted and range from 3 to 10 feet, with increases and decreases occurring gradually because there is no direct connection with the Columbia River. Water levels in the project

area are generally shallow and the southern lake end can be dry during low-water conditions (e.g., in the summer).

Carty Lake has limited recreational uses (USFWS, 2010), which can include wildlife photography, wildlife observation, environmental education, and fishing. Boating is not allowed. Trails lead to the Gee Creek portion of the Carty Unit for fishing. Carty Lake itself is not currently readily accessible to visitors; the Refuge maintains a mowed seasonal footpath along the north end of the lake, but this path is flooded during high-water periods and is not heavily used. However, the potential exists for the Refuge to work with the Port to develop a loop trail adjacent to Carty Lake for the public to access from the Port property.

In the future, the USFWS may consider the feasibility of reconnecting Carty Lake either to the Columbia River via Gee Creek or to Lake River through a constructed channel. Of the two options, the Gee Creek connection likely would be most feasible in terms of construction and access for salmonids (USFWS, 2010). The resulting hydrology of the lake could vary considerably, depending on the option selected; however, some changes to the fish, wildlife, and vegetation communities would be expected.

3.2.1 Environmental Consequences

Under Alternative A, the remedial action would not take place, and thus there would be no immediate impacts from the construction on the physical environment. The potential for contaminant transport from the site would remain. The current treated-wood bulkhead is degraded and portions have begun to fail. Complete failure of the wall in the future could result in release of soils into Carty Lake.

Under Alternative B, removal of sediment and placement of clean sand in an area of up to 1.5 acres would temporarily alter existing surface substrate (predominantly fines and some sand) to consist of sand until naturally occurring processes redeposit fines. The bathymetry of the excavation footprint would be deepened a minimum of 6 inches. A temporary isolation berm (likely sandbags) to facilitate excavation in the dry would be removed upon construction completion.

Remedial construction would include a permanent transition from the grades on the Port property to the Refuge in the form of constructed earthen embankments against the existing southern and eastern walls of the bulkhead. Stabilization of the embankments would ensure long-term containment of residual contamination in subsurface soils south and east of the Carty Unit. The embankments would functionally replace the existing bulkhead and would generally consist of common borrow or structural fill and topsoil fill with an outer layer of topsoil approximately 18 inches thick. To eliminate the impact of the eastern embankment on the wetland, the eastern embankment would be constructed at a slope no greater than 2.5H:1V, outside the wetland boundary where possible. For the southern embankment area, a retaining wall structure (to replace the southern wall) was evaluated in collaboration with USFWS staff in an effort to determine the most effective way to minimize impact to the wetland; however, the structure was considered impractical because of significant challenges in managing contaminated soil that is contained behind the existing soldier pile wall, as well as because of cost. To minimize the embankment footprint in the area, this portion of the embankment would be constructed at a nominal 2H:1V slope.

Embankments would be revegetated with native species to enhance habitat structure and control soil erosion.

A permanent gravel access ramp to the Carty Unit from the existing Cell 2 hard trail on Port-owned property would be constructed, reducing the vegetation (currently primarily reed canary grass) footprint in the Carty Unit. A temporary staging area for construction would be identified outside the wetland boundary to avoid wetland impacts and would be sized to minimize soil disturbance. The permanent access and staging footprint in the Refuge would occupy about 0.03 acre and 0.23 acre, respectively.

It is anticipated that traffic use may increase because of construction of the permanent access ramp. Use would generally be limited to one Refuge person's access. Therefore, the minimal increase in traffic would not significantly affect local air quality.

Currently, there is little human noise at the project site and infrequent use by people. During construction, the project site would be subjected to an increase in noise and activity. After completion of construction, the noise and activity would greatly diminish but might remain slightly above current levels because of improved access.

Construction impacts will be temporary, controlled, and eliminated or minimized where possible, and appropriate BMPs will be utilized. A perimeter sediment control (silt) fence placed along the limits of construction will prevent unnecessary impacts to roadways, adjacent properties, and the main portion of Carty Lake. Removal of sediment will be completed with the excavation in an isolated and dewatered condition, using land-based, fixed-arm equipment (excavator). Construction is scheduled for summer, when water levels are typically lowest and the southern end is not inundated; if surface water is present it will be pumped and treated for turbidity, if necessary, prior to discharge to the main body of Carty Lake. Because construction will be conducted in the dry, direct impacts to water quality (e.g., turbidity, dissolved oxygen) will be minimized or eliminated. The sediment handling and dewatering area will be constructed and managed consistent with all erosion-control BMPs to prevent exposed or stockpiled soil erosion due to wind or other natural events and to prevent free decant water from migrating into the adjacent Refuge. During dewatering operations, water quality will be closely monitored for turbidity; water will be treated prior to discharge if necessary. Because of the proximity of the main body of Carty Lake, debris booms and supporting vessels will be required to be on hand and deployed if and when needed. All equipment will be fueled upland or, where fueling near or in water is necessary, within a floating sorbent boom. In order to prevent the migration of site sediments and soil off site during transport of sediment to the landfill, a gravel construction entrance will be built.

3.3 Cultural Resources

A Cultural Resources Inventory and Survey was prepared in 2013 by Willamette Cultural Resources Associates, Ltd. (WillametteCRA) for the proposed remedial action (WillametteCRA, 2013). The cultural resources survey was conducted to specifically address the Archaeological Resources Protection Act, Section 106 of the National Historic Preservation Act, and NEPA requirements. The primary goal of the cultural resources survey and inventory was to assess the likelihood that an undertaking at the site will directly or indirectly alter the character or use of historic properties.

The cultural material located does not constitute an archaeological record that is eligible for the National Register of Historic Places. After a survey of 2 acres and an excavation of 19 shovel probes, one previously unrecorded resource, a precontact lithic isolate, was identified. This artifact is isolated, and it is the professional opinion of WillametteCRA that no significant archaeological or historic resources would be affected by the proposed remedial action. No additional archaeological investigations for the area are recommended at this time.

3.3.1 Environmental Consequences

Under Alternative A, the site and, subsequently, associated resources would not be disturbed.

In regard to Alternative B, the Cultural Resources Inventory and Survey indicated that it is unlikely that significant cultural resources would be found at the site. However, an Inadvertent Discovery Plan has been developed that specifies that an archaeological monitor would be present during sediment excavation and berm construction at Carty Lake. Tribes may also choose to have monitors present during cleanup activity. The plan also defines procedures to be followed should human remains or archaeological resources be encountered.

3.4 Environmental Justice

No one group or tribe represented in the community would be disproportionately impacted by construction of the remedial action. Tribes historically used Carty Lake for wapato harvest (USFWS, 2010) and may desire to use the area for this purpose in the future (Mercuri, 2012).

Under Alternative A, no action would take place. The potential for dioxin exposure due to wapato harvest and consumption was not explicitly evaluated, however, future use under current conditions is not expected to result in unacceptable risk to human health. Studies have shown that dioxins are not likely to be incorporated into any substantial fraction of the edible plant material (Paustenbach et al., 2006). In addition, a model developed for restoration workers showed sediment direct contact and incidental ingestion is not expected to result in unacceptable risk (MFA, 2013).

Under Alternative B, impacted sediment would be removed and wapato would be replanted as specified in the planting plan (forthcoming). Wapato would therefore continue to be available in the project area for Tribal members who may choose to harvest and consume wapato. Thus, the Alternatives would not result in any environmental justice issues.

3.5 Cumulative Effects

Cumulative effects result from the incremental impact of an action when added to other "past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions" (40 CFR 1508.7). The effects of an action may be insignificant when evaluated individually, but when added to other actions outside the immediate project area, they may contribute cumulatively to measurable environmental change. The scope for analysis of cumulative impacts is therefore larger than the immediate project area to more broadly consider the effects of

other activities occurring within the adjacent landscape. This scope includes consideration of an action in relation to the stated missions for refuge lands.

The mission of the NWRS is to administer a national network of lands and waters for the conservation, management, and, where appropriate, restoration of the fish, wildlife, and plant resources and their habitats in the United States for the benefit of present and future generations of Americans. Missions specific to the Refuge include its "use as an inviolate sanctuary, or for any other management purpose, for migratory birds" 16 U.S.C. § 715d (MBCA) and "to provide wintering habitat for dusky Canada goose and other waterfowl" (MBCC Memorandum Number 1, May 18, 1965). In addition, the Refuge has developed a CCP that establishes operational goals and objectives for wildlife, habitat, and public use (see Section 1.1). These missions and goals underline the continued need for habitat quality supportive of fish, wildlife, and plant resources on Refuge lands.

3.5.1 Environmental Consequences

Under Alternative A, impacts to habitat, wildlife, and fish associated with construction would not occur. However, not implementing the remedial action does not address environmental contamination present in sediments and is therefore not consistent with Refuge goals. Species directly associated with site sediments (e.g., benthic invertebrates) would continue to be exposed to chemical concentrations above risk-based levels, potentially resulting in long-term impacts to individuals and populations. Loss of benthos may negatively impact dependent species. Species indirectly associated with site sediments (e.g., predatory fish, birds, and mammals) would continue to ingest prey potentially impacted by chemicals, resulting in chemical bioaccumulation and associated impacts. Chemical concentrations and potential for contaminant transport could impede reasonably foreseeable activities in the project vicinity, including activities that would benefit listed salmonids in nearby waterways (e.g., reestablishing the former connection between Carty Lake and the Columbia River). Structural issues related to the existing treated-wood bulkhead would not be addressed; complete failure in the future could result in release of impacted subsurface soils to the Carty Unit. Non-native species such as reed canary grass would remain established and likely would continue to outcompete and supplant remaining native species.

Alternative B supports both the NWRS's and the Refuge's missions by providing improved habitat quality on Refuge land. The proposed project would improve long-term habitat quality by employing a technique (sediment removal) that permanently reduces contaminants in sediments. Long-term beneficial effects to aquatic-dependent species would be realized by significantly reducing chemicals in sediment that transfer directly or indirectly (via trophic transfer) to organisms utilizing the project area. Provision of clean substrate (sand) is expected to promote natural attenuation of the biologically active surface sediments, increasing benthic invertebrate abundance in the long term and thereby enhancing the prey base for higher-trophic-level species. Clean substrate also would be expected to promote growth and establishment of wetland vegetation in the long term. Native plantings would increase habitat quality and provide erosion control on constructed embankments.

Alternative B would result in some habitat loss and temporary disturbance of wildlife during construction activities. However, based on the environmental enhancement that would result,

implementation of BMPs to minimize construction impacts, and a remedy design that minimizes wetland habitat loss, the proposed construction does not represent a significant adverse impact on the natural environment.

PREPARERS AND REVIEWERS

Name	Position	Degrees	Experience
Phil Wiescher, PhD	Ecologist	PhD Ecology	Two years
Michael Stringer, MS	Ecologist	MS Conservation Biology	Eight years
Benjamin Harrison	USFWS— Deputy Regional Chief		

LIMITATIONS

The services undertaken in completing this report were performed consistent with generally accepted professional consulting principles and practices. No other warranty, express or implied, is made. These services were performed consistent with our agreement with our client. This report is solely for the use and information of our client unless otherwise noted. Any reliance on this report by a third party is at such party's sole risk.

Opinions and recommendations contained in this report apply to conditions existing when services were performed and are intended only for the client, purposes, locations, time frames, and project parameters indicated. We are not responsible for the impacts of any changes in environmental standards, practices, or regulations subsequent to performance of services. We do not warrant the accuracy of information supplied by others, or the use of segregated portions of this report.

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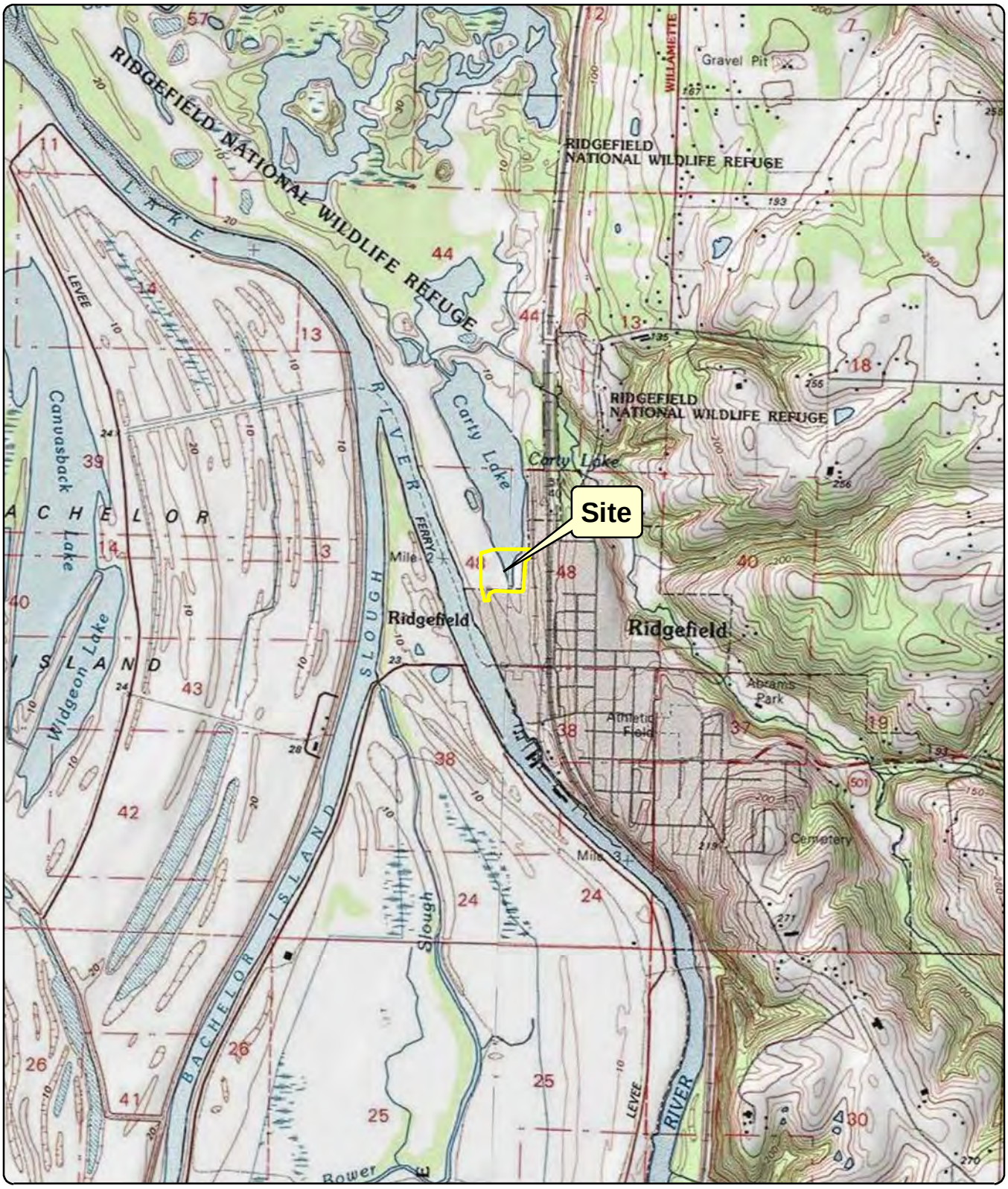
FIGURES



Source: Topographic Quadrangle obtained from ArcGIS Online Services/NGS-USGS TOPO! US Geological Survey (1999)
7.5-minute topographic quadrangle: Ridgefield
Address: Lake River Industrial Site
111 W. Division Street, Ridgefield, WA 98642
Section: 24 Township: 4N Range: 1W Of Willamette Meridian

Figure 1-1
Site Location

Carty Lake
Ridgefield, Washington

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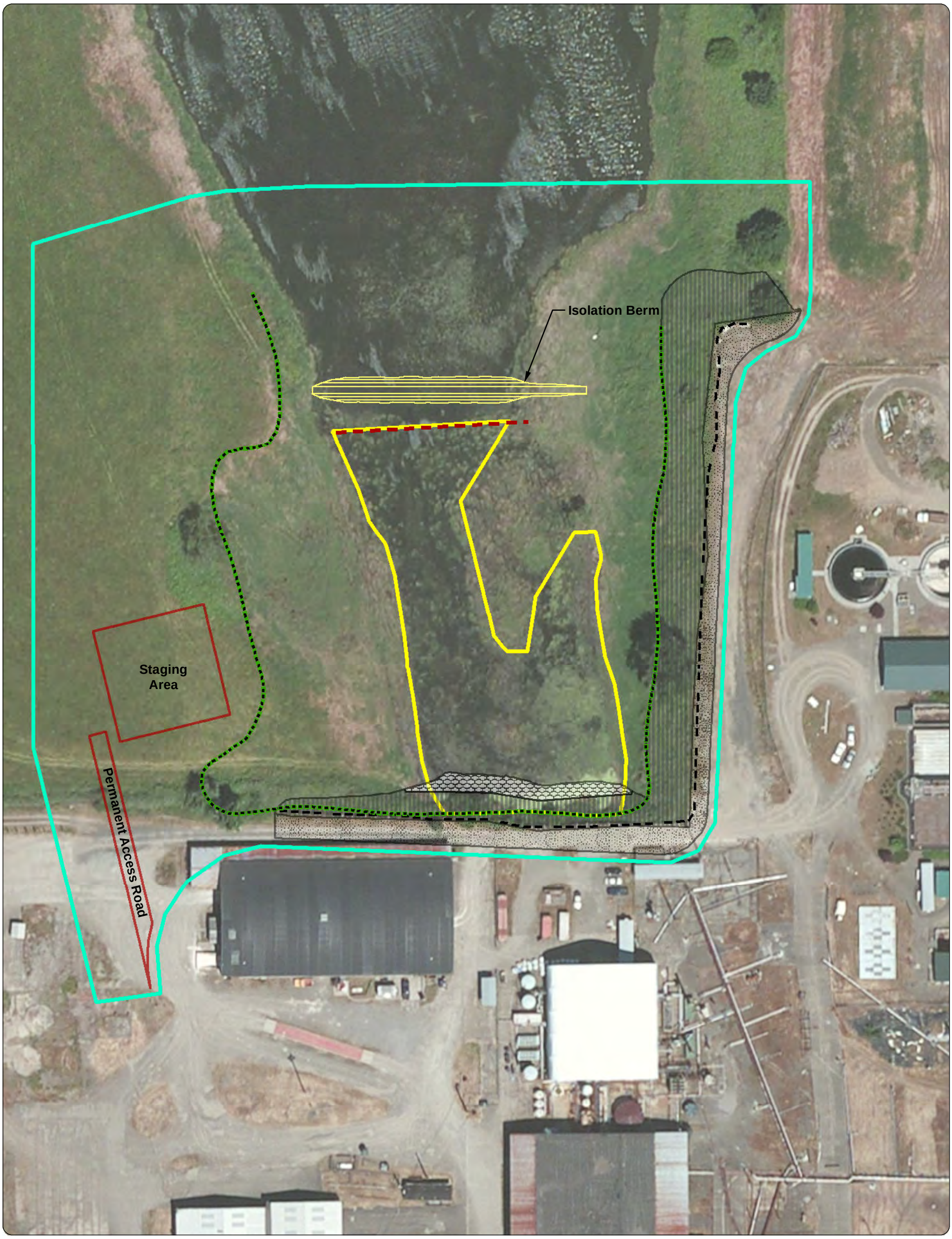
0 1,000 2,000
Feet

Project: 9003.01.20 Produced By: jschane Approved By: J. King Print Date: 11/14/2013 Path: X:\9003.01 Port of Ridgefield\40\Projects\06\Carty Lake USFW Permitting\Fig1-1_Site Location.mxd



Source: Aerial photograph obtained from ESRI, Inc. ArcGIS Online (2010).

Legend

- Earth Embankment
- Clean Fill
- Fish Mix Placement
- Retaining Wall
- Delineated Wetland Boundary
- Excavation Boundary
- Site Boundary

i.e., greatest extent that may be impacted by remedial action activities including remedial construction, staging, and access.

Figure 1-2
Alternative B
Project Components

Carty Lake
Ridgefield, Washington

0 50 100
Feet

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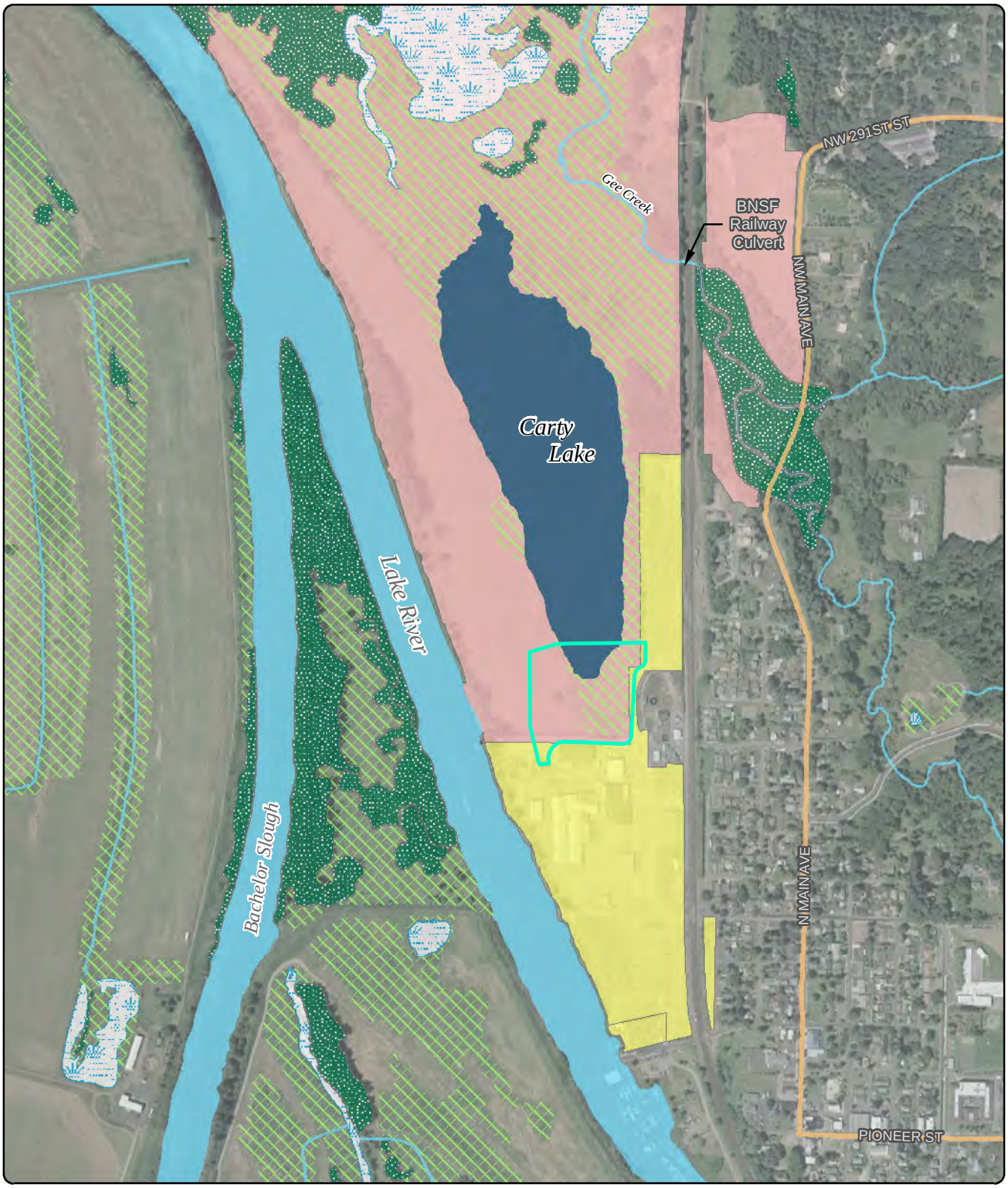
Project: 9003.01.40 Produced By: jschane Approved By: P. Wiescher Print Date: 11/18/2013



Source: Aerial photograph and shaded relief obtained from ESRI, Inc. ArcGIS Online.

Notes:
1. Wetlands Delineation obtained from the U.S. Fish and Wildlife Service, National Wetlands Inventory.

Legend

- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Riverine
- Port-Owned Property
- RNWR-Carty Unit
- Site Boundary

Figure 3-1
Carty Lake Setting

Carty Lake
Ridgefield, Washington

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Print Date: 11/15/2013
Approved By: P.Wiescher
Produced By: jschane
Project: 9003.01.40

ATTACHMENT A

Department of Ecology
SEPA DETERMINATION FOR CARTY LAKE REMEDIAL ACTION
PACIFIC WOOD TREATING SITE

SUBSTANTIVE REQUIREMENTS OF LOCAL AND STATE PERMITS
City of Ridgefield permits
Washington Department of Fish and Wildlife Hydraulic Project Approval

City of Ridgefield
Shoreline Master Program

CHAPTER 2
APPLICABILITY, SHORELINE PERMITS AND EXEMPTIONS

2.1 Applicability

Response: The Applicant understands that the proposed project area in Carty Lake is not currently identified in the adopted city of Ridgefield Shoreline Master Plan (SMP). However, the following materials have been prepared to provide a response to the substantive requirements of the SMP in order to demonstrate compliance with those requirements. The Applicant understands that in cases where a shoreland area is not designated but should be within the jurisdiction of the SMP, the default designation is Urban Conservancy, and therefore the following narrative addresses the substantive criteria of the SMP.

2.2 Shoreline Substantial Development Permit Required

Response: As indicated below, substantial compliance is met, pursuant to Revised Code of Washington (RCW), given that remedial actions conducted under a consent decree are exempt from the procedural requirements of applicable state and all local permits (RCW 70.105D.090).

CHAPTER 3
SHORELINE MASTER PROGRAM GOALS AND POLICIES

3.7 Public Access and Recreation

3.7.2 Policies

1. **Provide, protect, and enhance a public access system that is both physical and visual; utilizes both private and public lands; increases the amount and diversity of public access to the State's shorelines and adjacent areas; and is consistent with the shoreline character and functions, private rights, and public safety.**
2. **Increase and diversify recreational opportunities by promoting the continued public acquisition of appropriate shoreline areas for public use, and develop recreation facilities so that they are distributed throughout the community to foster convenient access.**

3. **Locate public access and recreational facilities in a manner that encourages variety, accessibility, and connectivity in a manner that will preserve the natural characteristics and functions of the shoreline.**

4. **Encourage public access provisions consistent with adopted City and County trails plans.**

5. **Encourage public access as part of each development project by a public entity, and for all private development (except residential development of less than four parcels), unless such access is shown to be incompatible due to reasons of safety, security, or impact to the shoreline environment.**

6. **Discourage shoreline uses that curtail or reduce public access unless such restriction is in the interest of the environment, public health, and safety, or is necessary to a proposed beneficial use.**

7. **Consider private rights, public safety, and protection of shoreline ecological functions and processes when providing public access and recreational opportunities.**

Response: The proposed work is in the shoreline area of Carty Lake, which is located entirely within the Ridgefield National Wildlife Refuge (RNWR). Therefore, the Applicant does not control access to the RNWR or to a large portion of the shoreline area. The portion of the shoreline area that lies outside the RNWR is owned by the Applicant. The proposed work does not include development. Public access to the shoreline area owned by the Applicant will be increased by completion of a public-access, multipurpose trail area within the shoreline area (see Sheet C5); a portion of the proposed trail will connect to an existing trail to the south, in the Lake River shoreline area, and an existing trail to the north, along the RNWR. The Applicant has designed the landscaping plan for the proposed work to retain existing view corridors to Carty Lake and the RNWR (see Sheets L0 through L4). The proposed action meets the standard.

3.8 Restoration

3.8.2 Policies

1. **Shorelines that are biologically degraded should be reclaimed and restored to the greatest extent feasible. Implementation of restoration projects identified in the Shoreline Restoration Plan that are focused on restoring degraded habitat in shoreline jurisdiction take precedence over other restoration projects. Implementation of restoration projects on shorelines of statewide significance take precedence over implementation of restoration projects on other shorelines of the state.**

Response: The Applicant proposes to rehabilitate degraded habitat through sediment excavation, bank stabilization, and revegetation with native species to the maximum extent feasible, improving ecosystem functions; the remediation is required by the state. The proposed action meets the standard.

2. **Restoration strategies should be developed and implemented such that ecosystem processes are sustainable in the long-term.**

Response: The Applicant proposes to permanently remove contaminated sediment and to stabilize a failing bulkhead that retains upland soils, providing long-term ecosystem functioning improvement. The work area will be revegetated with native plants; plantings will be monitored and maintained for five years. The proposed action meets the standard.

3. Restoration of shoreline ecological functions should be encouraged during redevelopment.

Response: This standard is not applicable. The Applicant proposes a remedial action to restore ecological functions in a wetland. The proposed work does not include development and is in the shoreline area of Carty Lake, which is located entirely within the RNWR; future development is therefore not expected. The proposed action meets the standard.

4. Restoration efforts should include retrofitting existing stormwater control facilities to improve water quality.

Response: This standard is not applicable. No stormwater control facilities, either existing or proposed, are located in the project area.

5. Restoration efforts should consider a focus on floodplain and channel migration zone reconnection where rivers are confined by levees.

Response: This standard is not applicable. The Applicant proposes to conduct a state-required remedial action in a wetland.

6. Restoration projects should have adaptive management techniques including adjusting the project design, correcting problems (barriers to success), and implementing contingency measures.

Response: The Applicant has included contingency measures, best management practices (BMPs), and adaptive management techniques in its planting plans. The proposed action meets the standard.

7. Eradication of invasive species, including noxious weeds and non-native species, should be undertaken as needed.

Response: The Applicant proposes to remove noxious weeds and non-native species before planting native vegetation (see Sheets L0 through L4). A monitoring and maintenance plan has been developed to limit non-native species encroachment (*Draft Carty Lake Mitigation Plan Addendum to the Joint Aquatic Resources Permit Application NO. NWS-2013-1209*, MFA, 2014). The proposed action meets the standard.

8. Planting of vegetation that enhances shoreline ecological function should be encouraged.

Response: The Applicant proposes to plant native vegetation suited to the postconstruction grade and habitat type to maximize ecological function. The proposed action meets the standard.

9. **Education programs should be developed for:**

   a. **Property owners about proper vegetation/landscape maintenance and the impacts of shore armoring and over-water structures; and**

   b. **Boaters about proper waste disposal methods, anchoring techniques, best boating practices, and the State's invasive species inspection program pursuant to RCW 77.15.290.**

Response: The Applicant has coordinated the remedial design and associated maintenance and monitoring measures with the property owner (the U.S. Fish and Wildlife Service [USFWS]). Boating is not allowed on Carty Lake. The proposed action meets the standard.

10. **Cooperative restoration actions involving local, state, and federal agencies, Native American tribes, non-government organizations, and landowners should be encouraged.**

Response: The Applicant has coordinated the remedial action design with multiple local, state, and federal agencies through the Section 106 permitting process. Native American tribes have been consulted throughout project development. The proposed action meets the standard.

3.9 Shoreline Modification and Stabilization

3.9.2 Policies

1. **New developments should be located in such a manner as to not require shoreline stabilization measures.**

Response: This standard is not applicable. No development is proposed.

2. **When necessary, natural, non-structural shoreline stabilization measures are preferred over structural stabilization measures. Alternatives for shoreline stabilization should be based on the following hierarchy of preference:**

   a. **No action;**

   b. **Flexible stabilization works constructed of natural materials, including soft shore protection, bioengineering, beach nourishment, protective berms, or vegetative stabilization;**

   c. **Rigid works constructed of structural materials such as riprap or concrete.**

Response: The proposed work includes stabilization of an existing, failing wooden bulkhead. This stabilization is required to prevent further bulkhead failure, and subsequent erosion, and to maintain the integrity of the clean environmental cap on the port property. The applicant proposes to construct a protective berm with vegetated turf reinforcement mat and rounded rock fish mix surfacing to provide stabilization (see Sheets C5 through C7). The proposed action meets the standard.

3. **Allow new or expanded structural shore stabilization, including bulkheads, only where it is demonstrated to be necessary to protect an existing primary structure that is in danger of loss or substantial damage, and where such**

structures and structural stabilization would not cause a net loss of shoreline ecological functions and processes.

Response: This standard is not applicable. No new or expanded structural shore stabilization is proposed. The proposed work includes permanent stabilization of an existing primary structure by installation of a bioengineered protective berm (see Sheets C5 through C7).

4. **Shoreline stabilization should be located and designed to accommodate the physical character and hydraulic energy potential of a specific shoreline reach, which may differ substantially from adjacent reaches.**

Response: The proposed shoreline stabilization has been designed in accordance with the U.S. Army Corps of Engineers (COE) Coastal Engineering Manual to accommodate the physical character and hydraulic energy potential of the shoreline reach. The proposed action meets the standard.

5. **Provisions for multiple use, restoration, and/or public shore access should be incorporated into the location, design and maintenance of shore stabilization for public or quasi-public developments whenever safely compatible with the primary purpose. Shoreline stabilization on publicly owned shorelines should not be allowed to decrease long-term public use of the shoreline.**

Response: No development is proposed. The area of the proposed shoreline stabilization is located entirely within the RNWR; public access to the area is currently by permit only. Should the unit be opened to public access in the future, the proposed shoreline stabilization measures will not inhibit or deter public access. The proposed action meets the standard.

6. **Shoreline stabilization projects should be developed in a coordinated manner among affected property owners and public agencies within a reach where feasible, particularly those that cross jurisdictional boundaries, to address ecological and geo-hydraulic processes and sediment conveyance.**

Response: The Applicant has included the Corps, the USFWS, the Washington State Department of Fish and Wildlife (WDFW), and the Washington State Department of Ecology (Ecology) in the planning of the proposed work. The agencies are in agreement with the proposed shoreline stabilization measures. The proposed action meets the standard.

7. **Failing, harmful, unnecessary, or ineffective shoreline stabilization structures should be removed or replaced to restore shoreline ecological functions and processes.**

Response: The proposed shoreline stabilization measures are intended solely to prevent further failure of the existing wooden bulkhead and to maintain the integrity of the existing clean soil environmental cap on the Lake River Industrial Site (LRIS). The proposed shoreline stabilization measures have been designed to restore shoreline ecological functions and processes. The proposed action meets the standard.

8. **Larger works such as jetties, breakwaters, weirs, or groin systems should be permitted only for water-dependent uses and where mitigated to provide no net loss of shoreline ecological functions and processes.**

Response: This standard is not applicable. No larger works are proposed.

9. **Lower impact structures, including floating, portable or submerged breakwater structures, or several smaller discontinuous structures, are preferred over higher impact structures.**

Response: This standard is not applicable. Stabilization of the failing, existing wooden bulkhead will extend to the top of the existing structure (see Sheet C7).

10. **Encourage and facilitate levee setback (including but not limited to, pulling back an existing levee to allow for a larger floodplain area contiguous to a water body), levee removal, and other shoreline enhancement projects.**

Response: This standard is not applicable. There are no existing levees in the project area.

11. **Materials used for construction of shoreline stabilization should be selected for durability, ease of maintenance, and compatibility with local shoreline features.**

Response: The proposed shoreline stabilization measures were selected for durability, ease of maintenance, and compatibility with local shoreline features. The proposed shoreline stabilization measures include turf reinforcement mat with native vegetation; a small amount of durable, rounded-rock fish mix will also be placed at the toe of the proposed berm (see Section 2, Sheet C7) designed in accordance with the Corps Coastal Engineering Manual (see 3.9.2 Response 4, above). The proposed action meets the standard.

12. **Development and shoreline modifications that would result in interference with the process of channel migration that may cause significant adverse impacts to property or public improvements and/or result in a net loss of shoreline ecological functions within the rivers and streams should be limited.**

Response: This standard is not applicable. The proposed work is in the shoreline area of Carty Lake, which is hydraulically connected to any other waterbody only under occasional high-water conditions. The proposed work will not cause significant adverse impacts to property or public improvements or result in a net loss of shoreline ecological function.

3.13 Water Quality and Quantity

3.13.2 Policies

1. **Encourage the location, construction, operation, and maintenance of shoreline uses, developments, and activities to be focused on maintaining or improving the quality and quantity of surface and ground water over the long term.**

Response: The proposed action will not result in the location, construction, operation, or maintenance of new shoreline uses. Rather, the proposal is intended to remove contaminated materials and not only to restore the shoreline but to improve it to a state that will have positive impacts on the long-term quality of surface water.

