



# Alder Creek Restoration Plan

Multnomah County, Oregon

Revised April 2014



# **ALDER CREEK RESTORATION PLAN**

**MULTNOMAH COUNTY, OREGON**

*Submitted by:*

Portland Harbor Holdings II, LLC  
c/o Wildlands PNW  
520 SW 6th Avenue, Suite 1210  
Portland, Oregon 97204  
Contact: Julie Mentzer  
Email: [jmentzer@wildlandsinc.com](mailto:jmentzer@wildlandsinc.com)  
Tel: (503) 241-4895  
Fax: (503) 296-2308

April 2014

# Table of Contents

Memorandum of Agreement

Memorandum of Agreement: Addendum 1

<b>Exhibit A</b>	General Location Maps
	A-1 General Vicinity Map
	A-2 Restoration Project Site Map
<b>Exhibit B</b>	Habitat Development Plan and Long-Term Management Framework
	B-1 Habitat Development Plan
	B-2 Long-Term Management Plan
<b>Exhibit C</b>	NRD Service Area
<b>Exhibit D</b>	Title Report, Legal Description, Parcel Maps
<b>Exhibit E</b>	Credit Evaluation
<b>Exhibit F</b>	Protection of Conservation Values
	F-1 Deed Restriction Form
	F-2 Conservation Easement Form
<b>Exhibit G</b>	Property Assessment & Acknowledgement
<b>Exhibit H</b>	Environmental Site Assessment (provided on CD)
	H-1 Phase 1 Environmental Site Assessment
	H-2 Phase 2 Environmental Site Assessment
<b>Exhibit I</b>	Sales Agreement/Credit Receipt
<b>Exhibit J</b>	Endowment and Financial Assurances
	J-1 Construction Security
	J-2 Interim Management and Contingency Security (IMCS)
	J-3 Endowment Fund Summary and Analysis (PAR)
	J-4 Lamprey Monitoring Funding Information
	J-5 Trustee Council Oversight Funding Information
<b>Exhibit K</b>	Endowment Funding Agreement Form
<b>Exhibit L</b>	Other Environmental Documentation (provided on CD)
	L-1 Wetland Delineation and Verification Letter from DSL
	L-2 Cultural Resources Report and Addendum
	L-3 Nationwide Permit 27 Authorization from the USACE
	L-4 Biological Opinion
	L-5 Removal/Fill Permit from DSL
	L-6 Letter of Approval from SIDIC
	L-7 Multnomah County Permits (Large Fills, Design Review, Greenway, and Hillside Development)
	L-8 Drainage Report
	L-9 Seepage Analysis
	L-10 Erosion and Sediment Control Plan
	L-11 Geotechnical Report
	L-12 Hydraulic and Hydrologic Report
<b>Exhibit M</b>	Construction Drawings (provided on CD)

## **Memorandum of Agreement**

**MEMORANDUM OF AGREEMENT BETWEEN THE NATURAL RESOURCE TRUSTEES, PORTLAND HARBOR HOLDINGS I, LLC, PORTLAND HARBOR HOLDINGS II, LLC AND PORTLAND HARBOR HOLDINGS III, LLC FOR PROVIDING TECHNICAL ASSISTANCE RELATED TO HABITAT RESTORATION PROJECTS TOWARD FUTURE SETTLEMENT OF NATURAL RESOURCE DAMAGE CLAIMS AT THE PORTLAND HARBOR CERCLA SITE**

THIS MEMORANDUM OF AGREEMENT (“MOA”) is made and entered into by and among the National Oceanic and Atmospheric Administration (“NOAA”) on behalf of the Department of Commerce, the United States Fish and Wildlife Service (“USFWS”) on behalf of the Department of the Interior, the Oregon Department of Fish and Wildlife, the Confederated Tribes of the Grand Ronde Community of Oregon, the Confederated Tribes of Siletz Indians, the Confederated Tribes of the Umatilla Indian Reservation, the Confederated Tribes of the Warm Springs Reservation of Oregon, and the Nez Perce Tribe (collectively, “the Trustees”) and *for* Portland Harbor Holdings I, LLC, a Delaware limited liability company, Portland Harbor Holdings II, LLC, a Delaware limited liability company, Portland Harbor Holdings III, LLC, a Delaware limited liability company (collectively, “Developer”) (together, “the Parties”). The effective date of this MOA is the date of the signature of Developer and one Trustee. *Heron Pacific, LLC as manager*

**RECITALS**

WHEREAS, the Trustees are carrying out a damage assessment for the Portland Harbor Superfund site (“Site”), and anticipate bringing claims for injuries to natural resources under the Comprehensive Environmental Response Compensation and Liability Act, 42 USC § 9601, et seq. (“CERCLA”); and

WHEREAS, the Parties desire to facilitate the creation of habitat in and near the Site in advance of the Trustees’ completion of a damage assessment or the filing of actions against liable parties; and

WHEREAS, the Parties recognize that the terms of any natural resource damages (“NRD”) settlement, including any restoration project the Trustees propose as part of the settlement, must be subject to public review and comment and court approval, and therefore the Trustees can make no final determination to accept a restoration project prior to entering into a settlement agreement; and

WHEREAS, the Parties agree that, if a habitat restoration project developed pursuant to this MOA is included in an NRD settlement agreement, it is appropriate to credit the ecological value produced by the project prior to entering into the settlement agreement against the liability of the settling party or parties who were responsible for developing and/or funding the development of the project; and

WHEREAS, Developer is willing to develop one or more habitat restoration projects in or near the Site with the intention of marketing the ecological value credits produced by such project(s) to one or more parties liable for natural resource damage claims at the Site to be

potentially used by such party or parties to offset some or all of their liability in settlements with the Trustees; and

WHEREAS, the Parties desire to work collaboratively to design and assess the value of one or more habitat restoration projects in or near the Site;

NOW, THEREFORE, in consideration of the foregoing recitals the Parties mutually agree as follows:

## AGREEMENT

### 1. **Definitions**

1.1 Project Baseline Condition. Solely for the purposes of this MOA, the “Project Baseline Condition” shall be the habitat conditions at the location of a habitat restoration project taking into account remedial measures that are, or are reasonably anticipated to be, required by the U.S. Environmental Protection Agency under CERCLA.

1.2 Covered Projects. “Covered Projects” shall refer to those habitat restoration projects as to which the Parties collaborate on project design and establishment of Forecast Settlement Credit Value pursuant to the terms of this MOA.

1.3 Forecast Settlement Credits Value. “Forecast Settlement Credits Value” shall be a determination of the value a habitat restoration project subject to this MOA is expected to generate taking into account the project’s anticipated habitat benefits beyond the Project Baseline Condition. Forecast Settlement Credits Value will be estimated based on discounted service acre years (“DSAYs”), or such other measurement of value that the Trustees employ for determining damages to natural resources for the Site and pursuing claims against liable parties for such damages.

1.4 Technical Assistance. “Technical Assistance” shall mean the provision by the Trustees of assistance to Developer in the evaluation, design and planning of Site area habitat restoration projects and the determination of Forecast Settlement Credits Value for such restoration projects. Technical Assistance shall include review and evaluation of proposed projects by Trustee technical and legal representatives as needed.

1.5 Final Settlement Credits Value. “Final Settlement Credits Value” shall be the value of a habitat restoration project that will be recognized as offsetting some or all of a party’s natural resource damage liability in a formal settlement agreement.

1.6 Potentially Liable Party. “Potentially Liable Party” shall mean any party identified by the Trustees as having potential NRD legal liability arising from releases of hazardous substances at or to the Site.

## **2. Collaboration on Habitat Project Design and Settlement Credits Value Assessment**

2.1 Site Habitat Project Evaluations. The Trustees will collaborate with Developer in evaluating options for potential habitat restoration projects located in or near the Site or at a location that has a demonstrable reasonable nexus to the natural resources and resource services impacted by releases of hazardous substances from the Site. Technical Assistance will be provided in an effort to maximize the ecological services of habitat restoration projects and the consistency of such projects with Trustee goals and responsibilities.

2.2 Payment of Trustee Technical Assistance Costs. Developer will reimburse the Trustees for the cost of Technical Assistance provided by the Trustees at Developer's request. In any future actions for or settlements of NRD claims with respect to the Site, the Trustees will not seek to recover any Technical Assistance costs paid by Developer pursuant to this MOA.

2.3 Billing Payment Procedures for Trustee Technical Assistance. Developer shall pay the cost of Technical Assistance annually on a projected basis. Developer shall make an initial payment of \$92,978 to the Trustees within 30 days of the signing of this MOA by Developer and one Trustee, which is the projected cost of providing Technical Assistance from August 2011 through December 2012. The Trustees shall have no obligation to begin providing Technical Assistance prior to receiving the initial payment. However, if the Trustees elect to provide Technical Assistance prior to the effective date of this MOA, Developer will reimburse those costs as part of the initial payment. On an annual basis January 1, 2013, the Trustees will provide Developer with an invoice detailing the Technical Assistance work performed prior to that date (or, for subsequent invoices, since the date of the prior invoice) and the charges for such work, and detailing the Technical Assistance work the Trustees project performing during the succeeding year and the projected charges for such work. Within 30 days after the date of each such invoice, Developer shall pay the Trustees' projected costs, less any amounts paid previously that have not been expended by the Trustees.

## **3. Establishment and Use of Settlement Credits Value**

3.1 Identification of Covered Projects and Establishment of Forecast Settlement Credits Values. The Parties shall jointly identify one or more proposed habitat restoration projects as Covered Projects under the terms of this MOA. The Parties shall jointly agree on a proposed design for each Covered Project, and shall in good faith meet and discuss the Forecast Settlement Credits Value for each Covered Project. If and when the Parties agree on the Forecast Settlement Credits Value of a Covered Project, that value shall be documented in written form by the Trustees and conveyed to Developer.

3.2 Future Adjustments to Credit Amounts. Prior to entering into any future NRD settlement in which the Trustees would propose to apply credits from a Covered Project, the Trustees and Developer shall in good faith meet and review the results of performance monitoring for each Covered Project and determine a Final Settlement Credits Value for each. The Trustees will allow for an upward adjustment from the Forecast Settlement Credits Value that has previously been established under paragraph 3.1 of this MOA, in the following

circumstances: 1) The results of performance monitoring for the affected Covered Project demonstrate the project has produced or is expected to produce greater ecological benefits than were estimated in developing the Forecast Settlement Credits Value; 2) the Trustees' protocols for the evaluation of habitat restoration projects change such that a greater Final Settlement Credits Value would be available under the new protocols; 3) additional habitat is planned or developed by Developer or others in the vicinity of a Covered Project such that a greater Final Settlement Credits Value should be available under the Trustees' protocols; or 4) any other circumstances under which Developer would have obtained a greater Final Settlement Credits Value for a Covered Project had Developer delayed working with the Trustees on the establishment of a Forecast Settlement Credit Value for that project. The Trustees will recognize a Final Settlement Credits Value that is lower than the Forecast Settlement Credits Value in the following circumstances: 1) The results of performance monitoring for the Covered Project demonstrate that the project has produced or is expected to produce lower ecological benefits than were estimated in developing the Forecast Settlement Credits Value; 2) remedial actions, development actions or other activities are planned or have occurred in the vicinity of a Covered Project such that a lower Final Settlement Credits Value should be available under the Trustees' protocols; or 3) a party has previously received credit for all or a portion of a Covered Project against environmental or habitat mitigation requirements under federal, state or local laws or ordinances or against NRD liability in another settlement agreement.

3.3 Further Collaboration. The Parties recognize that additional collaboration will be necessary to develop further entitlement conditions for Covered Projects, including, but not limited to, real estate assurances (*e.g.*, conservation easement, deed restrictions), financial assurances (*e.g.*, performance bonds), a monitoring and stewardship protocol, and the applicability, sale and transfer of credits to Potentially Liable Parties. Some or all of such additional collaboration would require an addendum to this MOA or a separate MOA.

3.4 Effect of MOA on Natural Resource Damage Assessment Process. This MOA and the Parties' actions or determinations pursuant to this MOA are not intended to prejudice or affect the course of or obviate the need for the Trustees' natural resource damage assessment process for the Site.

#### 4. **Miscellaneous**

4.1 Modifications. The Parties may modify the terms of this MOA by mutual written agreement signed by authorized representatives of the Parties.

4.2 No Admission of Liability; No Release of Non-Parties; and No Third Party Beneficiaries. This MOA shall not constitute nor shall it be used as evidence of any admission of law or fact, or a waiver of any right or defense by any Party, except as expressly set forth in this MOA. The Parties do not admit to any fact or to any liability under federal, state, or local law or regulation, and no part of this MOA shall constitute such an admission. This MOA is not intended to, nor shall it, release, discharge or affect any rights or causes of action that any of the Parties may have against any other person or entity, and each of the Parties reserves all such rights. This MOA is neither expressly nor impliedly intended for the benefit of any third party,



and is neither expressly nor impliedly enforceable by any third party, including, but not limited to, local, state and federal governments and/or agencies. Nothing in this MOA is or shall be construed to be a waiver of sovereign immunity by any of the Trustees.

4.3 Limitation. Nothing in this MOA shall be construed as obligating the Trustees, their officers, agents or employees, to expend any funds in excess of appropriations authorized by law.

4.4 Counterparts. This MOA may be executed in one or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument.

*(Signatures on the following page)*

**SIGNATURES**

**FOR DEVELOPER -** *Heron Pacific, LLC as Manager for Portland Harbor Holdings I, II & III, LLC*

By:  \_\_\_\_\_

Printed Name: Mark B. Heintz

Date: 9/20/2011

**FOR THE PORTLAND HARBOR NATURAL RESOURCE TRUSTEE COUNCIL**

**Confederated Tribes of the Grand Ronde Community of Oregon**

By: \_\_\_\_\_

Date: \_\_\_\_\_

**Confederated Tribes of Siletz Indians**

By: \_\_\_\_\_

Date: \_\_\_\_\_

**Nez Perce Tribe**

By: \_\_\_\_\_

Date: \_\_\_\_\_

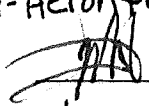
**Confederated Tribes of the Umatilla Indian Reservation**

By: \_\_\_\_\_

Date: \_\_\_\_\_

**SIGNATURES**

**FOR DEVELOPER -** *Heron Pacific, LLC as Manager for Portland Harbor Holdings I, II & III, LLC*


By: 

Printed Name: Mark B. Heintz

Date: 9/20/2011

**FOR THE PORTLAND HARBOR NATURAL RESOURCE TRUSTEE COUNCIL**

**Confederated Tribes of the Grand Ronde Community of Oregon**

By: 

Date: 11-16-11

**Confederated Tribes of Siletz Indians**

By: \_\_\_\_\_

Date: \_\_\_\_\_

**Nez Perce Tribe**

By: \_\_\_\_\_

Date: \_\_\_\_\_

**Confederated Tribes of the Umatilla Indian Reservation**

By: \_\_\_\_\_

Date: \_\_\_\_\_

**SIGNATURES**

**FOR DEVELOPER**

By: \_\_\_\_\_

Printed Name: \_\_\_\_\_

Date: \_\_\_\_\_

**FOR THE PORTLAND HARBOR NATURAL RESOURCE TRUSTEE COUNCIL**

**Confederated Tribes of the Grand Ronde Community of Oregon**

By: \_\_\_\_\_

Date: \_\_\_\_\_

**Confederated Tribes of Siletz Indians**

By: *Alonzo Pugh*

Date: 10/21/11

**Nez Perce Tribe**

By: \_\_\_\_\_

Date: \_\_\_\_\_

**Confederated Tribes of the Umatilla Indian Reservation**

By: \_\_\_\_\_

Date: \_\_\_\_\_

**SIGNATURES**

**FOR DEVELOPER**

By: \_\_\_\_\_

Printed Name: \_\_\_\_\_

Date: \_\_\_\_\_

**FOR THE PORTLAND HARBOR NATURAL RESOURCE TRUSTEE COUNCIL**

**Confederated Tribes of the Grand Ronde Community of Oregon**

By: \_\_\_\_\_

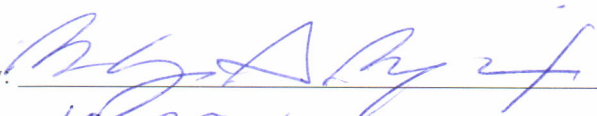
Date: \_\_\_\_\_

**Confederated Tribes of Siletz Indians**

By: \_\_\_\_\_

Date: \_\_\_\_\_

**Nez Perce Tribe**

By:   
Date: 10-25-11

**Confederated Tribes of the Umatilla Indian Reservation**

By: \_\_\_\_\_

Date: \_\_\_\_\_

**SIGNATURES**

**FOR DEVELOPER**

By: \_\_\_\_\_

Printed Name: \_\_\_\_\_

Date: \_\_\_\_\_

**FOR THE PORTLAND HARBOR NATURAL RESOURCE TRUSTEE COUNCIL**

**Confederated Tribes of the Grand Ronde Community of Oregon**

By: \_\_\_\_\_

Date: \_\_\_\_\_

**Confederated Tribes of Siletz Indians**

By: \_\_\_\_\_

Date: \_\_\_\_\_

**Nez Perce Tribe**

By: \_\_\_\_\_

Date: \_\_\_\_\_

**Confederated Tribes of the Umatilla Indian Reservation**

By: Les Mowbray

Date: 1-10-12

**Confederated Tribes of the Warm Springs Indian Reservation of Oregon**

By: *W.A. B. Moore*

Date: 8-27-11

**Oregon Department of Fish and Wildlife**

By: \_\_\_\_\_

Date: \_\_\_\_\_

**U.S. Department of the Interior**

By: \_\_\_\_\_

Date: \_\_\_\_\_

**National Oceanic and Atmospheric Administration**

By: \_\_\_\_\_

Date: \_\_\_\_\_

**Confederated Tribes of the Warm Springs Indian Reservation of Oregon**

By: \_\_\_\_\_

Date: \_\_\_\_\_

**Oregon Department of Fish and Wildlife**

By: *[Signature]*

Date: 10/31/11

**U.S. Department of the Interior**

By: \_\_\_\_\_

Date: \_\_\_\_\_

**National Oceanic and Atmospheric Administration**

By: \_\_\_\_\_

Date: \_\_\_\_\_



**Confederated Tribes of the Warm Springs Indian Reservation of Oregon**

By: \_\_\_\_\_

Date: \_\_\_\_\_

**Oregon Department of Fish and Wildlife**

By: \_\_\_\_\_

Date: \_\_\_\_\_

**U.S. Department of the Interior**

By: Michael Conis, Acting Regional Director

Date: NOV 15 2011

**National Oceanic and Atmospheric Administration**

By: \_\_\_\_\_

Date: \_\_\_\_\_

**Confederated Tribes of the Warm Springs Indian Reservation of Oregon**

By: \_\_\_\_\_

Date: \_\_\_\_\_

**Oregon Department of Fish and Wildlife**

By: \_\_\_\_\_

Date: \_\_\_\_\_

**U.S. Department of the Interior**

By: \_\_\_\_\_

Date: \_\_\_\_\_

**National Oceanic and Atmospheric Administration**

By: Katherine Pease for Craig R. O'Connor

Date: 11/14/11

**Wildlands Restoration Agreement**  
**Technical Assistance Budget Template**  
**August 2011 – December 2012**

Task	Date(s)	Participants	Hours (per participant)	NOAA Cost	Nez Perce Cost	Grand Ronde Cost	Stratus Cost	Siletz Cost	DOI Cost	State Cost	Warm Springs Cost	Umatilla Cost
Regular updates on project design and development at Restoration Committee meetings	2nd Thursdays, 8/2011 through 12/2012	Restoration Committee members	1 hr. per meeting; 17 hr. total	\$4,590	\$3,500	\$1,105	\$4,505	\$680	\$1,232.05	\$819	\$1,200	-
Update full Council on project development	4 <sup>th</sup> Thursdays, 10/2011, 2/2012, 6/2012, 10/2012	Full Council	.5 hr. per meeting; 2 hr. total	\$1,200	\$450	\$410	\$950	\$501.82	\$193.37	\$588.90	\$300	\$300.00
Site visits and design concepts review <sup>1</sup>	11/2011	Restoration Committee members	8 hr.	\$1,080	\$1,600	\$520	-	\$320	\$579.79	\$358.69	\$1,000	-
Legal assistance as needed <sup>2</sup>	2 <sup>nd</sup> Thursdays, 8/2011 through 12/2012	Legal Committee members	.5 hr per meeting; 6.5 hr. total	\$4,000	\$4,000	\$560	-	\$1,370.92	-	\$2884.96	\$1,200	\$975.00
Estimate HEA value of project(s)	Fall 2011	Stratus	12 hr.	-	-	-	\$1,290	-	-	-	-	-
Review of HEA estimates	Fall 2011	Full Council	2 hr.	\$1,200	\$450	\$410	-	\$501.82	\$193.37	\$349.69	\$400	\$300.00
Review compliance plan and documentation <sup>3</sup>	Winter 2012	Restoration Committee members	12 hr.	\$1,080	\$2,400	\$780	\$1,590	\$480	\$869.68	\$578.53	\$600	-
Review proposed monitoring and maintenance plans	Spring 2011	Restoration and Legal Committee members	8 hr.	\$2,080	\$1,600	\$1,080	\$1,060	\$2,007.28	\$579.79	\$560.53	\$800	\$1,200.00
Participate in public or community project planning meeting (Wildlands lead)	Spring-summer 2012	Restoration Committee members	8 hr.	\$1,080	\$1,000	\$520	\$1,060	\$320	\$579.79	\$478.42	-	-
Prepare for and participate in project groundbreaking or other public event	August 2012	Full Council	4 hr.	\$3,840	\$4,000***	\$820	-	\$1,003.64	\$386.75	\$1,177.80	\$600	\$600.00
As-built site inspection <sup>4</sup>	October 2012	Restoration Committee members	4 hr.	\$520	\$800	\$260	\$500	\$160	\$289.89	\$192.84	\$500	-
Review of monitoring reports	October 2012 – December 2012	Restoration Committee members	6 hr.	\$1,080	\$1,200	\$390	\$840	\$240	\$434.84	\$289.27	\$400	-
<b>Totals:</b>				\$21,750	\$21,000	\$6,855	\$11,795	\$7,585	\$5,339	\$8,279	\$7,000	\$3,375
											<b>Total</b>	<b>\$92,978</b>

\*\*\*Includes funding sufficient to allow attendance by two staff members or officials from the Nez Perce Tribe in addition to the Portland Harbor Tribal Representative

<sup>1</sup> Budget includes pre-implementation tasks for three projects (Alder, Miller, and Linnton).

<sup>2</sup> Includes identification and development of legal mechanism for providing credit estimate and post-construction certification, and resolution of issues associated with sale of credit to PRPs, assurances of long-term project performance, and ultimate releases from liability.

<sup>3</sup> Includes review of Wildlands-generated materials for the purpose of identifying information gaps or potential issues associated with permitting and compliance. Trustees will not develop or prepare compliance-related documents under this MOA.

<sup>4</sup> Budget assumes on-the-ground implementation of Alder and Miller in summer 2012. Implementation of Linnton is planned for 2013 and 2014.

## **Memorandum of Agreement: Addendum 1**

**FIRST ADDENDUM TO MEMORANDUM OF AGREEMENT BETWEEN THE  
PORTLAND HARBOR NATURAL RESOURCE TRUSTEE COUNCIL AND  
PORTLAND HARBOR HOLDINGS II, LLC RELATED TO HABITAT  
RESTORATION PROJECTS TOWARD FUTURE SETTLEMENT OF NATURAL  
RESOURCE DAMAGE CLAIMS AT THE PORTLAND HARBOR CERCLA SITE  
(Alder Creek Restoration Site)**

This First Addendum to Memorandum of Agreement (“**First Addendum**”), dated for reference purposes only as May 6, 2014, is entered into by and between **PORTLAND HARBOR HOLDINGS II, LLC**, a Delaware limited liability company (“**Restoration Implementer**”) and the **NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION** (“**NOAA**”), on behalf of the Department of the Commerce, the **UNITED STATES FISH AND WILDLIFE SERVICE** (“**USFWS**”), on behalf of the Department of the Interior, the **OREGON DEPARTMENT OF FISH AND WILDLIFE** (“**ODFW**”), the **CONFEDERATED TRIBES OF THE GRAND RONDE COMMUNITY OF OREGON**, the **CONFEDERATED TRIBES OF SILETZ INDIANS**, the **CONFEDERATED TRIBES OF THE UMATILLA INDIAN RESERVATION**, the **CONFEDERATED TRIBES OF THE WARM SPRINGS RESERVATION OF OREGON**, and the **NEZ PERCE TRIBE** (collectively the “**Trustees**”). The Restoration Implementer and the Trustees are collectively referred to herein as the “**Parties**.” This First Addendum sets forth the agreement of the Parties regarding the establishment, use, operation and maintenance of the Alder Creek Restoration Site (the “**Restoration Site**”). The effective date of this First Addendum is the date of the signature of the Restoration Implementer and one Trustee.

**Recitals**

A. The Trustees are carrying out a damage assessment for the Portland Harbor Superfund Site and anticipate bringing claims for injuries to natural resources under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA), 42 U.S.C. §§ 9601, *et seq.*

B. Trustees and Restoration Implementer entered into the “Memorandum of Agreement between the Natural Resource Trustees, Portland Harbor Holdings I, LLC, Portland Harbor Holdings II, LLC, and Portland Harbor Holdings III, LLC for Providing Technical Assistance Related to Habitat Restoration Projects toward Future Settlement of Natural Resource Damage Claims at the Portland Harbor CERCLA Site” (the “**Original Memorandum**”) (effective September 27, 2011), wherein they agreed to use their collaborative efforts to identify, design and assess the value of one or more habitat restoration projects in or near the Portland Harbor

Superfund Site. The Original Memorandum set forth a process to develop a forecast settlement credits value and final settlement credit value for a habitat restoration project.

C. Restoration Implementer is the owner of certain real property, consisting of approximately 64 acres (the “**Overall Property**”), located on the southern tip of Sauvie Island in Multnomah County, Oregon. The location of the Overall Property is shown on “Exhibit A, Overall Property” attached hereto and incorporated herein by this reference.

D. Pursuant to the terms of the Original Memorandum, Restoration Implementer and Trustees have determined that a portion of the Overall Property, consisting of approximately 52.3 acres (the “Restoration Site”), is a suitable habitat restoration project. Based upon such determination, Restoration Implementer desires to develop the Alder Creek Restoration Project (the “Restoration Project”) on the Restoration Site. The location of the Restoration Site is shown on the Site Plan.

E. Consistent with the terms of the Original Memorandum, Restoration Implementer intends to develop the Restoration Site for the purpose of creating credits (“**Conservation Credits**” or “**DSAYs**”) for sale to one or more potentially liable parties seeking to offset its/their liability for damages resulting from injury to natural resources in the Portland Harbor.

F. In collaboration with the Trustee Council, Restoration Implementer has developed the “Alder Creek Restoration Plan” dated May 6, 2014 for the Restoration Project (the “Restoration Plan”), which includes in detail, without limitation, a Habitat Development Plan, a Conservation Easement, a Credit Evaluation, a Credit Release Schedule, and a Declaration of Trust/Endowment Funding Agreement for the Restoration Site (the “**Alder Restoration Plan**”).<sup>1</sup>

G. The Trustees agree that the Restoration Project fits within the parameters set forth in the draft Portland Harbor Programmatic EIS and Restoration Plan and that the Restoration Project, if implemented pursuant to the Alder Restoration Plan, will provide ecological credits that may be proposed as part of a natural resource damages (NRD) settlement, subject to approval by all appropriate public officials, public review and comment and court approval.

H. The purpose of this First Addendum is to set forth the Trustees’ approval of the Alder Restoration Plan and agreement that the Restoration Implementer may issue Conservation Credits or DSAYs for the ecological value produced from Restoration Implementer’s implementation of the Restoration Project in accordance with such Restoration Plan.

---

<sup>1</sup> A project-specific long-term stewardship plan will also need to be developed and approved after the project is constructed and prior to the end of the Performance Period.

NOW, THEREFORE, in consideration of the foregoing recitals, and the mutual covenants contained herein, the Parties agree as follows:

### Agreement

1. Approval of the Alder Restoration Plan. The Trustees hereby approve the Alder Restoration Plan.

2. Restoration Project Implementation. The Restoration Project shall be implemented in accordance with the Restoration Plan. Such implementation shall include, without limitation, recording a deed restriction, obtaining all necessary permits for the Restoration Project, constructing the Restoration Project, recording the Conservation Easement (which shall be in the form attached as “Exhibit F” to the Restoration Plan) against the Restoration Site, providing all real estate assurances and financial assurances required under the Restoration Plan, and maintaining and monitoring the Restoration Project in accordance with the Restoration Plan.

3. DSAYs. The number of DSAYs forecasted for the Restoration Project (forecast settlement credits value) shall be as provided in the Credit Evaluation attached as “Exhibit E-2” to the Alder Restoration Plan. Subject to the Original Memorandum, section 3.2, the Trustees may adjust the forecast settlement credits value upward or downward based on a number of factors.

4. DSAY Availability. The DSAYs shall be available for use, transfer and/or sale in accordance with the “Credit Table and Release Schedule” contained in “Exhibit E-2” of the Restoration Plan.

5. Settlement Agreements. The Parties recognize that the terms of any NRD settlement may include additional terms or assurances that are not part of this Agreement. The Parties agree that if requested by the Trustees, the Restoration Implementer will be a party to any NRD settlement accepting the credits purchased by a PRP, with the understanding that the Restoration Implementer will have the right to review and approve those portions of the consent decree or settlement agreement related to the Restoration Implementer.

6. Limitation. Nothing in this First Addendum shall be construed as obligating the Trustees, their officers, agents or employees, to expend any funds in excess of appropriations authorized by law.

7. Ratification. The Parties agree that, except as provided in this First Addendum, the Original Memorandum is ratified, affirmed and remains in full force and effect and is incorporated herein by this reference.

8. Counterparts. This First Addendum may be executed in multiple counterparts, each of which shall be deemed an original, but all of which, together, shall constitute one and the same instrument.

9. Electronic Transmittals. The Parties agree that if this First Addendum is transmitted electronically, the electronic transmittal of the original execution signatures shall be treated as original signatures and given the same legal effect as an original signature.

10. Dispute Resolution. Any dispute, controversy or claim arising out of or relating to this First Addendum, the Original Memorandum, the Restoration Plan or its incorporated exhibits, including any dispute relating to interpretation of or performance thereunder ("**Dispute**"), shall be resolved in the manner set forth below:

a. If a violation is not cured within thirty (30) days after receipt of written notice and demand, or if the cure reasonably requires more than thirty (30) days to complete and there is failure to begin the cure within the thirty-day period or failure to continue diligently to complete the cure, the Parties shall first engage in the following dispute resolution process to resolve any disputes arising related to the violation and cure. The Restoration Implementer, the Trustee's or the Trustee's designee(s), shall issue a written Notice of Deficiencies to all Parties, detailing the claimed deficiencies concerning the violation and cure. The Notice of Deficiencies shall identify a higher-level administrative officer within the issuing Party's organization who shall represent the Party in the dispute resolution process ("Dispute Resolution Representative"). The Notice of Deficiencies shall include the Dispute Resolution Representative's contact information. Within fourteen (14) days of the receipt of the Notice of Deficiencies, the remaining Parties shall identify corresponding Dispute Resolution Representatives within their respective organizations and communicate to schedule a joint conference to be held at the earliest opportunity. The Dispute Resolution Representatives shall engage in a reasonable, good-faith effort to review the dispute and decide upon a mutually agreeable cure, which shall be diligently implemented. If, after a reasonable period of time, the Dispute Resolution Representatives are unable to reach agreement, the Restoration Implementer, the Trustee's or the Trustee's designee(s) may bring an action at law or in equity in a court of competent jurisdiction to enforce compliance with the terms of the First Addendum, the Original Memorandum, the Restoration Plan or its incorporated exhibits, to recover any damages to which Grantee, Restoration Implementer, the Trustee's or the Trustee's designee(s) may be entitled for violation of the terms of the First Addendum, the Original Memorandum, the Restoration Plan or its incorporated exhibits, or for other equitable relief, including, but not limited to, the restoration of the Restoration Site to the condition in which it existed prior to any violation or injury. Without limiting violator's liability therefore, any damages recovered may be applied to the cost of undertaking any corrective action on the Restoration Site.



IN WITNESS WHEREOF, the Parties hereto have executed this First Addendum as of the dates set forth on the following page.

*[The remainder of this page has been intentionally left blank.]*

**FOR THE PORTLAND HARBOR  
NATURAL RESOURCE TRUSTEE  
COUNCIL:**

**Confederated Tribes of the Grand  
Ronde Community of Oregon**

By: \_\_\_\_\_  
Its: \_\_\_\_\_  
Date: \_\_\_\_\_

**RESTORATION IMPLEMENTER:**

**Portland Harbor Holdings II, LLC, a  
Delaware limited liability company**

By:     *HA*      
Its:     *Authorized Agent*      
Date:     *May 6, 2014*    

**Confederated Tribes of Siletz Indians**

By: \_\_\_\_\_  
Its: \_\_\_\_\_  
Date: \_\_\_\_\_

**Nez Perce Tribe**

By: \_\_\_\_\_  
Its: \_\_\_\_\_  
Date: \_\_\_\_\_

**Confederated Tribes of the Umatilla  
Indian Reservation**

By: \_\_\_\_\_  
Its: \_\_\_\_\_  
Date: \_\_\_\_\_

**Confederated Tribes of the Warm  
Springs Indian Reservation of Oregon**

By: \_\_\_\_\_  
Its: \_\_\_\_\_  
Date: \_\_\_\_\_

**Oregon Department of Fish and Wildlife**

By: \_\_\_\_\_  
Its: \_\_\_\_\_  
Date: \_\_\_\_\_

**FOR THE PORTLAND HARBOR  
NATURAL RESOURCE TRUSTEE  
COUNCIL:**

**Confederated Tribes of the Grand  
Ronde Community of Oregon**

By: \_\_\_\_\_  
Its: \_\_\_\_\_  
Date: \_\_\_\_\_

**RESTORATION IMPLEMENTER:**


**Portland Harbor Holdings II, LLC, a  
Delaware limited liability company**

By: \_\_\_\_\_  
Its: \_\_\_\_\_  
Date: \_\_\_\_\_

**Confederated Tribes of Siletz Indians**

By: \_\_\_\_\_  
Its: \_\_\_\_\_  
Date: \_\_\_\_\_

**Nez Perce Tribe**

By:  \_\_\_\_\_  
Its: *Chairman* \_\_\_\_\_  
Date: *05-07-14* \_\_\_\_\_

**Confederated Tribes of the Umatilla  
Indian Reservation**

By: \_\_\_\_\_  
Its: \_\_\_\_\_  
Date: \_\_\_\_\_

**Confederated Tribes of the Warm  
Springs Indian Reservation of Oregon**

By: \_\_\_\_\_  
Its: \_\_\_\_\_  
Date: \_\_\_\_\_

**Oregon Department of Fish and Wildlife**

By: \_\_\_\_\_  
Its: \_\_\_\_\_  
Date: \_\_\_\_\_

**FOR THE PORTLAND HARBOR  
NATURAL RESOURCE TRUSTEE  
COUNCIL:**

**Confederated Tribes of the Grand  
Ronde Community of Oregon**

By: Reynold L. Leno  
Its: \_\_\_\_\_  
Date: \_\_\_\_\_

**RESTORATION IMPLEMENTER:**

**Portland Harbor Holdings II, LLC, a  
Delaware limited liability company**

By: \_\_\_\_\_  
Its: \_\_\_\_\_  
Date: \_\_\_\_\_

**Confederated Tribes of Siletz Indians**

By: \_\_\_\_\_  
Its: \_\_\_\_\_  
Date: \_\_\_\_\_

**Nez Perce Tribe**

By: \_\_\_\_\_  
Its: \_\_\_\_\_  
Date: \_\_\_\_\_

**Confederated Tribes of the Umatilla  
Indian Reservation**

By: \_\_\_\_\_  
Its: \_\_\_\_\_  
Date: \_\_\_\_\_

**Confederated Tribes of the Warm  
Springs Indian Reservation of Oregon**

By: \_\_\_\_\_  
Its: \_\_\_\_\_  
Date: \_\_\_\_\_

**Oregon Department of Fish and Wildlife**

By: \_\_\_\_\_  
Its: \_\_\_\_\_  
Date: \_\_\_\_\_

**FOR THE PORTLAND HARBOR  
NATURAL RESOURCE TRUSTEE  
COUNCIL:**

**Confederated Tribes of the Grand  
Ronde Community of Oregon**

By: \_\_\_\_\_  
Its: \_\_\_\_\_  
Date: \_\_\_\_\_

**RESTORATION IMPLEMENTER:**

**Portland Harbor Holdings II, LLC, a  
Delaware limited liability company**

By: \_\_\_\_\_  
Its: \_\_\_\_\_  
Date: \_\_\_\_\_

**Confederated Tribes of Siletz Indians**

By: *Robert H. [Signature]*  
Its: *Chairman*  
Date: *5/16/17*

**Nez Perce Tribe**

By: \_\_\_\_\_  
Its: \_\_\_\_\_  
Date: \_\_\_\_\_

**Confederated Tribes of the Umatilla  
Indian Reservation**

By: \_\_\_\_\_  
Its: \_\_\_\_\_  
Date: \_\_\_\_\_

**Confederated Tribes of the Warm  
Springs Indian Reservation of Oregon**

By: \_\_\_\_\_  
Its: \_\_\_\_\_  
Date: \_\_\_\_\_

**Oregon Department of Fish and Wildlife**

By: \_\_\_\_\_  
Its: \_\_\_\_\_  
Date: \_\_\_\_\_

**FOR THE PORTLAND HARBOR  
NATURAL RESOURCE TRUSTEE  
COUNCIL:**

**Confederated Tribes of the Grand  
Ronde Community of Oregon**

By: \_\_\_\_\_  
Its: \_\_\_\_\_  
Date: \_\_\_\_\_

**Confederated Tribes of Siletz Indians**

By: \_\_\_\_\_  
Its: \_\_\_\_\_  
Date: \_\_\_\_\_

**Nez Perce Tribe**

By: \_\_\_\_\_  
Its: \_\_\_\_\_  
Date: \_\_\_\_\_

**Confederated Tribes of the Umatilla  
Indian Reservation**

By: \_\_\_\_\_  
Its: \_\_\_\_\_  
Date: \_\_\_\_\_

**Confederated Tribes of the Warm  
Springs Indian Reservation of Oregon**

By: Pat Brown  
Its: GM BNR  
Date: 8-23-14

**Oregon Department of Fish and Wildlife**

By: \_\_\_\_\_  
Its: \_\_\_\_\_  
Date: \_\_\_\_\_

**RESTORATION IMPLEMENTER:**

**Portland Harbor Holdings II, LLC, a  
Delaware limited liability company**

By: \_\_\_\_\_  
Its: \_\_\_\_\_  
Date: \_\_\_\_\_

**FOR THE PORTLAND HARBOR  
NATURAL RESOURCE TRUSTEE  
COUNCIL:**

**Confederated Tribes of the Grand  
Ronde Community of Oregon**

By: \_\_\_\_\_  
Its: \_\_\_\_\_  
Date: \_\_\_\_\_

**RESTORATION IMPLEMENTER:**

**Portland Harbor Holdings II, LLC, a  
Delaware limited liability company**

By: \_\_\_\_\_  
Its: \_\_\_\_\_  
Date: \_\_\_\_\_

**Confederated Tribes of Siletz Indians**

By: \_\_\_\_\_  
Its: \_\_\_\_\_  
Date: \_\_\_\_\_

**Nez Perce Tribe**

By: \_\_\_\_\_  
Its: \_\_\_\_\_  
Date: \_\_\_\_\_

**Confederated Tribes of the Umatilla  
Indian Reservation**

By: \_\_\_\_\_  
Its: \_\_\_\_\_  
Date: \_\_\_\_\_

**Confederated Tribes of the Warm  
Springs Indian Reservation of Oregon**

By: \_\_\_\_\_  
Its: \_\_\_\_\_  
Date: \_\_\_\_\_

**Oregon Department of Fish and Wildlife**

By: Michael J. Epler  
Its: \_\_\_\_\_  
Date: 7/1/14

**FOR THE PORTLAND HARBOR  
NATURAL RESOURCE TRUSTEE  
COUNCIL:**

**Confederated Tribes of the Grand  
Ronde Community of Oregon**

By: \_\_\_\_\_  
Its: \_\_\_\_\_  
Date: \_\_\_\_\_

**RESTORATION IMPLEMENTER:**

**Portland Harbor Holdings II, LLC, a  
Delaware limited liability company**

By: \_\_\_\_\_  
Its: \_\_\_\_\_  
Date: \_\_\_\_\_

**Confederated Tribes of Siletz Indians**

By: \_\_\_\_\_  
Its: \_\_\_\_\_  
Date: \_\_\_\_\_

**Nez Perce Tribe**

By: \_\_\_\_\_  
Its: \_\_\_\_\_  
Date: \_\_\_\_\_

**Confederated Tribes of the Umatilla  
Indian Reservation**

By: *Darryl B. Smith*  
Its: \_\_\_\_\_  
Date: 6-17-14

**Confederated Tribes of the Warm  
Springs Indian Reservation of Oregon**

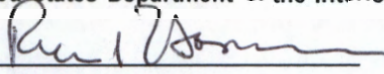
By: \_\_\_\_\_  
Its: \_\_\_\_\_  
Date: \_\_\_\_\_

**Oregon Department of Fish and Wildlife**

By: \_\_\_\_\_  
Its: \_\_\_\_\_  
Date: \_\_\_\_\_



United States Department of the Interior

By:   
Its: \_\_\_\_\_  
Date: 7/3/14

National Oceanic and Atmospheric  
Administration

By: \_\_\_\_\_  
Its: \_\_\_\_\_  
Date: \_\_\_\_\_

United States Department of the Interior

By: \_\_\_\_\_

Its: \_\_\_\_\_

Date: \_\_\_\_\_

National Oceanic and Atmospheric Administration

By: Katherine A. Pease

*for* Craig R. O'Connor, Special Counsel for Natural Resources

Date: 5-7-14

Addendum to MOA

**Attachment A**  
**Overall Property**



**Attachment A**  
**Overall Property**



Access Road

Multnomah

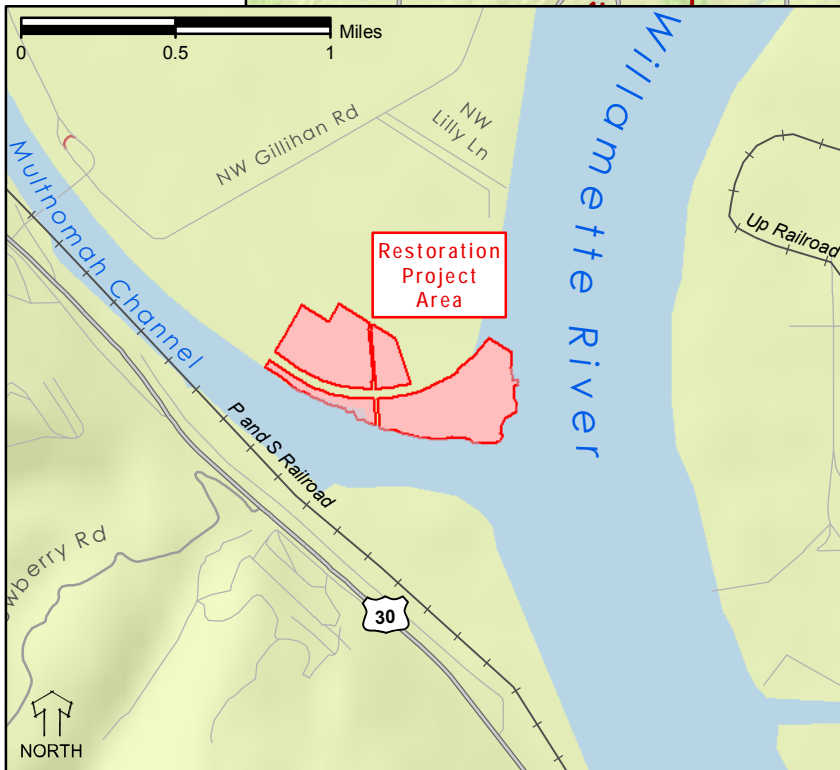
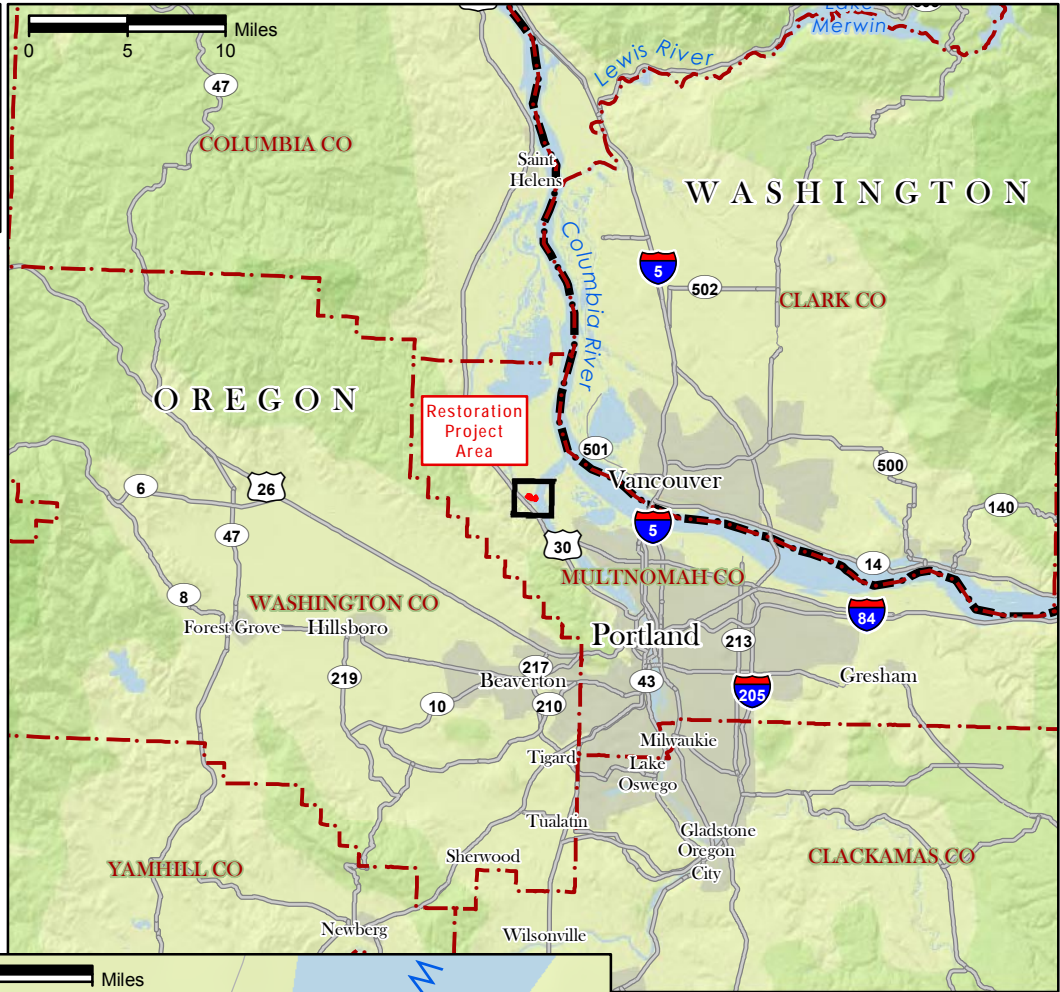
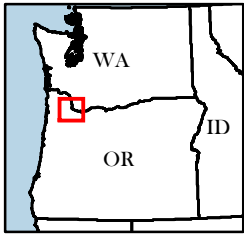
Channel

# **Exhibit A**

## **General Location Maps**

Exhibit A-1 General Vicinity Map

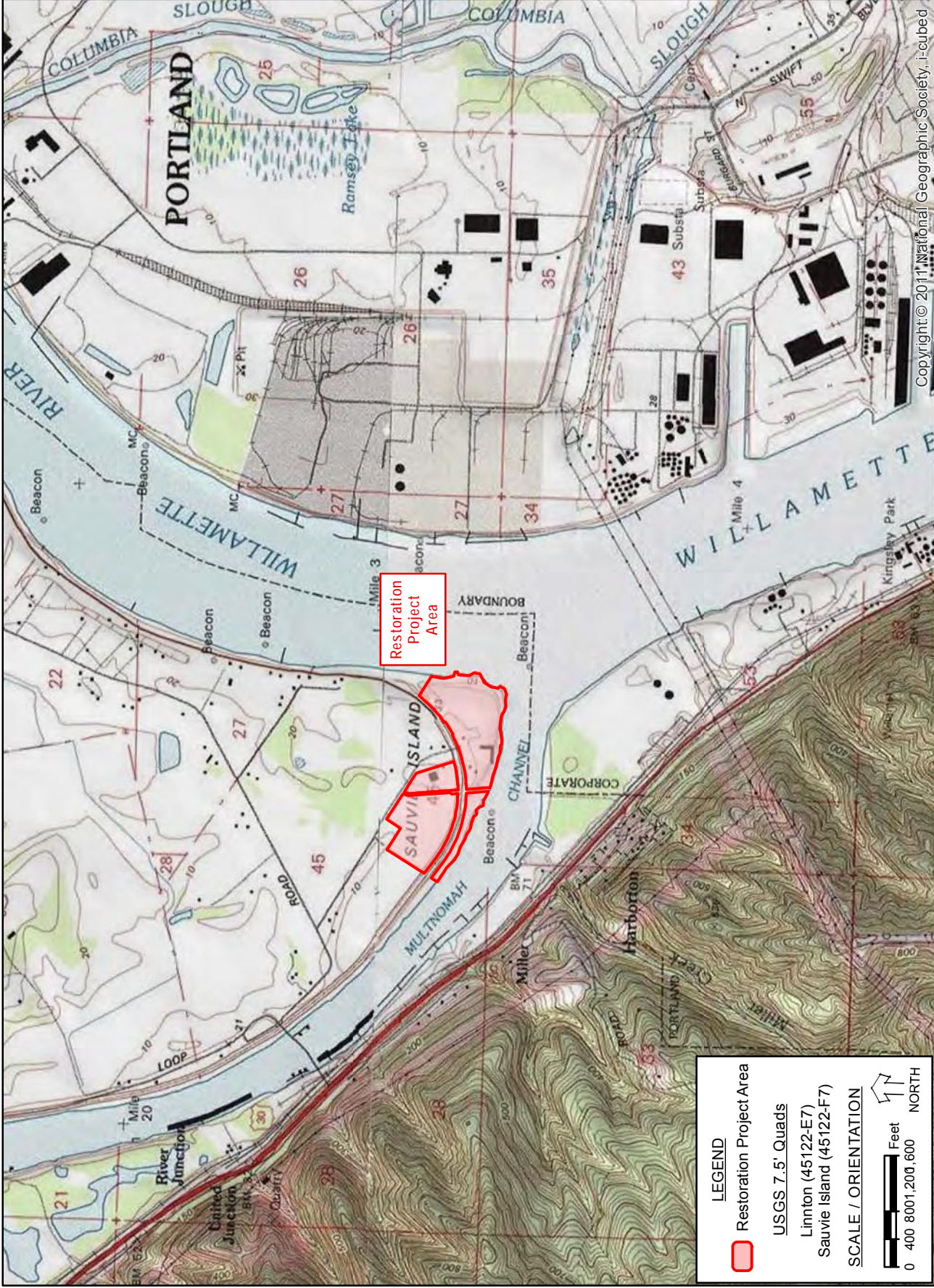
Exhibit A-2 Site Map



**LEGEND**  
Restoration Project Area







# WILDLANDS

Alder Creek Restoration Plan

Exhibit A-2

Restoration Project Site Map

## **Exhibit B**

### **Habitat Development Plan and Long-Term Management Framework**

Exhibit B-1 Habitat Development Plan

Exhibit B-2 Long-Term Management Framework

# **Exhibit B-1**

## **Habitat Development Plan**

**HABITAT DEVELOPMENT PLAN**  
**FOR THE**  
**ALDER CREEK RESTORATION PROJECT**  
**MULTNOMAH COUNTY, OREGON**

*Prepared by:*

Portland Harbor Holdings II, LLC  
c/o Wildlands PNW  
520 SW 6th Avenue, Suite 914  
Portland, Oregon 97204  
Contact: Julie Mentzer  
Email: [jmentzer@wildlandsinc.com](mailto:jmentzer@wildlandsinc.com)  
Tel: (503) 241-4895  
Fax: (503) 296-2308

April 2014

**TABLE OF CONTENTS**

**Section 1 Introduction ..... 1**

**Section 2 Goals ..... 2**

**Section 3 Existing Conditions..... 5**

    3.1 Location ..... 5

    3.2 Topography ..... 5

    3.3 Present and Historical Land Use ..... 6

    3.4 Buffers [Adjacent Land Uses] ..... 6

    3.5 Hydrology ..... 7

    3.6 Soils ..... 8

    3.7 Existing Habitats/Vegetation ..... 8

        3.7.1 Developed ..... 9

        3.7.2 Ruderal ..... 9

        3.7.3 Forested ..... 9

        3.7.4 Active Channel Margin ..... 10

        3.7.5 Wetlands and Other Waters of the United States ..... 10

    3.8 Wildlife ..... 10

        3.8.1 Target Salmonids ..... 11

**CHINOOK SALMON (*ONCORHYNCHUS TSHA WYTSCHA*)** ..... 12

                Lower Columbia River ESU Chinook salmon ..... 12

                Upper Willamette River Chinook salmon ..... 13

**COHO SALMON (*ONCHORYNCHUS KISUCH*)** ..... 13

                Lower Columbia River coho salmon ..... 13

**STEELHEAD (*ONCHORYNCHUS MYKISS*)** ..... 14

                Lower Columbia River steelhead ..... 14

                Upper Willamette River steelhead ..... 14

        3.8.2 Other Target Species ..... 14

**BALD EAGLE (*HALIAEETUS LEUCOCEPHALUS*)** ..... 14

**OSPREY (*PANDION HALIAETUS*)** ..... 15

**MINK (*NEOVISON VISON*)** ..... 16

**PACIFIC LAMPREY (*ENTOSPHEMUS TRIDENTATUS*)** ..... 17

**Section 4 Proposed Design ..... 18**

    4.1 Basis for Design ..... 18

    4.2 Restoration Design Elements ..... 19

    4.3 Demolition ..... 20

    4.4 Habitat Construction ..... 21

    4.5 Earthwork ..... 22

    4.6 Post-Construction habitats ..... 23

        4.6.1 Side Channels ..... 23

        4.6.2 Active Channel Margin ..... 23

            Mudflat and beach ..... 23

            Emergent marsh ..... 24

            Riparian scrub-shrub forest ..... 24

        4.6.3 Riparian Forest ..... 24

## TABLE OF CONTENTS (CONTINUED)

4.6.4	Upland Forest.....	25
4.6.5	Habitat Structures and Complexity.....	25
4.7	Planting.....	25
<b>Section 5</b>	<b>Restoration Site - Specific Goals, Objectives, and Performance Standards.....</b>	<b>27</b>
5.1	Project Goals and Objectives.....	27
5.1.1	Goals and Objectives.....	27
5.2	Long-Term Goals.....	29
5.3	Performance Standards.....	30
5.3.1	Hydrology.....	31
5.3.2	Geomorphic/Structural/Habitat Complexity Elements.....	31
5.3.3	Vegetation.....	32
	Emergent Marsh.....	33
	Riparian Scrub-shrub and Riparian Forest (ACM).....	33
	Riparian Forest and cottonwood-dominated upland forest.....	34
	Oak-Dominated Upland Forest.....	35
	Beaver herbivory.....	36
	Invasive Plant Species Management.....	37
5.3.4	Permanent Protection.....	38
6.1	Establishment Period Monitoring.....	39
6.1.1	Monitoring Design.....	40
6.1.2	Baseline Biological Monitoring for Existing Habitats.....	40
6.1.3	Aerial Photo Interpretation.....	41
6.1.4	Photo Documentation.....	41
6.1.5	Hydrology and Geomorphology.....	41
6.1.6	Native Vegetation.....	42
	Riparian scrub-shrub, riparian forest, and Upland Forest.....	42
	Emergent Marsh.....	42
6.1.7	Large Woody Debris.....	43
6.1.8	Invasive Species Monitoring.....	43
6.1.9	Fish Monitoring.....	44
6.1.10	Other Wildlife Monitoring.....	44
6.2	Establishment Period Monitoring Schedule.....	46
6.3	Long-Term Monitoring.....	47
6.4	Monitoring Reports.....	48
6.4.1	Habitat Monitoring Reports.....	49
<b>Section 7</b>	<b>Funding.....</b>	<b>51</b>
7.1	Interim management and contingency Security.....	51
<b>Section 8</b>	<b>Remedial Actions.....</b>	<b>51</b>
<b>Section 9</b>	<b>Management.....</b>	<b>52</b>
9.1	Hydrologic Connections.....	52
9.2	Trash Removal.....	52
9.3	Trespass and Public Access.....	53
9.4	Educational Activities.....	53

## TABLE OF CONTENTS (CONTINUED)

9.5	Recreational Activities.....	53
9.6	Force Majeure.....	54
<b>Section 10 References.....</b>		<b>55</b>

## LIST OF TABLES

Table 1. Proposed Restoration Habitat Types and Acreages .....	4
Table 2. Establishment Period Monitoring Schedule.....	47
Table 3. Remediation Guidelines for the Project.....	51

## LIST OF FIGURES

Figure 1	Vicinity Map
Figure 2	Overall Property and Restoration Site
Figure 3	Portland Harbor Focus Area for Ecological Restoration
Figure 4	Restoration Plan
Figure 5a-f	Cross Sections
Figure 6	USGS 7.5' Quadrangle
Figure 7	Existing Elevations
Figure 8	Existing Wetlands and Waterways
Figure 9	Soils
Figure 10	Existing Habitats
Figure 11	Post Construction Elevations
Figure 12	Wetlands and Other Waters Impacts
Figure 13	NMFS Willamette/Lower Columbia Recovery Domain
Figure 14	Baseline Monitoring Locations
Figure 15	Post-construction Monitoring Locations

## **TABLE OF CONTENTS (CONTINUED)**

### **LIST OF ATTACHMENTS**

- Attachment 1 Botanical Survey Report
- Attachment 2 Alder Creek Baseline Survey Report



## **TABLE OF CONTENTS (CONTINUED)**

### **List of Terms/Acronyms and Explanations**

ACM	Active Channel Margin
AWW	active work window
BMP	best management practices
LCR	Lower Columbia River
DPS	Distinct Population Segment
DSL	Oregon Department of State Lands
ESA	Federal Endangered Species Act
ESCP	Erosion and Sediment Control Plan
Establishment Period	The 10-year period of active habitat establishment, monitoring and maintenance following habitat construction. See also Performance Period.
ESU	evolutionarily significant unit
GLO	General Land Office
GPS	global positioning system
Harbor	Portland Harbor
Land Owner (or Owner)	Portland Harbor Holdings II, LLC owns the 64-acre Overall Property
LCR	Lower Columbia River
LWD	large woody debris
MUA	multiple use agriculture
NAVD 88	North American Vertical Datum of 1988
NGVD 29	National Geodetic Vertical Datum of 1929
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NRD	Natural Resources Damages

## TABLE OF CONTENTS (CONTINUED)

ODFW	Oregon Department of Fish and Wildlife
OHWL	Ordinary High Water Line
OLWL	Ordinary Low Water Line
Overall Property	Approximately 64-acre property owned by Portland Harbor Holdings II, LLC
OWRD	Oregon Waters Resource Department
Performance Period	The 10-year period of active habitat establishment, monitoring and maintenance following habitat construction. See also Establishment Period.
Plan	Habitat Development Plan
Project	Alder Creek Restoration Project
Restoration Implementer	Portland Harbor Holdings II, LLC
Restoration Project	52.3-acre Alder Creek Restoration Project
Restoration Site	52.3-acre Alder Creek Restoration Project
RTK	real time kinematic
SIDIC	Sauvie Island Drainage Improvement Company
Target Salmonids	Upper Willamette River (UWR) spring-run Chinook salmon ( <i>Onchorhynchus tshawytscha</i> ), Lower Columbia River (LCR) Chinook salmon, LCR steelhead ( <i>Onchorhynchus mykiss</i> ), UWR steelhead, and LCR coho salmon ( <i>O. kisutch</i> )
Target Species	Target Salmonids, Pacific lamprey ( <i>Lampetra tridentate</i> ), bald eagle ( <i>Haliaeetus leucocephalus</i> ), osprey ( <i>Pandion haliaetus</i> ), mink ( <i>Mustela vison</i> )
Trustees	Portland Harbor Natural Resource Trustee Council
URS	URS Corporation
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UWR	Upper Willamette River
Wetland Delineation Study Area	Area studied for the wetland delineation which includes the overall property, the DSL lease area, and the portion of the work area within State Lands for a total of 69.23 acres.

## Section 1 Introduction

---

The Alder Creek Restoration Project (“Project” or “Restoration Project”) is an aquatic, riparian, and upland forest restoration and enhancement project being developed in coordination with the Portland Harbor Natural Resource Trustee Council (“Trustees”). The habitat values provided by this Project will be used to offset Natural Resource Damages (NRD) resulting from more than a century of industrial use along the Willamette River in Portland, Oregon (Figure 1). This Project will assist with the implementation of the Preferred Alternative of the National Oceanic and Atmospheric Administration (NOAA) Draft Portland Harbor Programmatic EIS and Restoration Plan (NOAA 2012). This Preferred Alternative, the Integrated Habitat Restoration Planning Alternative, calls for the restoration of certain types of habitats that support a range of species and associated natural resource services. Under this alternative, projects such as this Restoration Project that provide benefits to a number of potentially injured species have greater ecological value compared to projects that benefit only one species.

Portland Harbor Holdings II, LLC (“Owner” and “Restoration Implementer”) owns approximately 64 acres (“Overall Property”) located on the southern tip of Sauvie Island in Multnomah County, Oregon (Figure 1). The Restoration Project will be located on a 52.3-acre unencumbered portion of this Overall Property (“Restoration Site”) (Figure 2). The Project is located at the divergence of the Willamette River and Multnomah Channel, near River Mile 3, approximately 10 miles north of downtown Portland, within the northern extent of the Portland Harbor Study Area (NOAA 2012) (Figure 3). The Restoration Implementer proposes this Project primarily for the benefit of salmonid species, Pacific lamprey (*Lampetra tridentate*), bald eagle (*Haliaeetus leucocephalus*), osprey (*Pandion haliaetus*), and mink (*Mustela vison*), but also to provide habitat and benefits to all native fish occurring within the lower Willamette River, as well as numerous other avian and terrestrial species occurring in the vicinity of the Restoration Project.

The Project will be developed under guidance from the Trustees primarily for the following species (hereafter referred to collectively as “Target Species”): federally threatened Upper Willamette River (UWR) spring-run Chinook salmon (*Onchorhynchus tshawytscha*) evolutionarily significant unit (ESU), the federally threatened Lower Columbia River (LCR) Chinook salmon ESU, the federally threatened LCR steelhead (*Onchorhynchus mykiss*) distinct population segment (DPS), the federally threatened UWR steelhead DPS, LCR coho salmon (*O. kisutch*) ESU, Pacific lamprey, bald eagle, osprey, and mink. Once complete, this Project will also benefit a diverse array of other aquatic and terrestrial species that reside either permanently or temporarily within the Willamette and Columbia Rivers of the Pacific Northwest.

This Habitat Development Plan (“Plan”) describes the habitat design for the 52.3-acre Restoration Project, which includes approximately 32 waterfront acres south (waterward) of the Sauvie Island Drainage Improvement Company (SIDIC) levee and approximately 20 acres north (landward) of the SIDIC levee (Figure 2). The Project design includes dismantling the sawmill complex and then restoring the site to a mosaic of side channel, active channel margin (“ACM”) (including mud flat, beach, emergent marsh, and riparian scrub-shrub), riparian forest, and upland forest habitats (Figure 4).

## **Section 2 Goals**

---

The main purpose of the Project is to restore, enhance, and protect aquatic, riparian, and upland forest habitats to benefit the Target Species, as well as providing benefits to other aquatic, avian, and terrestrial species. This Project will create, enhance, and protect a mosaic of habitats that will enhance fish and wildlife resources in the Lower Willamette River, an area that has experienced significant degradation of habitat including channelization, off-channel habitat removal, floodplain removal, silt loading, and water temperature increases. The most limiting or scarce habitat types within the Lower Willamette River include refuge from mainstem Willamette River flows, shallow water, and beach habitats with or without large wood assemblages, and undulating natural shorelines (NOAA 2012).

This Restoration Project has been designed so that its implementation will restore and improve habitats that:

- Move towards normative hydrology;
- Restore floodplain function, including off-channel habitat for multiple species;
- Re-establish floodplain and riparian plant communities;
- Improve aquatic and riparian habitat conditions;
- Improve river margin habitat (increase complexity in river margins); and
- Restore habitat that provides ecological value in the landscape perspective (connectivity, patch size, shape, and distance between different patches of habitat).

Implementation of the Project design will result in a complex ecosystem that transitions from the submerged tidal waters of the Willamette River and the Multnomah Channel up in elevation to an upland forest. Along this elevational transition will be a complex mosaic of habitats including beach, mudflat, marsh, side channels, scrub-shrub, riparian, and upland forest habitats (Figure 4).

The target habitat types for this Restoration Project include side channel habitat and the river's active channel margin (ACM). Side channel habitat is an important type of off-channel habitat. Side-channel habitat is defined as "flowing water bodies with clearly identifiable upstream and downstream connections to the main channel". ACM is defined as "that portion of the river's edge that is located at the interface of unwetted shoreline and shallow water, and occurs from the ordinary high water line (OHWL) mark to the ordinary low water line (OLWL)". In addition, shorelines and riparian zones, especially those adjoining off-channel habitat and contiguous upland habitats, are targeted habitat priorities because of their ability to support fish and wildlife and their ecological connection to aquatic habitats.

Project construction is proposed to be completed within one construction season, and all in-water construction work is scheduled to occur within the designated in-water work window in order to minimize potential impacts to the protected resources onsite. Prior to construction, the Restoration Project will be protected with an interim deed restriction (see Exhibit F-1) to protect its conservation values. In addition, no later than the time that the project meets its ten-year performance standards, the Restoration Project will be protected in perpetuity with a conservation easement and managed with funds from a non-wasting endowment fund. The specific goals of the Project include restoration and enhancement of the habitats onsite by conducting the following tasks:

- Industrial Sawmill Removal
  - Remove the sawmill infrastructure and materials from the floodplain including buildings, roads, pads, wood by-products, and equipment (Figure 2);
- Invasive Species Control and Native Re-vegetation
  - Manage invasive species by removal and re-vegetation with native species;
- Side Channel Habitat Restoration
  - Restore off-channel habitat in the form of side channels by excavating material from the waterward side of the SIDIC levee (Figure 4);
- ACM Habitat Restoration
  - Restore ACM habitats adjacent to the restored side channel habitat, the Willamette River, and the Multnomah Channel in the form of frequently inundated mudflat, beach, marsh, and riparian scrub-shrub habitat (Figure 4);
- Habitat Complexity Improvement
  - Provide habitat structure and complexity by installing large woody debris, snags, debris piles, rock piles, and downed wood where possible and appropriate;
- Hydrologic Reconnection
  - Reconnect restored and enhanced aquatic habitats by excavating two connections to the Willamette River and one connection to Multnomah Channel (Figure 4);
- Riparian Forest Restoration
  - Establish a natural gradient of riparian scrub-shrub and forest adjacent to restored emergent marsh, adjacent to the created side channels (Figure 4);
- Upland Forest Creation
  - Establish upland forest habitat by depositing excavated material north (landward) of the SIDIC levee and planting this area with native trees and shrubs (Figure 4);
- Removal of In-water Structures
  - Where feasible and appropriate, remove overwater structures and pilings from within the Multnomah Channel and Willamette River in order to connect side channel habitat to these water bodies (Figure 2).;
- Protection of Conservation Values
  - Prior to project construction, record an interim deed restriction that protects the conservation values of the Restoration Project; At or before the time that the Restoration Project meets its 10-year performance standards, provide in-perpetuity protection through the establishment of a conservation easement; and
- Long-term Stewardship
  - Provide in-perpetuity stewardship through the implementation of a Long-term Stewardship Plan, the management of which will be funded by a non-wasting endowment.

At project completion, the Project will consist of approximately 3.10 acres of restored side channel habitat, 20.01 acres of habitat within the active channel margin (which includes 3.29 acres of mudflat and

beach habitat, 5.57 acres of emergent marsh, and 11.15 acres of riparian scrub-shrub habitat), 8.79 acres of riparian forest within the floodplain, and 20.38 acres of forest (including 7.05 acres of cottonwood-dominant forest and 13.33 acres of oak-dominant forest) outside of the floodplain (Table 1).

<b>Table 1. Proposed Restoration Habitat Types</b>		
Habitat Type	Active Channel Margin	Acres
Side Channel (off-channel habitat)	No	3.10
Mudflat or Beach	Yes	3.29
Vegetated Marsh	Yes	5.57
Scrub-shrub riparian below the OHWL	Yes	11.15
Riparian forest within the historic floodplain	No	8.79
Riparian forest outside the historic floodplain (upland cottonwood-dominant forest)	No	7.05
Upland Oak-dominant forest	No	13.33
		Total ACM = 20.01
<b>Total Project Acreage (including ACM) = 52.28<sup>1</sup></b>		
<p><sup>1</sup> The HEA estimate prepared for the Project and included in Exhibit E is based on 54.17 acres. However, the total Project acreage was later revised by PHH to be 52.28 acres (which includes the entire property minus the levee easement and utility easements). The difference in the two acreages is an area within the levee easement which was originally included, but later removed since it is already encumbered by an easement. A new HEA estimate will be prepared pursuant to the MOA between Portland Harbor Holdings and the Trustee Council following submission of the as-built drawings. The acreage difference will be reflected in the new HEA estimate as well as any differences between the design used for the original HEA estimate and the as-built drawings. The potential DSAYs generated by the Project will also be revised accordingly.</p>		

The restored habitats within the Project will be held to measureable performance standards, monitoring requirements and management standards, all of which are described in this Plan. To verify that the Restoration Project has achieved performance standards, activities such as regular site visits, habitat maintenance, adaptive management, effectiveness monitoring (including hydrology, vegetation, and physical monitoring), and annual reports will be required to maintain and track Project effectiveness and function in-perpetuity. Over the long-term, the restored habitats are expected to continually provide the enhanced and restored habitat functions without significant human intervention.

## **Section 3 Existing Conditions**

---

### **3.1 LOCATION**

The Overall Property consists of approximately 64 acres located within the Willamette Basin, on the southernmost tip of Sauvie Island at the divergence of the Willamette River and Multnomah Channel in Multnomah County, Oregon (Figure 1). The Restoration Project, which will be developed on 52.3 acres of the Overall Property, is located in the northernmost reach of the Portland Harbor Superfund Site (Figure 3). The Overall Property is bisected by the Sauvie Island Drainage Improvement Company's (SIDIC) levee and a north-south oriented underground utility easement, both of which are excluded from the Restoration Project (Figure 2). The southeastern portion of the Project (waterward of the SIDIC levee and within the floodplain of the Willamette River) is approximately 32 acres and is bordered by the SIDIC Levee on the north, mostly undeveloped private property to the northeast, the Willamette River on the east, and the Multnomah Channel on the southwest. The northwestern portion of the Project (landward of the SIDIC levee and outside of the active floodplain) is approximately 20 acres and is bordered on the northeast by private rural-residential property, on the east by the utility easement, on the south by the SIDIC Levee, and by the ESCO Landfill to the northwest (Figure 2).