2. **Minimize, through effective education, site planning, and best management practices, the inadvertent release of chemicals, activities that cause erosion, stormwater runoff, and faulty on-site sewage systems that could contaminate or cause adverse effects on water quality.**

Response: The Applicant will implement BMPs to eliminate or reduce water quality impacts to the maximum extent practicable. Construction will be conducted "in the dry" to minimize water quality impacts. The proposed remedial action includes additional components designed to minimize erosion, runoff, and chemical release (i.e., placement of a clean sand layer in the sediment excavation area to minimize chemical residuals, slope stabilization and native plantings to minimize erosion and runoff). The proposed action meets the standard.

3. **Encourage the maintenance and restoration of appropriate vegetative buffers along surface waters to improve water temperature and reduce the adverse effects of erosion and runoff.**

Response: The Applicant proposes to plant native vegetation in the wetland and surrounding areas suited to the postconstruction grade and habitat type in order to reduce erosion and runoff (see Sheets L0 through L4). A plant monitoring and maintenance plan has been developed to maintain native vegetation and associated functions. The proposed action meets the standard.

CHAPTER 4
SHORELINE DESIGNATIONS

4.3.3 Urban Conservancy Shoreline Designation

4.3.3.1 Purpose

The purpose of the "Urban Conservancy" shoreline designation is to protect and restore shoreline ecological functions of open space, floodplains, and other sensitive lands, where they exist in urban and developed settings, while allowing a variety of compatible uses.

4.3.3.2 Designation Criteria

Response: The Applicant understands that the project area currently has no designation in the SMP, and in such situations, the default designation shall be Urban Conservancy. Therefore, the application addresses the substantive requirements of this section.

4.3.3.3 Areas Designated

The Urban Conservancy shoreline designation applies to areas as shown on a copy of the Official Shoreline Designation Map, City of Ridgefield, Washington (Section 4.4) and on a copy of the unofficial map in Appendix A.

Response: The Applicant understands that the project area currently has no designation in the SMP, and in such situations, the default designation shall be Urban Conservancy. Therefore, the application addresses the substantive requirements of this section.

4.3.3.4 Management Policies

In addition to the other applicable policies and standards of this Program the following management policies shall apply:

1. **Uses that preserve the natural character of the area or promote preservation of open space or critical areas either directly or over the long term should be the primary allowed uses. Uses that result in restoration of shoreline ecological functions should be allowed if the use is otherwise compatible with the purpose of the Urban Conservancy shoreline designation and the setting.**

Response: The proposed remedial action will not result in permanent uses on the subject property area. The remediation will result in an improved shoreline through the restoration of the bank, removal of invasive species, and placement of native plant species. The standard has been satisfied.

4. **Public access and public recreation objectives should be implemented whenever feasible and when significant ecological impacts can be mitigated.**

Response: Public access is not available from the shoreline of Carty Lake in the project area. The standard is not applicable.

5. **Thinning or removal of vegetation should be limited to that necessary to**
   a. **Remove noxious vegetation and invasive species;**
   b. **Provide physical or visual access to the shoreline; or**
   c. **Maintain or enhance an existing use consistent with critical areas protection and maintenance or enhancement of shoreline ecological functions.**

Response: The proposed remedial action will remove existing vegetation in the work area, and native vegetation will be planted. The native vegetation will be maintained and monitored for five years. The standard has been satisfied.

6. **Public access and public recreation facilities are a preferred use if they will not cause substantial ecological impacts and when restoration of ecological functions is incorporated.**

Response: Public access is not available from the shoreline of Carty Lake in the project area. The standard is not applicable.

7. **Low intensity water-oriented commercial uses may be permitted if compatible with surrounding uses.**

Response: The proposed remedial action will not result in permanent uses on the subject property area. The remediation will result in an improved shoreline through the restoration of the bank, removal of invasive species, and placement of native plant species. The standard has been satisfied.

4.4 Official Shoreline Map

4.4.1 Map Established

1. **The location and extent of areas under the jurisdiction of this Program, and the boundaries of various shoreline designations affecting the lands and waters of the City shall be as shown on the map entitled, "Official Shoreline Designation Map, City of Ridgefield, Washington." All the notations, references, amendments, and other information shown on the "Official Shoreline Designation Map" are hereby made a part of this Program, as if such information set forth on the map were fully described herein.**

Response: The Applicant understands that the proposed project area in Carty Lake is not currently identified in the adopted city of Ridgefield SMP. However, the following materials have been prepared to provide a response to the substantive requirements of the SMP in order to demonstrate compliance with those requirements. The Applicant understands that in cases where a shoreland area is not designated but should be within the jurisdiction of the SMP, the default designation is Urban Conservancy, and therefore the following narrative addresses the SMP criteria.

CHAPTER 5
GENERAL SHORELINE USE AND DEVELOPMENT REGULATIONS

All uses and development activities in shoreline jurisdiction shall be subject to the following general standards and those in Chapter 5A in addition to the applicable use-specific standards in Chapter 6.

5.1 General Shoreline Use and Development Regulations

1. **Shoreline uses and developments that are water-dependent shall be given priority.**

Response: The Applicant proposes a remedial action to rehabilitate aquatic habitat in the wetland fringe of Carty Lake in the RNWR. The proposed action supports the shoreline uses of the lake, including provision of suitable habitat for aquatic-dependent wildlife.

2. **The applicant shall demonstrate all reasonable efforts have been taken to avoid and where unavoidable, minimize and mitigate impacts such that no net loss of critical area and shoreline ecological function is achieved. Mitigation shall occur in the following order of priority:**

    a. **Avoiding the impact altogether by not taking a certain action or parts of an action. This may necessitate a redesign of the proposal.**

    b. **Minimizing unavoidable impacts by limiting the degree or magnitude of the action and its implementation by using appropriate technology or by taking affirmative steps to avoid or reduce impacts. The applicant shall seek to minimize fragmentation of the resource to the greatest extent possible.**

c. Rectifying the impact by repairing, rehabilitating, or restoring the affected environment;

d. Reducing or eliminating the impact over time by preservation and maintenance operations;

e. Compensating for the impact by replacing, enhancing, or providing substitute resources or environments. The compensatory mitigation shall be designed to achieve the functions as soon as practicable.

f. Monitoring the impact and the compensation projects and taking appropriate corrective measures.

Response: The Applicant has incorporated mitigation sequencing (avoiding, minimizing, and mitigating impacts) throughout the project design, which has been overseen by Ecology and coordinated with the USFWS. The project is self-mitigating,[1] and compensatory mitigation is not required.[2] The USFWS concurs with this determination. The proposed action meets the standards.

Avoidance approaches include the following:

- The in-water remedial investigation used a sample-intensive methodology to ensure that only areas exceeding cleanup levels would be excavated. Other areas are therefore avoided and are not disturbed unnecessarily.
- Bank stabilization along the eastern side of the wetland was redesigned from a 3:1 soil slope to a 2.5:1 (minimum) slope to avoid wetland encroachment (see Section 1, Sheet C7).
- A spill prevention and pollution control plan will be implemented during construction, along with erosion- and sediment-control BMPs, to avoid potential impacts to water quality.

Minimization measures include the following:

- Bank stabilization on the southern side of the wetland is designed at a 2:1 slope (see Section 2, Sheet C7). This slope was selected as the preferred

[1] If the typical practice of calculating wetland mitigation and impact areas were applied to this project, then the area of in-water rehabilitation (approximately 1 acre, not including contingency) would be compared to the area of wetland filled (approximately 0.17 acre, not including contingency). This yields a 6:1 ratio. As described in the January 21, 2014, letter to Mr. Eric Eisemann, the mitigation ratio for rehabilitation in Category 2 wetlands is listed as 8:1 (Table 18.280-7). As stated in the Ridgefield Municipal Code (RMC), the compensatory mitigation ratios listed shall be consistent with the 2004 Ecology Guidance on Wetland Mitigation in Washington State, Part 1: Laws, Rules, Policies, and Guidance Related to Wetland Mitigation (Ecology publication No. 04-06-013a), or as revised by Ecology. The Ecology (2004) draft guidance document is obsolete and has been revised and replaced with the 2006 Wetland Mitigation in Washington State Part 1: Agency Policies and Guidance (Ecology publication No. 06-06-011a). The updated document specifies a 6:1 mitigation ratio for rehabilitation in Category 2 wetlands (Table 1a in Ecology publication No. 06-06-011a). The 6:1 mitigation ratio is therefore consistent with RMC and is appropriate for evaluating Carty Lake remedial action project impacts.

[2] Note that the Corps Section 404 permitting for the remedial action is under way and that the Corps mitigation evaluation operates under a different framework. The Corps is requiring purchase of wetland credits through a Columbia River mitigation bank. The port is in the process of accommodating this request. The Corps requirements are offered for information purposes only.

alternative because it minimizes encroachment into the wetland. Other evaluated stabilization designs (e.g., 3:1 slope, ecology blocks) would result in greater encroachment or were infeasible.

- The sediment area will be dewatered before excavation. Construction in the dry allows the use of conventional excavation equipment and minimizes the disturbance of adjacent sediments and wetlands.
- Native vegetation will be preserved where possible.
- The sediment excavation area will be functionally isolated (using sandbags or placement of a temporary isolation berm) from wetland habitat to the north (see Sheet C5), thereby minimizing impacts outside the work area.

The following measures will mitigate construction impacts:

- **Sediment rehabilitation.** Contaminated sediments will be removed.
- **Invasive-species control.** At the request of the USFWS, the final depth of Carty Lake in the excavation area will be at least 6 inches deeper than the current condition to inhibit the growth of reed canary grass.
- **Bank enhancement.** The proposed bank stabilization elements include remediate an existing wall condition (an abrupt, approximately 15-foot change in grade from the higher-elevation Miller's Landing to the lower-elevation wetlands of the Carty Unit), with more gradual slopes planted with a diverse palette of native plants. This will increase both the area and the quality of transition habitat between the wetland and the surrounding uplands.
- **Native wetland plantings.** The excavation area and surrounding areas where work will take place will be planted with native species suited to the post-remedy elevations, enhancing habitat quality.
- Maintenance and monitoring. A monitoring approach and adaptive management and maintenance techniques were developed to ensure that plantings are effective.

The standard has been satisfied.

3. In addition to compensatory mitigation, unavoidable adverse impacts may be further addressed through voluntary restoration efforts.

Response: The remediation does not propose any additional restoration efforts.

4. Shoreline uses and developments shall not cause impacts that require remedial action or loss of shoreline ecological functions on other properties.

Response: This standard is not applicable. The Applicant proposes a remedial action designed specifically to increase ecological functions.

5. Shoreline uses and developments shall be located and designed in a manner such that shoreline stabilization is not necessary at the time of development and will not be necessary in the future for the subject property or other nearby shoreline properties unless it can be demonstrated that stabilization is the

only alternative that allows a reasonable and appropriate water-dependent use to become established or expand or protects public safety and existing primary structures.

Response: No development is proposed. The Applicant proposes to construct shoreline stabilization measures solely to prevent further failure of the existing wooden bulkhead and to maintain the integrity of the existing clean soil environmental cap on the LRIS. Further failure of this bulkhead presents a risk to both public safety and the environment. The proposed shoreline stabilization measures have been designed to restore shoreline ecological functions and processes.

6. **Land shall not be cleared, graded, filled, excavated or otherwise altered prior to issuance of the necessary permits and approvals including a Shoreline Statement of Exemption for a proposed shoreline use or development to determine if environmental impacts have been avoided, minimized and mitigated to result in no net loss of ecological functions.**

Response: The Applicant is pursuing approval through the state Joint Aquatic Resources Permit Application program, which includes applications for federal, state, and local permits. Pursuant to RCW 70.105D.090, remedial actions conducted under a consent decree are exempt from the procedural requirements of applicable state permits and all local permits. However, Ecology shall ensure compliance with the substantive provisions of these permits. The Applicant has provided these narrative responses to demonstrate compliance with the substantive provisions identified by the city.

7. **Non-water-oriented uses shall not adversely impact or displace water-oriented shoreline uses.**

Response: No non-water-oriented uses are currently proposed. The standard is not applicable.

8. **Single family residential uses shall be allowed on all shorelands not subject to a preference for commercial or industrial water-dependent uses, and shall be located, designed and used in accordance with applicable policies and standards of this Program. However, single family residences are prohibited in the Natural shoreline designation, and new floating homes are prohibited in the Aquatic shoreline designation.**

Response: Single-family residential uses are not proposed. The standard is not applicable.

9. **On navigable waters or their beds, all uses and developments should be located and designed to:**

   a. Minimize interference with surface navigation;

   b. Consider impacts to public views; and

   c. Allow for the safe, unobstructed passage of fish and wildlife, particularly species dependent on migration.

Response: The proposed remedial action will not interfere with surface navigation, likely will improve public views through the removal of noxious invasive species, and will improve habitat for fish and wildlife through the removal of toxic materials and placement of native plant species. The standard has been satisfied.

10. **Hazardous materials shall be disposed of and other steps be taken to protect the ecological integrity of the shoreline area in accordance with the other policies and regulations of this Program as amended and all other applicable federal, state, and local statutes, codes, and ordinances. Environmental remediation actions pursuant to a consent decree, order, or agreed order issued under RCW 70.105(D) are exempt from the requirement to obtain an SSDP, SCUP, or SVAR under this Program but must comply with the substantive requirements of the Act and this Program. Any development or redevelopment on a remediated site must occur consistent with any covenants running with the land, the Act and this Program. (See Sections 1.7(6), 2.3.2(19), and 6.1(3).)**

Response: The proposed work will not include the generation, handling, or disposal of hazardous materials. The remedial and shoreline-stabilization designs are both intended to protect the ecological integrity of the shoreline area. The proposed work is pursuant to a Consent Decree with the State of Washington; the proposed work will comply with the substantive requirements of the Act and this program. No development or redevelopment is proposed.

11. **In-water work shall be scheduled to protect biological productivity (including but not limited to fish runs, spawning, and benthic productivity). In-water work shall not occur in areas used for commercial fishing during a fishing season unless specifically addressed and mitigated for in the permit.**

Response: The Applicant proposes to conduct work during the low-water season to minimize ecological disturbance, consistent with a USFWS request. The project area is not a commercial fishing area. The standard has been satisfied.

12. **The effect of proposed in-stream structures on bank margin habitat, channel migration, and floodplain processes should be evaluated during permit review.**

Response: The standard is not applicable. The Applicant does not propose to construct in-stream structures.

13. **Previous approvals of master plans for projects in shoreline jurisdiction should be accepted. New phases of projects for which no master plan has yet been approved, or for which major changes are being proposed, or new projects for which master plans are being submitted shall be subject to the policies and regulations of this Program.**

Response: The Applicant understands the provision. An existing master plan exists for upland port-owned property, but the currently proposed action is outside the master plan area.

14. **Within urban growth areas (RCW 36.70A.110), the Department of Ecology may grant relief from use and development regulations of this program when:**

Response: The Applicant does not request relief from use and development regulations of the SMP program.

5.3 Critical Areas Protection

5.3.1 General Provisions

1. **In addition to the provisions of this section, critical areas (fish and wildlife habitat conservation areas, frequently flooded areas, geologic hazard areas, critical aquifer recharge areas, and wetlands) located within shoreline jurisdiction and their buffers are regulated and protected by Chapter 5A, RMC 18.280, Critical Areas Protection and RMC 18.750, Flood Control as modified for consistency with the Act and this Program.**
2. **Unless otherwise stated, no development shall be constructed, located, extended, modified, converted, or altered or land divided without full compliance with this Program whether or not a shoreline permit or written Shoreline Statement of Exemption is required.**
3. **Any allowed use, development, or activity affecting a critical area proposed on a parcel located in the shoreline jurisdiction, whether or not exempt from obtaining a Shoreline Substantial Development Permit, Shoreline Conditional Use Permit, or Shoreline Variance, shall be regulated under the provisions of this Program.**
4. **Shoreline uses and developments and their associated structures and equipment shall be located, designed and operated using best management practices to protect critical areas.**

Response: The Applicant understands these provisions. The proposed remedial action is located within the shoreline jurisdiction and is therefore subject to the provisions of this chapter. The Applicant is requesting review of the substantive requirements of this section and all others pertaining to the critical areas review, pursuant to the review directed by RCW 105.70.090D.

5.4 Public Access

1. **Provisions for adequate public access shall be incorporated into all shoreline development proposals that involve public funding unless the applicant demonstrates public access is not feasible due to one or more of the provisions of Section 5.4.2 (a-e). Where feasible, such projects shall incorporate ecological restoration.**

Response: The proposed work is in the shoreline area of Carty Lake; Carty Lake is located entirely within the RNWR. Therefore, the Applicant does not control access to the RNWR or to a large portion of the shoreline area. The portion of the shoreline area that lies outside the RNWR is owned by the Applicant. The proposed work does not include development. Public access to the shorelines area owned by the Applicant will be increased by completion of a public-access, multi-purpose trail area within the shoreline area; a portion of the proposed trail will connect to an existing trail to the south, within the Lake River shoreline area, and an existing trail to the north, along the RNWR. The Applicant has designed the landscaping plan for the project area to retain existing view corridors to Carty Lake and the RNWR (see Sheets L0 through

L4). The proposed work is intended to protect the ecological integrity of the shoreline area.

2. **Consistent with constitutional limitations, provisions for adequate public access shall be incorporated into all land divisions and other shoreline development proposals (except residential development of less than five (5) parcels), unless this requirement is clearly inappropriate to the total proposal.**

Response: No land division or shoreline development is proposed as part of this remedial action. The standard is not applicable.

3. **Public access sites shall be connected to barrier free route of travel and shall include facilities based on criteria within the Americans with Disabilities Act Accessibility guidelines.**

Response: The design of the proposed multi-use trail complies with the Americans with Disabilities Act accessibility guidelines. The standard has been satisfied.

4. **Public access shall include provisions for protecting adjacent properties from trespass and other possible adverse impacts to neighboring properties.**

Response: The Applicant proposes to construct a fence to limit trespass onto the RNWR (see Sheets L2 through L4). The standard has been satisfied.

5. **Signs indicating the public right of access to shoreline areas shall be installed and maintained in conspicuous locations.**

Response: The proposed work is in the shoreline area of Carty Lake; Carty Lake is located entirely within the RNWR. Therefore, the Applicant does not control access to the RNWR or to a large portion of the shoreline area. The public is encouraged to visit the trail in the Applicant-owned portion of the shoreline area. The standard has been satisfied.

6. **Required public access shall be fully developed and available for public use at the time of occupancy of the use or activity.**

Response: No use or activity is proposed; however, public access to the Applicant-owned portions of the shoreline area will be fully developed and available for use at the completion of the proposed work. The standard has been satisfied.

7. **Public access shall consist of a dedication of land or a physical improvement in the form of a walkway, trail, bikeway, corridor, viewpoint, park, deck, observation tower, pier, boat launching ramp, dock or pier area, or other area serving as a means of view and/or physical approach to public waters and may include interpretive centers and displays.**

Response: Public access will consist of construction of a multi-use trail on the Applicant-owned portions of the shoreline area and preservation of view corridors to the RNWR. The standard has been satisfied.

8. **Public access easements and permit conditions shall be recorded on the deed of title and/or on the face of a plat or short plat as a condition running contemporaneous with the authorized land use, as a minimum. Said recording with the County Auditor's Office shall occur at the time of permit approval.**

Response: Public access easements and permit conditions are not anticipated. The standard does not apply.

9. **Future actions by the applicant, successors in interest, or other parties shall not diminish the usefulness or value of the public access provided.**

Response: The Applicant understands this provision.

10. **Maintenance of the public access facility shall be the responsibility of the owner unless otherwise accepted by a public or non-profit agency through a formal agreement approved by the Shoreline Administrator and recorded with the County Auditor's Office.**

Response: The Applicant intends to maintain the multi-use trail.

5.5 Restoration

1. **Restoration of shoreline ecological functions and processes shall be encouraged and allowed on all shorelines and shall be located, designed and implemented in accordance with applicable policies and regulations of this Program and consistent with other City programs (see Section 6.4.4). Implementation of restoration projects on shorelines of statewide significance take precedence over implementation of restoration projects on other shorelines of the state.**

Response: The Applicant proposes to rehabilitate degraded habitat through removal of contaminated sediment, bank stabilization, and revegetation to the maximum extent feasible, improving ecosystem functions; Ecology requires this remediation. The proposed action will be implemented consistent with applicable policies and standards of this program and consistent with other city programs. The proposed action meets the standard.

2. **Impacts to shoreline ecological functions shall be fully mitigated. Such mitigation may include elements from the Shoreline Restoration Plan, where appropriate.**

Response: The Applicant has incorporated mitigation sequencing (avoiding, minimizing, and mitigating impacts) throughout the project design, which has been overseen by Ecology and coordinated with the USFWS. The project is self-mitigating,[3] and

[3] If the typical practice of calculating wetland mitigation and impact areas were applied to this project, then the area of in-water rehabilitation (approximately 1 acre, not including contingency) would be compared to the area of wetland filled (approximately 0.17 acre, not including contingency). This yields a 6:1 ratio. As described in the January 21, 2014, letter to Mr. Eric Eisemann, the mitigation ratio for rehabilitation in Category 2 wetlands is listed as 8:1 (Table 18.280-7). As stated in the Ridgefield Municipal Code (RMC), the compensatory mitigation ratios listed shall be consistent with the 2004 Ecology Guidance on Wetland Mitigation in Washington State, Part 1: Laws, Rules, Policies, and Guidance Related to Wetland Mitigation (Ecology publication No. 04-06-013a), or as revised by Ecology. The Ecology (2004) draft guidance document is obsolete and has been revised and replaced with the 2006 Wetland Mitigation in Washington State Part 1: Agency Policies and Guidance (Ecology publication No. 06-06-011a). The updated document specifies a 6:1 mitigation ratio for rehabilitation in Category 2 wetlands (Table 1a in Ecology publication No. 06-06-011a). The 6:1 mitigation ratio is therefore consistent with RMC and is appropriate for evaluating Carty Lake remedial action project impacts.

compensatory mitigation is not required.[4] The USFWS concurs with this determination. Construction impacts to shoreline ecological functions will be mitigated by the following project components:

- **Sediment rehabilitation.** Contaminated sediments will be removed.
- **Invasive species control.** At the request of the USFWS, the final depth of Carty Lake in the excavation area will be at least 6 inches deeper than the current condition to inhibit the growth of reed canary grass.
- **Native wetland plantings.** The excavation area and surrounding areas where work will take place will be planted with native species suited to the post-remedy elevations, enhancing habitat quality (see Sheets L0 through L4).
- **Maintenance and monitoring.** A monitoring approach and adaptive management and maintenance techniques were developed to ensure that plantings are effective.
- **Bank enhancement.** The proposed bank stabilization elements include remediate an existing wall condition (an abrupt, approximately 15-foot change in grade from the higher-elevation Miller's Landing to the lower-elevation wetlands of the Carty Unit) with more gradual slopes planted with a diverse palette of native plants. This will increase both the area and the quality of transition habitat between the wetland and the surrounding uplands.

The proposed project meets the standard.

3. Elements of the Shoreline Restoration Plan may also be implemented in any shoreline designation to improve shoreline ecological function.

Response: The Applicant understands the standard.

4. Implementation of restoration projects identified in the Shoreline Restoration Plan that are focused on restoring degraded habitat in shoreline jurisdiction take precedence over other restoration projects.

Response: The Applicant proposes to rehabilitate degraded habitat through sediment excavation, bank stabilization, and revegetation to the maximum extent feasible, improving ecosystem functions; the remediation is required by the state.

5. Restoration efforts shall be developed by a qualified professional, shall be based on federal, state, and local guidance and shall consider the following:

a. Riparian soil conditions;

b. In-stream fish habitats; and

c. Healthy aquatic and terrestrial food webs.

[4] Note that the Corps Section 404 permitting for the remedial action is under way and that the Corps mitigation evaluation operates under a different framework. The Corps is requiring purchase of wetland credits through a Columbia River mitigation bank. The port is in the process of accommodating this request. The Corps requirements are offered for information purposes only.

Response: The Applicant has retained qualified professionals to design the remedial action. Consistent with federal, state, and local guidance, a wetland delineation identifying soil conditions and habitats has been completed; fish data have been reviewed to identify species and habitat present; and food web modeling has been completed to guide remedy area selection. The proposed action meets the standard.

5.6.2 Clearing, Grading, Fill and Excavation

1. **Land disturbing activities such as clearing, grading, fill, and excavation shall be conducted in such a way as to minimize impacts to soils and native vegetation, and shall comply with RMC 18.755, Erosion Control; 13.30, Stormwater Utility; and RMC Chapter 14.03, Construction Administrative Code.**

Response: The proposed work is designed to minimize impacts to non-contaminated soils and native vegetation. The Applicant proposes to remove existing non-native vegetation and replant disturbed areas with native vegetation. The Applicant will comply with RMC 18.755, Erosion Control; 13.30, Stormwater Utility; and RMC Chapter 14.03, Construction Administrative Code, as applicable. The proposed action meets the standard.

2. **Clearing, grading, fill, and excavation activities shall be scheduled to minimize adverse impacts, including but not limited to, damage to water quality and aquatic life.**

Response: The Applicant proposes to conduct work during seasonal low water, as requested by the USFWS, to minimize disturbance to aquatic life. During seasonal low water, the work area is typically dry. In order to minimize adverse impacts to water quality and aquatic life, the Applicant proposes to construct a temporary berm to hydraulically isolate the work area from Carty Lake (see Sheet C5). When the work is complete, this berm will be removed and the work area will be reconnected to Carty Lake. The proposed action meets the standard.

3. **Clearing and grading shall not result in changes to surface water drainage patterns that adversely impact adjacent properties.**

Response: The proposed work will not result in changes to surface water drainage patterns. The proposed action meets the standard.

4. **Developments shall comply with the RMC 18.755, Erosion Control during construction and shall ensure preservation of native vegetation for bank stability. Disturbed areas shall be stabilized immediately and revegetated with native vegetation.**

Response: No development is proposed. As noted above, the Applicant will comply with RMC 18.755. Native vegetation will be preserved where possible (see Sheets L0 through L4). The Applicant proposes to construct a temporary berm to hydraulically isolate the work area from Carty Lake (see Sheet C5). Disturbed areas will be stabilized and revegetated with native vegetation before the work area is reconnected to Carty Lake. The proposed action meets the standard.

5. **Habitat that cannot be replaced or restored within twenty (20) years shall be preserved. Peat bogs and stands of mature trees are examples of such habitat.**

Response: Neither peat bogs nor stands of mature trees are located in the proposed work area. The Applicant proposes to remove eight isolated trees, which are located immediately below the existing, failing wooden bulkhead (see Sheet C3). The Applicant proposes to preserve all other trees and plant approximately 50 trees in nearby areas. The proposed action meets the standard.

6. **Fills shall be permitted only in conjunction with a permitted use, and shall be of the minimum size necessary to support that use. Speculative fills are prohibited.**

Response: The Applicant proposes a minimum volume of fill to complete the remedial action and to stabilize the existing, failing wooden bulkhead. No speculative fills are proposed. The proposed action meets the standard.

7. **Any fill activity shall comply with the fill provisions of RMC Chapter 14.03. Fill shall consist only of clean materials.**

Response: The Applicant proposes to excavate and dispose of contaminated sediments and to place clean sand, rock, and soil fill. Sand and soil fill will be sampled and analyzed to confirm that it is clean. The proposed action meets the standard.

8. **Soil, gravel or other substrate transported to the site for fill shall be screened and documented that it is uncontaminated. Use of any contaminated materials as fill is prohibited unless done in conjunction with or as part of an environmental remediation project authorized under RCW 70.105D.**

Response: The Applicant will screen soil, gravel, or other substrate transported to the site for fill and will document that it is uncontaminated. No use of contaminated materials as fill is proposed. The proposed action meets the standard.

9. **Fills shall be designed and placed to allow surface water penetration into groundwater supplies where such conditions existed prior to filling unless contrary to the purposes of an environmental remediation project authorized under RCW 70.105D.**

Response: The proposed work will not impede surface water penetration into groundwater supplies. The proposed action meets the standard.

10. **Fills must protect shoreline ecological functions, including channel migration processes.**

Response: The proposed work is designed to enhance shoreline ecological functions by covering an existing, failing wooden bulkhead with a protective berm providing transitional habitat vegetated with native plants. There is no active channel in or near Carty Lake; the proposed work will not impede channel migration processes. The proposed action meets the standard.

11. **Fill waterward of OHWM shall only be allowed as a conditional use, and then only when it is necessary:**

    a. **To support a water-dependent or public access use;**

b. For habitat creation or restoration projects;

c. For remediation of contaminated sediments as part of an interagency environmental clean-up plan;

d. For disposal of dredged material considered suitable under, and conducted in accordance with the dredged material management program of the Washington Department of Natural Resources;

e. For expansion or alteration of transportation facilities of statewide significance currently located on the shoreline and then only upon a demonstration that alternatives to fill are not feasible;

f. For a mitigation action;

g. For environmental restoration; or

h. For a beach nourishment or enhancement project.

Response: The Applicant proposes to place clean fill for the remediation of contaminated sediments under a Consent Decree with the State of Washington. Additional clean fill is proposed waterward of the ordinary high-water mark (OHWM) to stabilize the existing, failing wooden bulkhead. This stabilization berm has been designed to minimize the amount of fill waterward of the OHWM (see Sheets C5 and C7). The proposed action meets the standard.

12. Excavation below the OHWM is considered dredging and subject to provisions under that section in Chapter 6.

Response: The Applicant will comply with the applicable dredging provisions of Section.

13. Upon completion of construction, remaining cleared areas shall be replanted with native species on the City's Native Plant List (RMC 18.830). Replanted areas shall be maintained such that within three (3) years' time the vegetation is fully re-established.

Response: The Applicant has proposed a planting and monitoring plan for the remedial action. Plants suited to the postconstruction grade and wetland and riparian habitat are selected. All plants selected are native species on the City's Native Plant List (RMC 18.830). It is anticipated that the vegetation will be established within three years. Replanted areas will be monitored and maintained for five years. The standard is met.

5.9 Water Quality and Quantity

1. The location, design, construction, and management of all shoreline uses and activities shall protect the quality and quantity of surface and ground water adjacent to the site.

Response: The proposed work will not affect the quality and quantity of surface water and groundwater adjacent to the site. The Applicant plans to conduct the proposed work in the dry by hydraulically isolating the work area from Carty Lake (see Sheet C5). No work that will impact the quality of groundwater is proposed. The proposed action meets the standard.

2. **All shoreline development shall comply with the applicable requirements of the RMC Chapter 18.755, Erosion Control and 13.30, Stormwater Utility.**

Response: The Applicant will comply with the applicable requirements of RMC Chapter 18.755, Erosion Control, and 13.30, Stormwater Utility. The proposed action meets the standard.

3. **Best management practices (BMPs) for control of erosion and sedimentation shall be implemented for all shoreline development.**

Response: In order to control erosion and sedimentation, the Applicant proposes to construct a temporary berm (i.e., sandbags) to hydraulically isolate the work area from Carty Lake (see Sheet C5). When the work is complete, this berm will be removed and the work area will be reconnected to Carty Lake. Disturbed surfaces will be revegetated with native vegetation and bioengineered erosion-control measures (see Sheets L0 through L4). The proposed action meets the standard.

4. **Potentially harmful materials, including but not limited to oil, chemicals, tires, or hazardous materials, shall not be allowed to enter any body of water or wetland, or to be discharged onto the land except in accordance with RMC 13.30, Stormwater Utility. Potentially harmful materials shall be maintained in safe and leak-proof containers.**

Response: The Applicant understands this standard; the proposed work will be conducted in accordance with applicable federal, state, and local standards. The proposed action meets the standard.

5. **Herbicides, fungicides, fertilizers, and pesticides shall not be applied within twenty-five (25) feet of a waterbody, except by a qualified professional in accordance with state and federal laws. Further, pesticides subject to the final ruling in Washington Toxics Coalition, et al., v. EPA shall not be applied within sixty (60) feet for ground applications or within three hundred (300) feet for aerial applications of the subject water bodies and shall be applied by a qualified professional in accordance with state and federal law.**

Response: The Applicant does not propose the use of herbicides, fungicides, fertilizers, or pesticides at this time. If necessary, adaptive management could include use of pesticides, herbicides, or fungicides that would be applied consistent with the standard. The standard is met.

6. **Any structure or feature in the Aquatic shoreline designation shall be constructed and/or maintained with materials that will not adversely affect water quality or aquatic plants or animals. Materials used for decking or other structural components shall be approved by applicable state agencies for contact with water to avoid discharge of pollutants.**

Response: The standard is not applicable. No structures or features are proposed.

7. **Septic systems should be located as far landward of the shoreline and floodway as possible. Where permitted, new on-site septic systems shall be located, designed, operated, and maintained to meet all applicable water quality, utility, and health standards.**

Response: The standard is not applicable. No septic systems are proposed.

CHAPTER 5A
GENERAL SHORELINE USE AND DEVELOPMENT REGULATIONS CONTINUED: CRITICAL AREAS REGULATIONS

18.280.030—Applicability and exemptions

A. Applicability.

Response: The Applicant understands that the critical area standards apply to the current application. Findings demonstrating substantive compliance with the applicable requirements are provided herein.

18.280.060—Approval criteria

Any activity subject to this chapter, unless otherwise provided for in this chapter, shall be reviewed and approved, approved with conditions, or denied based on the proposal's ability to comply with all of the following criteria. The city may condition the proposed activity as necessary to mitigate impacts to critical areas and their buffers and to conform to the standards required by this chapter. Activities shall protect the functions of the critical areas and buffers on the site.

A. Avoid Impacts. The applicant shall first avoid all impacts that degrade the functions and values of (a) critical area(s) by not taking a certain action or parts of an action. This may necessitate a redesign of the proposal.

Response: The Applicant has implemented mitigation sequencing (avoiding, minimizing, and mitigating impacts) throughout the project design. The proposed action meets the standard. Avoidance approaches include the following:

- The in-water remedial investigation used a sample-intensive methodology to ensure that only areas exceeding cleanup levels would be excavated. Other areas are therefore avoided and are not disturbed unnecessarily.
- Bank stabilization along the eastern side of the wetland was redesigned from a 3:1 soil slope to a 2.5:1 (minimum) slope to avoid wetland encroachment.
- A spill prevention and pollution control plan will be implemented during construction, along with erosion- and sediment-control BMPs, to avoid potential impacts to water quality.

B. Minimize Impacts. The applicant shall minimize the impact of the activity by limiting the degree or magnitude of the action and its implementation by using appropriate technology or by taking affirmative steps to avoid or reduce impacts. The applicant shall seek to minimize the fragmentation of the resource to the greatest extent possible.

Response: The Applicant has implemented mitigation sequencing (avoiding, minimizing, and mitigating impacts) throughout the project design. The proposed action meets the standard. Minimization measures include the following:

- Bank stabilization on the southern side of the wetland is designed at a 2:1 slope. This slope was selected as the preferred alternative because it minimizes encroachment into the wetland. Other evaluated stabilization designs (e.g., 3:1 slope, ecology blocks) would result in greater encroachment or were infeasible.
- The sediment area will be dewatered before excavation. Construction in the dry allows the use of conventional excavation equipment and minimizes the disturbance of adjacent sediments and wetlands.
- Native vegetation will be preserved where possible.
- The sediment excavation area will be functionally isolated (using sandbags or placement of a temporary isolation berm) from wetland habitat to the north, thereby minimizing impacts outside the work area.

C. Rectify Impacts. The applicant shall rectify the impacts by repairing, rehabilitating, or restoring the affected environment.

Response: The Applicant proposes a remedial action designed specifically to rehabilitate the Carty Lake wetland. The work area will be planted with native vegetation following excavation and clearing activities (see Sheets L0 through L4). Plantings will be monitored and maintained for five years. The proposed action meets the standard.

D. Reduce Impacts. The applicant shall reduce or eliminate the impacts over time by preservation and maintenance operations.