The Project is located within Township 2N, Range 1W, Sections 27, 28, and 34 of the Linnton and Sauvie Island, Oregon 7.5-minute U.S. Geological Survey quadrangle maps, Willamette Meridian, identified by tax lot numbers 700 and 800 (Figure 6).

### **3.2 TOPOGRAPHY**

The Project is physically separated into two areas by the SIDIC levee: the southeastern portion of the Restoration Site is located on the waterside of the SIDIC levee, and the northwestern portion of the Restoration Site is located on the landward side of the SIDIC levee. The southeastern portion of the Restoration Site ranges in elevation from about 8 to 30 feet NAVD 88 in flat-lying areas to 65 feet NAVD 88 in the woodchip stockpile area. The area which currently houses the sawmill and associated infrastructure is generally flat while the wood by-product storage area has varying topography, and the shoreline is a combination of gently sloping beaches and artificially created steep banks. A berm consisting mainly of wood by-product and earthen material was created in 1996 to protect the sawmill complex from flooding and is still present around the perimeter of the southeastern portion of the Restoration Site. The northeastern portion of the Restoration Site is generally flat as well, but gently slopes towards the northeast. The SIDIC levee is approximately 36 feet NAVD 88 at its highest (Figure 7).

### 3.3 PRESENT AND HISTORICAL LAND USE

As described in the Cultural Resources Survey prepared by Willamette Cultural Resources Associates (WCRA 2011), land alterations on the Overall Property (including the Restoration Site) date back before the General Land Office (GLO) map from 1854, which shows a structure on the southeastern tip of the Restoration Site, which has been identified as the Menzies house, surrounded by cultivated land. A U.S. Army Corps of Engineers (USACE) map produced in the 1880s shows a dam extending across Multnomah Channel connecting to the southern boundary of the Restoration Site and shore protection works are indicated. An aerial photograph from 1929 shows the first indication that the Restoration Site was used extensively for placement of dredge material. The 1947 United States Coast and Geodetic Survey planimetric map depicts dolphins, numerous “old” pilings, a wreck, riprap, and a rock jetty off the shore of the Restoration Site. According to the Alder Creek Lumber Mill owners, the lumber mill was built in the 1960s and began operating shortly thereafter.

The natural landscape on the Restoration Site has been significantly modified as a result of the lumber mill activities. Modifications to the shoreline on the Restoration Site include the placement of fill, riprap, pilings, and overwater structures. Recent aerial photos show log rafts directly off-shore of the Restoration Site all along Multnomah Channel. Numerous buildings and operational areas (including wood by-product processing areas) cover almost the entire southeastern portion of the property (Figure 2). The northwestern portion of the property consists of a few structures and a large, flat log storage area associated with the lumber mill activities.

The Restoration Site and surrounding properties are subject to Multnomah County zoning ordinances. The property is designated as Multiple Use Agriculture (MUA) 20 under the Multnomah County Code. While lumber mills are not listed in the permissible uses section of the MUA-20 zone, the existing lumber mill on the property is a lawfully established non-conforming use as previously determined by Multnomah County. Given the purpose and operation of the Project as a conservation area for habitat restoration, enhancement, and protection, the proposed use is consistent with the current zoning regulations.

The majority of the Restoration Site is mostly devoid of vegetation; however, the portions adjacent to Multnomah Channel and the Willamette River are dominated by Himalayan blackberry (*Rubus discolor*), and there are small areas of native riparian tree and shrub species (including willow, cottonwood, and alder). Currently, only portions of the outer shoreline of the Restoration Site below the ordinary high water line (OHWL) are accessible to fish during normal daily tides.

### 3.4 BUFFERS [ADJACENT LAND USES]

The Project contains several features which act as buffers for the conservation values. Open water (i.e., the Willamette River and Multnomah Channel) is located to the south, southeast, and southwest. The northeastern portion of the Project is bordered by a line of mature trees, beyond which is mostly open space associated with a private residence. Beyond a line of mature trees on the northwest is the ESCO Landfill.



## **3.5 HYDROLOGY**

The Project is located in an historic floodplain where the Willamette River and Multnomah Channel diverge around the southern tip of Sauvie Island and flow north to converge with the Columbia River which then flows north and west to the Pacific Ocean.

Several modifications to the natural environment have affected the hydrology on the Restoration Site. The Restoration Site has been used for dredge material placement since at least 1929. The SIDIC levee, built in the 1940s, resulted in the physical separation of the southeastern portion of the Restoration Site from the northwestern portion (Figure 2). Following the construction of the SIDIC levee, the southeastern portion of the Restoration Site was located adjacent to the Willamette River and hydrologically disconnected from the rest of Sauvie Island. The Multnomah Channel, a distributary channel, splits off from the mainstem Willamette River and flows north/northwest around the western side of Sauvie Island for approximately 21.5 miles before flowing into the Columbia River. The mainstem Willamette River flows north along the east side of Sauvie Island and then converges with the Columbia River approximately 2.6 miles downstream of the Restoration Site. The southeastern portion of the Restoration Site was further removed from natural hydrology in 1996 with the construction of a berm around the perimeter of the Restoration Site to protect the sawmill complex from high floodwaters.

The northwestern portion of the Restoration Site, which is located north and landward of the SIDIC levee, is no longer directly connected to either Multnomah Channel or the Willamette River. The area was developed as a log storage yard associated with the lumber sawmill. The development of the log yard included the creation of long linear strips compacted for log storage flanked by shallow drainages created specifically for the purpose of draining water away from the stored logs. The log storage area generally slopes gently to the northeast towards a large existing wetland area (Figures 7 and 8).

The climate in Multnomah County is a temperate marine climate typical of northwest Oregon influenced by winds from the Pacific Ocean. This area is characterized by mild, wet winters and moderately warm, dry summers. Freezing temperatures are experienced at times during the winter months. The average mean temperature for January is 41.3 °F while the average mean temperature in August is 68.4 °F. The annual precipitation on the Project is approximately 43 inches. The majority of the rainfall occurs between October and April (NRCS 2000).

Currently, the Restoration Project area contains approximately 1.76 acres of low to moderate functioning wetlands (Figure 8). The majority of these wetlands are mainly fed by direct precipitation. The highly degraded nature of the existing wetlands is due to the historic land uses and alterations on the Restoration Site. The Project's shoreline along Multnomah Channel and the Willamette River varies from gradually sloped, sandy beaches to artificially steepened Banks. The tidal fluctuation during periods of low river levels can be as much as three feet, rising and falling twice daily (Greenworks, P.C., et al, 2001). The tidal influence is almost entirely muted during high river levels. The portion of the Restoration Site which is waterward of the SIDIC levee occasionally flooded when river levels are high (flood stage) which prompted the previous landowner to construct an earthen berm around the perimeter of the property to provide flood protection for the lumber mill. Existing wetlands on the northeastern portion of the Restoration Site (located landward of the SIDIC levee) are only connected to other waters of the United States by surface flow towards the northwest corner during large or sustained precipitation events when surface flows are substantial.

## 3.6 SOILS

The Project is underlain by Quaternary Alluvium which is a surficial mantle of shallow, silty soils. These native soils have been overlain by artificial fill which consists of wood debris and emplaced dredge material. The Soil Survey of Multnomah County (Soil Survey Staff 2009) indicates that the study area contains two dominant soil mapping units, Sauvie silt loam and Sauvie silt loam (protected), with a minor inclusion of Moag silty clay loam in the northwest portion of the Restoration Site (Figure 9). The soil types are listed below in rough order of extent in the study area:

- Sauvie silt loam,
- Sauvie silt loam, protected
- Moag silty clay loam, protected.

*Sauvie silt loam and Sauvie silt loam, protected, 0 to 3 percent slopes.* Sauvie soil series consists of deep, poorly drained soils that formed mainly in alluvium on floodplains along the lower Columbia River and its tributaries. The soils are saturated from about December through June and are subject to freshwater overflow during high tides unless diked and artificially drained. These soils are poorly drained with the restrictive layer 80 inches deep or more. When diked and drained, the soils are used for improved hay and pasture, small grain, and truck crops. Areas that are not diked have native vegetation or are used for hay, pasture, and commercial waterfowl areas. The native vegetation supported by these soils includes red alder, ash, willow, cottonwood, grasses, and tussocks.

*Moag silty clay loam, protected, 0 to 2 percent slopes.* This soil type consists of very deep, very poorly drained soils formed on broad, nearly level, undulating floodplains of the Columbia River with the parent material consisting of alluvium with volcanic ash. The soils are saturated throughout the year and subject to freshwater overflow during high tides and spring floods unless diked and artificially drained. These soils are very poorly drained with a restrictive layer occurring at more than 80 inches deep. These soils are used for hay, pasture, and truck crops. Other uses include recreation and wildlife habitat. Where this soil is not cultivated, the vegetation is black cottonwood, willow, rose, and common snowberry with sedges, cattails, and grasses.

A Geotechnical report was prepared for the Overall Property in July 2011 (updated February 2013). As part of the geotechnical investigations, 8 borings were drilled: three within the SIDIC levee easement and 5 within the sawmill facility outside of the levee. Boring depths ranged from 30 to 71.5 feet below the existing ground surface. Soils encountered in the borings generally consisted of fill material and alluvium. The fill material was loose to medium density gray silty sand with gravel and discontinuous pockets of wood debris. Wood debris was encountered in all eight borings and varied from 5.5 to 10 feet thick with alluvial material occurring beneath the fill materials. The alluvial deposits consisted of very soft brown and gray silt with sand and trace clay to medium dense gray sand with silt. Deposits were weakly stratified and occasionally contained fine woody debris.

## 3.7 EXISTING HABITATS/VEGETATION

Currently, the Project consists of a lumber mill and associated structures waterward of the SIDIC levee and a log yard and associated structures landward of the SIDIC levee. The majority of the Restoration Site is either unvegetated or sparsely vegetated with mainly non-native species. There are areas of riprap and

bank stabilization along Multnomah Channel, including two small areas on either side of the Olympic Pipeline utility easement (which has been excluded from the Restoration Site). During the wetland delineation performed by URS Corporation (URS), a total of 2.071 acres of wetlands and 10.303 acres of waterways were identified within the wetland delineation study area. Approximately 1.76 acres of wetlands and 7.50 acres of waterways were identified within the 52.3-acre Restoration Site (Figure 8). This wetland delineation was verified by the DSL on June 12, 2012 and the USACE issued a Preliminary Jurisdictional Determination on July 11, 2013.

Natural habitats on the Project site have been significantly altered as a result of the historic and recent land uses including levee construction, lumber mill operations, wood by-product placement, dredge material deposition, bank armoring, and earthen berm construction. The existing wetlands on the Project are degraded from the historic and recent land uses on the Restoration Site and most are isolated from riverine influences as a result of manmade levees and berms. The dominant habitat type existing on the Restoration Site is developed habitat; however, patches of forest, ruderal, and active channel margin habitats also occur on the Restoration Site (Figure 10).

### 3.7.1 Developed

This habitat type is the most abundant on the Restoration Site (Figure 10). The developed areas include the area south and east of the levee which consists of the lumber mill, associated structures, and the wood chip sorting area. This area also includes a boat ramp/road. The developed area north of the levee consists of the developed areas of the log yard and associated structures. These areas are mostly devoid of vegetation. Where vegetation does exist, it is sparse and mostly non-native.

### 3.7.2 Ruderal

The second most abundant habitat type on the Restoration Site is ruderal habitat (Figure 10). This habitat type is dominated by non-native, invasive, and/or weedy species which are generally quick to colonize areas after disturbance. The ruderal habitat areas on the Restoration Site include the vegetated areas of the log storage yard, the vegetated areas around the sawmill complex, and the earthen berm which is vegetated almost entirely with Himalayan blackberry.

### 3.7.3 Forested

The Restoration Site contains a small amount of forested habitat (Figure 10). There is a small patch of forested habitat in the northwest portion of the Restoration Site. This habitat, which is outside of the floodplain and adjacent to the access road, consists of native trees with an understory dominated by non-native plant species (Figure 2). This habitat type is dominated by black cottonwood (*Populus trichocarpa*), dogwood (*Cornus sp*), Himalayan blackberry (*Rubus discolor*), common snowberry (*Symphoricarpos albus*), and Pacific blackberry (*Rubus ursinus*). There are also patches of forested habitat along the eastern edge of the Restoration Site adjacent to the Willamette River. Some of these forested areas contain mature, tall, riparian trees while other areas contain low-growing woody tree and shrub species. Both of these forested areas have an understory that contains mostly non-native plant species.

### 3.7.4 Active Channel Margin

The ACM is found between the OHWL and the OLWL and occurs on the outer edge of the Restoration Site along the Willamette River and Multnomah Channel (Figure 10). The existing ACM on the Project consists of a combination of non-native and invasive herbaceous vegetation, native herbaceous vegetation, woody species (both non-native and native), mudflat, beach, and open water. Approximately 1.26 acres of unvegetated beach occurs along the perimeter of the Restoration Site, mostly on the eastern edge. As high waters recede, large woody debris, as well as various other debris (e.g., trash, small woody debris, etc.), tends to accumulate here.

### 3.7.5 Wetlands and Other Waters of the United States

As a result of the wetland delineation performed by URS Corporation in 2012, a total of 2.071 acres of wetlands and 10.303 acres of waterways were identified within the wetland delineation study area (Figure 8). In addition to the waterways identified in the wetland delineation, an additional 1.96 acres of state-owned lands within the Multnomah Channel and Willamette River have been identified for a total of 12.262 acres. According to the concurrence letter from DSL dated June 12, 2012, DSL is asserting jurisdiction over 1.655 acres of wetlands and 10.298 acres of waters within the study area. According to the Preliminary Jurisdictional Determination issued by the Corps on June 11, 2013, the Corps is asserting jurisdiction over all the wetlands (2.071 acres) and waters (12.262 acres) within the wetland delineation study area. Out of the wetlands and waterways identified, a total of 1.76 acres of wetlands and 7.50 acres of waterways (i.e., Willamette River, Multnomah Channel, and a drainage ditch) were identified on the Restoration Site.

The majority of the existing wetlands on the Restoration Site have been substantially affected by previous activities including dredge material placement, road and levee construction, and sawmill operations. The majority of the wetlands on the waterside of the levee are located on fill material within the sawmill facilities or the wood byproduct processing area. There are linear wetlands which are excavated drainage features located at the base of the SIDIC levee. During high water events, some of these features have a surface connection to the Willamette River or Multnomah Channel; however, the majority of the existing wetlands are isolated from high flows because of their elevation (e.g., perched on fill material) and due to the perimeter berm which was constructed in 1996. Within the area of the Restoration Site landward (i.e. northwest) of the SIDIC levee, the majority of the wetlands are linear features which were used to drain the log storage area. These linear features slope gently to the north and into additional wetlands (Figure 8).

## 3.8 WILDLIFE

A search of the USFWS and Oregon Department of Fish and Wildlife (“ODFW”) databases of federally and state listed plant and wildlife species occurring within Multnomah County identified the following species with potential to occur within the vicinity of the Project.

Bald eagle (*Haliaeetus leucocephalus*), Bradshaw’s desert-parsley (*Lomatium bradshawii*), bull trout (*Salvelinus confluentus*), Columbia River chum salmon, Columbian white-tailed deer (*Odocoileus virginianus leucurus*), Kincaid’s lupine (*Lupinus sulphureus kincaidii*), LCR Chinook, LCR coho, LCR steelhead, Nelson’s checker-mallow (*Sidalcea nelsoniana*), northern spotted owl (*Strix occidentalis*)

*caurina*), UWR Chinook, UWR steelhead, water Howelia (*Howellia aquatilis*), and Willamette daisy (*Erigeron decumbens* var. *decumbens*).

In addition to the state and federally listed species mentioned above, there are numerous federal candidate species and species of concern identified by USFWS as having the potential to occur within Multnomah County. These species will be evaluated to determine which of them have potential to occur on the Project site. A special-status plant survey was conducted in spring of 2012 to determine which special-status species occur or have potential to occur on the Project site (Attachment A).

The main purpose of the Project is to create habitat for and contribute to the recovery of the Target Species including the Target Salmonids. The restoration activities on the Project will improve designated critical habitat of 5 listed anadromous salmonid species (critical habitat has been proposed, but has not yet been designated for LCR coho) from the NMFS Willamette/Lower Columbia recovery domain (Figure 13). The Willamette/Lower Columbia domain includes the tidal lower Columbia River below Bonneville Dam and all of the Willamette River from its headwaters downstream to the mouth on the Columbia River. The Project will provide habitat for all the special-status salmonids of the lower Columbia River and the Willamette River, including the following five ESUs and critical habitats for the species listed above with the exception of LCR coho salmon for which critical habitat has not yet been designated:

- LCR Chinook salmon (*O. tshawytscha*);
- UWR Chinook salmon;
- LCR coho salmon (*O. kisutch*);
- LCR steelhead (*Oncorhynchus mykiss*); and
- UWR steelhead.

In addition to the listed salmon and steelhead species above, the Project is also expected to provide habitat coastal cutthroat trout (*Oncorhynchus clarki* ssp.) as well as the numerous other fish, avian, and terrestrial species occurring on and within the vicinity of the Project. Specifically, in addition to the Target Salmonids, the Portland Harbor Trustee Council, Restoration Committee has also identified the following species as injured species targeted for restoration within Portland Harbor: bald eagle, mink, osprey and Pacific lamprey (These species together with the Target Salmonids are referred to collectively as “Target Species”).

### 3.8.1 Target Salmonids

Habitat loss and modification are major factors in the decline of salmonid populations. Salmonid populations rely on the availability of diverse habitats with connections among those habitats. The lifecycle of salmonids involves adult salmonids that matured in the ocean returning to their home streams to spawn. Following spawning activities, embryos incubate and eventually fry emerge but they remain near the nest or “redd” until the egg sack is nearly or completely absorbed. Once the egg sack is absorbed, the juveniles swim into the stream to begin to feed. They continue to feed and grow eventually migrating as smolts to the estuary to acclimate to saltwater. The estuary environment provides critical feeding opportunities in preparation for their migration to the ocean. The freshwater habitat needs of salmonids are diverse and include:

- Cool, clean water
- Appropriate water depth, quantity, and flow velocities

- Upland and riparian vegetation to stabilize soil and provide shade
- Overhanging vegetation for refuge from flow and predators
- Clean gravel for spawning and egg-rearing
- Large woody debris to provide refuge from flow and predators
- Adequate food
- Varied channel forms

### **CHINOOK SALMON (*ONCORHYNCHUS TSHA WYTSCHA*)**

Chinook salmon are the largest of any salmon species and have life-histories that can be divided into ocean-type and stream-type, depending on when adults return to fresh water, season in which spawning occurs, and duration of smolts in natal streams. Most ocean-type Chinook return to their natal streams as mature adult spawners in either the summer or fall and spawn in the fall. Ocean-type smolts out-migrate during spring and early-summer to marine habitat from freshwater rearing habitat as sub-yearling. Most stream-type Chinook return to their natal streams as immature adult spawners in spring, traveling higher into the watershed than fall or summer-run Chinook, and hold in deep pools until they spawn in the fall. Stream-type smolts out-migrate during spring and early-summer to marine habitat from freshwater rearing habitat as yearlings. Spring-run Chinook salmon only occur in a few tributaries (Myers et al., 1998).

From April through November, sub-yearling ocean-type juvenile Chinook salmon inhabit the estuaries and inter-tidal areas of the Pacific Coast. These estuarine areas with fresh and salt water wetlands and aquatic/riparian vegetation provide habitats that are crucial to juvenile Chinook salmon survival. Water quality within these areas is also crucial to their survival. Increases in siltation, changes in water temperature, and loss of riparian vegetation all have negative impacts on water quality. Riparian vegetation also provides habitat for juvenile Chinook (Myers et al., 1998).

### **LOWER COLUMBIA RIVER ESU CHINOOK SALMON**

The LCR Chinook salmon ESU was listed as threatened by NMFS on March 24, 1999. The range of the LCR Chinook salmon includes the Columbia River and its tributaries including the Willamette River to Willamette Falls. Factors limiting recovery for LCR Chinook salmon include reduced access to spawning/rearing habitat in tributaries, hatchery impacts, loss of habitat diversity and channel stability in tributaries, excessive sediment in spawning gravel, elevated water temperatures in tributaries, and harvest impacts (NMFS 2005, NMFS 2006). Critical habitat was designated for this species within the Columbia River on August 12, 2005, and includes the Restoration Site as well as the entire Lower Willamette River.

Adult and juvenile Chinook salmon use the Columbia River and the lower Willamette River for spawning, rearing, and migration. Adult fall Chinook salmon enter the Columbia River from August to late November, peaking early October through mid-November. Adult spring Chinook salmon enter the Columbia River from mid-January through late June, peaking mid-March through late May. Juvenile downstream migration peaks mid-March through late July. Juvenile Chinook rear in the Columbia and lower Willamette Rivers throughout the year. The Restoration Project will benefit LCR Chinook by providing refugia from high flows and important juvenile rearing habitat.

## **UPPER WILLAMETTE RIVER CHINOOK SALMON**

The UWR Chinook salmon ESU was listed as threatened by NMFS on March 24, 1999, and a second time on June 28, 2005 (70 FR 37160). NMFS completed a five-year review on this ESU on August 15, 2011, and concluded that this ESU should remain listed as threatened (76 FR 50448). Critical habitat was designated for this species within the Willamette River on August 12, 2005.

The ESU includes all naturally spawned populations of spring-run Chinook salmon in the Clackamas River and in the Willamette River, and its tributaries, above Willamette Falls, Oregon, as well as seven artificial propagation programs.

Adult and juvenile Chinook salmon use the lower Willamette River primarily for migration. Adult presence of UWR Chinook within the lower Willamette River would generally be found from mid-January through late June, peaking mid-March through late May. Juvenile downstream migration peaks mid-March through late July. The Restoration Project will benefit UWR Chinook by providing refugia from high flows and important rearing habitat.

## **COHO SALMON (*ONCHORYNCHUS KISUCH*)**

### **LOWER COLUMBIA RIVER COHO SALMON**

The LCR ESU of coho salmon is listed as threatened (70 FR 37160). Critical habitat for this ESU is under development. The ESU includes all naturally spawned populations of coho salmon in the Columbia River and its tributaries in Washington and Oregon, from the mouth of the Columbia up to and including the Big White Salmon and Hood Rivers, and includes the Willamette River to Willamette Falls, Oregon, as well as twenty-five artificial propagation programs (Weitkamp et al., 1995). Adult LCR coho salmon can be found migrating to their natal streams from June through February and spawning from September through March (Weitkamp et al., 1995). Coho generally spawn in the tributaries and headwater streams of large rivers, preferably in areas with low water velocity and small-sized gravel. Coho die soon after spawning. The eggs hatch in about one month, and the juvenile coho emerge from the gravel in about two to five weeks. The young coho usually remain in fresh water for one year, moving in and out of side-channels, sloughs, beaver ponds, and tributary streams, seeking food and shelter from the high winter currents (Weitkamp et al., 1995). Though they may begin their migration downstream from April through August, most will migrate downstream approximately one year after emerging from the gravel (Weitkamp et al., 1995). The juvenile coho will generally spend two days to one month in the Columbia River estuary, feeding and adapting to salt water before entering the open ocean. Coho generally spend two years in the ocean, returning to natal streams to spawn in their third year of life. A small percentage of the coho, usually less than five percent of the population, will return early after only one year in the ocean and are known as “Jack salmon” (Weitkamp et al., 1995).

Spawning adults and out-migrating smolts of coho salmon from this ESU use the mainstem Columbia River and Willamette River for rearing and migration (URS, 2012). Out-migrating coho smolts likely use the Restoration Project for migration and rearing in suitable nearshore habitats. The Restoration Project will benefit adults and juvenile coho by providing increased off-channel habitat, increased prey availability, and habitat improvements.

## **STEELHEAD (*ONCHORYNCHUS MYKISS*)**

### **LOWER COLUMBIA RIVER STEELHEAD**

The LCR steelhead DPS was listed as threatened by NMFS on March 19, 1998, and reaffirmed on January 5, 2006. NOAA Fisheries issued results of a five-year review on Aug. 15, 2011, and concluded that this species should remain listed as threatened (76 FR 50448).

The DPS includes all naturally spawned anadromous steelhead populations below natural and manmade impassable barriers in streams and tributaries to the Columbia River between the Cowlitz and Wind Rivers, Washington (inclusive), and the Willamette and Hood Rivers, Oregon (inclusive), as well as 10 artificial propagation programs. Excluded are steelhead populations in the upper Willamette River Basin above Willamette Falls, Oregon, and from the Little and Big White Salmon Rivers, Washington. Adult LCR steelhead enter the Willamette River from January to June, peaking from mid-January to late April. Juvenile steelhead rear in the Willamette River throughout the year. Juvenile downstream migration peaks from March to mid-August. The Restoration Project will benefit adults and juvenile LCR steelhead. Adults and juveniles will benefit from increased off-channel habitat, increased prey availability, and habitat improvements during out-migration.

### **UPPER WILLAMETTE RIVER STEELHEAD**

The UWR steelhead ESU was listed as threatened by NMFS on March 25, 1999. NOAA Fisheries issued results of a five-year review on Aug. 15, 2011, and concluded that this species should remain listed as threatened (76 FR 50448). Critical habitat was designated for this species within the Willamette River on August 12, 2005. The DPS includes all naturally spawned anadromous steelhead populations below natural and manmade impassable barriers in the Willamette River, Oregon, and its tributaries upstream from Willamette Falls to the Calapooia River (inclusive).

Adult and juvenile steelhead use the lower Willamette River primarily for migration. Adult and juvenile presence of UWR steelhead within the lower Willamette River would generally be found within the same timeframe as LCR steelhead (Section 3.5.3). The Restoration Project will provide benefits to UWR Chinook from increased off-channel habitat which provides refugia from high flows, increased prey availability, and habitat improvements,.

## **3.8.2 Other Target Species**

### **BALD EAGLE (*HALIAEETUS LEUCOCEPHALUS*)**

Bald eagles primarily nest in forested areas within 2 miles of fish-bearing water bodies including rivers, lakes and estuaries (DeGraaf et al. 1980; Peterson 1986). Bald eagles require the presence of large, mature trees, such as Sitka spruce, Douglas-fir, and black cottonwood to use for nesting and perching, and access to shallow-water areas for foraging. Nest trees are characterized by having large trunk forks or multiple forks of the trunk and are typically surrounded by a buffer of additional trees. Bald eagles are sensitive to human disturbance and protection from human disturbance is important for nesting, successful hunting, and feeding of young (Marshall et al. 2006).



Along the lower Columbia River, studies have reported that bald eagles forage mostly on fish (predominately large-scale sucker, American shad, and carp) which accounted for 71 percent of prey remains found at nest sites and 90 percent of direct foraging observations (Watson et al. 1991). Eagles also occasionally prey on smaller birds. Scavenging opportunities by eagles on the lower Columbia are rare and were not reported in previous studies; however, pirating of prey items from other species such as osprey and gulls is fairly common.

Eagles nesting along the lower Columbia and Willamette Rivers are year-round residents and even though their range may expand somewhat after the breeding season, they do not migrate. Migrating eagles from other areas also overwinter in the lower Columbia River.

Currently the Restoration Site supports only a very narrow band of native trees along the shoreline of the Willamette River. Due to the moderate size of the existing trees and their proximity to ongoing wood by-product processing operations, bald eagles are not expected to nest onsite. In 2012, an active bald eagle's nest was identified across Multnomah Channel in forested property owned by PGE.

Following construction, the Project will include a variety of habitats, including riparian and upland forest. The forest areas will be planted with native tree species in order to establish forested habitat adjacent to the created aquatic habitat and existing waterways. The forest habitat is expected to provide habitat for a variety of bird species, including bald eagle nesting habitat (once the planted trees reach maturity). In the interim, the Restoration Site will benefit bald eagles by removing a sawmill and wood by-product processing operation and providing additional shallow water habitat as well as providing long-term benefits for salmonids in the Lower Willamette River system. In the created marsh/mudflat habitat, installed large woody debris will provide a habitat complexity element for migratory birds (including bald eagles and osprey). Perch sites in the form of tree snags will also be installed on the Restoration Site.

### **OSPREY (*PANDION HALIAETUS*)**

Osprey prefer to nest in forested regions due to their preference for large live trees and snags located within 2 miles of a large waterbody (Henny et al. 1978; Vana-Miller 1987). Due to the conversion of forest land for development and agricultural use, osprey have adapted to man-made structures such as channel markers and utility poles for nest sites (Marshall et al. 2006). Lack of nesting opportunities (large trees and nest platforms) appear to be the primary limiting habitat feature for osprey in the Lower Willamette, as suitable open water and foraging opportunity exists.

Osprey along the Willamette River feed on fish which include large-scale sucker and northern pike minnow (Henny et al. 2003). Osprey in the area spend about 6 months on their wintering grounds in Mexico and Central America and return to their breeding grounds along the Willamette River by mid-March to early April of each year (Henny et al. 2003).

Currently the Restoration Site supports only minimal nesting opportunities for osprey in some of the moderately sized trees along the Willamette River. The developed portion of the Restoration Site (which is the majority of the Restoration Site) provides little to no habitat for osprey due to the lack of suitable foraging and nesting areas.

Following construction, the Project will include a variety of habitats beneficial to osprey, including riparian forest and upland forest. The forest areas will be planted with native tree species in order to establish forested habitat adjacent to the created aquatic habitat and the existing waterways. The forest habitat is expected to provide habitat for a variety of bird species, including osprey nesting habitat (once the trees reach maturity). In the interim, the removal of the sawmill and wood by-product processing

operations and the creation of shallow water habitat on the Restoration Site will provide direct benefits to osprey, while the long-term benefits to salmonids within the Lower Willamette River system will provide an indirect benefit to species dependent on salmonids for food source, including osprey. Once construction is complete, the existing trees on the Restoration Site will be more suitable as nesting habitat for osprey since the Restoration Site will no longer support a sawmill or wood by-product processing operation. In the created marsh/mudflat habitat, installed large woody debris will provide a habitat complexity element for migratory birds (including bald eagles and osprey). Perch sites in the form of tree snags will also be installed on the Restoration Site.

### **MINK (*NEOVISON VISON*)**

Mink are semi-aquatic mammals primarily found around streams, riverbanks, lake shores, and fresh and saltwater marshes. Mink are associated with brushy or vegetative cover next to aquatic habitats, especially in wet areas with irregular or diverse shorelines. Mink activity occurs close to open water and prey availability is the primary factor influencing mink movement and habitat use through the year (Allen 1986).

Mink prey includes fish, crayfish, waterfowl and other water-associated mammals. Upland prey includes rabbits and rodents (Gerell 1967; Allen 1986; Verts and Carraway 1998). Bank slopes are an important factor affecting access and movement of mink into and out of the water, with steep slopes making it difficult for mink to access aquatic prey. In-stream habitat structures such as logs and logjams are important foraging areas for mink (Verts and Carraway 1998). Connectivity between habitats is also important for mink, providing access between various foraging locations and den sites. Ideal habitat in the Willamette River would consist of a nearly continuous, structurally complex corridor along the river bank that provided overhead cover (woody vegetation and debris), permitting mink to travel between upstream and downstream foraging areas, tributaries, and upland habitat. Although mink are considered non-migratory, they have been found to travel distances up to 7.5 miles between forage locations and den sites (Whitaker and Hamilton 1998). Mink will use upland habitat if sufficient cover and prey are available (DeGraaf and Yamasaki 2001). Home ranges for both sexes tend to parallel the configuration of a body of water or wetland basin. Mink move back and forth to forage in a core area, which is located adjacent to the den site (Allen 1986). Gerell (1970) reported that mink had daily activity core areas that did not exceed more than 300m of shoreline. Based on this information, it is assumed that any wetland or wetland-associated habitat in the lower Willamette River has the potential to support mink or provide a corridor for mink passage.

Currently, the Restoration Site provides only limited habitat for mink in the narrow band of habitat around the perimeter of the Restoration Site. In many areas, the perimeter of the Restoration Site has steep slopes which would limit access and movement of mink into and out of the water making it difficult for mink to access aquatic prey. A small portion of the Restoration Site along the Multnomah Channel supports marsh habitat while a portion of the shoreline along the Willamette River supports a narrow band of riparian vegetation; however, these habitats are directly adjacent to the sawmill and wood by-product processing areas on the Restoration Site. The alterations made to the Restoration Site over the years have resulted in a conversion of natural habitats to industrial uses and fragmentation of habitats with limited connectivity and accessibility.

Following construction, the Project will support created channels, marsh/mudflat, riparian scrub-shrub and forest, and upland forest, all of which will be adjacent to the existing waterways (i.e., Multnomah Channel and the Willamette River). The continuous habitat which will be created or enhanced on the Restoration Site will provide mink direct access to the aquatic environment and direct access to upland

areas. The marsh, riparian scrub-shrub, and riparian forest habitats which will be directly adjacent to the created channels will provide native vegetative cover. The upland forest areas will be planted with native tree and shrub species to provide an area with increased cover. Debris piles will be constructed within the upland forest area to provide additional areas of cover. The Restoration Site is expected to provide linked foraging and den site locations and has the potential to provide a corridor for mink passage.

### **PACIFIC LAMPREY (*ENTOSPHEMUS TRIDENTATUS*)**

Pacific lamprey spawn in habitat similar to that of salmon: gravel bottomed streams at the upstream end of riffle habitat. Spawning occurs between March and July depending upon location within their range. Embryos hatch in approximately 19 days at 59° Fahrenheit (F) and the ammocoetes drift downstream to areas of low velocity and fine substrates where they burrow, grow and live as filter feeders for 3 to 7 years. Ammocoetes generally move downstream as they age and but their distribution can be altered due to extreme weather events or habitat-altering anthropogenic impacts. Metamorphosis to the juvenile phase (macrophthalmia) occurs gradually over several months, usually beginning in summer and is complete by winter. As developmental changes occur, including the appearance of eyes and teeth, the juveniles leave the substrate to enter the water column. Moving downstream, they migrate to the ocean between late fall and spring where they mature into adults.

Currently, habitat at the Restoration Site is constrained to a narrow riparian fringe around the outer perimeter of the Restoration Site, which provides limited near shore ACM functions during seasonal high water. This riparian fringe provides limited quality habitat. The majority of the Project property has been extensively impacted by recent and historic uses including: dredge material deposition, creation of a flood control levee, operation of a lumber mill, and construction of a perimeter berm.

Multnomah Channel and the Willamette River provide a migratory corridor for juvenile and adult Pacific lamprey as they may be able to access the sandy shallow shoreline portions of the Project adjacent to these waterways; however, portions of the shoreline have artificially steepened banks adjacent to the Multnomah Channel which would significantly limit access opportunity.

ODFW has identified numerous limiting factors in the Lower Willamette including lack of passage caused by barriers, loss of side channel habitat, scouring, and poor water quality, all of which will be improved and enhanced as a result of the Project. In order to address these factors, the Project will provide new habitat elements to support native fish, including: off-channel/side-channel waterways, shallow water, beach, edge habitats, high flow refugia, forested shoreline, and channel complexity resulting from topographic contouring and installation of LWD.

## **Section 4 Proposed Design**

---

The proposed design for the Project consists of the following activities: Remove the existing sawmill infrastructure; remove pilings, overwater structures, and, if feasible, dolphins associated with the lumber mill; excavate material (including the perimeter berm) to create side channels, marsh, mudflat, beach, and riparian habitat; enhance existing riparian habitat; establish riparian habitat along Multnomah Channel, the Willamette River, and the created marsh/mudflat areas; establish forested upland; install large woody debris; and control invasive species. The Project has been designed to provide habitat for native fish species occurring in the Willamette River and Multnomah Channel systems, specifically federally listed salmonids, as well as Pacific lamprey, mink, bald eagle, and osprey.

### **4.1 BASIS FOR DESIGN**

The Restoration Site design was chosen to provide maximum benefits to Target Species occurring in and around the Willamette and Columbia Rivers. Historically, the Willamette River Basin was an extensive system of open water with connected channels, emergent wetlands, and riparian and upland forests; however, over the last century the river system has been severely modified by human activities including dam and levee construction, river channelization, dredging and dredge material deposition, timber harvesting, and development. As a result, much of the high quality habitat for salmon and steelhead and the other Target Species was removed or otherwise adversely affected.

The Restoration Project is located in the historic floodplain and tidally-influenced area of the Willamette River where Multnomah Channel diverges. The Project presents a unique opportunity for restoration and enhancement of natural floodplain and upland habitats adjacent to both the Willamette River and Multnomah Channel. Currently, the Restoration Site contains small areas around the outer perimeter that are functioning as moderate quality fish and wetland habitats, although the majority of the site has been severely impacted by previous land uses including dredge material deposition, creation of a flood control levee, operation of a lumber mill, and construction of a private perimeter berm. While portions of the Restoration Site currently support vegetation, the majority of the existing vegetation is invasive weeds such as Himalayan blackberry and reed canarygrass.

The locations and types of restoration and enhancement activities proposed for the Restoration Site were chosen based on a preliminary opportunities and constraints analysis, existing topography, and limiting factors for salmon and steelhead. Technical studies including: a Preliminary Title Report; Phase 1, Environmental Site Assessment; Phase 2, Environmental Site Assessment; Prospective Purchaser's Agreement, Consent Judgment; Cultural Resources Survey and Report; Cultural Resources Documentation of Existing Structures; Geotechnical Assessment; Wetland Delineation; Hydraulic and Hydrologic Analysis; and a Hazardous Building Materials Assessment have been conducted/prepared for the Project.

While the exact location of the Restoration Site may not have historically supported the exact mosaic of channels, marsh, and riparian habitat proposed for the Project, these proposed habitats were once abundant on Sauvie Island and in the lower Willamette River watershed. The location of the Restoration Site presents a rare opportunity within Portland Harbor to create high quality habitat for the Target Salmonids and other Target Species within the Willamette River floodplain while providing an area landward of the SIDIC levee to place excavated material and establish upland forest.

The Restoration Project will provide habitat for the various Target Species occurring in the watershed as well as other wildlife species. Once constructed, the Restoration Project will provide habitats and habitat elements such as side channels, shallow water, beach, and edge habitats, refuge from high flow, forested shoreline, and large woody debris which have all been identified by the panel of experts convened by the Trustees as factors limiting the health and recovery of juvenile Chinook in the Lower Willamette River (2009). Riparian creation and enhancement will provide shade and cover which will benefit salmonids and mink, as well as additional insect production for food for salmon and steelhead populations that use the Restoration Site at varying stages of their life cycles. Habitat complexity elements include large woody debris placed and/or recruited along the created channel margins and marsh to provide habitat complexity and added in-stream cover, snags to provide perches and nesting cavities, and debris piles, rock piles, and downed wood to provide cover from prey as well as denning and nesting sites. Upland forest habitat established on the excavated material will provide habitat for numerous wildlife species. Restoration, creation, and enhancement of floodplain habitats and wetlands will provide additional habitat for Target Salmonids during periods of high-water. Ultimately, the Restoration Project would improve designated critical habitat for five listed anadromous salmon stocks from NMFS' Willamette/Lower Columbia recovery domain (critical habitat has not been designated for LCR coho salmon) as well as provide and improve habitat for the other Target Species.

In addition, the Project is located directly across Multnomah Channel from Fred's Marina where a 13-acre restoration project has been proposed (i.e., the Miller Creek Restoration Project). After both projects are constructed, high quality habitat will be present on both sides of Multnomah Channel in that area. The presence of two restoration projects across from one another increases the ecological value of each individual restoration project.

## **4.2 RESTORATION DESIGN ELEMENTS**

The proposed restoration design consists of four main restoration elements: demolition; restoration of side channels and ACM; upland forest establishment; and habitat complexity establishment. These elements are described in more detail below.

**Element 1** – Demolish existing sawmill complex and related infrastructure. The Alder Creek Lumber Mill and related infrastructure occur mainly waterward of the SIDIC levee although a large equipment storage building and the log storage yard are located landward of the levee. All of the structures on the Restoration Site will be demolished and removed as part of the restoration activities. These structures include: the sawmill, a pole barn, a planner, a bander shed, a truck barn, an equipment storage shed, offices, lunch room, and a bathroom. All of these structures will be dismantled and removed from the Restoration Site. To the degree practicable, materials will be recycled or salvaged. Materials that cannot be repurposed, sold, or recycled will be disposed of in appropriate land fill facilities.

**Element 2** – Restore side channels, ACM, and riparian scrub-shrub and forest. Within the portion of the Restoration Site waterward of the SIDIC levee, material will be excavated to create meandering side channels flanked by tidally influenced mudflat, emergent marsh, and riparian scrub-shrub habitats. The side channels will be connected to Multnomah Channel to the west by one channel opening and the Willamette River to the east by two separate channel openings. These connections have been designed to coincide with the river levels in order to maintain flow and permanent inundation within the side channels. These connections will allow flow to enter the newly created channels, providing high-value, year-round, rearing habitat for juvenile salmon and steelhead as well as lamprey ammocoete. The ACM habitat is also used by mink while hunting for prey.

Tidally influenced ACM including mud flat, emergent marsh, and scrub-shrub riparian habitats will also be created by excavating material waterward of the SIDIC levee. The created ACM habitats will be situated directly adjacent to the created channels and are expected to gradually transition from unvegetated mudflat, to emergent marsh, to low-growing scrub-shrub riparian, to riparian forest.

**Element 3** – Create upland forest. The material excavated to create the side channels and the ACM will be transported to and placed within the area north and landward of the SIDIC levee (i.e., the log yard). Once the excavated material has been placed within the log yard, native upland tree species will be planted throughout the area to establish upland forest habitat. Upland forest habitat established landward of the SIDIC levee is expected to provide habitat for birds and terrestrial wildlife while also providing a buffer from adjacent land uses, and may contribute additional organic material to Multnomah Channel.

**Element 4** – Provide habitat complexity: Large woody debris will be installed along the created channels and may be installed within the created marsh/mudflat habitat, if appropriate. Large woody debris provides cover and refugia from prey species as well as shade which helps to reduce high water temperatures. In order to provide a habitat complexity element for migratory birds (including bald eagles and osprey), perch sites in the form of tree snags will also be installed on the Restoration Site. Debris piles, downed wood, and rock piles will be added to the forested habitats above the OHWL (using onsite materials) to provide cover and potential den sites for mink as well as habitat for other small mammals until the vegetation gets established. In addition, the upland forest habitat will include slight variations in topography (i.e., micro-topography), as feasible, to provide a non-uniform surface in order to more efficiently mimic a natural system.

## 4.3 DEMOLITION

The Restoration Site is currently occupied by the inactive Alder Creek Lumber Mill. A number of structures associated with mill operations remain on the Restoration Site. These structures include: the sawmill, a pole barn, a planner, a bander shed, a truck barn, an equipment storage shed, offices, lunch room, and a bathroom (Figure 2). All of these structures will be dismantled and removed from the Restoration Site. Materials that cannot be repurposed, sold, or recycled will be disposed of in appropriate land fill facilities. The industrial nature of the mill raises the potential for industrial products and by-products to be present. A Hazardous Materials Assessment for the Project site was completed by URS and hazardous materials abatement plans/specifications will be developed prior to demolition. All hazardous materials will be disposed of by Oregon Department of Environmental Quality (DEQ)-approved methods and/or in appropriate disposal facilities.

Utilities that service the mill facility, whether in service or non-functioning, will be disconnected by the appropriate utility and decommissioned in accordance with state and local regulations. Transformers located at the mill will be decommissioned by Portland General Electric personnel and the transformers and associated infrastructure will be removed from the Restoration Site and appropriately decommissioned. One on-site water supply well will also be decommissioned in accordance with Oregon Water Resources Department (OWRD) requirements. The septic tank on the Project site will be decommissioned in accordance with the City of Portland and Multnomah County requirements.

Demolition work will be completed by a wide variety of tools and specialized equipment. Such equipment ranges from hand tools (e.g. wrenches, pry bars, hammers, etc.) to specialized equipment (e.g. cutting torches, jack hammers, excavators, shears, and demolition hammers, etc.). Heavy equipment, such as dozers, excavators, dump trucks, will also be employed to move, load, and remove debris.

## **4.4 HABITAT CONSTRUCTION**

Construction of the Project will require the use of scrapers, graders, excavators, dump trucks, and/or other heavy equipment. The heavy equipment will be used to demolish the existing sawmill structures and improvements, and to create the shallow water side channels, marsh/mudflat habitat, scrub-shrub riparian habitat, riparian forest habitat, and upland forested habitat. Construction restoration activities will also include the removal of construction debris and returning areas not targeted for restoration back to pre-construction conditions. Post-construction restoration shall include the application of native seed on disturbed upland areas.

All habitat development and management activities will comply with applicable local, state, and federal regulations. Construction of the restored and enhanced habitats will be managed by the Restoration Implementer to ensure that the habitats are constructed as designed, and that impacts to existing fish and wetland habitats as well as other sensitive resources will be minimized or avoided, where possible. In order to protect the avoided sensitive resource areas on the Project, the following measures will be implemented throughout construction.

- A PHH representative familiar with the project will manage habitat restoration/creation activities on a daily basis. If situations arise that could be detrimental to the avoided sensitive resource areas, the representative will have the authority to stop construction activities until corrective actions have been taken;
- The Restoration Implementer will organize and attend pre-construction meetings and conduct environmental trainings regarding the location of wetland or other water features as well as other sensitive resources;
- Erosion control Best Management Practices (BMPs) will be implemented during construction to ensure that deleterious substances, such as sediment laden run-off from grading operations, do not enter preserved or avoided sensitive resource areas during or following construction. BMPs include, but are not limited to, grading during the dry season, temporary berms and upland spoils compaction, and seeding and/or mulching areas of exposed soil;
- Prior to construction, avoided sensitive resources will be marked on construction drawings. Orange construction fencing or an equivalent visual barrier will be installed around the avoided sensitive resources on the Project, as necessary to alert construction personnel to the location of these resources;
- Soil stockpiles will be located more than 50 feet from avoided sensitive resource areas, and will be surrounded with erosion control materials (i.e., silt fencing or sterile straw wattles). Stockpiles and other exposed soil will be watered for dust control and soil compaction. The application of water to exposed soils significantly reduces the potential for air quality contamination by fugitive dust. The amount of water applied to the Restoration Site will be carefully monitored to prevent erosion and surface runoff due to excessive watering. Water application will be directed away from avoided wetlands and surface water;
- All construction staging activities will occur within a designated staging area, to be identified by the restoration ecologist. The staging area will be located at least 100 feet from any avoided jurisdictional wetland or other waters of the United States, and will be marked in the field and on the construction plans. The staging area will be located landward of the SIDIC levee. All refueling and maintenance activities will occur within the staging area;

- Any hazardous materials spill will be cleaned up immediately, in accordance with all federal, state and local regulations. An Erosion and Sediment Control Plan (ESCP) will be prepared and implemented prior to the initiation of construction. Additional measures and BMPs identified in the ESCP to minimize potential impacts to water quality shall be implemented;
- A cultural resources report and an inadvertent discovery and monitoring plan have been prepared and provide recommendations such as monitoring for sensitive areas. ;
- The Restoration Implementer will conduct a post-construction inspection to determine if any post-construction remediation is needed. If remediation actions are necessary, the Restoration Implementer will ensure that those actions are performed by the construction personnel; and
- Upon completion of the proposed Project, the Restoration Implementer shall provide a post-construction report within 120 days to the Trustee Council or its designee(s). The post-construction report shall include at a minimum: (1) pre- and post-groundbreaking photographs of avoided and protected habitat for federally-listed species; (2) written documentation of all construction personnel to receive the Worker Environmental Awareness Training Program; and (3) as-built drawings with any modifications from the original designs clearly identified.

Due to the location of the Project and the nature of the proposed restoration activities, the following measures will be used to minimize any potential disturbance to threatened and endangered fish species:

- In-water work will be completed during the summer in-water work window of July 1 through October 31;
- Existing native vegetation outside of the designated construction area will not be disturbed;
- When possible, work will be done “in the dry” to reduce potential direct and/or indirect impacts to waterways;
- No dirt, sediments, petroleum products, cement or other substances deleterious to fish shall be allowed to enter jurisdictional waters during construction of the Project;
- Adequate precautions will be taken during construction to prevent the stranding of juvenile or adult fish; and
- If any listed fish becomes trapped within the work area it will be captured and released by a permitted and qualified biologist using methods approved by NMFS.

## **4.5 EARTHWORK**

Earthwork activities associated with the project include the excavation of 442,000 cubic yards of material (consisting of dredge material, wood by-product, and native material) to create a mosaic of channel, ACM, and riparian habitats waterward of the levee. The majority of the excavated material will be transported over the levee and placed on the historic log storage yard. Approximately 100,000 cy of excavated material will be placed on the SIDIC levee and within the SIDIC easement for maintenance purposes, pending approval by SIDIC and USACE. Large equipment such as excavators, bulldozers, and possibly scrapers will be used to accomplish the earthwork.

Since some of the earth work will require excavation and fill within waters of the United States, authorization under Section 404 of the Clean Water Act from the USACE and a Removal/Fill permit from DSL will be secured prior to commencement of construction activities for any work within waters of the



State or waters of the United States, including wetlands. A Notice of Intent under Section 402 of the Clean Water Act will be submitted. An ESCP will be prepared, implemented, and kept on-site during construction. Authorization will be obtained from all other applicable agencies (e.g., Multnomah County, National Marine Fisheries Service, U.S. Fish and Wildlife Service, etc.), as required.

In addition to the earthwork described above, numerous pilings and an overwater structure off the shore of the Restoration Project will be removed. Two dolphins (i.e., group of pilings cabled together for the purpose of moorage) and additional pilings off the shore of the Restoration Project may also be removed.

## **4.6 POST-CONSTRUCTION HABITATS**

Following restoration, the Restoration Project will be dominated by four main habitats: side channels, ACM (which includes mudflat, emergent marsh, beach, and riparian scrub-shrub), riparian forest, and upland forest (Figure 4).

### **4.6.1 Side Channels**

Side channels will meander throughout the portion of the Restoration Project that is waterward of the SIDIC levee. These side channels will be perennially inundated; however, the water level will fluctuate with the river level and the tidal fluctuations (during times of low flow). These side channels will provide year round habitat for salmonids occurring in the lower Willamette River and Multnomah Channel and will provide refuge, feeding opportunities, and escape from high velocity flows. The side channels will connect to both the Willamette River and Multnomah Channel by way of three created connections. In order to create flow-through channels, the channels will be designed so that the two connections to the Willamette River will function as inlets and the connection to Multnomah Channel will function as the outlet with flow generally moving from east to west. These connections will allow flow to enter the newly created channels, providing high-value, year-round, rearing habitat for juvenile salmon and steelhead as well as lamprey ammocoete. The channels will also provide foraging and refuge for mink and other wildlife. The elevations of the bottom of the side channels will range from 2.5 to 5.0 feet (NAVD 88).

### **4.6.2 Active Channel Margin**

The ACM is a complex of habitats that includes unvegetated beach and mudflat as well as emergent marsh and woody scrub-shrub riparian areas once construction is complete. ACM will occur along the edge of the side channels, the Willamette River, and Multnomah Channel between the OHWL and the OLWL. The elevations for the ACM habitat complex range from 10 to 20 feet (NAVD 88) (Figure 11).

### **MUDFLAT AND BEACH**

The un-vegetated beach and mudflat areas will be located between the shallow water (Willamette River, Multnomah Channel, and created side channels) and the emergent marsh. Due to wave action, the un-vegetated beach areas along Multnomah Channel and the Willamette River will be

between elevations 5 ft and 10 ft (NAVD88), while the mudflat adjacent to the side channels will be between elevations 5ft and 8 ft (NAVD88).

## **EMERGENT MARSH**

This habitat will be semi-permanently flooded and will be contoured to facilitate flooding and draining with the fluctuating river levels. The marsh areas are expected to be vegetated with emergent marsh vegetation such as sedge and spikerush. This area will provide opportunities for foraging and cover for juvenile salmon and steelhead as well as mink and lamprey ammocoete. The substrate in this habitat will provide habitat for invertebrates, an important prey source for fish, shorebirds, and other wildlife.

## **RIPARIAN SCRUB-SHRUB FOREST**

Riparian (e.g., woody) scrub-shrub habitat will be established directly adjacent to the emergent marsh. The scrub-shrub habitat will be located below the OHWL and will be characterized by low-growing woody vegetation such as willows and dogwood. This scrub-shrub habitat will provide a transition zone between the marsh habitat and the riparian forest habitat located above the OHWL (described below). Vegetation in this habitat will be dominated by trees and shrubs less than 15 feet tall.

### **4.6.3 Riparian Forest**

Where feasible, at least 100 feet of riparian forest will be created above the OHWL and within the historic floodplain adjacent to the created scrub-shrub, marsh, mudflat, beach, and channel network. This riparian forest will be established at elevations between 20 and 31 feet (NAVD 88). The Portland Harbor Trustee Council, Restoration Committee determined that while the ideal riparian buffer is 200 wide or more, a 100-foot riparian buffer will likely achieve the desired ecological benefits while working within the constraints of the Harbor. This riparian forest will be established by planting container stock, bare root, and/or live stakes of native riparian shrub and tree species. Riparian habitat along the channels and marsh/mud flat will shade open water helping to reduce water temperatures and will provide both cover from prey and food supply for fry, juvenile, and smolt salmon and steelhead, mink, and Pacific lamprey. Riparian habitat is also expected to benefit water quality by filtering sediment and nutrients, buffer aquatic habitats from adjacent land uses, provide slope stabilization, trap woody debris, and when mature, provide large wood to the system. Portions of the eastern edge of the Restoration Site bordering the Willamette River support narrow areas of native tree and shrub species with non-native understory species. Some of these native overstory areas will be enhanced by invasive species understory control and planted with supplemental understory and overstory native species, where needed. Existing native trees and shrubs will be retained to the maximum extent practicable; however, small areas containing native woody species will need to be removed in order to create the side channel connections to Multnomah Channel and the Willamette River. Removed native woody trees will be salvaged and used onsite for habitat complexity features (e.g., large woody debris, debris piles, and/or downed wood) whenever practical.

#### **4.6.4 Upland Forest**

Material excavated to create the channels and the marsh/mud flat areas will be moved north and landward of the SIDIC levee. This upland area will be planted with native tree species in order to establish forest habitat over the area. Upland forest habitat is expected to provide habitat for birds and terrestrial wildlife and a buffer from adjacent land uses, as well as contributing additional organic material to the ecosystem which could be an additional food source for salmonids. The upland forest areas will be established by planting container stock, bare root, and/or live stakes of native shrub and tree species. In addition, native upland seed will be applied to the area as well to establish native species within the understory. Within this area, micro-topography and habitat complexity elements (e.g., debris piles and downed wood) will be used to increase the ecological value and to mimic a natural system. Regardless of elevation, forested areas on the landward side of the SIDIC levee will be classified as upland forest due to their location outside of the current floodplain. Upland forest includes both oak-dominant and cottonwood-dominant forest.

#### **4.6.5 Habitat Structures and Complexity**

Large woody debris will be installed along the created channels and within the created marsh/mudflat habitat, as appropriate. Large woody debris provides cover from prey species as well as shade which helps to reduce high water temperatures. In most cases, the large woody debris will consist of a large tree with root ball intact. In order to provide a habitat complexity element for migratory birds (including bald eagles and osprey), perch sites in the form of tree snags will also be installed on the Restoration Site.

Within the forested areas above the OHWL, habitat structures in the form of debris piles, downed wood, and rock piles will be created from onsite materials to provide cover to small mammals while the native trees become established. Small variations in topography (i.e., micro-topography) will be added to the surface of the upland forest area in order to add habitat complexity.

### **4.7 PLANTING**

While implementing the grading plan elements, care will be taken to minimize disturbance to existing native vegetation. While there is only minimal native vegetation on the Restoration Site, small patches of native tree species do occur along the southeastern and northwestern edge. While the channel connections to the Willamette River were located to avoid native trees to the maximum extent practicable, some trees will need to be removed. If native vegetation is disturbed during construction, any healthy native wetland herbaceous species that can reasonably be salvaged will be removed and either returned after grading is complete, or transplanted to a similarly disturbed location elsewhere on the Restoration Site. Trees that are removed during restoration activities will be used as LWD or other habitat complexity elements elsewhere on the Restoration Site, as appropriate.

A planting plan, including a cross-section, is included in the Construction Drawings (see Exhibit M). Plant sources will vary depending upon vegetation type. Herbaceous, emergent, and grass species will be installed using seed and/or plugs. The planting palette has been selected from the Portland Harbor Native Plants Restoration List (Appendix C of the Draft Portland Harbor Programmatic EIS and Restoration Plan). Plants selected for planting and/or seeding are also based on the reconnaissance of several analog sites to ensure that species planted are appropriate for the habitat types being restored. The planting

palette includes a wide variety of species to ensure that microhabitats on the site will likely have a well-suited species. Initial planting densities will be high for restored habitat along the river (approximately 2,000 woody stems per acre for riparian habitats and 5,000 plugs per acre for emergent marsh habitat) to accommodate potential losses from herbivory, invasive plant competition, and other stressors. Other techniques may be employed to help with native plant establishment including planting plugs and shrubs in clusters and fencing large areas of willow or other species prone to deer and beaver herbivory.

Woody vegetation will be container stock, bare root, and/or live stakes. All container plants will be procured from native plant nurseries in northwestern Oregon or southwestern Washington. Choice of plant material type and size will depend upon availability of plant material at the time of implementation. Some live stakes may be collected from the existing habitats on the Project.

Soil sampling will be conducted prior to planting. If soil samples indicate the soils are deficient for plant growth in some respect, those areas would be amended prior to planting.

It is expected that the area waterward of the SIDIC levee will not require any irrigation as long as the installation year is a normal precipitation year. The northwestern area (landward of the SIDIC levee) may require irrigation for the tree plantings in the first few years in order for the trees to fully establish and for the roots to grow deep enough to utilize groundwater.

Drill or broadcast seeding will be used to apply seed mix to all disturbed upland areas. Hydroseeding or hydromulching may occur on steeper slopes to provide for additional erosion control. Seeding will occur prior to the rainy season in order to provide soil stabilization on the Restoration Project. Seed mix containing suitable native upland plant species will be applied to all disturbed upland areas. The seed mix will be developed in order to minimize the extent of non-native and invasive species establishment on the Project.

## Section 5 Restoration Site - Specific Goals, Objectives, and Performance Standards

---

The goals and objectives of the proposed restoration activities are based on improving the functions and values of the habitats on the Restoration Project. Goals are broad statements that generally define the intent or purpose of the proposed restoration. Objectives specify the direct actions necessary to achieve the stated goals. Performance standards are the measurable values of specific variables that verify when objectives have been met. They provide the basis for determining if the restoration is a regulatory success.

### 5.1 PROJECT GOALS AND OBJECTIVES

#### 5.1.1 Goals and Objectives

- Project Goal 1:** Permanent protection and stewardship of the Restoration Project.
- Objective 1A:* Complete the development of a Restoration Plan agreement and supporting documentation approved by the appropriate agencies/parties.
- Objective 1B:* Protect habitat function by placing an interim deed restriction on the property and, at a time no later than when the Year 10 performance standards are met, record a conservation easement over the Restoration Project.
- Objective 1C:* Establish a long-term management and maintenance endowment fund, and establish financial assurances for the Restoration Project
- Objective 1E:* Implement long-term maintenance, financing, and protection.
- Project Goal 2:** Remove industrial facility (i.e., Alder Creek Lumber Mill) from the floodplain of the Willamette River.
- Objective 2A:* Demolish and remove the buildings, improvements, infrastructure, and fill material associated with the Alder Creek Lumber Mill from the floodplain of the Willamette River.
- Objective 2B:* Implement invasive vegetation controls; prevent significant re-colonization during habitat establishment.
- Project Goal 3:** Create approximately 3.10 acres of side channel habitat directly connected to Multnomah Channel and the Willamette River.
- Objective 3A:* Through grading and excavation, create new side channel habitat accessible to all fish species found in Multnomah Channel and the Willamette River.
- Project Goal 4:** Restore and or enhance approximately 3.29 acres of ACM in the form of mudflat and beach habitat.

Objective 4A: Through grading and excavation, restore mudflat and beach habitat accessible to all fish species found in Multnomah Channel and the Willamette River.

**Project Goal 5:** Restore approximately 5.57 acres of ACM in the form of vegetated marsh surrounding the restored mudflat habitat.

Objective 5A: Through grading and excavation, restore a strip surrounding the mudflat and channels to elevation 8.5 to 10 (NAVD 88) to support marsh habitat.

Objective 5B: Install marsh plug plantings per the approved planting plan throughout the marsh habitat to facilitate the establishment of emergent marsh vegetation adjacent to the restored mudflat habitat.

**Project Goal 6:** Restore and/or enhance approximately 11.15 acres of ACM in the form of riparian scrub-shrub and forest habitat.

Objective 6A: Through grading and excavation, restore riparian scrub-shrub and riparian forest habitat adjacent to the created marsh and along Multnomah Channel and the Willamette River.

Objective 6B: Install woody riparian scrub-shrub and tree species per the approved planting plan throughout the restored riparian scrub-shrub and forest habitat. In addition, plant and/or seed with native understory species.

**Project Goal 7:** Restore and/or enhance approximately 8.79 acres of riparian forest within the historic floodplain.

Objective 7A: Through grading and excavation, restore riparian forested habitat within the historic floodplain of the Willamette River.

Objective 7B: Install tree species per the approved planting plan throughout the restored and enhanced riparian forest areas. In addition, plant and/or seed with native understory species.

**Project Goal 8:** Restore and/or enhance approximately 20.38 acres of upland forest (including approximately 7.05 acres of cottonwood-dominant forest and 13.33 acres of oak-dominant forest).

Objective 8A: Place the excavated material landward (i.e., north) of the SIDIC levee and grade to 5:1 or greater slopes with small topographic variations to create upland forest habitat.

Objective 8B: Install native woody tree species per the approved planting plan throughout the upland forest area. In addition, plant and/or seed with native understory species.

**Project Goal 9:** As necessary and appropriate, remove overwater structures, pilings, and dolphins from Multnomah Channel and the Willamette River.

Objective 9A: Remove the overwater structures, pilings, and dolphins using the methods in NOAA's SLOPES IV Restoration.

**Project Goal 10:** Add habitat complexity features including LWD, snags, debris piles, rock piles, and downed wood to the Project site.

Objective 10A: Install a minimum of 24 pieces of LWD and 4 snags. In addition a minimum of 29 additional habitat elements (i.e. debris piles, rock piles, and downed wood) will be installed.

## 5.2 LONG-TERM GOALS

The long-term goal of the Project is to create, restore, and enhance habitat for the Target Species in order to benefit species survival within the lower Willamette River.

The main goals of the Alder Creek Restoration Project include: removing an industrial facility from the floodplain of the Willamette River; and creating/restoring side channel, ACM (including emergent marsh, mudflat, beach, scrub-shrub, and riparian forest), and riparian and upland forest habitat for the benefit of the Target Species as well as other native fish and terrestrial and avian species occurring in the vicinity of the Project. The objectives of the restoration activities proposed for the Project include:

- Creating new side channel habitat which will restore connectivity between the Restoration Project and Multnomah Channel and the Willamette River;
- Creating marsh, mudflat, scrub-shrub, and riparian habitat within the floodplain of the Willamette River;
- Creating upland forest habitat adjacent to the floodplain;
- Enhancing riparian vegetation through invasive species control and native understory planting;
- Installing habitat complexity elements including large woody debris, snags, debris piles, and rock piles to improve habitat complexity;
- Providing high quality, self-sustaining habitat for the Target Species and other wildlife within Portland Harbor.

By implementing the above objectives, upon project completion, the Project will include the following created/restored/enhanced habitats:

- Side channel habitat – 3.10 acres;
- Mudflat or beach – 3.29 acres;
- Vegetated marsh – 5.57 acres;
- Riparian scrub-shrub and forest habitat – 11.15 acres;
- Riparian forest within the historic floodplain – 8.79 acres
- Upland forest – 20.38 acres (including approximately 7.05 acres of cottonwood-dominant forest and 13.33 acres of oak-dominant forest)

Over the long-term, the created/restored/enhanced habitats are expected to continually provide the intended habitat functions without significant human intervention.

## **5.3 PERFORMANCE STANDARDS**

The Restoration Implementer anticipates that development of the Project will result in substantial increases in aquatic, riparian, and upland forest habitats that are critically important to the Target Species, including native fish, in the lower Willamette River system. Because the restored and enhanced habitats will be used to offset impacts to species and comparable habitat in the region, Restoration Implementer shall document that it has successfully achieved increases in the acreage and functional performance of the Project's habitats.

Monitoring at the Restoration Site will strive to answer the following questions related to performance standards:

- Was the Restoration Project constructed according to its approved design? Are any adjustments necessary to meet desired site conditions as described in the restoration plan for the site?
- Is the total quantity and quality of side-channel and ACM habitat that was created being retained over time?
- Are the vegetative communities that were retained or planted in the riparian, upland, and ACM surviving and healthy?
- Are invasive plant species being managed so they are kept to minimal levels throughout the site?
- Is the Restoration Project on track to meet its performance standards by the end of the 10-year performance period?
- Did the Restoration Project meet its performance standards? If so, can it move into the long-term stewardship phase?

Performance standards have been created for the following habitat parameters:

- Hydrology
- Geomorphic/structural features
- Vegetation
  - Emergent marsh
  - Shrub-scrub and riparian (ACM)
  - Riparian forest and cottonwood-dominated upland forest
  - Oak-dominated upland forest
  - Invasive plant species
- Permanent protection

The performance standards reflect that riverine ecosystems are dynamic, both in terms of their plant communities and the animal populations they support. The Project will be subject to periodic natural disturbances that will affect habitat acreages as well as habitat use and value; however, these natural disturbances are an important and necessary part of sustaining ecological succession and function. The Restoration Implementer fully expects substantial beneficial change in plant communities as well as in physical habitats based on the Project's location, geomorphological changes, and anticipated changes in hydrology following active restoration including flood control benefits. Restoration of the Project will



provide increases in the quality and extent of essential habitat for the Target Species as well as other wildlife. While performance standards are not prescribed for the presence or diversity of fish and other wildlife using these habitats, their use will be monitored throughout the establishment phase to inform the progress of habitat restoration conditions.

Because of the location of this project and the fact that it has been designed using an integrated habitat approach, beaver utilization is anticipated. Beavers will not be removed from the site except in the event that the project Restoration Implementer/Manager and the Trustee Council agree that this is a necessary and appropriate course of action. Documentation of the Trustee Council's concurrence with this course of action will be on file prior to implementation of any beaver removal action.

Two types of monitoring are required by the Trustees: monitoring questions related to performance standards and monitoring requirements related to Harbor-wide restoration goals. Monitoring requirements related to Harbor-wide restoration goals will address parameters that will gauge how the Restoration Site is developing and being used by fish and wildlife, but will not be tied to the performance period of the project.

### **5.3.1 Hydrology**

Hydrologic connections to the Willamette River and Multnomah Channel will be created by excavating side channels waterward of the SIDIC levee. A visual survey will be conducted (on foot or by boat) of the created channels and the connections to the Multnomah Channel and the Willamette River in Years 2, 3, 5, 7, and 10. The following performance standards will be used to demonstrate the success of newly created hydrologic connections:

- Constructed side channels and ACM (beach, mudflat, emergent marsh, and riparian scrub-shrub/forest) will flood (i.e., filling and partially or completely draining) in response to fluctuations in the daily tidal regime and seasonal river stages in the Willamette River and Multnomah Channel;
- Connections shall remain open (not blocked or clogged with debris or sediment to the extent that it prevents hydrologic connectivity to the Willamette River and Multnomah Channel; and
- Created and enhanced emergent marsh and riparian wetland areas will remain flooded, ponded, or saturated for a duration of time sufficient to maintain wetland hydrology (i.e. 14 or more consecutive days) or show reliable Group A or B primary wetland hydrology indicators as described in the Regional Supplement to the Corps of Engineers Wetland Delineation manual: Western Mountains, Valleys, and Coast Region (Version 2.0, May 2010).

### **5.3.2 Geomorphic/Structural/Habitat Complexity Elements**

This performance standard will use topographic surveys, aerial photography, hydrology, and visual site inspections to verify that the total quantity of ACM and side channel habitat is being maintained, that there are no barriers to fish entering or exiting the side channel, and that structural habitat features were installed as designed and are being retained.

A minimum of 24 pieces of large woody debris ("LWD") will be installed within the active channel margin (i.e., along the created channels and within the marsh, mudflat, and scrub-shrub habitats). LWD will be from onsite sources. Performance for LWD will be based on retention of pieces and/or natural recruitment, and the following standards will be used:

Years 2, 3, 5, 7, and 10: woody debris will have an 80 percent retention rate including naturally recruited material.

If the amount of large wood on-site fails to meet performance standards in Years 2, 3, 5, 7 or 10 and if existing conditions and hydraulics will allow the retention of replacement materials, LWD will be installed in the interior channels (and marsh/mudflat where appropriate) to achieve the targeted density.

In the forested areas above the OHWL (non-ACM habitats), habitat complexity elements in the form of debris piles, downed wood/logs, and rock piles will be installed at a minimum of one feature for every one acre (for a total of twenty-nine). Out of the 29 elements, at least one but no more than five will be rock piles. All habitat complexity elements will be created from onsite sources.

A minimum of four snags will be installed on the Project site with at least one installed within the upland habitat behind the levee. The snags will be created from onsite sources.

Additional performance standards include:

- During years 1, 3, 5, 7, and 10, topographic surveys will be completed once a year after the wet season to document changes in site topography and structural habitat features.
- Annual inspection to document any fish barriers.
- Aerial photos of the site will be collected once during later summer during years 1, 3, 5, 7, and 10.
- Water level data loggers will be placed at a minimum of two locations and continuous data will be collected, as feasible. If determined that continuous monitoring is not feasible, an alternative monitoring schedule will be determined in consultation with the Trustee Council representatives.

The following changes at the site would trigger a project review with Trustee Council representatives to determine what, if any, adaptive management actions are necessary:

- Identification of any fish passage barriers.
- Changes of more than 10% in ACM and side channel habitat acreages from the as-built surveys.
- Changes of more than 20% in side channel depths from the as-built surveys. Channel depths will be measured from the OHWM.

### **5.3.3 Vegetation**

Establishment of native vegetation at the Project is anticipated to result from both active planting and volunteer recruitment. Invasive plant species will be based on the current Oregon Department of Agriculture (ODA) Noxious Weed list and the Portland Plant List (September 2011). Invasive species for the purposes of performance evaluation include the following:

- Reed canarygrass
- Species on the ODA Noxious Weed list
- Species on the Portland Plant List, Rank A and Rank B
- Tree and shrub species on the Portland Plant List, Rank C

- Traveler's joy (*Clematis vitalba*) on the Portland Plant List, Rank C

The most recent versions of the ODA and City of Portland lists will be used. All lists described above will serve as a tool to identify and target species for treatment. Performance standards for native habitats and certain invasive species are described below.

## EMERGENT MARSH

Per the approved planting plan, 5,000 plug plantings of native vegetation per acre will be installed throughout the marsh habitat to facilitate the establishment of emergent marsh vegetation adjacent to the created side channels and mudflat habitat. It is anticipated that this area will partially vegetate naturally by volunteer recruitment. However, due to the fluctuations in river levels and based on analog sites observed on Sauvie Island, the emergent marsh vegetation is expected to be sparse and narrow, dominated by two species, and flanked by scrub-shrub riparian on one side and unvegetated mudflat on the other. The following performance standards will be used to assess the successful establishment of emergent marsh vegetation:

Year 5:

Cover:

- $\geq 30\%$  native herbaceous
- $\leq 10\%$  invasive herbaceous (excluding reed canarygrass)

Years 7 and 10:

Cover:

- $\geq 40\%$  native herbaceous
- $\leq 10\%$  invasive herbaceous (excluding reed canarygrass)

Emergent marsh monitoring will occur in Years 2, 3, 4, 5, 7, and 10; however, the purpose of the monitoring conducted in Years 2, 3, and 4 is to identify the native and non-native herbaceous cover to gauge whether or not the site appears to be on a trajectory towards meeting the performance standards for Year 5. If the emergent marsh appears to be in jeopardy of not meeting the performance standard for Year 5, adaptive management including herbivory prevention and replanting may be conducted.

## RIPARIAN SCRUB-SHRUB AND RIPARIAN FOREST (ACM)

Per the planting plan, 2,000 native woody plantings per acre will be installed throughout the riparian and scrub-shrub habitat to facilitate the establishment of riparian vegetation. Establishment of riparian scrub-shrub and forest within the ACM on the Project will require active management to ensure that plant densities and percent cover performance criteria are met. The following performance standards will be used to assess successful riparian scrub-shrub and riparian forest vegetation establishment.

Years 2-5:

- A minimum of 1,200 native woody stems per acre
- At least 5 native woody species (for Riparian Scrub-Shrub within the ACM)
- At least 3 native tree species and 5 native shrub species (for Riparian Forest within the ACM)

- Cover (during the first 5 years, woody species will be excluded from percent cover):
  - $\geq$  10% native herbaceous
  - $\leq$  10% invasive herbaceous (excluding reed canarygrass)
  - $\leq$  10% invasive shrubs

Year 7:

Cover:

- $\geq$  55% native woody species
- $\geq$  10% native herbaceous
- $\leq$  10% invasive herbaceous (excluding reed canarygrass)
- $\leq$  5% invasive shrubs

Year 10:

Cover:

- $\geq$  80% native woody species
- $\geq$  10% native herbaceous
- $\leq$  5% invasive herbaceous and shrubs (excluding reed canarygrass)

Volunteer recruitment of native shrubs and trees in the riparian scrub-shrub and forest planting areas may be credited towards the density per acre performance standard. If the density rates fall below the required performance standards, the Restoration Implementer will consult with the Trustee Council or its designee(s) regarding the precise plan for replanting. Replanting will be conducted during the appropriate season following monitoring. Beyond Year 5, mortality rates are expected to be minimal given the ideal conditions present at the Project for riparian vegetation, and natural succession of the plant community is anticipated to direct long-term habitat development. Mortality due to beaver herbivory is addressed below.

## **RIPARIAN FOREST AND COTTONWOOD-DOMINATED UPLAND FOREST**

While the riparian forest (which is within the 100-year historic floodplain, above the OHWL, and waterward of the SIDIC levee) and the cottonwood-dominated upland forest (which is outside the 100-year historic floodplain, above the OWHL, and landward of the SIDIC levee) represent two distinct areas on the site, they have been combined for the purposes of performance standards and monitoring. Both the riparian forest and the cottonwood-dominated upland forest will be planted with 2,000 native woody plantings per acre, per the planting plan, to facilitate the establishment of riparian vegetation. Establishment of woody forest habitat (above the OHWL) vegetation on the Project will require active management to ensure that plant densities and percent cover performance criteria are met. The following performance standards will be used to assess successful vegetation establishment within the riparian forest and cottonwood-dominated upland forest (above the OHWL).

Years 2-5:

- A minimum of 1,200 native woody stems per acre
- At least 3 native tree species and 5 native shrub species
- Cover (during the first 5 years, trees/shrubs will be excluded from percent cover):
  - $\geq$  10% native herbaceous
  - $\leq$  10% invasive herbaceous (excluding reed canarygrass)

Year 7:

Cover:

- $\geq 50\%$  native woody species
- $\geq 10\%$  native herbaceous
- $\leq 10\%$  invasive herbaceous (excluding reed canarygrass)
- $\leq 5\%$  invasive shrubs

Year 10:

Cover:

- $\geq 80\%$  native woody species
- $\geq 5\%$  native herbaceous
- $\leq 5\%$  invasive herbaceous and shrubs (excluding reed canarygrass)

Volunteer recruitment of native trees and shrubs in the riparian forest and cottonwood-dominated upland forest planting areas may be credited towards the density per acre performance standard. If the density rates fall below the required performance standards, the Restoration Implementer will consult with the Trustees regarding the precise plan for replanting. Replanting will be conducted during the appropriate season following monitoring. Beyond Year 5, mortality rates are expected to be minimal given the ideal conditions present at the Project for riparian vegetation, and natural succession of the plant community is anticipated to direct long-term habitat development.

## **OAK-DOMINATED UPLAND FOREST**

Per the planting plan, 850 native woody plantings per acre will be installed throughout the oak-dominated upland habitat to facilitate the establishment of native woody vegetation. Establishment of oak-dominated upland forest vegetation (which is located above the OHWL and outside the 100-year historic floodplain) will require active management to ensure that plant species survival and percent cover performance criteria are met. The following performance standards will be used to assess successful oak-dominated upland forest vegetation establishment.

Years 2-5:

- A minimum of 500 trees/shrubs per acre
- At least 1 native tree species and 4 native shrub species
- Cover (during the first 5 years, trees/shrubs will be excluded from percent cover):
  - $\geq 25\%$  native herbaceous
  - $\leq 15\%$  invasive herbaceous (excluding reed canarygrass)
  - $\leq 15\%$  invasive shrubs

Year 7:

Cover:

- $\geq 25\%$  native woody species
- $\geq 25\%$  native herbaceous
- $\leq 10\%$  invasive herbaceous (excluding reed canarygrass)
- $\leq 5\%$  invasive shrubs

Year 10:

Cover:

- $\geq 40\%$  native woody species (at least 10% of woody species cover will be provided by oaks)
- $\geq 25\%$  native herbaceous
- $\leq 5\%$  invasive herbaceous and shrubs (excluding reed canarygrass)

Volunteer recruitment of native trees and shrubs in the oak-dominated upland forest planting areas may be credited towards the density per acre performance standard; however, very little natural recruitment is expected to occur. If the density rates fall below the required performance standards, the Restoration Implementer will consult with the Trustee Council or its designee(s) regarding the precise plan for replanting. Replanting will be conducted during the appropriate season following monitoring. Beyond Year 5, mortality rates are expected to be minimal given the ideal conditions which will be present at the Project for oak-dominated upland forest vegetation, and natural succession of the plant community is anticipated to direct long-term habitat development.

## **BEAVER HERBIVORY**

A total of 10% of the woody plantings are expected to be lost to beaver herbivory (which equals 200 per acre since we are planting 2,000). During woody species density monitoring events, all live stems will be counted. In addition, all beaver-chewed stems resulting in mortality will be counted and documented as such.

If beaver herbivory is causing more than 10% mortality, the Restoration Implementer will notify the Trustee Council or its designee(s). Any beaver-chewed stems (resulting in mortality) beyond the 10% expected to be lost to beaver herbivory will be counted and added to the surviving tree/shrub number. If the resulting density is above 1,200 stems per acre, the performance standard will be considered met for that particular year. However, in order to continue on a trajectory towards meeting cover standards in Year 7, replanting efforts will be conducted in the year following monitoring if less than 1,200 live native woody species per acre were documented. No more than two replanting efforts, specifically in response to beaver herbivory, will be conducted in five years. (Additional replanting efforts may be appropriate if plant mortality from other factors are at fault and those efforts will not be counted toward beaver herbivory replanting efforts.) Generally, these replanting efforts will consist of 25 percent of the original planting density and will be concentrated in the areas of lowest survival, however actual replanting percentages and strategies (e.g., plant species selections, planting configurations, etc.) will depend on the extent of beaver damage and other sources of mortality, and what the Restoration Implementer calculates is necessary to be able to meet future performance standards.

To the extent practicable, species least desirable to beaver will be used in the replanting effort to discourage beaver herbivory. If, after 2 replanting efforts within 5 years, beaver herbivory continues to be a significant problem to the point that the site may not meet the cover standards in Years 7 and 10, the Trustee Council or its designee(s) will be consulted and either beaver trapping (with approval from the Trustee Council or its designee(s)) will be implemented or cover performance standards for Years 7 and 10 will be adapted to accommodate the rate of beaver herbivory occurring on the site.

## INVASIVE PLANT SPECIES MANAGEMENT

It is anticipated that invasive species in the marsh habitats will be managed by the establishment and proliferation of native plants following restoration activities. As previously mentioned, invasive species in this Plan are defined as the following: reed canarygrass; species on the ODA Noxious Weed list; species on the Portland Plant List, Rank A and Rank B; tree and shrub species on the Portland Plant List, Rank C; and traveler's joy (*Clematis vitalba*) on the Portland Plant List, Rank C. In the riparian areas and the upland forest, invasive species will be controlled during the Establishment Period. Primary methods of removing or controlling invasive plant species include: hand or mechanical removal and chemical treatment. These management techniques are discussed in detail below.

- **Hand/Mechanical Removal for Invasive Pest Plant Management:** Hand removal, use of small hand powered or handheld equipment (such as a Weed Wrench or a chainsaw), and mechanical methods (use of larger equipment with motors such as a small tractor with a mower or harrow) will be the preferred methods for the removal of invasive pest plant species from the Project. The Trustee Council or its designee(s) does not to be notified if removal will be done by hand, hand-held equipment, mower, or tractor.
- **Herbicides:** In some instances (i.e., extensive, severe, or persistent infestations), it may be necessary to use herbicides to control invasive plant species. All herbicides will be applied according to label instructions and will typically be applied using a low pressure spray. All herbicide applications will be conducted by a licensed pesticide applicator following all label instructions, in compliance with Oregon State laws, and in compliance with the permits and authorizations obtained for the Project. For areas where invasive plants are growing within desirable vegetation, herbicide will be applied using a backpack sprayer with a hood to minimize drift. No applications will be done within fifteen feet of any surface water.

The goal of reed canarygrass control is to keep it from out-competing the woody plantings in order to give the native plantings the competitive advantage. Specific performance standards developed for reed canarygrass and zero-untreated species are detailed below. General invasive species standards are detailed above under each vegetation type.

### Reed Canarygrass

It is anticipated that reed canarygrass will be difficult to control during the initial years of the restoration project. This species is ubiquitous across many habitats in the region and options for effective control are somewhat limited. Current restoration practitioners propose that establishing a dense shrub layer will eventually provide natural control of reed canarygrass through shading, but that complete control is unlikely. A recent study of Washington State Department of Transportation mitigation projects found that there was a strong correlation between a closed canopy provided by shrubs (i.e., high stem density of shrubs) with lower reed canarygrass infestation levels during Years 6-10 of restoration projects (Celedonia 2002). There are also tradeoffs with respect to riparian stand development using very high planting densities. These high densities can result in stand stagnation and unnatural competition for resources among crowded individuals. Stagnation typically results in slower growth rates for individuals (i.e., smaller individuals), a lower canopy, and less vertical structure in the canopy layers (Celedonia 2002). Even with higher shrub stem densities, some have found that reed canarygrass can exist at relatively high levels (as much as 40%) under abundant canopy cover ( $\geq 95\%$ ) (Celedonia 2002).

Control of reed canarygrass at the Project site will rely primarily upon a combination of mowing and chemical control. While native grasses and other graminoids will be seeded and planted across the site, native seeded species typically take a little longer to establish and do not generally have a competitive

edge against the oftentimes aggressive colonization and establishment of reed canarygrass. With continual mowing and chemical treatment of the herbaceous layer, it is anticipated that the average cover of reed canarygrass will be maintained at a reasonable level, but intensive treatment to maintain control will also likely have an effect on natives trying to establish.

Reed canarygrass will likely establish at higher rates in specific restored habitats, especially the zone between the emergent tidal zone and the riparian habitats. However, observations of existing conditions at the Project site indicate that the species will occupy areas from the tidal zone to upland habitats (reed canarygrass is currently growing on upland portions of the levee). Because this species is known to be very difficult to control in wetland habitats and it is uncertain how each habitat type will be affected by colonization of reed canarygrass, performance standards specific to reed canarygrass cover have been developed and pulled out separately, and cover values will be averaged across the Project site.

Cover:

- Years 1-5:  $\leq 30\%$  reed canarygrass
- Year 7:  $\leq 25\%$  reed canarygrass
- Year 10:  $\leq 20\%$  reed canarygrass

### **Zero-Untreated Species**

All individual plants of the following species will be treated within the year in which they are found, during the season that is most effective for control with reasonably aggressive, legal treatment with the goal of complete eradication:

- Japanese knotweed
- Giant knotweed
- Himalayan knotweed
- Yellow flag iris
- Butterfly bush
- Purple loosestrife

### **5.3.4 Permanent Protection**

Prior to the end of the 10-year Performance Period, the Project will be permanently protected with a conservation easement. In addition, a long-term management and maintenance endowment fund account will be established and funded up to a previously determined target amount. Long-term activities covered by this fund include, but are not limited to, the following: maintenance, monitoring, remediation, management, debris removal if hydrologic function is impaired, and removal of invasive vegetation impairing habitat function.



## **Section 6 Monitoring**

---

To ensure that the mitigation is progressing toward the pre-established performance standards and success criteria, Restoration Implementer staff and/or its consultants will monitor the created and enhanced habitats on the Project. Monitoring provides an important internal feedback role in Project management and maintenance, serving as an essential link in the internal adaptive management process, which guarantees the overall success of restoration. Restoration Implementer will prepare and submit monitoring reports to the Trustee Council or its designee(s) after each monitoring year in the Performance Period. The reports will be submitted by December 31 of each monitoring year for which a report is required. These reports will document the progress that has been made towards achieving the specified performance standards. Reports will also include descriptions of remedial actions that have been approved by the Trustee Council or its designee(s) and applied to the Project if standards are not being met. Further discussion of remedial actions can be found in Section 7.0. Monitoring will also help to guide adaptive management and evaluate/guide site stewardship activities.

Monitoring during the Establishment Period is directed at closely evaluating the performance of initial Project restoration treatments (Years 0 through 10) and is designed to closely evaluate the Project's trend towards meeting the project's stated success criteria and performance standards. Long-term monitoring (Years 11 and beyond) will contribute to the general knowledge of target species use of the restored habitats for the benefit of future restoration programs.

Two types of monitoring are required by the Trustee Council: monitoring questions related to performance standards and monitoring requirements related to Harbor-wide restoration goals. Monitoring requirements related to Harbor-wide restoration goals will address parameters that will gauge how the Restoration Site is being used by fish and wildlife and how it is contributing to the overall restoration goals for the Harbor, but will not be tied to the performance period of the Project.

### **6.1 ESTABLISHMENT PERIOD MONITORING**

Establishment Period monitoring for the Restoration Site will be conducted in Years 0 through 10 and is aimed at tracking the progress of establishing the habitats including hydrology; native vegetation; recruiting and retaining large woody debris; and controlling invasive plant species. Baseline conditions will be recorded prior to construction in Year 0, where appropriate.

Monitoring reports for each Monitoring Year during the Establishment Period will be submitted to the Trustee Council or its designee(s). "Monitoring Year" refers to each year in which sampling occurs. The monitoring reports shall document federally listed or candidate species identified during the monitoring surveys as well as other species targeted for restoration including Pacific lamprey, bald eagle, osprey, and mink. Performance standards have been developed for each of the enhanced and created habitat types on the Restoration Site to ensure that the acreage and habitats provide the intended functions.

If remedial activities are required to meet hydrologic and vegetation success criteria, annual monitoring of any remediated habitat will occur for two successive growing seasons after remedial actions were

implemented in order to verify that hydrologic and vegetation performance standards have been met without further human intervention. Once the two years of consecutive monitoring are complete, enhanced, restored, and created habitats will continue to be monitored during any successive Monitoring Years left within the 10-year establishment monitoring period. The Performance Period (or Establishment Period) will end when the Year 10 performance standards have been met or when the Restoration implementer and the Trustee Council or its designee(s) agree that the Performance Period has been completed, whichever occurs first.

### **6.1.1 Monitoring Design**

In order to appropriately monitor the Restoration Site to ensure that the restoration goals are being met, a repeatable and systematic monitoring methodology will be employed. This monitoring design includes designating monitoring transects that divide the Restoration Site into even sections with transects oriented perpendicular to the axis of the floodplain. Sampling will occur randomly along selected transects.

### **6.1.2 Baseline Biological Monitoring for Existing Habitats**

Baseline biological monitoring for the Site will be done prior to construction (Figure 14). For created or enhanced habitats, baseline biological monitoring will establish a baseline, or reference condition, against which establishment period and long-term monitoring can be compared in order to assess the overall lift in function of the restored or enhanced habitats over time. Comparison of establishment period and long-term monitoring data against an established baseline condition will be useful in guiding adaptive management decisions to ensure the continued presence of the aquatic and forest habitats the Project was established to enhance and create. Baseline monitoring will include, but is not limited to, the following:

- **Bird Assemblages** – On-site point counts will be established along transects to characterize bird species composition representative of pre-construction site conditions for comparison with post-construction habitats on the site. Point count transects will be no more than 150 meters apart with stations placed approximately every 100 meters along each transect (as appropriate for site conditions) and will cover areas where observers can document birds in portions of each existing habitat type. Point count monitoring is a common way to monitor bird populations. It is characterized by tallying bird species as well as populations at a fixed location during specific, repeated observation periods. It provides the relative abundance of all bird species and can detect trends in the abundance over time. All bird species will be recorded to assess species occurrences, proportionate abundance, species richness and information such as percent native/non-native and sensitive species presence will be reported. Bird assemblage surveys were conducted once a month in May, June, and July 2013 (see Attachment 2, Baseline Report).
- **Mink** – Camera traps will be placed along the shoreline in at least three locations from April through June to record mink use and movement along the waterway. Visual surveys for tracks, scat, and den sites will be conducted in potential use areas during camera trap maintenance or at least twice a month. In 2013, mink camera traps and scent stations were set-up in three locations from April 11 through August. Visual surveys were completed twice a month in April, May, June, July, and August (see Attachment 2, Baseline Report).
- **Bald Eagle** – Surveys to document bald eagle use of the site will be conducted using a combination of monitoring stations along the levee and a continuous route to more closely

observe existing trees. Monitoring will occur once a week, as feasible, for a total of two hours per day from mid-December through August. In 2013, bald eagle surveys were conducted monthly in February, March, and April and weekly in May, June, July, and August (varying between dawn, dusk, and other daylight hours). In order to complete baseline surveys for bald eagle, weekly surveys will begin in mid-December 2013 and continue through April 2014 (varying between dawn and dusk hours). See Attachment 2, Baseline Report.

- **Invasive Plant Species** - The extent and percent cover by species of pervasive invasive plants was mapped in 2012 to establish baseline conditions. Additional mapping will occur prior to construction in order to capture any change in condition and any additional invasive vegetation present.

### **6.1.3 Aerial Photo Interpretation**

Overall Project monitoring will be conducted by aerial photography in Years 1, 3, 5, 7, and 10, and then Year 15 and every ten years thereafter. Aerial photos will be taken during late summer each year that aerial photography is required. This will allow a year to year comparison of the development of planted vegetation, geomorphology, and will allow the tracking of general changes to the Restoration Site that may be difficult to detect during surveys constructed from the ground.

### **6.1.4 Photo Documentation**

Photo documentation of the Project will occur during Years 1, 2, 3, 4, 5, 7, and 10. Ten permanent photograph locations will be selected to illustrate year-to-year progress of the Project. Photo locations will be recorded with Global Positioning System (GPS) equipment and subsequent photos will be taken from the same location each year. At these permanent photograph locations the monitoring biologist will take four direction photos, one in each cardinal direction (N, E, S, W), unless the photo location borders the Project boundary, in which case photos will be taken from all directions that show the Project.

### **6.1.5 Hydrology and Geomorphology**

During years 1, 3, 5, 7, and 10, topographic surveys will be completed once a year after the wet season to document changes in site topography and structural habitat features. Topographic surveys will include collecting topographic readings along the 5 pre-selected, permanent monitoring transects. In addition, once a year during years 2, 3, 5, 7, and 10 after the wet season a visual inspection will be made to document any barriers that prevent fish from entering or exiting the site. If a fish barrier is identified, the Trustee Council will be notified within three (3) business days of discovery. Aerial photos of the site will be collected once during late summer during years 1, 3, 5, 7, and 10. Water level data loggers should be placed at a minimum of two locations and, if feasible, data should be collected continuously. If continuous monitoring is not possible, an alternative monitoring schedule should be discussed with Trustee Council representatives.

## **6.1.6 Native Vegetation**

### **RIPARIAN SCRUB-SHRUB, RIPARIAN FOREST, AND UPLAND FOREST**

Riparian scrub-shrub, riparian forest, and upland forest plantings will be monitored in late summer or early fall prior to entering winter dormancy. In order to assess plant density and survival, monitoring will include:

- direct counts of a sub-sample of live installed woody plants,
- direct counts of volunteer plants by species within established sample plots at various locations,
- vegetation cover estimates (herbaceous species only during Years 2-5 and all species thereafter), and
- representative photographs taken from (a minimum of ten) permanent photographic documentation points.

Quantitative monitoring data will be primarily collected using five main baseline transects running more or less north/south across the site (Figure 15).

Density and cover measurements in Year 2 will occur in a total of 37 sample plots, with each plot measuring 10 meters by 10 meters. Sampling plots have been initially identified along the baseline transects: 7 plots in the oak woodland; a total of 15 plots in the riparian forest and cottonwood-dominated upland forest; and 15 plots in riparian scrub (Figure 15). Plot locations depicted in Figure 14 may be adjusted based upon as-built habitats. The current design emphasizes data collection in the riparian forest and riparian scrub-shrub habitat on the outboard side of the levee with 25 plots across approximately 20 acres.

Pilot sampling during Year 2 will be used to determine what level of sampling is sufficient for the restoration site. The number of plots may be adjusted during Year 3 according to the results of Year 2 data analysis. Year 2 data for each wooded habitat type will be evaluated using a confidence level of 80 percent and a confidence interval width of 10, which is based upon the DSL Routine Monitoring Guidance for Vegetation (September 2009), to determine the number of plots necessary to derive representative averages for performance standard evaluation.

In each monitoring year, data will be tallied by species and each woody plant will be assessed for plant vigor (i.e., good, fair, poor). Signs of beaver herbivory will also be noted. These same plots will be used to assess cover and diversity for the wooded habitats. Cover classes will be used to determine cover values for each species identified within the plot.

As part of the riparian monitoring, the presence and extent of any invasive plant species will be documented throughout the riparian areas.

### **EMERGENT MARSH**

Monitoring of emergent marsh vegetation will be conducted in Years 2, 3, 4, 5, 7, and 10. Monitoring shall include visual surveys of the emergent marsh vegetation. Cover and diversity will be quantified

using a quadrat method. A sampling transect will be run perpendicular to the baseline transect and quadrat data will be collected along the sampling transect. The frequency of sampling quadrats and the size of quadrats will be tailored to best assess this habitat type. The sampling interval and the size of the quadrat will be determined in the field based on pilot sampling data.

Cover classes will be used to determine cover values for each species identified within the quadrat. Bare soil, rock, wood, or other non-plant cover will also be quantified. The size of the quadrat will be determined based on pilot sampling data. The location of the sampling transect will need to be determined in the field because the extent of this habitat type occurs in a fairly narrow belt along the constructed channels. A sampling transect will be run perpendicular to the main baseline transects and quadrat data will be collected along the sampling transect. The frequency of sampling quadrats and the size of quadrats will be tailored to best assess this habitat type and based on pilot sampling data.

The extent of existing habitat will then be compared to construction drawings and design goals in order to assess the relative success of management efforts.

### **6.1.7 Large Woody Debris**

Large woody material monitoring will be performed in Years 2, 3, 5, 7, and 10 following winter-spring floods to assess overall quality and stability of placed large woody material as well as any natural recruited wood, and to assess their function. Monitoring will consist of visual inspections by foot or by boat.

### **6.1.8 Invasive Species Monitoring**

In Years 1 through 5, 7, and 10 invasive vegetation field surveys will be conducted annually during the riparian, marsh, and forest habitat monitoring. During Years 6, 8, and 9, invasive species presence will be noted and mapped during general site assessments, and any necessary treatments will be undertaken depending on the species and its extent.

As described in Section 5.3.3, invasive species for the purposes of performance evaluation include the following:

- Reed canary grass
- Species on the ODA Noxious Weed list
- Species on the Portland Plant List, Rank A and Rank B
- Tree and shrub species on the Portland Plant List, Rank C
- Traveler's joy (*Clematis vitalba*) on the Portland Plant List, Rank C

In order to evaluate cover of reed canarygrass during vegetation monitoring events, the cover of this species will be assessed at each plot and be kept separate from other native and invasive species cover analyses. The reed canarygrass cover values at each plot will be added together and averaged over the site to evaluate the reed canarygrass performance standard.

The ODA Noxious Weed and Portland Plant lists are regularly updated and the most recent versions of these lists will be used to classify invasive plants. All other non-native plants will be identified using the USDA Plants Database. A portion of the herbaceous plants identified on the Rank C list are included on the ODA Noxious Weed List. In order to ensure that the remaining herbaceous plant species identified on the Rank C list do not affect habitat establishment, the presence and cover of these species will also be tracked during monitoring events. If the remaining herbaceous plants on the Rank C list comprise more than 15% cover in 10% or more of the sample plots in any habitat class, the issue will be discussed with the Trustee Council and the species will be evaluated for treatment. If the Trustee Council and the Restoration Implementer agree that treatment is necessary to protect habitat establishment, the species will be treated within that same monitoring year. If these species only appear in small numbers across the site, treatment may not be implemented in order to provide opportunity for native herbaceous species to increase in extent to meet performance standards. The intent of invasive plant species management is to support the establishment of the native species so that limited management is necessary over the long term.

### **6.1.9 Fish Monitoring**

Fish will be monitored at standard locations to determine the presence of native fish. The goal of fish monitoring is to document the presence of juvenile salmonids within the created side channels. The monitoring will occur within the newly created channels in Years 1, 3, 5, 7, and 10, or until juvenile salmonids are documented on the site. Sampling will take place two times per month from February through May in each monitoring year until juvenile salmonids are documented within the created channels. The timing of fish monitoring is subject to weather and other ecological factors and may change based on field conditions. During fish monitoring, habitat conditions will be recorded, including shade, cover, depth, substrate, and water quality (including water temperature, dissolved oxygen, turbidity). Water quality measurements should be taken where fish monitoring occurs and at locations in the Willamette River and Multnomah Channel adjacent to the Project site. During fish surveys, occurrences of aquatic plants will be noted by species, location, and relative abundance. All potential permits necessary for the authorization of fish sampling will be acquired from the appropriate regulatory agencies. Sampling methods will adhere to all permit conditions.

Monitoring will be conducted using snorkel surveys or beach seining. Beach seining will only be conducted until juvenile salmonids are captured. Once juvenile salmonids are captured, beach seining will no longer continue. Snorkel surveys may continue through the remainder of the monitoring period, as feasible.

### **6.1.10 Other Wildlife Monitoring**

- Bald eagle and osprey monitoring
  - Bald eagle surveys are intended to document bald eagle presence/absence and activity type if present, and any changes in bald eagle use at the site over time. Monitoring will take place in Years 3, 5, 7, and 10, once per week from mid-December through August. Although these surveys are targeting bald eagle, other raptor sightings (including osprey) and behavior will also be recorded. The monitoring will be conducted from least intrusive vantage point(s) for observing bald eagle use at the Project site for a total of 2 hours per sample, varying between dawn and dusk hours. It may be acceptable to use just one

survey site if a location can be identified that can be used to monitor the entire site at once with little disturbance that could affect bald eagle behavior.

- Investigate potential bald eagle and osprey nests
  - During site visits, all potential bald eagle and osprey nests will be identified and the location recorded with a GPS. Using binoculars or spotting scopes, the nest will be observed until it can be determined if it is actively being used, and by what type of bird. This information will be recorded and the nest will be documented for future visits.
- Bird assemblages including diversity and abundance
  - Bird assemblage monitoring data will be used to document species occurrences, proportionate species abundances, species richness, and how the bird assemblage changes over time. Bird monitoring will be completed in Years 1, 3, 5, and 10. The point counts will be done on transects established during pre-construction monitoring to characterize bird species composition representative of post-construction site conditions. These transects will be monitored once a month in April, May, and June. Point count transects will be no more than 150 meters apart with stations placed approximately every 100 meters along each transect (as appropriate for site conditions) and will cover areas where observers can document birds in portions of each existing habitat type. Point count monitoring is a common way to monitor bird populations. It is characterized by tallying bird species as well as populations at a fixed location during specific, repeated observation periods. It provides the relative abundance of all bird species and can detect trends in the abundance over time. All bird species will be recorded to assess species occurrences, proportionate abundance, species richness and information such as percent native/non-native and sensitive species. A few randomly selected point count locations may be added, if needed, to ensure all habitat types are represented.
- Mink
  - Mink usage monitoring will take place along the waterways of the Restoration Project including a 50-foot buffer from each waterway in the spring and summer in Years 3, 5, 7, and 10. Waterways include mainstem shorelines, backwater areas and side channels. Particular attention should be given to aquatic and terrestrial large wood and other cover structures during monitoring to capture use of den sites, foraging areas, and travel corridors. Survey methods include camera traps at three locations with scent stations to lure animals into camera view. Searches for tracks, scat, and den sites should also occur in designated areas with potential for mink use and shall be conducted during camera trap data collection and maintenance or at least twice a month. Monitoring should take place for at least 12 weeks of spring/summer.
- Pacific lamprey
  - Lamprey monitoring will be conducted as part of a Harbor-wide monitoring effort done by USFWS staff in accordance with the Lamprey Monitoring Plan developed by the Trustees.

During monitoring efforts for specific species, any observation or sign of other Target Species will be documented.

## **6.2 ESTABLISHMENT PERIOD MONITORING SCHEDULE**

All created and enhanced areas will be monitored until the performance criteria have been met or a minimum of 10 years. Quantitative monitoring data will be primarily collected using five main baseline transects running more or less north/south across the site (Figure 15). A table containing the approximate monitoring schedule for any given year during the Establishment Period is provided. The month of monitoring indicated in the table is approximate and will be adjusted every year to account for rainfall, weather, and plant growth.

Monitoring reports, which summarize the results of the monitoring effort, will be submitted to the Trustee Council or its designee(s) by December 31<sup>st</sup> of each Monitoring Year (“Monitoring Year” refers to each year in which sampling occurs). The monitoring reports shall document federally listed or candidate species identified during the monitoring surveys as well as other targeted species including Pacific lamprey, bald eagle, osprey, and mink. Performance standards have been developed for each of the created and enhanced habitat types on the Restoration Site to ensure that the habitats function as designed.

If remedial activities are required to meet hydrologic and vegetation success criteria, annual monitoring of any remediated habitat will occur for two successive growing seasons after remedial actions were implemented in order to verify that hydrologic and vegetation performance standards have been met without further human intervention. Once the two years of consecutive monitoring are complete, enhanced and created habitats will continue to be monitored during any successive monitoring years left within the 10-year initial Performance Period.



Table 2. Establishment Period Monitoring Schedule													
Biological Resource <i>Component</i>	Monitoring Frequency	January	February	March	April	May	June	July	August	September	October	November	December
<b>Hydrology &amp; Geomorphology</b>													
<i>Visual Surveys (including LWD retention)</i>	Years 2, 3, 5, 7, 10								X				
<i>Topography</i>	Years 1, 3, 5, 7, 10								X				
<b>Invasive Plant Species</b>													
<i>Vegetation</i>	Years 1, 2, 3, 4, 5, 7, 10				X				X				
<b>Native Vegetation</b>													
<i>Riparian Scrub/Shrub, Riparian Forest, Upland Forest</i>	Years 2-5, 7, 10								X				
<i>Emergent Marsh</i>	Years 2-5, 7, 10								X				
<b>Wildlife</b>													
<i>Fish Surveys</i>	Years 1, 3, 5, 7, 10		X	X	X	X							
<i>Bald Eagle Surveys</i>	Years 3, 5, 7, 10	X	X	X	X	X	X	X	X				/
<i>Bird Surveys</i>	Years 1, 3, 5, 10				X	X	X						
<i>Mink Surveys</i>	Years 3, 5, 7, 10					X	X	X					
<b>General Site Monitoring</b>													
<i>Aerial Photographs</i>	Years 1, 3, 5, 7, 10								X				
<i>Photo Documentation</i>	Years 1-5, 7, 10								X				

### 6.3 LONG-TERM MONITORING

General qualitative site assessments will occur annually to ensure site conditions do not deteriorate and more detailed biological monitoring of the Project’s habitats will occur in Year 15 and every 10 years thereafter to track habitat development. Long-term monitoring will be less intensive, but sufficient to provide information to allow the Restoration Implementer to determine if habitat values are being restored and maintained as planned. The endowment for the Project will fund monitoring of basic protections and habitat maintenance needs at the end of Year 10 and beyond, in perpetuity. Long-term monitoring activities are summarized below.

## **Qualitative Site Assessment**

Annual assessments of the Restoration Site's general condition will occur to ensure that potentially damaging conditions do not arise with respect to invasive plants, erosion, trespassing, and vandalism. General site conditions will be noted during each annual visit.

## **General Site Monitoring**

Overall aerial and general photographic Restoration Site monitoring will continue in Year 15 and every 10 years thereafter.

## **Hydrology**

Visual monitoring of the channel connections, channels, mudflat, marsh, and riparian wetlands at low water will continue in Year 15 and every 10 years thereafter.

## **Vegetation Monitoring**

Visual monitoring of vegetation will continue in Year 15 and every 10 years thereafter. An aerial photograph will be taken during the summer and photographs of established vegetation will be taken at 10-year intervals beginning in Year 15 to track Project conditions. Riparian habitats will be documented using GIS maps developed from rectified aerial photos. Sample plots evaluated during the Habitat Establishment Period will be used to ground truth and verify aerial interpretation and assess plant assemblages. Emergent marsh areas will continue to be documented through assessments of absolute cover, identification of species observed, and assessment of relative cover by species. The results of the vegetation surveys will provide feedback on how existing habitats evolve over time.

## **Invasive Species Monitoring**

Invasive species will be assessed and controlled, as appropriate, on an annual basis.

# **6.4 MONITORING REPORTS**

The Restoration Implementer shall submit reports to the Trustee Council or its designee(s), in hard copy and in electronic format, on or before December 31st of each Monitoring year following the Project establishment date. Each report shall cover the period from November 1st of the preceding year (or if earlier, the Establishment Date for the first annual report) through October 31st of the current year (the "Reporting Period").

Reports documenting the methods and results of each of the monitoring elements, including survival and percent cover assessments, wildlife monitoring, and achievement of performance standards will be prepared for each monitoring year during Years 1 through 10 (the Establishment Period), until all performance standards are met, or when the Restoration Implementer and the Trustee Council or its designee(s) agree that the Establishment Period is complete (whichever occurs later). These reports will detail the general Project conditions, and will include photographs of restored habitats and connecting channels, and notes on management activities for the monitoring period. During the long-term

stewardship period, monitoring reports will be prepared for each year that long-term habitat monitoring is conducted.

Following the achievement of all performance standards, the final establishment phase management report will be completed and submitted to the Trustee Council or its designee(s). This report will detail the general condition of the Project at the end of the establishment period and will address overall performance of the Project's habitat development and success of management activities related to the following:

- Hydrologic function;
- Sedimentation and erosion;
- Plant community development;
- Condition of Project facilities (gates, access roads, etc.);
- Trash and debris management;
- Wildlife survey results summary; and
- Fish sampling results summary.

### **6.4.1 Habitat Monitoring Reports**

During the habitat Establishment Period, Restoration Implementer shall submit habitat monitoring reports, during Years 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10. After the habitat is established, habitat monitoring reports will be submitted in Year 15 and every 10 years thereafter.

The original monitoring period may be extended upon a determination that hydrologic and/or vegetation performance standards have not been met or the plantings are not on track to meet them (e.g., high mortality rate of vegetation). The monitoring requirements may also be revised in cases where adaptive management or remediation is required.

The monitoring reports will provide the Trustee Council or its designee(s) with sufficient information to assess whether the Project is meeting performance standards, and to determine whether a compliance visit is warranted. Restoration Implementer may submit monitoring reports electronically or in hard copy.

Monitoring reports will include a monitoring report narrative that provides an overview of Project conditions and functions. This monitoring report narrative should be concise and generally less than 10 pages.

Monitoring reports will also include appropriate supporting data to assist the Trustee Council or its designee(s) in determining how the planting areas are progressing towards meeting vegetation performance standards. Such supporting data may include plans (such as as-built plans), maps, and photographs to illustrate Project conditions, as well as the results of functional, condition, or other assessments used to provide quantitative or qualitative measures of the functions provided by the Project.

The monitoring report narrative will include the following:

1. Project Overview (1 page)
  - a. Project name.

- b. Name of party(ies) responsible for conducting the monitoring and the date(s) the inspection was conducted. All persons who prepared the report, did the monitoring, and/or wrote or edited the text will be listed.
  - c. Written description of the location, any identifiable landmarks of the Project including information to locate the Project perimeter(s), and coordinates of the Restoration Site (expressed as latitude, longitudes, UTM's, state plane coordinate system, etc.).
  - d. Dates any planting commenced and/or was completed.
  - e. All data and results from monitoring conducted during the monitoring year, including monitoring that is not specifically tied to performance standards (i.e., wildlife monitoring).
  - f. Short statement on whether the performance standards are being met.
  - g. Dates of any recent corrective or maintenance activities conducted since the previous report submission.
  - h. Specific recommendations for any additional corrective or remedial actions.
2. Requirements (1 page). List the monitoring requirements and performance standards, as specified in this Plan and evaluate whether the Project is successfully achieving the approved performance standards or trending towards success. A table is a recommended option for comparing the performance standards to the conditions and status of the developing Project.
3. Summary Data (maximum of 4 pages). Summary data should be provided to substantiate the success and/or potential challenges associated with the Project. Photo documentation may be provided to support the findings and recommendations referenced in the monitoring report and to assist the Trustee Council or its designee(s) in assessing whether the Project is meeting applicable performance standards for that monitoring period. Submitted photos should be formatted to print on a standard 8 ½-inch by 11-inch piece of paper, dated, and clearly labeled with the direction from which the photo was taken. The photo location points should also be identified on the appropriate maps.
4. Maps and Plans (maximum of 3 pages). Maps should be provided to show the location of the Project relative to other landscape features, habitat types, locations of photographic reference points, transects, sampling data points, and/or other features pertinent to the monitoring plan. In addition, the submitted maps and plans should clearly delineate the Project perimeter(s), which will assist the Trustee Council or its designee(s) in locating the planting area(s) during subsequent Project inspections. Each map or diagram should be formatted to print on a standard 8 ½-inch by 11-inch piece of paper and include a legend and the location of any photos submitted for review. As-built plans may be included.
5. Conclusion (1 page). A general statement should be included that describes the conditions of the Project. If performance standards are not being met, a brief explanation of the difficulties and potential remedial actions proposed by Restoration Implementer, including a timetable, will be provided.

## Section 7 Funding

---

### 7.1 INTERIM MANAGEMENT AND CONTINGENCY SECURITY

The Restoration Implementer will furnish a performance bond or letter of credit, prior to the first credit release, in the amount specified in Exhibit J-2, Interim Management and Contingency Security (IMCS). The IMCS is intended to cover the cost of management and monitoring including any necessary adaptive management on the Site for the Establishment Period. Once the Year 5 performance standards have been met, the bond or letter of credit will be reduced by half. The remaining bond or letter of credit shall be released upon meeting the Year 10 performance standards or when the Restoration Implementer and the Trustee Council agree that that the Establishment Period is complete.

## Section 8 Remedial Actions

---

Minor corrective measures not requiring notification or approval of the Trustee Council or its designee(s) (e.g., prevention of unexpected runoff, prevention of unauthorized access to the area by placing locks on gates, etc.) will be carried out by the Restoration Implementer or Owner within sixty (60) days of identification of the problem, unless Project conditions warrant delay (e.g., if soil is saturated and equipment will damage the upland habitat on the Project, it may be necessary to delay work until conditions improve). All other corrective actions will take place when conditions are best suited for restoration to occur, and after the Trustee Council or its designee(s) have been notified or the Restoration Implementer has received approval. A list of potential remediation guidelines are described in Table 3.

**Table 3. Remediation Guidelines for the Project**

Type of Disturbance	Mitigation Guideline
Channels become blocked by debris or sediment	If a channel becomes blocked, the Restoration Implementer will report the observed blockage to the Trustee Council or its designee(s) within forty-eight (48) hours of its discovery. The potential causes for the blockage will be evaluated. If it is determined that conditions will not likely be remedied by natural processes, then re-excavating the areas of the blocked channels will be considered in discussions between the Restoration Implementer and the Trustee Council or its designee(s). See Section 9.1 below for additional details.
Riparian vegetation fails to establish	If mortality of planted riparian vegetation is such that performance standards are not being met, additional riparian plantings will be installed and, if

	needed, herbivore deterrents will be installed.
Marsh vegetation fails to establish	If the desired marsh vegetation has failed to establish such that performance standards are not being met, additional marsh plugs of desired species will be installed and, if needed, herbivore deterrents will be installed.
Invasive vegetation establishes onsite during the interim period.	Should invasive vegetation establish during the interim period, then the methods described in Section 5.3.3 of this document will be employed until the invasive vegetation is controlled.

## Section 9 Management

---

This section identifies the management and maintenance actions expected to occur during the Establishment Period. These same activities will likely be included in the Site-Specific Long-Term Stewardship Plan prepared for the Restoration Project prior to the end of the Establishment Period.

### 9.1 HYDROLOGIC CONNECTIONS

Hydrologic connections between the Restoration Project and the Willamette River and Multnomah Channel have been designed to be self-maintaining; however, there may be times when sediment and/or debris may clog the Project's channels, such as major flood events. If a connection remains clogged by extensive deposits of sediment, woody material, or other debris to the extent that Performance Standards are not being met, the Restoration Implementer will work with the Trustee Council or its designee(s) to determine if actions are necessary. If channel maintenance is determined to be necessary, maintenance will be accomplished primarily using track type excavators, or in extreme cases, barges. If these maintenance activities are not covered under the original construction permits for the Project, additional federal, state, and local authorizations may be required prior to doing any maintenance work.

### 9.2 TRASH REMOVAL

The Restoration Implementer will assess the need to remove accumulations of trash and other unwanted debris from the Project at least once per year. For the purposes of this Plan, trash and unwanted debris are defined as non-biodegradable, non-organic material including, but not limited to, household trash, derelict vessels, plastic containers, etc. Flood-transported organic material such as trees, shrubs, and branches will not be removed unless they pose a threat to habitat function (see Section 9.1).

## **9.3 TRESPASS AND PUBLIC ACCESS**

Supervised access for educational or habitat restoration activities will be allowed. Unauthorized access (i.e. trespass) to the Project will be discouraged by a locked gate and signage, if necessary.

Access to the Project in emergency or law enforcement situations, by medical, fire or law enforcement personnel or vehicles is allowed.

No motorized vehicles shall be used or permitted on any portion of the Project site with the exception of motorized vehicular use required for:

- Maintenance purposes;
- Biological monitoring purposes;
- Conservation easement monitoring purposes;
- Invasive plant species control and habitat maintenance;
- Emergency or law enforcement situations requiring access by medical, fire or law enforcement vehicles; and
- Access to Project for authorized recreational uses and site visits by Trustee Council or its designee(s).

## **9.4 EDUCATIONAL ACTIVITIES**

Research and/or other educational programs or efforts may be allowed on the Project as deemed appropriate by the Trustee Council or its designee(s), but are not specifically funded or a part of this Plan. Individuals or groups wishing to use the Project for educational purposes shall obtain the consent of and coordinate with the Restoration Implementer. If the educational activities will be passive in nature, such as a discussion of plants and animals of the habitats, then written permission of the Restoration Implementer is sufficient. If active use (other than restoration activities) of the Project is proposed or regular but passive use of the Project is proposed, review and approval by the Trustee Council or its designee(s) is required.

## **9.5 RECREATIONAL ACTIVITIES**

Recreational activities such as botanizing, bird watching, photography, nature study, etc... will only be permitted by the Owner, Restoration Implementer, or an employee or guest of the Owner or Restoration Implementer in a capacity that does not interfere with the goals and objectives of the Project. Portions of the Restoration Site which are under the ordinary high water line of the Willamette River or the Multnomah Channel (e.g., the sandy areas along the waterways) are currently used occasionally by recreational boaters and fisherman. After restoration, this type of access is expected to continue to occur.

## **9.6 FORCE MAJEURE**

The Project is vulnerable to catastrophic events, acts of force majeure, and unlawful acts that are beyond the control of the Restoration Implementer to prevent. The occurrence of any such act may necessitate changes to the Project, including revision of this Plan, to allow for activities that would offset and/or counteract the negative environmental impacts of that act. Depending upon the circumstances, it may be appropriate to let nature take its course, particularly when acceptable environmental conditions would be expected to eventually reestablish. If any such act occurs, then the Trustee Council or its designee(s), in consultation with the Restoration Implementer, shall determine what changes will be in the best interest of the Project and its habitats. The Restoration Implementer shall notify the Trustee Council or its designee(s) within forty-eight (48) hours of the discovery of a catastrophic event, event of force majeure, or unlawful act, and as promptly as reasonably possible thereafter Restoration Implementer and the Trustee Council or its designee(s) shall meet to discuss the course of action in response to such occurrence. In the meantime, Restoration Implementer shall continue to manage and maintain the Project to the full extent practicable.



## Section 10 References

---

- Allen, A.W. 1986. Habitat suitability index models: Mink, revised. U.S. Fish and Wildlife Service Biological Report 82(10.127). [First printed as: FWS/OBS-82/10.61, October 1983.] 23 pp.
- Celedonia, Mark T. 2002. Benchmarks for Stand Development of Forested and Scrub-Shrub Plant Communities at Wetland Mitigation Sites in the Lowlands of Western Washington. Washington State Department of Transportation, Olympia, WA.
- DeGraaf, R.M., and M. Yamasaki. 2001. New England wildlife: Habitat, natural history and distribution. University Press of New England, Hanover, New Hampshire, USA. 482pp.
- DeGraaf, R.M., G.M. Witman, J.W. Lancier, B.J. Hill, and J.M. Keniston. 1980. Forest habitat for birds of the Northeast. U.S. Forest Service, Northeast Forest Experiment Station, Broomall, Pennsylvania. 598 pp.
- DeGraaf, R.M., and M. Yamasaki. 2001. New England wildlife: Habitat, natural history and distribution. University Press of New England, Hanover, New Hampshire, USA. 482pp.
- Endangered Species Staff, United States Fish and Wildlife Service, United States Department of the Interior. Multnomah County, Oregon Endangered Species Web Search. Available online at <http://www.fws.gov/endangered/>. Accessed 12/20/2011].
- Gerell, R. 1967. Food selection in relation to habitat in mink in Sweden. *Oikos* 20(2): 451-460.
- Gerell, R. 1970. Home ranges and movements of the mink (*Mustela vison*) in southern Sweden. *Oikos* 21(2):160-173.
- Greenworks, P. C. Clearwater West, Fishman Environmental Services LLC, Inter-Fluve, Inc., and KPPF Consulting Engineers. 2001. Willamette River Project Design Notebook: Portland, Oregon. Bureau of Environmental Services. City of Portland, Oregon.
- Henny, C.J., J.A. Collins, and W.J. Diebert. 1978. Osprey distribution, abundance, and status in western North America: II. The Oregon population. *Murrelet* 59: 14-25.
- Henny, C.J., J.L. Kaiser, R.A. Grove, V.R. Bentley, and J.E. Elliott. 2003. Biomagnification factors (fish to osprey eggs from Willamette River, Oregon, U.S.A.) for PCDDs, PCDFs, PCBs and OC pesticides. *Environmental Monitoring and Assessment* 84:275-315.
- Marshall, D.B., M.G. Hunter, and A.L. Contreras. 2006. Birds of Oregon: A general reference. Oregon State University Press, Corvallis, Oregon. 640pp.
- Myers, J.M., R.G. Kope, G.J. Bryant, D. Teel, L.J. Lierheimer, T.C. Wainwright, W.S. Grant, F.W. Waknitz, K. Neely, S.T. Lindley, and R.S. Waples. 1998. Status review of Chinook salmon from Washington, Idaho, Oregon, and California. National Marine Fisheries Service, Northwest Fisheries Science Center, Conservation Biology Division, Seattle, WA

- Natural Resource Conservation Service (NRCS). 2000. National Water and Climate Center. Climate Information for Multnomah County in the State of Oregon using Station OR6749 at Portland WB City. Available online at <http://www.wcc.nrcs.usda.gov/ftpref/support/climate/taps/or/41051.txt>. Accessed 01/09/2012.
- NMFS (National Marine Fisheries Service). 2005. 2005 Report to Congress: Pacific Coastal Salmon Recovery Fund FY 2000-2004. NMFS, Northwest Region, Seattle, WA.
- NMFS (National Marine Fisheries Service). 2006. 2005 Report to Congress: Pacific Coastal Salmon Recovery Fund FY 2000-2005. NMFS, Northwest Region, Seattle, WA.
- NOAA 2012, DRAFT Portland Harbor Programmatic EIS and Restoration Plan, July 09, 2012.
- Northwest Power and Conservation Council. "Chapter 3: Subbasin Assessment". Willamette Subbasin Plan. Portland, Oregon, 2004.
- Peterson, A. 1986. Habitat suitability index models: Bald eagle (breeding season). U.S. Fish and Wildlife Service Biological Report 82(10.126). 25 pp.
- Soil Survey Staff. Natural Resources Conservation Service, United States Department of Agriculture. Web Soil Survey (WSS) Database for 14456 NW Gillihan Road, Portland, Oregon and Vicinity. Available online at <http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>. Accessed 12/20/2011.
- United States Department of Agriculture, Soil Conservation Service and Forest Service, in cooperation with Oregon Agricultural Experiment. Soil Survey of Multnomah County, Oregon. Available online at [http://soildatamart.nrcs.usda.gov/Manuscripts/OR051/0/or051\\_text.pdf](http://soildatamart.nrcs.usda.gov/Manuscripts/OR051/0/or051_text.pdf) [1983].
- United States Fish & Wildlife Service. "Species Fact Sheet, Pacific lamprey." [www.fws.gov](http://www.fws.gov). n.d. Web. 18 Dec. 2012.
- URS, 2012. Alder Creek Mill Restoration Project Biological Assessment. URS Project Number: 25697497, August 2012
- Vana-Miller, S.L. 1987. Habitat suitability index models: Osprey. USDI Fish and Wildlife Service, Biological report 82(10.154) 46pp.
- Verts, B.J., and L. Carraway. 1998. Land Mammals of Oregon. University of California Press, Berkeley and Los Angeles, California. 424pp.
- Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 175 pp.
- Watson, J.W., M.G. Garrett, and R.G. Anthony. 1991. Foraging ecology of bald eagles in the Columbia River estuary. *Journal of Wildlife Management* 55:492-499.
- Weitcamp, L.A., T.C. Wainwright, G.J Bryant, G.B. Milner, D.J. Teel, R.G. Kope, and R.S. Waples. 1995. Status review of coho salmon from Washington, Oregon, and California. U.S. Department of Commerce, NOAA technical memorandum, NMFS-NWFSC-24.

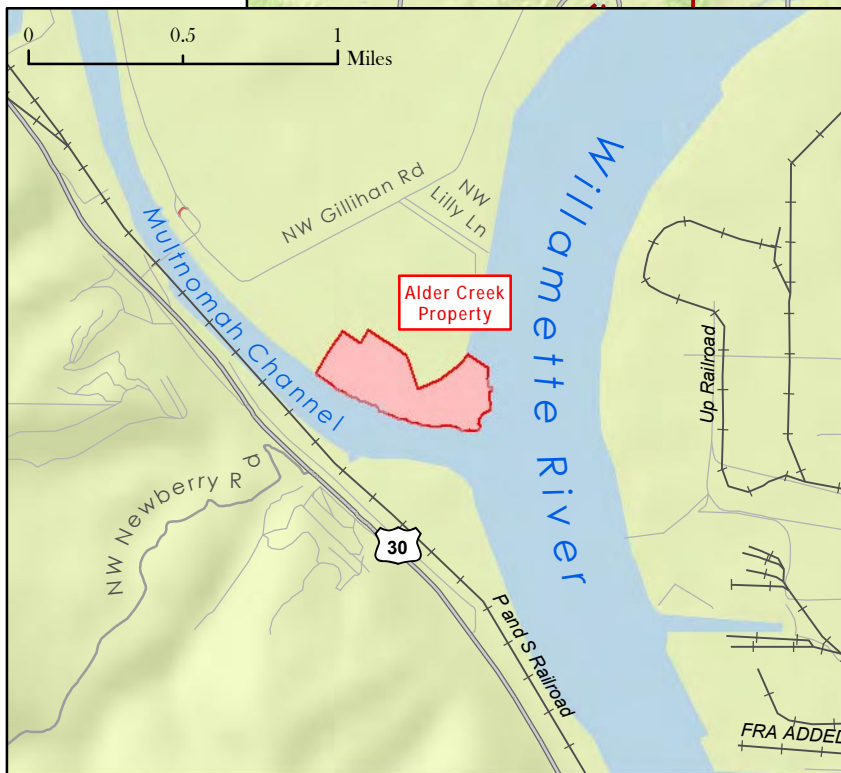
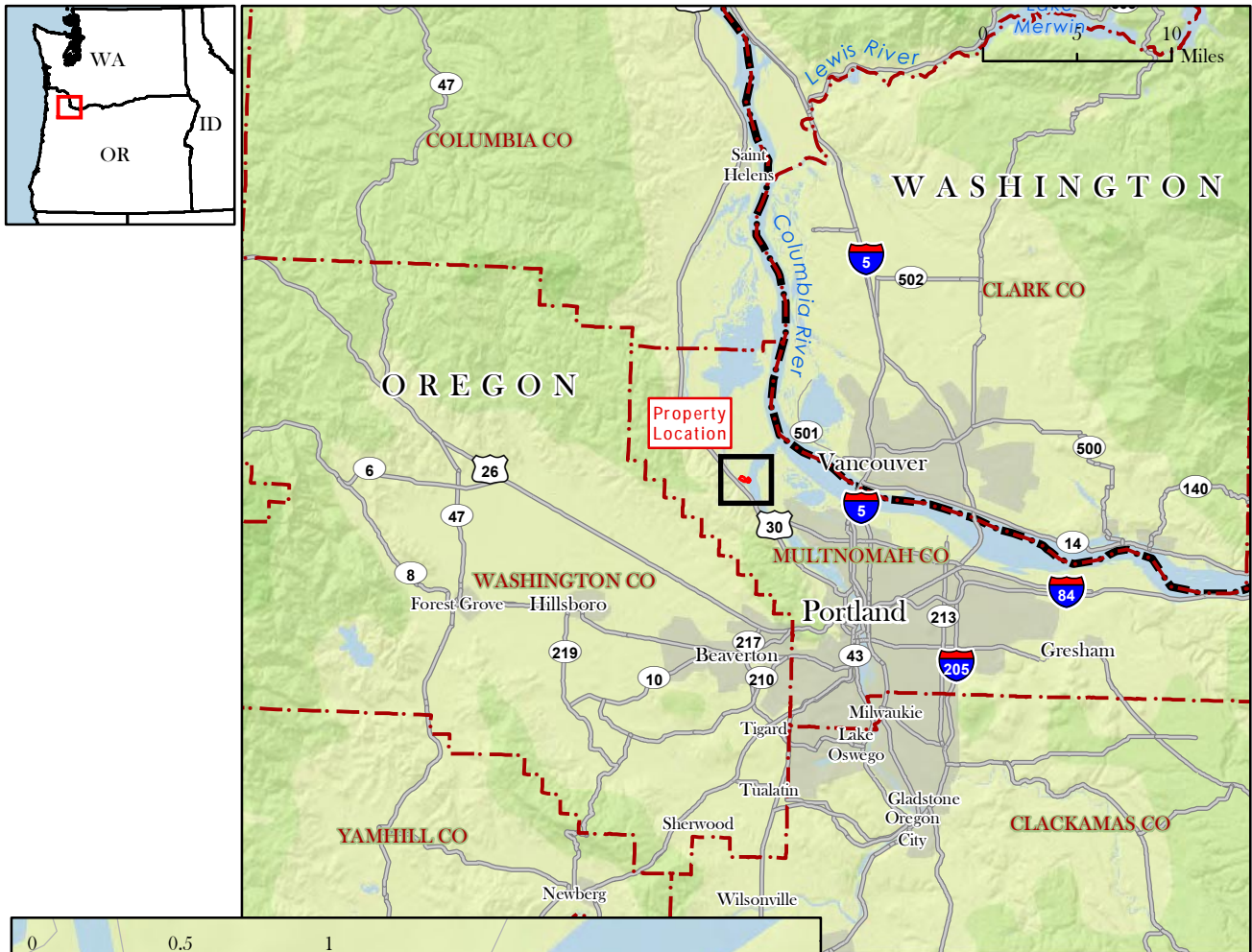
Whitaker, J.O., and W.J. Hamilton, Jr. 1998. *Mammals of the Eastern United States*. Cornell University Press, Ithaca, NY. 583pp.

Willamette Cultural Resources Associates, Ltd. (WCRA) 2011. *Cultural Resources Survey for the Proposed Alder Creek Restoration Project, Multnomah County, Oregon, Final Report*. WillametteCRA Report Number 10-25. June 2, 2012.

Williams, Travis (2009). *The Willamette River Field Guide*. Portland, Oregon: Timber Press. ISBN 978-0-88192-866-2

**Figures**

---



**WILDLANDS**

Alder Creek Restoration Project

Figure 1

Vicinity Map  
January 24, 2013







Map Source: Portland Harbor Natural Resource Trustee Council - Broader Focus Area for Ecological Restoration.





**LEGEND**

- Restoration Project Boundary
- Ordinary High Water Line (OHWL):  
20ft NAVD88 (16.6ft NGVD29)
- 100 yr Floodplain:  
32ft NAVD88 (28.6ft NGVD29)
- Cross-Sections, see figures (5A)-(5E)

**Post-construction Habitats:**

- Side Channels (SC)
- Mudflat and Beach (MB)
- Emergent Marsh / Mudflat (EM)
- Scrub-Shrub and Riparian Forest - below OHWL (SS)
- Riparian Forest - above OHWL (within 100-yr floodplain) (RF)
- Forest - above OHWL (outside 100-yr floodplain) - Oak Dominant (FO)
- Forest - above OHWL (outside 100-yr floodplain) - Cottonwood Dominant (FC)

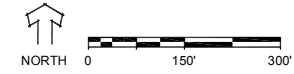
**Active Channel Margin**

- Large Woody Debris (LWD)

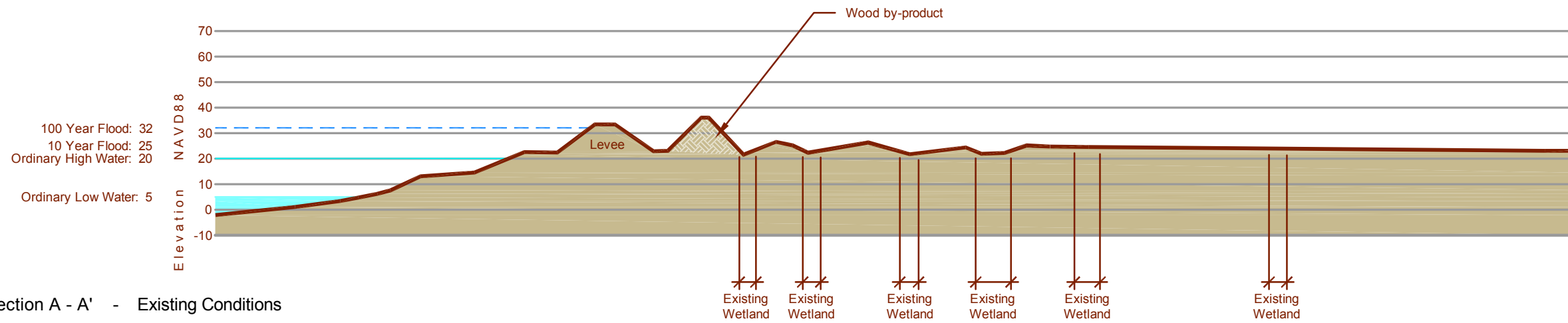
Source of Ordinary High Water Line: US Army Corps of Engineers. (November 2004). *Portland-Vancouver Harbor Information Package; Second Edition; Reservoir Regulation and Water Quality Section*. Retrieved March 13, 2012, from [http://www.nwd-wc.usace.army.mil/nwp/Reports/Portland\\_Harbor.pdf](http://www.nwd-wc.usace.army.mil/nwp/Reports/Portland_Harbor.pdf)

Source of 100 year Floodplain: GreenWorks, PC • ClearWater West • Fishman Environmental Services • Inter-Fluve • KPFF Consulting. (May 2004). *Willamette Riverbank Design Notebook: Portland, Oregon*. Retrieved March 13, 2012 from [http://www.fws.gov/filedownloads/ftp\\_OFWO/PortlandHarborNRDAdocs/13\\_ID51877.willamette\\_riverbank\\_design\\_notebook.pdf](http://www.fws.gov/filedownloads/ftp_OFWO/PortlandHarborNRDAdocs/13_ID51877.willamette_riverbank_design_notebook.pdf)

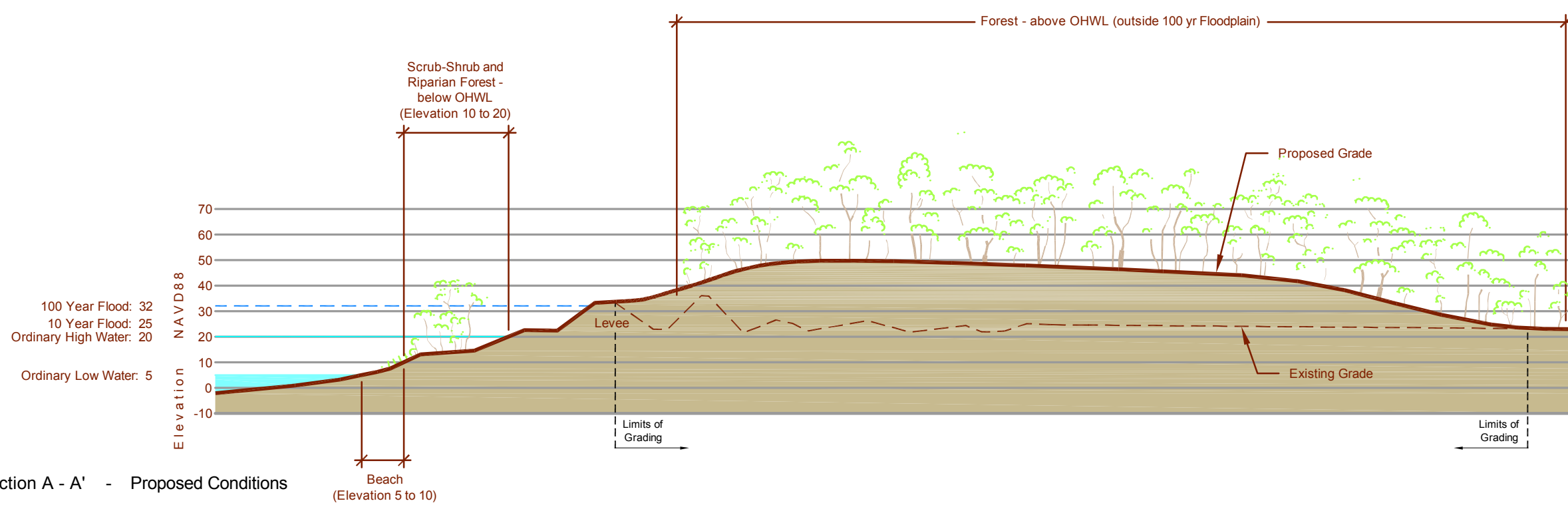
Aerial Photo: 45°37'18.88" N and 122°47'58.40" W. **Google Earth**. August 20, 2011.