Response: The Applicant proposes a remedial action that provides long-term environmental benefit. Short-term construction impacts will be reduced through use of BMPs, including spill prevention and pollution-, erosion-, and sediment-control measures. The proposed action meets the standard.

E. Compensatory Mitigation. The applicant shall compensate for the impacts by replacing, enhancing, or providing substitute resources or environments. The compensatory mitigation shall be designed to achieve the functions as soon as practicable.

Response: The project is self-mitigating,[5] and compensatory mitigation is not required.[6] The USFWS concurs with this determination. Construction impacts to shoreline ecological functions will be mitigated by the following project components:

[5] If the typical practice of calculating wetland mitigation and impact areas were applied to this project, then the area of in-water rehabilitation (approximately 1 acre, not including contingency) would be compared to the area of wetland filled (approximately 0.17 acre, not including contingency). This yields a 6:1 ratio. As described in the January 21, 2014, letter to Mr. Eric Eisemann, the mitigation ratio for rehabilitation in Category 2 wetlands is listed as 8:1 (Table 18.280-7). As stated in the RMC, the compensatory mitigation ratios listed shall be consistent with the 2004 Ecology Guidance on Wetland Mitigation in Washington State, Part 1: Laws, Rules, Policies, and Guidance Related to Wetland Mitigation (Ecology publication No. 04-06-013a), or as revised by Ecology. The Ecology (2004) draft guidance document is obsolete and has been revised and replaced with the 2006 Wetland Mitigation in Washington State Part 1: Agency Policies and Guidance (Ecology publication No. 06-06-011a). The updated document specifies a 6:1 mitigation ratio for rehabilitation in Category 2 wetlands (Table 1a in Ecology publication #06-06-011a). The 6:1 mitigation ratio is therefore consistent with RMC and is appropriate for evaluating Carty Lake remedial action project impacts.

- **Sediment rehabilitation.** Contaminated sediments will be removed.
- **Invasive species control.** At the request of the USFWS, the final depth of Carty Lake in the excavation area will be at least 6 inches deeper than the current condition to inhibit the growth of reed canary grass.
- **Native wetland plantings.** The excavation area and surrounding areas where work will take place will be planted with native species suited to the post-remedy elevations, enhancing habitat quality (see Sheets L0 through L4).
- **Maintenance and monitoring.** A monitoring approach and adaptive management and maintenance techniques were developed to ensure that plantings are effective.
- **Bank enhancement.** The proposed bank stabilization elements include remediating an existing wall condition (an abrupt, approximately 15-foot change in grade from the higher-elevation Miller's Landing to the lower-elevation wetlands of the Carty Unit) with more gradual slopes planted with a diverse palette of native plants. This will increase both the area and the quality of transition habitat between the wetland and the surrounding uplands.

The proposed project meets the standard.

F. Monitor Impacts and Mitigation. The applicant shall monitor the impacts and the compensation projects and take appropriate corrective measures.

Response: The Applicant has developed a planting maintenance and monitoring plan. A monitoring approach and adaptive management and maintenance techniques were developed to ensure that plantings establish successfully. Plantings will be maintained and monitored for five years. The proposed action meets the standard.

G. Type and Location of Mitigation. Compensatory mitigation shall be in-kind and on-site when feasible, and sufficient to maintain the functions of the critical area consistent with the mitigation provisions of this ordinance, and to prevent risk from a hazard posed by a critical area to a development or by a development to a critical area. Wetland mitigation bank credits shall only be utilized when consistent with the provisions of this ordinance.

Response: The standard is not applicable. See response to Section E above.

H. In addition to mitigation, unavoidable adverse impacts may be addressed through restoration efforts.

Response: The standard is not applicable. The Applicant proposes a remedial action designed specifically to rehabilitate the Carty Lake wetland.

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[6] Note that the Corps Section 404 permitting for the remedial action is under way and that the Corps mitigation evaluation operates under a different framework. The Corps is requiring purchase of wetland credits through a Columbia River mitigation bank. The port is in the process of accommodating this request. The Corps requirements are offered for information purposes only.

I. No Net Loss. The proposal protects the critical area functions and values and results in no net loss of critical area functions and values.

Response: The Applicant proposes a remedial action designed specifically to provide environmental benefit to the Carty Lake wetland. The remedial action required by Ecology addresses unacceptable risks to ecological receptors and includes excavating contaminated sediment; placing clean sand to contain residual contamination; stabilizing a failing, treated-wood retaining wall; and vegetating the wetland and upland banks with native plants. Therefore, the project will result in a net increase in critical area functions and values. The proposed action meets the standard.

J. Consistency with General Purposes. The proposal is consistent with the general purposes of this chapter and does not pose a significant threat to the public health, safety, or welfare on or off the development proposal site; (Ord. 903 § 2(part), 2006).

Response: The Applicant proposes a remedial action that is designed with oversight from Ecology and the USFWS, is consistent with the general purposes of this chapter, and is designed to protect human health and the environment. There will be no significant adverse effects to public health, safety, or welfare. The proposed action meets the standard.

18.280.110—Fish and wildlife habitat conservation areas.

A. Designation.

1. There are established in the city the following identified fish and wildlife habitat conservation areas:

a. Habitat for any life stage of state or federally designated endangered, threatened, and sensitive fish or wildlife species. A current list of federally and state identified species is available from the shoreline administrator.

b. Priority Habitats and areas associated with Priority Species. Current lists of priority habitats and species and applicable management recommendations promulgated by the Washington Department of Fish and Wildlife are available from the shoreline administrator.

c. Water bodies including lakes, streams, rivers and naturally occurring ponds.

Response: The Applicant understands these designations. The project area does not include habitat for any life stage of state or federally designated endangered, threatened, or sensitive fish or wildlife species. Priority Species Maps depict waterfowl concentrations across the site. The proposed action will be conducted in a Category 2 wetland.

2. Habitat Location Information. Information on the approximate location and extent of habitat conservation areas is available from the shoreline administrator.

Response: The Applicant understands that the project site is located in a Riparian Habitat Conservation area and that Carty Lake is a shoreline of the state. Priority Habitat and Species Maps depict waterfowl concentrations across the site (see Figure 1). Salmonid distribution maps and the USFWS indicate that salmonids are not known to be or expected to be present in the project area.

B. Fish and Wildlife Habitat Conservation Areas and Riparian Buffers. Fish and wildlife habitat conservation areas within the city shall be established pursuant to the Washington State Department of Natural Resources Stream Typing System, as amended. Fish and wildlife habitat conservation areas shall be established by a qualified professional and shall be measured to include the land in each direction from the OHWM of the designated stream type.

1. **The minimum riparian buffer widths for stream types designated in accordance with the Washington State Department of Natural Resources (DNR) Stream Typing System shall be as described in Table 18.280.110-1.**

Response: The Applicant notes that the project area is located at the southern end of Carty Lake. Carty Lake is, in total, larger than 20 acres and is considered a shoreline of the state, but is not large enough (>1,000 acres) to be considered a lake of statewide significance. A minimum 150-foot riparian buffer is designated for shorelines of the state. However, the existing wooden bulkhead along the Port of Ridgefield property, located directly adjacent to the southern and eastern boundaries of Carty Lake, does not provide habitat functions to protect the wetland. The unvegetated and historically impervious buffer on the port property is isolated from the functioning and vegetated buffer along Carty Lake. Therefore, the required buffer extends from the wetland boundary to the functionally isolated boundary/retaining wall associated with the port property.

2. **Fish and wildlife habitat conservation areas and associated buffers shall be identified on the face of plat maps site plans or other development plans, and shall be protected in perpetuity with conservation covenants, deed restrictions or other legally binding mechanisms.**

Response: The Clark County Sensitive and Habitat Areas Map depicts Carty Lake and the project area as a Riparian Habitat Conservation Area (see Figure 1). The Applicant notes that the proposed project is located in the RNWR. The RNWR is managed for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats and is protected by legally binding mechanisms.

3. **If impervious surfaces from previous development completely functionally isolate the designated stream type and associated buffer the regulated fish and wildlife habitat conservation shall extend from the ordinary high water mark to the impervious surfaces. An example would be an existing industrial paved area and warehouses in the riparian buffer.**

Response: Functionally isolated areas are generally defined as areas that do not provide vegetation or habitat functions to the adjacent critical areas. The existing retaining walls along the Port of Ridgefield property located directly adjacent to the southern and eastern boundaries of Carty Lake do not provide habitat functions to protect the

wetland. The unvegetated and historically impervious buffer on the port property is therefore considered isolated from the functioning and vegetated buffer along Carty Lake. Therefore, the required buffer extends from the wetland boundary to the functionally isolated boundary/retaining wall associated with the port property.

D. Performance Standards.

1. General.

a. Development or clearing activities shall protect the functions of the fish and wildlife habitat conservation areas on the site. The activity shall result in no net loss of functions. Protection can be provided by avoiding (the preferred protection) or minimizing and mitigating. Functions include:

i. Providing habitat for breeding, rearing, foraging, protection and escape, migration, and over-wintering.

ii. Providing complexity of physical structure, supporting biological diversity, regulating stormwater runoff and infiltration, removing pollutants from water, and maintaining appropriate temperatures.

Response: The Applicant proposes a remedial action designed for environmental benefit. Carty Lake sediments are contaminated at levels that present unacceptable risk to ecological receptors. The proposed action provides a net gain of ecological function, primarily by removal of contaminants to improve habitat, increase in native plant abundance and structure, and measures (slope stabilization and native plantings) to reduce erosion and runoff. The proposed action meets the standard.

b. An applicant shall replace any lost functions by enhancement to other functions, so long as the applicant demonstrates that enhancement of the other functions provides no net loss in overall functions and maintains habitat connectivity. An example of unavoidable loss of function would be interruption of a travel corridor in a fish and wildlife habitat conservation area and its associated buffer. To the maximum extent feasible, enhancement shall be undertaken on-site.

Response: Habitat is currently severely degraded, as sediment conditions are not protective of benthic and wetland species that rely on benthos (e.g., wetland biota may bioaccumulate contaminants). A small area in the southernmost part of the wetland will be filled because the proposed bank stabilization to contain contaminants behind the failing bulkhead cannot be designed to avoid the wetland effectively. This small area (approximately 0.17 acre, not including contingency) will lose all function; however, contaminant removal, native plantings, and slope stabilization will improve overall wetland functioning. The USFWS concurs with this determination. The wetland will remain hydraulically connected with Carty Lake. The proposed action meets the standard.

c. If development or clearing activity is within a priority habitat and species area the applicant shall follow Washington Department of Fish

and Wildlife Management Guidelines or other standards approved by the Washington Department of Fish and Wildlife.

Response: The Applicant notes that the project is exempt from a WDFW Hydraulic Project Approval. However, substantive requirements developed for the project by WDFW will be met. The proposed action meets the standard.

d. Signs for Fish and Wildlife Conservation Areas

Response: The Applicant notes that the project will be conducted in the RNWR, which is managed by the USFWS to conserve habitat. Signage and markers identifying the conservation areas are already in place. The proposed action meets the standard.

2. Fish and Wildlife Habitat Conservation Areas and Riparian Buffers.

a. Fish and Wildlife Habitat Conservation Areas. Development or clearing activity may occur in Fish and Wildlife Habitat Conservation Areas for the following:

i. A water-dependent, water-related or water-enjoyment activity where there are no feasible alternatives that would have a less adverse impact on the fish and wildlife habitat conservation area or riparian buffer. The applicant shall minimize the impact and mitigate for any unavoidable impact to functions;

Response: The Applicant proposes a project required by the state for environmental benefit that has been designed to avoid, minimize, and mitigate impacts. Other alternatives were evaluated but not selected, as detailed in the Ecology-issued cleanup action plan. The proposed action meets the standard 2(a)(i).

b. Riparian Buffer. Development or clearing activity may occur in the riparian buffer, provided that mitigation is conducted that results in no net loss of riparian habitat functions on the site, and further, that functionally significant habitat, defined as habitat that cannot be replaced or restored within twenty years, shall be preserved unless the clearing or development activity cannot feasibly be located on the site outside of the riparian buffer. An example of habitat that cannot be replaced within twenty years would be a stand of mature trees or a peat bog.

Response: The Applicant proposes to stabilize the failing retaining wall to the south and east of the wetland such that existing subsurface upland (on port property) soil contamination does not reach the wetland. Stabilization components above the wetland boundary include removal of existing vegetation (primarily non-natives such as Himalayan blackberry and up to eight isolated trees, not considered functionally significant habitat) (see Sheet C3), construction of stabilization slopes with 18 inches of topsoil (see Sheet C7), and planting of native vegetation, including approximately 50 trees throughout the project area (see Sheets L0 through L4). Therefore, stabilization elements cannot feasibly be located outside the riparian buffer, and native plantings and improved control of erosion and runoff will result in no net loss of riparian function. The proposed action meets the standard.

c. Buffer Width Averaging. The shoreline administrator may allow buffer width averaging in accordance with an approved critical area report on a case-by-case basis. Buffer width averaging shall not be used in combination with buffer width reduction on the same buffer segment to reduce the minimum buffer width below that specified in this chapter.

d. Buffer Width Reduction. The shoreline administrator may authorize the reduction of required buffer widths to a lesser width provided that an applicant demonstrates compliance with the following:

e. Buffer width reduction shall not be used in combination with buffer width averaging on the same buffer segment, but can be used in combination with the same wetland resource. Where multiple resources exist on a property or site, the shoreline administrator may authorize the use of buffer width averaging and buffer width reduction on different resources on the property or site provided that any required scientific analysis or reporting addresses and supports the separate use.

Response: The previous standards are not applicable. The required buffer extends from the Carty Lake wetland boundary to the functionally isolated boundary/retaining wall associated with the port property, as determined in the wetland delineation and critical areas report completed by a qualified professional (ELS, August 2013).

f. Buffer Maintenance. Except as otherwise specified or allowed in accordance with this chapter, buffers for fish and wildlife habitat conservation areas shall be maintained according to the approved critical area permit.

Response: The Applicant proposes to regrade slopes to stabilize the failing retaining wall (see Sheets C5 and C7). The slopes will be planted with native vegetation (see Sheets L0 through L4). The proposed action meets the standard.

g. Buffer Uses. The following uses may be permitted within a buffer for a fish and wildlife habitat conservation area in accordance with the review procedures of this chapter; provided, they are not prohibited by any other applicable law or regulation and they are conducted in a manner so as to minimize impacts to the buffer and the wetland:

i. Activities allowed under the same terms and conditions as in the associated fish and wildlife habitat conservation areas.

ii. Enhancement and restoration activities aimed at protecting the soil, water, vegetation or wildlife.

Response: The Applicant proposes a remedial action aimed at protecting ecological receptors and enhancing the plant community. The proposed action meets the standard.

3. Signs and Fencing of Fish and Wildlife Habitat Conservation Areas

Response: The Applicant notes that the project will be conducted in the RNWR, which is managed by the USFWS to conserve habitat. Signage and markers identifying the conservation area are already in place. The proposed action meets the standard.

CHAPTER 5B 18.750
FLOOD CONTROL

18.750.030 General provisions.

A. Lands to Which this Chapter Applies. This chapter shall apply to all areas of special flood hazards within the jurisdiction of the city of Ridgefield.

Response: The Applicant understands that the provisions of this chapter apply to the Carty Lake remedial project pursuant to the applicable Flood Insurance Rate Map (FIRM).

18.750.060—Specific standards.

B. Nonresidential Construction. New construction and substantial improvement of any commercial, industrial or other nonresidential structure shall either have the lowest floor, including basement, elevated one foot or more above the base flood elevation; or, together with attendant utility and sanitary facilities, shall:

Response: The standard is not applicable. The Applicant is not proposing new construction or substantial improvement of any commercial, industrial, or other nonresidential structure.

F. Floodways and Channel Migration Zones. Located within areas of special flood hazard are areas designated as floodways and channel migration zones. Since the floodway is an extremely hazardous area due to the velocity of floodwaters that can carry debris, and increase erosion potential, and channel migration zones are hazardous due to alteration of the location of the watercourse by natural processes, the following provisions apply:

Response: The standard is not applicable. As shown on FEMA FIRM 53011C0184, the frequently flooded areas of the project site are part of the Columbia River flood fringe—in Zone AE but outside the floodway. The proposed action will not be conducted in a floodway.

G. Critical Facility. Construction of new critical facilities shall be, to the extent possible, located outside the limits of the special flood hazard area (SFHA) (one-hundred-year floodplain). Construction of new critical facilities shall be permissible within the SFHA in accordance with Section 18.750.060(F) if no feasible alternative site is available. Critical facilities constructed within the SFHA shall have the lowest floor elevated three feet above BFE or to the height of the five-hundred-year flood, whichever is higher. Access to and from the critical facility should also be protected to the height utilized above. Floodproofing and sealing measures must be taken to ensure that toxic substances will not be displaced by or released into floodwaters. Access routes elevated to or above the level of the base flood elevation shall be provided to all critical facilities to the extent possible.

Response: The standard is not applicable. No new critical facilities are proposed.

CHAPTER 6
SPECIFIC SHORELINE USE REGULATIONS

6.4.2 Dredging and Dredge Material Disposal

6.4.2.1 General

1. **Dredging and dredge disposal shall be prohibited on or in archaeological sites that are listed on the National Register of Historic Places, the Washington Heritage Register, and/or the Clark County Heritage Register until such time that they have been reviewed and approved by the appropriate agency.**

Response: The site is not listed in the registers identified above. The Applicant has engaged a qualified professional to identify cultural resources at the site, and the USFWS is conducting Section 106 review for cultural resources. Sediment excavation (as currently designed) will take place only if it is determined that no significant archaeological or historical resources would be affected by the proposed action. The proposed action meets the standard.

2. **Dredging and dredge disposal shall be scheduled to protect biological productivity (including but not limited to, fish runs, spawning, and benthic productivity) and to minimize interference with fishing activities. Dredging activities shall not occur in areas used for commercial fishing (including but not limited to, drift netting and crabbing) during a fishing season unless specifically addressed and mitigated for in the permit.**

Response: The Applicant proposes to conduct work during low-water season to protect biological productivity. The project area is not a commercial fishing area. The proposed action meets the standard.

6.4.2.2 Dredging

1. **Dredging shall be avoided where possible. Dredging shall be permitted only where it is demonstrated that the proposed water-dependent or water-related uses will not result in significant or ongoing adverse impacts to water quality, fish and wildlife habitat conservation areas and other critical areas, flood holding capacity, natural drainage and water circulation patterns, significant plant communities, prime agricultural land, and public access to shorelines unless one or more of these impacts cannot be avoided. When such impacts are unavoidable, they shall be minimized and mitigated such that they result in no net loss of shoreline ecological functions.**

Response: No water-dependent or water-related uses are proposed. The proposed action involves the dredging and disposal of contaminated sediments for environmental remediation. The project is designed to improve the shoreline ecological functions. The proposed action meets the standard.

2. Maintenance dredging of established navigation channels and basins shall be restricted to managing previously dredged and/or existing authorized location, depth and width.

Response: The standard is not applicable. No maintenance dredging is proposed.

3. Dredging activity is prohibited in the following locations:

a. Along net positive drift sectors and where geohydraulic-hydraulic processes are active and accretion shore forms would be damaged, altered, or irretrievably lost;

b. In shoreline areas with bottom materials that are prone to significant sloughing and refilling due to currents or tidal activity which result in the need for continual maintenance dredging;

c. In habitats identified as critical to the life cycle of officially designated or protected fish, shellfish, or wildlife.

Response: No known net positive drift sectors, shorelines with bottom materials that are prone to significant sloughing and refilling, or habitats identified as critical to the life cycle of officially designated or protected fish, shellfish, or wildlife are present. The criteria do not apply.

4. Dredging techniques that cause minimum dispersal and broadcast of bottom material shall be used, and only the amount of dredging necessary shall be permitted.

Response: The Applicant proposes to construct a temporary berm to hydraulically isolate the work area from Carty Lake. Dredging will be conducted in the dry, using standard earthwork equipment and techniques (see Sheet C5). When the work is complete, this berm will be removed and the work area will be reconnected to Carty Lake. The proposed action meets the standard.

5. Dredging shall be permitted only:

d. To improve water flow or water quality, provided that all dredged material shall be contained and managed so as to prevent it from reentering the water; or

Response: The proposed dredging is pursuant to a consent decree between Ecology and the Applicant. The dredging is proposed to improve water quality and remedy sediments to protect ecological receptors. The proposed action meets the standard.

6. Dredging for fill is prohibited except where the material is necessary for restoration of shoreline ecological functions. When allowed, the site where the fill is to be placed must be located waterward of the ordinary high-water mark. The project must be either associated with a MTCA or CERCLA habitat restoration project or, if approved through a shoreline Shoreline Conditional Use Permit, any other significant habitat enhancement project (WAC 173-26-231(3)(f)).

Response: The standard is not applicable. No dredging for fill is proposed.

6.4.2.3 Dredge Material Disposal

1. **Dredge material disposal shall be avoided where possible. Dredge disposal shall be permitted only where it is demonstrated that the proposed water-dependent or water-related uses will not result in significant or ongoing adverse impacts to water quality, fish and wildlife habitat conservation areas and other critical areas, flood holding capacity, natural drainage and water circulation patterns, significant plant communities, prime agricultural land, and public access to shorelines. When such impacts are unavoidable, they shall be minimized and mitigated such that they result in no net loss of shoreline ecological functions.**

Response: No on-site disposal of dredge material is proposed. Disposal of the dredge material in a permitted, Subtitle D landfill is proposed. The criteria do not apply.

2. **Near shore or landside disposal of dredge materials shall not be located upon, adversely affect, or diminish:**

   a. **Stream mouths, wetlands, or significant plant communities (approved mitigation plans may justify exceptions);**

   b. **Prime agricultural land except as enhancement;**

   c. **Natural resources including but not limited to sand and gravel deposits, timber, or natural recreational beaches and waters except for enhancement purposes;**

   d. **Designated or officially recognized wildlife habitat and concentration areas;**

   e. **Water quality, quantity, and drainage characteristics; and**

   f. **Public access to shorelines and water bodies.**

Response: The dredge material will be disposed of in a permitted, subtitle D landfill. The criteria do not apply.

3. **Dredge material shall be disposed of on land only at sites reviewed and approved by the USACOE and the Shoreline Administrator.**

Response: Because the dredge material is contaminated, it will be disposed of in a permitted, subtitle D landfill. The criteria do not apply.

4. **The following conditions shall apply to land disposal sites:**

Response: Dredge material will be disposed of elsewhere. The criteria do not apply.

5. **Dredge material shall be disposed of in water only at sites approved by the USACOE and the Shoreline Administrator. Disposal techniques that cause minimum dispersal and broadcast of bottom material shall be used, and only if:**

Response: No in-water disposal is proposed. The criteria do not apply.

6. **The deposition of dredged materials in water or wetlands shall be permitted only in approved, open water disposal sites and:**

Response: No in-water or wetland disposal of dredge material is proposed. The criteria do not apply.

6.4.3.3 In-stream Structures

Response: In-stream structures are not proposed. The current proposal relates only to the shoreline of Carty Lake. The criteria do not apply.

6.4.4 Shoreline Restoration and Enhancement

1. **Shoreline restoration and enhancement activities designed to restore shoreline ecological functions and processes and/or shoreline features should be targeted toward meeting the needs of sensitive and/or regionally important plant, fish, and wildlife species and shall be given priority. Implementation of restoration projects on shorelines of statewide significance take precedence over implementation of restoration projects on other shorelines of the state.**

Response: The Applicant proposes to rehabilitate degraded habitat through removal of contaminated sediment, bank stabilization, and revegetation to the maximum extent feasible, improving ecosystem functions; Ecology requires this remediation. The proposed action meets the standard.

2. **Shoreline restoration, enhancement, and mitigation activities designed to create dynamic and sustainable ecosystems to assist the city in achieving no net loss of shoreline ecological functions are preferred.**

Response: The Applicant proposes to rehabilitate degraded habitat through sediment excavation, bank stabilization, and revegetation to the maximum extent feasible, improving shoreline ecosystem functions. The proposed action meets the standard.

3. **Restoration activities shall be carried out in accordance with an approved shoreline restoration plan, and in accordance with the provisions of this Program.**

Response: The standard does not apply. The Applicant proposes a remedial action required by the state and designed to address unacceptable ecological risk.

4. **To the extent possible, restoration, enhancement, and mitigation activities shall be integrated and coordinated with other parallel natural resource management efforts. Implementation of restoration projects identified in the Shoreline Restoration Plan that are focused on restoring degraded habitat in shoreline jurisdiction take precedence over other restoration projects.**

Response: The standard does not apply. The Applicant proposes a remedial action required by Ecology and designed to address unacceptable ecological risk.

5. **Habitat and beach creation, expansion, restoration, and enhancement projects may be permitted subject to required state or federal permits when the applicant has demonstrated that:**

    a. **The project will not adversely impact spawning, nesting, or breeding fish and wildlife habitat conservation areas;**

b. Upstream or downstream properties or fish and wildlife habitat conservation areas will not be adversely affected;

c. Water quality will not be degraded;

d. Flood storage capacity will not be degraded;

e. Streamflow will not be reduced;

f. Impacts to critical areas and buffers will be avoided and where unavoidable, minimized and mitigated; and

g. The project will not interfere with the normal public use of the navigable waters of the state.

Response: The project is not a habitat or beach creation, expansion, restoration, or enhancement project. The Applicant proposes a remedial action required by Ecology and designed to address unacceptable ecological risk.

6.4.5 Shoreline Stabilization—General

1. New shoreline stabilization to protect new residential development is prohibited. For other types of new development new shoreline stabilization is prohibited unless it can be demonstrated through a geotechnical analysis by a qualified professional that:

Response: No new development is proposed. The proposed shoreline stabilization is solely intended to protect an existing primary structure—a failing wooden bulkhead. The criteria do not apply.

2. New or expanded shore stabilization shall:

a. Be designed using best available science and in accordance with applicable Ecology and WDFW guidelines;

b. Not result in a net loss of shoreline ecological functions;

c. Not cause significant erosion or beach starvation;

d. Not be located where valuable geohydraulic, hydraulic, or biological processes are sensitive to interference and critical to shoreline conservation;

e. Document that alternative solutions (including relocation or reconstruction of existing structures) are not feasible or do not provide sufficient protection;

f. Demonstrate that future stabilization measures would not be required on the project site or adjacent properties; and

g. Be certified by a qualified professional.

Response: The Applicant has designed the proposed work using best available science and in accordance with applicable federal, Ecology, and WDFW guidelines. The proposed work is designed to increase shoreline ecological functions and to resist, not cause, erosion. The proposed work is not located where valuable geohydraulic, hydraulic, or

biological processes are sensitive to interference and critical to shoreline conservation. The relocation or reconstruction of the existing structure has been evaluated, discussed with Ecology and the USFWS, and found to be infeasible. Future stabilization measures are neither designed nor anticipated. The proposed work has been designed by a professional civil engineer licensed in the State of Washington. The criteria are met.

3. **New or expanded structural shoreline stabilization for existing primary structures, including roads, railroads, and public facilities is prohibited unless there is conclusive evidence documented by a geotechnical analysis that there is a significant possibility that the structure will be damaged within three years as a result of shoreline erosion caused by stream processor waves, and only when significant adverse impacts are mitigated to ensure no net loss of shoreline ecological functions and/or processes.**

Response: As the existing wooden bulkhead primary structure has already begun to fail, additional analysis to determine whether there is a significant possibility that the structure will be damaged within three years is not necessary. The proposed work has been evaluated by a professional geotechnical engineer licensed in the State of Washington. The criteria are met.

4. **Where a geotechnical analysis confirms a need to prevent potential damage to a primary structure, but the need is not as immediate as three years, the analysis may still be used to justify more immediate authorization for shoreline stabilization using bioengineering approaches.**

Response: The existing, wooden bulkhead primary structure has already begun to fail. The criteria do not apply.

5. **Replacement of an existing shoreline stabilization structure with a similar structure is permitted if there is a demonstrated need to protect existing primary uses, structures or public facilities including roads, bridges, railways, and utility systems from erosion caused by stream undercutting or wave action; provided that, the existing shoreline stabilization structure is removed from the shoreline as part of the replacement activity. Replacement walls or bulkheads shall not encroach waterward of the ordinary high-water mark or existing structure unless the structure is a residence that was occupied prior to January 1, 1992, and there are overriding safety or environmental concerns. New or expanded shore stabilization shall be designed in accordance with applicable Ecology and WDFW guidelines and certified by a qualified professional.**

Response: As noted above, it is proposed that the existing primary structure be stabilized in place by a protective berm planted with native vegetation (see Sheets C5 and C7 and L0 through L4). As the existing, failing wooden bulkhead is immediately adjacent to an existing environmental cap, removal of this structure is not feasible. This has been described to, discussed with, and agreed upon by the USFWS, Ecology, and WDFW. The proposed work has been designed in accordance with applicable Ecology and WDFW guidelines by a professional civil engineer licensed in the State of Washington. The proposed action meets the criteria.

6. **Shoreline stabilization projects that meet the criteria of Section 2.3.2(18) require a Shoreline Statement of Exemption (Section 2.3.3) and if exempt will be regulated under RCW 77.55.181. Stabilization projects that do not meet these criteria will be regulated by this Program.**

Response: The current project is not considered exempt under Section 2.3.2(18).

7. **Small-scale or uncomplicated shoreline stabilization projects (for example, tree planting projects) shall be reviewed by a qualified professional to ensure that the project has been designed using best available science.**

Response: The proposal is not a small-scale or uncomplicated project. The criterion does not apply.

8. **Large-scale or more complex shoreline stabilization projects (for example, projects requiring fill or excavation, placing objects in the water, or hardening the bank) shall be designed by a qualified professional using best available science. The applicant may be required to have a qualified professional oversee construction or construct the project.**

Response: As noted above, the proposed work has been designed by a professional civil engineer licensed in the State of Washington, using the best available science. The proposed work will be overseen by a professional engineer licensed in the State of Washington. The proposed action meets the criteria.

9. **Standards for new stabilization structures when found to be necessary include limiting the size to the minimum necessary to achieve the stabilization objective, using measures to assure no net loss of shoreline ecological functions, using soft approaches, and mitigating for impacts.**

Response: The proposed work has been designed by a professional civil engineer licensed in the State of Washington to minimize the overall stabilization footprint. The proposed work includes soft approaches, such as turf reinforcement mat with native vegetation, and has been designed to improve shoreline ecological functions.

18.280.120 Frequently flooded areas.

Refer to RDC Chapter 18.750, Flood Control, for all requirements and standards regarding frequently flooded areas (shown below).

18.750.030 General provisions.

A. Lands to Which this Chapter Applies. This chapter shall apply to all areas of special flood hazards within the jurisdiction of the city of Ridgefield.

Response: The Applicant understands the applicability of this chapter.

B. Basis for Establishing the Areas of Special Flood Hazard. The areas of special flood hazard identified by the Federal Insurance Administration in a scientific and engineering report titled "The Flood Insurance Study for Clark County, Washington, and Incorporated Areas" dated September 5, 2012, and any revisions thereto, with accompanying Flood Insurance Rate Map (FIRM) dated September 5, 2012, and any revisions thereto, are adopted by reference and declared to be a part of this chapter. The Flood Insurance Study and the FIRM are on file at Ridgefield City Hall, 230 Pioneer Avenue, Ridgefield, Washington. The best available information for flood hazard area identification as outlined in Section 18.750.040(D)(2) shall be the basis for regulation until a new FIRM is issued which incorporates the data utilized under section 18.750.040(D)(2).

Response: The Applicant understands that the above-referenced documents serve as the basis of the City's SFHAs.

C. Penalties for Noncompliance. No structure or land shall hereafter be constructed, located, extended, converted, or altered without full compliance with the terms of this chapter and other applicable regulations. Violations of the provisions of this chapter by failure to comply with any of its requirements (including violations of conditions and safeguards established in connection with conditions), shall be remedied through the provisions of Chapter 18.395, Enforcement Procedures and Penalties. Nothing herein contained shall prevent the city of Ridgefield from taking such other lawful action as is necessary to prevent or remedy any violation.

Response: The Applicant understands the penalties for noncompliance.

D. Abrogation and Greater Restrictions. This chapter is not intended to repeal, abrogate, or impair any existing easements, covenants, or deed restrictions. However, where this chapter and another ordinance, easement, covenant, or deed restriction conflict or overlap, whichever imposes the more stringent restrictions shall prevail.

Response: The Applicant understands that the more restrictive provisions of this chapter or any other underlying instrument shall supersede.

E. Interpretation. In the interpretation and application of this chapter, all provisions shall be:

1. **Considered as minimum requirements;**

2. **Liberally construed in favor of the governing body; and**

3. **Deemed neither to limit nor repeal any other powers granted under state statutes.**

Response: The Applicant understands the criterion.

F. Warning and Disclaimer of Liability. The degree of flood protection required by this chapter is considered reasonable for regulatory purposes and is based on scientific and engineering considerations. Larger floods can and will occur on rare occasions. Flood heights may be increased by man-made or natural causes. This chapter does not imply that land outside the areas of special flood hazards or uses permitted within such areas will be free from flooding or flood damages. This chapter shall not create liability on the part of the city of Ridgefield, any officer or employee thereof, or the Federal Insurance Administration, for any flood damages that result from reliance on this chapter or any administrative decision lawfully made hereunder.

Response: The Applicant understands and acknowledges this criterion.

18.750.040 Administration.

A. Development Permit Required. A development permit shall be obtained before construction or development begins within any area of special flood hazard established in Section 18.750.020(B). The permit shall be for all structures including manufactured homes, as set forth in the "definitions," and for all development including fill and other activities, also as set forth in the "definitions."

Response: The Applicant understands that in most cases a development permit would be required for the currently proposed project. However, pursuant to RCW 105.70.090D, the project is exempt from obtaining local permits. The Applicant is providing demonstration of compliance with the substantive requirements of the underlying ordinance.

18.750.050 Provisions for flood hazard reduction.

A. Anchoring.

Response: No new structures or substantial improvements are proposed. The provision does not apply.

B. Construction Materials and Methods.

Response: No new structures or substantial improvements are proposed. The proposed clean fill will be stabilized by native vegetation to minimize erosion that may occur during a potential flood event.

C. Utilities.

Response: The provision does not apply.

D. Subdivision Proposals.

Response: The provision does not apply.

18.750.060 Specific standards.

In all areas of special flood hazards where base flood elevation data has been provided as set forth in Sections 18.750.030(B) or 18.750.040(D)(2), the following provisions shall apply.

A. Residential Construction.

B. Nonresidential Construction.

C. Manufactured Homes.

D. Recreational Vehicles.

Response: The current proposed remedial action does not include construction of the abovementioned uses. The criteria do not apply.

E. AE Zone with Base Flood Elevations but No Floodways. In areas with base flood elevations (but a regulatory floodway has not been designated), no new construction, substantial improvements, or other development (including fill) shall be permitted within Zone AE on the community's FIRM, unless it is demonstrated that the cumulative effect of the proposed development, when combined with all other existing and anticipated development, will not increase the water surface elevation of the base flood more than one foot at any point within the community.

Response: As shown on FIRM 53011C0184, the frequently flooded areas of the project site are part of the Columbia River flood fringe—within AE Zone. A regulatory floodway has been designated for the Columbia River and is shown on FIRM 53011C0184. The criteria do not apply.

F. Floodways. Located within areas of special flood hazard are areas designated as floodways. Since the floodway is an extremely hazardous area due to the velocity of floodwaters that can carry debris, and increase erosion potential, the following provisions apply:

Response: As shown on FEMA FIRM 53011C0184, the frequently flooded areas of the project site are part of the Columbia River flood fringe—within Zone AE but outside the floodway. The proposed action is not in a floodway. The criteria do not apply.

G. Critical Facility. Construction of new critical facilities shall be, to the extent possible, located outside the limits of the special flood hazard area (SFHA) (one-hundred-year floodplain). Construction of new critical facilities shall be permissible within the SFHA if no feasible alternative site is available. Critical facilities constructed within the SFHA shall have the lowest floor elevated three feet above BFE or to the height of the five-hundred-year flood, whichever is higher. Access to and from the critical facility should also be protected to the height utilized above. Floodproofing and sealing measures must be taken to ensure that toxic substances will not be displaced by or released into floodwaters. Access routes elevated to or above the level of the base flood elevation shall be provided to all critical facilities to the extent possible.

Response: No new critical facilities are proposed. The criteria do not apply.

18.830.040 Native plants.

The native plant list in this section identifies native plants historically found in this area. The list divides plants into three groups: trees and arborescent shrubs, shrubs, and ground covers. Arborescent shrubs are indicated with an "AS" superscript. These shrubs may not be used to meet criteria or conditions of approval which require trees. For each group, the list includes the scientific (Latin) name, common name, indicator status and the habitat types where the plant is most likely to be found.

The indicator status refers to the frequency with which a plant occurs in a wetland; the categories are derived from the National List of Plant Species That Occur In Wetlands: 1988 National Summary (USFWS, Biological Report 88(24), 1988). The indicator categories are as follows:

- **A. Obligate Wetland (OBL): occur almost always (estimated probability greater than ninety-nine percent) under natural conditions in wetlands.**
- **B. Facultative Wetland (FACW): Usually occur in wetlands (estimated probability sixty-seven percent to ninety-nine percent), but occasionally found in non-wetlands.**
- **C. Facultative (FAC): equally likely to occur in wetlands or non-wetlands (estimated probability thirty-four percent to sixty-six percent).**
- **D. Facultative Upland (FACU): usually occur in nonwetlands (estimated probability sixty-seven percent to ninety-nine percent), but occasionally found in wetlands (estimated probability one percent to thirty-three percent).**
- **E. Obligate Upland (UPL): occur in wetlands in another region, but occur almost always (estimated probability greater than ninety-nine percent) under natural conditions in nonwetlands in the Northwest region.**

Response: The Applicant has proposed a planting plan for the remedial action (see Sheet L0). Plants suited to the postconstruction grade and wetland and riparian habitat are selected. All plants selected are native species that are identified as historically found in this area. The standard is met.

SUBSTANTIVE REQUIREMENTS OF HYDRAULIC PROJECT APPROVAL:
Pacific Wood Treating Site: Carty Lake Remedial Action

Ecology has solicited the substantive requirements of the Washington Department of Fish and Wildlife Hydraulic Project Approval and has identified the following requirements:

- Dredging equipment shall be well-maintained and in good repair to prevent the loss of lubricants, grease, and any other deleterious materials from entering the lake.

- All containers storing fuel or other deleterious substances shall be secured during dredging operations to prevent incidental spills.

- If at any time, as a result of project activities, fish are observed in distress, a fish kill occurs, or water quality problems develop (including equipment leaks or spills), immediate notification shall be made to the Washington Military Department's Emergency Management Division at 1-800-258-5990, and to Anne Friesz, Assistant Regional Habitat Program Manager at 360-906-6764.

- Every effort shall be taken during all phases of this project to ensure that sediment-laden water is not allowed to enter the lake.

- Extreme care shall be taken to ensure that no petroleum products, hydraulic fluid, fresh cement, sediments, chemicals, or any other toxic or deleterious materials are allowed to enter or leach into the lake.

- Bulkhead stabilization work shall be restricted to work necessary to protect the eroding bank.

- Placement of vegetated earthen material embankments against the bulkhead structure waterward of the ordinary high water line shall be restricted to the minimum amount necessary and per the construction documents to protect the toe of the bank or for installation of mitigation features.

- Fish-mix rock (7-inch median, rounded rock) may be placed at the toe of the southern embankment to resist erosion. Angular rock may be used in the foundation of the embankment but will not be exposed.

- Pile and portions of the existing treated-wood bulkhead shall be disposed of at a municipal solid waste landfill, per WAC 173-351.

APPENDIX B
WETLAND DELINEATION

Critical Areas Report

For

Carty Lake
Ridgefield, Washington

Prepared for:
Port of Ridgefield
C/O Maul Foster & Alongi, Inc.
2001 NW 19th Avenue, Suite 200
Portland, Oregon 97209
(503) 501-5209

Prepared by:
Ecological Land Services, Inc.
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(360) 578-1371

August 2, 2013

ELS project # 421.08

SIGNATURE PAGE

The information and data in this report were compiled and prepared under the supervision and direction of the undersigned.

Andrea Aberle
Sr. Biologist/ Project Manager

Cora Siipola
Biologist

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INTRODUCTION

Ecological Land Services, Inc. (ELS) performed a critical areas delineation for a study area located at the southern end of Carty Lake for Maul Foster & Alongi, Inc. (MFA) on behalf of the Port of Ridgefield. The study area (Figure 2) is located northwest of downtown Ridgefield, Washington, in a portion of Section 24, Township 4 North, Range 1 West of the Willamette Meridian.

SITE DESCRIPTION

The study area, located at the southern end of Carty Lake, consists of approximately 5.70 acres of the Carty Unit within Ridgefield National Wildlife Refuge. The Carty Lake study area has been investigated due to required remediation on the adjacent Port of Ridgefield Lake River Industrial Site (LRIS).

Carty Lake is adjacent to the former Pacific Wood Treating Co. (PWT) site. Treated lumber retaining walls separate the lake and the former PWT site. PWT operated a wood-treating facility from 1963 to 1993 at the Port's (LRIS). Historical PWT operations resulted in impacts to Carty Lake sediment. Operations involved pressure-treating wood products with oil-based treatment solutions and water-based mixtures. Cleanup actions will be conducted in Carty Lake under the authority of the Washington Department of Ecology (DOE).

METHODS

The wetland in the study area was delineated by ELS biologists using the Routine Determination Method according to the U.S. Army Corps of Engineers (USACE) *Wetland Delineation Manual* (1987), the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0)* (2010), and the Washington Department of Ecology (WDOE) *Washington State Wetlands Identification and Delineation Manual* (1997). The Routine Determination Method examines three parameters - vegetation, hydrology, and soils - to determine if wetlands exist in a given area. Hydrology is critical in determining what is wetland, but is often difficult to assess due to hydrologic conditions that can change periodically (hourly, daily, or seasonally). It is necessary to determine if hydrophytic vegetation and hydric soils exist that would indicate water is present for a duration that is sufficient to support a wetland plant community. By definition, wetlands are those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands are regulated as "Waters of the United States" by the USACE, as "Waters of the State" by WDOE, and locally by *RMC 18.280.150.*

ELS biologists evaluated the project site for jurisdictional wetlands in June and July 2013. The project site was evaluated for the presence and extent of wetlands by observations of topography, changes in vegetation, and evidence of surface and/or subsurface hydrology. Vegetation, soil, and hydrology data were collected from sixteen test plots to verify the location and boundaries of the wetland (Appendix A). A lake-fringe wetland and the ordinary high water mark (OHWM) boundaries of Carty Lake were delineated by ELS within the study area. Wetland boundaries

were delineated onsite with consecutively numbered fluorescent flagging, and subsequently mapped by ELS using a hand-held Trimble GPS unit with +/- 12" accuracy.

The lake-fringe wetland associated with Carty Lake was assessed using the *Wetland Rating Form for Western Washington-Revised* (WDOE 2004; Appendix B). The ordinary high water mark (OHWM) of the Carty Lake shoreline generally follows the 12-foot (NGVD 29) topography contour within the study area (see Figure 2).

VEGETATION

Dominant vegetation in the test plots are documented on the attached data sheets (Appendix A). The indicator categories following the common and scientific names indicate the likelihood of a species to be found in wetlands. Listed from most likely to least likely to be found in wetlands, the indicator categories are:

- **OBL** (obligate wetland) - almost always occurs (estimated probability >99%) in wetlands, under natural conditions.
- **FACW** (facultative wetland) - usually occur in wetlands (estimated probability 67%-99%), but occasionally found in non-wetlands.
- **FAC** (facultative) - equally likely to occur in wetlands or non-wetlands (estimated probability 34%-66%).
- **FACU** (facultative upland) - usually occur in non-wetlands (estimated probability 67%-99%), but occasionally found in wetlands (estimated probability 1%-33%).
- **UPL** (obligate upland) - almost always occur (estimated probability >99%) in non-wetlands, under natural conditions.
- **NI** (no indicator) - insufficient data to assign to an indicator category.

Vegetative cover along the lake-fringe wetland onsite is dense, predominantly consisting of reed canarygrass (*Phalaris arundinacea*, FACW) and patches of Himalayan blackberry (*Rubus armeniacus*, FACU). Other vegetation observed within the onsite wetland and buffer, but not recorded within the test plots include Pacific willow (*Salix lucida*, FACW), wapato (*Sagittaria latifolia,* OBL), water smartweed (*Polygonum amphibium*, OBL), mild water pepper (*Polygonum hydropiperoides*, OBL), common duckweed (*Lemna minor*, OBL), simple stem bur-reed (*Sparganium emersum*, OBL), and small flowered forget-me-not (*Myosotis laxa*, OBL).

Invasive species observed within the study area include; Himalayan blackberry (*Rubus armeniacus*, FACU), field bindweed (*Convolvulus arvensis*, NI), bird's foot trefoil (*Lotus corniculatus*, FAC), and bittersweet nightshade (*Solanum dulcamara*, FAC).

SOILS

Soils onsite are mapped as Sauvie silt loam, 3 to 8 percent slopes (SmB), according to Natural Resource Conservation Service Web Soil Survey Data (NRCS 2013; Figure 3). Sauvie silt loam soils are moderately well drained soils formed from alluvium and found on flood plains. Mapped onsite soils are classified as non-hydric by the Natural Resource Conservation Service (NRCS).

HYDROLOGY

The Lake-fringe wetland hydrology stems from the adjacent Carty Lake water body, seasonal tidal fluctuations associated with Lake River and groundwater. Lake River is located just west of Carty Lake, is tidally influenced, and flows north toward the Columbia River. The majority of the Port of Ridgefield property is currently pervious in the form of a soil cap with historically being an impervious surface.

WETLAND AND CRITICAL AREAS INVENTORIES

The National Wetlands Inventory (NWI) maps Carty Lake as a lacustrine, limnetic, unconsolidated bottom, permanently-tidal (L1UBV; Figure 4). Edges of the southern portion of the lake are mapped as palustrine, emergent, persistent, though temporarily or seasonally flooded wetlands and the southeastern side as having temporary-tidal water regime. NWI maps should be used with discretion because they provide general wetland information about a regional area and therefore are limited in accuracy for smaller sites because of their large scale. ELS concurs with the NWI mapping within the study area.

Washington State Priority Species

The Clark County Sensitive and Habitat Areas Map depict Carty Lake and the study area as a Riparian Habitat Conservation area (Figure 6). Priority Habitat and Species (PHS) database information received from the Washington Department of Fish and Wildlife Priority Species Maps depict waterfowl concentrations across the study area. ELS concurs with the PHS mapping within the study area (PHS website July 2013).

CONCLUSIONS

Wetland Evaluation

Carty Lake, categorized as a Category II lake-fringe wetland, (Appendix B) was identified within the study area. The wetland water quality functions scored the maximum (24) by exceeding the vegetation width criteria (33 feet), meeting the herbaceous plant coverage threshold (more than 90 percent) and by providing the opportunity to improve water quality for urban areas located within 150 feet. The wetland hydrologic functions scored low, receiving 4 out of the 12 possible points because the wetland vegetation along the shoreline is dominated by herbaceous species which do not provide a high potential to reduce shoreline erosion. The wetland scored moderately (25 out of 48) for habitat functions. The vegetation structure consists of aquatic bed, emergent, and scrub-shrub components (or 3 out of 5 possible) as well as a moderate level of plant species richness.

Shoreline Definition

Washington Administrative Code (WAC 173-20-030) defines: "Lakes" to be all surface water areas of the state, including reservoirs. Lakes greater than twenty acres in size are considered

shorelines of the state. "Lakes of statewide significance" are those, whether natural, artificial or a combination thereof, with a surface acreage of one thousand acres or more measured at the ordinary high-water mark. Carty Lake is greater than twenty acres in total size and is considered a shoreline of the state, but not large enough to be considered a lake of statewide significance. *RMC 18.100.046* defines shorelines as "*all water areas of the state, including reservoirs, and their associated shorelands, together with the lands underlying them.*"

The City of Ridgefield requires 150-foot buffers for all water bodies that meet the shoreline of the state definition (RMC Table 18.280.110-1). However, the Ridgefield Community Development Department, Staff Report and Notice of Decision, *Carty Lake Shoreline Management Act Jurisdiction Determination PLZ-09-0018* (June 18, 2009) states; "the exterior boundaries of the Ridgefield National Wildlife refuge are not subject to jurisdiction of the Shoreline Management Act," (Appendix C). Therefore, Carty Lake is exempt from shoreline jurisdiction and additional buffer requirements beyond those required for wetland habitat per RMC Table 18.280.140-4.

Wetland Buffer Requirements

The Ridgefield Municipal Code (RMC) Table 18.280.140-4 requires a 100-foot buffer for Category II wetlands with moderate habitat function and high land use intensity. According to RMC, areas which are completely functionally separated from a wetland and do not protect the wetland from adverse impacts may be excluded from buffers otherwise required (*RMC 18.280.150 (C)(2)(b)(ii)(F)*). The existing retaining walls and soil cap remedy a top the Port of Ridgefield property located directly adjacent to the southern and eastern boundaries of Carty Lake do not provide habitat functions to protect the wetland from adverse impacts associated with the adjacent industrial use. ELS considers the un-vegetated and historically impacted wetland buffer on the Port property to be isolated from the functioning and vegetated buffer along Carty Lake. The vegetated and functioning buffer along the south and east boundaries of Carty Lake within the study area extends to the retaining wall. The retaining wall is also the edge of the soil cap remedy recently implemented by the Port as required by DOE. Prior to the soil cap remedy, the Port property was historically covered by impervious surface.

Functionally isolated areas are generally defined as areas that do not provide vegetation or habitat functions to the adjacent critical areas. Any additional development between the functionally isolated boundary and the wetland boundary will require mitigation. Therefore, the required buffer width of 100 feet for the Category II wetland will stop at this functionally isolated boundary/retaining wall associated with LRIS (see Figure 2).

LIMITATIONS

ELS personnel base the above listed conclusions on standard scientific methodology and best professional judgment. In our opinion, local, state, and federal regulatory agencies should agree with the findings presented in this report.

The services described in this report were performed consistent with generally accepted professional consulting principles and practices. There are no other warranties, express or implied. The services preformed were consistent with our agreement with our client. This report

is prepared solely for the use of our client and may not be used or relied upon by a third party for any purpose. Any such use or reliance will be at such party's risk.

The opinions and recommendations contained in this report apply to conditions existing when services were performed. ELS are not responsible for the impacts of any changes in environmental standards, practices, or regulations after the date of this report. ELS does not warrant the accuracy of supplemental information incorporated in this report that was supplied by others.

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FIGURES

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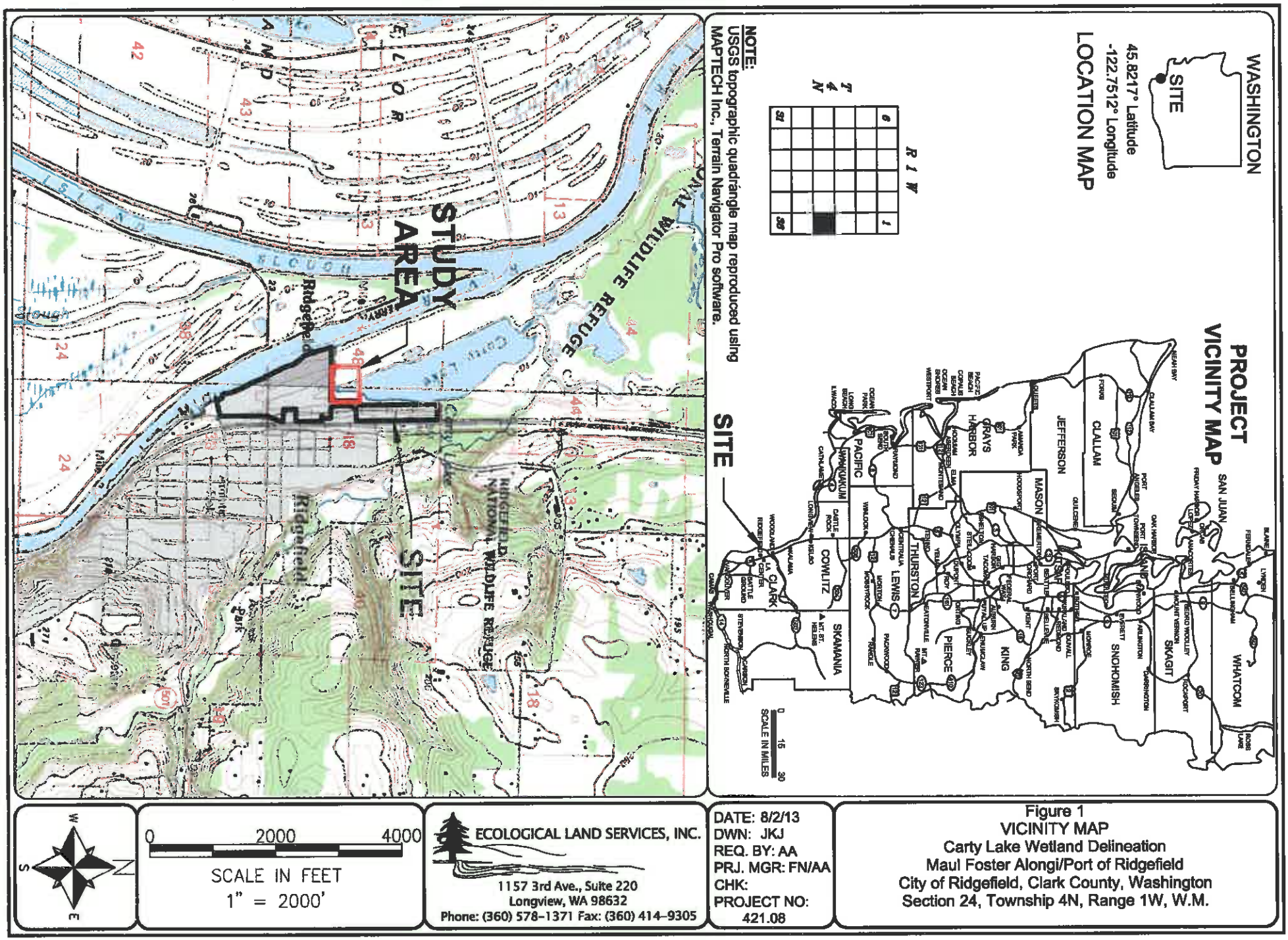

ECOLOGICAL LAND SERVICES, INC.
1157 3rd Ave., Suite 220
Longview, WA 98632
Phone: (360) 578-1371 Fax: (360) 414-9305

DATE: 8/2/13
DWN: JKJ
REQ. BY: AA
PRJ. MGR: FN/AA
CHK:
PROJECT NO: 421.08

Figure 1
VICINITY MAP
Carty Lake Wetland Delineation
Maul Foster Alongi/Port of Ridgefield
City of Ridgefield, Clark County, Washington
Section 24, Township 4N, Range 1W, W.M.

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LEGEND:

- Project Site Boundary
- Study Area (5.70 acres)
- OHWM of Carty Lake
- Wetland Boundary
- Wetland Buffer (100 feet)
- Edge of Existing Functionally Isolated Buffer (Coincides with Wetland Buffer Boundary)
- TP-1 ● Test Plot Location

NOTE(S):

1. Surveyed in 2013 by Minister-Glaeser Surveying, Inc.
2. Site boundary from Clark County GIS Department.
3. Carty Lake is exempt from shoreline buffers per Shoreline Management Master Program, Clark County, WA, August 1974, page 14, Fn.
4. Category II wetland boundary per RMC Table 18.280.140-4.

N W E S

0 100 200

SCALE IN FEET
1" = 100'

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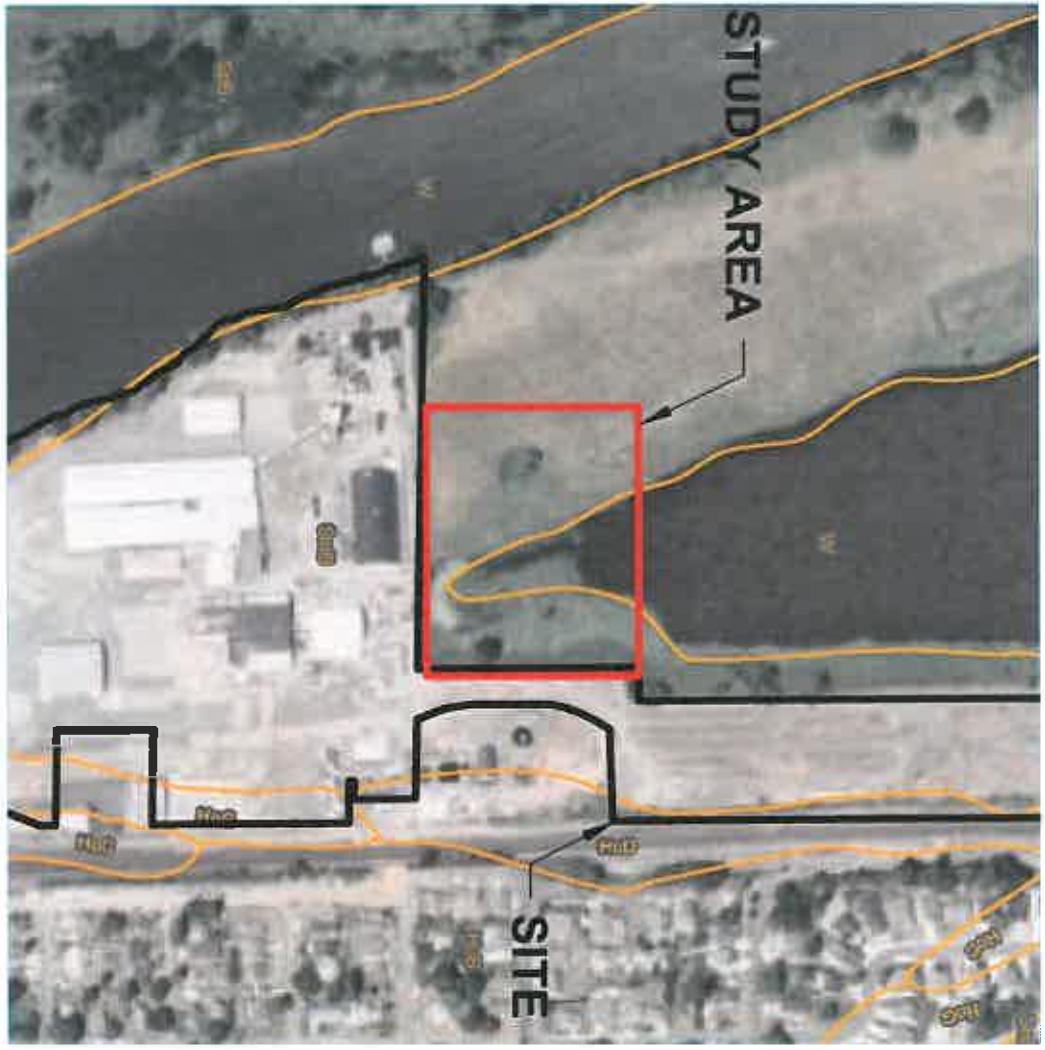
Figure 2
SITE MAP
Carty Lake Wetland Delineation
Maul Foster Alongi/Port of Ridgefield
City of Ridgefield, Clark County, Washington
Section 24, Township 4N, Range 1W, W.M.



LEGEND:

SmB Sauvie silt loam, 3 to 8 percent slopes. Not hydric.

W Water

NOTE(S):

1. Map provided on-line by NRCS at web address: *http://websoilsurvey.nrcs.usda.gov/app/*

W S E

0 400 800

SCALE IN FEET
1" = 400'

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Figure 3
SOIL SURVEY MAP
Carty Lake Wetland Delineation
Maul Foster Alongi/Port of Ridgefield
City of Ridgefield, Clark County, Washington
Section 24, Township 4N, Range 1W, W.M.

No mapped wetlands indicated onsite by US Fish & Wildlife Service.

LEGEND:

- Freshwater Emergent Wetland
- Lake

L1UBV	Lacustrine, limnetic, unconsolidated bottom, permanent-tidal.
PEM1A	Palustrine, emergent, persistent, temporarily flooded.
PEM1C	Palustrine, emergent, persistent, seasonally flooded.
PEM1S	Palustrine, emergent, persistent, temporary-tidal.

NOTE(S):

1. Map provided on-line by US Fish & Wildlife Service at web address: *http://www.fws.gov/wetlands/data/index.html*

Figure 4
NATIONAL WETLANDS INVENTORY MAP
Carty Lake Wetland Delineation
Maul Foster Alongi/Port of Ridgefield
City of Ridgefield, Clark County, Washington
Section 24, Township 4N, Range 1W, W.M.

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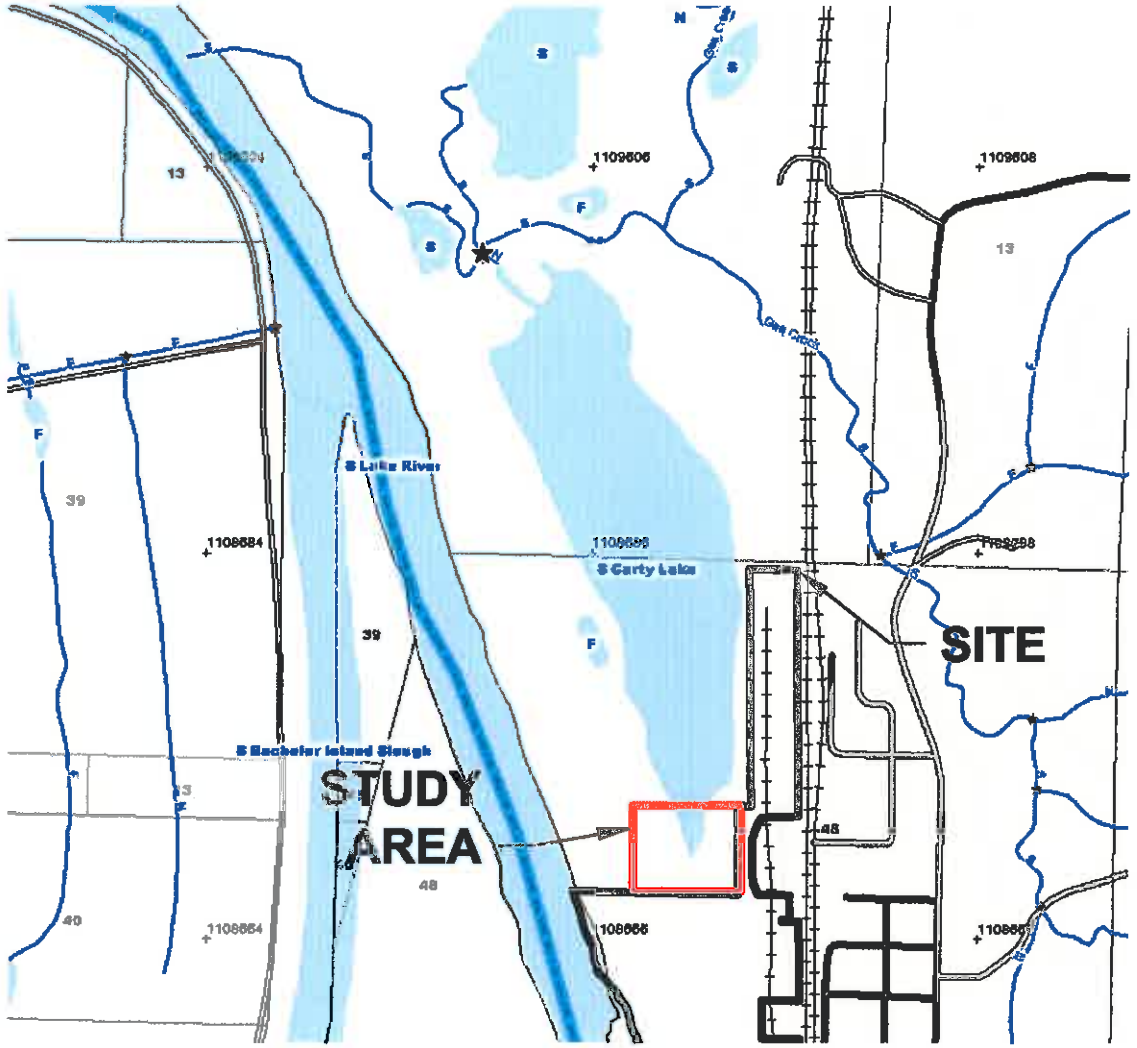
ECOLOGICAL LAND SERVICES, INC.
1157 3rd Ave., Suite 220
Longview, WA 98632
Phone: (360) 578-1371 Fax: (360) 414-9305

0 200 400
SCALE IN FEET
1" = 200'

N W E S



LEGEND:

- Stream Water Type S, F, N
- Water Type Change
- WAU (Watershed Administrative Unit Boundary)
- Open Water

NOTE: Map provided on-line by Washington State Department of Natural Resources at web address: *http://fortress.wa.gov/dnr/app1/Fpars/viewer.htm*

Figure 5
DNR STREAM TYPE MAP
Carty Lake Wetland Delineation
Maul Foster Alongi/Port of Ridgefield
City of Ridgefield, Clark County, Washington
Section 24, Township 4N, Range 1W, W.M.

DATE: 8/2/13
DWN: JKJ
REQ. BY: AA
PRJ. MGR: FN/AA
CHK:
PROJECT NO: 421.08

ECOLOGICAL LAND SERVICES, INC.
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Longview, WA 98632
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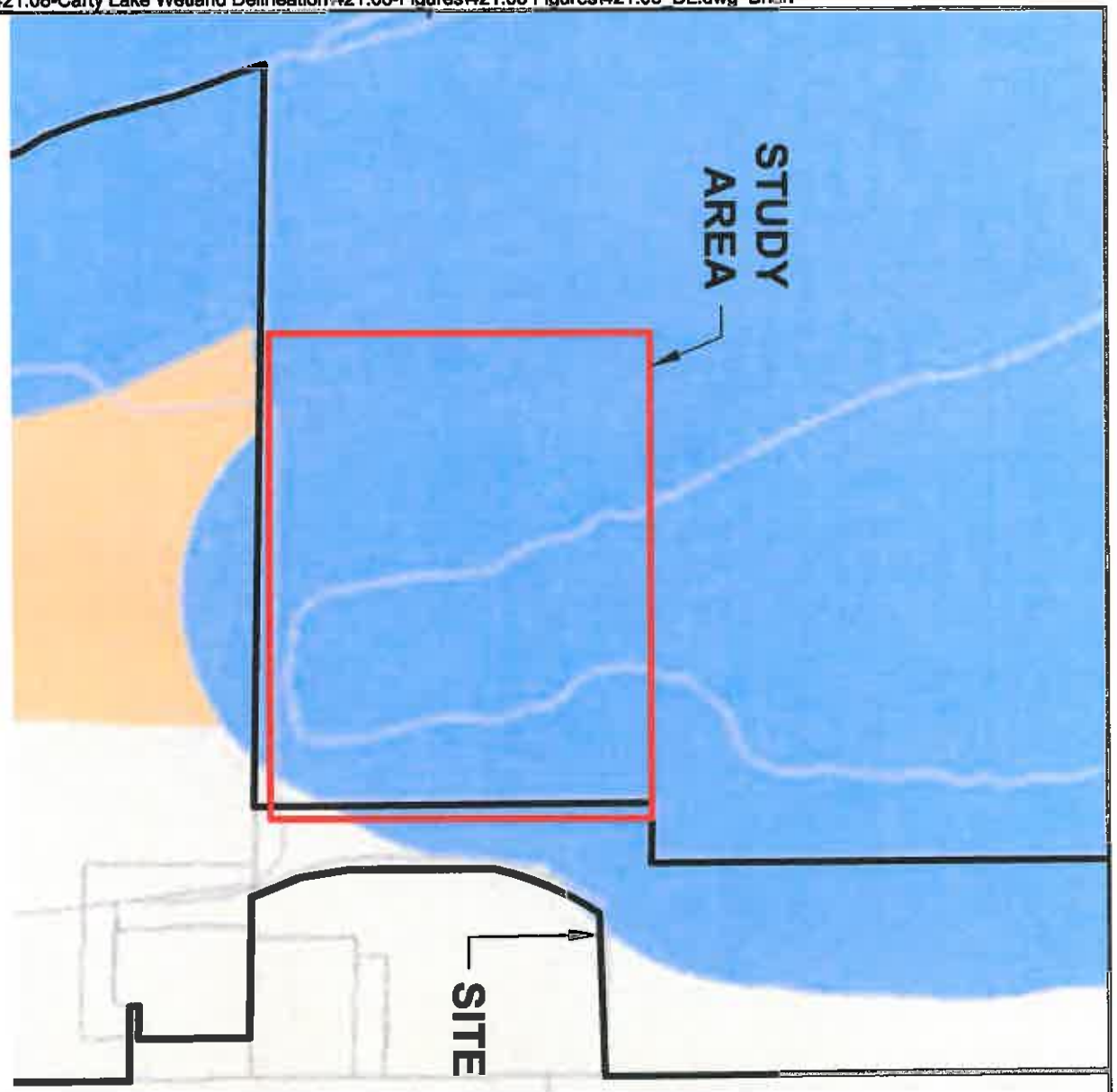
0 1000 2000
SCALE IN FEET
1" = 1000'

N W E S



LEGEND:
- Riparian Habitat Conservation Area
- Species (Waterfowl Concentrations)

NOTE: Map provided on-line by Clark County, Washington at web address: *http://gis.clark.wa.gov/imf/imf.jsp?site=zoning*

W S E

0 200 400
SCALE IN FEET
1" = 200'

ECOLOGICAL LAND SERVICES, INC.
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Longview, WA 98632
Phone: (360) 578-1371 Fax: (360) 414-9305

DATE: 8/2/13
DWN: JKJ
REQ. BY: AA
PRJ. MGR: FN/AA
CHK:
PROJECT NO: 421.08

Figure 6
CLARK COUNTY PRIORITY HABITAT AND SPECIES MAP
Carty Lake Wetland Delineation
Maul Foster Alongi/Port of Ridgefield
City of Ridgefield, Clark County, Washington
Section 24, Township 4N, Range 1W, W.M.