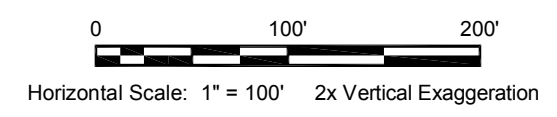


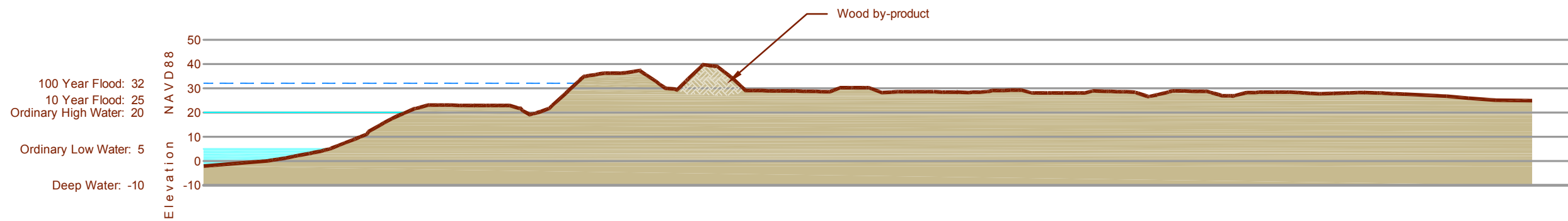


Cross Section A - A' - Existing Conditions

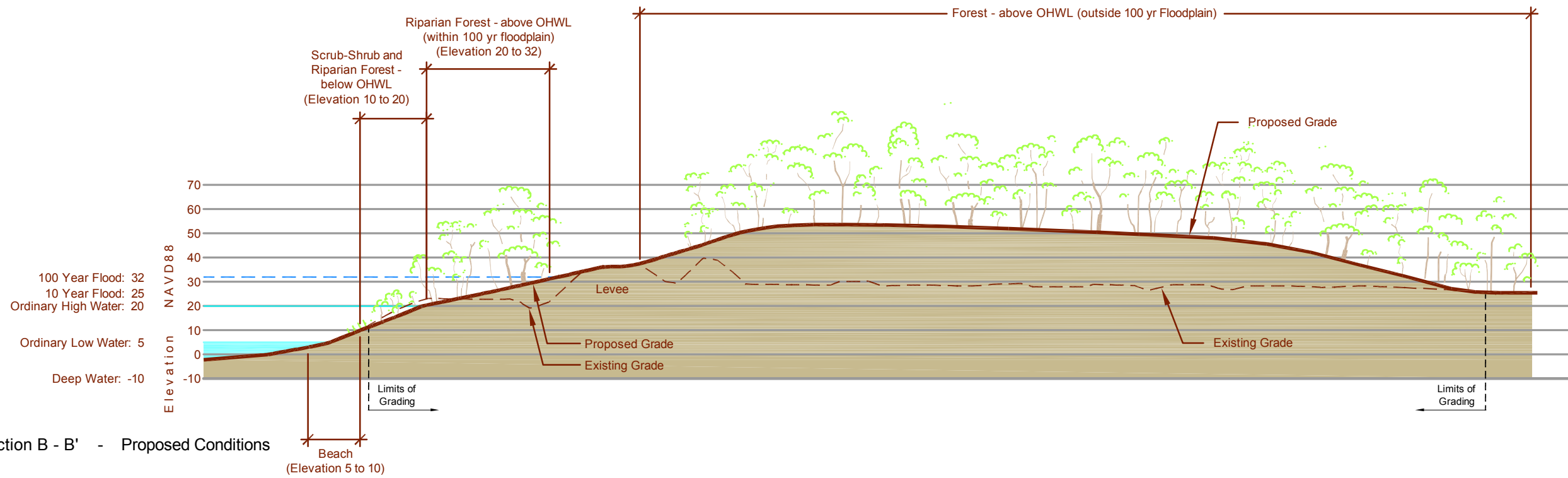


Cross Section A - A' - Proposed Conditions

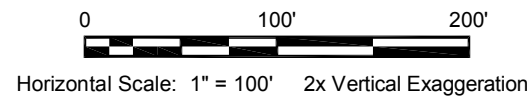


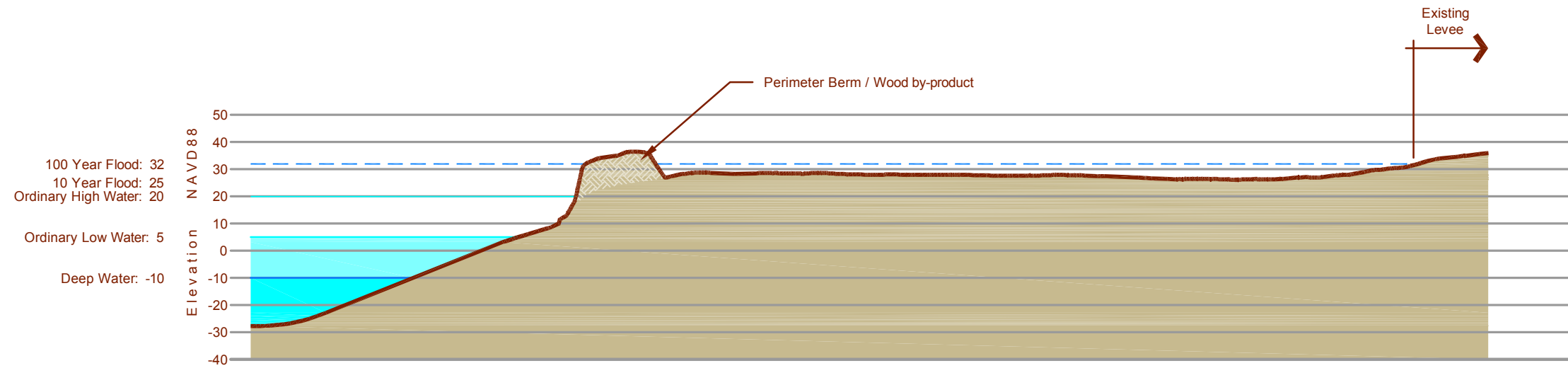


Cross Section B - B' - Existing Conditions

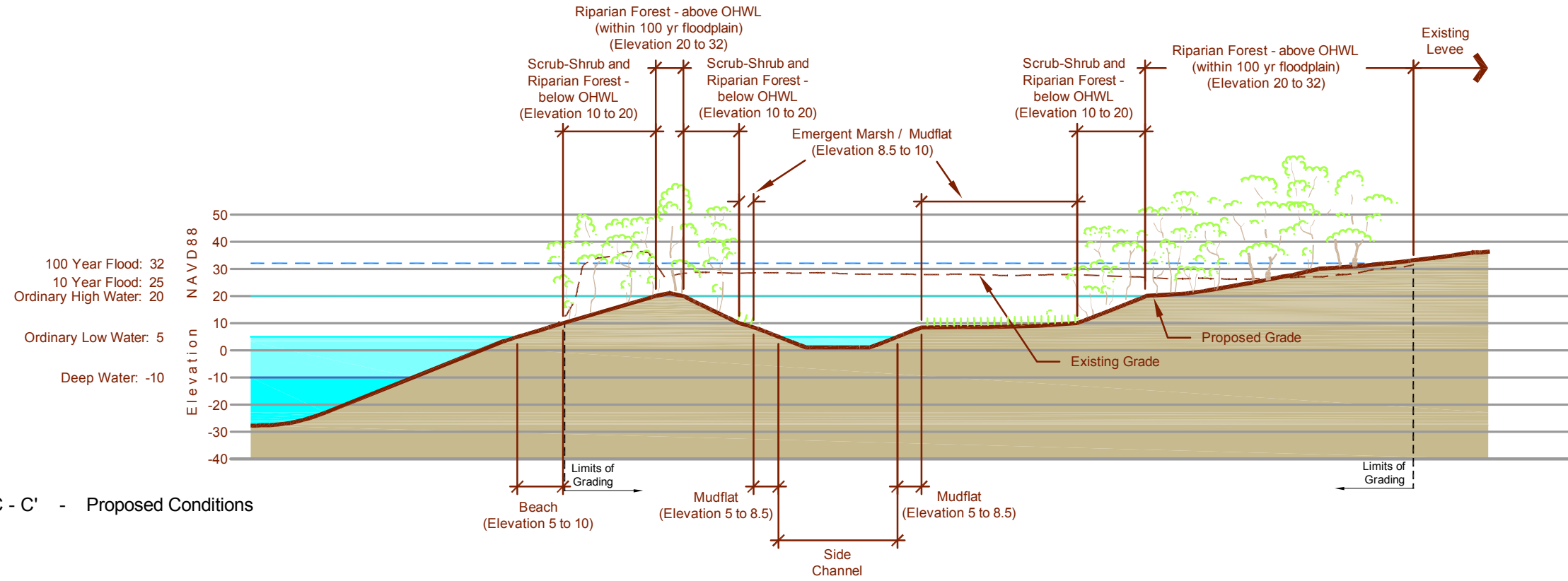


Cross Section B - B' - Proposed Conditions

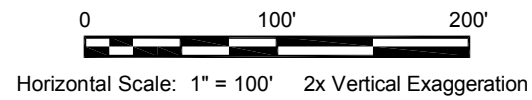


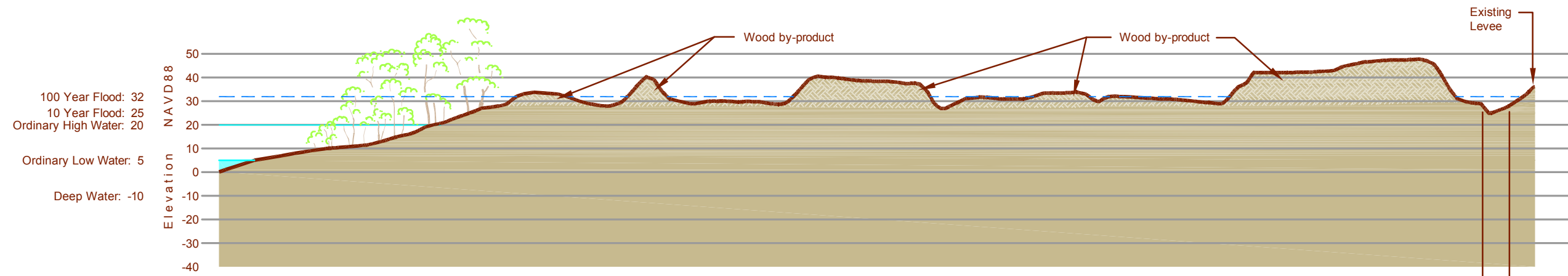


Cross Section C - C' - Existing Conditions

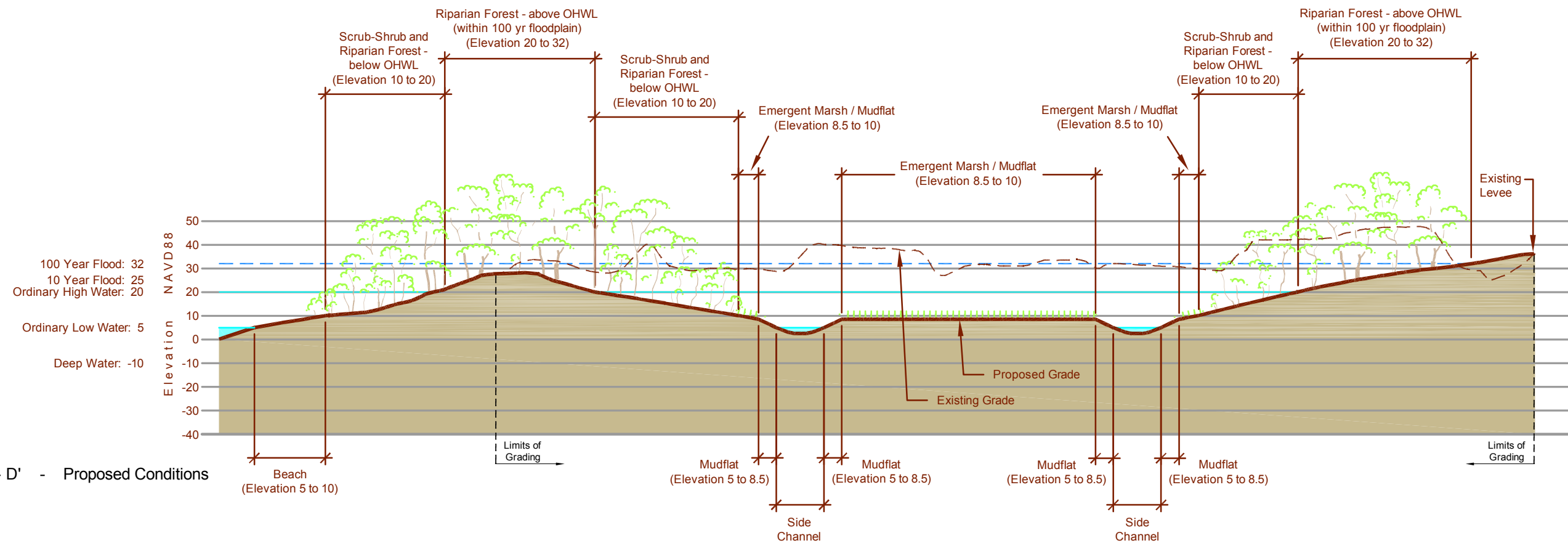


Cross Section C - C' - Proposed Conditions

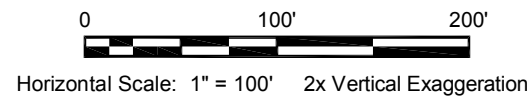


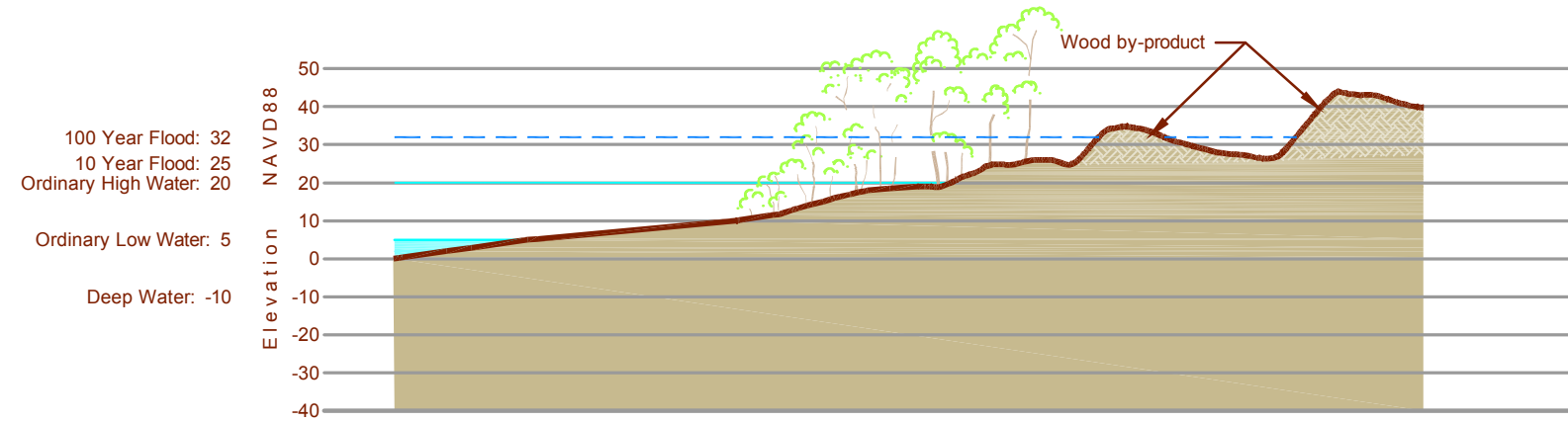


Cross Section D - D' - Existing Conditions

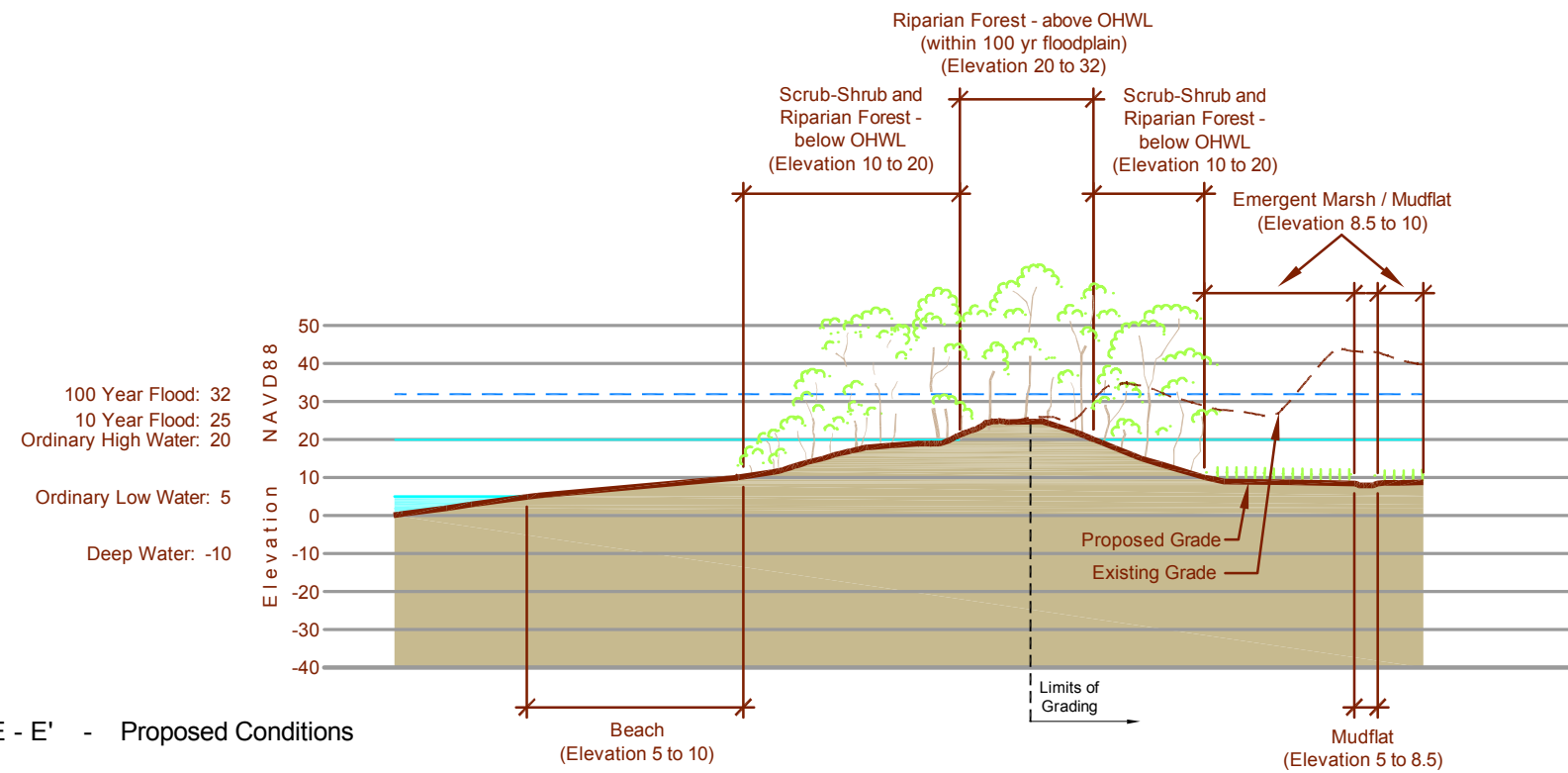


Cross Section D - D' - Proposed Conditions

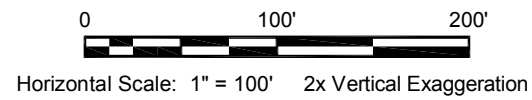


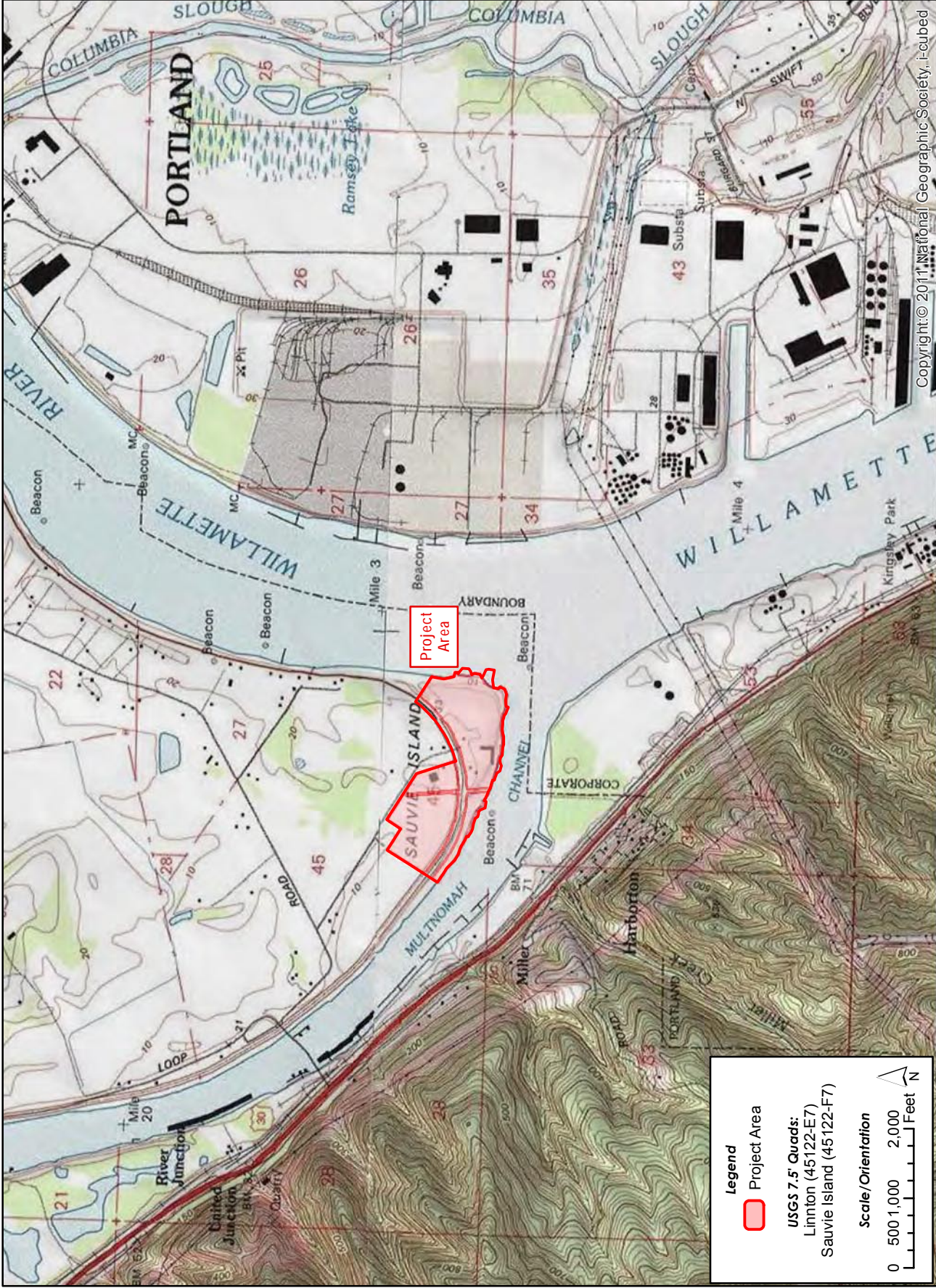


Cross Section E - E' - Existing Conditions



Cross Section E - E' - Proposed Conditions





Copyright © 2011, National Geographic Society, i-cubed



Figure 6  
 USGS 7.5' Quadrangle  
 January 24, 2013

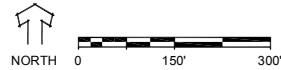




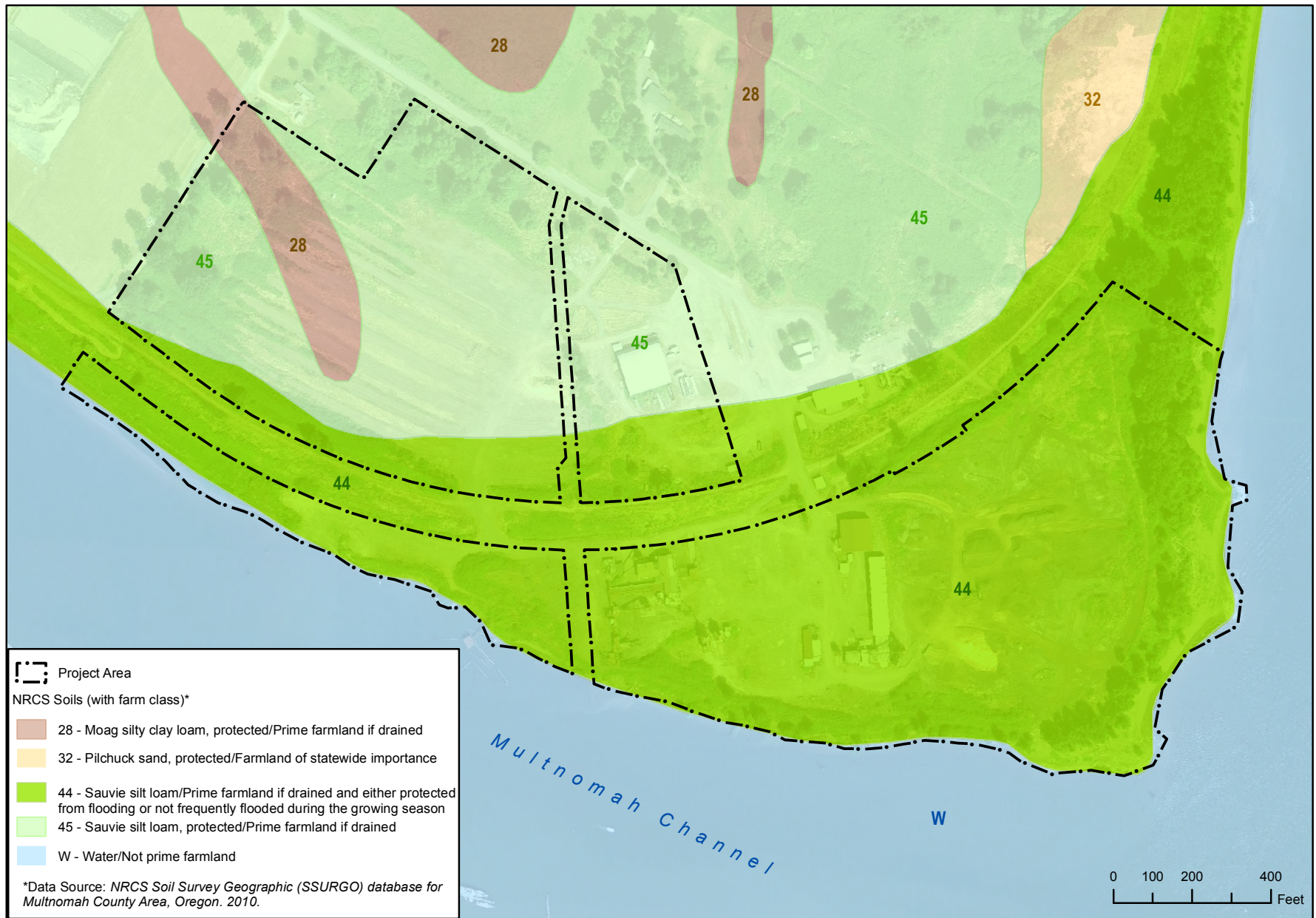
Source of Wetlands and Other Waters: Herlocker, Noah, Danni Kline, and Kimberly Degutis. *Wetland and Other Waters Delineation Report: Alder Creek Mill Restoration Site*. URS Corporation, Portland, OR. December 8, 2011.

Source of Riparian Zone and Wetland: Multnomah County; <http://www4.multco.us/lup/>

Aerial Photo: 45°37'18.88" N and 122°47'58.40" W. **Google Earth**. August 20, 2011.





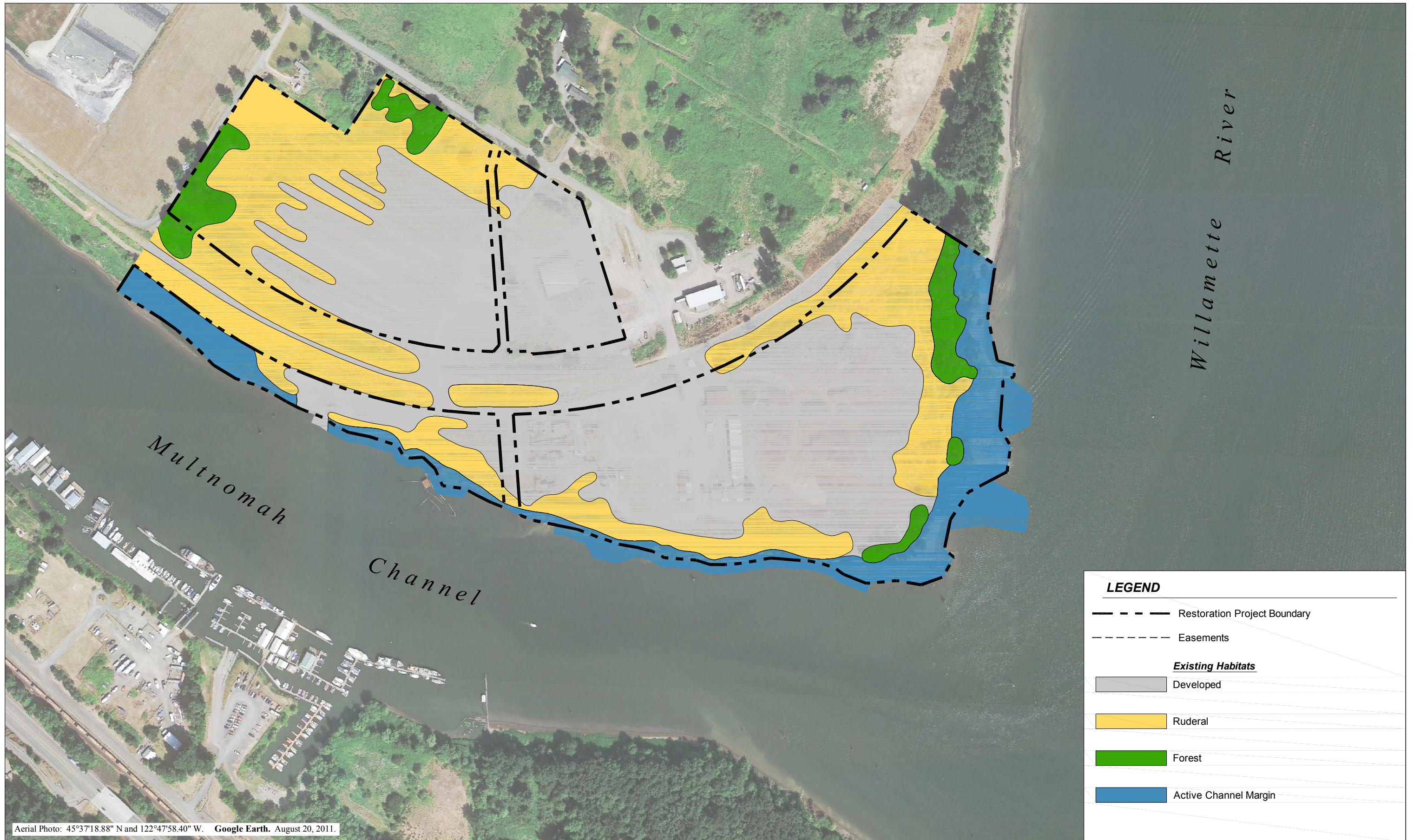


# WILDLANDS

Alder Creek Restoration Project



Figure 9  
Soils Map  
January 24, 2013









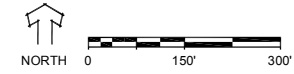
Aerial Photo: 45°37'18.88" N and 122°47'58.40" W. Google Earth. August 20, 2011.

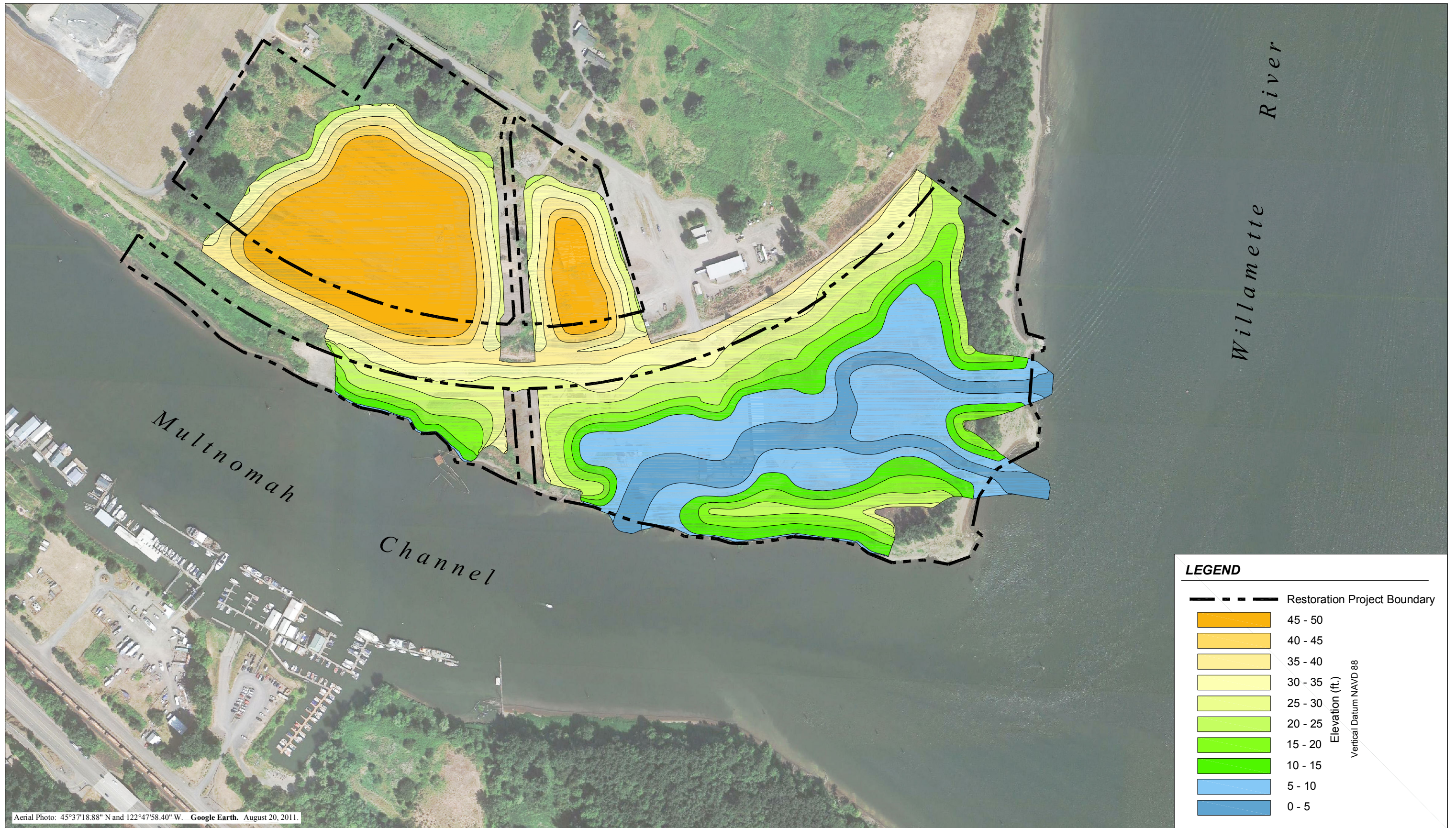
**LEGEND**

-  Restoration Project Boundary
-  Easements

**Existing Habitats**

-  Developed
-  Ruderal
-  Forest
-  Active Channel Margin

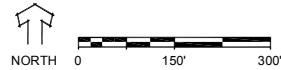






Source: Herlocker, Noah, Danni Kline, and Kimberly Degutis. *Wetland and Other Waters Delineation Report: Alder Creek Mill Restoration Site*. URS Corporation, Portland, OR. December 8, 2011.

Aerial Photo: 45°37'18.88" N and 122°47'58.40" W. Google Earth. August 20, 2011.





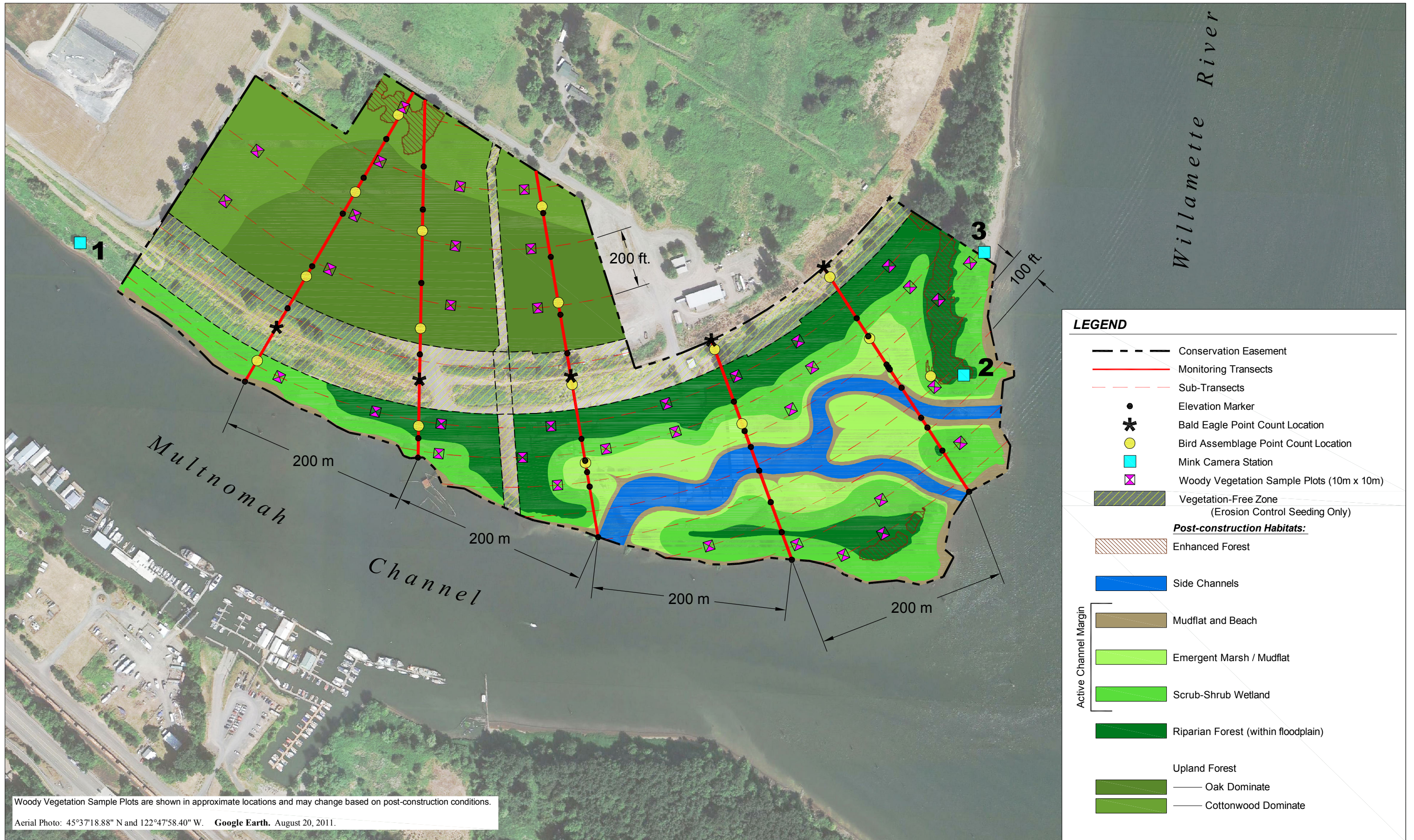
**WILDLANDS**

Alder Creek Restoration Project

Figure 13  
 NMFS Willamette/Lower Columbia Recovery Domain  
 January 24, 2013







Woody Vegetation Sample Plots are shown in approximate locations and may change based on post-construction conditions.

Aerial Photo: 45°37'18.88" N and 122°47'58.40" W. Google Earth. August 20, 2011.

**LEGEND**

- Conservation Easement
- Monitoring Transects
- - - Sub-Transects
- Elevation Marker
- \* Bald Eagle Point Count Location
- Bird Assemblage Point Count Location
- Mink Camera Station
- ◻ Woody Vegetation Sample Plots (10m x 10m)
- ▨ Vegetation-Free Zone (Erosion Control Seeding Only)

**Post-construction Habitats:**

- ▨ Enhanced Forest
- Side Channels
- Mudflat and Beach
- Emergent Marsh / Mudflat
- Scrub-Shrub Wetland
- Riparian Forest (within floodplain)

**Active Channel Margin**

- Upland Forest
- Oak Dominate
- Cottonwood Dominate

**Attachment 1**  
**Botanical Survey Report**



# **BOTANICAL SURVEY REPORT**

## **Alder Creek Mill Restoration Site**



**September 24, 2012**

*Prepared for:*

Portland Harbor Holdings II, LLC  
520 SW 6<sup>th</sup> Ave, Suite 914  
Portland, Oregon 97204

*Prepared by:*

**URS**

111 SW Columbia, Suite 1500  
Portland, Oregon 97201  
Project# 25697497

# TABLE OF CONTENTS

---

<b>1.0</b>	<b>Introduction.....</b>	<b>1-1</b>
1.1	Purpose of Report .....	1-1
1.2	Project Contacts .....	1-1
<b>2.0</b>	<b>Methods.....</b>	<b>2-1</b>
2.1	Vegetation Community Analysis.....	2-1
2.2	Special Status Plants Survey .....	2-1
2.2.1	Review of Existing Literature/Data .....	2-1
2.2.2	Special Status Plant Target List .....	2-1
2.2.3	Survey Method.....	2-1
2.3	Noxious Weeds Surveys .....	2-2
<b>3.0</b>	<b>Results .....</b>	<b>3-1</b>
3.1	Vegetation Communities .....	3-1
3.1.1	Riparian Forest .....	3-1
3.1.2	Ash Forest .....	3-1
3.1.3	Disturbed/Developed Areas .....	3-1
3.1.4	Low Dike Emergent Floodplain.....	3-1
3.1.5	Herbaceous, Flooded Shoreline .....	3-1
3.1.6	Shrub Community .....	3-1
3.2	Federal ESA-Listed Species .....	3-2
3.2.1	Water Howellia .....	3-1
3.2.2	Kincaid’s Lupine.....	3-1
3.2.3	Nelson’s Checker-mallow .....	3-1
3.3	Noxious Weeds .....	3-3
<b>4.0</b>	<b>Conclusion .....</b>	<b>4-1</b>
<b>5.0</b>	<b>References.....</b>	<b>5-1</b>

## Tables

1	State and Federal Listed Plants with Potential to Occur within the Study Area..	2-1
2	Noxious Weeds Observed within the Study Area.....	

## Figures

1	Vicinity Map
2	Existing Vegetation Communities

## Appendices

A	Plant Species Observation List
B	Site Photographs

## **1.1 Purpose of Report**

Portland Harbor Holdings II, LLC (PHH) contracted with URS Corporation (URS) to conduct a botanical survey at the Alder Creek Mill Site on the southern end of Sauvie Island, Multnomah County, Oregon (see Figure 1). The survey documented the various vascular plant species and vegetation communities onsite with particular emphasis on both special status plants and noxious weeds. This report summarizes the methodology and findings of the survey conducted by URS Corporation on June 13, 2012.

## **1.2 Project Contacts**

### Client

Julie Mentzer

[JMentzer@wildlandsinc.com](mailto:JMentzer@wildlandsinc.com)

Phone: 503-241-4895

Portland Harbor Holdings II, LLC

520 SW 6<sup>th</sup> Ave, Suite 914

Portland, Oregon 97204

### Botanist

Noah Herlocker, PWS

Senior Ecologist

[Noah.Herlocker@urscorp.com](mailto:Noah.Herlocker@urscorp.com)

Phone: 503-478-2768

URS

111 SW Columbia, Suite 1500

Portland, Oregon 97201

The botanical survey consisted of the following three components: an overall vegetation community analysis, a special status plant survey, and a noxious weed survey. This section describes the methods associated with each of these three components.

## 2.1 Vegetation Community Analysis

Using a combination of high-resolution aerial photography and site observations, the various general plant communities on site were delineated based on their constituent form (i.e. tree vs. ground covers), level of disturbance, and location inside or outside of the Sauvie Island Drainage Improvement Company (SIDIC) levee.

## 2.2 Special Status Plants Survey

### 2.2.1 Review of Existing Literature/Data

Available literature and data were gathered and reviewed prior to conducting the botanical survey. Literature included special status plant lists from the U. S. Fish and Wildlife Service (USFWS), the Oregon Department of Agriculture (ODA), and the Oregon Biodiversity Information Center (ORBIC).

### 2.2.2 Special Status Plant Target List

The special status plant survey targeted all federal- and state-listed *Endangered*, *Threatened*, and *Candidate* vascular plant species with potential to occur in the project area. These species, their state and federal status, and typical flowering period are shown in Table 1.

Species Name	Common Name	USFWS*	ODA*	Flowering Period
<i>Howellia aquatilis</i>	Water howellia	T	T	May - August
<i>Lupinus sulphureus</i> ssp. <i>kincaidii</i>	Kincaid's lupine	T	T	April - June
<i>Sidalcea nelsoniana</i>	Nelson's checker-mallow	T	T	Mid-May - July

Source: USFWS 2012, ODA 2012a

\* The letter "T" in this column designates the status of "Threatened"

### 2.2.3 Survey Method

URS conducted the botanical survey on June 13, 2012, when all federal- and state-listed plant species with potential to occur in the project area would be identifiable. The "intuitive controlled" survey method, regularly employed by the Bureau of Land Management and U.S. Forest Service, was used for the survey. This method consists of meandering through the study area with more intensive focus on habitats with a moderate to high potential to support one or more of the target plant species. To ensure that no special status plant was overlooked, URS compiled a species list for all plants identified during the survey (Appendix A). This list is not exhaustive; it represents plants identifiable during the month of June, which is generally considered the appropriate time to survey for the target plant species listed on Table 1. Shoreline plants that may become exposed during low summer river elevations were not observable in June due to high river levels; however, the target plant species are not known to grow in shoreline habitats.

### **2.3 Noxious Weeds Surveys**

The ODA regulates noxious weeds pursuant to OAR 603-052-1200. ODA categorizes noxious weeds into two primary groups: List A and List B (ODA, 2012b). List A weeds occur in Oregon in small enough infestations to make eradication or containment possible or their presence in neighboring states makes future occurrence in Oregon imminent. All List A weeds were to be mapped with a GPS unit if encountered during surveys. List B weeds are regionally abundant but may have limited distribution in some counties. List B weeds that were found commonly throughout the survey area were noted as present within applicable vegetation communities but they were not surveyed. Noxious weeds observed within the survey area are noted in red font in the observed plant species list in Appendix A.

### 3.1 Vegetation Communities

Six vegetation communities were documented at the site and are described briefly below. These communities are mapped on Figure 2

#### 3.1.1 Riparian Forest

This community is located within the floodplain along the east edge of the site, adjacent to the Willamette River. The community is influenced by daily tidal fluctuations, resulting in bar/swale microtopography with large amounts of tidal debris located within the swales inland of the outermost bar. The community is dominated by black cottonwood (*Populus balsamifera* ssp. *trichocarpa*), Pacific willow (*Salix lucida* ssp. *lasiandra*), Himalayan blackberry (*Rubus armeniacus*), reed canarygrass (*Phalaris arundinaceae*), and horsetail (*Equisetum arvense*).

#### 3.1.2 Ash Forest (Behind Levee)

This community is similar to the riparian forest community but it is located inside of the SIDIC levee and is therefore protected from flooding. The topography is less variable in this community, generally sloping to the northeast where surface water is impounded by road berms. Overstory vegetation is dominated by Oregon ash (*Fraxinus latifolia*) with some black cottonwood, but less cottonwood than found outside of the levee. The understory is dominated by common snowberry (*Symphoricarpos albus*), reed canarygrass, and trailing blackberry (*Rubus ursinus*). One-seed hawthorne (*Crataegus monogyna*), a non-native invasive shrub, is common in this community.

#### 3.1.3 Disturbed/Developed Areas

The majority of the site, as shown on Figure 2, was historically filled and developed in association with the now inactive mill. Only a small portion of the developed area is still regularly used for processing of wood waste. The remainder of this community has remained fallow for several years, in which time a variety of cosmopolitan, non-native plant species have begun to emerge through the historical fill. Vegetation is highly variable but common constituents include Himalayan blackberry, Scot's broom (*Cytisus scoparius*), and common non-native, weedy grasses and other forbs such as velvetgrass (*Holcus lanatus*), Mexican tea (*Chenopodium ambrosioides*), hairy cats-ear (*Hypochaeris radicata*), and common St. John's wort (*Hypericum perforatum*).

#### 3.1.4 Low, Diked Emergent Area

This community is characterized by a dense community of reed canarygrass located inside of the SIDIC levee and therefore protected from flooding. Pockets of Himalayan blackberry are located along the perimeter of this community and pockets of scouring rush (*Equisetum hyemale*) were observed in a few isolated areas. This habitat is seasonally inundated by direct precipitation and runoff from the log yard.

#### 3.1.5 Herbaceous Shoreline

This vegetation community is characterized by seasonally flooded shorelines that are dominated by reed canarygrass and Himalayan blackberry. This community contains false indigo bush (*Amorpha fruticosa*) which is native in the central and eastern United States but invasive in Oregon.

### 3.1.6 Riparian Shrubs

This community includes a few isolated pockets of native willows located along a ditch and shoreline area outside of the SIDIC levee. Overstory vegetation is dominated by Scouler's willow (*Salix scouleriana*) and Pacific willow. The understory is characterized by a mixture of Himalayan blackberry, reed canarygrass, and soft rush (*Juncus effuses*).

## 3.2 Federal ESA-Listed Species

Small areas of marginally suitable habitat conditions were found for federal ESA-listed species. However, while conducting ground surveys, no special status species were observed within the study area. This finding was corroborated by the original review of ORBIC GIS files, which revealed only one federal- or state-listed plant record within two miles of the study area, but no records located on site. Further species-specific detail is provided below.

### 3.2.1 Water howellia (*Howellia aquatilis*)

Water howellia was listed as threatened on July 14, 1994 (59 CFR 35860) and a recovery plan was published in September 1996 (USFWS, 1996). Water howellia is listed as Threatened under the Oregon ESA (OAR 603-073-0070).

This species is a Pacific Northwest endemic, with occurrences in Oregon, Washington, California, Idaho, and Montana (ODA, 2012a). It is typically found in small, seasonally inundated freshwater wetlands, oxbow sloughs, and on margins of marshy areas (ODA, 2012a).

ORBIC data show that several collections of water howellia were made from Sauvie Island between 1879 and 1886 (ORBIC, 2012); however, the populations are considered historical and the species was considered extirpated in Oregon until a population was found in Benton County in 2002 (ODA, 2012a).

Habitat for water howellia is present in the project area. URS conducted a targeted search of seasonally inundated areas within the ash forest habitat; however, no water howellia was observed.

### 3.2.2 Kincaid's Lupine (*Lupinus sulphureus ssp. kincaidii*)

Kincaid's lupine was listed as threatened on January 25, 2000 (65 FR 3875). A critical habitat determination was proposed for the species on November 2, 2005 (70 FR 66492). Kincaid's lupine is listed as Threatened in Oregon.

Kincaid's lupine is a regional endemic, occurring west of the Cascade Range, from Douglas County, Oregon north to Lewis County, Washington. Most of the populations occur within the Willamette Valley. The species occurs in upland prairies remnants and in ecotones between grassland and forest (OSA, 2012a).

There is no native upland prairie habitat for Kincaid's lupine in the project area. Much of the area is either wetland, forested, or disturbed. Degraded grassland communities were surveyed but no Kincaid's lupine was observed.

### 3.2.3 Nelson's Checker-mallow (*Sidalcea nelsoniana*)

Nelson's checker-mallow was listed as threatened on February 12, 1993 (50 FR 8235) and a recovery plan was published in September 30, 1998 (USFWS, 1998). This species is listed as Threatened under the Oregon ESA (OAR 603-073-0070).

Nelson's checker-mallow is a regional endemic, occurring from southern Benton County, Oregon north to Lewis County, Washington. The species occurs in uplands along streams and in meadows and other relatively open areas. It is generally found in areas where remnant native prairie or grassland communities persist, such as along fencerows, roadsides, and drainage swales (WNHP, 2000). Occasionally, the species occurs in the understory or margins of ash woodlands (ODA, 2012a).

There is little potential habitat for Nelson's checker-mallow in most of the project area since it is either wetland or disturbed land. URS focused on surveying the understory and edges of the ash forest habitat and along drainage ditches; no Nelson's checker-mallow was observed.

### 3.3 Noxious Weeds

Several species listed on the ODA noxious weed list were observed in the study area and are listed in Table 2.

Species Name	Common Name	Status	Associated Vegetation Community
<i>Buddleja davidii</i>	butterfly bush	List B	Disturbed areas and herbaceous shoreline
<i>Cirsium arvense</i>	Canada thistle	List B	All communities (widespread)
<i>Cirsium vulgare</i>	bull thistle	List B	Ash forest and disturbed areas
<i>Conium maculatum</i>	poison hemlock	List B	Riparian forest, ash forest, disturbed areas, and herbaceous shoreline
<i>Convolvulus arvensis</i>	field bindweed	List B	Disturbed areas and riparian forest
<i>Cytisus scoparius</i>	Scot's broom	List B	Disturbed areas, diked emergent areas, herbaceous shoreline, and shrub communities
<i>Geranium robertianum</i>	herb Robert	List B	Disturbed areas
<i>Hypericum perforatum</i>	common St. John's wort	List B	Disturbed areas
<i>Iris pseudacorus</i>	yellow flag	List B	Riparian forest
<i>Lythrum salicaria</i>	purple loosestrife	List B	Riparian forest
<i>Polygonum cuspidatum</i>	Japanese knotweed	List B	Riparian forest
<i>Rubus armeniacus</i>	Himalayan blackberry	List B	All communities (widespread)
<i>Senecio jacobaea</i>	tansy ragwort	List B	Ash forest and disturbed areas

Many of these species, including Himalayan blackberry, Scot's broom, and Canada thistle are widespread across all six vegetation communities. The others typically occur throughout the disturbed/developed portion of the site.



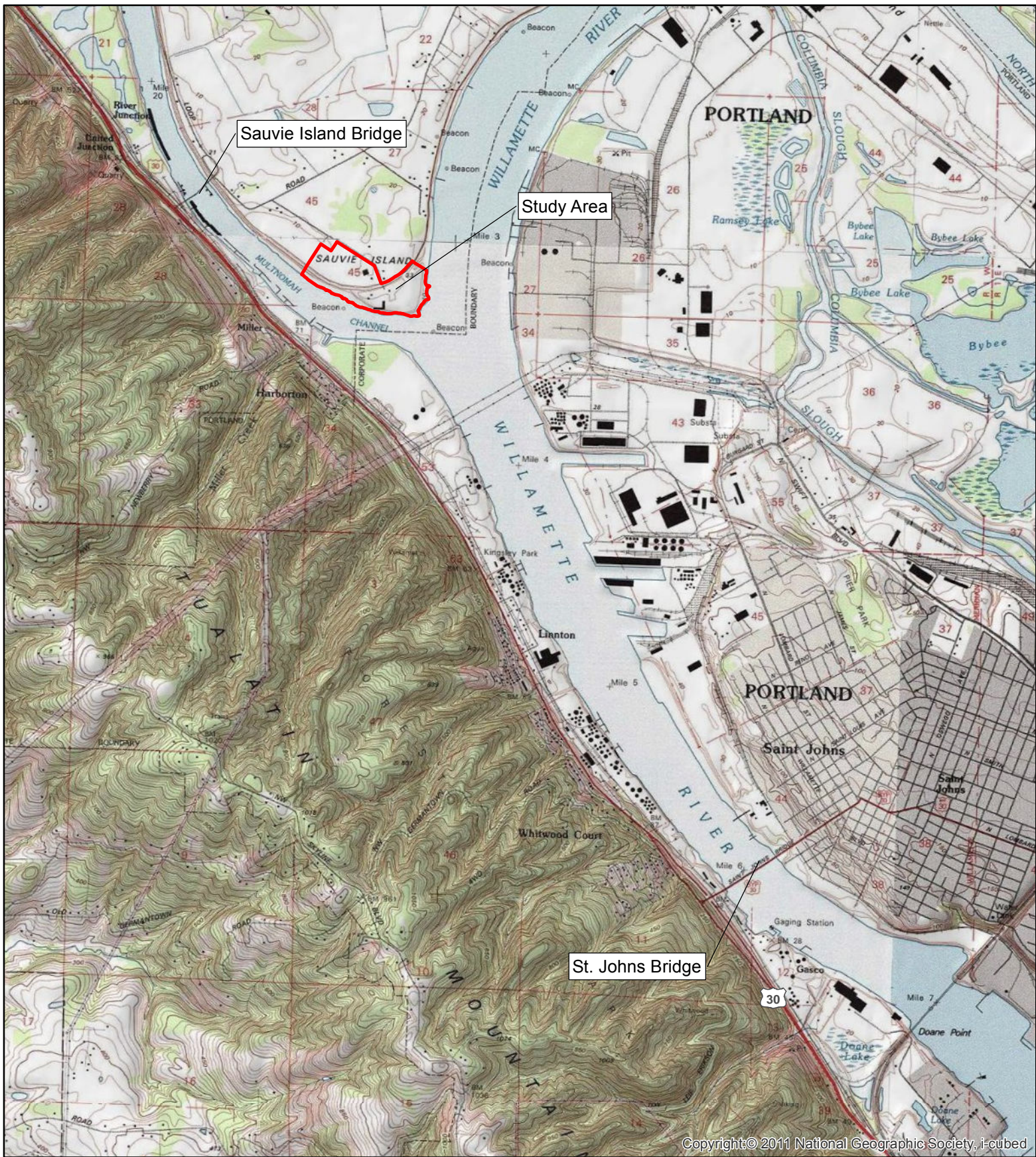
Only a few small areas of marginally-suitable habitat for the target rare plants were observed. In general, habitat conditions have been degraded by filling, development, and industrial use. No specific rare plant records are known for the site. Observations confirm that the site has very low potential for supporting the target rare plants. No rare plants were observed during field surveys.

Most of the understory vegetation throughout the site has been colonized by reed canarygrass and Himalayan blackberry. Despite this, riparian trees are largely in good health and dominated by native ashes and cottonwoods.

- ORBIC (Oregon Biodiversity Information Center). 2012. Data system search for rare, threatened, and endangered plants and animals in the vicinity of the Alder Creek Lumber Mill Project. Oregon Biodiversity Information Center. Portland State University. Portland, Oregon.
- ODA (Oregon Department of Agriculture). 2012a. Oregon listed plants. Accessed at: <http://cms.oregon.gov/ODA/PLANT/CONSERVATION/Pages/statelist.aspx>
- \_\_\_\_\_. 2012b. Noxious Weed Policy and Classification System 2012. Oregon Department of Agriculture, Noxious Weed Control Program. Salem, Oregon.
- USFWS (US Fish and Wildlife Service). 2012. Federally listed, Proposed, Candidate, delisted species and species of concern by Oregon County. Oregon Fish and Wildlife Office. Accessed at: <http://www.fws.gov/oregonfwo/Species/Lists/>.
- \_\_\_\_\_. 1998. Recovery Plan for the Threatened Nelson's Checker-mallow (*Sidalcea nelsoniana*). Available at: [http://ecos.fws.gov/docs/recovery\\_plans/1998/980930e.pdf](http://ecos.fws.gov/docs/recovery_plans/1998/980930e.pdf)
- \_\_\_\_\_. 1996. Water Howellia (*Howellia aquatilis*) Recovery Plan. Available at: [http://ecos.fws.gov/docs/recovery\\_plans/1996/960924.pdf](http://ecos.fws.gov/docs/recovery_plans/1996/960924.pdf)
- WNHP (Washington Natural Heritage Program). 2000. Field Guide to Washington's Rare Plants. Washington Department of Natural Resources and USDI Bureau of Land Management, Spokane District. Olympia, Washington.


# FIGURES

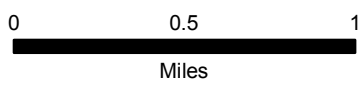
---



Copyright © 2011 National Geographic Society, i-cubed

**Legend**

 Study Area



**FIGURE 1  
VICINITY MAP**

Botanical Survey Report  
Alder Creek Mill Restoration Site  
Sauvie Island, Oregon



August 31, 2012



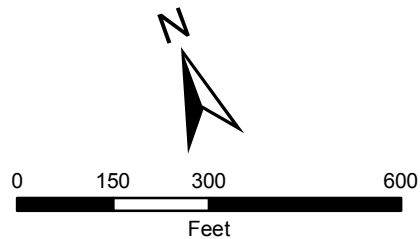
Data Source: Multnomah County NAIP, 2009.

**Legend**

- Botanical Study Area
- Developed Area
- 1 → Photo Location & Direction

**Vegetation Communities**

- Riparian Forest
- Ash Forest (behind levee)
- Disturbed/Developed Areas
- Low, Diked Emergent Area
- Herbacious Shoreline
- Riparian Shrubs



**FIGURE 2**  
**EXISTING VEGETATION COMMUNITIES**

Botanical Survey Report  
Alder Creek Mill Restoration Site  
Sauvie Island, Oregon



September 24, 2012



Species	Common Name	N/I	Status	Riparian Forest	Ash Forest	Disturbed Habitat/ Developed	Low Diked Emergent Floodplain	Herbaceous Shoreline	Shrub Community
<i>Agrostis gigantea</i>	redtop	i							*
<i>Agropyron repens</i>	quackgrass	i		*					
<i>Aira caryophyllea</i> var. <i>caryophyllea</i>	silver hairgrass	i				*			
<i>Alnus rubra</i>	red alder	n						*	
<i>Alopecurus pratensis</i>	meadow foxtail	i			*	*	*	*	
<i>Amorpha fruticosa</i>	false indigo bush	i		*				*	
<i>Anthemis cotula</i>	stinking mayweed	i				*			
<i>Arctium minus</i>	common burdock	i		*					
<i>Artemisia</i> sp.	wormwood	?				*			
<i>Betula papyrifera</i>	paper birch	n				*			
<i>Bidens frondosa</i>	devil's beggartick	n				*			
<i>Brassica</i> sp.	mustard	i		*					
<i>Bromus carinatus</i>	California brome	n			*				
<i>Bromus diandrus</i>	riggut brome	i				*			
<i>Bromus hordeaceus</i> ssp. <i>hordeaceus</i>	soft brome	i				*			
<i>Buddleja davidii</i>	butterfly bush	i	List B			*			
<i>Callitriche heterophylla</i>	two-headed water starwort	n				*			
<i>Cerastium glomeratum</i>	sticky chickweed	i				*			
<i>Chenopodium ambrosioides</i>	Mexican tea	i				*			
<i>Cichorium intybus</i>	common chicory	i				*			
<i>Cirsium arvense</i>	Canada thistle	i	List B	*	*	*	*	*	*
<i>Cirsium vulgare</i>	bull thistle	i	List B		*	*			
<i>Claytonia sibirica</i>	Siberian springbeauty	n		*					
<i>Conium maculatum</i>	poison hemlock	i	List B	*	*	*		*	
<i>Convolvulus arvensis</i>	field bindweed	i	List B	*		*			
<i>Conyza canadensis</i>	Canadian horseweed	i				*			
<i>Cornus nuttallii</i>	Pacific dogwood	n		*					

Species	Common Name	N/I	Status	Riparian Forest	Ash Forest	Disturbed Habitat/ Developed	Low Diked Emergent Floodplain	Herbaceous Shoreline	Shrub Community
<i>Cornus sericea</i>	red-osier dogwood	n		*					
<i>Corylus cornuta</i> var. <i>californica</i>	beaked hazelnut	n			*				
<i>Crataegus douglasii</i>	black hawthorn	n		*	*				
<i>Crataegus monogyna</i>	English hawthorn	i			*				
<i>Cynosurus echinatus</i>	hedgehog dogtail	i				*			
<i>Cytisus scoparius</i>	Scot's broom	i	List B			*	*	*	*
<i>Dactylis glomerata</i>	orchardgrass	i					*		
<i>Daucus carota</i>	Queen Anne's lace	i		*		*			
<i>Deschampsia</i> sp.	hairgrass	?				*			
<i>Deschampsia caespitosa</i>	tufted hairgrass	n				*			
<i>Digitalis purpurea</i>	foxglove	i				*			
<i>Dipsacus fullonum</i>	common teasel	i		*		*	*	*	
<i>Distichlis spicata</i>	saltgrass	n		*					
<i>Echinochloa crus-galli</i>	barnyard grass	i				*			
<i>Eleocharis ovata</i>	ovoid spikerush	n				*			
<i>Eleocharis palustris</i>	common spikerush	n				*			
<i>Epilobium ciliatum</i> ssp. <i>ciliatum</i>	ciliate willowherb	n		*		*			
<i>Equisetum arvense</i>	common horsetail	n		*			*		
<i>Equisetum hyemale</i> var. <i>affine</i>	common scouring rush	n		*					
<i>Eschscholtzia californica</i>	California poppy	n				*			
<i>Festuca arundinacea</i>	tall fescue	i				*			
<i>Fraxinus latifolia</i>	Oregon ash	n		*	*		*		
<i>Galium aparine</i>	common bedstraw	n		*	*	*	*	*	
<i>Geranium dissectum</i>	cut-leaf geranium	i				*			
<i>Geranium robertianum</i>	herb Robert	i	List B			*			
<i>Gnaphthium uliginosum</i>	marsh cudweed	i				*			
<i>Holcus lanatus</i>	common velvetgrass	i		*	*	*	*		*




Species	Common Name	N/I	Status	Riparian Forest	Ash Forest	Disturbed Habitat/ Developed	Low Diked Emergent Floodplain	Herbaceous Shoreline	Shrub Community
<i>Hypericum perforatum</i>	common St. John's wort	i	List B			*			
<i>Hypochaeris radicata</i>	hairy cat's ear	i				*			
<i>Impatiens capensis</i>	jewelweed	n		*					
<i>Iris pseudacorus</i>	yellow flag	i	List B	*					
<i>Iris</i> sp.	iris	?			*				
<i>Juncus acuminatus</i>	tapertip rush	n				*			
<i>Juncus bufonius</i>	toad rush	n				*			
<i>Juncus effusus</i>	soft rush	?			*	*			*
<i>Juncus tenuis</i>	poverty rush	n				*			
<i>Lactuca serriola</i>	prickly lettuce	i				*			
<i>Lapsana communis</i>	common nipplewort	i		*					
<i>Leucanthemum vulgare</i>	ox-eye daisy	i		*		*		*	
<i>Lolium perenne</i> ssp. <i>multiflorum</i>	Italian ryegrass	i				*		*	
<i>Lotus corniculatus</i>	bird's-foot trefoil	i		*		*			
<i>Lotus micranthus</i>	desert deervetch	n				*			
<i>Lupinus polycarpus</i>	small-flowered lupine	n				*			
<i>Lupinus polyphyllus</i>	bigleaf lupine	n				*			
<i>Lupinus rivularis</i>	riverbank lupine	n				*			
<i>Lythrum portula</i>	spatula-leaf loosestrife	i				*			
<i>Lythrum salicaria</i>	purple loosestrife	i	List B	*					
<i>Madia glomerata</i>	mountain tarweed	n				*			
<i>Matricaria discoidea</i>	pineapple weed	i				*			
<i>Medicago lupulina</i>	black medick	i				*			
<i>Mycelis muralis</i>	wall lettuce	i		*	*				
<i>Myriophyllum</i> sp.	poss. green parrot's feather	i				*			
<i>Oemleria cerasiformis</i>	osoberry	n		*					
<i>Parentucellia viscosa</i>	yellow glandweed	i				*			
<i>Phalaris arundinacea</i> var. <i>arundinacea</i>	reed canarygrass	i		*	*	*	*	*	


Species	Common Name	N/I	Status	Riparian Forest	Ash Forest	Disturbed Habitat/ Developed	Low Diked Emergent Floodplain	Herbaceous Shoreline	Shrub Community
<i>Pinus ponderosa</i>	ponderosa pine	n				*			
<i>Plagiobothrys</i> sp.	popcorn flower	?				*			
<i>Plantago lanceolata</i>	English plantain	i				*			
<i>Plantago major</i>	common plantain	i		*					
<i>Poa annua</i>	annual bluegrass	i				*			
<i>Poa palustris</i>	fowl bluegrass	n			*				
<i>Poa pratensis</i>	Kentucky bluegrass	i					*		
<i>Polygonum aviculare</i>	prostrate knotweed	i				*			
<i>Polygonum cuspidatum</i>	Japanese knotweed	i	List B	*					
<i>Polygonum</i> sp.	lady's thumb					*			
<i>Polystichum munitum</i>	common swordfern	n		*	*				
<i>Populus trichocarpa</i>	black cottonwood	n		*	*	*			*
<i>Pseudognaphalium stramineum</i>	cottonbatting plant	n				*			
<i>Ranunculus occidentalis</i>	western buttercup	n					*		
<i>Ribes divaricatum</i> var. <i>divaricatum</i>	straggly gooseberry	n		*					
<i>Robinia pseudoacacia</i>	black locust	i						*	
<i>Rorippa curvisiliqua</i>	western yellowcress	n				*			
<i>Rosa multiflora</i>	rambler rose	i				*			
<i>Rosa nutkana</i> var. <i>nutkana</i>	Nootka rose	n		*				*	
<i>Rubus armeniacus</i>	Himalayan blackberry	i	List B	*	*	*	*	*	*
<i>Rubus leucodermis</i>	blackcap raspberry	n		*					
<i>Rubus ursinus</i>	trailing blackberry	n		*	*	*			
<i>Rumex acetosella</i>	sheep sorrel	i							
<i>Rumex crispus</i>	curly dock	i		*		*			
<i>Rumex obtusifolius</i>	bitter dock	i			*	*			
<i>Rumex</i> sp.	dock	?		*	*				
<i>Salix fluviatilis</i>	Columbia River willow	n		*					


Species	Common Name	N/I	Status	Riparian Forest	Ash Forest	Disturbed Habitat/ Developed	Low Diked Emergent Floodplain	Herbaceous Shoreline	Shrub Community
<i>Salix lasiandra</i> var. <i>lasiandra</i>	Pacific willow	n		*				*	*
<i>Salix sitchensis</i>	Sitka willow	n				*			*
<i>Salix scouleriana</i>	Scouler's willow	n		*	*	*		*	*
<i>Sambucus racemosa</i> var. <i>arborescens</i>	red elderberry	n		*	*				
<i>Senecio jacobaea</i>	tansy ragwort	i	List B		*	*			
<i>Senecio vulgaris</i>	common groundsel	i		*		*			
<i>Solanum dulcamara</i>	climbing nightshade	i			*				
<i>Sonchus asper</i>	prickly sowthistle	i				*			
<i>Spiraea douglasii</i>	rose spirea	n			*				
<i>Stachys</i> sp.	hedgenettle	n		*					
<i>Symphoricarpos albus</i> var. <i>laevigatus</i>	common snowberry	n		*	*			*	
<i>Tanacetum vulgare</i>	common tansy	i		*		*	*		
<i>Taraxacum officinale</i>	common dandelion	i				*			
<i>Toxicodendron diversilobum</i>	poison oak	n		*					
<i>Trifolium arvense</i>	rabbit-foot clover	i				*			
<i>Trifolium dubium</i>	suckling clover	n				*			
<i>Trifolium hybridum</i>	alsike clover	i				*			
<i>Trifolium repens</i>	white clover	i				*			
<i>Typha latifolia</i>	common cattail	n				*			
<i>Urtica dioica</i> ssp. <i>gracilis</i>	stinging nettle	n		*	*	*			
<i>Verbascum blattaria</i>	moth mullein	i				*			
<i>Verbascum thapsus</i>	common mullein	i		*		*			
<i>Veronica americana</i>	American brooklime	n		*					
<i>Vicia americana</i> var. <i>americana</i>	American vetch	n			*				
<i>Vicia cracca</i>	bird vetch	i				*			
<i>Vicia sativa</i> var. <i>angustifolia</i>	common vetch	i				*			*

Species	Common Name	N/I	Status	Riparian Forest	Ash Forest	Disturbed Habitat/ Developed	Low Diked Emergent Floodplain	Herbaceous Shoreline	Shrub Community
<i>Vicia tetrasperma</i>	lentil vetch	i				*			
<i>Vulpia myuros</i>	rattail fescue	i				*			
<i>Vulpia</i> sp.	fescue	?				*			





<b>Project:</b> Alder Creek Mill Restoration Site		<b>APPENDIX B</b>	<b>URS Project No.</b> 25697497
<b>Photo No.</b> <b>1</b>	<b>Date:</b> June 13, 2012		
<b>Direction Photo Taken:</b> Southwest			
<b>Description:</b> Typical riparian forest community dominated by black cottonwood, Himalayan blackberry, reed canarygrass, and cleavers. This area contained significant flood debris.			

<b>Photo No.</b> <b>2</b>	<b>Date:</b> June 13, 2012		
<b>Direction Photo Taken:</b> Southeast			
<b>Description:</b> Typical ash forest community dominated by a mix of Oregon ash and black cottonwood in the overstory with snowberry, reed canarygrass, and trailing blackberry in the understory.			

<b>Photo No.</b> <b>3</b>	<b>Date:</b> June 13, 2012	
<b>Direction Photo Taken:</b>  North		
<b>Description:</b>  Disturbed conditions in the wood waste area. This area was dominated by weedy species, including Himalayan blackberry and Scot's broom and non-native grasses such as velvetgrass.		

<b>Photo No.</b> <b>4</b>	<b>Date:</b> June 13, 2012	
<b>Direction Photo Taken:</b>  Northwest		
<b>Description:</b>  Typical low diked emergent floodplain area characterized by a dominance of herbaceous weedy species (primarily reed canarygrass).		

<b>Photo No.</b> <b>5</b>	<b>Date:</b> June 13, 2012	
<b>Direction Photo Taken:</b>  Northwest		
<b>Description:</b>  Typical herbaceous, active floodplain community along shoreline. Area is densely vegetated with reed canarygrass and Himalayan blackberry.		

<b>Photo No.</b> <b>6</b>	<b>Date:</b> June 13, 2012	
<b>Direction Photo Taken:</b>  Southeast		
<b>Description:</b>  Typical shrub community along edge of the disturbed wood waste area. Dominant shrubs include willows and Himalayan blackberry.		



# **Attachment 2**

## **Baseline Report**



Photo credit: Julie Gentry & USFWS



*Final Report:*  
Alder Creek Restoration Site

# Wildlife Baseline Monitoring Surveys

Submitted to:  
Portland Harbor Holdings II, LLC  
520 SW 6<sup>th</sup> Avenue, Suite 1210  
Portland, OR 97204

Submitted by:  
Turnstone Environmental Consultants, Inc.  
PO Box 83362  
Portland, OR 97283

Date:  
March 17, 2014

# TABLE OF CONTENTS

<b>List of Figures .....</b>	<b>3</b>
<b>Introduction.....</b>	<b>4</b>
<b>Project Overview .....</b>	<b>4</b>
Survey Area .....	4
Statement of Work.....	5
<i>Bird Assemblages</i> .....	5
<i>Eagle Surveys</i> .....	5
<i>Mink Monitoring</i> .....	5
<b>Methodology .....</b>	<b>5</b>
Bird Assemblages.....	5
Eagle Surveys.....	6
Mink Monitoring .....	6
<i>Camera Traps</i> .....	6
<i>Visual Surveys</i> .....	6
<b>Results.....</b>	<b>6</b>
Bird Assemblages.....	6
Eagle Surveys.....	9
Mink Monitoring .....	10
<i>Camera Traps</i> .....	10
<i>Visual Surveys</i> .....	11
<b>Conclusions &amp; Recommendations.....</b>	<b>11</b>
<b>References.....</b>	<b>12</b>
<b>Appendix A: Personnel Biographies .....</b>	<b>13</b>
Jeff Reams.....	13
Daphne Swope.....	19
Devin Sahl .....	21
Russell Namitz.....	25
<b>Appendix B: Data Tables.....</b>	<b>27</b>
Point Count Data Summary Table.....	27
Eagle Data Summary Table.....	29
Mink Camera Data Summary Table.....	30
Mink Visual Survey Data Summary Table.....	31



## LIST OF FIGURES

Figure 1. Survey Area, including point count locations and mink camera stations.....	4
Figure 2. Species Abundance and Species Richness, by visit.....	7
Figure 3. Top species counted in point count surveys, by total overall abundance .....	7
Figure 4. Percentage of native and nonnative species, by visit date .....	8
Figure 5. Percentage of native and nonnative species over all visits.....	8
Figure 6. Estimated locations of eagle observations, May through August.....	9
Figure 7. Mean bald eagle and other raptor observations, by month.....	10
Figure 8. Mean bald Eagle and other raptor observations, by time of day.....	10



## INTRODUCTION

Portland Harbor Holdings II, LLC. (PHH) retained the services of Turnstone Environmental Consultants, Inc. (Turnstone) to perform wildlife baseline monitoring surveys on Sauvie Island in Portland, Oregon in support of the Alder Creek Restoration Project (Project). Surveys were conducted for bird assemblages, bald eagles (*Haliaeetus leucocephalus*) and other raptors, and American mink (*Neovision vision*, "mink") located within and adjacent to the survey area.

## PROJECT OVERVIEW

### Survey Area

The survey area is comprised of a 64-acre sawmill complex, located at the southernmost tip of Sauvie Island at the confluence of Multnomah Channel and the Willamette River (Figure 1).