APPENDIX A
Routine Wetland Determination Data Forms

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Carty Lake City/County: Ridgefield/Clark Sampling Date: 07/23/13
Applicant/Owner: Port of Ridgefield State: WA Sampling Point: TP-1, wet
Investigator(s): A. Aberle, C. Siipola Section, Township, Range: Section 48, Township 4N, Range 1W, W.M.
Landform (hillslope, terrace, etc.): slope Local relief: concave Slope (%): 3%
Subregion (LRR): A Lat: 45.8217 Long: -122.7512 Datum:
Soil Map Unit Name: SmB Sauvie silt loam, 3 to 8 percent slopes NWI classification: PEM1C
Are climatic / hydrologic conditions on the site typical for this time of year? Yes☒ No☐ (If no, explain Remarks.)
Are Vegetation☐, Soil☐, or Hydrology☐ significantly disturbed? Area "Normal Circumstances" present? Yes☒ No☐
Are Vegetation☐, Soil☐, or Hydrology☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒ No ☐	**Is the Sampled Area within a Wetland?** Yes☒ No☐
Hydric Soils Present?	Yes ☒ No ☐	
Wetland Hydrology Present?	Yes ☒ No ☐	

Remarks: Within wetland on the southern side of study area

VEGETATION (*Use scientific names*)

Tree Stratum (Plot size: ____ ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.	%		
2.	%		
3.	%		
4.	%		
Total Cover:	%		
Sapling/Shrub Stratum (Plot size: ____ ft. radius)			
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
Total Cover:	%		
Herb Stratum (Plot size: 15 ft radius)			
1. *Phalaris arundinacea*	30%	yes	FACW
2. *Sagittaria latifolia*	30%	yes	OBL
3. *Sparganium angustifolium*	20%	yes	OBL
4. *Convolvulus arvensis*	10%	no	UPL
5.	%		
6.	%		
7.	%		
8.	%		
Total Cover:	90%		
Woody Vine Stratum (Plot size: ____ ft radius)			
1.	%		
2.	%		
Total Cover:	%		

% Bare Ground in Herb Stratum ____ %

Dominance Test Worksheet

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:	
OBL species	x 1=	
FACW species	x 2=	
FAC species	x 3=	
FACU species	x 4=	
UPL species	x 5=	
Column Totals:	(A)	(B)

Prevalence Index = B/A= ____

Hydrophytic Vegetation Indicators:

- ☐ 1 – Rapid Test for Hydrophytic Vegetation
- ☒ 2 – Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data In Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology Must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes☒ No☐

Remarks:

SOIL

Sampling Point: TP-1, wet

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	Gley 1 3/10Y	100%		%			sandy clay	
		%		%				
		%		%				
		%		%				
		%		%				
		%		%				
		%		%				
		%		%				

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosal (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Minerals (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☒ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and Wetland hydrology must be present

Restrictive Layer (if present):

Type: ____

Depth (inches):

Hydric Soil Present? **Yes☒ No☐**

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (min. of one required; check all that apply)

- ☐ Surface Water (A1)
- ☒ High Water Table (A2)
- ☒ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, & 4B)**
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) **(LRR A)**
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D4)

Field Observations:

Surface Water Present?	Yes ☐	No ☒	Depth (Inches): ____
Water Table Present?	Yes ☒	No ☐	Depth (Inches): 3
Saturation Present? (Includes Capillary fringe)	Yes ☒	No ☐	Depth (Inches): 2

Wetland Hydrology Present? **Yes ☒ No ☐**

Describe Recorded Data (Stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Carty Lake | City/County: Ridgefield/Clark | Sampling Date: 07/23/13
Applicant/Owner: Port of Ridgefield | State: WA | Sampling Point: TP-2, up
Investigator(s): A. Aberle, C. Siipola | Section, Township, Range: Section 48, Township 4N, Range 1W, W.M.
Landform (hillslope, terrace, etc.): slope | Local relief: convex | Slope (%): 3%
Subregion (LRR): A | Lat: 45.8217 | Long: -122.7512 | Datum:
Soil Map Unit Name: SmB Sauvie silt loam, 3 to 8 percent slopes | NWI classification: none
Are climatic / hydrologic conditions on the site typical for this time of year? Yes☒ No☐ (If no, explain Remarks.)
Are Vegetation☐, Soil☐, or Hydrology☐ significantly disturbed? Area "Normal Circumstances" present? Yes☒ No☐
Are Vegetation☐, Soil☐, or Hydrology☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes☐ No☒
Hydric Soils Present? Yes☐ No☒
Wetland Hydrology Present? Yes☐ No☒

Is the Sampled Area within a Wetland? Yes☐ No☒

Remarks: located in southern section of study area

VEGETATION (*Use scientific names*)

Tree Stratum (Plot size: ____ ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.	%		
2.	%		
3.	%		
4.	%		
Total Cover:	%		
Sapling/Shrub Stratum (Plot size: ____ ft. radius)			
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
Total Cover:	%		
Herb Stratum (Plot size: 15 ft radius)			
1. *Rubus armeniacus*	30%	yes	FACU
2. *Phalaris arundinacea*	20%	yes	FACW
3. *Hedera helix*	20%	yes	UPL
4. *Sambucus racemosa*	20%	yes	FACU
5. *Convolvulus arvensis*	10%	no	UPL
6.	%		
7.	%		
8.	%		
Total Cover:	100%		
Woody Vine Stratum (Plot size: ____ ft radius)			
1.	%		
2.	%		
Total Cover:	%		

% Bare Ground in Herb Stratum ____ %

Dominance Test Worksheet

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 25 (A/B)

Prevalence Index worksheet

Total % Cover of:		Multiply by:	
OBL species		x 1=	
FACW species		x 2=	
FAC species		x 3=	
FACU species		x 4=	
UPL species		x 5=	
Column Totals:	(A)		(B)

Prevalence Index = B/A= ____

Hydrophytic Vegetation Indicators:

- ☐ 1 – Rapid Test for Hydrophytic Vegetation
- ☐ 2 – Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data In Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology Must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes☐ No☒

Remarks:

SOIL

Sampling Point: TP-2, up

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
		%		%				See Remarks Below
		%		%				
		%		%				
		%		%				
		%		%				
		%		%				
		%		%				
		%		%				

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosal (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Minerals (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and Wetland hydrology must be present

Restrictive Layer (if present):

Type: rock fill

Depth (inches):beneath duff layer

Hydric Soil Present? Yes☐ No☒

Remarks: duff layer with rocks at surface

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (min. of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, & 4B)**
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) **(LRR A)**
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D4)

Field Observations:

Surface Water Present?	Yes ☐	No ☒	Depth (Inches): ____
Water Table Present?	Yes ☐	No ☒	Depth (Inches): ____
Saturation Present? (Includes Capillary fringe)	Yes ☐	No ☒	Depth (Inches): ____

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (Stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Carty Lake City/County: Ridgefield/Clark Sampling Date: 07/23/13
Applicant/Owner: Port of Ridgefield State: WA Sampling Point: TP-3, wet
Investigator(s): A. Aberle, C. Siipola Section, Township, Range: Section 48, Township 4N, Range 1W, W.M.
Landform (hillslope, terrace, etc.): slope Local relief: concave Slope (%): 3%
Subregion (LRR): A Lat: 45.8217 Long: -122.7512 Datum:
Soil Map Unit Name: SmB Sauvie silt loam, 3 to 8 percent slopes NWI classification: none
Are climatic / hydrologic conditions on the site typical for this time of year? Yes☒ No☐ (If no, explain Remarks.)
Are Vegetation☐, Soil☐, or Hydrology☐ significantly disturbed? Area "Normal Circumstances" present? Yes☒ No☐
Are Vegetation☐, Soil☐, or Hydrology☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒ No ☐	**Is the Sampled Area within a Wetland?** Yes☒ No☐
Hydric Soils Present?	Yes ☒ No ☐	
Wetland Hydrology Present?	Yes ☒ No ☐	

Remarks: Located in northwest corner of study area. Soils appear to be transitioning to hydric. Area determined wet based on vegetation, topography and presences of oxidized rhizospheres.

VEGETATION (*Use scientific names*)

Tree Stratum (Plot size: ____ ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.	%		
2.	%		
3.	%		
4.	%		
Total Cover:	%		
Sapling/Shrub Stratum (Plot size: ____ ft. radius)			
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
Total Cover:	%		
Herb Stratum (Plot size: 15 ft radius)			
1. *Phalaris arundinacea*	90%	yes	FACW
2. *Rubus armeniacus*	10%	no	FACU
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
Total Cover:	100%		
Woody Vine Stratum (Plot size: ____ ft radius)			
1.	%		
2.	%		
Total Cover:	%		

% Bare Ground in Herb Stratum ____ %

Dominance Test Worksheet

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC 100 (A/B)

Prevalence Index worksheet

Total % Cover of:		Multiply by:	
OBL species		x 1=	
FACW species		x 2=	
FAC species		x 3=	
FACU species		x 4=	
UPL species		x 5=	
Column Totals:	(A)		(B)

Prevalence Index = B/A= ____

Hydrophytic Vegetation Indicators:

- ☐ 1 – Rapid Test for Hydrophytic Vegetation
- ☒ 2 – Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data In Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology Must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes☒ No☐

Remarks: trace- Canada thistle

SOIL

Sampling Point: TP-3, wet

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 4/3	100%		%			silt loam	
6-16	10YR 4/3	70%	10YR 4/6	30%	C	M	silt loam	
		%		%				
		%		%				
		%		%				
		%		%				
		%		%				
		%		%				

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosal (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Minerals (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and Wetland hydrology must be present

Restrictive Layer (if present):

Type: _____

Depth (inches):

Hydric Soil Present? Yes☐ No☒

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (min. of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ **High Water Table (A2)**
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, & 4B)**
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☒ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) **(LRR A)**
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D4)

Field Observations:

Surface Water Present?	Yes ☐	No ☒	Depth (Inches): _____
Water Table Present?	Yes ☐	No ☒	Depth (Inches): _____
Saturation Present? (Includes Capillary fringe)	Yes ☐	No ☒	Depth (Inches): _____

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (Stream gauge, monitoring well, aerial photos, previous inspections), if available:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Carty Lake City/County: Ridgefield/Clark Sampling Date: 07/23/13
Applicant/Owner: Port of Ridgefield State: WA Sampling Point: TP-4, up
Investigator(s): A. Aberle, C. Siipola Section, Township, Range: Section 48, Township 4N, Range 1W, W.M.
Landform (hillslope, terrace, etc.): slope Local relief: convex Slope (%): 3%
Subregion (LRR): A Lat: 45.8217 Long: -122.7512 Datum:
Soil Map Unit Name: SmB Sauvie silt loam, 3 to 8 percent slopes NWI classification: none
Are climatic / hydrologic conditions on the site typical for this time of year? Yes☒ No☐ (If no, explain Remarks.)
Are Vegetation☐, Soil☐, or Hydrology☐ significantly disturbed? Area "Normal Circumstances" present? Yes☒ No☐
Are Vegetation☐, Soil☐, or Hydrology☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☐ No ☒	**Is the Sampled Area within a Wetland?** Yes☐ No☒
Hydric Soils Present?	Yes ☐ No ☒	
Wetland Hydrology Present?	Yes ☐ No ☒	

Remarks: Located in northwest corner of study area

VEGETATION (*Use scientific names*)

Tree Stratum (Plot size: ____ ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.	%		
2.	%		
3.	%		
4.	%		
Total Cover:	%		
Sapling/Shrub Stratum (Plot size: ____ ft. radius)			
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
Total Cover:	%		
Herb Stratum (Plot size: 15 ft radius)			
1. *Holcus lanatus*	40%	yes	FAC
2. *Anthoxanthum odoratum*	20%	yes	FACU
3. *Rubus armeniacus*	20%	yes	FACU
4. *Agrostis capillaris*	10%	no	FAC
5. *Cirsium arvense*	10%	no	FAC
6.	%		
7.	%		
8.	%		
Total Cover:	100%		
Woody Vine Stratum (Plot size: ____ ft radius)			
1.	%		
2.	%		
Total Cover:	%		

% Bare Ground in Herb Stratum ____ %

Dominance Test Worksheet

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33 (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:	
OBL species	x 1=	
FACW species	x 2=	
FAC species	x 3=	
FACU species	x 4=	
UPL species	x 5=	
Column Totals:	(A)	(B)

Prevalence Index = B/A= ____

Hydrophytic Vegetation Indicators:

- ☐ 1 – Rapid Test for Hydrophytic Vegetation
- ☐ 2 – Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data In Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology Must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes☐ No☒

Remarks: trace- bird's-foot trefoil

SOIL

Sampling Point: TP-4, up

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 4/3	100%		%				
		%		%				
		%		%				
		%		%				
		%		%				
		%		%				
		%		%				
		%		%				

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosal (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Minerals (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and Wetland hydrology must be present

Restrictive Layer (If present):

Type: ____

Depth (inches):

Hydric Soil Present? Yes☐ No☒

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (min. of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, & 4B)**
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) **(LRR A)**
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D4)

Field Observations:

Surface Water Present?	Yes ☐	No ☒	Depth (Inches): ____
Water Table Present?	Yes ☐	No ☒	Depth (Inches): ____
Saturation Present? (Includes Capillary fringe)	Yes ☐	No ☒	Depth (Inches): ____

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (Stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Carty Lake City/County: Ridgefield/Clark Sampling Date: 07/23/13
Applicant/Owner: Port of Ridgefield State: WA Sampling Point: TP-5, wet
Investigator(s): A. Aberle, C. Siipola Section, Township, Range: Section 48, Township 4N, Range 1W, W.M.
Landform (hillslope, terrace, etc.): slope Local relief: concave Slope (%): 3%
Subregion (LRR): A Lat: 45.8217 Long: -122.7512 Datum:
Soil Map Unit Name: SmB Sauvie silt loam, 3 to 8 percent slopes NWI classification: PEM1A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes☒ No☐ (If no, explain Remarks.)
Are Vegetation☐, Soil☐, or Hydrology☐ significantly disturbed? Area "Normal Circumstances" present? Yes☒ No☐
Are Vegetation☐, Soil☐, or Hydrology☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☒ No ☐ Hydric Soils Present? Yes ☒ No ☐ Wetland Hydrology Present? Yes ☒ No ☐	**Is the Sampled Area within a Wetland?** Yes☒ No☐

Remarks: Located in northwest corner of study area

VEGETATION (*Use scientific names*)

Tree Stratum (Plot size: ____ ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.	%		
2.	%		
3.	%		
4.	%		
Total Cover:	%		
Sapling/Shrub Stratum (Plot size: ____ ft. radius)			
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
Total Cover:	%		
Herb Stratum (Plot size: 15 ft radius)			
1. *Phalaris arundinacea*	90%	yes	FACW
2. *Rubus armeniacus*	10%	no	FACU
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
Total Cover:	100%		
Woody Vine Stratum (Plot size: ____ ft radius)			
1.	%		
2.	%		
Total Cover:	%		

% Bare Ground in Herb Stratum ____ %

Dominance Test Worksheet

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet

Total % Cover of:		Multiply by:	
OBL species		x 1=	
FACW species		x 2=	
FAC species		x 3=	
FACU species		x 4=	
UPL species		x 5=	
Column Totals:	(A)		(B)

Prevalence Index = B/A= ____

Hydrophytic Vegetation Indicators:

- ☐ 1 – Rapid Test for Hydrophytic Vegetation
- ☒ 2 – Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data In Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology Must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes☒ No☐

Remarks: trace- colonial bentgrass, bird's-foot trefoil, and Canada thistle

SOIL

Sampling Point: TP-5, wet

Profile Description: (Describe to the depth needed to document the Indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 3/2	90%	10YR 3/4	10%	C	M	silt loam	
6-16	10YR 3/1	70%	10YR 3/4	30%	C	M	silt loam	
		%		%				
		%		%				
		%		%				
		%		%				
		%		%				
		%		%				

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosal (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Minerals (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☒ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and Wetland hydrology must be present

Restrictive Layer (if present):

Type: _____

Depth (inches):

Hydric Soil Present? Yes☒ No☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (min. of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, & 4B)**
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☒ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) **(LRR A)**
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D4)

Field Observations:

Surface Water Present?	Yes ☐	No ☒	Depth (Inches): _____
Water Table Present?	Yes ☐	No ☒	Depth (Inches): _____
Saturation Present? (Includes Capillary fringe)	Yes ☐	No ☒	Depth (Inches): _____

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (Stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Carty Lake City/County: Ridgefield/Clark Sampling Date: 07/23/13
Applicant/Owner: Port of Ridgefield State: WA Sampling Point: TP-6, up
Investigator(s): A. Aberle, C. Siipola Section, Township, Range: Section 48, Township 4N, Range 1W, W.M.
Landform (hillslope, terrace, etc.): slope Local relief: convex Slope (%): 3%
Subregion (LRR): A Lat: 45.8217 Long: -122.7512 Datum:
Soil Map Unit Name: SmB Sauvie silt loam, 3 to 8 percent slopes NWI classification: none
Are climatic / hydrologic conditions on the site typical for this time of year? Yes☒ No☐ (If no, explain Remarks.)
Are Vegetation☐, Soil☐, or Hydrology☐ significantly disturbed? Area "Normal Circumstances" present? Yes☒ No☐
Are Vegetation☐, Soil☐, or Hydrology☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☐ No ☒	**Is the Sampled Area within a Wetland?** Yes☐ No☒
Hydric Soils Present?	Yes ☐ No ☒	
Wetland Hydrology Present?	Yes ☐ No ☒	

Remarks: Located in northwest corner of study area

VEGETATION (*Use scientific names*)

Tree Stratum (Plot size: ____ ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.	%		
2.	%		
3.	%		
4.	%		
Total Cover:	%		
Sapling/Shrub Stratum (Plot size: ____ ft. radius)			
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
Total Cover:	%		
Herb Stratum (Plot size: 15 ft radius)			
1. *Anthoxanthum odoratum*	30%	yes	FACU
2. *Agrostis capillaris*	20%	yes	FAC
3. *Rubus armeniacus*	20%	yes	FACU
4. *Holcus lanatus*	10%	no	FAC
5. *Cirsium arvense*	10%	no	FAC
6. *Festuca arundinacea*	10%	no	FAC
7.	%		
8.	%		
Total Cover:	100%		
Woody Vine Stratum (Plot size: ____ ft radius)			
1.	%		
2.	%		
Total Cover:	%		

% Bare Ground in Herb Stratum ____ %

Dominance Test Worksheet

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33 (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species ____	x 1= ____
FACW species ____	x 2= ____
FAC species ____	x 3= ____
FACU species ____	x 4= ____
UPL species ____	x 5= ____
Column Totals: (A)	(B)

Prevalence Index = B/A= ____

Hydrophytic Vegetation Indicators:

- ☐ 1 – Rapid Test for Hydrophytic Vegetation
- ☐ 2 – Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data In Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology Must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes☐ No☒

Remarks: trace- bird's-foot trefoil

SOIL

Sampling Point: TP-6, up

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 3/2	100%		%			silt loam	
		%		%				
		%		%				
		%		%				
		%		%				
		%		%				
		%		%				
		%		%				

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosal (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Minerals (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and Wetland hydrology must be present

Restrictive Layer (if present):

Type: ____

Depth (inches):

Hydric Soil Present? Yes☐ No☒

Remarks: dry

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (min. of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, & 4B)**
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) **(LRR A)**
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D4)

Field Observations:

Surface Water Present?	Yes ☐	No ☒	Depth (Inches): ____
Water Table Present?	Yes ☐	No ☒	Depth (Inches): ____
Saturation Present? (Includes Capillary fringe)	Yes ☐	No ☒	Depth (Inches): ____

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (Stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Carty Lake | City/County: Ridgefield/Clark | Sampling Date: 07/23/13
Applicant/Owner: Port of Ridgefield | State: WA | Sampling Point: TP-7, up
Investigator(s): A. Aberle, C. Siipola | Section, Township, Range: Section 48, Township 4N, Range 1W, W.M.
Landform (hillslope, terrace, etc.): slope | Local relief: convex | Slope (%): 3%
Subregion (LRR): A | Lat: 45.8217 | Long: -122.7512 | Datum:
Soil Map Unit Name: SmB Sauvie silt loam, 3 to 8 percent slopes | NWI classification: none
Are climatic / hydrologic conditions on the site typical for this time of year? Yes☒ No☐ (If no, explain Remarks.)
Are Vegetation☐, Soil☐, or Hydrology☐ significantly disturbed? Area "Normal Circumstances" present? Yes☒ No☐
Are Vegetation☐, Soil☐, or Hydrology☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes☐ No☒	**Is the Sampled Area within a Wetland?** Yes☐ No☒
Hydric Soils Present?	Yes☐ No☒	
Wetland Hydrology Present?	Yes☐ No☒	

Remarks: Located in southwest side of study area

VEGETATION (*Use scientific names*)

Tree Stratum (Plot size: ____ ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.	%		
2.	%		
3.	%		
4.	%		
Total Cover:	%		
Sapling/Shrub Stratum (Plot size: ____ ft. radius)			
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
Total Cover:	%		
Herb Stratum (Plot size: 15 ft radius)			
1. *Anthoxanthum odoratum*	30%	yes	FACU
2. *Agrostis capillaris*	20%	yes	FAC
3. *Dactylis glomerata*	20%	yes	FACU
4. *Rubus armeniacus*	10%	no	FACU
5. *Cirsium arvense*	10%	no	FAC
6. *Phalaris arundinacea*	10%	no	FACW
7.	%		
8.	%		
Total Cover:	100%		
Woody Vine Stratum (Plot size: ____ ft radius)			
1.	%		
2.	%		
Total Cover:	%		

% Bare Ground in Herb Stratum ____ %

Dominance Test Worksheet

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33 (A/B)

Prevalence Index worksheet

Total % Cover of:		Multiply by:	
OBL species		x 1=	
FACW species		x 2=	
FAC species		x 3=	
FACU species		x 4=	
UPL species		x 5=	
Column Totals:	(A)		(B)

Prevalence Index = B/A= ____

Hydrophytic Vegetation Indicators:

- ☐ 1 – Rapid Test for Hydrophytic Vegetation
- ☐ 2 – Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data In Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology Must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes☐ No☒

Remarks: trace- tall fescue, bird's-foot trefoil

SOIL

Sampling Point: TP-7, up

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 3/2	100%		%			silt loam	
		%		%				
		%		%				
		%		%				
		%		%				
		%		%				
		%		%				
		%		%				

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosal (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☒ Thick Dark Surface (A12)
- ☐ Sandy Mucky Minerals (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and Wetland hydrology must be present

Restrictive Layer (If present):

Type: ____

Depth (inches):

Hydric Soil Present? Yes☐ No☒

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Secondary Indicators (2 or more required)

Primary Indicators (min. of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or crust (B4)
- ☐ **Iron Deposits (B5)**
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, & 4B)**
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) **(LRR A)**
- ☐ Other (Explain in Remarks)
- ☐ Water Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D4)

Field Observations:

Surface Water Present?	Yes ☐	No ☒	Depth (Inches): ____
Water Table Present?	Yes ☐	No ☒	Depth (Inches): ____
Saturation Present? (Includes Capillary fringe)	Yes ☐	No ☒	Depth (Inches): ____

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (Stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Carty Lake City/County: Ridgefield/Clark Sampling Date: 07/23/13
Applicant/Owner: Port of Ridgefield State: WA Sampling Point: TP-8, wet
Investigator(s): A. Aberle, C. Siipola Section, Township, Range: Section 48, Township 4N, Range 1W, W.M.
Landform (hillslope, terrace, etc.): slope Local relief: concave Slope (%): 3%
Subregion (LRR): A Lat: 45.8217 Long: -122.7512 Datum:
Soil Map Unit Name: SmB Sauvie silt loam, 3 to 8 percent slopes NWI classification: none
Are climatic / hydrologic conditions on the site typical for this time of year? Yes☒ No☐ (If no, explain Remarks.)
Are Vegetation☐, Soil☐, or Hydrology☐ significantly disturbed? Area "Normal Circumstances" present? Yes☒ No☐
Are Vegetation☐, Soil☐, or Hydrology☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒ No ☐	**Is the Sampled Area within a Wetland?** Yes☒ No☐
Hydric Soils Present?	Yes ☒ No ☐	
Wetland Hydrology Present?	Yes ☒ No ☐	

Remarks: Located in southwest side of study area

VEGETATION (*Use scientific names*)

Tree Stratum (Plot size: ____ ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.	%		
2.	%		
3.	%		
4.	%		
Total Cover:	%		
Sapling/Shrub Stratum (Plot size: ____ ft. radius)			
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
Total Cover:	%		
Herb Stratum (Plot size: 15 ft radius)			
1. *Phalaris arundinacea*	90%	yes	FACW
2. *Rubus armeniacus*	10%	no	FACU
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
Total Cover:	100%		
Woody Vine Stratum (Plot size: ____ ft radius)			
1.	%		
2.	%		
Total Cover:	%		

% Bare Ground in Herb Stratum ____ %

Dominance Test Worksheet

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:	
OBL species	x 1=	
FACW species	x 2=	
FAC species	x 3=	
FACU species	x 4=	
UPL species	x 5=	
Column Totals: (A)		(B)

Prevalence Index = B/A=

Hydrophytic Vegetation Indicators:

- ☐ 1 – Rapid Test for Hydrophytic Vegetation
- ☒ 2 – Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data In Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology Must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes☒ No☐

Remarks: trace- bird's-foot trefoil

SOIL

Sampling Point: TP-8, wet

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 2/1	70%	10YR 4/6	30%	C	M	silt loam	
		%		%				
		%		%				
		%		%				
		%		%				
		%		%				
		%		%				
		%		%				

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosal (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Minerals (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☒ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and Wetland hydrology must be present

Restrictive Layer (If present):

Type: ____

Depth (inches):

Hydric Soil Present? Yes☒ No☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (min. of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, & 4B)**
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☒ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) **(LRR A)**
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D4)

Field Observations:

Surface Water Present?	Yes ☐	No ☒	Depth (Inches): ____
Water Table Present?	Yes ☐	No ☒	Depth (Inches): ____
Saturation Present? (Includes Capillary fringe)	Yes ☐	No ☒	Depth (Inches): ____

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (Stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Carty Lake City/County: Ridgefield/Clark Sampling Date: 07/23/13
Applicant/Owner: Port of Ridgefield State: WA Sampling Point: TP-9, up
Investigator(s): A. Aberle, C. Siipola Section, Township, Range: Section 48, Township 4N, Range 1W, W.M.
Landform (hillslope, terrace, etc.): slope Local relief: convex Slope (%): 3%
Subregion (LRR): A Lat: 45.8217 Long: -122.7512 Datum:
Soil Map Unit Name: SmB Sauvie silt loam, 3 to 8 percent slopes NWI classification: none
Are climatic / hydrologic conditions on the site typical for this time of year? Yes☒ No☐ (If no, explain Remarks.)
Are Vegetation☐, Soil☐, or Hydrology☐ significantly disturbed? Area "Normal Circumstances" present? Yes☒ No☐
Are Vegetation☐, Soil☐, or Hydrology☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☐ No ☒	**Is the Sampled Area within a Wetland?** Yes☐ No☒
Hydric Soils Present?	Yes ☐ No ☒	
Wetland Hydrology Present?	Yes ☐ No ☒	

Remarks: Located in southwest side of study area

VEGETATION (*Use scientific names*)

Tree Stratum (Plot size: ____ ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.	%		
2.	%		
3.	%		
4.	%		
Total Cover:	%		
Sapling/Shrub Stratum (Plot size: ____ ft. radius)			
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
Total Cover:	%		
Herb Stratum (Plot size: 15 ft radius)			
1. *Festuca arundinacea*	40%	yes	FAC
2. *Anthoxanthum odoratum*	30%	yes	FACU
3. *Dactylis glomerata*	20%	yes	FACU
4. *Cirsium arvense*	10%	no	FAC
5.	%		
6.	%		
7.	%		
8.	%		
Total Cover:	100%		
Woody Vine Stratum (Plot size: ____ ft radius)			
1.	%		
2.	%		
Total Cover:	%		

% Bare Ground in Herb Stratum ____ %

Dominance Test Worksheet

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33 (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:	
OBL species	x 1=	
FACW species	x 2=	
FAC species	x 3=	
FACU species	x 4=	
UPL species	x 5=	
Column Totals:	(A)	(B)

Prevalence Index = B/A= ____

Hydrophytic Vegetation Indicators:

- ☐ 1 – Rapid Test for Hydrophytic Vegetation
- ☐ 2 – Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data In Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology Must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes☐ No☒

Remarks: trace- bird's-foot trefoil

SOIL

Sampling Point: TP-9, up

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 3/2	100%		%			silt loam	
		%		%				
		%		%				
		%		%				
		%		%				
		%		%				
		%		%				
		%		%				

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosal (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Minerals (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and Wetland hydrology must be present

Restrictive Layer (If present):

Type: ____

Depth (inches):

Hydric Soil Present? Yes☐ No☒

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (min. of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, & 4B)**
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) **(LRR A)**
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D4)

Field Observations:

Surface Water Present?	Yes ☐	No ☒	Depth (Inches): ____
Water Table Present?	Yes ☐	No ☒	Depth (Inches): ____
Saturation Present? (Includes Capillary fringe)	Yes ☐	No ☒	Depth (Inches): ____

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (Stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Carty Lake City/County: Ridgefield/Clark Sampling Date: 07/23/13
Applicant/Owner: Port of Ridgefield State: WA Sampling Point: TP-10, wet
Investigator(s): A. Aberle, C. Slipola Section, Township, Range: Section 48, Township 4N, Range 1W, W.M.
Landform (hillslope, terrace, etc.): slope Local relief: concave Slope (%): 3%
Subregion (LRR): A Lat: 45.8217 Long: -122.7512 Datum:
Soil Map Unit Name: SmB Sauvie silt loam, 3 to 8 percent slopes NWI classification: none
Are climatic / hydrologic conditions on the site typical for this time of year? Yes☒ No☐ (If no, explain Remarks.)
Are Vegetation☐, Soil☐, or Hydrology☐ significantly disturbed? Area "Normal Circumstances" present? Yes☒ No☐
Are Vegetation☐, Soil☐, or Hydrology☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☒ No ☐ Hydric Soils Present? Yes ☒ No ☐ Wetland Hydrology Present? Yes ☒ No ☐	**Is the Sampled Area within a Wetland?** Yes☒ No☐

Remarks: Located in southwest side of study area

VEGETATION (*Use scientific names*)

Tree Stratum (Plot size: ____ ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.	%		
2.	%		
3.	%		
4.	%		
Total Cover:	%		
Sapling/Shrub Stratum (Plot size: ____ ft. radius)			
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
Total Cover:	%		
Herb Stratum (Plot size: 15 ft radius)			
1. *Phalaris arundinacea*	80%	yes	FACW
2. *Lotus corniculatus*	20%	yes	FAC
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
Total Cover:	100%		
Woody Vine Stratum (Plot size: ____ ft radius)			
1.	%		
2.	%		
Total Cover:	%		

% Bare Ground in Herb Stratum ____ %

Dominance Test Worksheet

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:	
OBL species	x 1=	
FACW species	x 2=	
FAC species	x 3=	
FACU species	x 4=	
UPL species	x 5=	
Column Totals:	(A)	(B)

Prevalence Index = B/A= ____

Hydrophytic Vegetation Indicators:

- ☐ 1 – Rapid Test for Hydrophytic Vegetation
- ☒ 2 – Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data In Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology Must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes☒ No☐

Remarks: trace- Canada thistle, Himalayan blackberry

SOIL

Sampling Point: TP-10, wet

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 3/2	40%		%			silt loam	
	10YR 3/1	40%	7.5YR 3/4	20%	C	M	silt loam	
		%		%				
		%		%				
		%		%				
		%		%				
		%		%				
		%		%				

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosal (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Minerals (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☒ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and Wetland hydrology must be present

Restrictive Layer (If present):

Type: ____

Depth (inches):

Hydric Soil Present? Yes☒ No☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (min. of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, & 4B)**
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☒ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) **(LRR A)**
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D4)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (Inches): ____

Water Table Present? Yes ☐ No ☒ Depth (Inches): ____

Saturation Present? Yes ☐ No ☒ Depth (Inches): ____

(Includes Capillary fringe)

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (Stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Carty Lake City/County: Ridgefield/Clark Sampling Date: 07/23/13
Applicant/Owner: Port of Ridgefield State: WA Sampling Point: TP-11, up
Investigator(s): A. Aberle, C. Siipola Section, Township, Range: Section 48, Township 4N, Range 1W, W.M.
Landform (hillslope, terrace, etc.): slope Local relief: convex Slope (%): 3%
Subregion (LRR): A Lat: 45.8217 Long: -122.7512 Datum:
Soil Map Unit Name: SmB Sauvie silt loam, 3 to 8 percent slopes NWI classification: none
Are climatic / hydrologic conditions on the site typical for this time of year? Yes☒ No☐ (If no, explain Remarks.)
Are Vegetation☐, Soil☐, or Hydrology☐ significantly disturbed? Area "Normal Circumstances" present? Yes☒ No☐
Are Vegetation☐, Soil☐, or Hydrology☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☐ No ☒	**Is the Sampled Area within a Wetland?** Yes☐ No☒
Hydric Soils Present?	Yes ☐ No ☒	
Wetland Hydrology Present?	Yes ☐ No ☒	

Remarks: Located on east side of study area

VEGETATION (*Use scientific names*)

Tree Stratum (Plot size: ____ ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.	%		
2.	%		
3.	%		
4.	%		
Total Cover:	%		
Sapling/Shrub Stratum (Plot size: ____ ft. radius)			
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
Total Cover:	%		
Herb Stratum (Plot size: 15 ft radius)			
1. *Rubus armeniacus*	100%	yes	FACU
2.	%		
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
Total Cover:	100%		
Woody Vine Stratum (Plot size: ____ ft radius)			
1.	%		
2.	%		
Total Cover:	%		

% Bare Ground in Herb Stratum ____ %

Dominance Test Worksheet

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species	x 1=
FACW species	x 2=
FAC species	x 3=
FACU species	x 4=
UPL species	x 5=
Column Totals: (A)	(B)

Prevalence Index = B/A=____

Hydrophytic Vegetation Indicators:

- ☐ 1 – Rapid Test for Hydrophytic Vegetation
- ☐ 2 – Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data In Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology Must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes☐ No☒

Remarks:

SOIL

Sampling Point: TP-11, up

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 3/1	100%		%			silt loam	
		%		%				
		%		%				
		%		%				
		%		%				
		%		%				
		%		%				
		%		%				

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosal (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Minerals (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and Wetland hydrology must be present

Restrictive Layer (if present):

Type: ____

Depth (inches):

Hydric Soil Present? Yes☐ No☒

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (min. of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, & 4B)**
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) **(LRR A)**
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D4)

Field Observations:

Surface Water Present?	Yes ☐	No ☒	Depth (Inches): ____
Water Table Present?	Yes ☐	No ☒	Depth (Inches): ____
Saturation Present? (Includes Capillary fringe)	Yes ☐	No ☒	Depth (Inches): ____

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (Stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Carty Lake City/County: Ridgefield/Clark Sampling Date: 07/23/13
Applicant/Owner: Port of Ridgefield State: WA Sampling Point: TP-12, wet
Investigator(s): A. Aberle, C. Slipola Section, Township, Range: Section 48, Township 4N, Range 1W, W.M.
Landform (hillslope, terrace, etc.): slope Local relief: concave Slope (%): 3%
Subregion (LRR): A Lat: 45.8217 Long: -122.7512 Datum:
Soil Map Unit Name: SmB Sauvie silt loam, 3 to 8 percent slopes NWI classification: PEM1S
Are climatic / hydrologic conditions on the site typical for this time of year? Yes☒ No☐ (If no, explain Remarks.)
Are Vegetation☐, Soil☐, or Hydrology☐ significantly disturbed? Area "Normal Circumstances" present? Yes☒ No☐
Are Vegetation☐, Soil☐, or Hydrology☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒ No ☐	**Is the Sampled Area within a Wetland?** Yes☒ No☐
Hydric Soils Present?	Yes ☒ No ☐	
Wetland Hydrology Present?	Yes ☒ No ☐	

Remarks: Located on east side of study area

VEGETATION (*Use scientific names*)

Tree Stratum (Plot size: ____ ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.	%		
2.	%		
3.	%		
4.	%		
Total Cover:	%		
Sapling/Shrub Stratum (Plot size: ____ ft. radius)			
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
Total Cover:	%		
Herb Stratum (Plot size: 15 ft radius)			
1. *Phalaris arundinacea*	100%	yes	FACW
2.	%		
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
Total Cover:	100%		
Woody Vine Stratum (Plot size: ____ ft radius)			
1.	%		
2.	%		
Total Cover:	%		

% Bare Ground in Herb Stratum ____ %

Dominance Test Worksheet

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species ____	x 1= ____
FACW species ____	x 2= ____
FAC species ____	x 3= ____
FACU species ____	x 4= ____
UPL species ____	x 5= ____
Column Totals: ____ (A)	(B)

Prevalence Index = B/A= ____

Hydrophytic Vegetation Indicators:

- ☐ 1 – Rapid Test for Hydrophytic Vegetation
- ☒ 2 – Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data In Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology Must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes☒ No☐

Remarks: trace- Himalayan blackberry

SOIL

Sampling Point: TP-12, wet

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 3/1	80%	10YR 4/6	20%	C	M	silt loam	
		%		%				
		%		%				
		%		%				
		%		%				
		%		%				
		%		%				
		%		%				

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosal (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Minerals (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☒ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and Wetland hydrology must be present

Restrictive Layer (if present):

Type: ____

Depth (inches):

Hydric Soil Present? Yes☒ No☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (min. of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, & 4B)**
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☒ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) **(LRR A)**
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D4)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (Inches): ____

Water Table Present? Yes ☐ No ☒ Depth (Inches): ____

Saturation Present? Yes ☐ No ☒ Depth (Inches): ____

(Includes Capillary fringe)

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (Stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Carty Lake City/County: Ridgefield/Clark Sampling Date: 07/23/13
Applicant/Owner: Port of Ridgefield State: WA Sampling Point: TP-13, up
Investigator(s): A. Aberle, C. Siipola Section, Township, Range: Section 48, Township 4N, Range 1W, W.M.
Landform (hillslope, terrace, etc.): slope Local relief: convex Slope (%): 3%
Subregion (LRR): A Lat: 45.8217 Long: -122.7512 Datum:
Soil Map Unit Name: SmB Sauvie silt loam, 3 to 8 percent slopes NWI classification: PEM1S
Are climatic / hydrologic conditions on the site typical for this time of year? Yes☒ No☐ (If no, explain Remarks.)
Are Vegetation☐, Soil☐, or Hydrology☐ significantly disturbed? Area "Normal Circumstances" present? Yes☒ No☐
Are Vegetation☐, Soil☐, or Hydrology☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☐ No ☒ Hydric Soils Present? Yes ☐ No ☒ Wetland Hydrology Present? Yes ☐ No ☒	**Is the Sampled Area within a Wetland?** Yes☐ No☒

Remarks: Located in southeastern boundary of the study area

VEGETATION (*Use scientific names*)

Tree Stratum (Plot size: ____ ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.	%		
2.	%		
3.	%		
4.	%		
Total Cover:	%		
Sapling/Shrub Stratum (Plot size: ____ ft. radius)			
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
Total Cover:	%		
Herb Stratum (Plot size: 15 ft radius)			
1. *Rubus armeniacus*	100%	yes	FACU
2.	%		
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
Total Cover:	100%		
Woody Vine Stratum (Plot size: ____ ft radius)			
1.	%		
2.	%		
Total Cover:	%		

% Bare Ground in Herb Stratum ____ %

Dominance Test Worksheet

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 0 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species	x 1=
FACW species	x 2=
FAC species	x 3=
FACU species	x 4=
UPL species	x 5=
Column Totals: (A)	(B)

Prevalence Index = B/A=

Hydrophytic Vegetation Indicators:

- ☐ 1 – Rapid Test for Hydrophytic Vegetation
- ☐ 2 – Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data In Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology Must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes☐ No☒

Remarks: trace- field bindweed

SOIL

Sampling Point: TP-13, up

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
		%		%				See Remarks Below
		%		%				
		%		%				
		%		%				
		%		%				
		%		%				
		%		%				
		%		%				

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosal (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Minerals (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and Wetland hydrology must be present

Restrictive Layer (if present):

Type: gravel fill

Depth (inches):surface

Hydric Soil Present? Yes☐ No☒

Remarks: gravel at surface

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (min. of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, & 4B)**
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) **(LRR A)**
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D4)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (Inches): ____

Water Table Present? Yes ☐ No ☒ Depth (Inches): ____

Saturation Present? Yes ☐ No ☒ Depth (Inches): ____

(Includes Capillary fringe)

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (Stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Carty Lake City/County: Ridgefield/Clark Sampling Date: 07/23/13
Applicant/Owner: Port of Ridgefield State: WA Sampling Point: TP-14, wet
Investigator(s): A. Aberle, C. Siipola Section, Township, Range: Section 48, Township 4N, Range 1W, W.M.
Landform (hillslope, terrace, etc.): slope Local relief: concave Slope (%): 3%
Subregion (LRR): A Lat: 45.8217 Long: -122.7512 Datum:
Soil Map Unit Name: SmB Sauvie silt loam, 3 to 8 percent slopes NWI classification: PEM1S
Are climatic / hydrologic conditions on the site typical for this time of year? Yes☒ No☐ (If no, explain Remarks.)
Are Vegetation☐, Soil☐, or Hydrology☐ significantly disturbed? Area "Normal Circumstances" present? Yes☒ No☐
Are Vegetation☐, Soil☐, or Hydrology☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒ No ☐	**Is the Sampled Area within a Wetland?** Yes☒ No☐
Hydric Soils Present?	Yes ☒ No ☐	
Wetland Hydrology Present?	Yes ☒ No ☐	

Remarks: Located in southeastern boundary of the study area

VEGETATION (*Use scientific names*)

Tree Stratum (Plot size: ____ ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.	%		
2.	%		
3.	%		
4.	%		
Total Cover:	%		
Sapling/Shrub Stratum (Plot size: ____ ft. radius)			
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
Total Cover:	%		
Herb Stratum (Plot size: 15 ft radius)			
1. *Phalaris arundinacea*	100%	yes	FACW
2.	%		
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
Total Cover:	100%		
Woody Vine Stratum (Plot size: ____ ft radius)			
1.	%		
2.	%		
Total Cover:	%		

% Bare Ground in Herb Stratum ____ %

Dominance Test Worksheet

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:	
OBL species	x 1=	
FACW species	x 2=	
FAC species	x 3=	
FACU species	x 4=	
UPL species	x 5=	
Column Totals:	(A)	(B)

Prevalence Index = B/A= ____

Hydrophytic Vegetation Indicators:

- ☐ 1 – Rapid Test for Hydrophytic Vegetation
- ☒ 2 – Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data In Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology Must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes☒ No☐

Remarks: trace- field bindweed

SOIL

Sampling Point: TP-14, wet

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	Gley 1 3/10Y	100%		%			sandy clay	
		%		%				
		%		%				
		%		%				
		%		%				
		%		%				
		%		%				
		%		%				

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosal (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Minerals (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☒ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and Wetland hydrology must be present

Restrictive Layer (if present):

Type: ____

Depth (inches):

Hydric Soil Present? Yes☒ No☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (min. of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, & 4B)**
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☒ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) **(LRR A)**
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D4)

Field Observations:

Surface Water Present?	Yes ☐	No ☒	Depth (Inches): ____
Water Table Present?	Yes ☐	No ☒	Depth (Inches): ____
Saturation Present? (Includes Capillary fringe)	Yes ☐	No ☒	Depth (Inches): ____

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (Stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Carty Lake City/County: Ridgefield/Clark Sampling Date: 07/23/13
Applicant/Owner: Port of Ridgefield State: WA Sampling Point: TP-15, up
Investigator(s): A. Aberle, C. Slipola Section, Township, Range: Section 48, Township 4N, Range 1W, W.M.
Landform (hillslope, terrace, etc.): slope Local relief: convex Slope (%): 3%
Subregion (LRR): A Lat: 45.8217 Long: -122.7512 Datum:
Soil Map Unit Name: SmB Sauvie silt loam, 3 to 8 percent slopes NWI classification: PEM1S
Are climatic / hydrologic conditions on the site typical for this time of year? Yes☒ No☐ (If no, explain Remarks.)
Are Vegetation☐, Soil☐, or Hydrology☐ significantly disturbed? Area "Normal Circumstances" present? Yes☒ No☐
Are Vegetation☐, Soil☐, or Hydrology☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☐ No ☒ Hydric Soils Present? Yes ☐ No ☒ Wetland Hydrology Present? Yes ☐ No ☒	**Is the Sampled Area within a Wetland?** Yes☐ No☒

Remarks: Located in northeastern portion of study area

VEGETATION (*Use scientific names*)

Tree Stratum (Plot size: ____ ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.	%		
2.	%		
3.	%		
4.	%		
Total Cover:	%		
Sapling/Shrub Stratum (Plot size: ____ ft. radius)			
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
Total Cover:	%		
Herb Stratum (Plot size: 15 ft radius)			
1. *Rubus armeniacus*	80%	yes	FACU
2. *Phalaris arundinacea*	20%	yes	FACW
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
Total Cover:	100%		
Woody Vine Stratum (Plot size: ____ ft radius)			
1.	%		
2.	%		
Total Cover:	%		

% Bare Ground in Herb Stratum ____ %

Dominance Test Worksheet

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet

Total % Cover of:		Multiply by:	
OBL species		x 1=	
FACW species		x 2=	
FAC species		x 3=	
FACU species		x 4=	
UPL species		x 5=	
Column Totals:	(A)		(B)

Prevalence Index = B/A= ____

Hydrophytic Vegetation Indicators:

- ☐ 1 – Rapid Test for Hydrophytic Vegetation
- ☐ 2 – Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data In Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology Must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes☐ No☒

Remarks:

SOIL

Sampling Point: TP-15, up

Profile Description: (Describe to the depth needed to document the Indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 3/1	100%		%			silt loam	
		%		%				
		%		%				
		%		%				
		%		%				
		%		%				
		%		%				
		%		%				

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosal (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Minerals (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and Wetland hydrology must be present

Restrictive Layer (if present):

Type: ____

Depth (inches):

Hydric Soil Present? Yes☐ No☒

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (min. of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, & 4B)**
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) **(LRR A)**
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D4)

Field Observations:

Surface Water Present?	Yes ☐	No ☒	Depth (Inches): ____
Water Table Present?	Yes ☐	No ☒	Depth (Inches): ____
Saturation Present? (Includes Capillary fringe)	Yes ☐	No ☒	Depth (Inches): ____

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (Stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Carty Lake City/County: Ridgefield/Clark Sampling Date: 07/23/13
Applicant/Owner: Port of Ridgefield State: WA Sampling Point: TP-16, wet
Investigator(s): A. Aberle, C. Siipola Section, Township, Range: Section 48, Township 4N, Range 1W, W.M.
Landform (hillslope, terrace, etc.): slope Local relief: concave Slope (%): 3%
Subregion (LRR): A Lat: 45.8217 Long: -122.7512 Datum:
Soil Map Unit Name: SmB Sauvie silt loam, 3 to 8 percent slopes NWI classification: PEM1S
Are climatic / hydrologic conditions on the site typical for this time of year? Yes☒ No☐ (If no, explain Remarks.)
Are Vegetation☐, Soil☐, or Hydrology☐ significantly disturbed? Area "Normal Circumstances" present? Yes☒ No☐
Are Vegetation☐, Soil☐, or Hydrology☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒ No ☐	**Is the Sampled Area within a Wetland?** Yes☒ No☐
Hydric Soils Present?	Yes ☒ No ☐	
Wetland Hydrology Present?	Yes ☒ No ☐	

Remarks: Located in northeastern portion of study area

VEGETATION (*Use scientific names*)

Tree Stratum (Plot size: ____ ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.	%		
2.	%		
3.	%		
4.	%		
Total Cover:	%		
Sapling/Shrub Stratum (Plot size: ____ ft. radius)			
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
Total Cover:	%		
Herb Stratum (Plot size: 15 ft radius)			
1. *Phalaris arundinacea*	100%	yes	FACW
2.	%		
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
Total Cover:	100%		
Woody Vine Stratum (Plot size: ____ ft radius)			
1.	%		
2.	%		
Total Cover:	%		

% Bare Ground in Herb Stratum ____ %

Dominance Test Worksheet

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:	
OBL species	x 1=	
FACW species	x 2=	
FAC species	x 3=	
FACU species	x 4=	
UPL species	x 5=	
Column Totals:	(A)	(B)

Prevalence Index = B/A=____

Hydrophytic Vegetation Indicators:

- ☐ 1 – Rapid Test for Hydrophytic Vegetation
- ☒ 2 – Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data In Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology Must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes☒ No☐

Remarks:

SOIL

Sampling Point: TP-16, wet

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 3/1	70%	10YR 4/6	30%	C	M	silt loam	
		%		%				
		%		%				
		%		%				
		%		%				
		%		%				
		%		%				
		%		%				

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosal (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Minerals (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☒ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and Wetland hydrology must be present

Restrictive Layer (if present):

Type: ____

Depth (inches):

Hydric Soil Present? Yes☒ No☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (min. of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, & 4B)**
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☒ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) **(LRR A)**
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D4)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (Inches): ____

Water Table Present? Yes ☐ No ☒ Depth (Inches): ____

Saturation Present? Yes ☐ No ☒ Depth (Inches): ____

(Includes Capillary fringe)

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (Stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

APPENDIX B

Wetland Rating Form for Western Washington

WETLAND RATING FORM – WESTERN WASHINGTON

Version 2 – Updated July 2006 to increase accuracy and reproducibility among users
Updated Oct 2008 with new WDFW definitions for priority habitats

Name of wetland (if known): Carty Lake Date of site visit: 6/25/13

Rated by A. Aberle Trained by Ecology? Yes ☒ No ☐ Date of Training: 2006

SECTION: 44 & 48 TWNSHIP: 4N RNGE: 1W Is S/T/R in Appendix D? Yes ☐ No ☒

Map of wetland unit: Figure 2 Estimated size ~20 acres

SUMMARY OF RATING

Category based on FUNCTIONS provided by wetland

I ☐ II ☒ III ☐ IV ☐

Category I = Score >=70 Category II = Score 51-69 Category III = Score 30-50 Category IV = Score < 30	Score for Water Quality Functions: 24 Score for Hydrologic Functions: 4 Score for Habitat Functions: 25 **TOTAL Score for functions: 53**

Category based on SPECIAL CHARACTERISTICS of wetland

I ☐ II ☐ Does not Apply ☒

Final Category (choose the "highest" category from above): II

Summary of basic information about the wetland unit

Wetland Unit has Special Characteristics		Wetland HGM Class used for Rating	
Estuarine	☐	Depressional	☐
Natural Heritage Wetland	☐	Riverine	☐
Bog	☐	Lake-fringe	☒
Mature Forest	☐	Slope	☐
Old Growth Forest	☐	Flats	☐
Coastal Lagoon	☐	Freshwater Tidal	☐
Interdunal	☐		
None of the above	☐	Check if unit has multiple HGM classes present	☐

Does the wetland being rated meet any of the criteria below?

If you answer YES to any of the questions below you will need to protect the wetland according to the regulations regarding the special characteristics found in the wetland.

Check List for Wetlands That May Need Additional Protection (in addition to the protection recommended for its category)	YES	NO
SP1. *Has the wetland been documented as a habitat for any Federally listed Threatened or Endangered **animal** or **plant** species (T/E species)?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.	☐	☒
SP2. *Has the wetland unit been documented as habitat for any State listed Threatened or Endangered **animal** species?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form).	☐	☒
SP3. *Does the wetland contain individuals of Priority species listed by the WDFW for the state?*	☐	☒
SP4. *Does the wetland have a local significance in addition to its functions?* For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.	☐	☒

To complete the next part of the data sheet you will need to determine the Hydrogeomorphic Class of the wetland being rated.

The hydrogeomorphic classification groups wetlands into those that function in similar ways. This simplifies the questions needed to answer how well the wetland functions. The Hydrogeomorphic Class of a wetland can be determined using the key below. See p. 24 for more detailed instructions on classifying wetlands.

Classification of Wetland Units in Western Washington

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

1. Are the water levels in the entire unit usually controlled by tides (i.e. except during floods)?

☒NO – go to 2 ☐YES – the wetland class is **Tidal Fringe**

If yes, is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)? ☐ **YES – Freshwater Tidal Fringe** ☐**NO – Saltwater Tidal Fringe (Estuarine)**

*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is rated as an **Estuarine** wetland.* Wetlands that were called estuarine in the first and second editions of the rating system are called Salt Water Tidal Fringe in the Hydrogeomorphic Classification. Estuarine wetlands were categorized separately in the earlier editions, and this separation is being kept in this revision. To maintain consistency between editions, the term "Estuarine" wetland is kept. Please note, however, that the characteristics that define Category I and II estuarine wetlands have changed (see p.).

2. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

☒NO – go to 3 ☐YES – The wetland class is **Flats**

If your wetland can be classified as a "Flats" wetland, use the form for **Depressional** wetlands.

3. Does the wetland **meet both** of the following criteria?

☒ The vegetated part of the wetland is on the shores of a body of open water (without any vegetation on the surface) at least 20 acres (8 ha) in size;

☒ At least 30% of the open water area is deeper than 6.6 ft (2 m)?

☐NO – go to 4 ☒YES – The wetland class is **Lake-fringe (Lacustrine Fringe)**

4. Does the wetland **meet all** of the following criteria?

☐ The wetland is on a slope (*slope can be very gradual*),

☐ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.

☐ The water leaves the wetland **without being impounded**?

NOTE: *Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3ft diameter and less than 1 foot deep).*

☐NO - go to 5 ☐YES – The wetland class is **Slope**

5. Does the entire wetland unit **meet all** of the following criteria?

☐ The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river

☐ The overbank flooding occurs at least once every two years.

NOTE: The riverine unit can contain depressions that are filled with water when the river is not flooding.

☐NO - go to 6 ☐ **YES** – The wetland class is **Riverine**

6. Is the wetland in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

☐NO – go to 7 ☐**YES** – The wetland class is **Depressional**

7. Is the entire wetland located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.

☐NO – go to 8 ☐ **YES** – The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within your wetland. NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM Classes within the wetland unit being rated	*HGM Class to Use in Rating*
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine along stream within boundary	Depressional
Depressional + Lake-fringe	Depressional
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE under wetlands with special characteristics

If you are unable still to determine which of the above criteria apply to your wetland, or you have more than 2 HGM classes within a wetland boundary, classify the wetland as **Depressional** for the rating.

L	Lake-Fringe Wetlands WATER QUALITY FUNCTIONS - Indicators that wetland functions to improve water quality	Points (only 1 score per box)
L	**L 1. Does the wetland have the potential to improve water quality?**	*(see p. 59)*
L	L 1.1 Average width of vegetation along the lakeshore: Vegetation is more than 33ft (10m) wide — points = 6 Vegetation is more than 16 (5m) wide and <33ft — points = 3 Vegetation is more than 6ft (2m) wide and <16 ft — points = 1 Vegetation is less than 6 ft wide — points = 0	Figure__ 6
L	L 1.2 Characteristics of the vegetation in the wetland: *choose the appropriate description that results in the highest points, and do not include any open water in your estimate of coverage. In this case the herbaceous plants can be either the dominant form or forest community .These are not Cowardin classes. Area of Cover is total cover in the unit, but can be in patches. Note: Herbaceous does not include aquatic bed.* Cover of herbaceous plants cover >90% of the vegetated area — points = 6 Cover of herbaceous plants cover >2/3 of the vegetated area — points = 4 Cover of herbaceous plants cover >1/3 of the vegetated area — points = 3 Other vegetation that is not aquatic bed in > 2/3 vegetated area — points = 3 Other vegetation that is not aquatic bed in > 1/3 vegetated area — points = 1 Aquatic bed vegetation and open water cover > 2/3 of the vegetated area — points = 0 Map with polygons of different vegetation types	Figure__ 6
L	*Add the points in the boxes above*	12
L	**L 2. Does the wetland have the opportunity to improve water quality?** Answer YES if you know or believe there are pollutants in the lake water, or polluted surface water flowing through the unit to the lake. *Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity* ☐ Wetland is along the shores of a lake or reservoir that does not meet water quality standards ☐ Grazing in the wetland or within 150ft ☒ Polluted water discharges to wetland along upland edge ☐ Tilled fields or orchards within 150 feet of wetland ☒ Residential or urban areas are within 150 ft of wetland ☐ Parks with grassy areas that are maintained, ballfields, golf courses (all within 150 ft. of lake shore) ☐ Power boats with gasoline or diesel engines use the lake ☐ Other _____ ☒YES multiplier is 2 ☐NO multiplier is 1	*(see p. 61)* multiplier 2
L	**TOTAL - Water Quality Functions** Multiply the score from L1 by L2 ***Add score to table on p. 1***	24

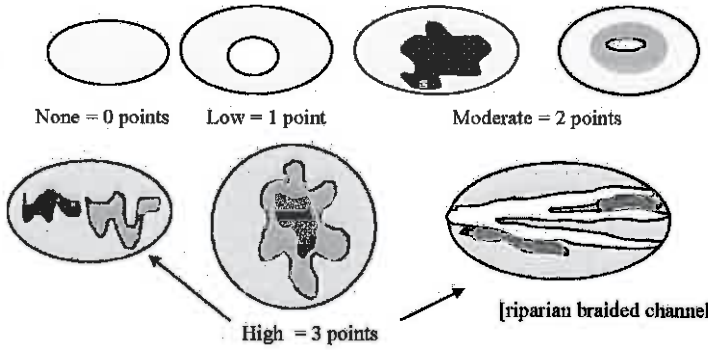
Comments

L	Lake-Fringe Wetlands HYDROLOGIC FUNCTIONS - Indicators that wetland unit functions to reduce shoreline erosion	Points (only 1 score per box)
L	**L 3. Does the wetland have the potential to reduce shoreline erosion?**	*(see p. 62)*
L	L 3 Distance along shore and average width of Cowardin classes along the lakeshore (**do not** include aquatic bed): (*choose the highest scoring description that matches conditions in the wetland*): >¾ of distance is shrubs or forest at least 33 ft (10m) wide — points = 6 >¾ of distance is shrubs or forest at least 6 ft. (2m) wide — points = 4 >¼ of distance is shrubs or forest at least 33 ft (10m) wide — points = 4 Vegetation is at least 6 ft (2m) wide (any type except aquatic bed) — points = 2 Vegetation is less than 6 ft (2m) wide (any type except aquatic bed) — points = 0 Aerial photo or map with Cowardin vegetation classes	Figure__ 2
L	*Record the points from the box above*	
L	**L 4. Does the wetland unit have the opportunity to reduce erosion?** Are there features along the shore which will be impacted if the shoreline erodes? *Note which of the following conditions apply.* ☐ There are human structures and activities along the upland edge of the wetland (buildings, fields) that can be damaged by erosion. ☒ There are undisturbed natural resources along the upland edge of the wetland (e.g. mature forests other than wetland) that can be damaged by shoreline erosion ☐ Other _____ ☒YES multiplier is 2 ☐NO multiplier is 1	*(see p. 63)* multiplier 2
L	**TOTAL – Hydrologic Functions** Multiply the score from L 3 by L 4 ***Add score to table on p. 1***	4

Comments

These questions apply to wetlands of all HGM classes HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat	**Points** (only 1 score per box)
H 1. Does the wetland have the potential to provide habitat for many species?	
H 1.1 Vegetation structure *(see p. 72)* *Check the types of vegetation classes present (as defined by Cowardin)- Size threshold for each class is ¼ acre or more than 10% of the area if unit is smaller than 2.5 acres.* ☒ Aquatic bed ☒ Emergent plants ☒ Scrub/shrub (areas where shrubs have >30% cover) ☐ Forested (areas where trees have >30% cover) *If the unit has a forested class check if:* ☐ Forested areas have 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the forested polygon *Add the number of vegetation types that qualify. If you have:* 4 types or more points = 4 3 types points = 2 Map of Cowardin vegetation classes 2 types points = 1 1 type points = 0	Figure__ 2
H 1.2 Hydroperiods *(see p. 73)* *Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ acre to count. (See text for description of hydroperiods.)* ☐ Permanently flooded or inundated 4 or more types present points = 3 ☐ Seasonally flooded or inundated 3 types present points = 2 ☐ Occasionally flooded or inundated 2 types present points = 1 ☐ Saturated only ☐ Permanently flowing stream or river in, or adjacent to, the wetland ☐ Seasonally flowing stream or river in, or adjacent to, the wetland ☒ ***Lake-fringe wetland* = 2 points** ☐ ***Freshwater tidal wetland* = 2 points**	Figure__ 2
H 1.3 Richness of Plant Species *(see p. 75)* Count the number of plant species in the wetland that cover at least 10 ft^2. *(Different patches of the same species can be combined to meet the size threshold.)* *You do not have to name the species.* *Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle.* If you counted: > 19 species points = 2 5 - 19 species points = 1 *List species below if you want to:* <5 species points = 0	2

Total for page: 6

H 1.4 Interspersion of habitats *(see p. 76)* Decide from the diagrams below whether interspersion between Cowardin vegetation classes (described in H 1.1), or classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.  NOTE: If you have four or more classes or three vegetation classes and open water the rating is always "high". Use map of Cowardin vegetation classes	Figure__ 3
H 1.5 Special Habitat Features: *(see p. 77)* *Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column.* ☐ Large, downed, woody debris within the wetland (>4in. diameter and 6 ft long). ☐ Standing snags (diameter at bottom >4 inches) in the wetland ☒ Undercut banks are present for at least 6.6 ft. (2m) and/or overhanging vegetation extends at least 3.3 ft (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft (10m) ☐ Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30 degree slope) OR signs of recent beaver activity are present *(cut shrubs or trees that have not yet turned grey/brown)* ☒ At least ¼ acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated *(structures for egg-laying by amphibians)* ☐ Invasive plants cover less than 25% of the wetland area in each stratum of plants *Note: The 20% stated in early printings of the manual on page 78 is an error*	2
H 1. TOTAL Score – potential for providing habitat *Add the scores from H1.1, H1.2, H1.3, H1.4, H1.5*	11

Comments:

H 2. Does the wetland have the opportunity to provide habitat for many species?)

H 2.1 Buffers *(see p. 80)*

Choose the description that best represents condition of buffer of wetland. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed."

- ☐ 100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water >95% of circumference. No structures are within the undisturbed part of buffer. (relatively undisturbed also means no grazing, no landscaping, no daily human use) **Points = 5**
- ☒ 100 m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water >50% circumference. **Points = 4**
- ☐ 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water >95% circumference. **Points = 4**
- ☐ 100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water >25% circumference. **Points = 3**
- ☐ 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water for > 50% circumference. **Points = 3**

If buffer does not meet any of the three criteria above

- ☐ No paved areas (except paved trails) or buildings within 25 m (80ft) of wetland > 95% circumference. Light to moderate grazing, or lawns are OK. **Points = 2**
- ☐ No paved areas or buildings within 50m of wetland for >50% circumference. Light to moderate grazing or lawns are OK **Points = 2**
- ☐ Heavy grazing in buffer. **Points = 1**
- ☐ Vegetated buffers are <2m wide (6.6ft) for more than 95% of the circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland) **Points = 0**
- ☐ Buffer does not meet any of the criteria above. **Points = 1**

Aerial photo showing buffers

Figure__ **4**

H 2.2 Corridors and Connections *(see p. 81)*

H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft wide, has at least 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are at least 250 acres in size? *(dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor).*

☐YES = **4 points** *(go to H 2.3)* ☒NO = go to H 2.2.2

H 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50ft wide, has at least 30% cover of shrubs or forest, and connects to estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? **OR** a **Lake-fringe** wetland, if it does not have an undisturbed corridor as in the question above?

☒YES = **2 points** *(go to H 2.3)* ☐NO = H 2.2.3

H 2.2.3 Is the wetland:

within 5 mi (8km) of a brackish or salt water estuary OR
within 3 mi of a large field or pasture (>40 acres) OR
within 1 mi of a lake greater than 20 acres?

☐YES = **1 point** ☐NO = **0 points**

2

Total for page: 6

H 2.3 Near or adjacent to other priority habitats listed by WDFW *(see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report http://wdfw.wa.gov/hab/phslist.htm)*

Which of the following priority habitats are within 330ft (100m) of the wetland unit? *NOTE: the connections do not have to be relatively undisturbed.*

- ☐ **Aspen Stands:** Pure or mixed stands of aspen greater than 0.4 ha (1 acre).
- ☐ **Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife *(full descriptions in WDFW PHS report p. 152).*
- ☐ **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.
- ☐ **Old-growth/Mature forests:** (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) > 81 cm (32 in) dbh or > 200 years of age. (Mature forests) Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less than 100%; crown cover may be less that 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80 - 200 years old west of the Cascade crest.
- ☒ **Oregon white Oak:** Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important *(fill descriptions in WLDFW PHS report p. 158).*
- ☒ **Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- ☐ **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie *(full descriptions in WDFW PHS report p. 161).*
- ☐ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- ☐ **Nearshore:** Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. *(full descriptions of habitats and the definition of relatively undisturbed are in WDFW report.' pp. 167-169 and glossary in Appendix A).*
- ☐ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- ☐ **Cliffs:** Greater than 7.6 m (25 ft) high and occurring below 5000 ft.
- ☐ **Talus:** Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- ☐ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 51 cm (20 in) in western Washington and are > 2 m (6.5 ft) in height. Priority logs are > 30 cm (12 in) in diameter at the largest end, and > 6 m (20 if) long.

If wetland has **3 or more** priority habitats = **4 points**
If wetland has **2** priority habitats = **3 points**
If wetland has **1** priority habitat = **1 point** No habitats = 0 points

Note: All vegetated wetlands are by definition a priority habitat but are not included in this list. Nearby wetlands are addressed in question H 2.4)

3

H 2.4 Wetland Landscape *(choose the **one** description of the landscape around the wetland that best fits) (see p. 84)* ☒ There are at least 3 other wetlands within ½ mile, and the connections between them are relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating, but connections should NOT be bisected by paved roads, fill, fields, or other development. points = 5 ☐ The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within ½ mile points = 5 ☐ There are at least 3 other wetlands within ½ mile, BUT the connections between them are disturbed points = 3 ☐ The wetland is Lake-fringe on a lake with disturbance and there are 3 other lake-fringe wetlands within ½ mile points = 3 ☐ There is at least 1 wetland within ½ mile. points = 2 ☐ There are no wetlands within ½ mile. points = 0	5
H 2. TOTAL Score -opportunity for providing habitat *Add the scores in the column above*	**14**
TOTAL for H 1 from page 14	**11**
Total Score for Habitat Functions – add the points for H 1, H 2 **and** record the result on p. 1	**25**

APPENDIX C

Ridgefield Community Development Department: Notice of Decision

RIDGEFIELD COMMUNITY DEVELOPMENT DEPARTMENT

CARTY LAKE
SHORELINE MANAGMENT ACT JURISDICTION DETERMINATION
PLZ-09-0018
STAFF REPORT AND NOTICE OF DECISION

301 N 3rd Ave. ◆ PO Box 608 ◆Ridgefield, WA 98642
Ph: 360.887.3908 ◆ Fax: 360.887.2507 ◆ www.ci.ridgefield.wa.us

PROPOSAL:	Shoreline Management Act Jurisdiction Determination
FILE NUMBER:	PLZ-09-0018
REVIEW PROCESS:	Type I
DECISION MAILED:	**June 18, 2009** (public notice is not required for a Type I review, RDC 18.310.060)
PROPERTY OWNER:	United States Government Ridgefield National Wildlife Refuge 28908 NW Main Ave, Ridgefield, 98642 Ridgefield, WA 98642
APPLICANT:	The City of Ridgefield PO Box 608 230 Pioneer Street Ridgefield, WA 98642
APPLICANT'S REPRESENTATIVE:	Justin Clary, City Manager (360) 887-3557
LOCATION:	Carty Lake, Ridgefield, Clark County, WA ¼ Sec 24 of T4N, R1W WM and ¼ Sec. 13 T4N R1W WM
ZONING:	Waterfront Mixed-Use (WMU)
APPLICABLE APPROVAL CRITERIA:	RDC 18.310.060 (Type I Procedure); RDC 18.230 (Base Zone Requirements); 18.820.090 (SMA Exemption determination), and City of Ridgefield Shoreline Master Management Program (SMMP).
DECISION:	**Approved**
STAFF PLANNER: _____	Eric Eisemann, Consulting Planner, E^2 Land Use Planning Services, LLC, 215 W. 4th St., # 201, Vancouver, WA 98660 (360-750-0038 e.eisemann@e2landuse.com

I. BACKGROUND

The city seeks to determine whether Carty Lake is within the purview of RCW 90.58.

II. FINDINGS

A. The city of Ridgefield has adopted Chapter 18.2820 of the Ridgefield Development Code for purposes of fulfilling its responsibilities under the Shoreline Management Act.

B. WAC 173-20-140 does not list Carty Lake as being under the purview of RCW 90.58. [1]

C. *"Land and water bodies situated within the exterior boundaries of the Ridgefield National Wildlife refuge are not subject to jurisdiction of the Shoreline Management Act, ..."* Shoreline Management Master Program, Clark County, Washington, August 1974, page 14, Fn.

III. DECISION

The city has determined that it does not have SMA jurisdictional authority over Carty Lake because Carty Lake is not within the purview of RCW 90.58.

IV. APPEAL

Pursuant to RMC 18.310.100.A, a written appeal of a Type I land use procedure shall be filed with the City Clerk by an interested party within fourteen (14) working days after the written notice of the decision is mailed. All appeals shall contain the minimum information required pursuant to RMC 18.301.00.B.1-4.

APPENDIX C

CARTY LAKE MITIGATION PLAN

CARTY LAKE MITIGATION PLAN

ADDENDUM TO THE JOINT AQUATIC RESOURCES PERMIT APPLICATION NO. NWS-2013-1209

CARTY LAKE REMEDIAL ACTION
111 W DIVISION STREET
RIDGEFIELD, WASHINGTON

Prepared for
PORT OF RIDGEFIELD
RIDGEFIELD, WA
October 22, 2014
Project No. 9003.01.40

Prepared by
Maul Foster & Alongi, Inc.
400 E Mill Plain Blvd., Suite 400, Vancouver WA 98660

MAUL FOSTER ALONGI

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TABLES AND ILLUSTRATIONS

FOLLOWING PLAN:

TABLES

FIGURE

EXHIBITS

On behalf of the Port of Ridgefield (Port), Maul Foster & Alongi, Inc. has prepared this draft mitigation plan as a supplement to the Carty Lake Remedial Action Joint Aquatic Resources Permit Application (JARPA No. NWS-2013-1209) submitted to the U.S. Army Corps of Engineers (COE). The purpose of the remedial action is to address historical contamination of sediment in the southern end of Carty Lake in the U.S. Fish and Wildlife Service (USFWS) Ridgefield National Wildlife Refuge (RNWR). Carty Lake is located north of the former Pacific Wood Treating Co. (PWT) site in Ridgefield, Washington (see the figure). PWT operated a wood-treating facility from 1964 to 1993 at the Port's Lake River Industrial Site (LRIS) (now known as Miller's Landing), and cleanup actions have been conducted at the LRIS since 2000. The remedial action required by the Washington State Department of Ecology (Ecology) in Carty Lake addresses unacceptable risks to ecological receptors and includes excavating contaminated sediment, placing clean sand to contain residual contamination, stabilizing a failing treated-wood retaining wall, and vegetating the wetland and upland banks with native plants (see Attachment 1 to the JARPA for a more detailed project description).

Two types of impacts to the wetland resulting from the remedial action are identified:

- Short-term temporary impacts to 1.2 acres[1] of wetland will result from sediment excavation. Sediment removal will result in construction impacts to benthic populations and vegetation.
- Permanent impacts to up to 0.23 acre[2] of wetland will result from the construction of bank stabilization and remediation elements.

Short-term temporary impacts will be mitigated by 1.2[3] acres of revegetation and maintenance in the excavation area. In addition, areas surrounding the mitigation area will be revegetated and maintained to impede nonnative species encroachment. This draft mitigation plan addresses temporary impacts and was prepared consistent with Section 33 CFR Parts 325 and 332 and guidance provided in *Wetland Mitigation in Washington State—Part 1: Agency Policies and Guidance* (Ecology, COE, and USEPA, 2006a) and *Wetland Mitigation in Washington State—Part 2: Developing Mitigation Plans* (Ecology, COE, and USEPA, 2006b). The plan describes mitigation objectives, mitigation site selection, and monitoring and maintenance requirements for on-site mitigation. The mitigation was developed in consultation with the USFWS.

Permanent impacts will be mitigated by the purchase of mitigation credits. A bank use plan describing off-site mitigation to compensate for wetland filling is provided as an addendum to the JARPA. The bank use plan is prepared consistent with the 2009 Interagency Review Team for Washington State Guidance Paper *Using Credits from Wetland Mitigation Banks: Guidance to Applicants on Submittal Contents for Bank Use Plans.*

1. MITIGATION APPROACH

The process of avoiding, minimizing, and mitigating temporary impacts is incorporated into the project design, which has been overseen by Ecology and coordinated with the USFWS. Following

[1] The area of temporary impacts is approximate and does not include areas that will be excavated and permanently covered by bank stabilization elements. These permanent impacts will be addressed by mitigation banking.

[2] The acreage includes contingency as described in the JARPA. Permanent impacts may therefore be less.

[3] The area of mitigation planting will be equivalent to the final temporary impact area.

the best practices of wetland habitat restoration, the remedial action has been designed to enhance functions and values relative to existing conditions.

1.1. AVOIDANCE AND MINIMIZATION

Avoiding and minimizing impacts to the maximum extent practicable are fundamental to the mitigation sequencing process. The following avoidance approaches were used:

- The in-water remedial investigation used a sample-intensive methodology in consultation with the USFWS to ensure that only areas exceeding cleanup levels would be excavated. Areas with sediments that did not exceed cleanup levels are therefore avoided and are not disturbed unnecessarily.
- Bank stabilization along the eastern side of the wetland was redesigned from a 3:1 soil slope to a 2.5:1 (minimum) slope to avoid wetland encroachment.
- A spill prevention and pollution control plan will be implemented during construction, along with erosion- and sediment-control best management practices, to avoid potential impacts to water quality.