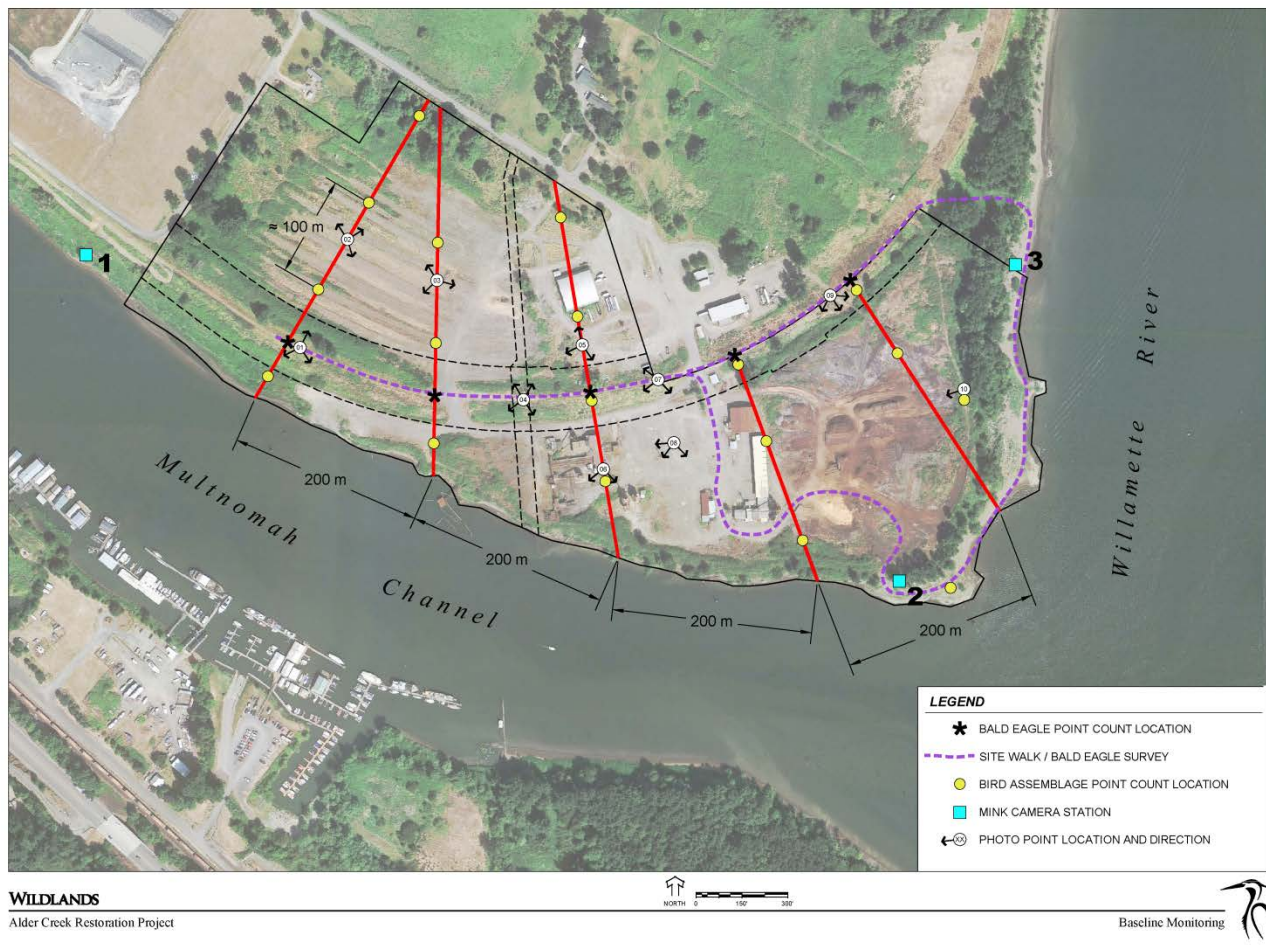


Figure 1. Survey Area, including point count locations and mink camera stations

## **Statement of Work**

### **Bird Assemblages**

Bird assemblage surveys were conducted as an effective way to gather information about habitat function. Turnstone conducted on-site point counts along transects in order to characterize bird species composition representative of pre-construction site conditions for comparison with post-restoration habitats on the site. The data will be used to document species occurrences, proportionate species abundances, species richness, and how bird assemblages change over time.

### **Eagle Surveys**

Bald eagle surveys were conducted to obtain bald eagle presence/absence and behavior (if present). The objective is to document any changes in bald eagle use or behavior at the site over time.

### **Mink Monitoring**

Scent stations with remote cameras were established to obtain mink presence/absence along the shoreline of the Site. Visual searches for tracks, scat, and den sites were also conducted in designated areas in search of potential mink use.

## **METHODOLOGY**

Surveys were conducted from May to August 2013 by qualified personnel. Turnstone Project Manager, Jeff Reams, worked with experienced wildlife biologists Daphne Swope, Devin Sahl, and Russell Namitz to complete the baseline monitoring surveys. Professional resumes for project personnel are located in Appendix A.

### **Bird Assemblages**

Turnstone conducted on-site point counts along transects at least once per month in May, June, and July 2013, following the habitat-based protocol outlined by Huff, et al (2000). A Turnstone biologist began audio visual surveys near sunrise and finished at approximately 10:00 am. Surveys were conducted only under favorable conditions; if high winds, heavy rain, or other conditions would result in poor bird detectability then the survey would be postponed. Point counts were conducted at each designated station, approximately every 100 meters along each transect, unless wood by-product processing made surveying a particular station infeasible. All birds detected during the five-minute survey at each station were recorded, with separate counts for adult and juvenile birds. Detections of birds were categorized according to the following specifications:

<b>Typical detection 0 to 50 m:</b>	birds up to top of vegetation/canopy, <50 m from the station center point
<b>Typical detection &gt; 50 m:</b>	birds up to top of vegetation or canopy, >50 m from the station center point
<b>Fly-over associated:</b>	birds above top of vegetation or canopy, but in your judgment are associated with the local habitat.
<b>Fly-over independent:</b>	birds above top of vegetation or canopy, and in your



judgment are unassociated with the local habitat

## **Eagle Surveys**

Turnstone and Wildlands biologists conducted raptor monitoring surveys at vantage point(s) with the best visibility for observing bald eagle use at the project site. Surveys were conducted for a total of two hours, varying between dawn and dusk and other daylight hours. Surveys were conducted along the prescribed survey route, including ten minutes at each of the five monitoring stations. Surveys were performed once per month in February, March, and April 2013 and once per week in May, June, July, and August 2013. Behavioral characteristics were recorded when possible for all observations. General location of the observation was mapped over satellite imagery by the biologist.

## **Mink Monitoring**

### **Camera Traps**

Camera traps (using remote, motion-sensor cameras) and scent stations (using mink bait) were set at three separate locations along the shoreline of the survey area on April 11, 2013. Camera photos were analyzed by Wildlands personnel in May, and by Turnstone personnel in June, July, and August. Cameras were visited twice per month in order to download photos and reapply mink bait. The downloaded photos were then individually searched for captured photos of mink and other wildlife species. The numbers of individuals of each species were recorded and at least one photo of each species observed was archived.

### **Visual Surveys**

Visual surveys for tracks, scat, and den sites were conducted along the shoreline of the survey area two times per month in May, June, July, and August 2013. Identification characteristics that were investigated are summarized below (GDNR 2013).

- Scat:** Dark brown or black, 5-6 inches long, roughly cylindrical, with occasional segmentation and bits of fur or bone; found on beaver lodges, rocks, logs, and near dens
- Den Sites:** Burrow holes in streams/riverbanks are roughly four inches in diameter
- Tracks:** Nearly round with a width of 1¼ - 1¾ inches for the front feet and 2¼ inches long for the hind feet. Stride length is 12-26 inches apart and both hind and forefeet prints almost touch.

## **RESULTS**

### **Bird Assemblages**

During the 2013 survey period, Turnstone conducted a total of four point counts. A summary table of the data collected is located in Appendix B. Total abundance and species richness were highest on May 28 (Figure 2). The most abundant species overall were song sparrow (*Melospiza melodia*), American goldfinch (*Spinus tristis*), brown-headed cowbird (*Molothrus ater*), European starling (*Sturnus vulgaris*), barn swallow (*Hirundo rustica*), common yellowthroat (*Geothlypis trichas*), American robin (*Turdus migratorius*), cliff swallow (*Petrochelidon pyrrhonota*), spotted towhee (*Pipilo maculatus*), and osprey (*Pandion haliaetus*). Abundance by visit for these species is detailed in Figure 3. The average percentage of nonnative



individuals counted for the four visits was nine percent (Figure 5). The proportion of nonnative individuals was slightly higher for the May 28 visit (10%) and slightly lower in June (8%) and July (7%; Figure 4).

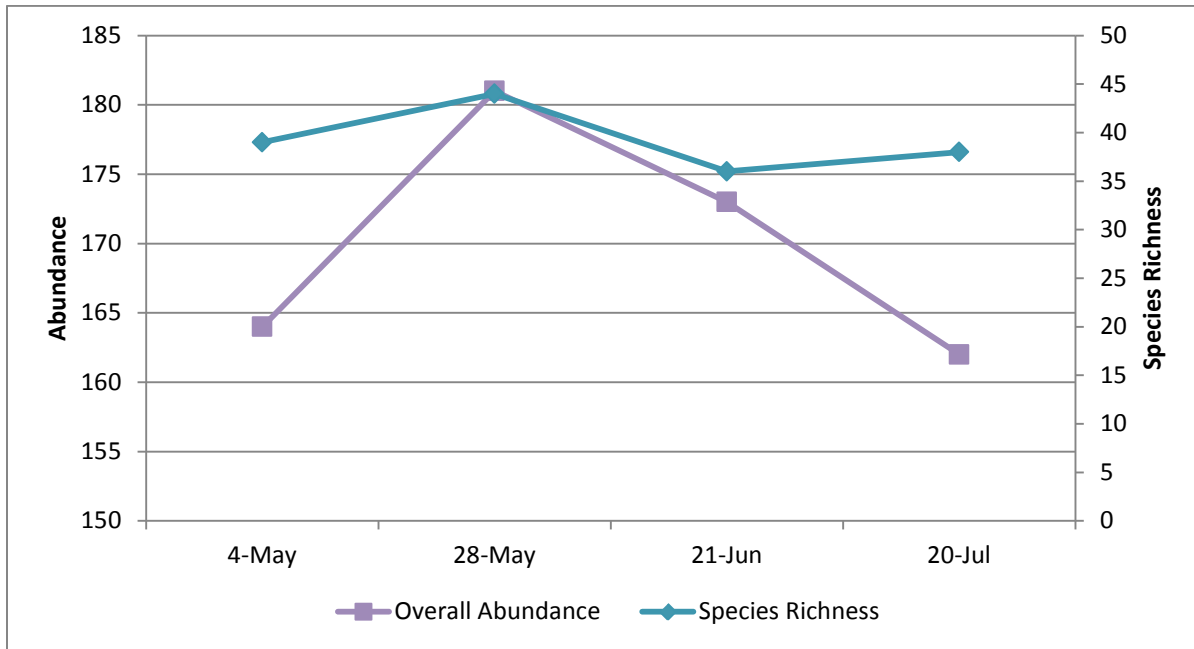


Figure 2. Species Abundance and Species Richness, by visit

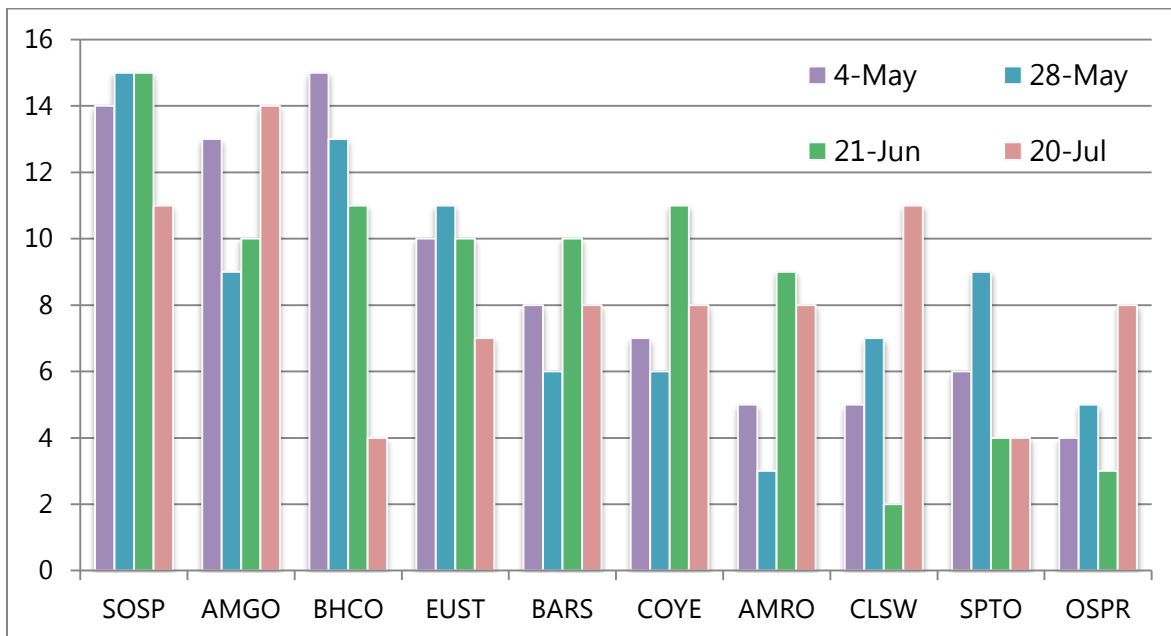


Figure 3. Top species counted in point count surveys, by total overall abundance





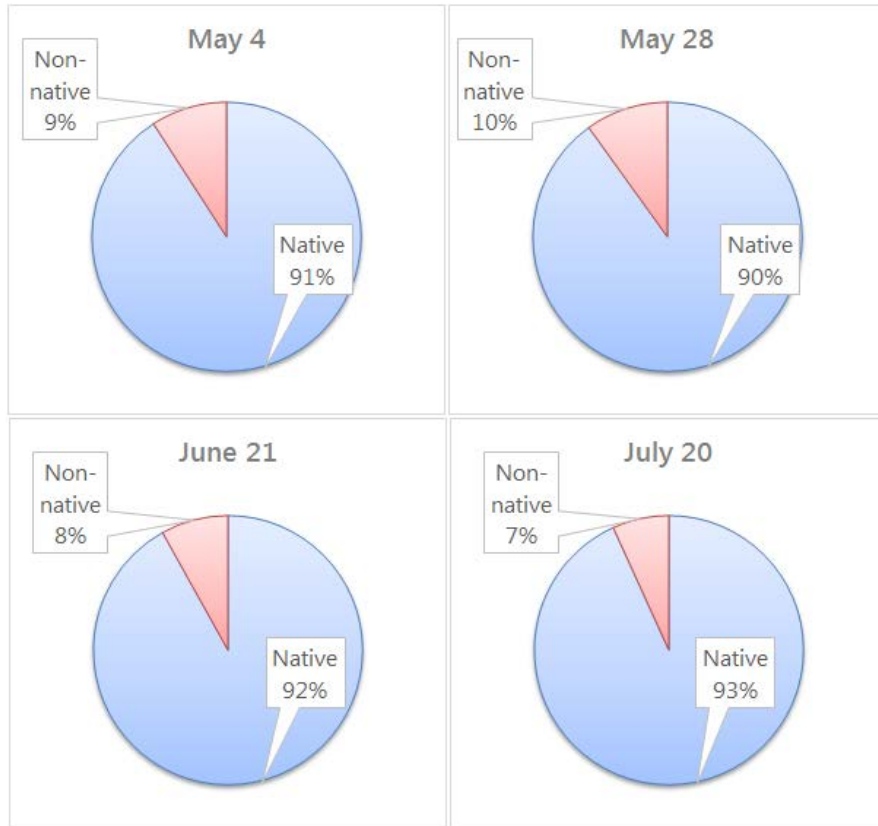


Figure 4. Percentage of native and nonnative species, by visit date

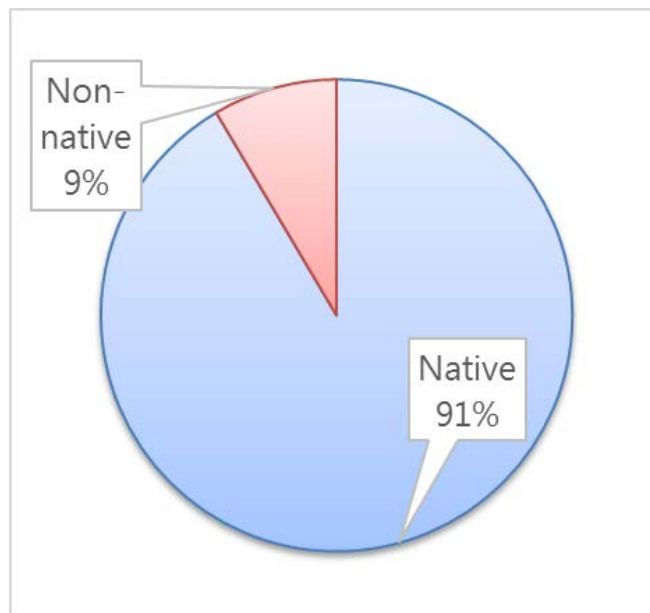


Figure 5. Percentage of native and nonnative species over all visits

## Eagle Surveys

During the 2013 survey period, 21 total eagle surveys were conducted. Wildlands personnel conducted four surveys between February and April, and Turnstone conducted 17 surveys between May and August. One survey conducted on April 11 was not included in data analysis as it did not follow the standardized protocol. Seventeen total bald eagle sightings and 163 raptor sightings were recorded. The spatial distribution of eagle observations recorded in May through August is displayed in Figure 6. Raptor species observed included osprey, turkey vulture (*Cathartes aura*), red-tailed hawk (*Buteo jamaicensis*), and peregrine falcon (*Falco peregrinus*). Although observations of other raptors was generally higher later in the survey season, eagle observations was generally higher earlier in the season (Figure 7). Visits that began in the mid-afternoon or early evening yielded higher bald eagle observations than those that took place earlier in the day and raptor observations peaked in the late morning (Figure 8).



Figure 6. Estimated locations of eagle observations, May through August

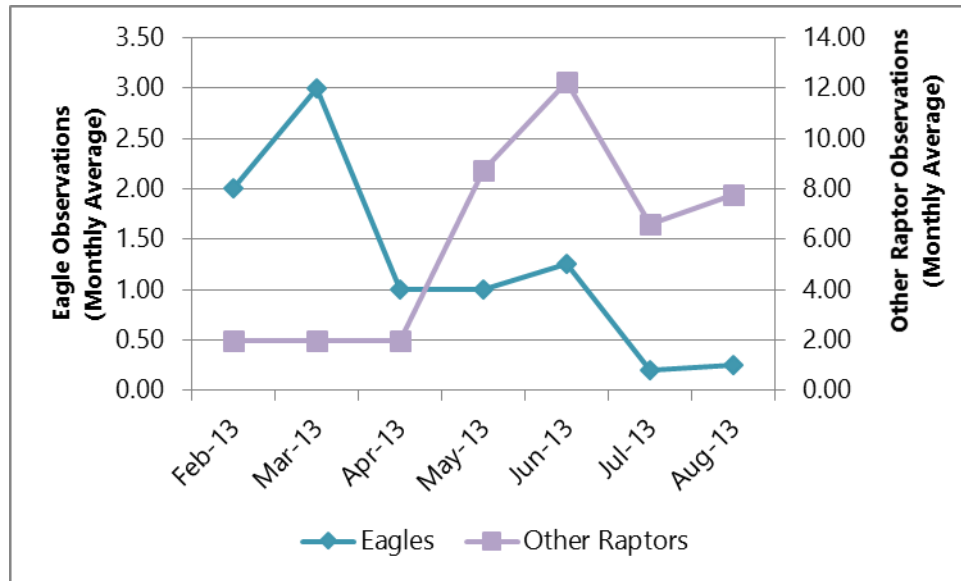


Figure 7. Mean bald eagle and other raptor observations, by month

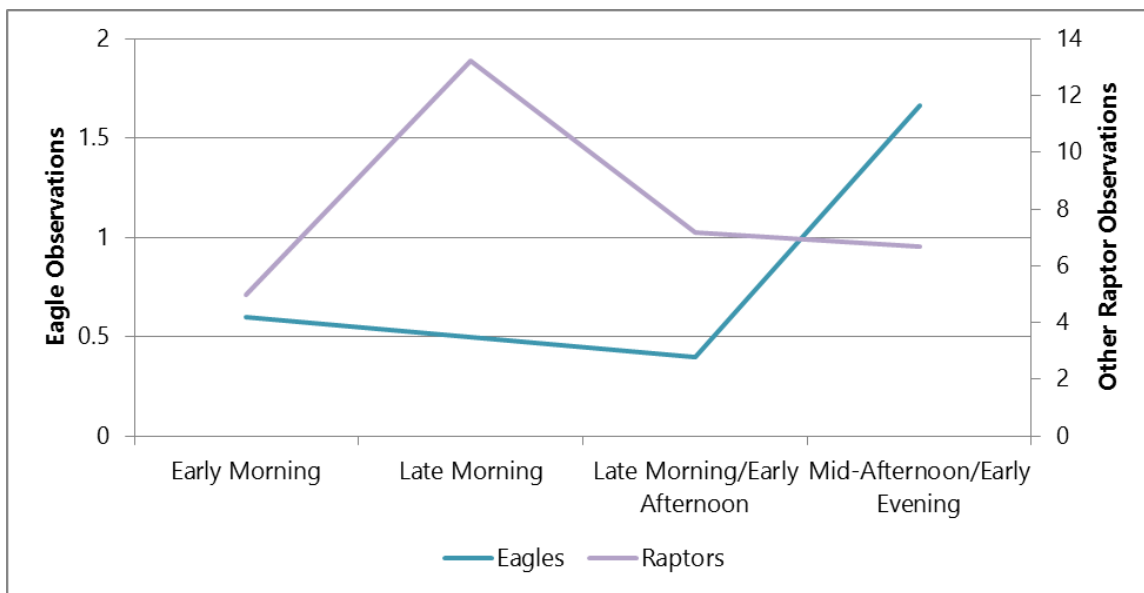


Figure 8. Mean bald eagle and other raptor observations, by time of day<sup>1,2</sup>

## Mink Monitoring

### Camera Traps

During the 2013 survey period, Turnstone conducted six camera visits. No mink were observed on any camera photos. Other wildlife species noted included black-tailed deer (*Odocoileus hemionus*), Canada

<sup>1</sup> Early Morning= 6:00 A.M. to 9:00 A.M., Late Morning= 9:00A.M. to 10:45 A.M., Late Morning/Early Afternoon= 10:45 A.M. to 2:15 P.M., Mid-Afternoon= 2:15 P.M. to 5:30 P.M.

<sup>2</sup> Each time period includes a total of 4 visits, except Late Morning/Early Afternoon, which includes 5 visits.



goose (*Branta canadensis*), nutria (*Myocastor coypus*), coyote (*Canis latrans*), and various passerines. Species observed in the photos analyzed by Wildlands personnel in May included black-tailed deer, coyote, Canada goose, and great blue heron.

### Visual Surveys

During the 2013 survey period, Turnstone conducted eight mink sign surveys. No mink tracks, scat, or den sites were found during field sign investigation surveys. Other wildlife signs noted included goose, nutria, coyote, and river otter (*Lutra canadensis*).

## CONCLUSIONS & RECOMMENDATIONS

Between February and August 2013, biologists conducted four bird assemblage surveys, 21 eagle surveys, eight mink visual surveys, and six mink camera visits. Seventeen bald eagle sightings were recorded and no mink photos or mink sign was recorded.

Turnstone suggests that any post-restoration monitoring be conducted in the same manner described in the Methodology section above in order to be able to compare baseline data to post-restoration data to obtain insight on how the restoration effort has influenced wildlife use in the Project area.



## REFERENCES

Georgia Department of Natural Resources (GDNR). Mink Fact Sheet.

<http://www.georgiawildlife.com/node/898>. Last accessed on September 20, 2013.

Huff, Mark H.; Bettinger, Kelly A.; Ferguson, Howard L.; Brown, Martin J.; Altman, Bob. 2000. A habitat-based point-count protocol for terrestrial birds, emphasizing Washington and Oregon. Gen. Tech. Rep. PNW- GTR-501. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 39 p.



## APPENDIX A: PERSONNEL BIOGRAPHIES

### Jeff Reams



#### Wildlife Biologist, CEO of Turnstone

Jeff Reams, CEO and Co-founder of Turnstone, has over 20 years of experience as an environmental professional in the western United States. His experience includes project management on a wide variety of complex, multi-year projects involving ecosystem and forestry practice management approaches to ensure regulatory compliance and environmental permitting, including state and federal Endangered Species Acts, a wide variety of aquatic and terrestrial ecological survey and inventory projects, habitat delineation, assessment and mitigation projects, wetland delineation and mitigation, biological assessments and evaluations, serving as liaison with regulatory agencies, and compiling and writing final reports. He currently works with numerous private timber companies such as the Forest Capital Partners, Weyerhaeuser and Miami Corporation in developing and managing long-term spotted owl programs. Jeff was also the project manager of the ODF northern spotted owl effort, where his team successfully completed over 1,200 calling stations over six forests. Jeff has worked directly with numerous government agencies and an extensive range of clients and has coordinated as many as 23 biologists on a single project. He is an active member of the Pacific Seabird Group, part of the Marbled Murrelet Technical Committee (PSG) and a past board member of the Oregon Chapter of The Wildlife Society. His education includes numerous threatened, endangered and sensitive (TES) species survey protocols, certification by the Army Corps of Engineers to delineate wetlands, Wildlife Module Watershed Analysis and a BS in Animal Science from Oregon State University.

#### Education

BS, Animal Science, Oregon State University, 1990

#### Certification & Licensure

- Western Pond Turtle Survey Protocol, Level I & II
- Foliar Distress Identification "Interior West Forest Inventory and Analysis Forest Survey Field Procedures"
- Delineate Wetlands (COE)
- Certified Trainer for Marbled Murrelet Survey Protocol
- CPR and First Aid (American Red Cross)

#### Professional Memberships

- Past Board Member (The Wildlife Society, Oregon Chapter)
- The Wildlife Society (Oregon and National Chapter)
- Marbled Murrelet Technical Committee (PSG)
- Pacific Seabird Group

#### Project Experience

##### BATS

#### Project Manager, Redmond Caves Bat Survey & Habitat Assessment, Bureau of Land Management.

Turnstone was contracted to assess the current condition of five caves at the Redmond Caves Site and determine each cave's potential suitability as habitat for bats, specifically Townsend's Big-eared Bats. Also, to identify management or restoration opportunities in regards to bat habitat needs. (2005-2006)

##### MONITORING

#### Field Coordinator, Ozone Bio-monitoring Project, U.S. Forest Service.

Turnstone staff was certified to identify foliar distress in forested environments related to ozone-caused damage. Specific plant species identified as bioindicators were used to monitor changes in air quality across a region. Turnstone strictly followed the ozone damage monitoring protocol while identifying and surveying biosites in AZ, CO, ID, MT, NV



---

**BATS**

**Wildlife Biologist, Willamette Valley Bat Project, Oregon Department of Fish and Wildlife.** Turnstone designed and implemented a bat study in the Willamette Valley of Oregon. Over 600 individual bridges were surveyed for bat presence or evidence of bat use. Subsets of bridges throughout the valley were then sampled via mist nets for bat usage and species distribution. Turnstone utilized GPS technology to accurately record geographic information. (1998)

**Project Manager, Comprehensive Avian & Bat Use Study, W.E.S.T.** Turnstone conducted an extensive bat and avian use study for a site being considered for a wind power development project. Conducted breeding bird surveys, point count surveys and bat surveys. Project area was wildlife-rich with as many as six threatened or endangered avian species likely to be present. Biologists utilized GPS and Anabat bat detectors. (2005-2006)

---

**MONITORING**

and UT. All information was entered into personal data recorders, uploaded into a spatial database following procedures detailed in "Interior West Forest Inventory and Analysis Forest Survey Field Procedures". (2004, 2007 – ongoing in WA and CA)

**Project Coordinator, Long Term Soil Productivity Project, USDA Forest Service/Duck Creek & Associates.** Turnstone provided technical services for the Long-Term Soil Productivity (LTSP) program, which is a national framework of permanent and large-scale experiments intended to evaluate the effects of soil porosity and organic matter on plant production. Data collected was used to evaluate timber management programs on LTSP, the sustainability of managed stands, set calibration and soil monitoring standards and to evaluate forest practices to enhance productivity. Tenth-year measurements including aboveground plant biomass (trees, shrubs, herbs), soil bulk density in 10 cm profiles and physical tree measurements (diameter, height, crown base height, and crown width) were collected in 42 half-acre plots in the El Dorado National Forest and on participating private lands. (2004)

---

**NORTHERN SPOTTED OWL**

**Project Manager, Northern Spotted Owl Surveys, Bureau of Land Management.** Turnstone was contracted to perform northern spotted owl surveys for the BLM in the Cascades Resource Area, Salem District. All owl responses were documented, including northern spotted owls, great horned owls, and barred owls. (2010)

**Project Manager, Cascade Crossing Northern Spotted Owl and Great Gray Owl Habitat Delineation and Surveys, Tetra Tech.** Turnstone is conducting surveys for northern spotted owls on a specific power line right-of-way in the Oregon Cascade Range for the 2010 season. Turnstone delineated suitable habitat and continues to conduct surveys to complete the season to protocol. Much of the area has not been surveyed in recent years. Surveys are conducted on challenging terrain with the impact on surveys efforts being compounded by late snow in the high elevations. Turnstone worked closely with USFW following all procedural guidelines and regulatory policies. (2010)

**Project Manager, Special Status Species Surveys and Habitat Delineation, Whistling Ridge Wind Project, for CH2M Hill, PPM Energy and SDS Lumber.** Turnstone delineated suitable habitat and surveyed for several special status species: northern spotted owls, northern goshawks

**Project Manager, Northern Spotted Owl Surveys, Pacific Forest Trust.** Turnstone worked with PFT to develop and implement a northern spotted owl survey management plan for property holdings in the coast range. Owl data was collected and recorded on owl densities, home ranges and habitat used. Data was summarized into a final report, detailing sites surveyed and responses recorded. (2008-ongoing)

**Project Manager, Northern Spotted Owl Survey Management Plan, Forest Capital Partners.** Turnstone designed and implemented a northern spotted owl survey management plan. Data is summarized annually into a final report, detailing sites surveyed and responses recorded. Developed and managed GIS layers. (2005-ongoing)

**Project Manager, Northern Spotted Owl Survey Management Plan, Miami Corporation.** Turnstone continues an ongoing relationship with the Miami Corporation providing natural resource consultation to develop and implement a northern spotted owl survey management plan. Owl data is collected and recorded on owl densities, home ranges and habitat relationships. Data is summarized annually into a final



## NORTHERN SPOTTED OWL

and Washington Ground Squirrels for the proposed White Salmon Wind Project. Owl data was collected and recorded using all current up to date survey methodology following strict protocol requirements of the Washington Department of Fish and Wildlife and U.S. Fish and Wildlife Service. Data was summarized into a final report. (2003-2004, 2008-ongoing)

**Project Manager, Northern Spotted Owl Survey Management Plan, Weyerhaeuser Corp.** Turnstone worked with Weyerhaeuser to develop and implement a northern spotted owl survey management plan for select tree farms. Owl data was then collected and recorded on owl densities, home ranges and habitat relationships. Data was summarized into a final report, detailing sites surveyed and responses recorded. (2001-ongoing)

**Project Manager, Northern Spotted Owl Survey, Eugene Water and Electric Board.** Turnstone worked with EWEB to develop and implement a northern spotted owl survey management plan for two electrical construction projects. Owl data was collected and recorded on owl densities, home ranges and habitat types used. Data was summarized into a final report, detailing sites surveyed and responses recorded. (2009)

report, detailing sites surveyed and responses recorded. (1999-ongoing)

**Project Manager, Northern Spotted Owl and Marbled Murrelet Surveys, USFS.** Turnstone was contracted to perform northern spotted owl and marbled murrelet surveys as part of a recreation area improvement plan. Turnstone located survey areas and established remote survey stations. The surveys were conducted with strict adherence to the forest management protocol endorsed by U.S. Fish and Wildlife Service. (2004)

**Project Manager, Northern Spotted Owl Surveys, CH2MHILL.** Northern spotted owl protocol and surveys for CH2MHILL. Was responsible for coordinating and scheduling surveys to fit the northern spotted owl protocol, supervising all crews, inspecting data and performing surveys. Used stand data within the area of potential impact to delineate special status species habitats. Established survey parameters and ensured surveys were conducted with strict adherence to the forest management protocol endorsed by U.S. Fish and Wildlife Service. Data was summarized into a final report, detailing sites surveyed and responses recorded. (2003-2004)

## WETLANDS

**Muddy Creek Mitigation Bank, LLC.** Turnstone has established and maintains the Muddy Creek Mitigation Bank in the upper Willamette Valley, working with numerous regional agencies including the Oregon Department of State Lands, U.S. Army Corps of Engineers, Department of Environmental Quality, U.S. Fish and Wildlife, Environmental Protection Agency, and Oregon Department of Fish and Wildlife. Turnstone is providing a range of wetland services in the conversion and restoration of 108 acres of degraded farmland to historical riparian and palustrine wetland conditions for use as a wetland mitigation bank. Phases have included every stage of the wetland mitigation bank approval process, prospectus, public comments, wetland delineations, wetland functional assessments using the HGM method to determine current status and assess success of restoration efforts, site preparation, restoration of site hydrology, grading plans, planting plan, vegetation and long-term monitoring. (2006-present)

**Project Manager, Warrenton Fiber, Wetland Permitting and Environmental Services.** Turnstone

**Project Manager, NW Natural, Calapooia River Restoration Project.** Turnstone designed and implemented a restoration plan for a 1-acre riparian hardwood forest in Albany, Oregon. Turnstone created a technical memorandum for the restoration of the site which was submitted to the U.S. Army Corps of Engineers and the Oregon Department of State Lands. The plan was approved and plant materials were installed by Turnstone staff. Vegetation maintenance work was done in 2010 and Turnstone performed year-one monitoring in the late summer of 2011.

**City of Salem, Wetland Monitoring and Assessment.** Turnstone has an ongoing contract with the City of Salem to provide wetland monitoring and assessment services. In 2008, Turnstone monitored vegetation characteristics at a large city-owned wetland mitigation site. Data collected will contribute to continual efforts to track wetland condition, species diversity, and the success of the restoration efforts. (2008)

**Gary Rodgers, Scenic Drive Delineation** (2008), and





## WETLANDS

provides a wide range of environmental consulting services to Warrenton Fiber Co. Permitting and wetland staff assist the client with landscape-scale land-use planning and stewardship by providing an assessment of current ecological conditions, providing monitoring and mitigation options, acting as their representative throughout all stages of the regulatory and Section 404 and 401 permitting process, and ensuring adherence to environmental requirements throughout various phases of land-use planning and execution. (2008-present)

- **Johnson Farm Mitigation Bank** - Turnstone worked with Warrenton Fiber to construct a 260 acre mitigation bank on the west shore of Young's River, about 6 miles southeast of Astoria, in Clatsop County, Oregon. The mitigation plan for the Johnson Farm Bank included a combination of estuarine wetland restoration and creation; some upland enhancement and preservation was also included in the project. Turnstone outlined the goals, need and mitigation plan for the bank, and discusses the sponsors' commitment to restore, enhance, preserve and maintain the proposed Johnson Farm Mitigation Bank now and in the future at a level sufficient for agency evaluation. Turnstone also negotiated diligently with the diking district to breach dikes to flood the area. Turnstone worked to expedite the federal regulations section 408 of the Policy and Procedural Guidance to breach dikes without an act of Congress. (2007-present)
- **Claremont Road Mitigation Bank** - Turnstone is in the process of providing off-site compensatory mitigation and rolling the remainder of the enhanced wetland credits into a wetland mitigation bank at the headwaters of the John Day River. The purpose is to enhance a water type disproportionately lost in the region and create mitigation opportunities in the Lower Columbia Watershed. Key features of the project include removing a barrier to fish passage, re-introducing tidal influence to an area that has been diked for over 75-years, restoring over 60-acres of fish rearing habitat, and converting a currently exotic-dominated plant community to a native, freshwater tidal wetland. (2010 – present)

### **Project Manager, Willamette Neighborhood Housing Services, Wetland Del., Permitting and Restoration.**

Turnstone provides a wide variety of environmental and regulatory compliance expertise and permitting services for development projects for the City of Corvallis Willamette Neighborhood Housing Services. Projects include Section 404 permitting and wetland functional assessments of locally significant wetlands occurring within the urban growth boundary. Turnstone has provided permitting assistance and public meeting expertise during the land use planning and development

### **Robinhood Lane Wetland Delineation (2009)**

Turnstone delineated a 6 acre site at Scenic Drive, comprised of four tax lots in Albany, Oregon. Most of the site was covered with palustrine freshwater emergent wetland. Turnstone prepared a wetland delineation for two parcels south of Robinhood Lane in Albany, Oregon.

### **Project Manager, Gene Tools, LLC Project: Summerton Property Determination.**

Turnstone conducted a wetland determination on portions of a specific tax lot in Benton County to determine whether or not wetlands exist on site in preparation for planning a new building associated with the client. Additionally, some monitoring work was conducted. (2009)

### **Project Manager, Hendgen-McMinnville, LLC, Crocker Lane, Albany Wetland Delineation**

Wetland delineation and assessments were completed for a residential property in Albany, Oregon. A Palustrine emergent wetland was delineated to 1987 Manual standards and consulting services were provided to the client regarding local and state permitting and development regulations. (2007)

### **Project Manager, Alaska Natural Gas Development Authority, ANGDA Pipeline Wetland Delineation.**

A comprehensive wetland mapping project involving wetland delineation and assessment on a proposed natural gas pipeline through the Southcentral Alaskan wilderness. Wetland scientists from Turnstone conducted wetland delineations, functional assessments, advanced wetland mapping, and other GIS services along the 400 mile linear route in the summer of 2008. (2008)

### **Project Manager, Bonneville Power Administration, Bandon-Rogue Transmission Line Rebuild Project**

Turnstone conducted wetland and waterway surveys throughout the 46-mile Bandon-Rogue transmission line corridor along the southern Oregon coast. Wetland scientists from Turnstone conducted wetland delineations, collected GPS data, compiled a wetland delineation report, conducted functional assessments, and assisted in the Removal-Fill permitting process. GIS mapping of wetlands and waterways. (June 2011-February 2011)

### **Project Manager, Private Landholder, Tenny Creek Wetland Delineation and Habitat Assessment.**

Turnstone conducted a wetland delineation and assessment to determine wetland status for a proposed



**WETLANDS**

process including wetland determination and delineation services, natural resource assessments, environmental site assessments, habitat analysis, botanical surveys and mitigation recommendations. (2007-present)

**Thomas and Thomas Partners, Sauvie Island Mitigation Bank.** Habitat restoration plan for a compensatory wetland mitigation site as part of an overarching mission to restore a 40-acre farm to its historic ecological conditions. Restoration efforts include the excavation of shallow pools and alteration of the drainage ditches on site to restore hydrology. Emergent and shrub scrub native wetland species have been planted and invasive vegetation removed. Habitat features have been installed, including the placement of large woody debris throughout the wetland. Ongoing maintenance and monitoring of the first phase are being conducted by Turnstone. The project mitigates for unavoidable wetland impacts on another Sauvie Island property. (2008-present)

development site in Clark County. Performed preliminary resource review, site assessment, tree surveys, and provided guidance in the permitting process. An alternatives analysis was developed for potential onsite wetland mitigation. Final report included extensive mapping, data documentation and analysis, and submission of wetland reports to the Washington State Department of Ecology and the Army Corps of Engineers. (2006)



## GENERAL WILDLIFE

**Biologist, Wildlife and Botanical Habitat Analysis, Oregon Department of Fish and Wildlife.** Jeff was contracted by the Oregon Department of Fish and Wildlife to write natural resource environmental assessments for highway corridors located in Oregon. These reports include the identification of significant natural resources located within these corridors. Significant resources include all federal and state endangered, threatened, and sensitive plant and animal species. Other topics covered in these assessments include: habitat types, geology, topography, botanical features, wetlands, water quality, fish issues, terrestrial issues, land use and land ownership, mitigation, safety issues, and enhancement opportunities. (1996)

**Project Manager, Small Mammal Tracking and Identification, U.S. Forest Service.** Turnstone was contracted to identify the small mammal communities present within the project area, Jim's Creek Restoration Project area. Turnstone collected data on small mammal species composition in six distinct areas. Two distinct areas were sampled in each of the three habitat types of interest (forest, meadow/forest ecotone, and regenerating forest). Turnstone used a blocked design and sampled three areas, one of each habitat type, at a time. (2004)

**Field Coordinator, Marbled Murrelet Surveys, Oregon Department of Forestry.** Turnstone was contracted by the Oregon Department of Forestry to conduct marbled murrelet surveys on state lands. Jeff was responsible for all personnel and field logistics of a large-scale project. Working closely with the project manager, Jeff was responsible for the training, station set-up, data inspection, workload dynamics and using GPS to identify all station locations. All field work, data and maps were meticulously examined, ensuring strict adherence to proper Pacific Seabird Group procedures. (1997 - 2005)

**Project Manager, Neotropical Bird Surveys, Army Corps of Engineers.** Turnstone established 72 stations and then conducted 216 Neotropical bird surveys for the Army Corps. of Engineers. Stations were located in 6 different habitat types near the Fern Ridge Reservoir. All stations were meticulously mapped using GPS to verify adherence of the station placement to the parameters of the Partners In Flight protocol. Bird songs of over 70 species were recorded and then entered into a Turnstone-designed database. (1999)

**Wildlife Project Manager, New Carissa Oil Spill, U.S. Fish & Wildlife.** Turnstone was hired to conduct oiled seabird surveys as part of a hazardous materials response to a grounded freighter ship near Coos Bay Oregon. Turnstone biologists were formed into multiple crews and distributed along extensive segments of the Oregon coast to implement an established survey protocol for the New Carissa oil spill. Specific duties include the collection of dead wildlife, recording the amount of oiling on the beach, observing and recording the numbers and species of live wildlife and degree of oiling, and reporting or collecting any injured wildlife for rehabilitation. Turnstone biologists were also responsible for monitoring the location, abundance, condition, and band combinations of snowy plovers. They also served as liaisons with the multiple-agency recovery team and supported efforts to capture oiled plovers for rehabilitation. As field coordinator Jeff was responsible for overseeing and scheduling all survey activities, ensuring field protocols were followed and served as a contact for wildlife information in the Incident Command Center to coordinate cleanup efforts with other sections. Primary duties included hiring field personnel, performing surveys, compiling daily reports, and assisting in the day-to-day operation of all fieldwork. (1999)



## Daphne Swope



### Wildlife Biologist, Technical Writer

Daphne has four years of experience in the natural resources field, with a focus on avian research, primarily in the Pacific Northwest. She is able to identify many wildlife and botanical species and their associated habitats and is proficient in survey, inventory and delineation protocols and techniques. Daphne joined Turnstone as the crew leader for the ODF marbled murrelet survey project in 2012; her work since then includes assisting senior staff members in writing biological assessments and other technical reports and working on various projects, including wetland delineation, and marbled murrelet and ground squirrel surveys. Daphne holds a BS in Environmental Biology/Zoology from Michigan State University, and certifications from Portland State University's Environmental Professional Program, Pacific Seabird Group's Marbled Murrelet Survey Protocol, and the North American Banding Council's Passerine Bander and Trainer Program.

### Education

B.S., Environmental Biology/Zoology, Michigan State University, 2009

### Certification & Training

- Marbled Murrelet Pacific Seabird Survey Protocol
- Portland State University Environmental Professional Program NEPA course
- North American Banding Council Trainer and Passerine Bander
- Avian Point Count Training Workshop, Klamath Bird Observatory
- Orienteering Training Workshop, Klamath Bird Observatory

### Project Experience

#### **Wildlife Biologist/Crew Lead/Technical Writer, Marbled Murrelet Surveys, Oregon Department of Forestry.**

Primary duties included performing marbled murrelet (MAMU) surveys according to the Pacific Seabird Group protocol in western Oregon on Oregon Department of Forestry (ODF) lands and supervision of other crew members. These surveys involved extensive night-time navigational skills, including the use of GPS units, topographical maps, compass, aerial photos and ground flagging. Additional duties included identifying and plotting any other species of concern found during surveys and setting marbled murrelet survey stations. The work required the ability to follow an intricate survey protocol, proficiency in the use of four-wheel drive vehicles and the ability to navigate through steep and wet forested areas. Assisted in report preparation. (2012-2013)

#### **Wildlife Biologist, Keeler-Tillamook Rebuild Project, Bonneville Power Administration.**

Conducted marbled murrelet surveys and prepared a Biological Assessment for a 59-mile transmission line rebuild project to evaluate potential impacts to ESA-listed plant and animal species and their critical habitat. (2013)

#### **Wildlife Biologist, Washington Ground Squirrel Surveys, Umatilla Power Company.**

Wildlife Biologist/Technical Writer on a project surveying for the near-threatened Washington Ground Squirrel along power lines in Eastern Oregon. Conducted surveys and prepared final technical report. (2013)

#### **Wildlife Biologist/Technical Writer, Private Timber Northern Spotted Owl and Marbled Murrelet Habitat Assessment and Surveys, The Campbell Group.**

Conducted marbled murrelet surveys and completed technical writing for a final report on northern spotted owl and marbled murrelet survey results. (2012-2013)

#### **Technical Writer, BPA Alvey-Fairview Environmental Assessment/Biological Assessment, Parsons-Brinckerhoff.**

Technical Writer for completion of a BA and select chapters of an EA for a 97-mile transmission line rebuild project to evaluate potential impacts to ESA-listed plant and animal species and their critical habitat and provide mitigation recommendations. (2013-ongoing)



**Technical Writer, Oregon LNG Northern Spotted Owl and Marbled Murrelet Habitat Assessment and Surveys CH2M Hill.** Technical Writer for a final report on northern spotted owl and marbled murrelet survey results.

**Technical Writer, BPA Lane-Wendson Transmission Line Rebuild, Parsons Brinckerhoff.** Technical Writer for a BA and select chapters of an EA for a 41-mile 115-kV transmission line between Eugene and Florence. The BA addresses potential impacts to species including but not limited to the marbled murrelet, northern spotted owl, Fender's blue butterfly, Oregon silverspot butterfly, Willamette daisy, Bradshaw's desert parsley, Kincaid's lupine, and their designated critical habitat. (2013-ongoing)

**Field Crew Leader, Passerine Long-Term Demographic Study, Klamath Bird Observatory, OR.** Supervising field biologist on a long-term banding project throughout southern Oregon. Conducted field data collection and responsible for overseeing the logistics of entire project. (2010)

**Biological Technician, Avian Data Network Project, Klamath Bird Observatory.** Completed data management projects with the goal of introducing datasets into the Cornell Lab of Ornithology's Avian Data Network. Used Microsoft Access and SAS to proof, edit and manage multiple field ornithological data types. (2010)

**Research/Banding Technician, Multiple Projects, Klamath Bird Observatory.** Carried out banding efforts during the breeding and migration seasons; operating mist nets, conducting area searches, banding and processing a variety of passerines and near-passerines, including ageing, sexing, cloacal/feather sampling and collection of biometrics. Worked with multiple data management projects; including data proofing and editing of multiple data types, geospatial database management, creating SOPs and developing study site reference materials for the Oregon Aquatic Bird Monitoring Program.

**Technical Writer, Mt. Hood Energy Project Northern Spotted Owl Habitat Assessment and Surveys, Cardno-ENTRIX.** Technical Writer for a final report on northern spotted owl survey results.

**Technical Writer, Northern Spotted Owl Habitat Assessment and Surveys.** Technical Writer for a final report on northern spotted owl survey results.

**Field Technician, Wet Forest Birds Long-Term Demographic Study, USGS Pacific Islands Ecosystem Research Center.** Conducted mist-netting and banding of wet forest birds, including endangered species, for a long-term demographic monitoring study. Collected blood samples from banded birds to evaluate disease prevalence, performed DNA extraction, collected feather and claw samples for stable isotope analysis, color-banded and resighted birds. Attached transmitters and tracked birds using radio telemetry; resighted radio-marked birds and conducted behavioral observations. (2012)

**Banding Assistant, Avian-Agriculture Conflict Research, Columbia University and the American Museum of Natural History.** Assisted in thesis data collection of breeding condition and other indicators of habitat quality for passerines found in citrus agriculture landscapes. Trained local forestry officials in the techniques of mist netting, banding, and measuring resident and migratory passerines on the island of Dominica. (2010)



## Devin Sahl



### Wildlife Biologist, GIS Specialist

Devin Sahl has eleven years of broad experience as a wildlife biologist, specializing in sensitive and endangered species, primarily in the Pacific Northwest. He has an exceptional understanding of wildlife science, is able to identify many wildlife species and their associated habitats and is well-versed in survey, inventory and delineation protocols and techniques. Devin has conducted surveys for a wide variety of wildlife species throughout the Pacific Northwest. He has also conducted numerous natural resource assessments as part of the development permitting process required by local agencies and participated in several landscape-level inventories in Oregon and Washington.

Devin has been the Assistant Project Manager for the ODF marbled murrelet survey efforts for the past 4 years. He managed multiple field teams and headed up training, logistics, and survey efforts. He is an expert at the logistical considerations of large-scale natural resource inventory projects.

Devin is adept in the use of GPS equipment, including data loggers, correction techniques and software. He is exceptionally skilled with creating, manipulating and interpreting GIS data products. He has been responsible for creating and maintaining GIS databases for several of our long-term clients and he has a hand in every project at Turnstone that requires a GIS component. Devin is a member in the Pacific Seabird Group and the Society for Conservation Biology. His education includes numerous survey methodologies and protocols, extensive GIS training and a BS in Natural Resources from Oregon State University.

#### Education

B.S., Natural Resources, Oregon State University, 2000

#### Certification & Training

- Northern Spotted Owl Survey & Habitat Delineation Protocol (USFS)
- Marbled Murrelet Pacific Seabird Survey & Habitat Delineation Protocol
- Threatened & Endangered Species Survey Protocols
- Known Site Survey Protocol (USFS)
- Northern Goshawk Survey Protocol (USFS)
- Survey and Manage Fungi Survey Protocol (USFS)
- Mollusk Survey Protocol (USFS)
- Foliar Distress Identification "Interior West Forest Inventory and Analysis Forest Survey Field Procedures", (PNW,USFS)
- Stream Inventory, Level I & II, (2007) USFS
- Wilderness First Aid (WMI)
- PADI Open Water Diver
- Oregon ATV Safety Card

#### Project Experience

##### WILDLIFE- AVIAN

**Wildlife Biologist/GIS Specialist, Northern Spotted Owl and Northern Goshawk habitat assessment and surveys, SDS Lumber Co.** Turnstone has provided habitat assessment, GIS products and species surveys for a proposed wind energy facility to be sited on SDS property. The project has involved habitat assessments, field surveys, GIS product creation and consultation with resource managers and agency personnel. Analysis and survey

**Wildlife Biologist, Northern Spotted Owl Survey Management Plan, Miami Corp.** Established and conducted northern spotted owl surveys. Established survey parameters, located remote survey stations, developed survey routes and performed spotted owl surveys. Collated data and created GIS maps in support of the project. Surveys were conducted and data collected with strict adherence to the forest



**WILDLIFE-AVIAN**

efforts initially began in 2003 thru 2004 and then continued in 2007 thru 2010. (2003-2004, 2007-2010).

**Wildlife Biologist/GIS Specialist, Northern Spotted Owl and Marbled Murrelet Habitat Assessment and Surveys, CH2M Hill-Oregon LNG.** Turnstone was selected as a subcontractor to assist CH2M HILL with marbled murrelet and northern spotted owl habitat assessment and surveys for a proposed liquefied natural gas pipeline that would traverse through the North Oregon Coast Range. The project (ongoing) involves coordination with multiple land managers to collate existing biological data with new survey data and large scale spatial data for GIS habitat analyses. Deliverables include a detailed and progressive habitat model, a proposed comprehensive survey plan and final report to satisfy ESA requirements. (2007-ongoing)

**GIS Specialist, Biologist, Biological Assessment, CH2M Hill-Oregon LNG.** Turnstone is providing a biological assessment and is also conducting a habitat assessment for marbled murrelets and northern spotted owls as a sub-consultant to CH2M HILL. The BA is an integral component of the environmental documentation for Oregon LNG's application to the Federal Energy Regulatory Commission (FERC). The habitat assessment will be used in an affects analysis by the USFWS. (2007-ongoing)

**Wildlife Biologist/GIS Specialist, Northern Spotted Owl Long-Term Habitat and Species Management, Forest Capital Partners.** Turnstone designed and implemented a northern spotted owl survey management plan. Devin conducted northern spotted owl surveys, managed data, assisted in mapping and documentation organization for the final report. (2005-ongoing)

**Wildlife Biologist, Northern Spotted Owl Survey Management Plan, Weyerhaeuser.** Established and conducted northern spotted owl surveys. Established survey parameters, located remote survey stations and performed spotted owl surveys. Surveys were conducted and data collected with strict adherence to the survey protocol endorsed by U.S. Fish and Wildlife Service. (2005-ongoing)

**Assistant Project Manager, Marbled Murrelet Surveys, Oregon Department of Forestry.** Primary duties include managing project logistics, data collection, GIS needs and personnel in a large scale marbled murrelet survey project in western Oregon under a contract with the Oregon Department of Forestry. Project typically involves a survey crew of 20-30 individuals. (2006 – ongoing)

management protocol endorsed by U.S. Fish and Wildlife Service. (2005-ongoing)

**Wildlife Biologist/Crew Lead, Marbled Murrelet Surveys, Oregon Department of Forestry and Washington State Department of Natural Resources.** Primary duties included performing marbled murrelet (MAMU) surveys according to the Pacific Seabird Group protocol in western Oregon on Oregon Department of Forestry (ODF) lands and western Washington on Department of Natural Resources (DNR) lands. These surveys involved extensive night-time navigational skills, including the use of GPS units, topographical maps, compass, aerial photos and ground flagging. Managed data and crew responsibilities. Additional duties included identifying and plotting any other species of concern found during surveys and setting marbled murrelet survey stations. The work required the ability to follow an intricate survey protocol, proficiency in the use of four-wheel drive vehicles and the ability to navigate through steep and wet forested areas. (2003 – 2005)

**GIS Specialist, Danger Tree Removal Biological Assessment, Bonneville Power Administration.** Turnstone, as the main contractor, created a Biological Assessment to identify the possible effects that the proposed danger tree removal might have on marbled murrelets, designated marbled murrelet Critical Habitat, and suitable habitat for marbled murrelets and northern spotted owls. (2008-2009)

**Field Surveyor, Delineation of Marbled Murrelet Habitat areas, Washington Department of Natural Resources.** Conducted field surveys to verify and establish Marbled Murrelet habitat in Northern Washington. Project involved locating and traversing steep forested areas and evaluating stand and individual tree structure to determine potential MAMU habitat. Areas were then mapped and possible boundaries identified. (2004-2005)



## MACROINVERTEBRATES/MOLLUSKS

**Wildlife Biologist/Crewleader, Macroinvertebrate Species and Habitat Analysis, Washington Army National Guard.** Turnstone conducted a natural resources inventory on two military installations in Washington State. Devin designed and coordinated the Macroinvertebrate studies. He compiled the data and wrote the final report including suggestions for habitat enhancement. (2005-2006)

**Wildlife Biologist/GIS Specialist, Mollusk Surveys, USFS Willamette National Forest - Middle Fork District.** Turnstone has been contracted to conduct surveys for Survey and Manage mollusk species as designated in the Northwest Forest Plan, on the Willamette National Forest. This is a 5 year contract to conduct strategic surveys to support management activities across the district. Surveys began in the fall of 2010 and are expected to continue on an as needed basis through the 2015 contract window. (2010-ongoing)

## WILDLIFE – MAMMALS

**Wildlife Biologist/GIS Specialist, Western Gray Squirrel Habitat Assessment and Surveys, SDS Lumber Co.** Turnstone has provided habitat assessment, GIS products and species surveys for a proposed wind energy facility to be sited on SDS property. The project has involved habitat assessments, field surveys, GIS product creation and consultation with resource managers and agency personnel. Analysis and survey efforts initially began in 2003 thru 2004 and then continued in 2007 thru 2010. (2003-2004, 2007-2010).

## MONITORING

**Biologist & Scuba Diver, Aquatic Weed Monitoring, City of Ocean Shores, WA.** Turnstone conducted aquatic vegetation and waterfowl surveys as part of a long-term monitoring effort to study the effect of introduced grass carp on invasive Brazilian Elodea populations in the Duck Lake waterway. Devin was the designated scuba diver who utilized vegetative sampling equipment to collect samples during the field surveys. He also assisted with assessing changes to the plant and waterfowl communities and preparing detailed annual report. Overall purpose of the project is to perform the necessary monitoring to satisfy grass carp restocking

## BATS

**Wildlife Biologist, Comprehensive Avian & Bat Use Study, W.E.S.T.** Devin conducted avian species surveys and inventories along Oregon coastal area, gathering data to determine where further survey efforts are required and to guide future management decisions for a possible wind development project. Works closely with the primary field coordinator and client to accomplish tasks critical to project success. Reviews survey data on a daily and weekly basis. Extensive topographical map and compass orienteering. Aerial photo interpretation. Anabat bat detectors, GPS and four-wheel drive experience. (2005, 2007 - 2009)

**Wildlife Biologist, Redmond Caves Bat Survey & Habitat Assessment, USFS.** Turnstone is contracted to assess the current condition of five caves at the Redmond Caves Site and determine each cave's potential suitability as habitat for bats, specifically Townsend's Big-eared Bats. Also, to identify management or restoration opportunities in regards to bat habitat needs. Devin is conducting the physical site surveys and will assist in the final report. (2005-2006)

## WETLANDS

**GIS Specialist for Wetland Mitigation Banks, Muddy Creek Mitigation Bank, LLC., and Thomas and Thomas Partners, LLC.** Devin is developing the topographic maps and coordinating GIS layers for two wetland mitigation banks in western Oregon. (2005-ongoing)

**GIS Specialist, ANGDA Pipeline Wetland Delineation, Shaw Environmental.** A comprehensive wetland mapping project involved wetland delineation and assessment on a proposed natural gas pipeline through the Southcentral Alaskan wilderness. Wetland scientists





permits, in consultation with the Washington DFW. (2005-2011)

from Turnstone conducted wetland delineations, functional assessments, advanced wetland mapping, and other GIS services along the 400-mi linear route. (2008)

## MONITORING

**Natural Resources Biologist, Long Term Soil Productivity Project, USFS.** Turnstone provided technical services for the Long-Term Soil Productivity (LTSP) program, which is a national framework of permanent and large-scale experiments intended to evaluate the effects of soil porosity and organic matter on plant production. Primary duties included measuring aboveground plant biomass, soil bulk density and physical tree measurements for several large treatment plots located on the Tahoe National Forest, California. Research and data collection were supervised by the Pacific Southwest Research Station. Assisted with crew management, data collection and entry. (2004)

**Natural Resources Biologist, Ozone Bio-monitoring Project, EPA/USFS.** Certified to identify foliar distress in forested environments related to ozone-caused damage. Identified specific plant species as bioindicators which were used to monitor changes in air quality across a region. Strictly followed the ozone damage monitoring protocol while identifying and surveying biosites in AZ, CO, ID, MT, NV and UT. Entered information into personal data recorders, uploaded into a spatial database following procedures detailed in "Interior West Forest Inventory and Analysis Forest Survey Field Procedures". (2004, 2006-2011)



## Russell Namitz



### Wildlife Biologist

Russell joined the Turnstone team in 2012 and has brought an exceptional level of knowledge to our field staff. He has 17 years of broad experience as a wildlife biologist and naturalist, with a strong background in avian work. Russell, an avid birder, is able to identify all Pacific Northwestern species by sight and sound, and his life birding list includes over 2000 species. He has surveyed for passerines and raptors, along with a multitude of special-status species, including the marbled murrelet, spotted owls, and northern goshawks. He holds a Bachelor of Science in Biology from Pacific University in Forest Grove, Oregon.

### Education

Master of Arts, Education/Curriculum Instruction, University of Phoenix, 2010

Secondary Education Credential Program: Life science, Humboldt State University, 2002

Bachelor of Science, Biology, Pacific University, 1996

### Certification & Training

- Northern Spotted Owl Survey & Habitat Delineation Protocol (USFS)
- Marbled Murrelet Pacific Seabird Survey & Habitat Delineation Protocol
- Threatened & Endangered Species Survey Protocols
- Northern Goshawk Survey Protocol (USFS)

### Project Experience

**Wildlife Biologist, Marbled Murrelet Surveys, Oregon Department of Forestry.** Primary duties included performing marbled murrelet (MAMU) surveys according to the Pacific Seabird Group protocol in western Oregon on Oregon Department of Forestry (ODF) lands. These surveys involved extensive night-time navigational skills, including the use of GPS units, topographical maps, compass, aerial photos and ground flagging. Additional duties included identifying and plotting any other species of concern found during surveys and setting marbled murrelet survey stations. The work required the ability to follow an intricate survey protocol, proficiency in the use of four-wheel drive vehicles and the ability to navigate through steep and wet forested areas. (2012-2013)

**Wildlife Biologist, Northern Spotted Owl Surveys, Hancock Forest Management.** Established and conducted northern spotted owl surveys. Located remote survey stations, developed survey routes and performed spotted owl surveys. Surveys were conducted and data collected with strict adherence to the forest management protocol endorsed by U.S. Fish and Wildlife Service. (2013)

**Field Technician, Spotted Owl Demographic Study, USDA Forest Service.** Monitored, banded, resighted and surveyed for California Spotted Owls and utilized radio transmitters to record juvenile owl dispersal from natal area.

**Wildlife Biologist, Northern Spotted Owl Surveys, Bureau of Land Management.** Established and conducted northern spotted owl surveys. Located remote survey stations, developed survey routes and performed spotted owl surveys. Surveys were conducted and data collected with strict adherence to the forest management protocol endorsed by U.S. Fish and Wildlife Service. (2013)

**Field Technician, Avifauna Demographic Study, Humboldt State University.** Spot-mapped for variety of bird species and nest-searched for all encountered bird species within plots. Set-up and monitored video systems on low nesting bird species and conducted point counts on various plots. Also performed vegetation surveys at nest sites and assisted in the handling & processing of small mammals. (2002)

**Field Technician, Raptor Migration Project, Hawkwatch International, Inc.** Counted & identified the species, age, plumage & sex of migrating raptors and counted & identified migrating Neotropical migrants and non-passerines. (1997-1998, 1999)

**Field Technician, Northern Goshawk Demographic Study, USDA Forest Service.** Surveyed old nest sites & conducted vegetation plots/analysis for new nests.



---

Conducted surveys at established call points to determine presence of unknown Spotted Owls and recorded all other owls & diurnal raptors heard and/or seen. (1997, 2002)

**Biologist, Threatened & Endangered Species Surveys, Georgia-Pacific Timber Co.** Monitored, banded, resighted and surveyed for Northern Spotted Owls. Surveyed and designed sites & stations for Marbled Murrelet study. Conducted stream surveys (electrofished & snorkeled for Coho Salmon) and keyed, measured & recorded all vertebrates in each electrofish stream survey. Monitored Golden Eagle, Peregrine Falcon & Northern Goshawk nests and participated in Neotropical point counts and mammal track plate census. Assessed habitat type of Neotropical point counts & Spotted Owl nest stands. (1998)

Assessed quality habitat in unsurveyed areas using aerial photos & topo maps. Launched surveys of timber sale/salvage areas for Accipiter activity. Participated in Common Loon Banding Project and Wolverine Camera Set-up. Administered Great Gray Owl Surveys. (1996)



## APPENDIX B: DATA TABLES

### Point Count Data Summary Table

Species	Common Name	Native/ Non native	4-May	28-May	21-Jun	20-Jul	Total
<i>Phalacrocorax auritus</i>	Double-crested Cormorant	N	0	1	0	0	1
<i>Ardea herodias</i>	Great Blue Heron	N	1	0	2	1	4
<i>Ardea alba</i>	Great Egret	N	1	1	0	0	2
<i>Cathartes aura</i>	Turkey Vulture	N	6	1	0	0	7
<i>Branta canadensis</i>	Canada Goose	N	3	4	1	2	10
<i>Anas platyrhynchos</i>	Mallard	N	1	0	0	0	1
<i>Pandion haliaetus</i>	Osprey	N	4	5	3	8	20
<i>Haliaeetus leucocephalus</i>	Bald Eagle	N	2	4	3	1	10
<i>Buteo jamaicensis</i>	Red-tailed Hawk	N	0	0	2	0	2
<i>Falco peregrinus</i>	Peregrine Falcon	N	0	0	1	0	1
<i>Callipepla californica</i>	California Quail	NN	4	6	4	4	18
<i>Charadrius vociferus</i>	Killdeer	N	2	1	0	0	3
<i>Actitis macularia</i>	Spotted Sandpiper	N	0	0	0	1	1
<i>Calidris minutilla</i>	Least Sandpiper	N	0	0	0	0	0
<i>Larus californicus</i>	California Gull	N	0	0	3	2	5
<i>Columba fasciata</i>	Band-tailed Pigeon	N	0	1	0	0	1
<i>Streptopelia decaocto</i>	Eurasian Collared-Dove	NN	1	1	0	0	2
<i>Zenaida macroura</i>	Mourning Dove	N	0	5	0	1	6
<i>Chaetura vauxi</i>	Vaux's Swift	N	1	1	2	0	4
<i>Calypte anna</i>	Anna's Hummingbird	N	0	0	2	0	2
<i>Picoides pubescens</i>	Downy Woodpecker	N	0	0	0	1	1
<i>Picoides villosus</i>	Hairy Woodpecker	N	1	0	0	0	1
<i>Colaptes auratus</i>	Northern Flicker	N	0	3	3	6	12
<i>Contopus sordidulus</i>	Western Wood-Pewee	N	0	6	9	4	19
<i>Empidonax trailii</i>	Willow Flycatcher	N	0	4	9	1	14
<i>Aphelocoma californica</i>	Western Scrub-Jay	N	2	2	7	4	15
<i>Corvus brachyrhynchos</i>	American Crow	N	1	0	0	1	2
<i>Progne subis</i>	Purple Martin	N	3	1	5	6	15



Species	Common Name	Native/ Non native	4-May	28-May	21-Jun	20-Jul	Total
<i>Tachycineta bicolor</i>	Tree Swallow	N	5	2	3	1	11
<i>Tachycineta thalassina</i>	Violet-green Swallow	N	2	4	2	12	20
<i>Stelgidopteryx serripennis</i>	Northern Rough-winged Swallow	N	2	0	0	1	3
<i>Petrochelidon pyrrhonota</i>	Cliff Swallow	N	5	7	2	11	25
<i>Hirundo rustica</i>	Barn Swallow	N	8	6	10	8	32
<i>Poecile atricapillus</i>	Black-capped Chickadee	N	0	2	2	2	6
<i>Sitta canadensis</i>	Red-breasted Nuthatch	N	0	0	0	1	1
<i>Thryomanes bewickii</i>	Bewick's Wren	N	1	5	6	3	15
<i>Troglodytes aedon</i>	House Wren	N	1	0	1	0	2
<i>Catharus guttatus</i>	Hermit Thrush	N	0	1	0	0	1
<i>Turdus migratorius</i>	American Robin	N	5	3	9	8	25
<i>Sturnus vulgaris</i>	European Starling	NN	10	11	10	7	38
<i>Bombycilla cedrorum</i>	Cedar Waxwing	N	0	6	3	6	15
<i>Vermivora celata</i>	Orange-crowned Warbler	N	14	0	0	0	14
<i>Dendroica petechia</i>	Yellow Warbler	N	0	5	0	0	5
<i>Oporornis tolmiei</i>	MacGillivray's Warbler	N	0	1	0	0	1
<i>Geothlypis trichas</i>	Common Yellowthroat	N	7	6	11	8	32
<i>Wilsonia pusilla</i>	Wilson's Warbler	N	0	0	1	0	1
<i>Icteria virens</i>	Yellow-breasted Chat	N	0	4	0	0	4
<i>Piranga ludoviciana</i>	Western Tanager	N	0	5	0	0	5
<i>Pipilo maculatus</i>	Spotted Towhee	N	6	9	4	4	23
<i>Passerculus sandwichensis</i>	Savannah Sparrow	N	1	3	0	0	4
<i>Melospiza melodia</i>	Song Sparrow	N	14	15	15	11	55
<i>Zonotrichia leucophrys</i>	White-crowned Sparrow	N	3	0	0	3	6
<i>Zonotrichia atricapilla</i>	Golden-crowned Sparrow	N	3	0	0	0	3
<i>Pheucticus melanocephalus</i>	Black-headed Grosbeak	N	4	5	4	1	14
<i>Passerina amoena</i>	Lazuli Bunting	N	1	0	0	0	1
<i>Agelaius phoeniceus</i>	Red-winged Blackbird	N	3	3	4	1	11



Species	Common Name	Native/ Non native	4-May	28-May	21-Jun	20-Jul	Total
<i>Molothrus ater</i>	Brown-headed Cowbird	N	15	13	11	4	43
<i>Icterus bullockii</i>	Bullock's Oriole	N	1	0	6	6	13
<i>Carpodacus purpureus</i>	Purple Finch	N	0	3	0	1	4
<i>Carpodacus mexicanus</i>	House Finch	N	5	2	2	3	12
<i>Loxia curvirostra</i>	Red Crossbill	N	0	2	0	0	2
<i>Carduelis pinus</i>	Pine Siskin	N	2	1	0	0	3
<i>Carduelis psaltria</i>	Lesser Goldfinch	N	0	1	1	3	5
<i>Carduelis tristis</i>	American Goldfinch	N	13	9	10	14	46
<b>Total</b>			<b>164</b>	<b>181</b>	<b>173</b>	<b>162</b>	<b>680</b>

### Eagle Data Summary Table

Date	Start Time	End Time	Eagle Count	Raptor Count	Raptor Species
27-Feb	7:00	9:00	2	2	RTHA
29-Mar	17:05	19:05	3	2	OSPR, UNRA
11-Apr	14:00	17:00	0	2	RTHA
26-Apr	16:30	18:30	1	2	RTHA
9-May	15:40	17:40	2	8	TUVU, RTHA, OSPR
16-May	14:25	16:25	0	11	RTHA, TUVU, OSPR
22-May	13:00	15:00	0	5	OSPR, TUVU
30-May	12:14	14:14	2	11	OSPR, TUVU
6-Jun	10:22	12:22	2	12	OSPR, RTHA, TUVU
15-Jun	9:32	11:32	0	13	OSPR, TUVU
20-Jun	15:55	17:55	3	6	OSPR, TUVU
28-Jun	9:25	11:25	0	18	OSPR, TUVU
3-Jul	10:35	12:35	0	10	OSPR, TUVU
12-Jul	7:50	9:50	0	10	OSPR, TUVU
19-Jul	8:40	10:40	1	2	OSPR
23-Jul	6:06	8:06	0	5	OSPR, RTHA
31-Jul	10:50	12:50	0	6	TUVU, OSPR
9-Aug	14:00	16:00	0	7	TUVU, OSPR
15-Aug	15:08	17:08	1	11	TUVU, OSPR
23-Aug	7:30	9:30	0	6	OSPR, RTHA, PEFA
28-Aug	14:17	16:17	0	7	OSPR, TUVU, UNRA



## Mink Camera Data Summary Table

Camera	Visit Date	Start Date	End Date	Mink Y/N	Other SP 1	SP1 Count	Other SP 2	SP2 Count	Other SP 3	SP3 Count	Other SP 4	SP4 Count	Notes
2	05/03/13	04/11/13	05/03/13	N	ODHE		ARHE						Cameras installed on 4/11/13
3	05/03/13	04/11/13	05/03/13	N	ODHE		CALA		BRCA				Cameras installed on 4/11/13
1	05/07/13	04/11/13	05/07/13	N									Cameras installed on 4/11/13
1	05/31/13	05/07/13	05/31/13	N	MYCO		CALA		BRCA				
2	05/31/13	05/03/13	05/31/13	N	APCA		ODHE						
3	05/31/13	05/03/13	05/31/13	N	ODHE		ARHE						
1	06/15/13	05/31/13	06/15/13	N	CAGO	14	ODHE	1	CALA	1			
2	06/15/13	05/31/13	06/15/13	N									Camera contained no photos – battery was dead – replaced on 6/17
3	06/15/13	05/31/13	06/15/13	N	ODHE	10							
1	06/28/13	06/15/13	06/28/13	N	ODHE	2							
2	06/28/13	06/17/13	06/28/13	N	ODHE	8							
3	06/28/13	06/15/13	06/28/13	N	ODHE	5	CAQU	2	BCCH	1			
1	07/17/13	06/28/13	07/17/13	N	CAGO	1	ODHE	2					
2	07/17/13	06/28/13	07/17/13	N	ODHE	18							
3	07/17/13	06/28/13	07/17/13	N	ODHE	10	SYBA	1	MYCO	1	AMRO	4	
1	07/31/13	07/17/13	07/31/13	N	ODHE	2							
2	07/31/13	07/17/13	07/31/13	N	ODHE	3							
3	07/31/13	07/17/13	07/31/13	N	ODHE	1	SWTH	2					

Camera	Visit Date	Start Date	End Date	Mink Y/N	Other SP 1	SP1 Count	Other SP 2	SP2 Count	Other SP 3	SP3 Count	Other SP 4	SP4 Count	Notes
1	08/13/13	07/31/13	08/13/13	N	NONE								
2	08/13/13	07/31/13	08/13/13	N	ODHE	7							
3	08/13/13	07/31/13	08/13/13	N	ODHE	6	CAQU	4	SCNI	I	AMCR	2	
1	08/30/13	08/13/13	08/30/13	N	ODHE	1							Cameras removed 8/30/13
2	08/30/13	08/13/13	08/30/13	N	ODHE	8							Cameras removed 8/30/13
3	08/30/13	08/13/13	08/30/13	N	NONE								Cameras removed 8/30/13

### Mink Visual Survey Data Summary Table

Visit Date	Mink Observations			
	Tracks	Scat	Den	Individual
16-May	0	0	0	0
30-May	0	0	0	0
14-Jun	0	0	0	0
28-Jun	0	0	0	0
17-Jul	0	0	0	0
31-Jul	0	0	0	0
13-Aug	0	0	0	0
30-Aug	0	0	0	0





## **Exhibit B-2**

### **Long-Term Management Framework**

# **LONG-TERM MANAGEMENT FRAMEWORK FOR THE ALDER CREEK RESTORATION PROJECT MULTNOMAH COUNTY, OREGON**

*Prepared by:*

Portland Harbor Holdings II, LLC  
c/o Wildlands PNW  
520 SW 6<sup>th</sup> Avenue, Suite 1210  
Portland, OR 97204  
Contact: Julie Mentzer  
Email: [jmentzer@wildlandsinc.com](mailto:jmentzer@wildlandsinc.com)  
Tel: (503) 241-4895  
Fax: (503) 296-2308

April 2014

## TABLE OF CONTENTS

<b>Section 1</b>	<b>Introduction .....</b>	<b>1</b>
1.1	Purpose of Establishment.....	1
1.2	Purpose of this Management Framework .....	1
1.3	Responsibilities OF THE LONG-TERM STEWARD.....	1
1.4	Responsibilities OF THE Conservation Easement Holder .....	2
1.5	Owner.....	2
1.6	Qualified Personnel / Monitoring Biologist.....	3
<b>Section 2</b>	<b>Long-Term Stewardship .....</b>	<b>4</b>
2.1	Long-term Stewardship Framework .....	4
2.2	Need for Long-term Stewardship.....	4
2.3	Long-term Steward Selection .....	5
2.4	Scope of Work for the Long-Term Steward .....	5
<b>Section 3</b>	<b>Transfer, Replacement, Amendments, and Notices.....</b>	<b>10</b>
3.1	Transfer .....	10
3.2	Replacement.....	10
3.3	Amendments .....	10
3.4	Notices .....	11
<b>Section 4</b>	<b>Funding and Task Prioritization .....</b>	<b>13</b>
4.1	Interim management and contingency Security.....	13
4.2	Long-term management Funding.....	13
4.3	Task Prioritization.....	14
4.4	Credits and Credit/Debit Determination .....	14
4.4.1	Credit Release Schedule .....	15
4.4.2	Service Area.....	15
4.4.3	Accounting Procedures .....	15

## LIST OF TABLES

Table 1.	Required documentation for long-term stewardship activities
----------	---

## **TABLE OF CONTENTS (CONTINUED)**

### **LIST OF APPENDICES**

Appendix A	Alder Creek Property Description
Figure 1	Vicinity Map
Figure 2	Quad Map
Figure 3	Portland Harbor Focus Area for Ecological Restoration
Figure 4	Overall Property and Existing Conditions
Figure 5	Soils Map
Figure 6	Pre-construction Habitats
Figure 7	Restoration Design
Figure 8	Existing Elevations
Figure 9	Post-construction Elevations
Figure 10	Post-construction Monitoring

## **TABLE OF CONTENTS (CONTINUED)**

### **List of Terms/Acronyms**

Conservation Easement Holder	[To be determined]
Corps	U.S. Army Corps of Engineers; see also USACE
DSL	Oregon Department of State Lands
Establishment Period	The 10-year period of active habitat establishment, monitoring and maintenance following habitat construction. See also Performance Period.
Harbor	Portland Harbor
LCR	Lower Columbia River
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NRD	Natural Resources Damages
ODFW	Oregon Department of Fish and Wildlife
Overall Property	64-acre property owned by Portland Harbor Holdings II, LLC
Owner or Landowner	Portland Harbor Holdings II, LLC
PAR	Property Analysis Record
Performance Period	The 10-year period of active habitat establishment, monitoring and maintenance following habitat construction. See also Establishment Period.
Management Framework	Alder Creek Long-term Management Framework
Restoration Implementer	Portland Harbor Holdings II, LLC
Restoration Project	52.3-acre Alder Creek Restoration Project
Restoration Site	52.3-acre Alder Creek Restoration Project
Steward	Portland Harbor Holdings II, LLC or other natural resource conservation-oriented organization approved by PHH and the Trustee Council or its designee(s)
Stewardship Plan	Restoration Project-specific long-term stewardship plan

## TABLE OF CONTENTS (CONTINUED)

Target Salmonids	Upper Willamette River (UWR) spring-run Chinook salmon ( <i>Onchorhynchus tshawytscha</i> ), Lower Columbia River (LCR) Chinook salmon, LCR steelhead ( <i>Onchorhynchus mykiss</i> ), UWR steelhead, and LCR coho salmon ( <i>O. kisutch</i> )
Target Species	Target Salmonids, Pacific lamprey ( <i>Lampetra tridentate</i> ), bald eagle ( <i>Haliaeetus leucocephalus</i> ), osprey ( <i>Pandion haliaetus</i> ), river otter ( <i>Lutra canadensis</i> ), mink ( <i>Mustela vison</i> )
Trustee Council (Trustees)	Portland Harbor Natural Resource Trustee Council
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
UWR	Upper Willamette River

## Section 1 Introduction

---

### 1.1 PURPOSE OF ESTABLISHMENT

The Alder Creek Restoration Project (“Restoration Project” or “Project”) is being established to satisfy restoration obligations for Natural Resource Damages (NRD) as determined by the Portland Harbor Natural Resource Trustee Council (“Trustees” or “Trustee Council”). Portland Harbor Holdings II, LLC, owns approximately 64 acres at the southern tip of Sauvie Island, Multnomah County, Oregon (“Overall Property”). The Restoration Project will encompass approximately 52.3 acres of the Overall Property. The Restoration Project is being developed under guidance from the Portland Harbor Trustee Council, the federal conservation banking program, and endangered species recovery planning efforts for federally listed Upper Willamette River (UWR) spring-run Chinook salmon (*Onchorhynchus tshawytscha*), Lower Columbia River (LCR) Chinook salmon, LCR steelhead (*Onchorhynchus mykiss*), UWR steelhead, Columbia River chum salmon (*O. keta*), and LCR coho salmon (*O. kisutch*), referred to as the “Target Species”. In addition, the Project is expected to provide habitat and benefits to all native fish occurring within the lower Willamette River, as well as numerous avian and terrestrial species occurring in the vicinity of the site.