To minimize the impacts of the work that must be conducted in the wetland, a number of measures will be taken, including the following:

- Bank stabilization on the southern side of the wetland is designed at a 2:1 slope. This slope was selected as the preferred alternative among several design options because it minimizes encroachment into the wetland.[4] Other evaluated stabilization designs (e.g., 3:1 slope, ecology blocks) would result in greater encroachment or were infeasible.
- The sediment area will be dewatered before excavation. Construction "in the dry" allows the use of conventional excavation equipment and minimizes the disturbance of adjacent sediments and wetlands.
- The sediment excavation area will be functionally isolated (using sandbags or placement of a temporary isolation berm) from wetland habitat to the north, thereby minimizing impacts outside the work area.

1.2. MITIGATION

Sediment excavation and clean sand placement will be conducted in the southern end of the wetland to remove and control contaminated sediments as part of the remedial action. However, benthic populations and vegetation (including nonnative and native species) will be temporarily disturbed or removed. Benthic populations are expected to recover quickly following construction and are expected to benefit from contaminant removal in the long term (see Attachment 2 to the JARPA). The following mitigation measures will be conducted during or following construction to account for unavoidable impacts and will enhance the wetland plant community relative to existing baseline conditions:

[4] Wetland encroachment is addressed in the Carty Lake bank use plan.

- Invasive species control. At the request of the USFWS, the final depth of Carty Lake in the mitigation area will be at least 6 inches deeper than the current condition to inhibit the growth of reed canary grass (*Phalaris arundinacea*). The deepening will be equivalent to the acreage of temporary construction impacts.
- Native wetland plantings. The mitigation area will be planted with native species suited to the post-remedy elevations, enhancing habitat quality. The acreage of native wetland plantings will be equivalent to the acreage of temporary construction impacts.

The sediment remediation and proposed measures will rehabilitate and enhance resource functioning of the Carty Lake watershed as follows:

- Water quality. Contaminated sediment removal reduces the potential for water quality impacts throughout the watershed. The wetland is hydraulically connected with the 52-acre Carty Lake. Contaminants present in wetland sediment may reduce water quality functions (i.e., the functions that trap and transform pollutants through biological, geological, and chemical processes) locally and, if transported from the southern end, could impact the larger watershed.
- Habitat. Sediment removal, wetland deepening, and native plantings reduce the potential for contaminant transport and uptake throughout the watershed; reduce nonnative plant establishment; and provide for native species diversity and associated beneficial ecological processes (e.g., support of native wildlife present in the watershed). Habitat is currently severely degraded, as sediment conditions are not protective of benthos and wetland species that rely on benthos (e.g., wetland biota may bioaccumulate contaminants). Several other factors currently negatively impact habitat conditions in the remedy area. While the wetland is home to a relatively high diversity of species present in the wetland, it is dominated by two nonnative invasives (reed canary grass and Himalayan blackberry [*Rubus armeniacus*]). The wetland is shallow and seasonally inundated, supporting establishment and propagation of reed canary grass, which outcompetes native species (Weinmann et al., 1984).

In addition to rehabilitation and enhancement of the excavation area, the wetland surrounding the mitigation area will be revegetated with native species, providing separation from surrounding nonnative species that may encroach on the mitigation area. The proposed bank stabilization slopes are designed to contain upland (i.e., on the LRIS) subsurface soil contamination and will also be planted with a diverse palette of native plants. These measures will increase both the area and the quality of transition habitat between the wetland and the surrounding uplands.

2. SITE OVERVIEW

Carty Lake is a 52-acre lake in the RNWR and is a unit of the National Wildlife Refuge System (NWRS).

The mission of the NWRS is:

> To administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of fish, wildlife, and plant resources and their habitats within the United

States for the benefit of present and future generations of Americans. (National Wildlife System Administration Act of 1966, as amended [16 U.S.C. 668dd-668ee])

The project site, located in the southern end of Carty Lake, encompasses approximately 8.6 acres, including 4.7 acres of wetland habitat. Temporary impacts to wetland will occur on the mitigation site, approximately 1.2 acres (see Exhibit 1).

The Carty Lake project description (Attachment 1 to the JARPA) details the remedial action construction plans and existing site conditions, including site topography, hydrodynamics, sediment conditions, and site use. Ecological and physical characteristics are provided in the biological evaluation (Attachment 2 to the JARPA) and the wetland delineation (Attachment 3 to the JARPA). An overview of the site is provided below.

2.1. SITE CONDITIONS

The project site is zoned parks/open space. The topography of the site generally consists of gently rolling terrain, with elevations ranging from 7 feet to 34 feet National Geodetic Vertical Datum of 1929/1947. A bathymetric and topographic survey of Carty Lake was conducted to inform the remedy design. These contours are provided in Attachment 1 to the JARPA.

Hydrodynamics and grain size distribution indicate that Carty Lake features a low-energy, depositional environment. Percent fines in Carty Lake are uniformly high, generally over 75 percent. Carty Lake's hydraulic exchange with other surface water bodies is limited to events involving unusually high water. Water fluctuations are generally muted, with increases and decreases occurring gradually because there is no direct connection with the Columbia River. Water levels in Carty Lake range from 3 to 10 feet, varying seasonally, while the project site in the southern end is underwater or seasonally inundated. A confining layer composed of clay that restricts vertical movement of water has been identified.

Metals (arsenic and chromium), pentachlorophenol, and dioxins/furans are present in site sediment. Percent total fines (silt and clay) generally dominate the particle size distribution, ranging from 56 to 93 percent in surface samples. In surface samples, total organic carbon ranged from 1.3 to 5.4 percent. Total organic carbon generally decreases with depth.

2.2. HABITAT

Oregon ash (*Fraxinus latifolia*), black cottonwood (*Populus trichocarpa*), and several willow species (*Salix spp.*) comprise the vast majority of the canopy cover in forested habitat of the RNWR. The understory is typical of lower Columbia River floodplain habitats, with nettles (*Urtica dioica*), red-osier dogwood (*Cornus sericea*), and nonnative Himalayan blackberry providing the bulk of the shrub and forb layer. Remnant stands of western red cedar (*Thuja plicata*) and Douglas fir (*Pseudotsuga menziesii*) occur on the highest portions of the Carty Unit, with species such as snowberry (*Symphoricarpos albus*) and Himalayan blackberry dominating the understory. Oregon white oak (*Quercus garryana*) woodlands (Washington State priority designated habitat) occur to the east and north of Carty Lake, but not near the project area at the southern end of Carty Lake.

Virtually all of the grasslands in the RNWR have been impacted by past agricultural activities, including row crop and field crop production and grazing. Near Carty Lake, nonnative reed canary grass is ubiquitous and generally dominates the shoreline, forming dense monocultures.

The National Wetlands Inventory classifies much of Carty Lake as a lacustrine, limnetic, unconsolidated bottom, permanently tidal (L1UBV). The southern portion of the lake is classified as palustrine, emergent, and persistent (PEM1); the western side is subdesignated as temporarily (PEM1A) or seasonally flooded (PEM1C); and the eastern side is subdesignated as temporary-tidal (PEM1S). Washington State priority designated palustrine aquatic habitats are present within 0.15 mile of the project area. Because Carty Lake lacks a consistent connection with the Columbia River system, the lake's functionality has been reduced, particularly with respect to anadromous fish-rearing habitat and native mussel beds. As with similar wetlands on the RNWR, water quality and aquatic plants have been negatively impacted by introduced carp. The southern end of Carty Lake is submerged for most of the year and is intermittently exposed during dry summer months. Aquatic plants, including wapato (*Sagittaria latifolia*), occur in the lake, and the fringe wetland is dominated by nonnative, invasive reed canary grass.

A wetland delineation and Wetland Rating Form for Western Washington were completed for the project area at the southern end of Carty Lake in 2013. The project area is rated as a Category II lake fringe wetland. The wetland boundary is shown in Exhibit 1. The assessment found that water quality functions scored high, with the vegetation exceeding 33 feet in width and herbaceous plants covering more than 90 percent of the area. The hydrologic functions scored low, receiving 4 out of the possible 12 for lake-fringe. The wetland scored 25 out of 48 in habitat functions, based on the high species diversity and complex habitat structure. However, species evenness is relatively low, with reed canary grass widespread. In addition, the standard wetland rating system is limited in its application to this site because it does not account for contamination impacts in scoring habitat quality. Carty Lake is not designated as federal critical habitat and is not on the 303(d) water quality impairment list.

Areas of the site to the south and east and above the wetland boundary are characterized by steep slopes overgrown with primarily nonnative vegetation (e.g., Himalayan blackberry). A portion of the Port property is separated from the southern portion of Carty Lake by a treated wooden soldier pile and lagging bulkhead approximately 1,800 feet long and between 7 and ten feet tall. Portions of the bulkhead have begun to fail, causing some erosion into the RNWR. Failure of the wall could result in release of contamination into Carty Lake.

2.3. WILDLIFE AND SPECIES OF CONCERN

Waterfowl are abundant at the RNWR during fall, winter, and spring. Abundant wintering species include Canada geese, cackling geese, tundra swan, mallard, American wigeon, gadwall, northern shoveler, northern pintail, and green-winged teal. The RNWR also attracts significant numbers of diving ducks, largely ring-necked duck, lesser scaup, and bufflehead. Several species of duck nest on the RNWR in limited numbers, including wood duck, mallard, blue-winged teal, and cinnamon teal. Carty Lake also provides habitat for warm water fish such as introduced carp (*Cyprinidaceous spp.*) and largescale sucker (*Catostomus macrocheilus*); waterbirds such as the great blue heron (*Ardea herodias*) and common egret (*A. alba*); and aquatic mammals such as beaver (*Castor canadensis*), mink (*Mustela vison*), and nutria (*Myocastor coypus*).

The Columbian white-tailed deer (*Odocoileus virginianus leucurus*) is federally designated as endangered and historically occurred in Clark County. Columbian white-tailed deer were recently transplanted from Julia Butler Hansen National Wildlife Refuge to the RNWR and are present in the Carty Unit. Other federally designated species are not known to occur in or near the project area. Because Carty Lake does not maintain connectivity with Gee Creek (a 4th order tributary of the Columbia River located north and east of Carty Lake) or the Columbia River, federally listed anadromous species are unlikely to utilize Carty Lake; in addition, the proposed project would be conducted in the dry. In the Blackwater Island Research Natural Area (located in the Carty Unit), there are three sites where the federally listed threatened plant water howellia (*Howellia aquatilis*) is known to occur; however, the Natural Area is more than 1 mile north of the project area.

3. SITE SELECTION AND JUSTIFICATION

On-site mitigation for short-term temporary impacts is proposed. Regulatory, ecological, and cultural considerations demonstrate that on-site mitigation (i.e., wetland deepening and planting) following rehabilitation construction is appropriate and necessary to meet watershed needs and that it contributes to the functioning of the larger landscape:

- Under the November 5, 2013, Consent Decree between the Port and Ecology, on-site planting following construction is required.
- USFWS management objectives for the Carty Unit include enhancing wetland habitats as described in the RNWR Comprehensive Conservation Plan (USFWS, 2010), and on-site mitigation is therefore compatible with planned future land-use objectives.
- The mitigation objectives are consistent with existing site conditions; the *Wetland Mitigation in Washington State—Part 1: Agency Policies and Guidance* (Ecology, 2006a) states "if the impacts are to wetlands dominated by non-native vegetation (e.g., blackberry, reed canary grass, or pasture grasses), restoration of the affected wetland with native species and monitoring after construction is generally all that is required."
- Mitigation is appropriate based on the ecological status of the wetland. Category II wetlands have significant habitat value and functioning[5] and are rated as sensitive (WAC 173-183-710).
- The wetland is and will remain hydraulically connected with Carty Lake and is part of a large protected landscape (the RNWR) featuring multiple wetland and upland habitats and associated wildlife.
- Plants of cultural significance (i.e., wapato) may be removed during sediment excavation and should be replaced to meet tribal interests.

3.1. COMPENSATION RATIO

The on-site compensatory mitigation project components will provide the required compensation for unavoidable short-term, temporary impacts to aquatic resources resulting from remedial construction. Removal of contaminated sediment provides significant environmental rehabilitation.

[5] Note that the standard wetland rating system is limited in its application to this site because it does not account for contamination impacts.

A 1:1 baseline mitigation ratio (acreage) is therefore proposed for associated temporary impacts to aquatic resources (CFR 332.3(f)). Table 1, summarizing unavoidable short-term, temporary impacts; associated mitigation measures; and additional enhancement measures, demonstrates that a 1:1 ratio is met.

A small area of wetland (a maximum of 0.23 acre) will be permanently filled to stabilize the bank. Off-site mitigation banking will account for permanent impacts to the wetland is described in the Carty Lake bank use plan.

4. GOALS, OBJECTIVES, AND PERFORMANCE STANDARDS

Goals, objectives, and performance standards for the on-site mitigation area are presented in this section. Performance standards are ecologically-based standards that will be used to determine whether the compensatory mitigation project is achieving its objectives (Section 33 CFR Part 332.5). Some areas outside the mitigation area will be planted with native vegetation and maintained. These areas are being treated at the behest of the permittee and are not regulated as mitigation areas. Monitoring results will not be presented for these areas and they will not be subject to performance standards. The areas will be monitored and maintained by the permittee to help ensure the success of the adjacent mitigation.

Goal. Compensate for unavoidable short-term temporary impacts to 1.2 acres of wetland.

Objective 1.1. Grade substrate as specified in the grading plan (Attachment 1 to the JARPA).

> **Performance Standard 1.1.** As shown by the proposed grading plan (Attachment 1 to the JARPA), the site will be graded to the proposed contours.

Objective 1.2. Establish a predominantly native plant community.

> **Performance Standard 1.2.** The areal cover of native species shall be at least 20 percent by Year One, 40 percent by Year Three, and 60 percent by Year Five. Replace dead or dying plants as needed to meet the performance standard.

Objective 1.3. Significantly reduce invasive plant cover.

> **Performance Standard 1.3:** During all monitoring, nonnative, invasive plant species will not exceed 20 percent areal cover.

Objective 1.4. Create a diverse native plant community.

> **Performance Standard 1.4.** By Years 3 and 5, at least three different native species shall be present. To qualify, a species must have at least 5 percent average cover in the habitat class and must occur in at least 10 percent of the plots sampled.

5. MITIGATION WORK PLAN

The proposed mitigation site is shown in Exhibit 1. Compensatory mitigation elements will be constructed during and following remedial action construction (expected to be completed in summer 2014).

See Attachment 1 to the JARPA for the remedial action construction schedule, sediment excavation and sand placement construction methods, and the location of the temporary isolation berm. Water quality impacts are not expected, as construction will take place in the dry and erosion- and sediment-control best management practices will be applied. Upland bank stabilization elements are designed to provide improved transition habitat between the wetland and surrounding areas, and fencing on the adjacent Miller's Landing will protect the site. See Attachment 1 to the JARPA for details.

5.1. CONSTRUCTION

The remedial action includes construction elements that intersect with mitigation objectives. Approximately 1.2 acres of wetland will be deepened a minimum of 6 inches during sediment excavation to provide sufficient hydrology to discourage reed canary grass reestablishment. Hydraulic connection to Carty Lake will be maintained. The deepening is expected to lead to increases in seasonal depths and duration of inundation. The depth of excavation is less than the vertical extent of the clay confining layer, and therefore vertical movement of water will continue to be restricted. See plans submitted in response to the December 31, 2013, COE information request for existing and postconstruction Carty Lake elevations and slopes.

To control for sediment contamination residuals, 1 foot of clean sand will be placed over the excavation area. Sand will be certified clean as part of the remedial action. The top 4 to 6 inches of sand will be amended with organic compost to promote conditions conducive to plant establishment (i.e., sufficient nutrients and organic carbon).

A small area (0.94 acre) of wetland outside the mitigation area will be scraped clean with an excavator to remove vegetation. Up to 8 inches of soil will be removed to account for the typical maximum depth of reed canary grass rhizomes. Soil will be disposed along with excavated sediments. Clean topsoil will be placed to bring the elevation up to existing grade and to provide nutrients and biota necessary for plant establishment. In addition, vegetation in the 0.93-acre upland bank stabilization area will be removed; bank stabilization includes placement of topsoil along the southern and eastern embankment and placement of rounded-rock fish mix at the base of the southern embankment. These areas will be planted consistent with the specifications in the planting plan.

5.2. PLANTING PLAN

Vegetation will be planted following completion of remedial construction. The temporary isolation berm designed for remedial construction will be maintained, if needed, to allow planting access. The berm will be removed following planting. Natives will be planted in the 1.2 acre mitigation area. A total of 1.9 acres of natives will be planted in areas surrounding the mitigation area to impede nonnative species encroachment.

The proposed planting area is organized into two specific areas: the wetland mitigation area and the scrub-shrub/upland bank area. Plant selection is based on the plants' location (relationship to the water's elevation) and their tolerance for wet and dry conditions. Culturally significant native plants (i.e., wapato) will be included throughout the wetland mitigation area. Native submerged planting groups will be located in deeper areas of the wetland mitigation area, while native emergent plants will be rooted in shallower areas. The scrub-shrub wetland fringe includes a mix of water-tolerant grasses, sedges, rushes, and shrubs. The upland bank areas are to be planted with native, drought-tolerant shrubs and groundcover. See Exhibits 1 through 3. Exhibits L0 through L4 provide the planting plan in COE plan format.

5.2.1. PLANT LIST

Native submergent plants will be installed in the wetland mitigation area at elevation 7 and below. Native emergent plants will be installed between elevations 7 and 11. These emergent plants include specific groupings of in-water plants that tolerate wetter conditions between elevations 7 and 10 and in-water edge plantings that perform well in wet and dry conditions from elevations 10 to 11 (see Table 2). In addition, native scrub-shrub plantings will be planted approximately between elevations 11 to 15 and native upland bank plants will be planted from elevation 15 and above. The scrub-shrub plantings include a mix of native shrub clusters and a transitional grass mix that can tolerate both moist and dry conditions. The upland bank will be planted with a variety of drought-tolerant native shrubs and grasses (see Table 3). The planting plan has been designed to provide structural habitat while protecting scenic views.

The plants specified for the mitigation site are intended to provide diversity in each stratum and will provide cover and habitat in both the short and long terms. The proposed plant lists include a diverse mix of native shrubs, along with variety of native grasses, sedges, rushes, aquatic plants, and groundcovers (see Tables 2 and 3).

5.2.2. PLANTING SPECIFICATIONS

Plants will be installed according to the following specifications.

Planting

- Plant the site with native species according to the planting list.
- Lay out the plants according to the planting plan.
- Plant containerized and bareroot trees and shrubs with a shovel or comparable tool. Position the plants' root crowns so that they are at or slightly above the level of the surrounding soil surface.
- Firmly compact the soil around the plants to eliminate air spaces.
- Install anti-herbivore devices, such as seedling protection tubes or mesh protection netting, around the stems of plants as appropriate. Secure with stakes.
- Irrigate all newly installed plants as weather conditions warrant.

Bareroot Stock

- Bareroot stock will be a minimum of 18 to 36 inches tall.
- Bareroot stock will be kept cool and moist before planting.
- The bareroot stock will have well-developed roots and sturdy stems with an appropriate root-to-shoot ratio.
- No damaged or desiccated roots or diseased plants will be accepted.
- Unplanted bareroot stock will be properly stored at the end of each planting day to prevent desiccation.

6. SITE PROTECTION AND MAINTENANCE

On May 18, 1965, the Migratory Bird Commission, under the authority of the Migratory Bird Treaty Act of 1929, approved the establishment of the RNWR and identified a 6,130.8-acre acquisition boundary; the project site is currently under USFWS ownership and is managed as part of the NWRS within a framework provided by legal and policy guidelines. The RNWR comprehensive conservation plan (USFWS, 2010) describes the long-term land protection instruments for the RNWR, agency missions and policies, and federal biological resource protection acts applicable to the site. These instruments will ensure the long-term protection of the compensatory mitigation site.

As described in the November 5, 2013, Consent Decree between the Port and Ecology, the Port will be responsible for monitoring and maintenance of the site. These activities will be coordinated with the owner (the USFWS).

The planting areas will be maintained during the monitoring period to support native plant establishment and to control wildlife and nonnative invasive species. Maintenance will include the following activities.

Irrigation—An irrigation system will be established. In the first year following planting, the irrigation system will be set to allow for 0.5 inch of precipitation two times per week between June 15 and October 1. In the second year following planting, the irrigation system will be set to allow for 0.5 inch of precipitation once per week between June 15 and October 1.

Nonnative Invasive Control—Nonnative plants will be controlled through mechanical means, including hand removal, brush cutting, and mowing. These activities will be conducted two to three times per growing season, or as needed, during the monitoring period, from approximately April 1 through October 1.

Wildlife Control—Some wildlife present at the site may consume newly planted vegetation. Appropriate measures to control loss of native vegetation will be evaluated and implemented, as needed, from approximately April 1 through October 1.

Plant Replacement—Dead or failing plants may be replaced to meet the performance standards. Dead or failing plants will be evaluated to determine the cause of the decline. Alternate native

species may be selected as replacement plants if it appears that these will have a better chance of survival. Replacement plants will be installed as described for the original installation.

7. MONITORING PLAN

Planting areas will be inspected and monitored annually for five years. The goal of the monitoring inspections is to determine the survival rate of the installed plant material, to determine the extent of nonnative invasive plant encroachment, and to identify maintenance tasks that are required to meet performance standards. Monitoring will be conducted in late spring during periods of low water. Monitoring in the planting areas will include:

- Establishing photodocumentation points to monitor plant growth.
- To measure the percent cover of native vegetation, the point-line or point-frame method will be used (Bonham, 1989; Coulloudon et al., 1999). In the point-line method, sample units consisting of fixed sets of points are randomly placed along sampling transects. A point-frame is a rectangular frame that encloses a set of points collectively serving as a sample unit. For each method, the sample unit is lowered over herbaceous vegetation and data are recorded where native vegetation intercepts point locations. Native percent cover is determined based on the number of times native vegetation is encountered divided by the total number of points. For example, if native species were encountered on 6 points from a sample unit composed of 10 points, the percent cover of native species for that sample unit is 60 percent.
- Identification of invasive plant material percent cover will be conducted as described for native vegetation.

Monitoring Report

Following each inspection, a monitoring report will be prepared that presents field observations. The report will be submitted to the COE and will indicate if the planting is successful, not successful, or moving toward successful establishment. Monitoring reports will also be provided to the USFWS. The information will indicate performance metrics, and photographs and a written description of the planting areas will be included. The report will be consistent with COE Regulatory Guidance Letter No. 08-03 and will include the following information:

- The date of the inspection.
- Photodocumentation from established photo points to compare plant growth between monitoring inspections. The photos will be used to support the findings and recommendations referenced in the report and to assist in assessing whether the project is successful for the monitoring period.
- A site location map indicating the monitoring area and locations of specific photo locations.
- A description of the conditions of the planting project and monitoring results.
- Conclusions. (If performance standards are not being met, a brief explanation of the difficulties will be included.)

- Recommendations for maintenance and adaptive management.

8. MITIGATION, MAINTENANCE, AND MONITORING SCHEDULE

Year 1: 2014-2015

- August 2014—Sediment excavation, sand placement, and wetland deepening are expected to be completed.
- September–October—Plant installation.
- April–October—Irrigation and maintenance.
- June–August—Conduct monitoring.
- September–October—Replace dead or failing plants as needed.

Year 2: 2015-2016

- April–October—Irrigation and maintenance.
- June–August—Conduct monitoring.
- September–October—Replace dead or failing plants as needed.

Year 3: 2016-17

- April–October—Irrigation as needed and maintenance.
- June–August—Conduct monitoring.
- September–October—Replace dead or failing plants as needed.

Year 4: 2017-2018

- April–October—Irrigation as needed and maintenance.
- June–August—Conduct monitoring.

Year 5: 2018-2019

- April–October—Irrigation as needed and maintenance.
- June–August—Conduct monitoring.
- September–October—Replace dead or failing plants as needed.

9. ADAPTIVE MANAGEMENT

The monitoring and maintenance events will provide a basis of information for evaluating the success of the project and for making any recommendations for adaptive management that may be needed. If the COE or the Port believes that adaptive management of the mitigation is needed, they will collaboratively discuss options, and the Port will present a written proposal to the COE, identifying specific issues and measures for addressing them. Upon receiving written approval by the COE, the Port will proceed to implement the adaptive management measures. The USFWS will be consulted throughout the process.

Significant challenges to project success include the widespread reed canary grass monoculture surrounding the site. As described in Ecology, COE, and USEPA (2006a), the intent of invasive species performance standards is to prevent the establishment of monocultures of invasive species

and unattainable performance standards which lead to compensatory mitigation failure should not be required. Wetland deepening (a minimum of 6 inches) is expected to provide sufficient hydrology to control reed canary grass reestablishment and was selected as a primary control measure. Additional native planting areas outside the sediment excavation area were included in the mitigation design to impede reed canary grass. If it is determined that encroachment is significant despite these efforts, the performance standard 1.3 for nonnative invasive species may be modified upward to no more than 30 percent nonnative species present.

10. FINANCIAL ASSURANCES

The Port has received a grant from Ecology to perform the remedial action and the mitigation work described in this plan. The Port will be responsible for implementing monitoring and maintenance according to the schedule provided above.

LIMITATIONS

The services undertaken in completing this report were performed consistent with generally accepted professional consulting principles and practices. No other warranty, express or implied, is made. These services were performed consistent with our agreement with our client. This report is solely for the use and information of our client unless otherwise noted. Any reliance on this report by a third party is at such party's sole risk.

Opinions and recommendations contained in this report apply to conditions existing when services were performed and are intended only for the client, purposes, locations, time frames, and project parameters indicated. We are not responsible for the impacts of any changes in environmental standards, practices, or regulations subsequent to performance of services. We do not warrant the accuracy of information supplied by others, or the use of segregated portions of this report.

REFERENCES

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TABLES

Table 1
Wetland Impacts and Mitigation
Carty Lake Remedial Action
Ridgefield, Washington

Area	Temporary Impacts	Impact (acres)	Proposed Measures	Mitigation (acres)	Habitat Enhancement (acres)	NWI Classification (Cowardin)	Western Washington Wetland Rating	HGM Classification
Mitigation Area[a]	Benthos and native vegetation disturbance or removal	1.2	Nonnative invasive species removal, native plantings, wetland deepening	1.2	1.2	Palustrine emergent, seasonally flooded	Category II	Lake-fringe
Wetland Areas adjacent to Mitigation Area[b]	--	--	Nonnative invasive species removal, native plantings	--	0.94	Palustrine emergent, temporarily flooded or temporary-tidal	Category II	Lake-fringe
Wetland Fringe and Upland Bank Area[c]	--	--	Nonnative invasive species removal, native plantings	--	0.93	--	--	--
Totals	--	1.2	--	1.2	3.1	--	--	--

NOTES:

-- = not applicable.

HGM = hydrogeomorphic classification based on western Washington wetland rating form.

NWI = National Wetlands Inventory.

[a]Does not include areas that will be excavated and permanently filled (these areas will be addressed with mitigation banking).

[b]Existing vegetation is primarily nonnative reed canary grass.

[c]Existing vegetation is primarily nonnative reed canary grass and Himalayan blackberry.

Table 2
Wetland Mitigation Plant List
Carty Lake Remedial Action
Ridgefield, Washington

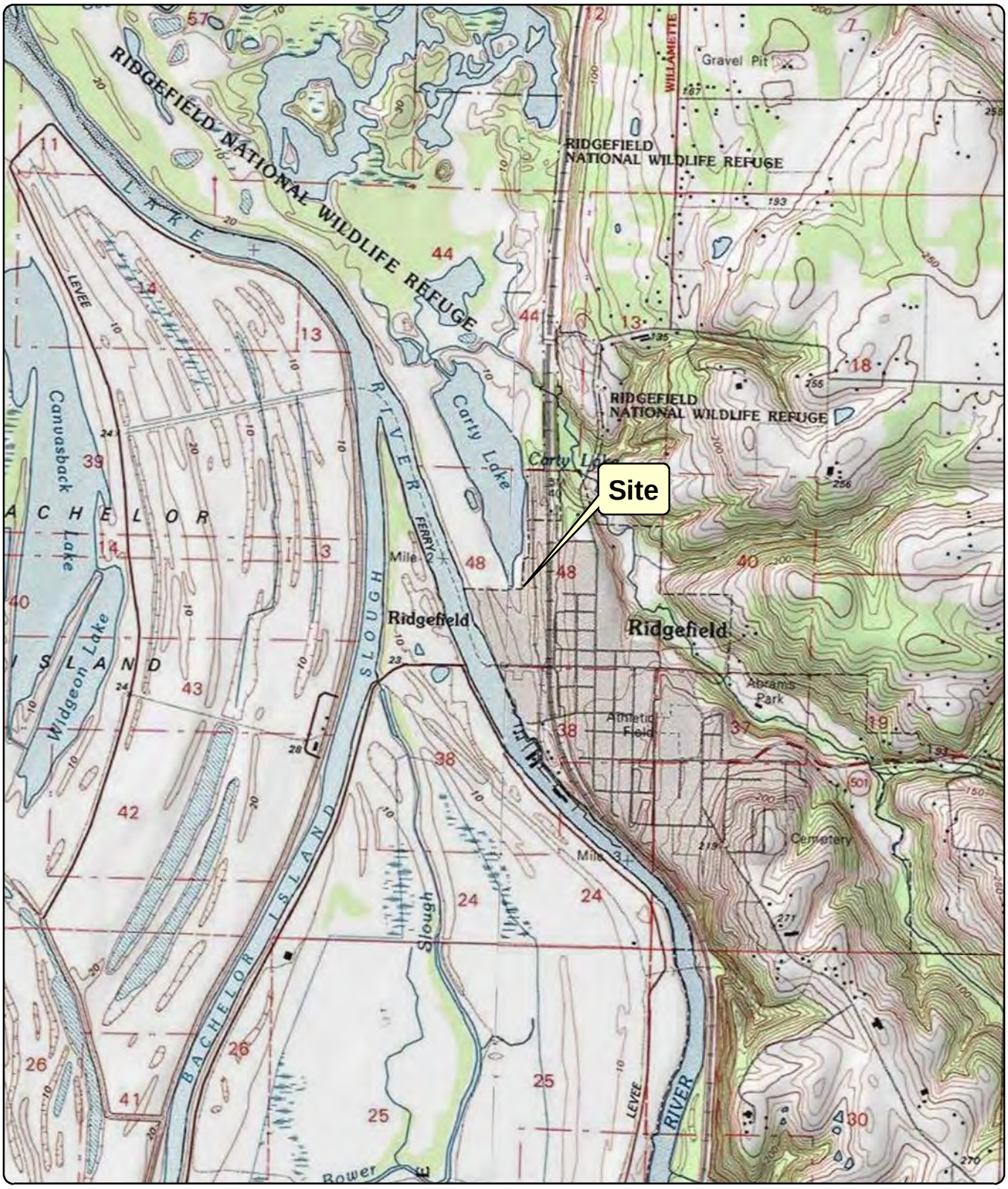
Common Name	Botanical Name	Size	Spacing
In-water Mix 1 (approx. elev. 7 and below)			
American Waterplantain	*Alisma plantago-aquatica*	Tuber	1'-0, o.c.
Wapato	*Sagittaria latifolia*	Tuber	1'-0, o.c.
Water Smartweed	*Polygonum amphibium*	BR Seedling	18"-0, o.c.
Floating-leaf Pondweed	*Potamogeton natans*	BR Seedling	18"-0, o.c.
Bur-reed	*Sparganium emersum*	BR Seedling	18"-0, o.c.
In-water Mix 2 (approx. between elev. 7 and 10)			
American Waterplantain	*Alisma plantago-aquatica*	Tuber	1'-0, o.c.
Wapato	*Sagittaria latifolia*	Tuber	1'-0, o.c.
Small-fruited Bulrush	*Scirpus microcarpus*	BR Seedling	18"-0, o.c.
Hardstem Bulrush	*Scirpus acutus*	BR Seedling	18"-0, o.c.
In-water Edge Mix (approx. between elev. 10 and 11)			
Columbia Sedge	*Carex aperta*	BR Seedling	18"-0, o.c.
Slough Sedge	*Carex obnupta*	BR Seedling	18"-0, o.c.
Tufted Hairgrass	*Deschampsia cespitosa*	BR Seedling	2'-0, o.c.
Ovate Spikerush	*Eleocharis ovata*	BR Seedling	2'-0, o.c.
Soft Rush	*Juncus effusus*	BR Seedling	2'-0, o.c.
Live Stakes[a] (within Fish Mix)			
Ninebark	*Physocarpus capitatus*	--	--
Red-Osier Dogwood	*Cornus sericea*	--	--
Douglas' Spiraea	*Spiraea douglasi*	--	--

[a]All proposed live stakes will be planted within the fish mix, adjacent to the wetland mitigation area (see Exhibit L1.2). This area is not identified as mitigation.

Table 3
Scrub-Shrub and Upland Bank Plant List
Carty Lake Remedial Action
Ridgefield, Washington

Common Name	Botanical Name	Qty	Size*	Spacing
Trees				
Pacific Willow	*Salix lasiandra*	*26*	3 gal	15'-0', o.c.
River Willow	*Salix fluviatilis*	*30*	3 gal	12'-0, o.c.
Sitka Willow	*Salix sitchensis*	*45*	3 gal	18"-0, o.c.
Shrubs				
Twinberry	*Lonicera involucrata*	*71*	3 gal	8'-0', o.c.
Ninebark	*Physocarpus capitatus*	*82*	3 gal	7'-0', o.c.
Ocean Spray	*Holodiscus discolor*	*75*	3 gal	6'–0", o.c.
Red-Osier Dogwood	*Cornus sericea*	*114*	3 gal	5'–0", o.c.
Western Viburnum	*Viburnum ellipticum*	*119*	1 gal	5'–0", o.c.
Snowberry	*Symphoricarpos albus*	*179*	1 gal	4'–0", o.c.
Red Flowering Currant	*Ribes sanquineum*	*188*	1 gal	4'–0", o.c.
Tall Oregon Grape	*Mahonia aquifolium*	*155*	1 gal	4'–0", o.c.
Douglas' Spiraea	*Spiraea douglasi*	*221*	1 gal	4'–0", o.c.
Cluster Rose	*Rosa pisocarpa*	*170*	1 gal	3'–0", o.c.
Nootka Rose	*Rosa nutkana*	*244*	1 gal	3'–0", o.c.
Transitional Fringe Mix (approx. between elev. 11 and 14)				
Mannagrass	*Glyceria occidentalis*	--	Seed	--
Blue Wildrye	*Elymus glaucus*	--	Seed	--
Tufted Hairgrass	*Deschampsia cespitosa*	--	Seed	--
Meadow Barley	*Hordeum brachyantherum*	--	Seed	--
Path Rush	*Juncus tenuis*	--	Seed	--
Upland Grass Mix				
Roemer's Fescue	*Festuca roemeri*	--	Seed	--
Blue Wildrye	*Elymus glaucus*	--	Seed	--
Spike Bentgrass	*Agrostis exarata*	--	Seed	--
California Brome	*Bromus carinatus*	--	Seed	--
Eco Grass Mix				
Idaho Fescue	*Festuca idahoensis*	--	Seed	--
California Oatgrass	*Danthonia californica*	--	Seed	--
Slender Hairgrass	*Deschampsia elongata*	--	Seed	--
Pine bluegrass	*Poa scabrella*	--	Seed	--
*If specified sizes are not available, bare root stock may be substituted.				