### 1.2 PURPOSE OF THIS MANAGEMENT FRAMEWORK

This Long-term Management Framework (“Management Framework”) outlines the framework for the collective long-term monitoring and maintenance activities prescribed for the Restoration Project. Long-term monitoring and maintenance activities shall assess Project goals and objectives and address habitat management requirements.

In the case of any inconsistency in determining the legal responsibilities of the Restoration Implementer, the Owner, Steward, or Conservation Easement Holder, the Conservation Easement(s) shall take precedence over this Management Framework and the Restoration Project-specific Long-term Stewardship Plan (“Stewardship Plan”), which is to be developed prior to the beginning of the long-term stewardship phase of the Project.

It should be noted that while it is the intent of this Management Framework and the Stewardship Plan to comply with federal, state and local permits, if any discrepancies between those plans and the permits exist, the permits override the plans’ stipulations unless written approval is received from the agency exerting the appropriate jurisdiction.

### 1.3 RESPONSIBILITIES OF THE LONG-TERM STEWARD

The long-term Steward, and subsequent Stewards upon transfer, shall implement this Management Framework and the Stewardship Plan, managing and monitoring the Restoration Project property in perpetuity to preserve its habitat and conservation values in accordance with the conservation easement

(Exhibit F-2), the Management Framework, and the Stewardship Plan. Long-term management tasks shall be funded through a non-wasting endowment fund (“Endowment Fund”). The Steward shall be responsible for providing an annual report to the Trustee Council or its designee(s) detailing the time period covered, an itemized account of the management tasks and total amount expended. Any subsequent grading or alteration of the Restoration Project’s hydrology and/or topography by the Steward or its representatives must be approved by the Trustee Council or its designee(s) and the necessary permits, agreements and consultations, such as a Section 404 permit, must be obtained, if required, in addition to consultation under the federal Endangered Species Acts.

The Steward’s responsibilities are described in detail in Section 2.4 below.

## **1.4 RESPONSIBILITIES OF THE CONSERVATION EASEMENT HOLDER**

The Conservation Easement Holder is a third-party organization qualified under ORS 271.715 (3) to hold a conservation easement. A permanent Conservation Easement Holder shall be designated by the Trustee Council, in agreement with the Owner, prior to the close of the Performance Period. Once the permanent Conservation Easement Holder is selected, a Conservation Easement Deed running with the land and restricting the uses of the Restoration Project consistent with the “Alder Creek Restoration Project Memorandum of Agreement” and the “Alder Creek Habitat Development Plan” will be recorded to ensure the protection of the Restoration Project in perpetuity. As part of the process to designate a permanent Conservation Easement Holder, the Trustee Council, Conservation Easement Holder, Owner, Endowment Manager, and Restoration Implementer shall create a mutually agreeable mechanism for the permanent Conservation Easement Holder to receive funding to cover all reasonable expenses to perform its responsibilities under the Conservation Easement Deed. The Trustee Council shall not release the final credit release for this Restoration Project until the Trustee Council approves of a permanent Conservation Easement Holder for the Conservation Easement and a final Conservation Easement Deed is recorded.

The responsibilities and duties of the Conservation Easement Holder shall include:

- Monitoring the Project for compliance with the terms of the Conservation Easement
- Upholding responsibilities and obligations as outlined in the Conservation Easement, this Management Framework, and the Stewardship Plan.
- Enforcing the terms of the Conservation Easement.

## **1.5 OWNER**

Portland Harbor Holdings II, LLC owns the Overall Property.



## **1.6 QUALIFIED PERSONNEL / MONITORING BIOLOGIST**

The Steward shall retain professional biologists, botanists or other types of specialists (the “Qualified Personnel”, including the “Monitoring Biologist”) to conduct specialized tasks. The Monitoring Biologist shall be familiar with Oregon flora and fauna, and shall have knowledge regarding fisheries ecology. If the Steward or the Qualified Personnel are changed, the outgoing and incoming personnel will tour the Restoration Project site together, and the former will advise the latter of trends, problem areas, and any administrative difficulties. In addition, the outgoing personnel will share monitoring data, site visit notes, and other information with the incoming personnel. Duties of the Qualified Personnel may include but are not limited to:

- Monitoring and maintaining Target Species and habitat function.
- Monitoring and maintaining erosion control.
- Evaluating the presence of newly introduced invasive plant species and recommending management, if needed.
- Conducting biological surveys, collecting data on the Restoration Project, and preparing reports required by this Management Framework and the Stewardship Plan.
- Evaluating site conditions and recommending corrective action to the Steward.
- Assisting in reviewing or planning restoration activities, use of the Restoration Project for education or other tasks such as grant proposals.

## Section 2 Long-Term Stewardship

---

### 2.1 LONG-TERM STEWARDSHIP FRAMEWORK

Long-term stewardship refers to described monitoring, maintenance, and adaptive management at a restoration project in perpetuity. At Portland Harbor, long-term stewardship will begin after a ten-year Performance Period of active monitoring and maintenance. The Performance Period will end when the Year 10 performance standards have been met or when the Restoration Implementer and the Trustee Council agree that the Establishment Period is complete, whichever occurs first. Long-term stewardship will involve tasks such as:

- Regularly scheduled site visits to observe and document site conditions,
- Managing invasive vegetation,
- Maintaining fences and gates,
- Ensuring any public uses are appropriate and any illegal or incompatible uses are addressed,
- Long-term monitoring of parameters such as vegetation survival,
- Clean-up and debris removal,
- Maintaining positive relationships with adjacent landowners and interested community members,
- Any other tasks required to maintain project effectiveness and full functionality of a given NRDA restoration project.

The goal of long-term stewardship is to ensure that a restoration project continues to meet the goals and objectives for that restoration project in perpetuity.

### 2.2 NEED FOR LONG-TERM STEWARDSHIP

The Habitat Equivalency Analysis (HEA) model used to calculate ecological credit for a NRDA restoration project assumes that a given site will continue to provide ecological benefit to injured resources at least 300 years into the future. In practice, a variety of natural and anthropogenic phenomena threaten the ecological value of a project throughout its existence. Newly disturbed soils may activate a fallow seedbank that includes invasive species. Major flood events may occur 5, 15, or 50 years after a project is installed and severely alter habitat element locations, elevations, or features. Decades in the future, project ownership or land ownership may be questioned or challenged by new land uses, new community members, or shifting management priorities. A long-term stewardship plan is needed to ensure that a restoration project's ecological integrity is maintained in perpetuity.

## 2.3 LONG-TERM STEWARD SELECTION

The Long-term Steward (Steward) of the Alder Creek site (the Restoration Project) will be determined by the Trustee Council and the Landowner in cooperation with the Easement Holder. This decision will be made before the long-term stewardship phase begins. Likely candidates for the role of Steward may be the Landowner or a third-party group, such as a non-profit organization with a natural resource conservation-oriented mission and restoration project management expertise.<sup>1</sup> The initial agreement between the Trustee Council and the Steward may be termed in order to allow for a trial period to make sure that the Steward is a proper fit for the needs of the restoration project. The Steward may choose to subcontract with other organizations for work crews, specialized technical assistance, or other activities as needed.

The Landowner will work with the Steward (unless the Landowner is the Steward), Easement Holder, Trustee Council, and other stakeholders to develop a long-term stewardship agreement before the 10-year Performance Period ends or the 10-year performance standards are met, whichever occurs first. The agreement must be consistent with the long-term stewardship requirements outlined in this framework. Once the Trustee Council has reviewed and approved the agreement, a transition period will follow. The Landowner will provide documentation from as-built surveys, implementation monitoring, annual effectiveness monitoring, and records of all adaptive management decisions made within the initial 10-year performance monitoring period to the Steward (if the Landowner is not the Steward). At this time, appropriate arrangements will be made between the Landowner, Steward, and Easement Holder for access to the restoration projects for regular site visits and work activities. Adequate funding to cover the cost of long-term stewardship will be provided by the endowment fund (Exhibit J-3).

## 2.4 SCOPE OF WORK FOR THE LONG-TERM STEWARD

Once the Performance Period has ended, the Steward will act as the manager of the Restoration Project. The Steward's tasks will include:

### **Program management**

If the Steward is responsible for more than one Portland Harbor restoration project then this Steward will supervise and coordinate all long-term stewardship activities occurring across all the restoration projects under its stewardship. This task may include supervision of employees, contract negotiation with work crews or scientists conducting long-term effectiveness

---

<sup>1</sup> Though there will be opportunities to allow various restoration implementers, landowners, or potentially responsible parties to provide long-term stewardship at individual restoration projects, the Trustee Council has a strong preference towards employing a single, outside entity to provide long-term stewardship services to ensure objectivity, maximum efficiency, and consistency among restoration projects.

monitoring, development of scopes of work, management of subcontracts, and providing or contracting technical assistance. The Steward will be responsible for timely communications with landowners (unless the Landowner is the Steward), the Trustee Council or its designee(s), and other stakeholders, as well as identification of additional partnerships or opportunities that may leverage the value and benefit of the Portland Harbor restoration projects. The Steward's tasks may also include fiscal management of the endowment fund.

### **Initial site assessment**

Following the Performance Period or when the Year 10 performance standards are met, whichever occurs first, the Steward will conduct an initial site assessment in consultation with the Trustee Council or its designee(s) to establish and document the current condition and identify any immediate maintenance needs. The Restoration Project should have successfully met its performance standards during the 10-year performance period. In addition to reviewing previous monitoring reports for the Restoration Project, the Steward may conduct site visits, meetings with the project stakeholders, observational data collection, photo documentation, and GIS mapping in order to develop an initial assessment of the Restoration Project's condition that will allow for subsequent evaluation of change at the Restoration Project. The Steward will use this information to create a Restoration Project-specific long-term stewardship plan.

### **Project-specific long-term stewardship plan**

The Steward will develop a Restoration Project-specific long-term stewardship plan in order to maintain the Restoration Project's full functionality using the effectiveness monitoring results, adaptive management techniques employed during the 10-year Performance Period, and the initial site assessment. This Stewardship Plan shall be developed by the Steward and Landowner in coordination with the Easement Holder and Trustee Council. The Stewardship Plan will include a schedule for site visits, monitoring activities, anticipated maintenance needs, and provide a framework for decision-making should an unexpected event occur (e.g., trespass, arrival of a new invasive species, catastrophe). The Stewardship Plan should outline and define the types of maintenance actions anticipated at the Restoration Project as well as describe the approach that will be used to prioritize stewardship actions at the Restoration Project each year. Development of the Stewardship Plan may also involve defining staff or stakeholder roles, identifying subcontracting mechanisms that could be used at the Restoration Project, and establishing a process for regular documentation and reporting.

The Stewardship Plan will be reviewed and approved by the Trustee Council prior to completion of the Restoration Project's Performance Period or when the Year 10 performance standards are met, whichever occurs first. The Trustee Council will not release the final credits for the Restoration Project until it approves the Restoration Project-specific long-term stewardship plan.

### **Site visits**

Visits will be made to the Restoration Project by the Steward on a regular basis in perpetuity. Site visits may take place on a more frequent basis (e.g., quarterly) in the early stages of restoration project stewardship and be scheduled less frequently (e.g., annually) after a

restoration project has proven to need little maintenance. The frequency of site visits will be specified in the Restoration Project-specific long-term stewardship plan. During site visits, the Steward will observe, document, and identify potential maintenance and adaptive management practices for the Restoration Project to ensure that the ecological value for which it was credited is maintained in perpetuity. A thorough and consistent method for observational data collection will be developed and used at the Restoration Project. This task will include labor, supplies used for assessment, and travel to and from the Restoration Project.

#### **Annual maintenance plan**

Potential maintenance and adaptive management needs identified during site visits, monitoring data review, or through other methods will be documented on an annual basis. This list of potential actions will be prioritized and form the basis of a Restoration Project-specific annual maintenance plan. When setting priorities, the Steward shall ensure the most effective use of limited resources.<sup>2</sup> This task will include maintenance plan development, review among various stakeholders, and plan distribution.

#### **Maintenance and adaptive management**

The Steward will be responsible for implementing the Restoration Project-specific long-term stewardship plan, annual maintenance plan, and employing adaptive management as needed. The Steward may employ staff, contracted crews, or volunteers to address maintenance and adaptive management concerns (e.g., invasive vegetation problems, fence maintenance, trash clean up). This task will include on-site management, contracting, supplies for maintenance (e.g., plantings, mulch, and equipment) and travel.

#### **Ongoing effectiveness monitoring**

Some parameters from the original monitoring and maintenance plan at the Restoration Project may warrant data collection beyond the initial 10-year Performance Period. These may be specific to habitat types that take greater than 10 years to establish (e.g., upland forests), individual species that may take longer to show a response at the site level (e.g., lamprey), or other factors that require less frequent monitoring over a longer period of time (e.g., contamination from upland or upstream sources). Potential parameters might include vegetation survival and composition, sedimentation rates and sediment composition, and contaminant levels in the sediment or water. Starting in the year after the Performance Period or after the Year 10 performance standards are met, whichever occurs first, the Steward will be responsible for monitoring data collection. The monitoring plan for lamprey extends for a period of 20 years after project implementation and will be led by the U. S. Fish and Wildlife Service and/or the Tribal Trustees throughout its duration. All effectiveness monitoring results will be shared with the Trustee Council or its designee on an annual basis. This task will include labor, transportation, and supplies associated with planning, conducting, analyzing, and reporting on the ongoing effectiveness monitoring.

---

<sup>2</sup> If the Restoration Project shares an endowment fund and Steward with one or more additional restoration projects, the Steward shall identify Restoration Project-specific priorities after considering those priorities in the context of the needs of the entire portfolio of restoration projects with shared endowment funding under its common stewardship.

### **Community relations and engagement**

The long-term viability of the Restoration Project is dependent upon a community that understands and supports the Restoration Project and contributes toward the Restoration Project's stewardship. The Steward cannot be expected to notice all of the potential issues that may threaten the Restoration Project through occasional site visits alone. Encroachment onto the Restoration Project by livestock or other domestic animals, illegal trespassing by humans, or large accumulations of human-derived trash and debris due to dumping or after a storm might each be most quickly observed (and consequently dealt with) by an informed and concerned community. The Steward will foster positive community relations with the Landowner, Easement Holder, neighbors, and broader community so that such issues are dealt with quickly and thoroughly. This task might include labor for regularly scheduled community meetings, presentations to interested audiences, volunteer involvement, and email, flyers, posters, telephone, or in-person communications.

### **Enforcement**

Trespassing, dumping, or other illegal activities may occasionally occur at the Restoration Project and require enforcement of the conservation easement. This task may include labor and fees associated with reporting violations of the conservation easement to the Landowner, Easement Holder, legal authorities, the Trustee Council or its designee(s), and others. The appropriate Trustee or its designee(s) will assume the responsibility of taking legal action on an enforcement issue as part of its ongoing oversight at the Restoration Project.

### **Documentation and reporting**

The Steward will provide documentation of all monitoring, adaptive management, and stewardship tasks to the Trustee Council or its designee(s), the Landowner (if the Landowner is not the Steward), the Easement Holder, and other interested parties on a regular basis. At a minimum, the documents outlined in Table 4 will be provided to the Trustee Council or its designee(s), the Landowner (if the Landowner is not the Steward), and the Easement Holder as they are developed or on an annual basis, depending on their frequency. In addition, the Steward will make Restoration Project information and data available to the general public in the form of a website, online database, or online mapping feature so that the general public can access information about the Restoration Project and stay involved in events such as work parties and community discussions.

<b>TABLE 1. Required documentation for long-term stewardship activities</b>			
<b>Product</b>	<b>Purpose</b>	<b>Frequency</b>	<b>Product Author/ Responsible Party</b>
Restoration Project Assessment	Describe baseline condition of Restoration Project when long-term stewardship begins	One time	Steward
Stewardship Plan	Provides prioritization methodology and actions	Once at the beginning and then update periodically, as needed	Steward
Maintenance Plan	Describes each year's activities based on priority actions	Annual	Steward
Monitoring Report	Provides current condition information and management and maintenance recommendations for the following year.	Annual	Steward
Fiscal Report	Document interest accrual, spending, and overall standing of long- term stewardship fund	Annual	Endowment Manager
Notification of Enforcement Issue	Notify the Trustee Council or its designee of enforcement issues and whether assistance is needed to resolve the problem.	As needed	Steward , Landowner, and Easement Holder

## **Section 3 Transfer, Replacement, Amendments, and Notices**

---

### **3.1 TRANSFER**

Any subsequent transfer of responsibilities under the Stewardship Plan to a different Steward shall be done so with notice to and approval of the Landowner and the Trustee Council or its designee(s). Any subsequent Steward assumes the responsibilities described in this Management Framework, the Stewardship Plan, and as required in the Conservation Easement, unless otherwise amended in writing by the Landowner and the Trustee Council or its designee(s). In the event of a transfer, the outgoing Steward will provide project monitoring data, site visit notes, and other information pertinent to the management of the Project site.

### **3.2 REPLACEMENT**

If the Steward fails to implement the tasks described in the Management Framework and Stewardship Plan and is notified of such failure in writing by the Trustee Council or its designee(s), the Steward shall have 90 days to cure such failure. If failure is not cured within 90 days, the Steward may request a meeting with the Trustee Council or its designee(s) to resolve the failure. Such meeting shall occur within 30 days or a longer period if approved by the Trustee Council or its designee(s). Based on the outcome of the meeting, or if no meeting is requested, the Trustee Council or its designee(s) with the agreement of the Landowner and in coordination with the Conservation Easement Holder may designate a replacement Steward in writing by amendment of the Management Framework and Stewardship Plan. If a replacement Steward is designated by the Trustee Council or its designee(s) and the Landowner, then such public or private land or resource management organization may enter onto the Project site in order to fulfill the purposes of the Management Framework and Stewardship Plan. Any replacement Steward will need final approval from the Trustee Council or its designee(s) and the Landowner.

### **3.3 AMENDMENTS**

The Steward, Landowner, and Trustee Council or its designee(s) may meet and confer from time to time, upon the request of any one of them, to revise the Stewardship Plan to better meet management objectives and preserve the habitat and conservation values of the Project. Any proposed changes to the Stewardship Plan shall be discussed with the Trustee Council or its designee(s), the Landowner, and the Steward. Any proposed changes will be designed with input from the Landowner, Trustee Council or its designee(s), and the Steward. Amendments to the Stewardship Plan shall be approved by the Trustee



Council or its designee(s) and the Landowner in writing, shall be required management components, and shall be implemented by the Steward.

If the Trustee Council or its designee(s) reasonably determine, in writing, that continued implementation of the Stewardship Plan would jeopardize the continued existence of a state or federally listed species, any written amendment to the Stewardship Plan, determined by either the NMFS or USFWS as necessary to avoid jeopardy, shall be a required management component and shall be implemented by the Steward.

### **3.4 NOTICES**

Any notices regarding the Management Framework or Stewardship Plan shall be directed as follows:

**Land Owner and Restoration Implementer:**

**Portland Harbor Holdings II, LLC**  
Attn: General Counsel  
3855 Atherton Road  
Rocklin, CA 95765  
Telephone: (916) 435-3555

**Long-term Steward:**

[Portland Harbor Holdings II, LLC or other natural resource conservation-oriented organization approved by PHH and the Trustee Council or its designee(s)]

**Conservation Easement Holder:**

[to be determined]

**Trustee Council or its designee(s):**

**National Oceanic and Atmospheric Administration, acting on behalf of U.S. Department of Commerce**  
Oregon State Habitat Office  
Attn: Oregon State Habitat Director  
1201 NE Lloyd Blvd., Suite 1100  
Portland, OR 97232  
Telephone: (503) 230-5400

**U.S. Fish and Wildlife Service, acting on behalf of U.S. Department of the Interior**

Pacific Region  
Attn: Field Supervisor  
911 NE 11th Avenue #1  
Portland, OR 97232-4181  
Telephone: (503) 231-6120

**Oregon Department of Fish and Wildlife, acting on behalf of State of Oregon**

3406 Cherry Avenue N.E.  
Salem, OR 97303  
Tel: (503) 947-6000 or (800) 720-ODFW [6339]

**Confederated Tribes of the Grand Ronde Community of Oregon**

Portland Office  
4445 S.W. Barbur Blvd.  
Portland, OR 97239  
Tel: (503)-235-4230  
Fax: (503) 239-8047

**Confederated Tribes of Siletz Indians**

Portland Area Office  
12790 SE Stark Street, Suite 102  
Portland, OR 97233  
(503) 238-1512  
(503) 238-2436 (fax)

**Confederated Tribes of the Umatilla Indian Reservation**

Nixyáawii Governance Center  
46411 Timíne Way  
Pendleton, Oregon 97801  
Tel: (541) 276-3165  
Fax: (541) 276-3095

**Confederated Tribes of the Warm Springs Reservation of Oregon**

1107 Wasco Street  
Warm Springs, OR 97761  
Tel: (541) 553-3007

**Nez Perce Tribe**

P.O. Box 305  
Lapwai, ID 83540

## **Section 4 Funding and Task Prioritization**

---

### **4.1 INTERIM MANAGEMENT AND CONTINGENCY SECURITY**

The Restoration Implementer will furnish a performance bond or letter of credit (LOC), prior to the first credit release, in the amount specified in Exhibit J-2, Interim Management and Contingency Security (IMCS). The IMCS amount includes: the estimated cost for the monitoring and management during the first 10 years; a 15% contingency; and an adaptive management security in the amount of \$250,000. Upon meeting the Year 5 performance standards, the bond or LOC will be reduced by half. Upon meeting the Year 10 performance standards or when the Restoration Implementer and the Trustee Council agree that the Performance Period is complete, the amount remaining in the IMCS will be released to the Restoration Implementer.

### **4.2 LONG-TERM MANAGEMENT FUNDING**

During the 10-year Performance Period, the cost to conduct the monitoring and carry out the management activities will be fully funded by the Restoration Implementer. During the 10-year Performance Period, the Trustee Council with the agreement of the Landowner, and following consultation with the Conservation Easement Holder and the Steward, may transfer the endowment fund to a different Endowment Manager to maximize efficiency for this Restoration Project and/or for the entire suite of Portland Harbor restoration projects. Following the completion of the 10-year Performance Period, the annual cost of monitoring and management will be funded through the interest generated on an endowment account for the Project. The Restoration Implementer will be responsible for depositing money into the Endowment Fund concurrent with the transfer of the credits (i.e., DSAYs) as detailed in Exhibit J-3, Endowment Information. The Endowment Fund will be held and managed by the Endowment Manager in a dedicated, interest-bearing account.

The value of the Endowment Fund is based upon the costs necessary to manage the Project in perpetuity calculated using the Center for Natural Lands Management's Property Analysis Record ("PAR") software. The PAR analysis for the Endowment Fund is presented as Exhibit J-3. The accrued interest and earnings from the Endowment Fund shall be used exclusively to fund the permanent management and long-term maintenance of the Project.

The Endowment Fund shall remain as a permanent capital endowment to manage the Project consistent with this Management Framework, the Stewardship Plan, and the Conservation Easement. The Landowner or Steward may use interest and earnings from the Endowment Fund to pay any costs and

expenses reasonably incurred through the monitoring, maintenance, or long-term management, including, without limitation, property taxes, contracts, equipment or materials, and signage related to the management of the Project and consistent with the Conservation Easement.

Endowment Manager shall hold the endowment principal and interest monies. These interest monies will fund the long-term management, enhancement, and monitoring activities on habitat lands in a manner consistent with this Management Framework and the Stewardship Plan.

The Landowner and/or Steward shall consult with the Endowment Manager on a year-to-year basis to determine the amount of funding available for management and monitoring activities. Following annual management activities, the Landowner and/or Steward may invoice the Endowment Manager for management activities following the invoicing instructions provided by the Endowment Manager.

The Endowment Fund obligations, the management obligations described in this Management Framework and the Stewardship Plan, and the obligations under the Conservation Easement shall continue in perpetuity as a covenant running with the land.

### **4.3 TASK PRIORITIZATION**

Due to unforeseen circumstances, prioritization of tasks, including tasks resulting from new requirements, may be necessary if insufficient funding is available to accomplish all tasks. The Landowner, Steward, and the Trustee Council or its designee(s) shall discuss task priorities and funding availability to determine which tasks will be implemented. In general, tasks are prioritized in this order:

1. Required by a local, state, or federal agency;
2. Tasks necessary to maintain or remediate habitat quality; and
3. Tasks that monitor resources, particularly if past monitoring has not shown downward trends.

Equipment and materials necessary to implement priority tasks will also be considered priorities. Final determination of task priorities in any given year of insufficient funding will be determined in consultation with the Trustee Council or its designee(s), as authorized by the Trustee Council or its designee(s) in writing. Specific task prioritization will occur within the annual maintenance plan prepared for the site.

### **4.4 CREDITS AND CREDIT/DEBIT DETERMINATION**

The Restoration Implementer will generate credits (e.g., DSAYs) by restoring and permanently protecting approximately 52.28 acres of habitat at the Project site. For purposes of this Project, a credit is defined as the increase in salmonid habitat that will result from restoring, enhancing, or creating habitat on the

Project site. While the actual number of credits generated cannot be determined until the Project is constructed and the activities assessed, it is estimated that the Project will generate 750 DSAYs. For the purposes of the Restoration Plan, one DSAY shall be equal to one credit. The final number of credits potentially generated by the Project will be determined by the Trustee Council or its designee(s) and will be based on the as-built drawings for this Project.

Potential credits resulting from activities performed as part of this Project for wetlands, storm water retention, carbon sequestration, pollution, nutrient reduction, and other functions are retained by the Restoration Implementer and/or Landowner and may be sold separately at some point in the future, provided the generation of such credits does not produce a conflict with the provisions of the Agreement.

Nothing in the Agreement shall prevent the Restoration Implementer and/or Landowner from working with the Trustee Council or its designee(s) or other authorized regulatory agencies to develop new credits or exchange Project credits for other types of endangered species or habitat credits defined in future years by regulatory authorities, provided this action does not conflict with the provisions of the Agreement.

#### **4.4.1 Credit Release Schedule**

Credits will be released by the Trustee Council or its designee(s) for sale as the performance standards associated with those credits are met (see Exhibit E: Credit Release Schedule). The Trustee Council or its designee(s) may award partial credit for partial accomplishment of a performance standard. Once a credit is released, the Restoration Implementer and/or Landowner may sell or transfer that credit at any time, subject to the provisions of the Agreement. Although credits may be sold, they will only be recognized for purposes of settlement following negotiation of individual settlement agreements with potentially responsible parties, public review and comment, and court approval or when credits are purchased by the Trustee Council or its members using cash-out settlement funds.

The Trustee Council or its designee(s) will approve the release of credits according to the table in Exhibit E, provided the Restoration Implementer demonstrates success in meeting the subject performance standards and is in compliance with the provisions of the Agreement.

#### **4.4.2 Service Area**

The service area for natural resource damages (NRD) includes a portion of Multnomah County, representing the entire Portland Harbor Superfund Site area and associated upland sites. See Exhibit C for the full description and map of this service area.

#### **4.4.3 Accounting Procedures**

The Restoration Implementer shall establish and maintain for inspection and reporting purposes, a ledger of all credit transactions. The following information will be recorded in the ledger for each transaction:

- Date of transaction

- Number of credits transacted
- For credits released for sale or transfer, reference the performance standard to which the released credits correspond
- For credit sales/transfers, include the name, address, telephone number, and contact for purchaser; and a reference number, if applicable.
- For credits withdrawn from the ledger for reasons other than credit purchase, include the specific reason for the withdrawal
- Number of credits available from the Project at the time of transaction
- Project's credit balance after this transaction

The Restoration Implementer shall provide the Trustee Council or its designee(s) with a copy of each credit transaction within 30 days of the transaction. The Restoration Implementer shall also provide the Services a copy of the ledger, as of December 31 of the previous year, by February 15 of each year until all credits have been awarded and sold or otherwise transferred, or until the Restoration Implementer has informed the Trustee Council or its designee(s) that it has terminated credit sales.

APPENDIX A  
ALDER CREEK PROPERTY DESCRIPTION

## **Appendix A**

### **Alder Creek Property Description**

---

#### **1.1 SETTING AND LOCATION**

The Alder Creek Restoration Project is an approximately 52.3-acre site located within the Willamette Basin, on the southernmost tip of Sauvie Island in Multnomah County, Oregon (Figure 1). The Restoration Project is part of the 64-acre Overall Property located immediately adjacent to the Willamette River and Multnomah Channel at the southernmost end of Sauvie Island (Figure 2). The Restoration Project consists of approximately 32 acres to the south (and waterward) of the Sauvie Island Drainage Improvement Company's (SIDIC) levee easement and approximately 20 acres to the north (and landward) of the SIDIC levee easement. The Project site is bordered by Multnomah Channel to the west, the Willamette River to the east, ESCO Landfill to the northwest, and private property to the northeast. The Project area is bisected by a north-south running utility easement. Both the SIDIC levee and the utility easement footprints are excluded from the proposed conservation easement area of the Project.

The Restoration Project is hydrologically separated into two distinct areas by the SIDIC levee so that approximately 32 acres of the Project occur waterward of the levee while approximately 20 acres of the Project occur landward of the levee. The Restoration Project is located within Township 2N, Range 1W, Sections 27, 28, and 34 of the Linnton and Sauvie Island, Oregon 7.5-minute U.S. Geological Survey quadrangle maps, Willamette Meridian, identified by Multnomah County tax lot numbers 700 and 800. The Restoration Project is located at the divergence of the Willamette River and Multnomah Channel at the uppermost reach of the Portland Harbor Superfund site (Figure 3).

#### **1.2 HISTORY AND LAND USE**

As described in the Cultural Resources Survey report prepared by Willamette Cultural Resources Associates (2011) and addendum (2013), land alterations on the site date back before the General Land Office (GLO) map from 1854 which shows a structure on the southeastern tip of the Site, which has been identified as the Menzies house, surrounded by cultivated land. The U.S. Army Corps of Engineers (USACE) maps produced in the 1880s show a dam extending across Multnomah Channel connecting to the southern boundary of the Site and shore protection works are indicated. In the 1870s and 1880s, a dam and training dike were constructed offshore of the Project in the Willamette River; however, by 1967, the majority of these structures had been removed. An aerial photograph from 1929 shows the first indication that the Site was used extensively for placement of dredge material. The 1947 United States Coast and Geodetic Survey planimetric map depicts dolphins, numerous "old" pilings, a wreck, riprap, and a rock jetty off the shore of the site. According to the Alder Creek Mill owners, the lumber mill was built in the 1960s and began operating shortly thereafter.

The natural landscape on the site has been significantly modified as a result of the lumber mill activities. Modifications to the shoreline on the Site include the placement of fill, riprap, pilings, and overwater



structures. Recent aerial photos show log rafts directly off-shore of the Site all along Multnomah Channel. Numerous buildings and operational areas (including wood by-product processing areas) cover almost the entire southeastern portion of the property (Figure 4). The northwestern portion of the property consists of a few structures and a large, flat log storage area associated with the lumber mill activities.

The Site and surrounding properties are subject to Multnomah County zoning ordinances. The property is designated as Multiple Use Agriculture (MUA) 20 under the Multnomah County Code. While lumber mills are not listed in the permissible uses section of the MUA-20- zone, the existing lumber mill on the property is a lawfully established non-conforming uses as previously determined by Multnomah County. Given the purpose and operation of the Project as a public/private conservation area for habitat restoration, enhancement, and protection, the proposed use is consistent with the current zoning regulations.

The majority of the site is mostly devoid of vegetation; however, portions of the area adjacent to Multnomah Channel and the Willamette River are dominated by Himalayan blackberry (*Rubus discolor*), although there are small areas of native riparian tree and shrub species (including willow, cottonwood, and alder). Currently, only portions of the outer shoreline of the site, below the ordinary high water line (OHWL), are accessible to fish during normal daily tides.

The primary land use at the Site will be resource conservation. This will be accomplished through the recordation of a conservation easement over 52.3 acres of the site. Other uses will only be permitted in a capacity that does not interfere with the goals and objectives of the Project (e.g., bird watching, botanizing, nature study, photography, etc.).

## 1.3 TOPOGRAPHY

The Project is physically separated into two areas by the SIDIC levee: the southeastern portion of the Restoration Site is located on the waterside of the SIDIC levee, and the northwestern portion of the Restoration Site is located on the landward side of the SIDIC levee. The southeastern portion of the Restoration Site ranges in elevation from about 8 to 30 feet NAVD 88 in flat-lying areas to 65 feet NAVD 88 in the woodchip stockpile area. The area which currently houses the sawmill and associated infrastructure is generally flat while the wood by-product storage area has varying topography, and the shoreline is a combination of gently sloping beaches and artificially created steep banks. A berm consisting mainly of wood by-product and earthen material was created in 1996 to protect the sawmill complex from flooding and is still present around the perimeter of the southeastern portion of the Restoration Site. The northeastern portion of the Restoration Site is generally flat as well, but gently slopes towards the northeast. The SIDIC levee is approximately 36 feet NAVD 88 at its highest (Figure 8).

## 1.4 HYDROLOGY

The Project is located in an historic floodplain where the Willamette River and Multnomah Channel diverge around the southern tip of Sauvie Island and flow north to converge with the Columbia River which then flows north and west to the Pacific Ocean.

Several modifications to the natural environment have affected the hydrology on the Restoration Site. The Restoration Site has been used for dredge material placement since at least 1929. The SIDIC levee, built in the 1940s, resulted in the physical separation of the southeastern portion of the Restoration Site from the northwestern portion (Figure 4). Following the construction of the SIDIC levee, the southeastern portion of the Restoration Site was located adjacent to the Willamette River and hydrologically disconnected from the rest of Sauvie Island. The Multnomah Channel, a distributary channel, splits off from the mainstem Willamette River and flows north/northwest around the western side of Sauvie Island for approximately 21.5 miles before flowing into the Columbia River. The mainstem Willamette River flows north along the east side of Sauvie Island and then converges with the Columbia River approximately 2.6 miles downstream of the Restoration Site. The southeastern portion of the Restoration Site was further removed from natural hydrology in 1996 with the construction of a berm around the perimeter of the Restoration Site to protect the sawmill complex from high floodwaters.

The northwestern portion of the Restoration Site, which is located north and landward of the SIDIC levee, is no longer directly connected to either Multnomah Channel or the Willamette River. The area was developed as a log storage yard associated with the lumber sawmill. The development of the log yard included the creation of long linear strips compacted for log storage flanked by shallow drainages created specifically for the purpose of draining water away from the stored logs. The log storage area generally slopes gently to the northeast towards a large existing wetland area (Figure 8).

The climate in Multnomah County is a temperate marine climate typical of northwest Oregon influenced by winds from the Pacific Ocean. This area is characterized by mild, wet winters and moderately warm, dry summers. Freezing temperatures are experienced at times during the winter months. The average mean temperature for January is 41.3 °F while the average mean temperature in August is 68.4 °F. The annual precipitation on the Project is approximately 43 inches. The majority of the rainfall occurs between October and April (NRCS 2000).

Prior to restoration, the Project site contains approximately 1.76 acres of low to moderate functioning wetlands. The majority of these wetlands are mainly fed by direct precipitation. The highly degraded nature of the existing wetlands is due to the historic land uses and alterations on the Restoration Site. The Project's shoreline along Multnomah Channel and the Willamette River varies from gradually sloped, sandy beaches to artificially steepened banks. The tidal fluctuation during periods of low river levels can be as much as three feet, rising and falling twice daily (Greenworks, P.C., et al, 2001). The tidal influence is almost entirely muted during high river levels. The portion of the Restoration Site which is waterward of the SIDIC levee occasionally flooded when river levels are high (flood stage) which prompted the previous landowner to construct an earthen berm around the perimeter of the property to provide flood protection for the lumber mill. Existing wetlands on the northeastern portion of the Restoration Site (located landward of the SIDIC levee) are only connected to other waters of the United States by surface flow towards the northwest corner during large or sustained precipitation events when surface flows are substantial.

## **1.5 SOILS**

The Project site is underlain by Quaternary Alluvium which is a surficial mantle of shallow, silty soils. These native soils have been overlain by artificial fill which consists of wood debris and emplaced dredge material. The Soil Survey of Multnomah County (Soil Survey Staff 2009) indicates that the study area contains two dominant soil mapping units, Sauvie silt loam and Sauvie silt loam (protected), with a minor inclusion of Moag silty clay loam in the northwest portion of the site (Figure 5). The soil types are listed below in rough order of extent in the study area:

- Sauvie silt loam,
- Sauvie silt loam, protected
- Moag silty clay loam, protected, 0 to 1 percent slope.

*Sauvie silt loam and Sauvie silt loam, protected, 0 to 3 percent slopes.* Sauvie soil series consists of deep, poorly drained soils that formed mainly in alluvium on floodplains along the lower Columbia River and its tributaries. The soils are saturated from about December through June and are subject to freshwater overflow during high tides unless diked and artificially drained. These soils are poorly drained with the restrictive layer 80 inches deep or more. When diked and drained, the soils are used for improved hay and pasture, small grain, and truck crops. Areas that are not diked have native vegetation or are used for hay, pasture, and commercial waterfowl areas. The native vegetation supported by these soils includes red alder, ash, willow, cottonwood, grasses, and tussocks.

*Moag silty clay loam, protected, 0 to 2 percent slopes.* This soil type consists of very deep, very poorly drained soils formed on broad, nearly level, undulating floodplains of the Columbia River with the parent material consisting of alluvium with volcanic ash. The soils are saturated throughout the year and subject to freshwater overflow during high tides and spring floods unless diked and artificially drained. These soils are very poorly drained with a restrictive layer occurring at more than 80 inches deep. These soils are used for hay, pasture, and truck crops. Other uses include recreation and wildlife habitat. Where this soil is not cultivated, the vegetation is black cottonwood, willow, rose, and common snowberry with sedges, cattails, and grasses.

A Geotechnical report was prepared for the site in July 2011 (and updated in February 2013). As part of the geotechnical investigations, 8 borings were drilled: three within the SIDIC levee easement and 5 within the sawmill facility outside of the levee. Boring depths ranged from 30 to 71.5 feet below the existing ground surface. Soils encountered in the borings generally consisted of fill material and alluvium. The fill material was loose to medium density gray silty sand with gravel and discontinuous pockets of wood debris. Wood debris was encountered in all eight borings and varied from 5.5 to 10 feet thick with alluvial material occurring beneath the fill materials. The alluvial deposits consisted of very soft brown and gray silt with sand and trace clay to medium dense gray sand with silt. Deposits were weakly stratified and occasionally contained fine woody debris.

## 1.6 BUFFERS [ADJACENT LAND USES]

The Restoration Project contains several features which act as buffers for the conservation values on the site. Open water (i.e., the Willamette River and Multnomah Channel) is located to the south, southeast, and southwest of the Project. The northeastern portion of the Project is bordered by a line of mature trees, beyond which is mostly open space associated with a private residence. Beyond a line of mature trees on the northwest is the ESCO Landfill.

## 1.7 EXISTING HABITATS

Currently, the Project consists of a lumber mill and associated structures waterward of the SIDIC levee and a log yard and associated structures landward of the SIDIC levee. The majority of the Restoration Site

is either unvegetated or sparsely vegetated with mainly non-native species. There are areas of riprap and bank stabilization along Multnomah Channel, including two small areas on either side of the Olympic Pipeline utility easement (which has been excluded from the Restoration Site). During the wetland delineation performed by URS Corporation (URS), a total of 2.071 acres of wetlands and 10.303 acres of waterways were identified within the wetland delineation study area. Approximately 1.76 acres of wetlands and 7.80 acres of waterways were identified within the 52.3-acre Restoration Site. This wetland delineation was verified by the DSL on June 12, 2012 and is pending verification by the USACE.

Natural habitats on the Project site have been significantly altered as a result of the historic and recent land uses including levee construction, lumber mill operations, wood by-product placement, dredge material deposition, bank armoring, and earthen berm construction. The existing wetlands on the Project are degraded from the historic and recent land uses on the Restoration Site and most are isolated from riverine influences as a result of manmade levees and berms. The dominant habitat type existing on the Restoration Site is developed habitat; however, patches of forest, ruderal, and active channel margin habitats also occur on the Restoration Site (Figure 6).

### 1.7.1 Developed

This habitat type is the most abundant on the Restoration Site (Figure 6). The developed areas include the area south and east of the levee which consists of the lumber mill, associated structures, and the wood chip sorting area. This area also includes a boat ramp/road. The developed area north of the levee consists of the developed areas of the log yard and associated structures. These areas are mostly devoid of vegetation. Where vegetation does exist, it is sparse and mostly non-native.

### 1.7.2 Ruderal

The second most abundant habitat type on the Restoration Site is ruderal habitat (Figure 6). This habitat type is dominated by non-native, invasive, and/or weedy species which are generally quick to colonize areas after disturbance. The ruderal habitat areas on the Restoration Site include the vegetated areas of the log storage yard, the vegetated areas around the sawmill complex, and the earthen berm which is vegetated almost entirely with Himalayan blackberry.

### 1.7.3 Forested

The Restoration Site contains a small amount of forested habitat (Figure 6). There is a small patch of forested habitat in the northwest portion of the Restoration Site. This habitat, which is outside of the floodplain and adjacent to the access road, consists of native trees with an understory dominated by non-native plant species. This habitat type is dominated by black cottonwood (*Populus trichocarpa*), dogwood (*Cornus sp*), Himalayan blackberry (*Rubus discolor*), common snowberry (*Symphoricarpos albus*), and Pacific blackberry (*Rubus ursinus*). There are also patches of forested habitat along the eastern edge of the Restoration Site adjacent to the Willamette River. Some of these forested areas contain mature, tall, riparian trees while other areas contain low-growing woody tree and shrub species. Both of these forested areas have an understory that contains mostly non-native plant species.

## 1.7.4 Active Channel Margin

The ACM is found between the OHWL and the OLWL and occurs on the outer edge of the Restoration Site along the Willamette River and Multnomah Channel (Figure 6). The existing ACM on the Project consists of a combination of non-native and invasive herbaceous vegetation, native herbaceous vegetation, woody species (both non-native and native), mudflat, beach, and open water. Approximately 1.26 acres of unvegetated beach occurs along the perimeter of the Restoration Site, mostly on the eastern edge. As high waters recede, large woody debris, as well as various other debris (e.g., trash, small woody debris, etc.), tends to accumulate here.

## 1.7.5 Wetlands and Other Waters of the United States

As a result of the wetland delineation performed by URS Corporation in 2012, a total of 2.071 acres of wetlands and 10.303 acres of waterways were identified within the wetland delineation study area. In addition to the waterways identified in the wetland delineation, an additional 1.96 acres of state-owned lands within the Multnomah Channel and Willamette River have been identified for a total of 12.262 acres. According to the concurrence letter from DSL dated June 12, 2012, DSL is asserting jurisdiction over 1.655 acres of wetlands and 10.298 acres of waters within the study area. It is expected that the Corps will make a preliminary determination that all wetlands (2.071 acres) and waters (12.262 acres) within the wetland delineation study area will be considered jurisdictional by the Corps. Out of the wetlands and waterways identified, a total of 1.76 acres of wetlands and 7.80 acres of waterways (i.e., Willamette River, Multnomah Channel, and a drainage ditch) were identified on the Restoration Site.

The majority of the existing wetlands on the Restoration Site have been substantially affected by previous activities including dredge material placement, road and levee construction, and sawmill operations. The majority of the wetlands on the waterside of the levee are located on fill material within the sawmill facilities or the wood byproduct processing area. There are linear wetlands which are excavated drainage features located at the base of the SIDIC levee. During high water events, some of these features have a surface connection to the Willamette River or Multnomah Channel; however, the majority of the existing wetlands are isolated from high flows because of their elevation (e.g., perched on fill material) and due to the perimeter berm which was constructed in 1996. Within the area of the Restoration Site landward (i.e. northwest) of the SIDIC levee, the majority of the wetlands are linear features which were used to drain the log storage area. These linear features slope gently to the north and into additional wetlands (Figure 8).

## 1.8 WILDLIFE

A search of the USFWS and Oregon Department of Fish and Wildlife (“ODFW”) databases of federally and state listed plant and wildlife species occurring within Multnomah County identified the following species with potential to occur within the vicinity of the Project.

Bald eagle (*Haliaeetus leucocephalus*), Bradshaw’s desert-parsley (*Lomatium bradshawii*), bull trout (*Salvelinus confluentus*), Columbia River chum salmon, Columbian white-tailed deer (*Odocoileus virginianus leucurus*), Kincaid’s lupine (*Lupinus sulphureus kincaidii*), LCR Chinook, LCR coho, LCR steelhead, Nelson’s checker-mallow (*Sidalcea nelsoniana*), northern spotted owl (*Strix occidentalis*)

*caurina*), UWR Chinook, UWR steelhead, water Howelia (*Howellia aquatilis*), and Willamette daisy (*Erigeron decumbens* var. *decumbens*).

In addition to the state and federal listed species mentioned above, there are numerous federal candidate species and species of concern identified by USFWS as having the potential to occur within Multnomah County. These species will be evaluated to determine which of them have potential to occur on the Project. A special-status plant survey was conducted in spring of 2012 to determine which special-status species occur or have potential to occur on the Project site (Attachment A).

The main purpose of the Project is to create habitat for and contribute to the recovery of the Target Salmonids. The restoration activities on the Project will improve designated critical habitat of 5 listed anadromous salmonid species (critical habitat has been proposed, but has not yet been designated for LCR coho) from the NMFS Willamette/Lower Columbia recovery domain. The Willamette/Lower Columbia domain includes the tidal lower Columbia River below Bonneville Dam and all of the Willamette River from its headwaters downstream to the mouth on the Columbia River. The Project will focus on habitat for all the special-status salmonids of the lower Columbia River and the Willamette River, including the following five ESUs and critical habitats for the species listed above with the exception of LCR coho salmon for which critical habitat has not yet been designated:

- LCR Chinook salmon (*O. tshawytscha*);
- UWR Chinook salmon;
- LCR coho salmon (*O. kisutch*);
- LCR steelhead (*Oncorhynchus mykiss*); and
- UWR steelhead.

In addition to the listed salmon and steelhead species above, the Project is also expected to provide habitat for Pacific lamprey (*Lampetra tridentate*) and coastal cutthroat trout (*Oncorhynchus clarki* ssp.) as well as the numerous other fish, avian, and terrestrial species occurring on and within the vicinity of the Project. Specifically, in addition to the Target Salmonids, the Portland Harbor Wildlife Advisory Group has also identified the following species as injured species targeted for restoration within Portland Harbor: bald eagle, mink (*Mustela vison*), osprey (*Pandion haliaetus*), and river otter (*Lutra canadensis*) as well as Pacific lamprey (These species together with the Target Salmonids are referred to collectively as “Target Species”).

### 1.8.1 Target Salmonids

Habitat loss and modification are major factors in the decline of salmonid populations. Salmonid populations rely on the availability of diverse habitats with connections among those habitats. The lifecycle of salmonids involves adult salmonids that matured in the ocean returning to their home streams to spawn. Following spawning activities, embryos incubate and eventually fry emerge but they remain near the nest or “redd” until the egg sack is nearly or completely absorbed. Once the egg sack is absorbed, the juveniles swim into the stream to begin to feed. They continue to feed and grow eventually migrating as smolts to the estuary to acclimate to saltwater. The estuary environment provides critical feeding opportunities in preparation for their migration to the ocean. The freshwater habitat needs of salmonids are diverse and include:

- Cool, clean water
- Appropriate water depth, quantity, and flow velocities

- Upland and riparian vegetation to stabilize soil and provide shade
- Overhanging vegetation for refuge from flow and predators
- Clean gravel for spawning and egg-rearing
- Large woody debris to provide refuge from flow and predators
- Adequate food
- Varied channel forms

### 1.8.1.1 Chinook Salmon (*Oncorhynchus tshawytscha*)

Chinook salmon are the largest of any salmon species and have life-histories that can be divided into ocean-type and stream-type, depending on when adults return to fresh water, season in which spawning occurs, and duration of smolts in natal streams. Most ocean-type Chinook return to their natal streams as mature adult spawners in either the summer or fall and spawn in the fall. Ocean-type smolts out-migrate during spring and early-summer to marine habitat from freshwater rearing habitat as sub-yearling. Most stream-type Chinook return to their natal streams as immature adult spawners in spring, traveling higher into the watershed than fall or summer-run Chinook, and hold in deep pools until they spawn in the fall. Stream-type smolts out-migrate during spring and early-summer to marine habitat from freshwater rearing habitat as yearlings. Spring-run Chinook salmon only occur in a few tributaries (Myers et al., 1998).

From April through November, sub-yearling ocean-type juvenile Chinook salmon inhabit the estuaries and inter-tidal areas of the Pacific Coast. These estuarine areas with fresh and salt water wetlands and aquatic/riparian vegetation provide habitats that are crucial to juvenile Chinook salmon survival. Water quality within these areas is also crucial to their survival. Increases in siltation, changes in water temperature, and loss of riparian vegetation all have negative impacts on water quality. Riparian vegetation also provides habitat for juvenile Chinook (Myers et al., 1998).

### 1.8.1.2 Lower Columbia River ESU Chinook salmon

The LCR Chinook salmon ESU was listed as threatened by NMFS on March 24, 1999. The range of the LCR Chinook salmon includes the Columbia River and its tributaries including the Willamette River to Willamette Falls. Factors limiting recovery for LCR Chinook salmon include reduced access to spawning/rearing habitat in tributaries, hatchery impacts, loss of habitat diversity and channel stability in tributaries, excessive sediment in spawning gravel, elevated water temperatures in tributaries, and harvest impacts (NMFS 2005, NMFS 2006). Critical habitat was designated for this species within the Columbia River on August 12, 2005, and includes the Restoration Site as well as the entire Lower Willamette River.

Adult and juvenile Chinook salmon use the Columbia River and the lower Willamette River for spawning, rearing, and migration. Adult fall Chinook salmon enter the Columbia River from August to late November, peaking early October through mid-November. Adult spring Chinook salmon enter the Columbia River from mid-January through late June, peaking mid-March through late May. Juvenile downstream migration peaks mid-March through late July. Juvenile Chinook rear in the Columbia and lower Willamette Rivers throughout the year. The Restoration Project will benefit LCR Chinook by providing refugia from high flows and important juvenile rearing habitat.

### 1.8.1.3 Upper Willamette River Chinook salmon

The UWR Chinook salmon ESU was listed as threatened by NMFS on March 24, 1999, and a second time on June 28, 2005 (70 FR 37160). NMFS completed a five-year review on this ESU on August 15, 2011, and concluded that this ESU should remain listed as threatened (76 FR 50448). Critical habitat was designated for this species within the Willamette River on August 12, 2005.

The ESU includes all naturally spawned populations of spring-run Chinook salmon in the Clackamas River and in the Willamette River, and its tributaries, above Willamette Falls, Oregon, as well as seven artificial propagation programs.

Adult and juvenile Chinook salmon use the lower Willamette River primarily for migration. Adult presence of UWR Chinook within the lower Willamette River would generally be found from mid-January through late June, peaking mid-March through late May. Juvenile downstream migration peaks mid-March through late July. The Restoration Project will benefit UWR Chinook by providing refugia from high flows and important rearing habitat.

### 1.8.1.4 Coho Salmon (*Onchorynchus kisuch*)

#### Lower Columbia River coho salmon

The LCR ESU of coho salmon is listed as threatened (70 FR 37160). Critical habitat for this ESU is under development. The ESU includes all naturally spawned populations of coho salmon in the Columbia River and its tributaries in Washington and Oregon, from the mouth of the Columbia up to and including the Big White Salmon and Hood Rivers, and includes the Willamette River to Willamette Falls, Oregon, as well as twenty-five artificial propagation programs (Weitkamp et al., 1995). Adult LCR coho salmon can be found migrating to their natal streams from June through February and spawning from September through March (Weitkamp et al., 1995). Coho generally spawn in the tributaries and headwater streams of large rivers, preferably in areas with low water velocity and small-sized gravel. Coho die soon after spawning. The eggs hatch in about one month, and the juvenile coho emerge from the gravel in about two to five weeks. The young coho usually remain in fresh water for one year, moving in and out of side-channels, sloughs, beaver ponds, and tributary streams, seeking food and shelter from the high winter currents (Weitkamp et al., 1995). Though they may begin their migration downstream from April through August, most will migrate downstream approximately one year after emerging from the gravel (Weitkamp et al., 1995). The juvenile coho will generally spend two days to one month in the Columbia River estuary, feeding and adapting to salt water before entering the open ocean. Coho generally spend two years in the ocean, returning to natal streams to spawn in their third year of life. A small percentage of the coho, usually less than five percent of the population, will return early after only one year in the ocean and are known as “Jack salmon” (Weitkamp et al., 1995).

Spawning adults and out-migrating smolts of coho salmon from this ESU use the mainstem Columbia River and Willamette River for rearing and migration (URS, 2012). Out-migrating coho smolts likely use the Restoration Project for migration and rearing in suitable nearshore habitats. The Restoration Project will benefit adults and juvenile coho by providing increased off-channel habitat, increased prey availability, and habitat improvements.



### **1.8.1.5 Steelhead (*Onchorynchus mykiss*)**

#### **Lower Columbia River steelhead**

The LCR steelhead DPS was listed as threatened by NMFS on March 19, 1998, and reaffirmed on January 5, 2006. NOAA Fisheries issued results of a five-year review on Aug. 15, 2011, and concluded that this species should remain listed as threatened (76 FR 50448).

The DPS includes all naturally spawned anadromous steelhead populations below natural and manmade impassable barriers in streams and tributaries to the Columbia River between the Cowlitz and Wind Rivers, Washington (inclusive), and the Willamette and Hood Rivers, Oregon (inclusive), as well as 10 artificial propagation programs. Excluded are steelhead populations in the upper Willamette River Basin above Willamette Falls, Oregon, and from the Little and Big White Salmon Rivers, Washington. Adult LCR steelhead enter the Willamette River from January to June, peaking from mid-January to late April. Juvenile steelhead rear in the Willamette River throughout the year. Juvenile downstream migration peaks from March to mid-August. The Restoration Project will benefit adults and juvenile LCR steelhead. Adults and juveniles will benefit from increased off-channel habitat, increased prey availability, and habitat improvements during out-migration.

### **1.8.1.6 Upper Willamette River steelhead**

The UWR steelhead ESU was listed as threatened by NMFS on March 25, 1999. NOAA Fisheries issued results of a five-year review on Aug. 15, 2011, and concluded that this species should remain listed as threatened (76 FR 50448). Critical habitat was designated for this species within the Willamette River on August 12, 2005. The DPS includes all naturally spawned anadromous steelhead populations below natural and manmade impassable barriers in the Willamette River, Oregon, and its tributaries upstream from Willamette Falls to the Calapooia River (inclusive).

Adult and juvenile steelhead use the lower Willamette River primarily for migration. Adult and juvenile presence of UWR steelhead within the lower Willamette River would generally be found within the same timeframe as LCR steelhead (Section 3.5.3). The Restoration Project will provide benefits to UWR Chinook from increased off-channel habitat which provides refugia from high flows, increased prey availability, and habitat improvements,.

## **1.8.2 Other Target Species**

### **1.8.2.1 Bald Eagle (*Haliaeetus leucocephalus*)**

Bald eagles primarily nest in forested areas within 2 miles of fish-bearing water bodies including rivers, lakes and estuaries (DeGraaf et al. 1980; Peterson 1986). Bald eagles require the presence of large, mature trees, such as Sitka spruce, Douglas-fir, and black cottonwood to use for nesting and perching, and access to shallow-water areas for foraging. Nest trees are characterized by having large trunk forks or multiple forks of the trunk and are typically surrounded by a buffer of additional trees. Bald eagles are sensitive to human disturbance and protection from human disturbance is important for nesting, successful hunting, and feeding of young (Marshall et al. 2006).

Along the lower Columbia River, studies have reported that bald eagles forage mostly on fish (predominately large-scale sucker, American shad, and carp) which accounted for 71 percent of prey remains found at nest sites and 90 percent of direct foraging observations (Watson et al. 1991). Eagles

also occasionally prey on smaller birds. Scavenging opportunities by eagles on the lower Columbia are rare and were not reported in previous studies; however, pirating of prey items from other species such as osprey and gulls is fairly common.

Eagles nesting along the lower Columbia and Willamette Rivers are year-round residents and even though their range may expand somewhat after the breeding season, they do not migrate. Migrating eagles from other areas also overwinter in the lower Columbia River.

Currently the Restoration Site supports only a very narrow band of native trees along the shoreline of the Willamette River. Due to the moderate size of the existing trees and their proximity to ongoing wood by-product processing operations, bald eagles are not expected to nest onsite. In 2012, an active bald eagle's nest was identified across Multnomah Channel in forested property owned by PGE. Portions of the Restoration Site are within a visual line-of-sight from the nest.

Following construction, the Project will include a variety of habitats, including riparian and upland forest. The forest areas will be planted with native tree species in order to establish forested habitat adjacent to the created aquatic habitat and existing waterways. The forest habitat is expected to provide habitat for a variety of bird species, including bald eagle nesting habitat (once the planted trees reach maturity). In the interim, the Restoration Site will benefit bald eagles by removing a sawmill and wood by-product processing operation and providing additional shallow water habitat as well as providing long-term benefits for salmonids in the Lower Willamette River system. In the created marsh/mudflat habitat, installed large woody debris will provide a habitat complexity element for migratory birds (including bald eagles and osprey). Perch sites in the form of tree snags may also be installed on the Restoration Site.

### **1.8.2.2 Osprey (*Pandion halliaetus*)**

Osprey prefer to nest in forested regions due to their preference for large live trees and snags located within 2 miles of a large waterbody (Henny et al. 1978; Vana-Miller 1987). Due to the conversion of forest land for development and agricultural use, osprey have adapted to man-made structures such as channel markers and utility poles for nest sites (Marshall et al. 2006). Lack of nesting opportunities (large trees and nest platforms) appear to be the primary limiting habitat feature for osprey in the Lower Willamette, as suitable open water and foraging opportunity exists.

Osprey along the Willamette River feed on fish which include large-scale sucker and northern pike minnow (Henny et al. 2003). Osprey in the area spend about 6 months on their wintering grounds in Mexico and Central America and return to their breeding grounds along the Willamette River by mid-March to early April of each year (Henny et al. 2003).

Currently the Restoration Site supports only minimal nesting opportunities for osprey in some of the moderately sized trees along the Willamette River. The developed portion of the Restoration Site (which is the majority of the Restoration Site) provides little to no habitat for osprey due to the lack of suitable foraging and nesting areas.

Following construction, the Project will include a variety of habitats beneficial to osprey, including riparian forest and upland forest. The forest areas will be planted with native tree species in order to establish forested habitat adjacent to the created aquatic habitat and the existing waterways. The forest habitat is expected to provide habitat for a variety of bird species, including osprey nesting habitat (once the trees reach maturity). In the interim, the removal of the sawmill and wood by-product processing operations and the creation of shallow water habitat on the Restoration Site will provide direct benefits to osprey, while the long-term benefits to salmonids within the Lower Willamette River system will provide an indirect benefit to species dependent on salmonids for food source, including osprey. Once

construction is complete, the existing trees on the Restoration Site will be more suitable as nesting habitat for osprey since the Restoration Site will no longer support a sawmill or wood by-product processing operation. In the created marsh/mudflat habitat, installed large woody debris will provide a habitat complexity element for migratory birds (including bald eagles and osprey). Perch sites in the form of tree snags may also be installed on the Restoration Site.

### 1.8.2.3 Mink (*Neovison vison*)

Mink are semi-aquatic mammals primarily found around streams, riverbanks, lake shores, and fresh and saltwater marshes. Mink are associated with brushy or vegetative cover next to aquatic habitats, especially in wet areas with irregular or diverse shorelines. Mink activity occurs close to open water and prey availability is the primary factor influencing mink movement and habitat use through the year (Allen 1986).

Mink prey includes fish, crayfish, waterfowl and other water-associated mammals. Upland prey includes rabbits and rodents (Gerell 1967; Allen 1986; Verts and Carraway 1998). Bank slopes are an important factor affecting access and movement of mink into and out of the water, with steep slopes making it difficult for mink to access aquatic prey. In-stream habitat structures such as logs and logjams are important foraging areas for mink (Verts and Carraway 1998). Connectivity between habitats is also important for mink, providing access between various foraging locations and den sites. Ideal habitat in the Willamette River would consist of a nearly continuous, structurally complex corridor along the river bank that provided overhead cover (woody vegetation and debris), permitting mink to travel between upstream and downstream foraging areas, tributaries, and upland habitat. Although mink are considered non-migratory, they have been found to travel distances up to 7.5 miles between forage locations and den sites (Whitaker and Hamilton 1998). Mink will use upland habitat if sufficient cover and prey are available (DeGraaf and Yamasaki 2001). Home ranges for both sexes tend to parallel the configuration of a body of water or wetland basin. Mink move back and forth to forage in a core area, which is located adjacent to the den site (Allen 1986). Gerell (1970) reported that mink had daily activity core areas that did not exceed more than 300m of shoreline. Based on this information, it is assumed that any wetland or wetland-associated habitat in the lower Willamette River has the potential to support mink or provide a corridor for mink passage.

Currently, the Restoration Site provides only limited habitat for mink in the narrow band of habitat around the perimeter of the Restoration Site. In many areas, the perimeter of the Restoration Site has steep slopes which would limit access and movement of mink into and out of the water making it difficult for mink to access aquatic prey. A small portion of the Restoration Site along the Multnomah Channel supports marsh habitat while a portion of the shoreline along the Willamette River supports a narrow band of riparian vegetation; however, these habitats are directly adjacent to the sawmill and wood by-product processing areas on the Restoration Site. The alterations made to the Restoration Site over the years have resulted in a conversion of natural habitats to industrial uses and fragmentation of habitats with limited connectivity and accessibility.

Following construction, the Project will support created channels, marsh/mudflat, riparian scrub-shrub and forest, and upland forest, all of which will be adjacent to the existing waterways (i.e., Multnomah Channel and the Willamette River). The continuous habitat which will be created or enhanced on the Restoration Site will provide mink direct access to the aquatic environment and direct access to upland areas. The marsh, riparian scrub-shrub, and riparian forest habitats which will be directly adjacent to the created channels will provide native vegetative cover. The upland forest areas will be planted with native tree and shrub species to provide an area with increased cover. Debris piles may be constructed throughout the upland forest area to provide cover until the trees and shrubs mature to a point that they

can also provide sufficient cover. The Restoration Site is expected to provide linked foraging and den site locations and has the potential to provide a corridor for mink passage.

#### **1.8.2.4 River Otter (*Lontra canadensis*)**

The river otter is highly adaptable to a wide variety of aquatic habitats. Habitat requirements include connectivity between habitats with a preference for complex overhanging vegetative cover along shorelines and access to open water. These areas are used for loafing, consuming captured prey, and interacting socially. River otters primarily prey on fish and crayfish in the Columbia River Basin; however, they may also consume crabs, mussels, amphibians, waterfowl, small mammals and insects (Toweill and Tabor 1982; Melquist and Dronkert 1987; Melquist et al. 2003). Although river otter home ranges encompass a much larger area compared to mink, the habitat need not be as continuous because otter use the river itself as a travel corridor. Otter home range and habitat use are largely dependent on prey availability and shelter. Off-channel aquatic habitat is used extensively in spring and summer months by adult females when the kits first begin to accompany their mother on foraging excursions (Reid et al. 1994).

There is limited habitat available for the river otter along the lower Willamette River between RM 0 and 15, including the Restoration Site. This is primarily due to the absence of shoreline vegetation, complex woody debris structure, and the lack of breeding and denning areas.

Currently, river otter habitat at the Restoration Site is constrained to a narrow strip around the outer perimeter of the Restoration Site, which provides limited near shore ACM functions during seasonal high water. The shoreline along the Willamette River supports a narrow strip of riparian vegetation, but this riparian fringe is directly adjacent to the wood by-product processing operation. The majority of the Project property has been extensively impacted by recent and historic uses, including: dredge material deposition, creation of a flood control levee, operation of a lumber mill, and construction of a perimeter berm for shoreline protection. Portions of the shoreline adjacent to the Multnomah channel is overly steep, which is an important factor affecting access and movement of river otter into and out of the water. The Restoration Site lacks in-stream habitat structures (e.g., logs and woody debris) that are important foraging areas for otters. The alterations made to the Restoration Site over the years have resulted in both a conversion of natural habitats to developed areas and fragmentation of natural habitats so that habitat connectivity has been lost.

Following construction, the Restoration Site will increase river otter habitat by creating channels, emergent marsh, mudflat, riparian scrub-shrub and forest, and upland forest. The Restoration Site will provide a contiguous area both waterward and landward of the SIDIC levee that would provide habitat for foraging, as well as opportunities for breeding and denning. The Project will also result in the installation of large woody debris along the created channels to mimic a mature riparian system until the planted trees have ample opportunity to establish and mature. The creation, restoration, and enhancement activities proposed for the Restoration Site are expected to improve foraging, breeding, and denning habitat for river otter across the Restoration Site.

#### **1.8.2.5 Pacific Lamprey (*Entosphenus tridentatus*)**

Pacific lamprey spawn in habitat similar to that of salmon: gravel bottomed streams at the upstream end of riffle habitat. Spawning occurs between March and July depending upon location within their range. Embryos hatch in approximately 19 days at 59° Fahrenheit (F) and the ammocoetes drift downstream to areas of low velocity and fine substrates where they burrow, grow and live as filter feeders for 3 to 7 years. Ammocoetes generally move downstream as they age and but their distribution can be altered due

to extreme weather events or habitat-altering anthropogenic impacts. Metamorphosis to the juvenile phase (macrophthalmia) occurs gradually over several months, usually beginning in summer and is complete by winter. As developmental changes occur, including the appearance of eyes and teeth, the juveniles leave the substrate to enter the water column. Moving downstream, they migrate to the ocean between late fall and spring where they mature into adults.

Currently, habitat at the Restoration Site is constrained to a narrow riparian fringe around the outer perimeter of the Restoration Site, which provides limited near shore ACM functions during seasonal high water. This riparian fringe provides limited quality habitat. The majority of the Project property has been extensively impacted by recent and historic uses including: dredge material deposition, creation of a flood control levee, operation of a lumber mill, and construction of a perimeter berm.

Multnomah Channel and the Willamette River provide a migratory corridor for juvenile and adult Pacific lamprey as they may be able to access the sandy shallow shoreline portions of the Project adjacent to these waterways; however, portions of the shoreline have artificially steepened banks adjacent to the Multnomah Channel which would significantly limit access opportunity.

ODFW has identified numerous limiting factors in the Lower Willamette including lack of passage caused by barriers, loss of side channel habitat, scouring, and poor water quality, all of which will be improved and enhanced as a result of the Project. In order to address these factors, the Project will provide new habitat elements to support native fish, including: off-channel/side-channel waterways, shallow water, beach, edge habitats, high flow refugia, forested shoreline, and channel complexity resulting from topographic contouring and installation of LWD.

## **1.9 SUMMARY OF HABITAT DEVELOPMENT PLAN**

The design of the Restoration Project consists of several restoration elements, including removing a sawmill from the floodplain of the Willamette River, excavating approximately 442,000 cy of material to create a variety of natural habitats within the active channel margin (ACM) of the Willamette River, and placing material landward of the levee in order to establish upland forest habitat. The natural habitats restored, created, and/or enhanced on the Project site will benefit numerous salmonid species (Target Salmonids) occurring within the Willamette River, as well as providing benefits to other aquatic, avian, and terrestrial species. The Habitat Development Plan for the Project (Exhibit B-1 of the Restoration Plan) describes in detail how the created, restored, and enhanced habitats will be established and enhanced during the Establishment Period including project objectives, performance standards, and monitoring methods and frequency.

This Project will create, enhance, and protect a mosaic of habitats that will enhance fish and wildlife resources in the Lower Willamette River, an area that has experienced significant degradation of habitat including channelization, off-channel habitat removal, floodplain removal, silt loading, and water temperature increases. The most limiting or scarce habitat types within the Lower Willamette River include refuge from mainstem Willamette River flows, shallow water, and beach habitats with or without large wood assemblages, and undulating natural shorelines (NOAA 2012).

The Project will be constructed with the use of heavy equipment including bulldozers, excavators, dump trucks, etc. Construction is proposed to be completed within one construction season, and all in-water construction work is scheduled to occur within the designated in-water work window in order to minimize potential impacts to the protected resources onsite. Following construction, the Restoration Project will be protected with an in-perpetuity conservation easement and managed with funds from a non-wasting endowment fund.

At Project completion, the Project will consist of approximately 3.10 acres of restored side channel habitat, 20.01 acres of habitat within the active channel margin (which includes 3.29 acres of mudflat and beach habitat, 5.57 acres of emergent marsh, and 11.15 acres of riparian scrub-shrub and forest habitat), 8.79 acres of riparian forest within the floodplain, and 20.38 acres of forest outside of the floodplain. See Figure 9 for post-construction elevations.

The restored habitats within the Project will be held to measureable performance standards, monitoring requirements and management standards, all of which are described in the Habitat Development Plan (Exhibit B-1). To verify that the Restoration Project has achieved performance standards, activities such as regular site visits, habitat maintenance, adaptive management, effectiveness monitoring (including hydrology, vegetation, and physical monitoring), and annual reports will be required to maintain and track Project effectiveness and function during the Establishment Period. The Establishment Period for the Alder Creek Restoration Project is 10 years. After 10 years, if the site has met all performance standards or if the Establishment Period is deemed complete by the Trustee Council or its designee(s), the Project will move into the long-term management phase as described in this Plan. Over the long-term, the restored habitats are expected to continually provide the enhanced and restored habitat functions without significant human intervention.

## References

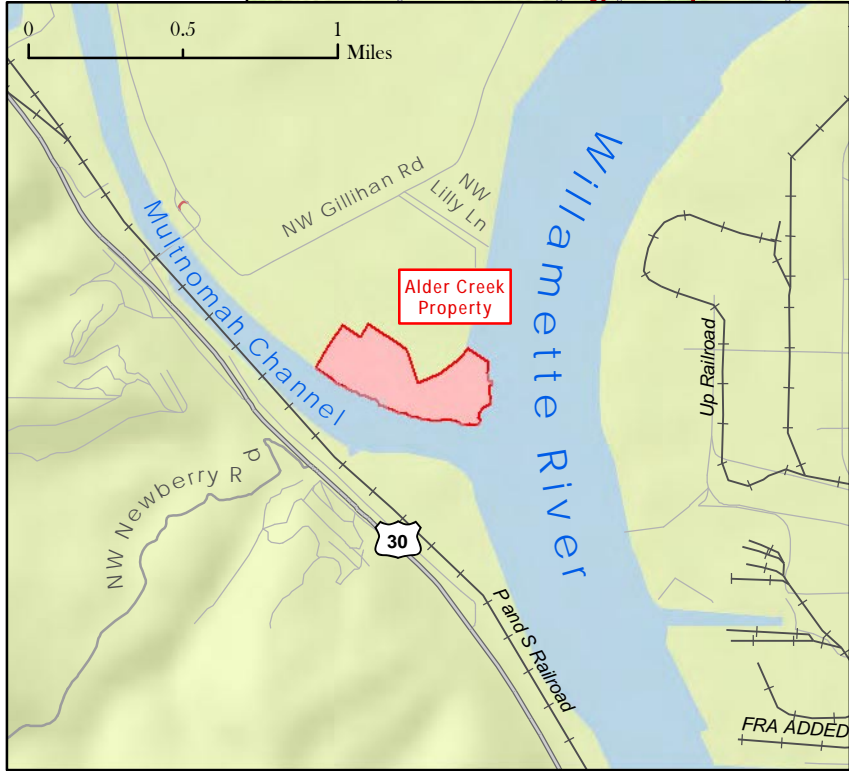
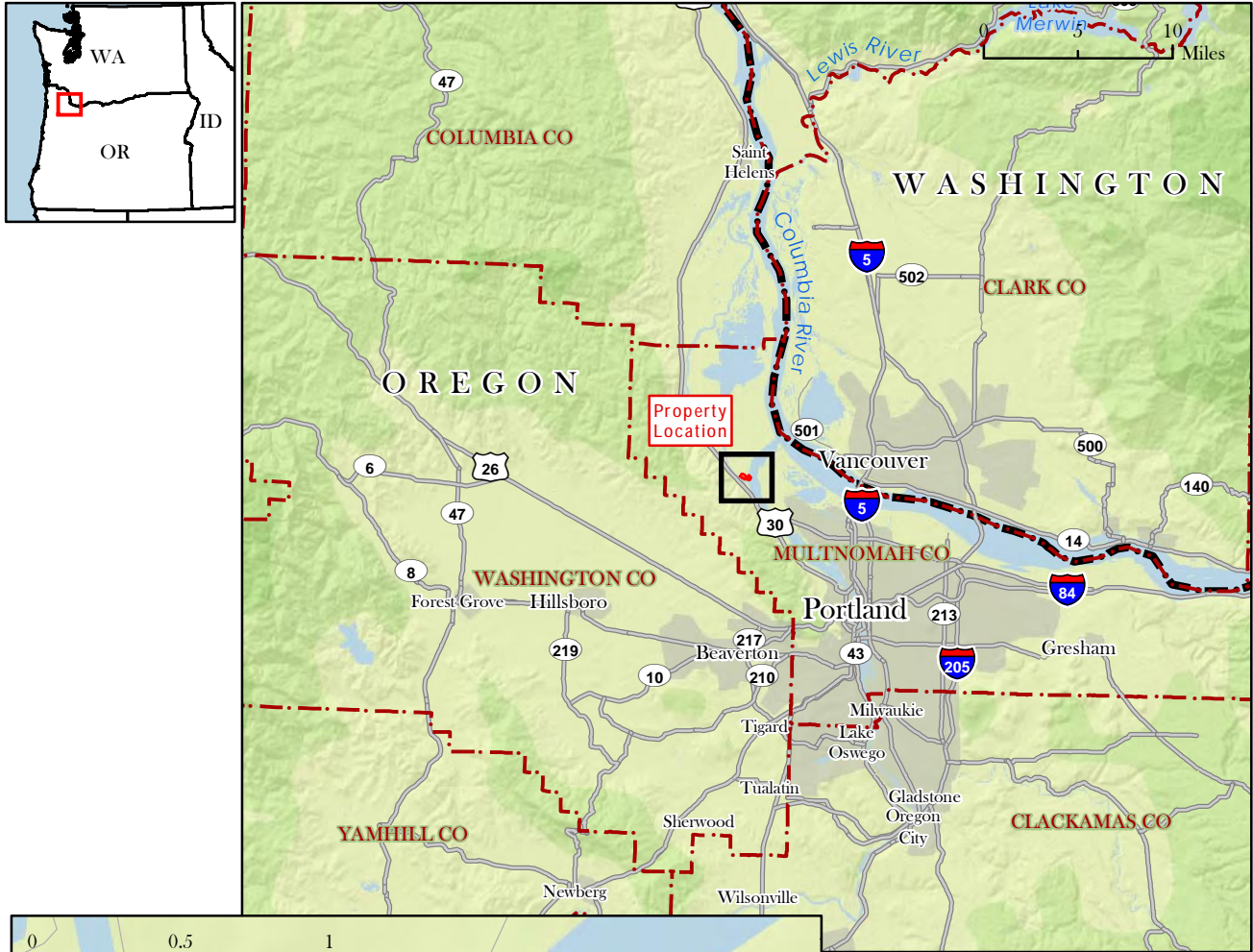
---

- Allen, A.W. 1986. Habitat suitability index models: Mink, revised. U.S. Fish and Wildlife Service Biological Report 82(10.127). [First printed as: FWS/OBS-82/10.61, October 1983.] 23 pp.
- DeGraaf, R.M., G.M. Witman, J.W. Lancier, B.J. Hill, and J.M. Keniston. 1980. Forest habitat for birds of the Northeast. U.S. Forest Service, Northeast Forest Experiment Station, Broomall, Pennsylvania. 598 pp.
- DeGraaf, R.M., and M. Yamasaki. 2001. New England wildlife: Habitat, natural history and distribution. University Press of New England, Hanover, New Hampshire, USA. 482pp.
- Greenworks, P.C. Clearwater West, Fishman Environmental Services LLC, Inter-Fluve, Inc., and KPPF Consulting Engineers. 2001. Willamette Riverbank Design Notebook: Portland, Oregon. Bureau of Environmental Services. City of Portland, Oregon.
- Gerell, R. 1967. Food selection in relation to habitat in mink in Sweden. *Oikos* 20(2): 451-460.
- Gerell, R. 1970. Home ranges and movements of the mink (*Mustela vison*) in southern Sweden. *Oikos* 21(2):160-173.
- Henny, C.J., J.A. Collins, and W.J. Diebert. 1978. Osprey distribution, abundance, and status in western North America: II. The Oregon population. *Murrelet* 59: 14-25.
- Henny, C.J., J.L. Kaiser, R.A. Grove, V.R. Bentley, and J.E. Elliot. 2003. Biomagnification factors (fish to osprey eggs from Willamette River, Oregon, U.S.A) for PCDDs, PCDFs, PCBs, and OC pesticides. *Environmental Monitoring and Assessment* 84:275-315.
- Marshall, D.B., M.G. Hunter, and A.L. Contreras. 2006. Birds of Oregon: A general reference. Oregon State University Press, Corvallis, Oregon. 640 pp.
- Melquist, W.E., and A.E. Dronkert. 1987. River otter. Pages 626-641 in M. Novak, J.A. Baker, M.E. Obbard, and B. Malloch, eds., *Wildlife furbearer management and conservation in North America*. Ontario Ministry of Natural Resources, Toronto, Canada. 1,150 pp.
- Melquist, W.W., P.J. Polechla, and D. Toweill. 2003. Chapter 35. River Otter (*Lontra canadensis*). Pages 708-734 in G.A. Feldhamer, B.C. Thompson, and J.A. Chapman, eds., *Wild Mammals of North America: Biology, Management, and Economics*. The John Hopkins University Press, Baltimore, Maryland. 1,216 pp.
- Myers, J.M., R.G. Kope, G.J. Bryant, D. Teel, L.J. Lierheimer, T.C. Wainwright, W.S. Grant, F.W. Waknitz, K. Neely, S.T. Lindley, and R.S. Waples. 1998. Status review of Chinook salmon from Washington, Idaho, Oregon, and California. National Marine Fisheries Service, Northwest Fisheries Science Center, Conservation Biology Division, Seattle, WA.
- Natural Resource Conservation Service (NRCS). 2000. National Water and Climate Center. Climate Information for Multnomah County in the State of Oregon using Station OR6749 at Portland WB City. Available online at <http://www.wcc.nrcs.usda.gov/ftpref/support/climate/taps/or/41051.txt>. Accessed 01/09/2012.

- NMFS (National Marine Fisheries Service). 2005. 2005 Report to Congress: Pacific Coastal Salmon Recovery Fund FY 2000-2004. NMFS, Northwest Region, Seattle, WA.
- NMFS (National Marine Fisheries Service). 2006. 2005 Report to Congress: Pacific Coastal Salmon Recovery Fund FY 2000-2005. NMFS, Northwest Region, Seattle, WA.
- NOAA (National Oceanic and Atmospheric Administration). July 09, 2012. DRAFT Portland Harbor Programmatic EIS and Restoration Plan. Portland, Oregon.
- Peterson, A. 1986. Habitat suitability index models: Bald eagle (breeding season). U.S. Fish and Wildlife Service Biological Report 82(10.126). 25 pp.
- Reid, D.G., T.E. Code, A.C.H. Reid, and S.M. Herrero. 1994. Spacing, movements, and habitat selection of the river otter in boreal Alberta. *Canadian Journal of Zoology* 72:1,314-1,324.
- Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. Web Soil Survey. Available online at <http://websoilsurvey.nrcs.usda.gov/> accessed [October/20/2009].
- Toweill, D.E., and J.E. Tabor. 1982. River otter (*Lutra canadensis*). Pages 688-703 in J.A. Chapman and G.A. Feldhamer, eds., *Wild Mammals of North America: Biology, management, and economics*. John Hopkins University Press, Baltimore, MA. 1,147 pp.
- URS, 2012. Alder Creek Mill Restoration Project Biological Assessment. URS Project Number: 25697497, August 2012
- Vana-Miller, S.L. 1987. Habitat suitability index models: Osprey. U.S. Fish and Wildlife Service Biological Report. 82(10.154). 46 pp.
- Verts, B.J., and L. Carraway. 1998. *Land Mammals of Oregon*. University of California Press, Berkeley and Los Angeles, California. 424pp.
- Watson, J.W., M.G. Garrett, and R.G. Anthony. 1991. Foraging ecology of bald eagles in the Columbia River estuary. *Journal of Wildlife Management*. 55:492-499.
- Whitaker, J.O., and W.J. Hamilton, Jr. 1998. *Mammals of the Eastern United States*. Cornell University Press, Ithaca, NY. 583pp.
- Willamette Cultural Resources Associates, Ltd. (WCRA) 2011. Cultural Resources Survey for the Proposed Alder Creek Restoration Project, Multnomah County, Oregon, Final Report. WillametteCRA Report Number 10-25. June 2, 2012.



## **FIGURES**



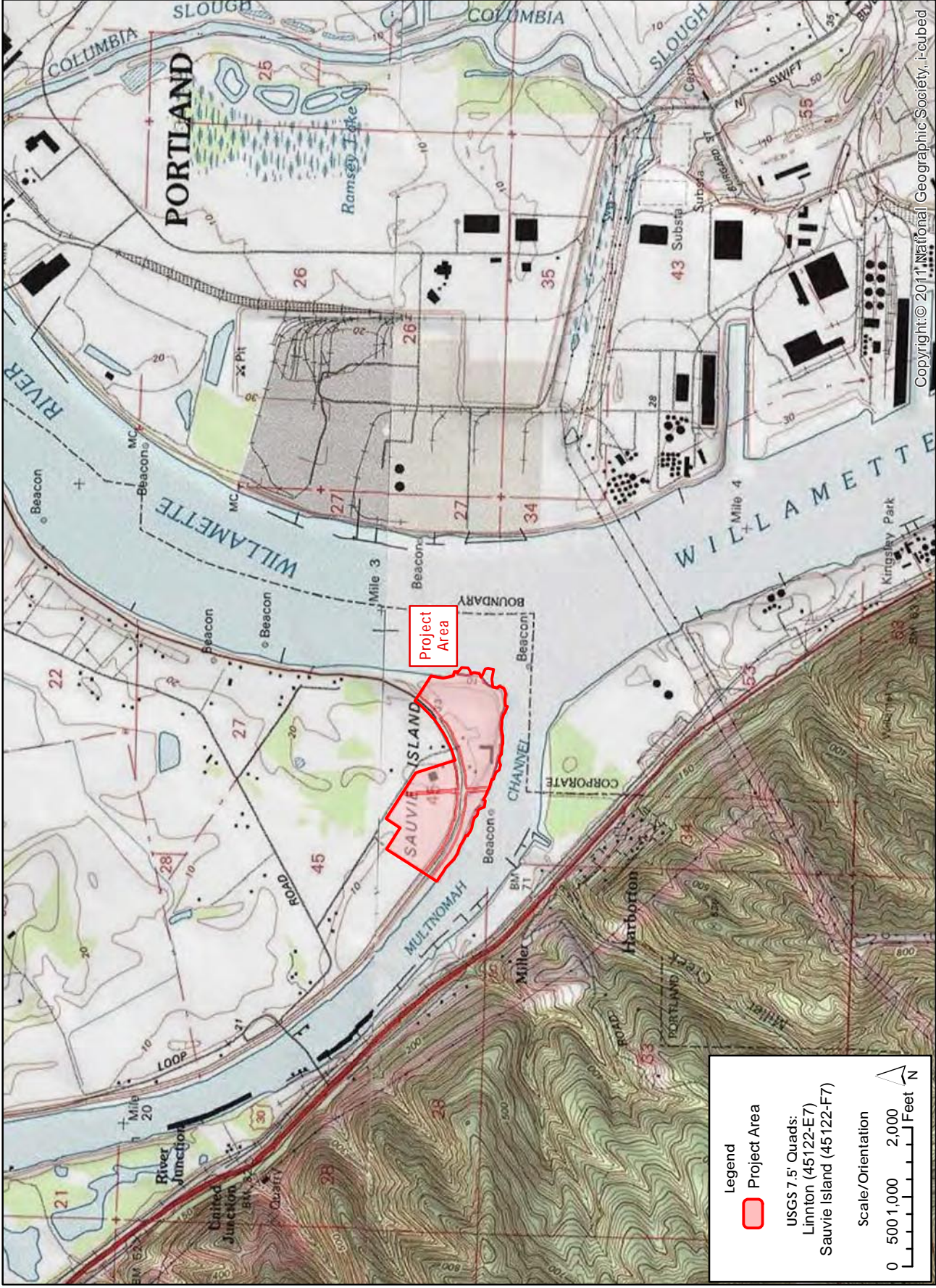
**Legend**  
 Alder Creek Property

**WILDLANDS**

Alder Creek Restoration Project

Figure 1  
Vicinity Map





# WILDLANDS

Alder Creek Restoration Project

Figure 2

USGS 7.5' Quadrangle





Map Source: Portland Harbor Natural Resource Trustee Council - Broader Focus Area for Ecological Restoration.

**WILDLANDS**

Alder Creek Restoration Project

Figure 3  
Portland Harbor Natural Resource Trustee Council  
Broader Focus Area for Ecological Restoration





Source of Ordinary High Water Line:  
 US Army Corps of Engineers. (November 2004). *Portland-Vancouver Harbor Information Package; Second Edition; Reservoir Regulation and Water Quality Section*. Retrieved March 13, 2012, from [http://www.nwd-wc.usace.army.mil/nwp/Reports/Portland\\_Harbor.pdf](http://www.nwd-wc.usace.army.mil/nwp/Reports/Portland_Harbor.pdf)  
 and  
*Wetland and Other Waters Delineation Report: Alder Creek Mill Restoration Site*. URS Corporation, Portland, OR. December 8, 2011.

Aerial Photo: 45°37'18.88" N and 122°47'58.40" W. **Google Earth**. August 20, 2011.

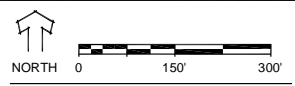
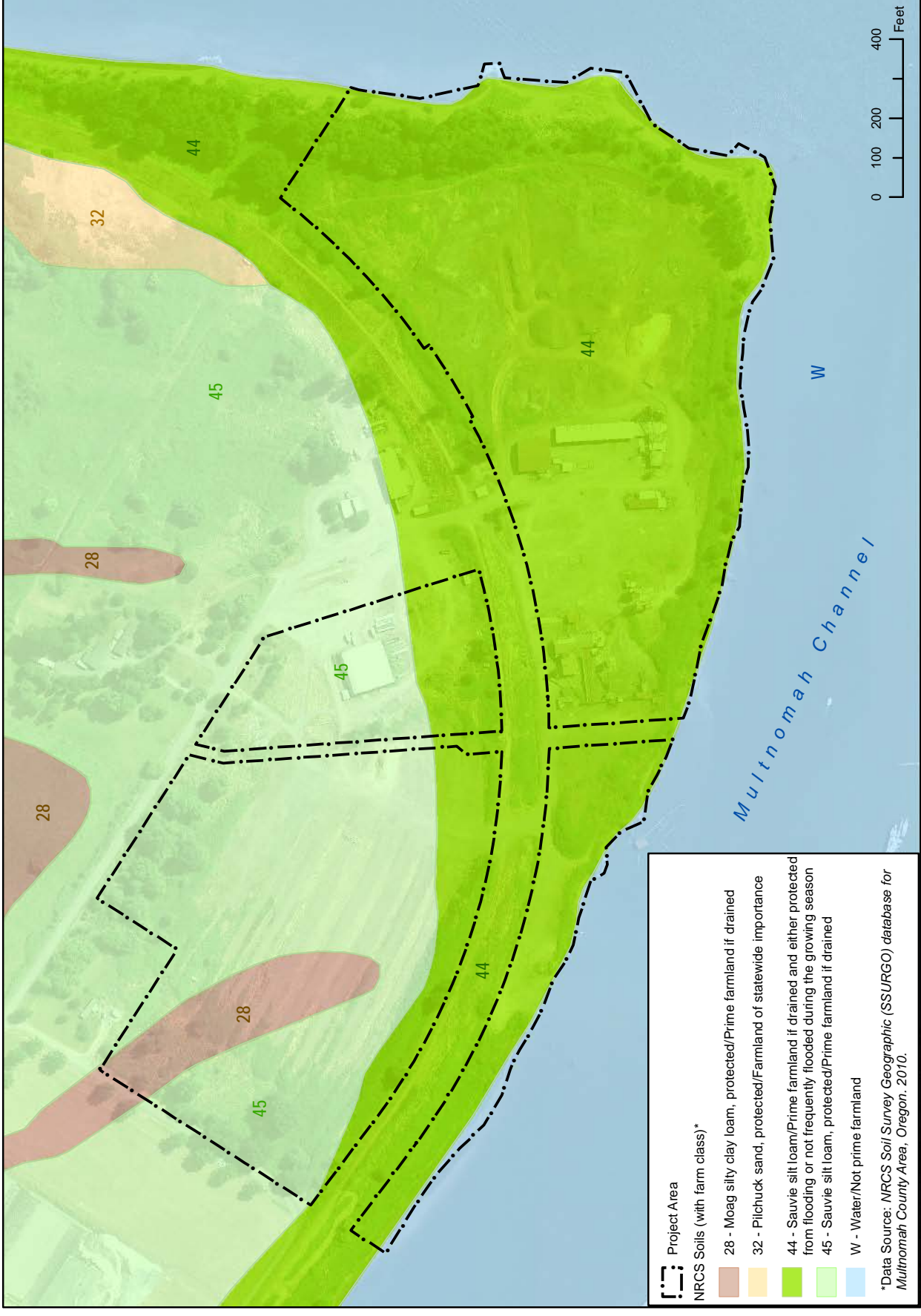


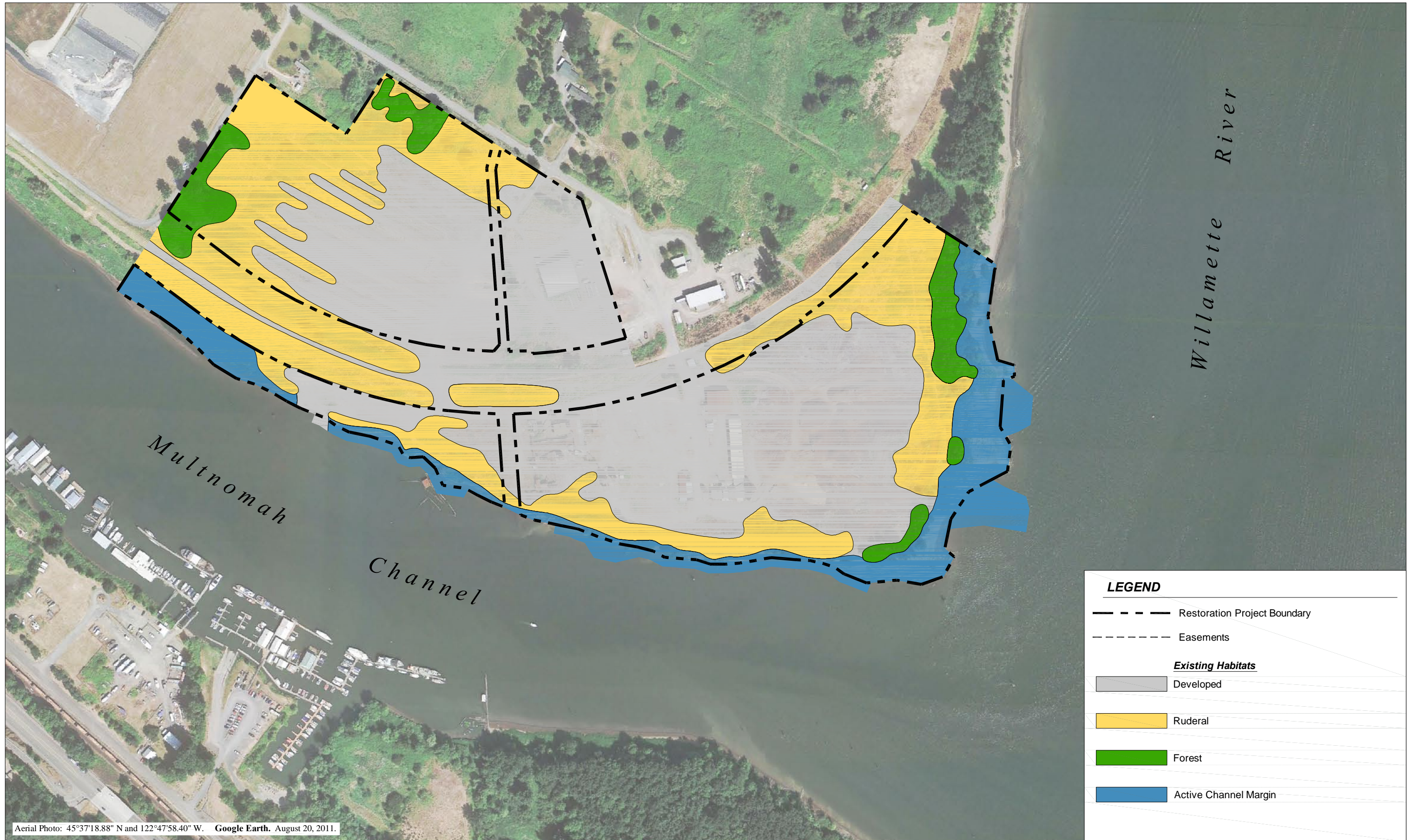


Figure 5  
Soils Map



# WILDLANDS

Alder Creek Restoration Project





**LEGEND**

- Restoration Project Boundary
- Ordinary High Water Line (OHWL):  
20ft NAVD88 (16.6ft NGVD29)
- 100 yr Floodplain:  
32ft NAVD88 (28.6ft NGVD29)

**Post-construction Habitats:**

- Side Channels (SC)
- Mudflat and Beach (MB)
- Emergent Marsh / Mudflat (EM)
- Scrub-Shrub and Riparian Forest - below OHWL (SS)
- Riparian Forest - above OHWL (within 100-yr floodplain) (RF)
- Forest - above OHWL (outside 100-yr floodplain) - Oak Dominant (FO)
- Forest - above OHWL (outside 100-yr floodplain) - Cottonwood Dominant (FC)

**Active Channel Margin**

- Large Woody Debris

Source of Ordinary High Water Line: US Army Corps of Engineers. (November 2004). *Portland-Vancouver Harbor Information Package; Second Edition; Reservoir Regulation and Water Quality Section*. Retrieved March 13, 2012, from [http://www.nwd-wc.usace.army.mil/nwp/Reports/Portland\\_Harbor.pdf](http://www.nwd-wc.usace.army.mil/nwp/Reports/Portland_Harbor.pdf)

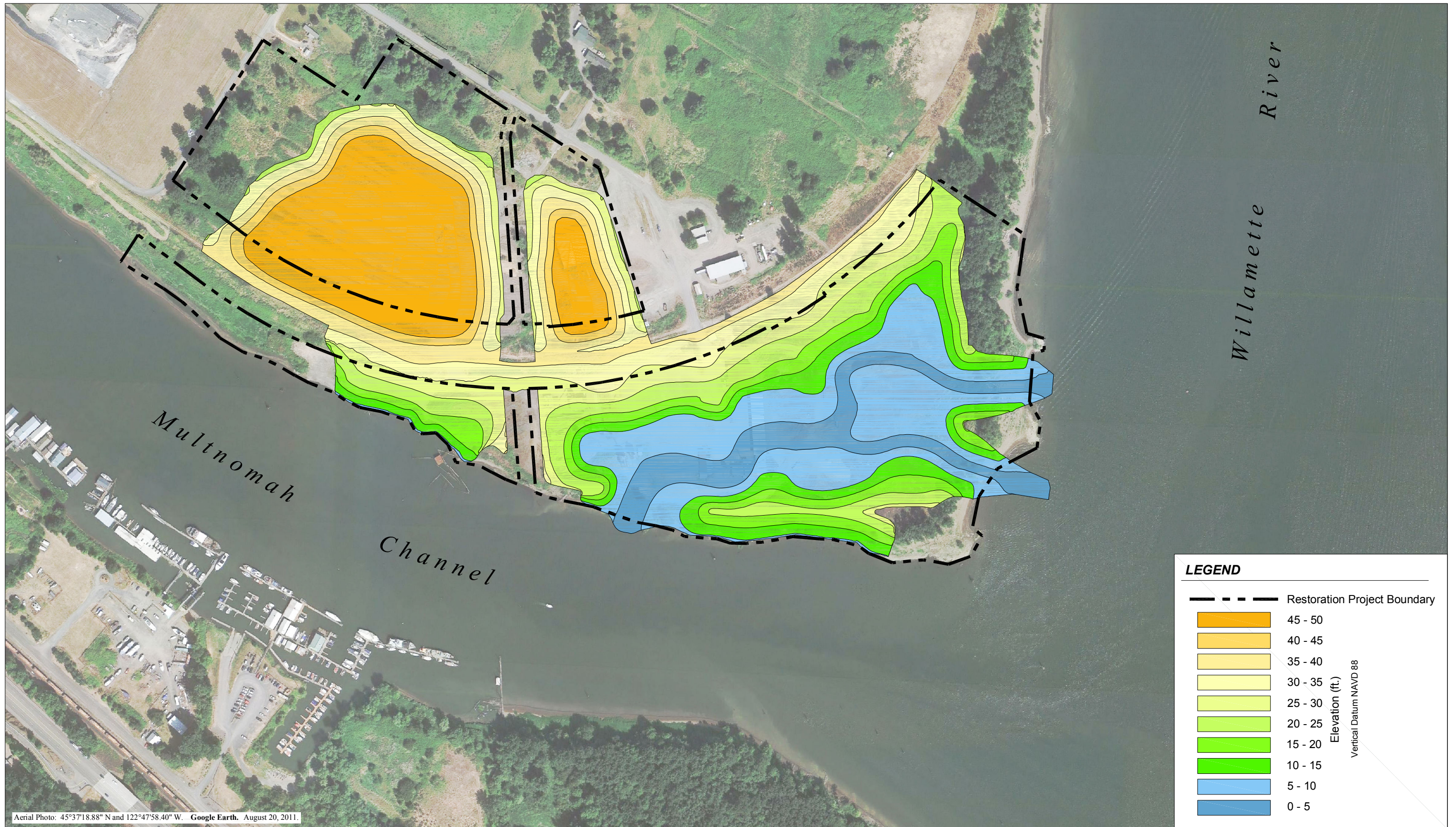
Source of 100 year Floodplain: GreenWorks, PC • ClearWater West • Fishman Environmental Services • Inter-Fluve • KPFF Consulting. (May 2004). *Willamette Riverbank Design Notebook: Portland, Oregon*. Retrieved March 13, 2012 from [http://www.fws.gov/filedownloads/ftp\\_OFWO/PortlandHarborNRDAdocs/13\\_ID51877.willamette\\_riverbank\\_design\\_notebook.pdf](http://www.fws.gov/filedownloads/ftp_OFWO/PortlandHarborNRDAdocs/13_ID51877.willamette_riverbank_design_notebook.pdf)

Aerial Photo: 45°37'18.88" N and 122°47'58.40" W. **Google Earth**. August 20, 2011.











**LEGEND**

- BIRD ASSEMBLAGE POINT COUNT LOCATION
- MINK CAMERA STATION
- ELEVATION MARKER
- MONITORING TRANSECT

# **Exhibit C**

## **NRD Service Area**

## **SERVICE AREA DESCRIPTION**

The Alder Creek Restoration Project (“Project”) is located at the southernmost tip of Sauvie Island at the divergence of the Willamette River and Multnomah Channel. The Project is intended to provide replacement of lost functions to habitat for threatened and endangered salmonids as well as other wildlife occurring within the Lower Willamette River system. Specifically, the Project will provide restoration to offset damages to natural resources identified under the Natural Resource Damages (NRD) Assessment for Portland Harbor. The NRD service area consists of the area of the Portland Harbor Superfund Study Area as depicted on the attached map, NRD Service Area. The Service Area runs from approximately river mile 1 to river mile 12.2 of the Willamette River and includes the upper mile of Multnomah Channel. The entire Portland Harbor Superfund area as well as adjacent lands is included within the Service Area. Subject to approval by all appropriate officials, public review and comment, and court approval, Portland Harbor Potentially Responsible Parties (PRPs) will be able to utilize the credits from the Project to either partially or fully satisfy their liability for NRD. The number of credits available is dependent on the final as-built surveys, achievement of performance monitoring standards, and a commitment to fund long-term stewardship of the Project.

The Restoration Project may also provide mitigation and/or compensation for impacts to threatened and endangered species, and wetlands and waters of the United States under Section 7 or Section 10 of the federal Endangered Species Act; Section 404 and Section 401 of the Clean Water Act; Section 10 of the Rivers and Harbors Appropriation Act; and other federal, state, and/or local regulations provided that authorization and/or approval is obtained from the appropriate agency or agencies.



Map Source: Portland Harbor Natural Resource Trustee Council - Broader Focus Area for Ecological Restoration.

# WILDLANDS

Alder Creek Restoration Project

Exhibit C  
NRD Service Area



## **Exhibit D**

**Title Report, Legal Description, Parcel Maps**

## **Title Report**





## **Ticor Title Company PRELIMINARY REPORT**

In response to the application for a policy of title insurance referenced herein Ticor Title Company hereby reports that it is prepared to issue, or cause to be issued, as of the specified date, a policy or policies of title insurance describing the land and the estate or interest hereinafter set forth, insuring against loss which may be sustained by reason of any defect, lien or encumbrance not shown or referred to as an exception herein or not excluded from coverage pursuant to the printed Schedules, Conditions and Stipulations or Conditions of said policy forms.

The printed Exceptions and Exclusions from the coverage of said policy or policies are set forth in Exhibit A. The policy to be issued may contain an arbitration clause. When the Amount of Insurance is less than that set forth in the arbitration clause, all arbitrable matters shall be arbitrated at the option of either the Company or the Insured as the exclusive remedy of the parties. Copies of the policy forms should be read. They are available from the office which issued this report.

This report (and any supplements or amendments hereto) is issued solely for the purpose of facilitating the issuance of a policy of title insurance and no liability is assumed hereby.

The policy(s) of title insurance to be issued hereunder will be policy(s) of Chicago Title Insurance Company, a/an Nebraska corporation.

**Please read the exceptions shown or referred to herein and the Exceptions and Exclusions set forth in Exhibit A of this report carefully. The Exceptions and Exclusions are meant to provide you with notice of matters which are not covered under the terms of the title insurance policy and should be carefully considered.**

**It is important to note that this preliminary report is not a written representation as to the condition of title and may not list all liens, defects and encumbrances affecting title to the land.**

This preliminary report is for the exclusive use of the parties to the contemplated transaction, and the Company does not have any liability to any third parties nor any liability until the full premium is paid and a policy is issued. Until all necessary documents are placed of record, the Company reserves the right to amend or supplement this preliminary report.

*Countersigned*



**Ticor Title Company**

111 SW Columbia, Suite 1000, Portland, OR 97201  
(503)646-4444 FAX (503)469-4197

**PRELIMINARY REPORT**

TITLE OFFICER: Mark Davison

ORDER NO.: 3626057811TO-TTPOR51  
CUSTOMER NO.: ALDER CREEK  
**1st Supplemental**

TO: Wildlands  
Attn: Becky Amos  
3855 Atherton Road  
Rocklin, CA 95765

OWNER/SELLER: Portland Harbor Holdings II

BUYER/BORROWER: Heron Pacific, LLC dba Wildlands PNW

**PROPERTY ADDRESS:** NW Gillihan Road  
Portland, Oregon 97231

**EFFECTIVE DATE: May 23, 2013, 08:00 AM**

1. THE POLICY AND ENDORSEMENTS TO BE ISSUED AND THE RELATED CHARGES ARE:

	<u>AMOUNT</u>	<u>PREMIUM</u>
Owner's Standard (Short Term Rate)		
Governmental Service Fee		\$ 50.00

2. THE ESTATE OR INTEREST IN THE LAND HEREINAFTER DESCRIBED OR REFERRED TO COVERED BY THIS REPORT IS:

A Fee

3. TITLE TO SAID ESTATE OR INTEREST AT THE DATE HEREOF IS VESTED IN:

Portland Harbor Holdings II, LLC, a Delaware limited liability company

4. THE LAND REFERRED TO IN THIS REPORT IS SITUATED IN THE COUNTY OF MULTNOMAH, STATE OF OREGON, AND IS DESCRIBED AS FOLLOWS:

SEE EXHIBIT "ONE" ATTACHED HERETO AND MADE A PART HEREOF

# PRELIMINARY REPORT

(Continued)

Order No.: 3626057811TO-TTPOR51

## EXHIBIT "ONE"

A CONSERVATION EASEMENT over the following tract described as follows:

A tract of land located in the James Menzie Donation Land Claim Number 45 also being located in Sections 27 and 28, Township 2 North, Range 1 West, Willamette Meridian, Multnomah County, Oregon, and being more particularly described as follows:

Beginning at a 4 inch brass disk at the most northerly corner of the James Menzie Donation Land Claim Number 45, thence South 12°30'05" East, 3393.60 feet to a 5/8 inch iron rod with a yellow plastic cap inscribed "AKS ENGR." at the westerly northern corner of the tract per Document Number 2012-031855 and the True Point of Beginning; thence along the northeasterly line of said Document Number 2012-031855 South 59°01'00" East 363.00 feet to a 5/8 inch iron rod with a yellow plastic cap inscribed "AKS ENGR."; thence continuing along said northeasterly line North 30°59'00" East, 240.22 feet to 5/8 inch iron rod with a yellow plastic cap inscribed " AKS ENGR."; thence along the northeasterly lines of the tracts per Document Number 2012-031855 and Document Number 2011-145120 South 59°01'00" East, 786.50 feet to a 5/8 inch iron rod with a yellow plastic cap inscribed " AKS ENGR."; thence continuing along the northeasterly line of said Document Number 2011-145120 South 19°14'19" East, 593.80 feet to a 5/8 inch iron rod with a yellow plastic cap inscribed " AKS ENGR."; thence along the centerline of the Levee Easement per Book 490 Page 435 (recorded 04/05/1939), Book 497 Page 251 (recorded 05/19/1939), Book 518 Page 250 (recorded 10/18/1939), Book 523 Page 91 (recorded 11/22/1939), Book 535 Page 51 (recorded 02/16/1940) and Book 2086 Page 291 (recorded 10/18/1961), partially quitclaimed per Document Number 2012-026638 hereinafter called "Levee Easement", along a non-tangent curve to the left (Radial: North 17°09'37" West) with a Radius of 1637.02 feet, a Delta of 36°46'12", a Length of 1050.57 feet, and a Chord of North 54°27'18" East, 1032.63 feet to a 5/8 inch iron rod with a yellow plastic cap inscribed " AKS ENGR."; thence leaving said Levee Easement centerline along the northeasterly line of said Document Number 2011-145120 South 59°01'00" East, 423 feet, more or less to the Mean Low Water line of the Willamette River; thence southerly along the Mean Low Water line of the Willamette River and northwesterly along the Mean Low Water line of the Multnomah Channel 4330 feet, more or less to a point on the northwest line of said tract per Document Number 2011-145120; thence along the northwest line of said tracts per Document Number 2011-145120 and Document Number 2012-031855 North 30°59'00" East, 859 feet, more or less to the True Point of Beginning.

EXCEPTING THEREFROM:

A tract of land located in the James Menzie Donation Land Claim Number 45 also being located in Section 27, Township 2 North, Range 1 West, Willamette Meridian, Multnomah County, Oregon, and being more particularly described as follows:

Beginning at a 4 inch brass disk at the most northerly corner of the James Menzie Donation Land Claim Number 45, thence South 12°30'05" East, 3393.60 feet to a 5/8 inch iron rod with a yellow plastic cap inscribed "AKS ENGR." at the westerly northern corner of the tract per Document Number 2012-031855; thence along the northeasterly line of said Document Number 2012-031855 South 59°01'00" East, 363.00 feet to a 5/8 inch iron rod with a yellow plastic cap inscribed "AKS ENGR."; thence continuing along said northeasterly line North 30°59'00" East, 240.22 feet to 5/8 inch iron rod with a yellow plastic cap inscribed " AKS ENGR."; thence along the northeasterly line of the tract per Document Number 2012-031855 South 59°01'00" East, 431.01 feet to a point on the westerly line of the 30.00 foot pipeline easement per Book 265 Page 113 (Recorded 04/05/1965) and the True Point of Beginning; thence along said westerly line South 11°44'00" West, 89.00 feet to a point; thence continuing along said westerly line South 05°48'00" East, 593.55 feet to a point; thence leaving said pipeline easement along the westerly line of the communications easement per Document Number 98179149

## PRELIMINARY REPORT

(Continued)

Order No.: 3626057811TO-TTPOR51

South 39°12'00" West, 31.82 feet to a point; thence continuing along said westerly line South 05°48'00" East, 525.01 feet to a point on the Mean Low Water Line of the Multnomah Channel; thence along said Mean Low Water line South 66°23'34" East, 60 feet, more or less to a point on the easterly line of said pipeline easement; thence along said easterly line North 05°48'00" West, 1166.02 feet to a point; thence continuing along said easterly line North 11°44'00" East, 73.90 feet to a point on the northeasterly line of said Document Number 2012-031855; thence along said northeasterly line North 59°01'00" West 31.78 feet to the True Point of Beginning.

ALSO EXCEPTING THEREFROM:

A tract of land located in the James Menzie Donation Land Claim Number 45 also being located in Sections 27 and 28, Township 2 North, Range 1 West, Willamette Meridian, Multnomah County, Oregon, and being more particularly described as follows:

Beginning at a 4 inch brass disk at the most northerly corner of the James Menzie Donation Land Claim Number 45, thence South 12°30'05" East, 3393.60 feet to a 5/8 inch iron rod with a yellow plastic cap inscribed "AKS ENGR." at the westerly northern corner of the tract per Document Number 2012-031855; thence along the northwesterly line of the tracts per Document Number 2012-031855 and Document Number 2011-145120 South 30°59'00" West, 544.67 feet to a point on northerly line of the "Levee Easement" (115.00 feet from centerline) and the True Point of Beginning; thence along the northerly line of said "Levee Easement" South 54°44'34" East 289.67 feet to a point; thence continuing along said northerly line along a non-tangent curve to the left (Radial: North 34°39'49" East) with a Radius of 1522.02 feet, a Delta of 39°47'41", a Length of 1057.12 feet, and a Chord of South 75°14'01" East, 1036.00 feet to a point; thence continuing along said north line South 05°07'52" East, 10.00 feet to a point; thence continuing along said northerly line (105.00 feet from centerline) along a non-tangent curve to the left (Radial: North 05°07'52" West) with a Radius of 1532.02 feet, a Delta of 11°53'11", a Length of 317.83 feet, a Chord of North 78°55'32" East, 317.26 feet to a point on the northeasterly line of said Document Number 2011-145120; thence along said northeasterly line South 19°14'19" East, 105.07 feet to a point on the centerline of said "Levee Easement"; thence along said centerline along a non-tangent curve to the left (Radial: North 17°09'37" West) with a Radius of 1637.02 feet, a Delta of 36°46'12", a Length of 1050.57 feet, and a Chord of North 54°27'18" East, 1032.63 feet to a 5/8 inch iron rod with a yellow plastic cap inscribed "AKS ENGR." on the northeasterly line of said Document Number 2011-145120; thence along said northeasterly line South 59°01'00" East, 90.34 feet to a point on the southerly line of said "Levee Easement" (90.00 feet from centerline); thence along said southerly line along a non-tangent curve to the right (Radial: North 54°11'45" West) with a Radius of 1727.02 feet, a Delta of 17°33'53", a Length of 529.44 feet, a Chord of South 44°35'11" West, 527.37 feet to a point; thence continuing along said southerly line South 36°37'52" East 15.00 feet to a point; thence continuing along said southerly line (105.00 feet from centerline) along a non-tangent curve to the right (Radial: North 36°37'52" West) with a Radius of 1742.02 feet, a Delta of 07°00'00", a Length of 212.83 feet, and a Chord of South 56°52'08" West, 212.70 feet to a point; thence North 29°37'52" West 10.00 feet to a point; thence continuing along said southerly line (95.00 feet from centerline) along a non-tangent curve to the right (Radial: North 29°37'52" West) with a Radius of 1732.02 feet, a Delta of 64°19'55", a Length of 1944.72 feet, and a Chord of North 87°27'55" West, 1844.17 feet to a point; thence North 54°44'34" West, 275.03 feet to a point on the northwest line of said Document Number 2011-145120; thence along said northwest line North 30°59'00" East, 210.59 feet to the True Point of Beginning.

As per survey by AKS Engineering & Forestry, Job Number 2641, dated March 6, 2012

**AS OF THE DATE OF THIS REPORT, ITEMS TO BE CONSIDERED AND EXCEPTIONS TO COVERAGE IN ADDITION TO THE PRINTED EXCEPTIONS AND EXCLUSIONS IN THE POLICY FORM WOULD BE AS FOLLOWS:**

**GENERAL EXCEPTIONS:**

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records; proceedings by a public agency which may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the public records.
2. Facts, rights, interests or claims which are not shown by the public records but which could be ascertained by an inspection of the land or by making inquiry of persons in possession thereof.
3. Easements, or claims of easement, not shown by the public records; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.
4. Any encroachment, (of existing improvements located on the subject land onto adjoining land or of existing improvements located on adjoining land onto the subject land), encumbrance, violation, variation or adverse circumstance affecting the title that would be disclosed by an accurate and complete land survey of the subject land.
5. Any lien or right to a lien for services, labor, material, equipment rental or workers compensation heretofore or hereafter furnished, imposed by law and not shown by the public records.

**SPECIFIC ITEMS AND EXCEPTIONS:**

- A. Note: Property taxes for the fiscal year shown below are paid in full.

Fiscal Year: 2012-13  
Amount: \$2,925.12  
Account No.: R325230, 2N1W27 -00800, CODE 049

- B. Note: Property taxes for the fiscal year shown below are paid in full.

Fiscal Year: 2012-13  
Amount: \$9,004.69  
Account No.: R325219, 2N1W27 -00700, CODE 049  
Affects: Land Only

- C. Note: Property taxes for the fiscal year shown below are paid in full.

Fiscal Year: 2012-13  
Amount: \$514.30  
Account No.: R325220, 2N1W27 -00700-A1, CODE 049  
Affects: Improvements only

- D. Note: Property taxes for the fiscal year shown below are paid in full.

Fiscal Year: 2012-13  
Amount: \$652.41  
Account No.: R646196, 2N1W27 -00700-A2, CODE 049  
Affects: Mach and Equip only

6. The Land has been classified as Unzoned Farm Land, as disclosed by the tax roll. If the Land becomes disqualified, said Land may be subject to additional taxes and/or penalties.

7. The Land is within and subject to the statutory power including the power of assessment of the Sauvies Island Drainage Improvement Company.
8. Intentionally Deleted.
9. Intentionally Deleted.
10. Any adverse claim based upon the assertion that:
  - A) Some portion of said land has been brought within the boundaries thereof by an avulsive movement of the Willamette River, Multnomah Channel and Willamette Slough or has been formed by accretion or reliction to any such portion.
  - B) Some portion of said property has been created by deposit of artificial fill.  
And Excepting;
  - C) The rights of the public and governmental bodies for fishing, navigation and commerce in and to any portion of the premises herein described, lying below the low water line of the Willamette River, Multnomah Channel and Willamette Slough.
  - D) The right, title and interest of the State of Oregon in and to any portion lying below the low water line of Willamette River, Multnomah Channel and Willamette Slough.
11. Intentionally Deleted.
12. Landowners' Notice, including the terms and provisions thereof,  
  
Filed by: Sauvie Island Drainage Improvement Company  
Recording Date: June 26, 2009  
Recording No.: 2009-091286
13. Requirements of the Consent Judgment entered on or about October 27, 2011, in the Circuit Court of Oregon for Multnomah County, Case No. 1110-14072, that affect the Land, a copy of which was:  
  
Recorded: November 14, 2011  
Recording No. 2011-126393,  
Records of Multnomah County
14. Terms and provisions of the Declaration of Access Easement and Temporary Construction Easement,  
  
Dated: February 28, 2012  
Recorded Date: March 7, 2012  
Recording No.: 2012-026639
15. Conditions, restrictions and easements contained in Quitclaim Deed  
  
From: Sauvie Island Drainage Improvement Company  
Recorded Date: March 7, 2012  
Recording No.: 2012-026638

16. Any rights, interests, or claims which may exist or arise by reason of the following matters disclosed by survey,

Job No.: 2641

Dated: March 21, 2012

Prepared by: AKS Engineering and Forestry

Matters shown:

- a. Utility lines servicing the property cross through adjacent property without the benefit of a recorded easement.
- b. Water line runs between Tax Lot 700 and TL 600
- c. Utility poles, guy anchors and transformers located on Parcel 1
- d. Communication lines located outside easement area
- e. Various culverts
- f. Pumphouse and catwalk located outside property line

17. Intentionally Deleted.

18. An unrecorded lease dated March 28, 2012, with certain terms, covenants, conditions and provisions set forth therein as disclosed by deed

Executed by: Portland Harbor Holdings II, LLC, a Delaware limited liability company

Lessor: Portland Harbor Holdings II, LLC, a Delaware limited liability company

Lessee: David Koennecke

Recording Date: March 28, 2012

Recording No: 2012-036501

19. Intentionally Deleted.

20. Temporary Water Well License, including the terms and provisions thereof,

In favor of: David Koennecke

Recording Date: March 28, 2012

Recording No: 2012-036504

ADDITIONAL REQUIREMENTS/NOTES:

- A. In addition to the standard policy exceptions, the exceptions enumerated above shall appear on the final 2006 ALTA policy unless removed prior to issuance.

- B. Note: The only conveyance(s) affecting said Land, which recorded within 24 months of the date of this report, are as follows:

Grantor: Alder Creek Lumber Co., Inc.

Grantee: Portland Harbor Holdings II, LLC, a Delaware limited liability company

Recording Date: March 28, 2012

Recording No: 2012-036501

- C. Note: There are no matters against the party(ies) shown below which would appear as exceptions to coverage in a title insurance product:

Parties: Heron Pacific, LLC, a Delaware limited liability company dba Wildlands PNW

D. IMPORTANT NOTICE TO TRANSFEROR(S) REGARDING WITHHOLDING TAX:

Effective January 1, 2008, Oregon law (ORS 314.258) requires closing agents closing a transaction for the transfer of certain Oregon real property interests to: (a) withhold from the transferor's proceeds an amount specified by law; and (b) remit the amount withheld to the Oregon Department of Revenue.

State mandated forms must be completed by all transferors in order to either: (a) claim or certify an exemption from the requirements of ORS 314.258; or (b) certify the withholding amount due pursuant to ORS 314.258.

You should consult with your tax or legal advisor in order to complete these forms prior to the closing of your transaction. Failure to timely deliver the appropriate form(s) to your closing agent may delay your closing or increase your withholding amount.

We are not legal or tax advisors. Although we may provide you with these forms and provide some assistance in filling out the forms, by law we are unable to advise you on the selection of which form(s) you must complete or the content in the forms.

E. THE FOLLOWING NOTICE IS REQUIRED BY STATE LAW: YOU WILL BE REVIEWING, APPROVING AND SIGNING IMPORTANT DOCUMENTS AT CLOSING. LEGAL CONSEQUENCES FOLLOW FROM THE SELECTION AND USE OF THESE DOCUMENTS. YOU MAY CONSULT AN ATTORNEY ABOUT THESE DOCUMENTS. YOU SHOULD CONSULT AN ATTORNEY IF YOU HAVE QUESTIONS OR CONCERNS ABOUT THE TRANSACTION OR ABOUT THE DOCUMENTS. IF YOU WISH TO REVIEW TRANSACTION DOCUMENTS THAT YOU HAVE NOT SEEN, PLEASE CONTACT THE ESCROW AGENT.

F. Multnomah County Recording, \$36.00 per Document, \$5.00 per Page



## **Fidelity National Financial, Inc. Privacy Statement**

Fidelity National Financial, Inc. and its subsidiaries ("FNF") respect the privacy and security of your non-public personal information ("Personal Information") and protecting your Personal Information is one of our top priorities. This Privacy Statement explains FNF's privacy practices, including how we use the Personal Information we receive from you and from other specified sources, and to whom it may be disclosed. FNF follows the privacy practices described in this Privacy Statement and, depending on the business performed, FNF companies may share information as described herein.

### **Personal Information Collected**

We may collect Personal Information about you from the following sources:

- Information we receive from you on applications or other forms, such as your name, address, social security number, tax identification number, asset information, and income information;
- Information we receive from you through our Internet websites, such as your name, address, email address, Internet Protocol address, the website links you used to get to our websites, and your activity while using or reviewing our websites;
- Information about your transactions with or services performed by us, our affiliates, or others, such as information concerning your policy, premiums, payment history, information about your home or other real property, information from lenders and other third parties involved in such transaction, account balances, and credit card information; and
- Information we receive from consumer or other reporting agencies and publicly recorded documents.

### **Disclosure of Personal Information**

We may provide your Personal Information (excluding information we receive from consumer or other credit reporting agencies) to various individuals and companies, as permitted by law, without obtaining your prior authorization. Such laws do not allow consumers to restrict these disclosures. Disclosures may include, without limitation, the following:

- To insurance agents, brokers, representatives, support organizations, or others to provide you with services you have requested, and to enable us to detect or prevent criminal activity, fraud, material misrepresentation, or nondisclosure in connection with an insurance transaction;
- To third-party contractors or service providers for the purpose of determining your eligibility for an insurance benefit or payment and/or providing you with services you have requested;
- To an insurance regulatory authority, or a law enforcement or other governmental authority, in a civil action, in connection with a subpoena or a governmental investigation;
- To companies that perform marketing services on our behalf or to other financial institutions with which we have joint marketing agreements and/or
- To lenders, lien holders, judgment creditors, or other parties claiming an encumbrance or an interest in title whose claim or interest must be determined, settled, paid or released prior to a title or escrow closing.

We may also disclose your Personal Information to others when we believe, in good faith, that such disclosure is reasonably necessary to comply with the law or to protect the safety of our customers, employees, or property and/or to comply with a judicial proceeding, court order or legal process.

**DISCLOSURE TO AFFILIATED COMPANIES** - We are permitted by law to share your name, address and facts about your transaction with other FNF companies, such as insurance companies, agents, and other real estate service providers to provide you with services you have requested, for marketing or product development research, or to market products or services to you. We do not, however, disclose information we collect from consumer or credit reporting agencies with our affiliates or others without your consent, in conformity with applicable law, unless such disclosure is otherwise permitted by law.

**DISCLOSURE TO NONAFFILIATED THIRD PARTIES** - We do not disclose Personal Information about our customers or former customers to nonaffiliated third parties, except as outlined herein or as otherwise permitted by law.

### **Confidentiality and Security of Personal Information**

Fidelity National Financial, Inc.  
Privacy Statement  
(continued)

We restrict access to Personal Information about you to those employees who need to know that information to provide products or services to you. We maintain physical, electronic, and procedural safeguards that comply with federal regulations to guard Personal Information.

**Access to Personal Information/  
Requests for Correction, Amendment, or Deletion of Personal Information**

As required by applicable law, we will afford you the right to access your Personal Information, under certain circumstances to find out to whom your Personal Information has been disclosed, and request correction or deletion of your Personal Information. However, FNF'S CURRENT POLICY IS TO MAINTAIN CUSTOMERS' PERSONAL INFORMATION FOR NO LESS THAN YOUR STATE'S REQUIRED RECORD RETENTION REQUIREMENTS FOR THE PURPOSE OF HANDLING FUTURE COVERAGE CLAIMS.

For your protection, ALL REQUESTS MADE UNDER THIS SECTION MUST BE IN WRITING AND MUST INCLUDE YOUR NOTARIZED SIGNATURE TO ESTABLISH YOUR IDENTITY. Where permitted by law, we may charge a reasonable fee to cover the costs incurred in responding to such requests. Please send requests to:

Chief Privacy Officer  
Fidelity National Financial, Inc.  
601 Riverside Avenue  
Jacksonville, FL 32204

**Changes to this Privacy Statement**

This Privacy Statement may be amended from time to time consistent with applicable privacy laws. When we amend this Privacy Statement, we will post a notice of such changes on our website. The effective date of this Privacy Statement, as stated above, indicates the last time this Privacy Statement was revised or materially changed.

## Legal Description

**ENGINEERING PLANNING  
FORESTRY**

13910 S.W. Galbreath Dr., Suite 100  
Sherwood, Oregon 97140  
Phone: (503) 925-8799  
Fax: (503) 925-8969



**LANDSCAPE ARCHITECTURE  
SURVEYING**

AKS Group of Companies:  
SHERWOOD, OREGON  
SALEM, OREGON  
VANCOUVER, WASHINGTON  
[www.aks-eng.com](http://www.aks-eng.com)

**EXHIBIT A**

**OVERALL TRACT:**

A tract of land located in the James Menzie Donation Land Claim Number 45 also being located in Sections 27 and 28, Township 2 North, Range 1 West, Willamette Meridian, Multnomah County, Oregon, and being more particularly described as follows:

Beginning at a 4 inch brass disk at the most northerly corner of the James Menzie Donation Land Claim Number 45, thence South  $12^{\circ}30'05''$  East 3393.60 feet to a 5/8 inch iron rod with a yellow plastic cap inscribed "AKS ENGR." at the westerly northern corner of the tract per Document Number 2012-031855 and the True Point of Beginning; thence along the northeasterly line of said Document Number 2012-031855 South  $59^{\circ}01'00''$  East 363.00 feet to a 5/8 inch iron rod with a yellow plastic cap inscribed "AKS ENGR."; thence continuing along said northeasterly line North  $30^{\circ}59'00''$  East 240.22 feet to 5/8 inch iron rod with a yellow plastic cap inscribed "AKS ENGR."; thence along the northeasterly lines of the tracts per Document Number 2012-031855 and Document Number 2011-145120 South  $59^{\circ}01'00''$  East 786.50 feet to a 5/8 inch iron rod with a yellow plastic cap inscribed "AKS ENGR."; thence continuing along the northeasterly line of said Document Number 2011-145120 South  $19^{\circ}14'19''$  East 593.80 feet to a 5/8 inch iron rod with a yellow plastic cap inscribed "AKS ENGR."; thence along the centerline of the Levee Easement per Book 490 Page 435 (recorded 04/05/1939), Book 497 Page 251 (recorded 05/19/1939), Book 518 Page 250 (recorded 10/18/1939), Book 523 Page 91 (recorded 11/22/1939), Book 535 Page 51 (recorded 02/16/1940) and Book 2086 Page 291 (recorded 10/18/1961), partially quitclaimed per Document Number 2012-026638 hereinafter called "Levee Easement", along a non-tangent curve to the left (Radial: North  $17^{\circ}09'37''$  West) with a Radius of 1637.02 feet, a Delta of  $36^{\circ}46'12''$ , a Length of 1050.57 feet, and a Chord of North  $54^{\circ}27'18''$  East 1032.63 feet to a 5/8 inch iron rod with a yellow plastic cap inscribed "AKS ENGR."; thence leaving said Levee Easement centerline along the northeasterly line of said Document Number 2011-145120 South  $59^{\circ}01'00''$  East 423 feet, more or less to the Mean Low Water line of the Willamette River; thence southerly along the Mean Low Water line of the Willamette River and northwesterly along the Mean Low Water line of the Multnomah Channel 4330 feet, more or less to a point on the northwest line of said tract per Document Number 2011-145120; thence along the northwest line of said tracts per Document Number 2011-145120 and Document Number 2012-031855 North  $30^{\circ}59'00''$  East 859 feet, more or less to the True Point of Beginning.

**EXCEPTING THEREFROM:**

A tract of land located in the James Menzie Donation Land Claim Number 45 also being located in Section 27, Township 2 North, Range 1 West, Willamette Meridian, Multnomah County, Oregon, and being more particularly described as follows:

Beginning at a 4 inch brass disk at the most northerly corner of the James Menzie Donation Land Claim Number 45, thence South  $12^{\circ}30'05''$  East 3393.60 feet to a 5/8 inch iron rod with a yellow plastic cap inscribed "AKS ENGR." at the westerly northern corner of the tract per Document Number 2012-031855; thence along the northeasterly line of said Document Number 2012-031855 South  $59^{\circ}01'00''$  East 363.00 feet to a 5/8 inch iron rod with a yellow plastic cap inscribed "AKS ENGR."; thence continuing along said northeasterly line North  $30^{\circ}59'00''$  East 240.22 feet to 5/8 inch iron rod with a yellow plastic cap inscribed " AKS ENGR."; thence along the northeasterly line of the tract per Document Number 2012-031855 South  $59^{\circ}01'00''$  East 431.01 feet to a point on the westerly line of the 30.00 foot pipeline easement per Book 265 Page 113 (Recorded 04/05/1965) and the True Point of Beginning; thence along said westerly line South  $11^{\circ}44'00''$  West 89.00 feet to a point; thence continuing along said westerly line South  $05^{\circ}48'00''$  East 593.55 feet to a point; thence leaving said pipeline easement along the westerly line of the communications easement per Document Number 98179149 South  $39^{\circ}12'00''$  West 31.82 feet to a point; thence continuing along said westerly line South  $05^{\circ}48'00''$  East 525.01 feet to a point on the Mean Low Water Line of the Multnomah Channel; thence along said Mean Low Water line South  $66^{\circ}23'34''$  East 60 feet, more or less to a point on the easterly line of said pipeline easement; thence along said easterly line North  $05^{\circ}48'00''$  West 1166.02 feet to a point; thence continuing along said easterly line North  $11^{\circ}44'00''$  East 73.90 feet to a point on the northeasterly line of said Document Number 2012-031855; thence along said northeasterly line North  $59^{\circ}01'00''$  West 31.78 feet to the True Point of Beginning.

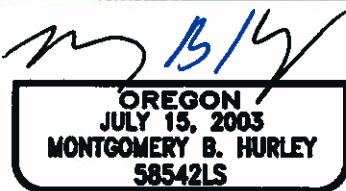
**ALSO EXCEPTING THEREFROM:**

A tract of land located in the James Menzie Donation Land Claim Number 45 also being located in Sections 27 and 28, Township 2 North, Range 1 West, Willamette Meridian, Multnomah County, Oregon, and being more particularly described as follows:

Beginning at a 4 inch brass disk at the most northerly corner of the James Menzie Donation Land Claim Number 45, thence South  $12^{\circ}30'05''$  East 3393.60 feet to a 5/8 inch iron rod with a yellow plastic cap inscribed "AKS ENGR." at the westerly northern corner of the tract per Document Number 2012-031855; thence along the northwesterly line of the tracts per Document Number 2012-031855 and Document Number 2011-145120 South  $30^{\circ}59'00''$  West 544.67 feet to a point on northerly line of the "Levee Easement" (115.00 feet from centerline) and the True Point of Beginning; thence along the northerly line of said "Levee Easement" South  $54^{\circ}44'34''$  East 289.67 feet to a point; thence continuing along said northerly line along a non-tangent curve to the left (Radial: North  $34^{\circ}39'49''$  East) with a Radius of 1522.02 feet, a Delta of  $39^{\circ}47'41''$ , a Length of 1057.12 feet, and a Chord of South  $75^{\circ}14'01''$  East 1036.00 feet to a point; thence continuing along said north line South  $05^{\circ}07'52''$  East 10.00 feet to a point; thence continuing along said northerly line (105.00 feet from centerline) along a non-tangent curve to the left (Radial: North  $05^{\circ}07'52''$  West) with a Radius of 1532.02 feet, a Delta of  $11^{\circ}53'11''$ , a Length of

317.83 feet, a Chord of North 78°55'32" East 317.26 feet to a point on the northeasterly line of said Document Number 2011-145120; thence along said northeasterly line South 19°14'19" East 105.07 feet to a point on the centerline of said "Levee Easement"; thence along said centerline along a non-tangent curve to the left (Radial: North 17°09'37" West) with a Radius of 1637.02 feet, a Delta of 36°46'12", a Length of 1050.57 feet, and a Chord of North 54°27'18" East 1032.63 feet to a 5/8 inch iron rod with a yellow plastic cap inscribed "AKS ENGR." on the northeasterly line of said Document Number 2011-145120; thence along said northeasterly line South 59°01'00" East 90.34 feet to a point on the southerly line of said "Levee Easement" (90.00 feet from centerline); thence along said southerly line along a non-tangent curve to the right (Radial: North 54°11'45" West) with a Radius of 1727.02 feet, a Delta of 17°33'53", a Length of 529.44 feet, a Chord of South 44°35'11" West 527.37 feet to a point; thence continuing along said southerly line South 36°37'52" East 15.00 feet to a point; thence continuing along said southerly line (105.00 feet from centerline) along a non-tangent curve to the right (Radial: North 36°37'52" West) with a Radius of 1742.02 feet, a Delta of 07°00'00", a Length of 212.83 feet, and a Chord of South 56°52'08" West 212.70 feet to a point; thence North 29°37'52" West 10.00 feet to a point; thence continuing along said southerly line (95.00 feet from centerline) along a non-tangent curve to the right (Radial: North 29°37'52" West) with a Radius of 1732.02 feet, a Delta of 64°19'55", a Length of 1944.72 feet, and a Chord of North 87°27'55" West 1844.17 feet to a point; thence North 54°44'34" West 275.03 feet to a point on the northwest line of said Document Number 2011-145120; thence along said northwest line North 30°59'00" East 210.59 feet to the True Point of Beginning.

The above described conservation easement boundary contains 52.28 acres, more or less.