FIGURE



Source: Topographic Quadrangle obtained from ArcGIS Online Services/NGS-USGS TOPO! US Geological Survey (1999)
7.5-minute topographic quadrangle: Ridgefield

REFERENCE: NWS-2013-1209

APPLICANT: Port of Ridgefield

ADJACENT PROPERTY OWNERS:
Multiple. See JARPA

LOCATION: 111 West Division St. Ridgefield, WA 98642

LAT/LONG: 45.822 N / -122.751 W

PAGE #4 OF #10 DATE: 09/20/2013

PROPOSED PROJECT: Carty Lake Remedial Action

IN: Carty Lake
NEAR/AT: Ridgefield
COUNTY: Clark
STATE: Washington

Figure
Site Location

Former PWT Site
Ridgefield, Washington

Township 4N, Range 1W, W.M Section 24

0 1,000 2,000
Feet

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Project: 9003.01.20 Produced By: jschane Approved By: J. King Print Date: 1/14/2014
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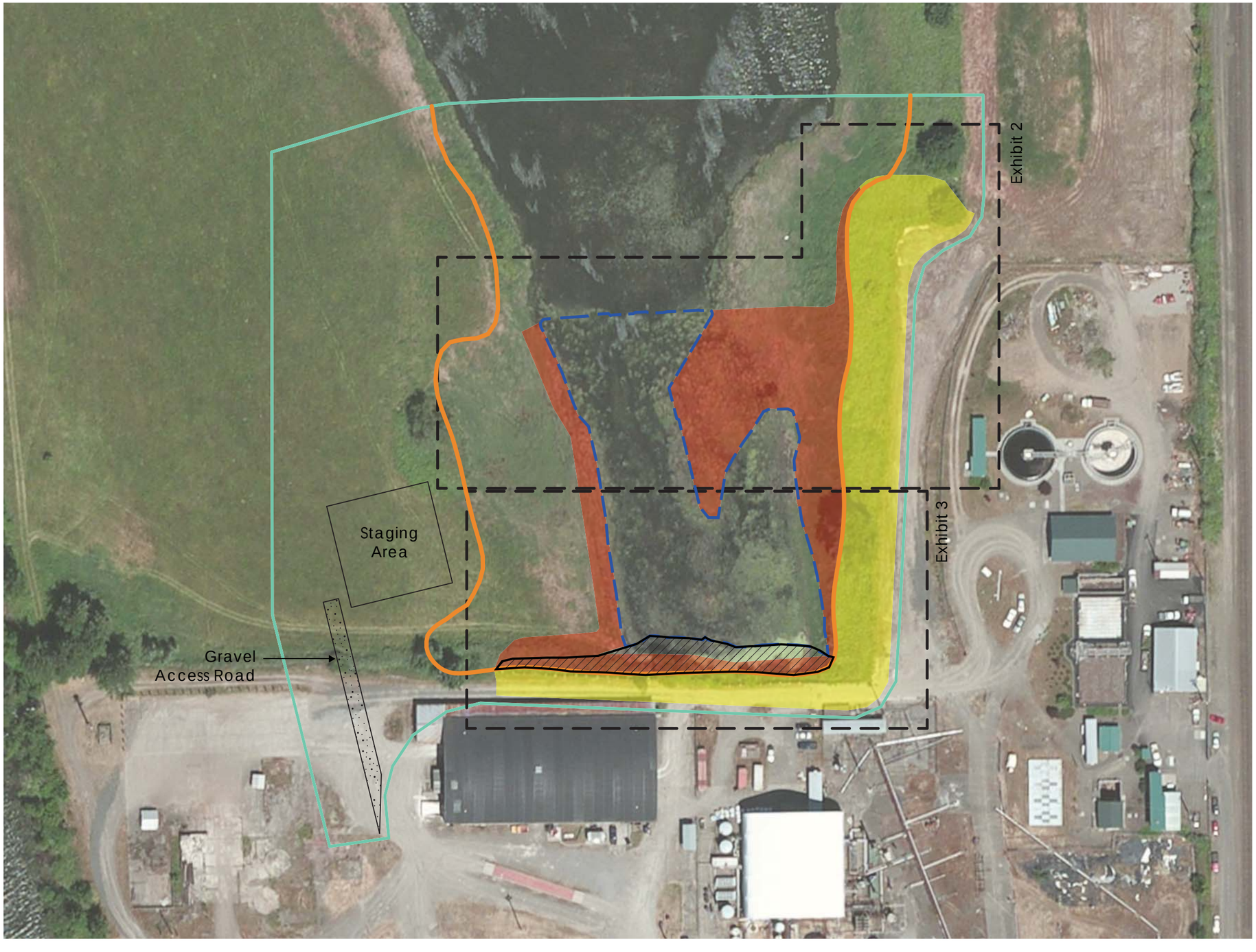
EXHIBITS



LEGEND

- Site Boundary
  8.6 ACRES
- Wetland Boundary
  4.7 ACRES
- Mitigation Site
  1.2 ACRES
- Current Wetland Areas Adjacent to Mitigation Area 0.94 ACRES
- Wetland Fringe and Upland Bank
  0.93 ACRES
- Wetland Mitigation Banking
  Up to 0.23 ACRES

0 100 200
Feet

SITE OVERVIEW
CARTY LAKE
PORT OF RIDGEFIELD
RIDGEFIELD, WASHINGTON

EXHIBIT
1

MFA JOB #:	9003.01.40
ISSUE DATE:	01/29/2014
CHECKED:	J. ELLIOT
DRAWN:	C.RILEY

MAUL FOSTER ALONGI
2001 NW 19TH AVENUE, SUITE 200
PORTLAND, OR 97209
PHONE: 971.544.2139
www.maulfoster.com

PLANT MATERIAL SCHEDULE

SYM	COMMON NAME
	PACIFIC WILLOW
	SANDBAR WILLOW
	SITKA WILLOW
	TWINBERRY
	NINEBARK
	RED TWIG DOGWOOD
	OCEAN SPRAY
	WESTERN VIBURNUM
	SNOWBERRY
	DOUGLAS' SPIRAEA
	RED FLOWERING CURRANT
	NOOTKA ROSE
	CLUSTER ROSE
	TALL OREGON GRAPE

GROUNDCOVER

FISH MIX W/ LIVE STAKES
(ELEV. 9 TO 14)
LIVE STAKES INCLUDE:
NINEBARK
REDTWIG DOGWOOD
DOUGLAS' SPIRAEA

IN-WATER PLANTING

IN-WATER MIX 1
(APPROX. ELEV. 7 & BELOW)
AMERICAN WATERPLANTAIN
WAPATO
WATER SMARTWEED
FLOATING-LEAF PONDWEED
BUR-REED

IN-WATER MIX 2
(APPROX. ELEV. 7 TO 10)
AMERICAN WATERPLANTAIN
WAPATO
SMALL-FRUITED BULRUSH
HARDSTEM BULRUSH

IN-WATER EDGE MIX
(APPROX. ELEV. 10 TO 11)
COLUMBIA SEDGE
SLOUGH SEDGE
TUFTED HAIRGRASS
OVATE SPIKERUSH
SOFT RUSH

TRANSITIONAL FRINGE MIX
(APPROX. ELEV. 11 TO 14)
MANNAGRASS
BLUE WILDRYE
TUFTED HAIRGRASS
MEADOW BARLEY
PATH RUSH

UPLAND GRASS MIX
ROEMER'S FESCUE
BLUE WILDRYE
SPIKE BENTGRASS
CALIFORNIA BROME

ECO GRASS MIX
IDAHO FESCUE
CALIFORNIA OATGRASS
SLENDER HAIRGRASS
PINE BLUEGRASS

PROPOSED 4' SMOOTH WIRE FENCE

WETLAND BOUNDARY

WETLAND MITIGATION AREA

EXISTING TREE TO REMAIN

SITE BOUNDARY

MATCHLINE

NOTE:
1. SEE ATTACHMENT 1 IN THE JARPA FOR THE PROPOSED GRADING PLAN.

0 40' 80'

NOTE: BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY.

ENLARGED PLANTING PLAN 1
CARTY LAKE
PORT OF RIDGEFIELD
RIDGEFIELD, WASHINGTON

EXHIBIT
2

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MFA JOB #:	9003.01.40
ISSUE DATE:	01/29/2014
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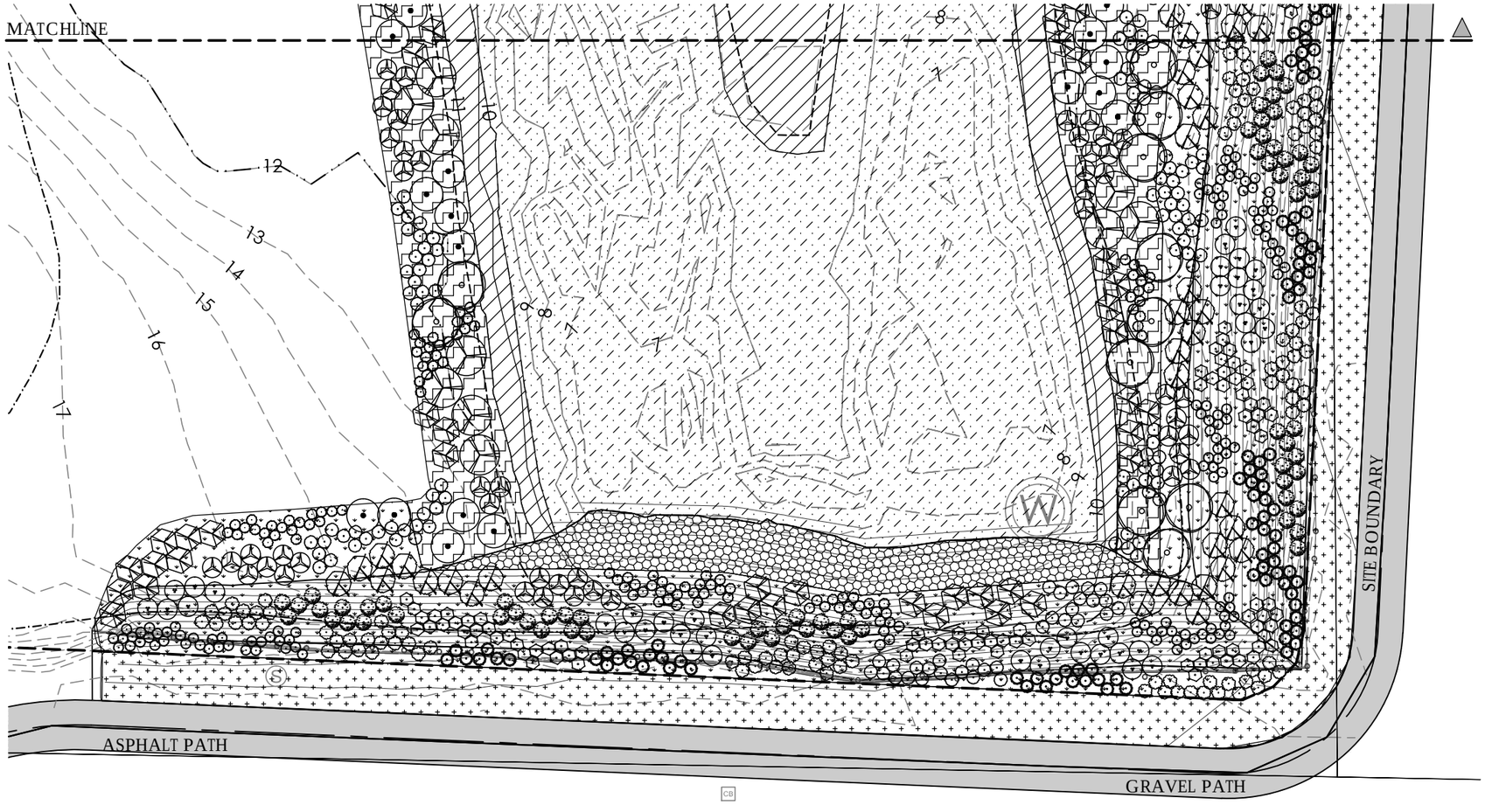
NOTE:
1. SEE ATTACHMENT 1 IN THE JARPA FOR THE PROPOSED GRADING PLAN.



PLANT MATERIAL SCHEDULE

SYM	COMMON NAME
	PACIFIC WILLOW
	SANDBAR WILLOW
	SITKA WILLOW
	TWINBERRY
	NINEBARK
	RED TWIG DOGWOOD
	OCEAN SPRAY
	WESTERN VIBURNUM
	SNOWBERRY
	DOUGLAS' SPIRAEA
	RED FLOWERING CURRANT
	NOOTKA ROSE
	CLUSTER ROSE
	TALL OREGON GRAPE

GROUNDCOVER

FISH MIX W/ LIVE STAKES
(ELEV. 9 TO 14)
LIVE STAKES INCLUDE:
NINEBARK
REDTWIG DOGWOOD
DOUGLAS' SPIRAEA

IN-WATER PLANTING

IN-WATER MIX 1
(APPROX. ELEV. 7 & BELOW)
AMERICAN WATERPLANTAIN
WAPATO
WATER SMARTWEED
FLOATING-LEAF PONDWEED
BUR-REED

IN-WATER MIX 2
(APPROX. ELEV. 7 TO 10)
AMERICAN WATERPLANTAIN
WAPATO
SMALL-FRUITED BULRUSH
HARDSTEM BULRUSH

IN-WATER EDGE MIX
(APPROX. ELEV. 10 TO 11)
COLUMBIA SEDGE
SLOUGH SEDGE
TUFTED HAIRGRASS
OVATE SPIKERUSH
SOFT RUSH

TRANSITIONAL FRINGE MIX
(APPROX. ELEV. 11 TO 14)
MANNAGRASS
BLUE WILDRYE
TUFTED HAIRGRASS
MEADOW BARLEY
PATH RUSH

UPLAND GRASS MIX
ROEMER'S FESCUE
BLUE WILDRYE
SPIKE BENTGRASS
CALIFORNIA BROME

ECO GRASS MIX
IDAHO FESCUE
CALIFORNIA OATGRASS
SLENDER HAIRGRASS
PINE BLUEGRASS

PROPOSED 4' SMOOTH WIRE FENCE

WETLAND BOUNDARY

WETLAND MITIGATION AREA

0 40' 80'

NOTE: BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY.

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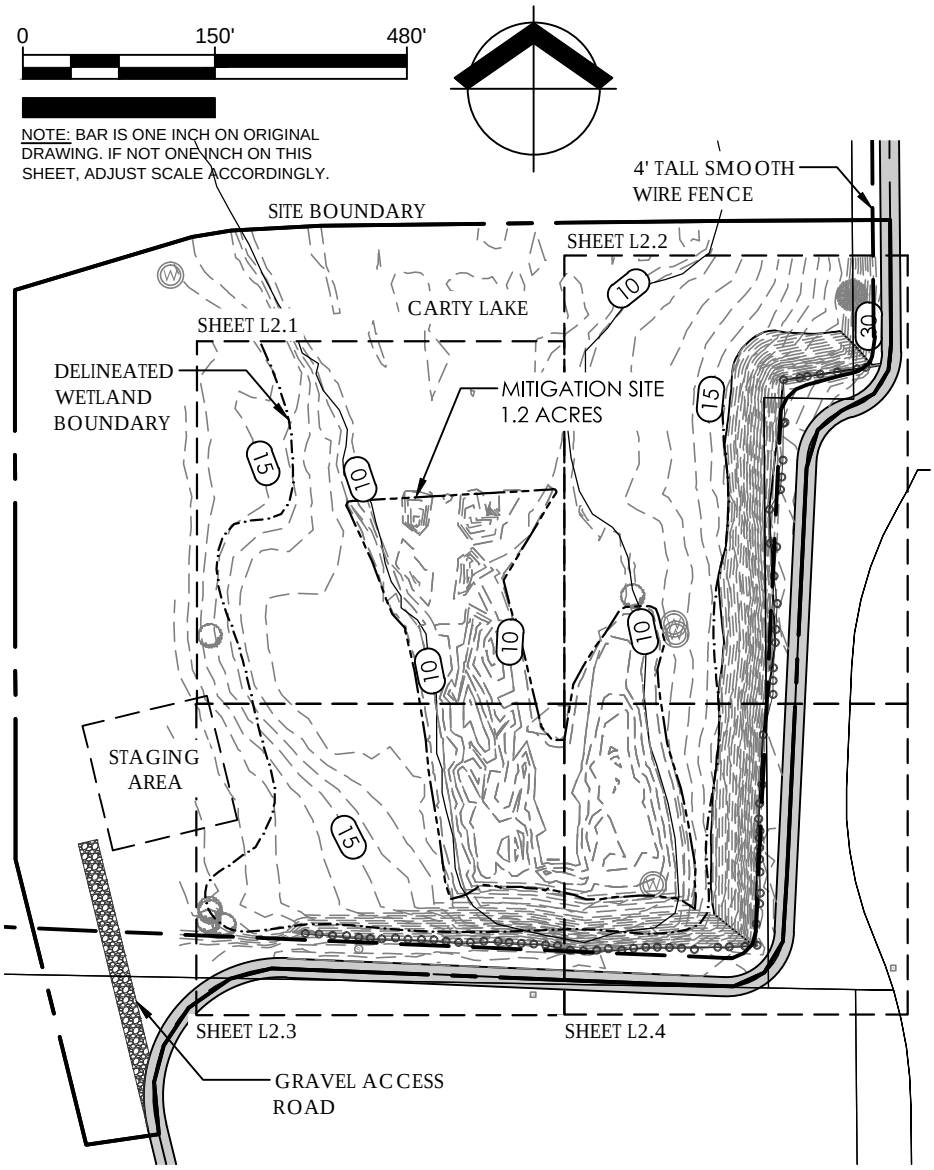
ENLARGED PLANTING PLAN 2
CARTY LAKE
PORT OF RIDGEFIELD
RIDGEFIELD, WASHINGTON

EXHIBIT
3



PLANT MATERIAL SCHEDULE

SYM	COMMON NAME	SPACING
	PACIFIC WILLOW	15'-0", O.C
	SANDBAR WILLOW	12'-0", O.C
	SITKA WILLOW	10'-0", O.C
	TWINBERRY	8'-0", O.C.
	PACIFIC NINEBARK	8'-0", O.C.
	RED TWIG DOGWOOD	6'-0", O.C.
	OCEAN SPRAY	6'-0", O.C.
	WESTERN VIBURNUM	5'-0", O.C.
	SNOWBERRY	4'-0", O.C.
	DOUGLAS' SPIRAEA	4'-0", O.C.
	RED FLOWERING CURRANT	4'-0", O.C.
	TALL OREGON GRAPE	4'-0", O.C.
	NOOTKA ROSE	3'-0", O.C.
	CLUSTER ROSE	3'-0", O.C.

GROUNDCOVER

FISH MIX W/ LIVE STAKES
(ELEV. 9 TO 14)
LIVE STAKES INCLUDE:
NINEBARK
REDTWIG DOGWOOD
DOUGLAS' SPIRAEA

IN-WATER PLANTING

IN-WATER MIX 1
(APPROX. ELEV. 7 & BELOW)
AMERICAN WATERPLANTAIN
WAPATO
WATER SMARTWEED
FLOATING-LEAF PONDWEED
BUR-REED

IN-WATER MIX 2
(APPROX. ELEV. 7 TO 10)
AMERICAN WATERPLANTAIN
WAPATO
SMALL-FRUITED BULRUSH
HARDSTEM BULRUSH

UPLAND GRASS MIX
ROEMER'S FESCUE
BLUE WILDRYE
SPIKE BENTGRASS
CALIFORNIA BROME

ECO GRASS MIX
IDAHO FESCUE
CALIFORNIA OATGRASS
SLENDER HAIRGRASS
PINE BLUEGRASS

IN-WATER EDGE MIX
(APPROX. ELEV. 10 TO 11)
COLUMBIA SEDGE
SLOUGH SEDGE
TUFTED HAIRGRASS
OVATE SPIKERUSH
SOFT RUSH

TRANSITIONAL FRINGE MIX
(APPROX. ELEV. 11 TO 14)
MANNAGRASS
BLUE WILDRYE
TUFTED HAIRGRASS
MEADOW BARLEY
PATH RUSH

NOTE:
REFER TO CARTY LAKE MITIGATION PLAN (01/29/2014) FOR GROUNDCOVER PLANT SPACING

PERMIT DOCUMENT

MFA JOB #:	9003.01.40
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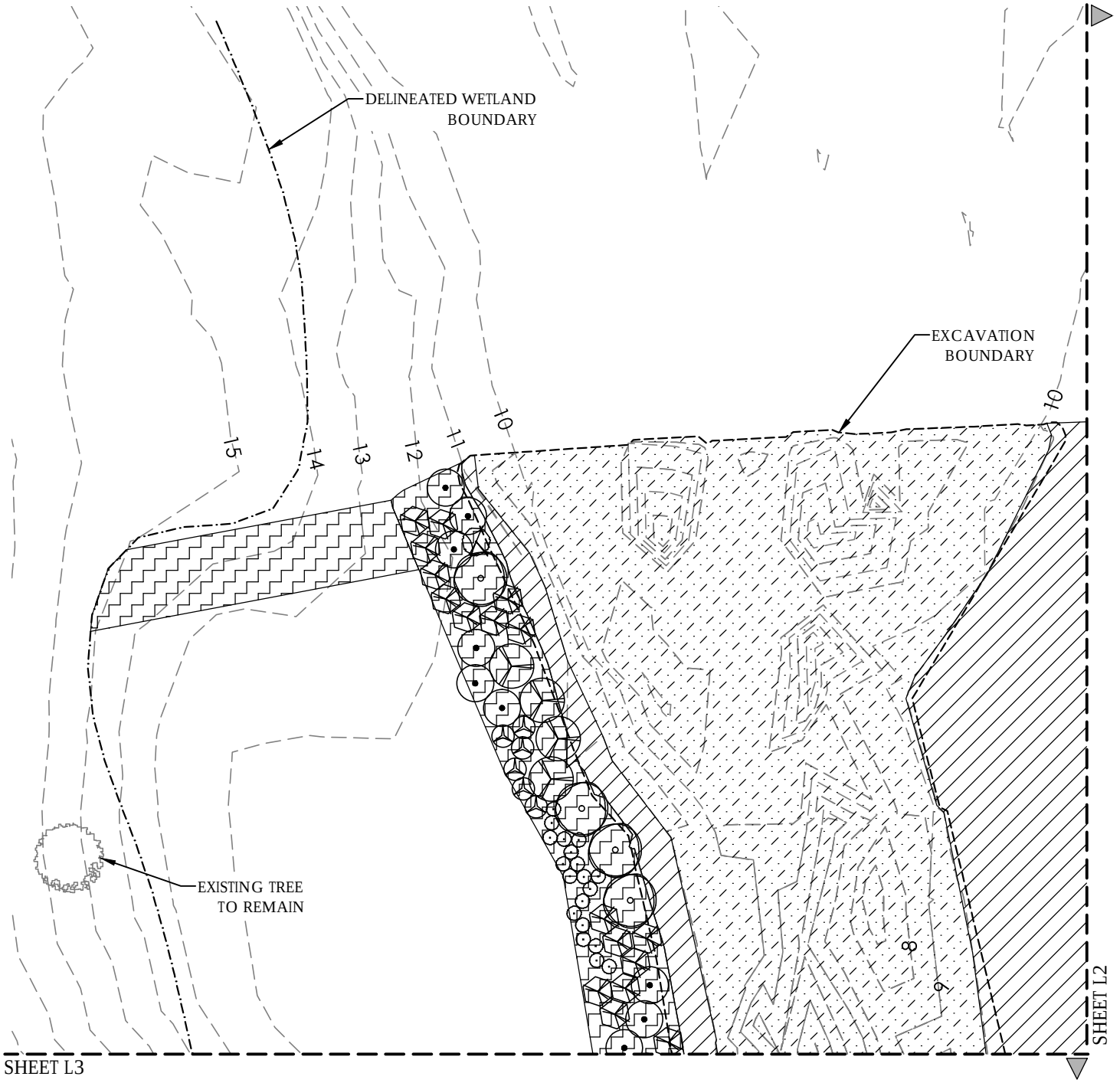
PLANTING OVERVIEW

CARTY LAKE REMEDIAL ACTION

PORT OF RIDGEFIELD
RIDGEFIELD, WA

REFERENCE #: NWS-2013-1209

SHEET
L0



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ENLARGED PLANTING PLAN 1

CARTY LAKE REMEDIAL ACTION

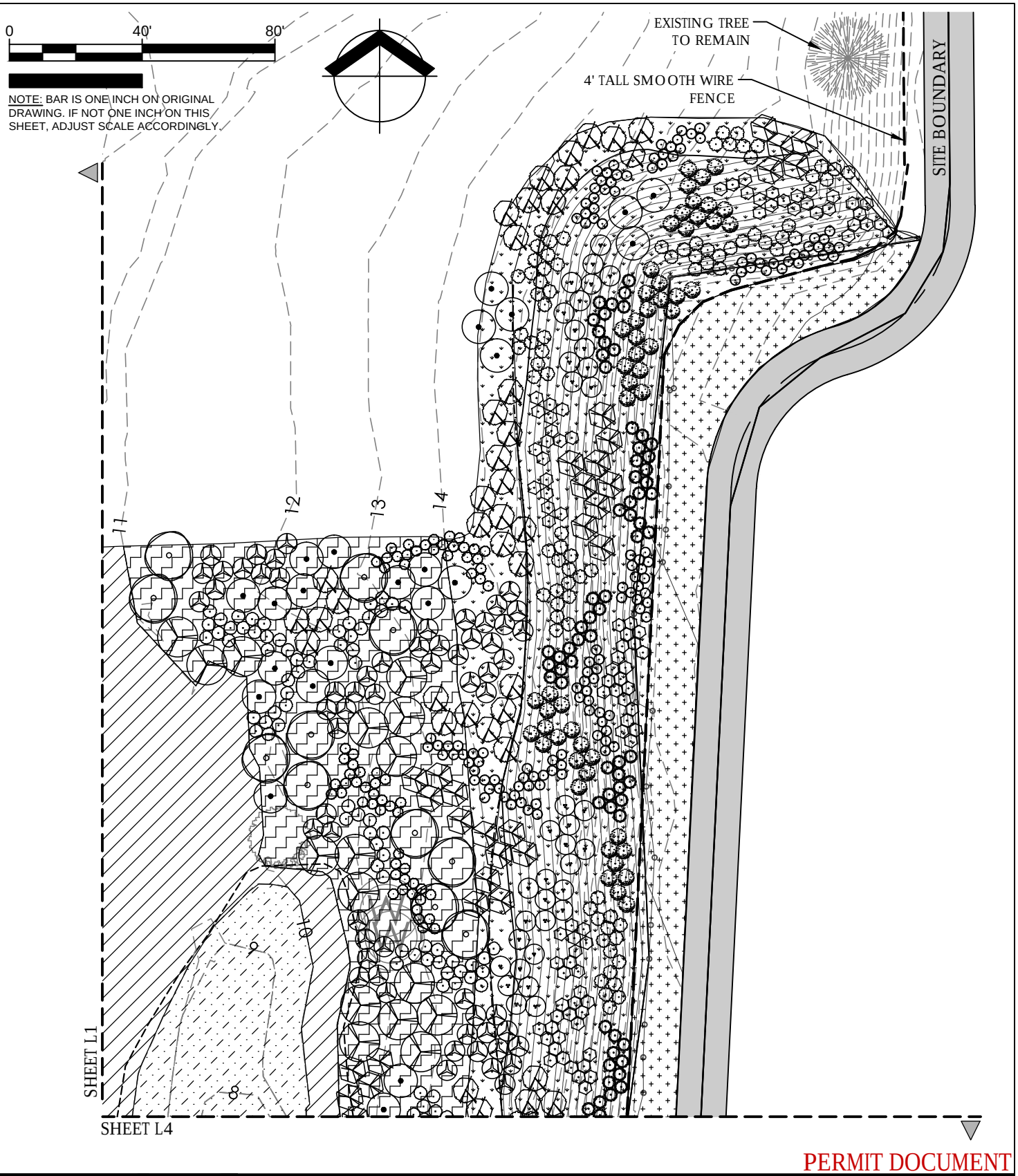
PORT OF RIDGEFIELD

RIDGEFIELD, WA

REFERENCE #: NWS-2013-1209

SHEET

L1



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Date: 01/28/2014

MFA JOB #:	9003.01.40
ISSUE DATE:	01/29/2014
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ENLARGED PLANTING PLAN 2

CARTY LAKE REMEDIAL ACTION

PORT OF RIDGEFIELD

RIDGEFIELD, WA

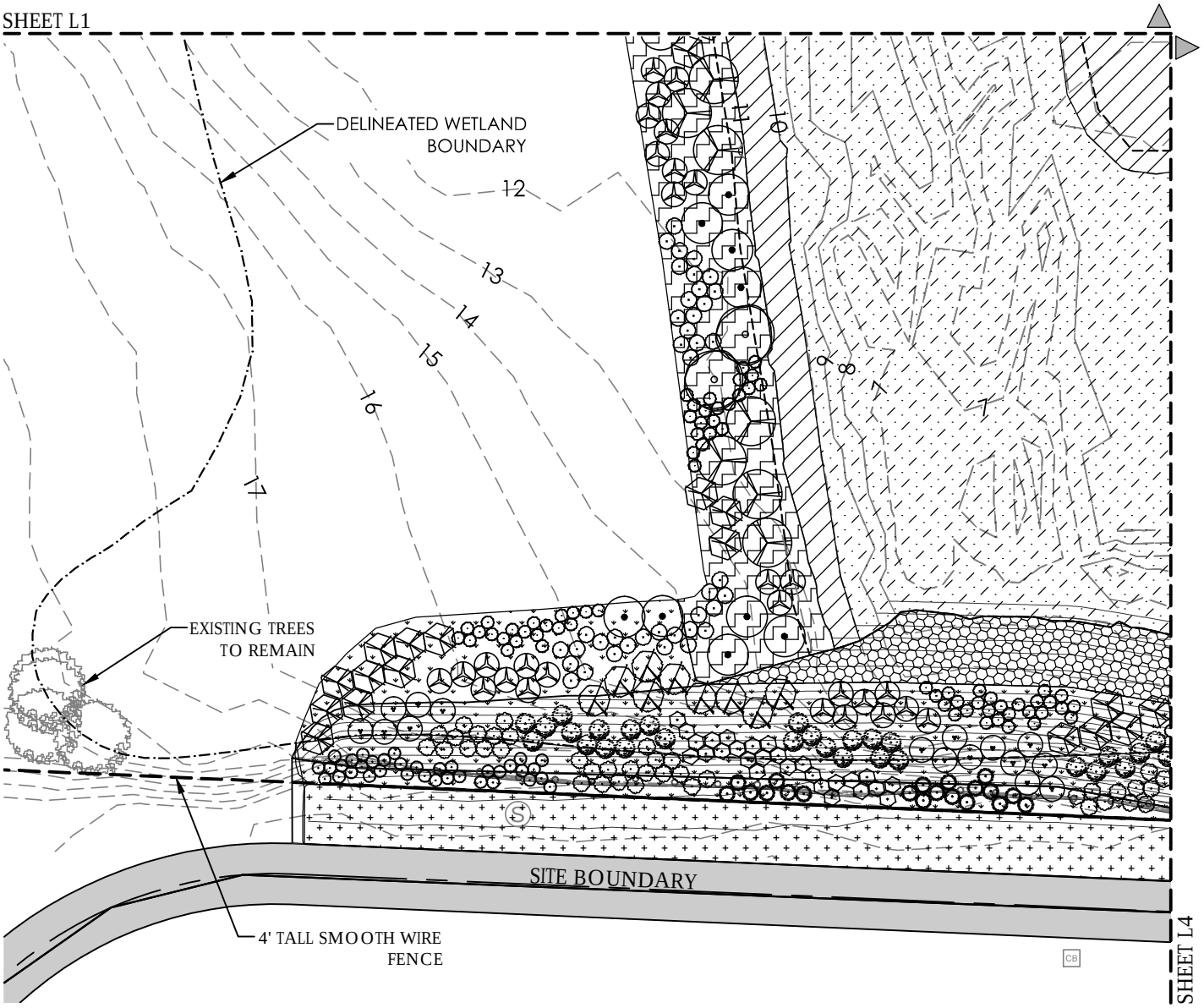
REFERENCE #: NWS-2013-1209

SHEET

L2

0 40' 80'

NOTE: BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY.



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ENLARGED PLANTING PLAN 3

CARTY LAKE REMEDIAL ACTION

PORT OF RIDGEFIELD

RIDGEFIELD, WA

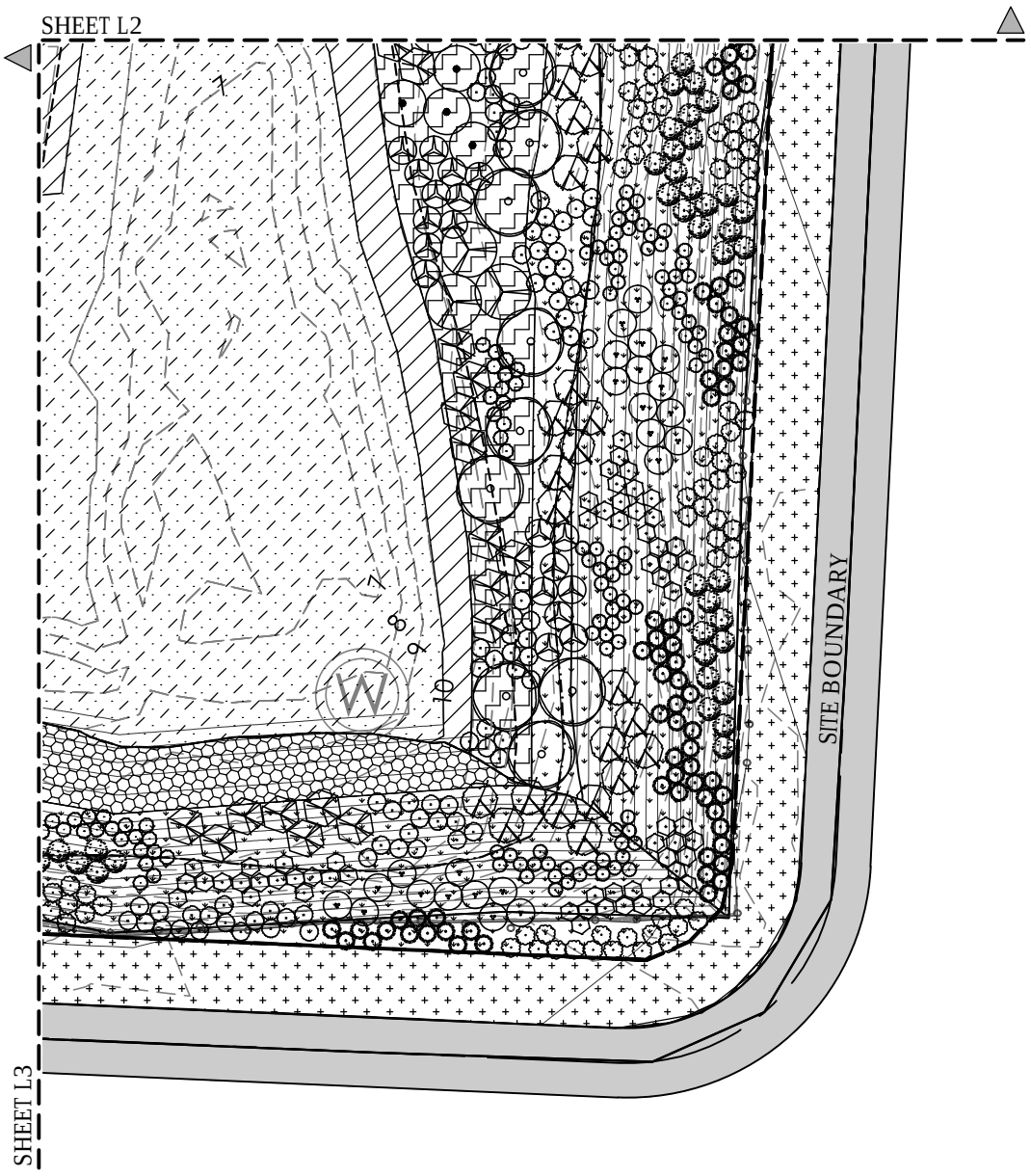
REFERENCE #: NWS-2013-1209

SHEET

L3

0 40' 80'

NOTE: BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY.



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ENLARGED PLANTING PLAN 4

CARTY LAKE REMEDIAL ACTION

PORT OF RIDGEFIELD

RIDGEFIELD, WA

REFERENCE #: NWS-2013-1209

SHEET

L4