RENEWS: 6/30/13

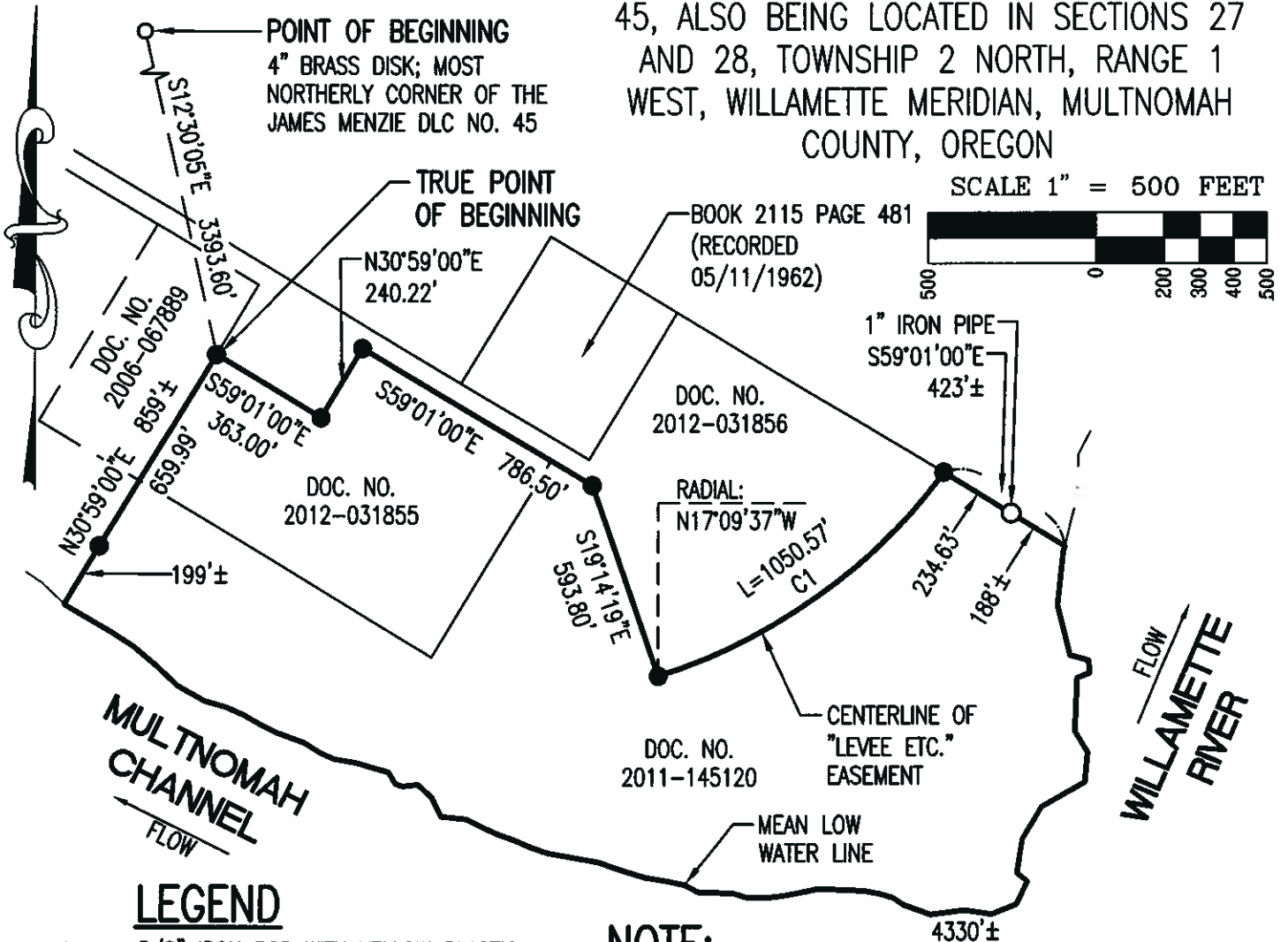
## Parcel Maps

# PREPARED FOR

PORTLAND HARBOR HOLDINGS II, LLC.  
3855 ATHERTON ROAD  
ROCKLIN, CA 95765

# EXHIBIT B

LOCATED IN THE JAMES MENZIE DLC NO. 45, ALSO BEING LOCATED IN SECTIONS 27 AND 28, TOWNSHIP 2 NORTH, RANGE 1 WEST, WILLAMETTE MERIDIAN, MULTNOMAH COUNTY, OREGON



## LEGEND

- 5/8" IRON ROD WITH YELLOW PLASTIC CAP INSCRIBED "AKS ENGR."
  - MONUMENT AS NOTED
- DOC. NO. DOCUMENT NUMBER PER MULTNOMAH COUNTY DEED RECORDS

## NOTE:

"LEVEE ETC." EASEMENT IS PER BOOK 490 PAGE 435 (04/05/1939), BOOK 497 PAGE 251 (05/19/1939), BOOK 523 PAGE 91 (11/22/1939), BOOK 535 PAGE 51 (02/16/1940), AND BOOK 2086 PAGE 291 (10/18/1961), PARTIALLY QUITCLAIMED PER DOC. NO. 2012-026638

## CURVE TABLE

CURVE	RADIUS	DELTA	LENGTH	CHORD
C1	1637.02'	36°46'12"	1050.57'	N54°27'18"E 1032.63'

3-6-13

**REGISTERED  
PROFESSIONAL  
LAND SURVEYOR**

*M B H*

**OREGON  
JULY 15, 2003  
MONTGOMERY B. HURLEY  
58542LS**

RENEWS: 6/30/13

JOB NAME: ALDER CREEK
JOB NUMBER: 2641
DRAWN BY: JOH
CHECKED BY: NSW
DWG NO.: 022813 2641EXB

ENGINEERING • PLANNING • LANDSCAPE ARCHITECTURE  
FORESTRY • SURVEYING



LICENSED IN OR & WA

13910 SW GALBREATH  
DRIVE, SUITE 100  
SHERWOOD, OR 97140  
PHONE: (503) 925-8799  
FAX: (503) 925-8969

OFFICES LOCATED IN REDMOND, OR & VANCOUVER, WA



DOC. NO.  
2012-031856

S59°01'00"E 363.00'

N30°59'00"E 240.22'

S59°01'00"E 431.01'

N59°01'00"W 31.78'

N11°44'00"E 73.90'

POINT OF BEGINNING  
BEARS S12°30'05"E 3393.60'  
FROM A 4" BRASS DISK; MOST  
NORTHERLY CORNER OF THE  
JAMES MENZIE DLC NO. 45

TRUE POINT  
OF BEGINNING

S11°44'00"W 89.00'

DOC. NO.  
2012-031855

30.00' PIPELINE EASEMENT PER 265  
PAGE 113 (04/05/1965) AND  
COMMUNICATIONS EASEMENT PER  
DOC. NO. 98179149

S05°48'00"E 593.55'

S05°48'00"E 1166.02'

S39°12'00"W 31.82'

DOC. NO.  
2011-145120

EASEMENT  
EXCEPTION AREA

15.00' COMMUNICATIONS  
EASEMENT PER DOC.  
NO. 98179149

S05°48'00"E 525.01'

S05°48'00"E 1166.02'

30.00' PIPELINE  
EASEMENT PER  
265 PAGE 113  
(04/05/1965)

S66°23'34"E 60'±



### EXHIBIT B

LOCATED IN THE JAMES MENZIE DLC  
NO. 45, ALSO BEING LOCATED IN  
SECTIONS 27, TOWNSHIP 2 NORTH,  
RANGE 1 WEST, WILLAMETTE MERIDIAN,  
MULTNOMAH COUNTY, OREGON

MEAN LOW  
WATER LINE

### PREPARED FOR

PORTLAND HARBOR HOLDINGS II, LLC.  
3855 ATHERTON ROAD  
ROCKLIN, CA 95765

SCALE 1" = 200 FEET



MULTNOMAH  
CHANNEL  
FLOW

3-6-13

REGISTERED  
PROFESSIONAL  
LAND SURVEYOR

*M B/H*

OREGON  
JULY 15, 2003  
MONTGOMERY B. HURLEY  
58542LS

RENEWS: 6/30/13

JOB NAME: ALDER CREEK
JOB NUMBER: 2641
DRAWN BY: JOH
CHECKED BY: NSW
DWG NO.: 022813 2641EXB

ENGINEERING • PLANNING • LANDSCAPE ARCHITECTURE  
FORESTRY • SURVEYING



LICENSED IN OR & WA

13910 SW GALBREATH  
DRIVE, SUITE 100  
SHERWOOD, OR 97140  
PHONE: (503) 925-8799  
FAX: (503) 925-8969

OFFICES LOCATED IN REDMOND, OR & VANCOUVER, WA

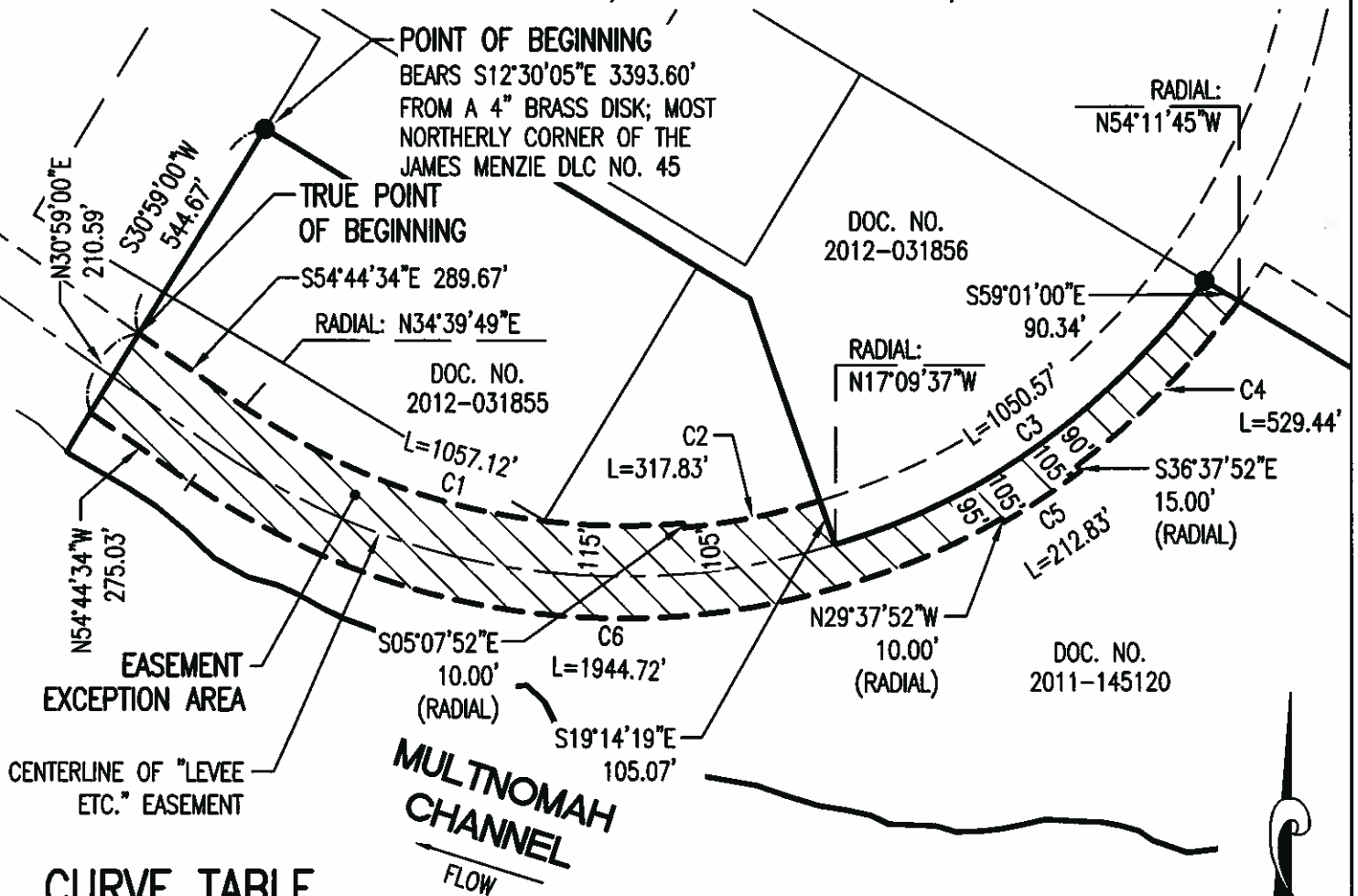
# EXHIBIT B

SHEET 3 OF 4

## PREPARED FOR

PORTLAND HARBOR HOLDINGS II, LLC.  
3855 ATHERTON ROAD  
ROCKLIN, CA 95765

LOCATED IN THE JAMES MENZIE DLC NO. 45,  
ALSO BEING LOCATED IN SECTIONS 27 AND 28,  
TOWNSHIP 2 NORTH, RANGE 1 WEST, WILLAMETTE  
MERIDIAN, MULTNOMAH COUNTY, OREGON



## CURVE TABLE

CURVE	RADIUS	DELTA	LENGTH	CHORD
C1	1522.02'	39°47'41"	1057.12'	S75°14'01"E 1036.00'
C2	1532.02'	11°53'11"	317.83'	N78°55'32"E 317.26'
C3	1637.02'	36°46'12"	1050.57'	N54°27'18"E 1032.63'
C4	1727.02'	17°33'53"	529.44'	S44°35'11"W 527.37'
C5	1742.02'	7°00'00"	212.83'	S56°52'08"W 212.70'
C6	1732.02'	64°19'55"	1944.72'	N87°27'55"W 1844.17'

SCALE 1" = 400 FEET



3-6-13

REGISTERED  
PROFESSIONAL  
LAND SURVEYOR

*Handwritten signature*

OREGON  
JULY 15, 2003  
MONTGOMERY B. HURLEY  
58542LS

RENEWS: 6/30/13

JOB NAME: ALDER CREEK

JOB NUMBER: 2641

DRAWN BY: JOH

CHECKED BY: NSW

DWG NO.: 022813 2641EXB

ENGINEERING • PLANNING • LANDSCAPE ARCHITECTURE  
FORESTRY • SURVEYING



LICENSED IN OR & WA

13910 SW GALBREATH  
DRIVE, SUITE 100  
SHERWOOD, OR 97140  
PHONE: (503) 925-8799  
FAX: (503) 925-8969

OFFICES LOCATED IN REDMOND, OR & VANCOUVER, WA

# PREPARED FOR

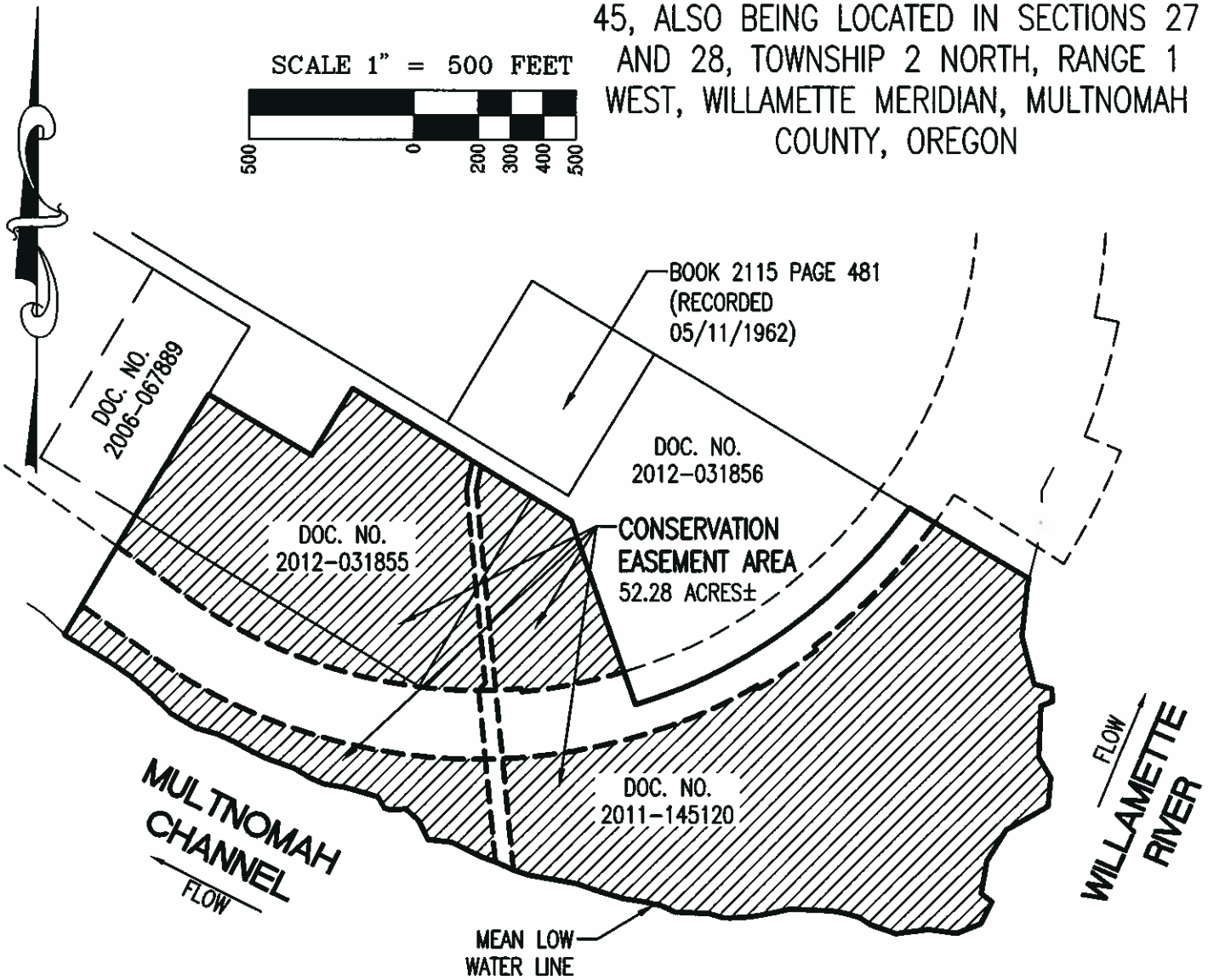
PORTLAND HARBOR HOLDINGS II, LLC.  
3855 ATHERTON ROAD  
ROCKLIN, CA 95765

SHEET 4 OF 4

# EXHIBIT B

LOCATED IN THE JAMES MENZIE DLC NO. 45, ALSO BEING LOCATED IN SECTIONS 27 AND 28, TOWNSHIP 2 NORTH, RANGE 1 WEST, WILLAMETTE MERIDIAN, MULTNOMAH COUNTY, OREGON

SCALE 1" = 500 FEET



## LEGEND

DOC. NO. DOCUMENT NUMBER PER MULTNOMAH COUNTY DEED RECORDS

3-6-13

REGISTERED PROFESSIONAL LAND SURVEYOR

OREGON  
JULY 15, 2003  
MONTGOMERY B. HURLEY  
58542LS

RENEWS: 6/30/13

JOB NAME: ALDER CREEK

JOB NUMBER: 2641

DRAWN BY: JOH

CHECKED BY: NSW

DWG NO.: 022813 2641EXB

ENGINEERING • PLANNING • LANDSCAPE ARCHITECTURE  
FORESTRY • SURVEYING



LICENSED IN OR & WA

13910 SW GALBREATH DRIVE, SUITE 100  
SHERWOOD, OR 97140  
PHONE: (503) 925-8799  
FAX: (503) 925-8969

OFFICES LOCATED IN REDMOND, OR & VANCOUVER, WA

**Exhibit E**  
**Credit Evaluation**

## CREDIT EVALUATION

Credits for the Alder Creek Restoration Project (“Project”) have been forecasted using a Habitat Equivalency Analysis methodology to evaluate ecological services to juvenile salmon. The functional methodology uses units of Discounted Service Acre-Year (DSAY) values. For the purposes of this Project, one DSAY shall be equivalent to one “Credit”. The following DSAY values have been forecasted for the restoration and enhancement actions on the Project:

Number of Acres	DSAY Value
54.17 <sup>1</sup> acres restored, enhanced and protected habitat	749.7 DSAYs
<b>Total</b>	<b>749.7 DSAYs</b>
Removal of the overwater structure <sup>2</sup>	TBD
Removal of registered structures (dolphins) and pilings <sup>2</sup>	TBD
Notes:	
<p>1.) The HEA estimate prepared for the Project is based on 54.17 acres. However, the total Project acreage was later revised by PHH to be 52.28 acres (which includes the entire property minus the levee easement and utility easements). The difference in the two acreages is an area within the levee easement which was originally included, but later removed since it is already encumbered by an easement. A new HEA estimate will be prepared pursuant to the MOA between Portland Harbor Holdings and the Trustee Council following submission of the as-built drawings. The acreage difference will be reflected in the new HEA estimate as well as any differences between the design used for the original HEA estimate and the as-built drawings. The potential DSAYs generated by the Project will also be revised accordingly.</p> <p>2.) The number of Credits/DSAYs generated by the removal of overwater structures, dolphins, and pilings will be calculated based on the final as-built drawings.</p>	

These DSAY numbers are based on an evaluation done by the Portland Harbor Natural Resource Trustee Council using a Habitat Equivalency Analysis, which compares the pre-restoration functional value of the Project site to the proposed post-restoration functional value to determine the functional lift (measured in DSAYs). The spreadsheet used to calculate the DSAYs is attached. The DSAY evaluation was based on the conceptual design prepared for the Project. Any changes to this design may result in changes to the number of Credits potentially generated by the Project. The number of potential Credits generated by the Project may need to be revised if the as-built drawings differ from the conceptual plan (on which the HEA was based). If the number of Credits potentially generated by the Project changes, the Credit Table and Release Schedule will be revised accordingly (changes to the Credit Table and Release Schedule would not affect the status of previously released Credits, whether or not they have yet been sold or transferred). In addition, catastrophic events, acts of force majeure, and unlawful acts shall not affect the status of previously released Credits, whether or not they have yet been sold or transferred.

## CREDIT TABLE AND RELEASE SCHEDULE<sup>1</sup>

Release Schedule for Restored and Enhanced Habitat		Credits/DSAYs Released <sup>2</sup>
1	15% release upon recordation of the deed restriction and establishment of the Construction Security, and Interim Management and Contingency Security (IMCS).	112.45
2	35% release upon approval of the as-built drawings.	262.40
3	30% release upon achievement of year 2 performance standards. <sup>3</sup>	224.91
4	10% release upon achievement of year 5 performance standards. <sup>3</sup>	74.97
5	10% release upon achievement of year 10 performance standards, recording of the permanent conservation easement, approval of the long-term stewardship plan, and full funding of the endowment fund.	74.97
<b>Total Credits</b>		<b>749.7 DSAYs<sup>4</sup></b>
<p>Notes:</p> <p>1.) Although credits may be sold, they will only be recognized for purposes of settlement following negotiation of individual settlement agreements, public review and comment, and court approval or when credits are purchased by the Trustee Council or its members using cash-out settlement funds.</p> <p>2.) The number of Credits/DSAYs has been based on preliminary calculations. The final number of potential Credits/ DSAYs shall be based on the final acreage of habitat as shown in the final as-built drawings.</p> <p>3.) If beaver herbivory is causing more than 10% mortality resulting in the native woody plant minimum density performance standards not being met, the standard may be considered met for the purposes of credit release if the situation meets the requirements set forth in Section 5 of Exhibit B-1, Habitat Development Plan.</p> <p>4.) Any mitigation requirement specified as an acreage requirement shall be deducted from the available Conservation Credits/DSAYs at a ratio of 1 acre = 14.34 Credits/DSAYs.</p>		

Release Schedule for Piling, Dolphin, and Over-water Structure Removal		Credits/DSAYs Released
1	100% release upon removal of the overwater structure. <sup>1</sup>	TBD
2	100% release upon removal of registered structures (dolphins) and pilings <sup>1</sup>	TBD
<p>Notes:</p> <p>1.) The number of Credits/DSAYs generated by the removal of overwater structures, dolphins, and pilings will be calculated based on the final as-built drawings.</p>		

**GENERAL INPUTS**

3.0%	Discount Rate
2011	Base Year
2013	Restoration Start Year
2313	Model End Year

Total Acres in site boundary	55.62 DSAYs/acre	13.5
Acres with restoration change	54.17	
% of site modified	97.4%	

**Current Habitats**

**Total 159.3**

Habitat type	Acres Converted	Habitat quality adj factor
Covered - floating	0.005	0
ACM; slope<11; vegetated invasive	1.59	0.75
ACM; slope<11; vegetated native	0.38	1
ACM; slope<11; unvegetated	1.79	0.8
ACM; slope>11; vegetated invasive	0.812	0.09
ACM; slope>11; vegetated native	0.08	0.2
ACM; slope>11; unvegetated	0.37	0.1
Riparian; Invasive	6.269	0.1
Riparian; Historic Floodplain; Forested	0.611	0.65
Riparian; Unvegetated/Paved/Buildings	6.59	0
Upland; Historic Floodplain; Invasive	1.02	0.1
Upland; Unvegetated/Paved/Buildings	22.09	0
Upland; Outside Floodplain; Invasive	12.18	0.05
Upland; Outside Floodplain; Forested	0.38	0.15

PV DSAYs per acre converted	Quality Adj. PV DSAYs per acre converted	Quality Adj. PV DSAYs
32.4	-	-
32.4	24.3	38.5
32.4	32.4	12.4
32.4	25.9	46.3
32.4	2.9	2.4
32.4	6.5	0.5
32.4	3.2	1.2
32.4	3.2	20.3
32.4	21.0	12.9
32.4	-	-
32.4	3.2	3.3
32.4	-	-
32.4	1.6	19.7
32.4	4.9	1.8

**Restored Habitats**

**Total 909.0**

Habitat type	Acres Restored	Habitat quality adj factor	Restoration Trajectory	Credit Segment 1	Credit Segment 2	Credit Segment 3	Total PV DSAYs per acre restored	Total Quality Adj. PV DSAYs per acre restored	Quality Adj. PV DSAYs
				PV DSAYs per acre	PV DSAYs per acre	PV DSAYs per acre			
ACM; slope<11; unvegetated	2.13	0.8	1	0.9	31.4	-	32.4	25.9	55.1
ACM; slope<11; vegetated native	5.65	1	3	1.8	29.6	-	31.4	31.4	177.5
ACM; slope<11; vegetated native	9.37	1	3	1.8	29.6	-	31.4	31.4	294.4
ACM; slope<11; vegetated native	1.44	1	3	1.8	29.6	-	31.4	31.4	45.3
ACM; slope<11; vegetated native	0.58	1	1	0.9	31.4	-	32.4	32.4	18.8
ACM; slope>11; vegetated native	0.13	0.2	3	1.8	29.6	-	31.4	6.3	0.8
ACM; slope>11; vegetated native	0.11	0.2	1	0.9	31.4	-	32.4	6.5	0.7
Riparian; Historic Floodplain; Forested	0.27	0.65	10/40	3.5	12.6	9.9	26.0	16.9	4.6
Riparian; Historic Floodplain; Forested	0.85	0.65	1	0.9	31.4	-	32.4	21.0	17.9
Riparian; Historic Floodplain; Forested	7.73	0.65	10/40	3.5	12.6	9.9	26.0	16.9	130.6
Riparian; Historic Floodplain; Forested	0.1	0.65	1	0.9	31.4	-	32.4	21.0	2.1
Side channel	2.11	1	1	0.9	31.4	-	32.4	32.4	68.3
Upland; Outside Floodplain; Forested	0.58	0.15	1	0.9	31.4	-	32.4	4.9	2.8
Upland; Outside Floodplain; Forested	23.13	0.15	10/40	3.5	12.6	9.9	26.0	3.9	90.2
NA	0	0	NA	NA	NA	NA	-	-	-

**TOTAL CREDIT**

**749.7**

# **Exhibit F**

## **Protection of Conservation Values**

Exhibit F-1 Deed Restriction Form

Exhibit F-2 Conservation Easement Form



# **Exhibit F-1**

## **Deed Restriction Form**

**DECLARATION OF RESTRICTIONS  
AND GRANT OF ENTRY**

**Property Address:**        **NW Gillihan Road  
Multnomah County  
Portland, OR 97231**

**Tax Parcel IDs:**

**Deed Reference(s):**    **Multnomah County  
Recording No.**

Portland Harbor Holdings II, LLC (hereafter the “DECLARANT”) is the fee simple owner of approximately 64 acres of land in Portland, Multnomah County, Oregon, which are more particularly described in the attached Attachment A (hereafter “Overall Property”). Attachment A is incorporated herein by reference.

The Declarant intends to implement a natural resource damage assessment restoration project known as the Alder Creek Restoration Project on 52.3 acres of the Overall Property. The 52.3 acre portion of the Overall Property is more particularly depicted and described in the attached Attachment B (hereafter the “Property”). Attachment B is incorporated herein by reference.

The Declarant hereby restricts, as set forth below, the uses to which the Property may be put. The Declarant declares that these restrictions shall constitute covenants that run with the land, as provided by applicable law, and said restrictions shall continue in perpetuity or for the maximum period allowed by law. The restrictions on the Property’s use under this Declaration shall be binding on the Declarant, its personal representatives, heirs, successors, assigns, employees, agents, lessees, licensees and invitees, and any subsequent person or entity claiming an interest in the Property. However, this deed restriction will terminate at the time that Declarant conveys a conservation easement approved by the Portland Harbor Natural Resource Trustee Council (hereafter “Trustee Council”) to an authorized holder.

## RESTRICTIONS:

The Property shall be restricted as follows:

1. Uses by the Declarant and the Trustee Council furthering natural resource damage assessment restoration objectives. The Trustee Council consists of the National Oceanic and Atmospheric Administration on behalf of the Department of the Commerce, the United States Fish and Wildlife Service on behalf of the Department of Interior, the Oregon Department of Fish and Wildlife on behalf of the State of Oregon, the Confederated Tribes of the Grand Ronde Community of Oregon, the Confederated Tribes of Siletz Indians, the Confederated Tribes of the Umatilla Indian Reservation, the Confederated Tribes of the Warm Springs Reservation of Oregon, and the Nez Perce Tribe. The term “natural resource” shall be defined pursuant to 42 U.S.C. § 9601 (16).
2. Implementation of the Alder Creek Restoration Plan consistent with and pursuant to the terms of the Alder Creek Restoration Plan (including Exhibits), incorporated herein by reference and agreed to by the Trustee Council and the Declarant.
3. Purposes compatible with the preservation and enhancement of native species and their habitats in a manner consistent with the conservation purposes and performance standards set forth in the Alder Creek Restoration Plan.

The Property shall not be used for any purposes inconsistent with the Alder Creek Restoration Project and the perpetual protection and conservation of the Property as provided in the Alder Creek Restoration Plan. All rights accruing from Declarant’s ownership of the Property, including the right to engage in or permit or invite others to engage in all uses of the Property that are not prohibited herein and are not inconsistent with the purposes of this Declaration are reserved to Declarant and Declarant’s personal representatives, heirs, successors, and assigns.

Prohibited uses of the Property, in so far as they are not actions identified by the Alder Creek Restoration Plan and its Exhibits, include, but are not limited to, the following:

1. Construction, reconstruction or placement of any permanent building or structure.
2. Unseasonable watering; use of fertilizers, biocides, or other agricultural chemicals; incompatible fire protection activities; and any and all other uses which may adversely affect conservation objectives and performance standards.
3. Grazing and agricultural activity of any kind.
4. Commercial or industrial uses.
5. Depositing or accumulating soil, trash, ashes, refuse, waste, bio-solids or any other material.

6. Filling, dumping, excavating, draining, dredging, mining, drilling, removing, exploring for or extracting minerals, loam, gravel, soil, rock, sand or other material on or to a depth of 100 feet below the surface of the Property, or granting or authorizing surface entry for any of these purposes of the Property, or granting or authorizing surface entry for any of these purposes.
7. Altering the surface or general topography of the Property, including building roads, paving or otherwise covering the Property with concrete, asphalt, or any other impervious material,
8. Removing, destroying, or cutting trees, shrubs or other vegetation, except as required for: (i) fire breaks; (ii) maintenance of existing foot trails or roads; (iii) prevention or treatment of disease; (iv) utility line clearance; (v) levee easement clearance; or (vi) invasive species management.
9. Use of motorized vehicles, including off-road vehicles, except on existing roadways, inasmuch as they are harmful or adverse to the conservation objectives of the Alder Creek Restoration Plan, otherwise they shall be allowed for the purposes of land management, restoration project implementation, and monitoring.
10. Transferring any water, mineral, or air rights necessary to maintain or restore the biological resources of the Property.
11. Planting, introduction, or dispersal of invasive or exotic plant or animal species.
12. Manipulating, impounding or altering any natural watercourse, body of water or water circulation on the Property, other than those actions set forth under the Alder Creek Restoration Plan, and any activities or uses detrimental to water quality, including but not limited to degradation or pollution of any surface or sub-surface waters.
13. Permitting a general right of access to the Property.
14. Hunting.
15. Trapping of native species. An exception to the prohibition on trapping may be made for the trapping of beaver during the ten-year monitoring period as agreed to by the Trustee Council or its designee(s).

#### GRANT OF ENTRY:

The Declarant hereby grants the Trustee Council or its designee(s) the right to enter the Property at reasonable times, subject to giving the Declarant 48-hours notice (except in cases where the Trustee Council or its designee(s) determines that immediate entry is required to

preserve the conservation values of the Property) to monitor the Declarant's compliance with the terms of this Declaration and for other purposes not inconsistent with this instrument; provided that the Trustee Council or its designee(s) shall not unreasonably interfere with the Declarant's authorized use and quiet enjoyment of the Property.

#### ENFORCEMENT:

The Declarant hereby grants the Trustee Council or its designee(s) the right to enforce the terms of this instrument and prevent any activity or use of the Property that is inconsistent with the terms of this instrument or the Alder Creek Restoration Plan and, thus, detrimental to the interests of the Trustee Council and its designee(s). Further, consistent with the forgoing grant of a right of enforcement, the Declarant hereby recognizes the Trustee Council and its designee(s)' standing to enforce the terms of this instrument and the Alder Creek Restoration Plan and require the restoration of such areas or features of the Property that may be damaged by any act, failure to act, or any use or activity that is inconsistent with the purposes of this instrument and the Alder Creek Restoration Plan.

[The remainder of this page intentionally left blank.]

IN WITNESS WHEREOF, the undersigned being duly authorized by the Declarant herein, has unto set its hand this \_\_\_\_\_ day of \_\_\_\_\_, 2014.

FOR THE DECLARANT,  
PORTLAND HARBOR HOLDINGS II, LLC

\_\_\_\_\_  
Name  
Title

STATE OF OREGON  
COUNTY OF MULTNOMAH

This instrument was acknowledged before me on \_\_\_\_\_ (date) by \_\_\_\_\_ (name(s) of person(s)) as \_\_\_\_\_ (type of authority, e.g., officer, trustee, etc.) of Portland Harbor Holdings II, LLC.

\_\_\_\_\_  
NOTARY PUBLIC

Print Name: \_\_\_\_\_

My Commission Expires: \_\_\_\_\_

**Exhibit A**  
**Overall Property**  
**[legal description of overall property]**

## EXHIBIT A

### Parcel 1 (Adjusted TL 700)

A tract of land located in the James Menzie Donation Land Claim Number 45 also being located in Sections 27 and 28, Township 2 North, Range 1 West, Willamette Meridian, Multnomah County, Oregon, and being more particularly described as follows:

Beginning at a 4 inch brass disk at the most Northerly Corner of the James Menzie Donation Land Claim Number 45, thence South 57°04'51" East 1961.55 feet to a point on the centerline of Gillihan Road; thence along said centerline South 60°16'26" West 2254.26 feet to a 1/2 inch iron pipe; thence continuing along said centerline South 60°42'26" West 149.38 feet to a point; thence leaving said centerline South 59°01'00" East 23.03 feet to a point on the southeast right-of-way of Gillihan Road (20.00 feet from centerline) from which a 1 inch iron pipe bears South 59°01'00" East 0.76 feet; thence along the westerly northeast line of the tract per Book 524 Page 330 (recorded 09/01/1966) South 59°01'00" East 2630.64 feet to a point; thence along the northwest line of the tract per Book 2759 Page 2103 (recorded 09/29/1993) North 30°59'00" East 507.27 feet to a point; thence along the northeast line of said tract per Book 2759 Page 2103 South 59°01'00" East 915.32 feet to a point on the centerline of the Levee Easement per Book 490 Page 435 (Recorded 04/05/1939), Book 497 Page 251 (Recorded 05/19/1939), Book 518 Page 250 (Recorded 10/18/1939), Book 523 Page 91 (Recorded 11/22/1939), Book 535 Page 51 (Recorded 02/16/1940) and Book 2086 Page 291 (Recorded 10/18/1961), hereinafter called "Levee Easement", also being the True Point of Beginning; thence along said "Levee Easement" along a non-tangent curve to the right (Radial North 53°55'48" West) with a Radius of 1637.02 feet, a Delta of 36°46'12", a Length of 1050.57 feet, and a Chord of South 54°27'18" West 1032.63 feet to a point; thence leaving said "Levee Easement" North 19°14'19" West 593.80 feet to a point; thence along a line offset 60.00 feet southwesterly from said westerly northeast line of the tract per Book 524 Page 330 North 59°01'00" West 141.19 feet to a point; thence along the southeast line of the tract per Book 1968 Page 1822 (recorded 12/30/1986) South 30°59'00" West 675.87 feet to a point; thence along the southwest line of said tract per 1968 Page 1822 North 59°01'00" West 1008.31 feet to a 5/8 inch iron rod with a yellow plastic cap inscribed "W&H PACIFIC"; thence along the southeast line of the tract per Document Number 2006-199633 South 30°59'00" West 423 feet, more or less, to a point on the mean low water line of the Multnomah Channel; thence southeasterly along the mean low water line of the Multnomah Channel and northerly along the mean low water line of the Willamette River and to a point on the northeast line of said tract per Book 2759 Page 2103; thence along said northeast line North 59°01'00" West 423 feet, more or less, to the True Point of Beginning.

The above described tract contains 50.25 acres, more or less.

### Parcel 2 (Adjusted TL 800)

A tract of land located in the James Menzie Donation Land Claim Number 45 also being located in Sections 27 and 28, Township 2 North, Range 1 West, Willamette Meridian, Multnomah County, Oregon, and being more particularly described as follows:

Beginning at a 4 inch brass disk at the most Northerly Corner of the James Menzie Donation Land Claim Number 45, thence South 57°04'51" East 1961.55 feet to a point on the centerline of Gillihan Road; thence along said centerline South 60°16'26" West 2254.26 feet to a 1/2 inch iron pipe; thence



continuing along said centerline South 60°42'26" West 149.38 feet to a point; thence leaving said centerline South 59°01'00" East 23.03 feet to a point on the southeast right-of-way of Gillihan Road (20.00 feet from centerline) from which a 1 inch iron pipe bears South 59°01'00" East 0.76 feet; thence along said southeast right-of-way South 60°42'26" West 69.09 feet to a point; thence along a line offset 60.00 feet southwesterly from the westerly northeast line of the tract per Book 524 Page 330 (recorded 09/01/1966) South 59°01'00" East 1563.07 feet to a 5/8 inch iron rod with a yellow plastic cap inscribed "W&H PACIFIC"; thence along the northwest line of the tract per Book 1968 Page 1822 (recorded 12/30/1986) South 30°59'00" West 240.22 feet to the True Point of Beginning; thence leaving said northwest line South 59°01'00" East 363.00 feet to a point; thence North 30°59'00" East 240.22 feet to a point; thence along said line offset 60.00 feet southwesterly from said westerly northeast line of the tract per Book 524 Page 330 (recorded 09/01/1966) South 59°01'00" East 645.31 feet to a point; thence along the southeast line of said tract per Book 1968 Page 1822 (recorded 12/30/1986) South 30°59'00" West 675.87 feet to a point; thence along the southwest line of said tract per Book 1968 Page 1822 (recorded 12/30/1986) North 59°01'00" West 1008.31 feet to a 5/8 inch iron rod with a yellow plastic cap inscribed "W&H PACIFIC"; thence along said northwest line of Book 1968 Page 1822 (recorded 12/30/1986) North 30°59'00" East 435.65 feet to the True Point of Beginning.

The above described tract contains 13.64 acres, more or less (Tax Lot 800).

### Parcel 3

Easements for access and temporary construction as set forth in Declaration of Access Easement and Temporary Construction Easement recorded March 7, 2012 at Recording No. 2012-026639.

**Exhibit B**  
**Property**  
**[legal description of property]**

**ENGINEERING PLANNING  
FORESTRY**

13910 S.W. Galbreath Dr., Suite 100  
Sherwood, Oregon 97140  
Phone: (503) 925-8799  
Fax: (503) 925-8969



**LANDSCAPE ARCHITECTURE  
SURVEYING**

AKS Group of Companies:  
SHERWOOD, OREGON  
SALEM, OREGON  
VANCOUVER, WASHINGTON  
[www.aks-eng.com](http://www.aks-eng.com)

**EXHIBIT B**

**OVERALL TRACT:**

A tract of land located in the James Menzie Donation Land Claim Number 45 also being located in Sections 27 and 28, Township 2 North, Range 1 West, Willamette Meridian, Multnomah County, Oregon, and being more particularly described as follows:

Beginning at a 4 inch brass disk at the most northerly corner of the James Menzie Donation Land Claim Number 45, thence South 12°30'05" East 3393.60 feet to a 5/8 inch iron rod with a yellow plastic cap inscribed "AKS ENGR." at the westerly northern corner of the tract per Document Number 2012-031855 and the True Point of Beginning; thence along the northeasterly line of said Document Number 2012-031855 South 59°01'00" East 363.00 feet to a 5/8 inch iron rod with a yellow plastic cap inscribed "AKS ENGR."; thence continuing along said northeasterly line North 30°59'00" East 240.22 feet to 5/8 inch iron rod with a yellow plastic cap inscribed "AKS ENGR."; thence along the northeasterly lines of the tracts per Document Number 2012-031855 and Document Number 2011-145120 South 59°01'00" East 786.50 feet to a 5/8 inch iron rod with a yellow plastic cap inscribed "AKS ENGR."; thence continuing along the northeasterly line of said Document Number 2011-145120 South 19°14'19" East 593.80 feet to a 5/8 inch iron rod with a yellow plastic cap inscribed "AKS ENGR."; thence along the centerline of the Levee Easement per Book 490 Page 435 (recorded 04/05/1939), Book 497 Page 251 (recorded 05/19/1939), Book 518 Page 250 (recorded 10/18/1939), Book 523 Page 91 (recorded 11/22/1939), Book 535 Page 51 (recorded 02/16/1940) and Book 2086 Page 291 (recorded 10/18/1961), partially quitclaimed per Document Number 2012-026638 hereinafter called "Levee Easement", along a non-tangent curve to the left (Radial: North 17°09'37" West) with a Radius of 1637.02 feet, a Delta of 36°46'12", a Length of 1050.57 feet, and a Chord of North 54°27'18" East 1032.63 feet to a 5/8 inch iron rod with a yellow plastic cap inscribed "AKS ENGR."; thence leaving said Levee Easement centerline along the northeasterly line of said Document Number 2011-145120 South 59°01'00" East 423 feet, more or less to the Mean Low Water line of the Willamette River; thence southerly along the Mean Low Water line of the Willamette River and northwesterly along the Mean Low Water line of the Multnomah Channel 4330 feet, more or less to a point on the northwest line of said tract per Document Number 2011-145120; thence along the northwest line of said tracts per Document Number 2011-145120 and Document Number 2012-031855 North 30°59'00" East 859 feet, more or less to the True Point of Beginning.

**EXCEPTING THEREFROM:**

A tract of land located in the James Menzie Donation Land Claim Number 45 also being located in Section 27, Township 2 North, Range 1 West, Willamette Meridian, Multnomah County, Oregon, and being more particularly described as follows:

Beginning at a 4 inch brass disk at the most northerly corner of the James Menzie Donation Land Claim Number 45, thence South  $12^{\circ}30'05''$  East 3393.60 feet to a 5/8 inch iron rod with a yellow plastic cap inscribed "AKS ENGR." at the westerly northern corner of the tract per Document Number 2012-031855; thence along the northeasterly line of said Document Number 2012-031855 South  $59^{\circ}01'00''$  East 363.00 feet to a 5/8 inch iron rod with a yellow plastic cap inscribed "AKS ENGR."; thence continuing along said northeasterly line North  $30^{\circ}59'00''$  East 240.22 feet to 5/8 inch iron rod with a yellow plastic cap inscribed " AKS ENGR."; thence along the northeasterly line of the tract per Document Number 2012-031855 South  $59^{\circ}01'00''$  East 431.01 feet to a point on the westerly line of the 30.00 foot pipeline easement per Book 265 Page 113 (Recorded 04/05/1965) and the True Point of Beginning; thence along said westerly line South  $11^{\circ}44'00''$  West 89.00 feet to a point; thence continuing along said westerly line South  $05^{\circ}48'00''$  East 593.55 feet to a point; thence leaving said pipeline easement along the westerly line of the communications easement per Document Number 98179149 South  $39^{\circ}12'00''$  West 31.82 feet to a point; thence continuing along said westerly line South  $05^{\circ}48'00''$  East 525.01 feet to a point on the Mean Low Water Line of the Multnomah Channel; thence along said Mean Low Water line South  $66^{\circ}23'34''$  East 60 feet, more or less to a point on the easterly line of said pipeline easement; thence along said easterly line North  $05^{\circ}48'00''$  West 1166.02 feet to a point; thence continuing along said easterly line North  $11^{\circ}44'00''$  East 73.90 feet to a point on the northeasterly line of said Document Number 2012-031855; thence along said northeasterly line North  $59^{\circ}01'00''$  West 31.78 feet to the True Point of Beginning.

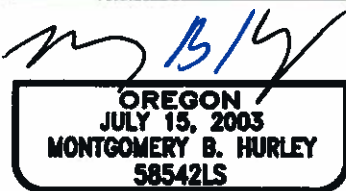
**ALSO EXCEPTING THEREFROM:**

A tract of land located in the James Menzie Donation Land Claim Number 45 also being located in Sections 27 and 28, Township 2 North, Range 1 West, Willamette Meridian, Multnomah County, Oregon, and being more particularly described as follows:

Beginning at a 4 inch brass disk at the most northerly corner of the James Menzie Donation Land Claim Number 45, thence South  $12^{\circ}30'05''$  East 3393.60 feet to a 5/8 inch iron rod with a yellow plastic cap inscribed "AKS ENGR." at the westerly northern corner of the tract per Document Number 2012-031855; thence along the northwesterly line of the tracts per Document Number 2012-031855 and Document Number 2011-145120 South  $30^{\circ}59'00''$  West 544.67 feet to a point on northerly line of the "Levee Easement" (115.00 feet from centerline) and the True Point of Beginning; thence along the northerly line of said "Levee Easement" South  $54^{\circ}44'34''$  East 289.67 feet to a point; thence continuing along said northerly line along a non-tangent curve to the left (Radial: North  $34^{\circ}39'49''$  East) with a Radius of 1522.02 feet, a Delta of  $39^{\circ}47'41''$ , a Length of 1057.12 feet, and a Chord of South  $75^{\circ}14'01''$  East 1036.00 feet to a point; thence continuing along said north line South  $05^{\circ}07'52''$  East 10.00 feet to a point; thence continuing along said northerly line (105.00 feet from centerline) along a non-tangent curve to the left (Radial: North  $05^{\circ}07'52''$  West) with a Radius of 1532.02 feet, a Delta of  $11^{\circ}53'11''$ , a Length of

317.83 feet, a Chord of North 78°55'32" East 317.26 feet to a point on the northeasterly line of said Document Number 2011-145120; thence along said northeasterly line South 19°14'19" East 105.07 feet to a point on the centerline of said "Levee Easement"; thence along said centerline along a non-tangent curve to the left (Radial: North 17°09'37" West) with a Radius of 1637.02 feet, a Delta of 36°46'12", a Length of 1050.57 feet, and a Chord of North 54°27'18" East 1032.63 feet to a 5/8 inch iron rod with a yellow plastic cap inscribed "AKS ENGR." on the northeasterly line of said Document Number 2011-145120; thence along said northeasterly line South 59°01'00" East 90.34 feet to a point on the southerly line of said "Levee Easement" (90.00 feet from centerline); thence along said southerly line along a non-tangent curve to the right (Radial: North 54°11'45" West) with a Radius of 1727.02 feet, a Delta of 17°33'53", a Length of 529.44 feet, a Chord of South 44°35'11" West 527.37 feet to a point; thence continuing along said southerly line South 36°37'52" East 15.00 feet to a point; thence continuing along said southerly line (105.00 feet from centerline) along a non-tangent curve to the right (Radial: North 36°37'52" West) with a Radius of 1742.02 feet, a Delta of 07°00'00", a Length of 212.83 feet, and a Chord of South 56°52'08" West 212.70 feet to a point; thence North 29°37'52" West 10.00 feet to a point; thence continuing along said southerly line (95.00 feet from centerline) along a non-tangent curve to the right (Radial: North 29°37'52" West) with a Radius of 1732.02 feet, a Delta of 64°19'55", a Length of 1944.72 feet, and a Chord of North 87°27'55" West 1844.17 feet to a point; thence North 54°44'34" West 275.03 feet to a point on the northwest line of said Document Number 2011-145120; thence along said northwest line North 30°59'00" East 210.59 feet to the True Point of Beginning.

The above described conservation easement boundary contains 52.28 acres, more or less.



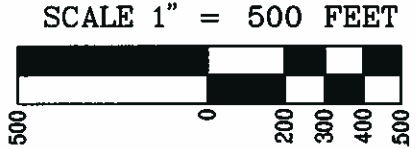
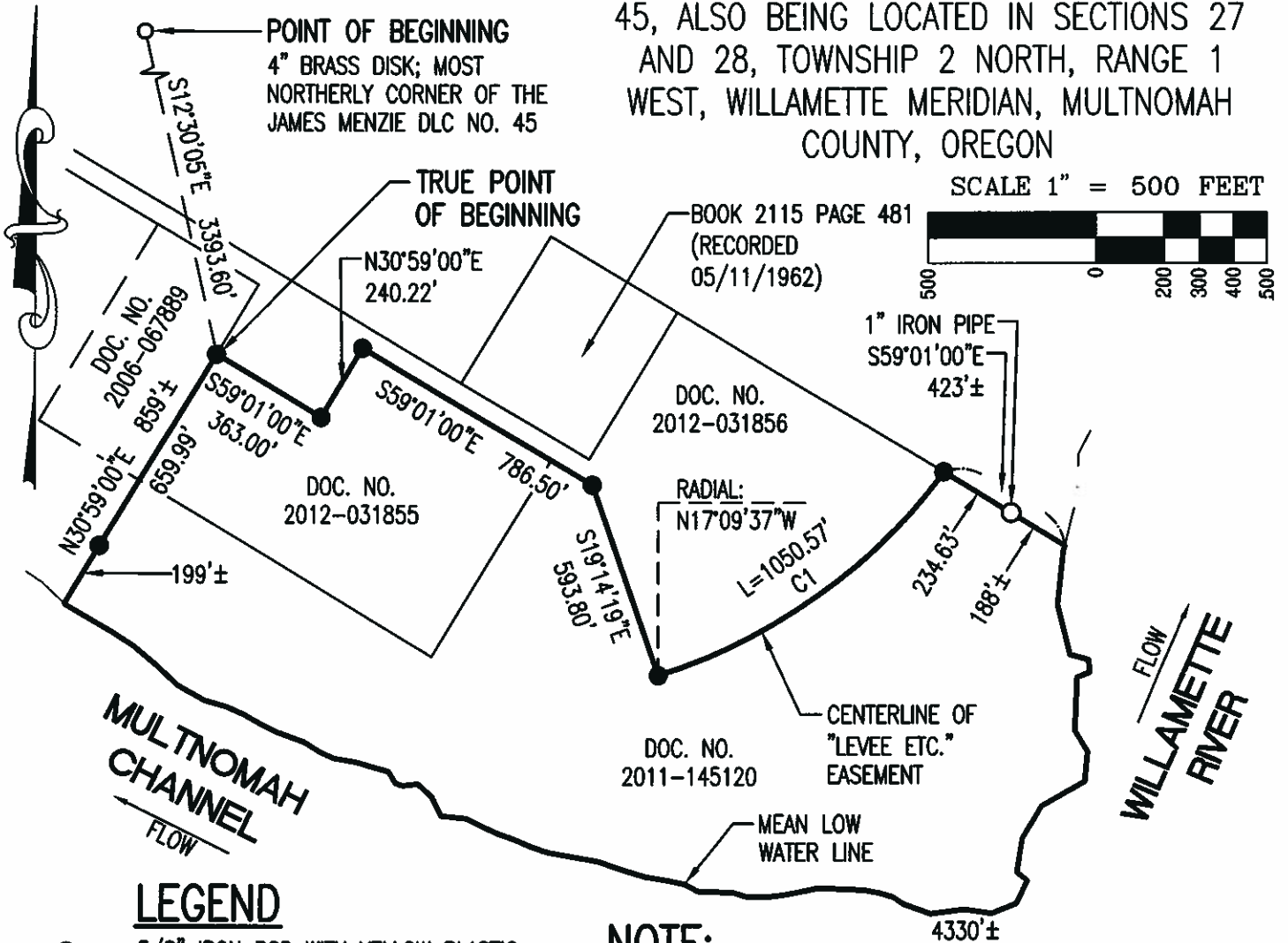
RENEWS: 6/30/13

# PREPARED FOR

PORTLAND HARBOR HOLDINGS II, LLC.  
3855 ATHERTON ROAD  
ROCKLIN, CA 95765

# EXHIBIT B

LOCATED IN THE JAMES MENZIE DLC NO. 45, ALSO BEING LOCATED IN SECTIONS 27 AND 28, TOWNSHIP 2 NORTH, RANGE 1 WEST, WILLAMETTE MERIDIAN, MULTNOMAH COUNTY, OREGON



## LEGEND

- 5/8" IRON ROD WITH YELLOW PLASTIC CAP INSCRIBED "AKS ENGR."
  - MONUMENT AS NOTED
- DOC. NO. DOCUMENT NUMBER PER MULTNOMAH COUNTY DEED RECORDS

## NOTE:

"LEVEE ETC." EASEMENT IS PER BOOK 490 PAGE 435 (04/05/1939), BOOK 497 PAGE 251 (05/19/1939), BOOK 523 PAGE 91 (11/22/1939), BOOK 535 PAGE 51 (02/16/1940), AND BOOK 2086 PAGE 291 (10/18/1961), PARTIALLY QUITCLAIMED PER DOC. NO. 2012-026638

## CURVE TABLE

CURVE	RADIUS	DELTA	LENGTH	CHORD
C1	1637.02'	36°46'12"	1050.57'	N54°27'18"E 1032.63'

3-6-13

**REGISTERED PROFESSIONAL LAND SURVEYOR**

*M B H*

OREGON  
JULY 15, 2003  
MONTGOMERY B. HURLEY  
58542LS

RENEWS: 6/30/13

JOB NAME: ALDER CREEK
JOB NUMBER: 2641
DRAWN BY: JOH
CHECKED BY: NSW
DWG NO.: 022813 2641EXB

ENGINEERING • PLANNING • LANDSCAPE ARCHITECTURE  
FORESTRY • SURVEYING



LICENSED IN OR & WA

13910 SW GALBREATH DRIVE, SUITE 100  
SHERWOOD, OR 97140  
PHONE: (503) 925-8799  
FAX: (503) 925-8969

OFFICES LOCATED IN REDMOND, OR & VANCOUVER, WA

DOC. NO.  
2012-031856

S59°01'00"E 363.00'

N30°59'00"E 240.22'

S59°01'00"E 431.01'

N59°01'00"W 31.78'

N11°44'00"E 73.90'

POINT OF BEGINNING  
BEARS S12°30'05"E 3393.60'  
FROM A 4" BRASS DISK; MOST  
NORTHERLY CORNER OF THE  
JAMES MENZIE DLC NO. 45

TRUE POINT  
OF BEGINNING

S11°44'00"W 89.00'

DOC. NO.  
2012-031855

30.00' PIPELINE EASEMENT PER 265  
PAGE 113 (04/05/1965) AND  
COMMUNICATIONS EASEMENT PER  
DOC. NO. 98179149

S05°48'00"E 593.55'

S05°48'00"E 1166.02'

S39°12'00"W 31.82'

DOC. NO.  
2011-145120

EASEMENT  
EXCEPTION AREA

15.00' COMMUNICATIONS  
EASEMENT PER DOC.  
NO. 98179149

S05°48'00"E 525.01'

S05°48'00"E 1166.02'

30.00' PIPELINE  
EASEMENT PER  
265 PAGE 113  
(04/05/1965)

S66°23'34"E 60'±

### EXHIBIT B

LOCATED IN THE JAMES MENZIE DLC  
NO. 45, ALSO BEING LOCATED IN  
SECTIONS 27, TOWNSHIP 2 NORTH,  
RANGE 1 WEST, WILLAMETTE MERIDIAN,  
MULTNOMAH COUNTY, OREGON

MEAN LOW  
WATER LINE

### PREPARED FOR

PORTLAND HARBOR HOLDINGS II, LLC.  
3855 ATHERTON ROAD  
ROCKLIN, CA 95765

SCALE 1" = 200 FEET



MULTNOMAH  
CHANNEL  
FLOW

3-6-13

REGISTERED  
PROFESSIONAL  
LAND SURVEYOR

*M B/H*

OREGON  
JULY 15, 2003  
MONTGOMERY B. HURLEY  
58542LS

RENEWS: 6/30/13

JOB NAME: ALDER CREEK

JOB NUMBER: 2641

DRAWN BY: JOH

CHECKED BY: NSW

DWG NO.: 022813 2641EXB

ENGINEERING • PLANNING • LANDSCAPE ARCHITECTURE  
FORESTRY • SURVEYING



LICENSED IN OR & WA

13910 SW GALBREATH  
DRIVE, SUITE 100  
SHERWOOD, OR 97140  
PHONE: (503) 925-8799  
FAX: (503) 925-8969

OFFICES LOCATED IN REDMOND, OR & VANCOUVER, WA

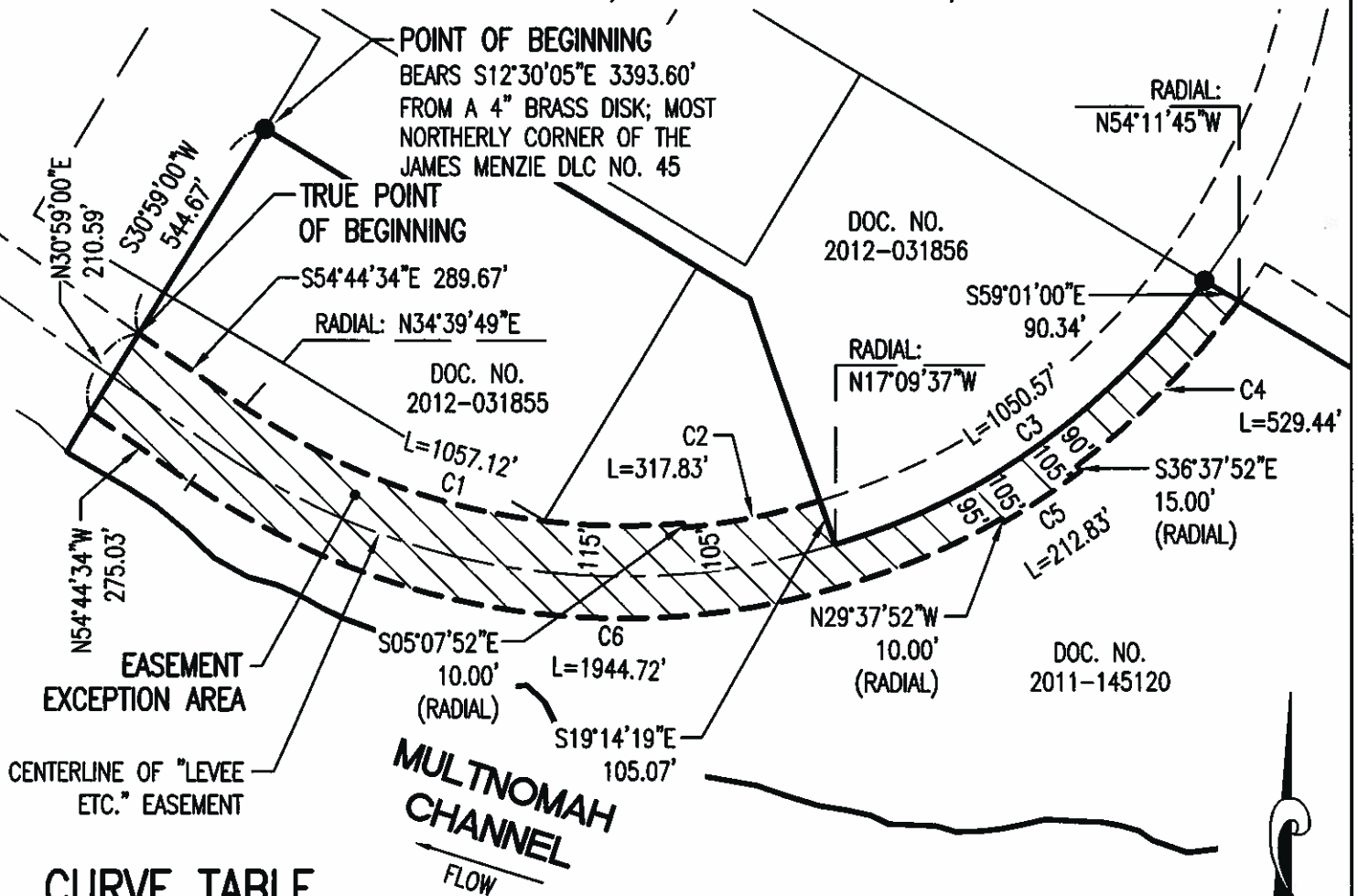
# EXHIBIT B

SHEET 3 OF 4

## PREPARED FOR

PORTLAND HARBOR HOLDINGS II, LLC.  
3855 ATHERTON ROAD  
ROCKLIN, CA 95765

LOCATED IN THE JAMES MENZIE DLC NO. 45,  
ALSO BEING LOCATED IN SECTIONS 27 AND 28,  
TOWNSHIP 2 NORTH, RANGE 1 WEST, WILLAMETTE  
MERIDIAN, MULTNOMAH COUNTY, OREGON



## CURVE TABLE

CURVE	RADIUS	DELTA	LENGTH	CHORD
C1	1522.02'	39°47'41"	1057.12'	S75°14'01"E 1036.00'
C2	1532.02'	11°53'11"	317.83'	N78°55'32"E 317.26'
C3	1637.02'	36°46'12"	1050.57'	N54°27'18"E 1032.63'
C4	1727.02'	17°33'53"	529.44'	S44°35'11"W 527.37'
C5	1742.02'	7°00'00"	212.83'	S56°52'08"W 212.70'
C6	1732.02'	64°19'55"	1944.72'	N87°27'55"W 1844.17'

SCALE 1" = 400 FEET



3-6-13

REGISTERED  
PROFESSIONAL  
LAND SURVEYOR

*Handwritten signature*

OREGON  
JULY 15, 2003  
MONTGOMERY B. HURLEY  
58542LS

RENEWS: 6/30/13

JOB NAME: ALDER CREEK

JOB NUMBER: 2641

DRAWN BY: JOH

CHECKED BY: NSW

DWG NO.: 022813 2641EXB

ENGINEERING • PLANNING • LANDSCAPE ARCHITECTURE  
FORESTRY • SURVEYING



LICENSED IN OR & WA

13910 SW GALBREATH  
DRIVE, SUITE 100  
SHERWOOD, OR 97140  
PHONE: (503) 925-8799  
FAX: (503) 925-8969

OFFICES LOCATED IN REDMOND, OR & VANCOUVER, WA



# PREPARED FOR

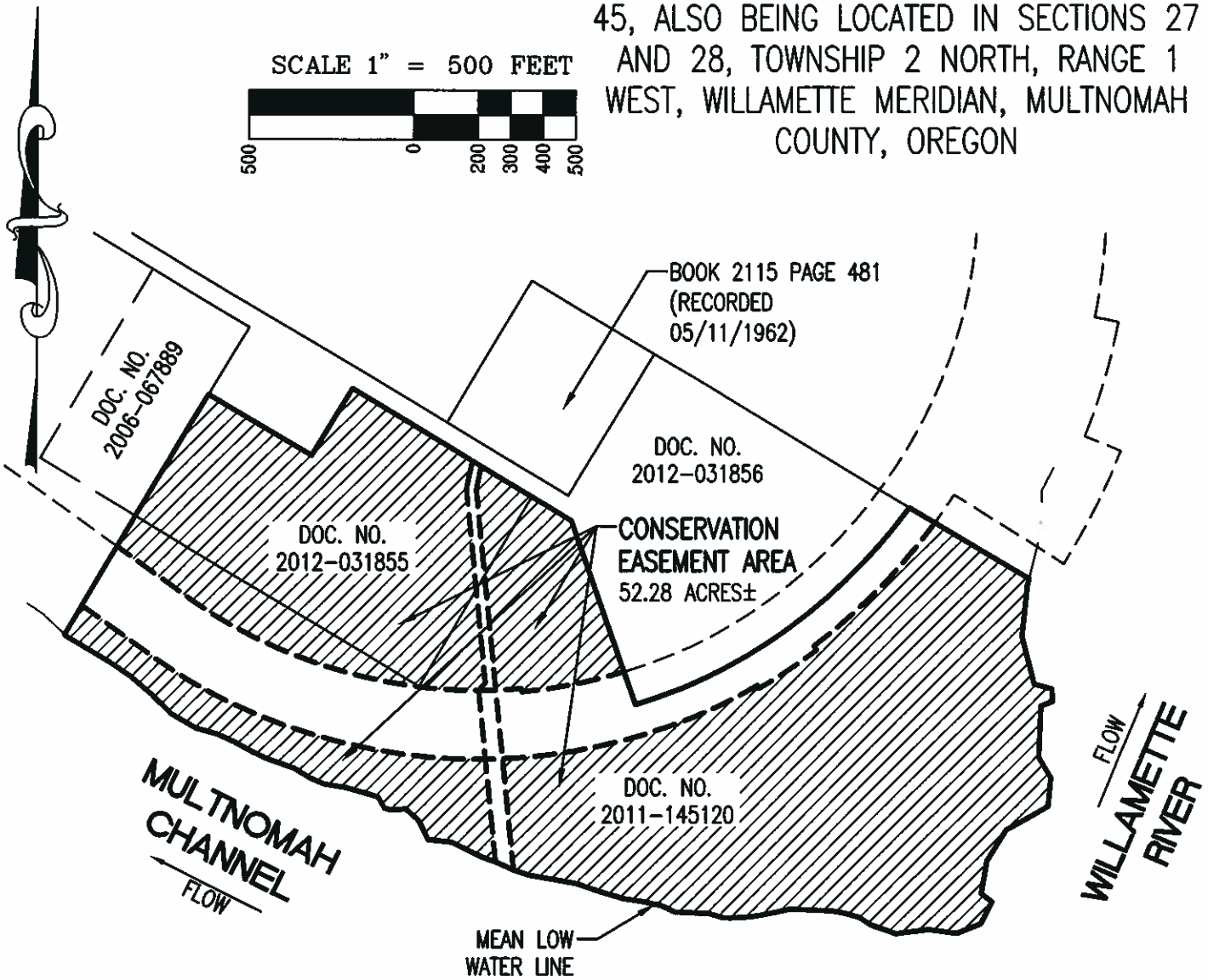
PORTLAND HARBOR HOLDINGS II, LLC.  
3855 ATHERTON ROAD  
ROCKLIN, CA 95765

SHEET 4 OF 4

# EXHIBIT B

LOCATED IN THE JAMES MENZIE DLC NO. 45, ALSO BEING LOCATED IN SECTIONS 27 AND 28, TOWNSHIP 2 NORTH, RANGE 1 WEST, WILLAMETTE MERIDIAN, MULTNOMAH COUNTY, OREGON

SCALE 1" = 500 FEET



## LEGEND

DOC. NO. DOCUMENT NUMBER PER MULTNOMAH COUNTY DEED RECORDS

3-6-13

REGISTERED PROFESSIONAL LAND SURVEYOR

OREGON  
JULY 15, 2003  
MONTGOMERY B. HURLEY  
58542LS

RENEWS: 6/30/13

JOB NAME: ALDER CREEK

JOB NUMBER: 2641

DRAWN BY: JOH

CHECKED BY: NSW

DWG NO.: 022813 2641EXB

ENGINEERING • PLANNING • LANDSCAPE ARCHITECTURE  
FORESTRY • SURVEYING



LICENSED IN OR & WA

13910 SW GALBREATH DRIVE, SUITE 100  
SHERWOOD, OR 97140  
PHONE: (503) 925-8799  
FAX: (503) 925-8969

OFFICES LOCATED IN REDMOND, OR & VANCOUVER, WA

## **Exhibit F-2**

### **Conservation Easement Form**

[Note: This Conservation Easement Form may be revised once a conservation easement holder is determined.]

April 2014

**RECORDING REQUESTED BY  
AND WHEN RECORDED MAIL TO:**

Portland Harbor Holdings II, LLC

c/o Wildlands  
Attn: General Counsel  
3855 Atherton Road  
Rocklin, CA 95765

---

**Conservation Easement Deed  
(Alder Creek Restoration Project)**

THIS CONSERVATION EASEMENT DEED (“Conservation Easement”) is made this \_\_\_ day of \_\_\_\_\_, 2014, by Portland Harbor Holdings II, LLC. (“PHH”) (the “Grantor”), in favor of [insert grantee name] (“Grantee”).

**RECITALS:**

A. Grantor is the sole owner in fee simple of certain real property containing approximately 64 acres in the County of Multnomah, State of Oregon more particularly described in Exhibit A attached hereto and incorporated herein (the "Overall Property"). Grantor desires to grant the Conservation Easement over a 52.28-acre portion of the Overall Property (the “Property”). The Property is more particularly described in Exhibit B, which is attached hereto and incorporated herein.

B. Grantee is an organization qualified by ORS 271.715 (3) to hold conservation easements.

C. This agreement is a conservation easement as provided for by ORS 271.715 to 271.795 and will run with the land.

D. This Conservation Easement Deed is being executed and delivered pursuant to the Restoration Plan for the Alder Creek Restoration Project (the “Restoration Plan”) and “Alder Creek Restoration Project Memorandum of Agreement” (collectively, the “Conservation Agreement”). A specific habitat development plan and a long-term stewardship plan for the Property have been developed, entitled “Alder Creek Habitat Development Plan” (the “Development Plan”) and the “Alder Creek Long-term Stewardship Plan” (the “Stewardship

April 2014

Plan”). Grantor and Grantee each have a copy of the Long-term Stewardship Plan and the Habitat Development Plan, both incorporated herein by reference.

E. The Property provides or is capable of providing significant ecological and habitat values that benefit endangered, threatened, and other species (collectively, “Conservation Values”), as set forth in the Conservation Agreement, including “Essential Fish Habitat” for all life stages and associated habitat, for, among other things, Lower Columbia River steelhead (*Oncorhycus mykiss*), Lower Columbia River Chinook salmon (*O. tshawytscha*), Columbia River chum salmon (*O. keta*), Lower Columbia River coho salmon (*O. kisutch*), Upper Willamette River Chinook salmon, and Upper Willamette River steelhead (each a “Target Species”).

F. The Portland Harbor Natural Resource Trustee Council (“Trustee Council”) consists of the following members: the National Oceanic and Atmospheric Administration (“NOAA”) on behalf of the United States Department of Commerce, the United States Fish and Wildlife Service (“USFWS”) on behalf of the United States Department of the Interior, the Oregon Department of Fish and Wildlife (“ODFW”) on behalf of the State of Oregon, the Confederated Tribes of the Grand Ronde Community of Oregon, the Confederated Tribes of Siletz Indians, the Confederated Tribes of the Umatilla Indian Reservation, the Confederated Tribes of the Warm Springs Reservation of Oregon, and the Nez Perce Tribe. As referenced to in this Easement Deed, “Trustee Council” means all of the above listed Trustee Council members. The Trustee Council is conducting a damage assessment for the Portland Harbor Superfund site (“Site”), and anticipates bringing claims for injuries to natural resources under the Comprehensive Environmental Response Compensation and Liability Act, 42 U.S.C. §§ 9601, *et seq.* (“CERCLA”), the Oil Pollution Act of 1990, 33 U.S.C. §§ 9601, *et seq.* and other applicable federal and state law.

G. Additionally, NOAA and USFWS exercise jurisdiction with respect to the conservation, protection, restoration, enhancement, and management of threatened and endangered species and habitat pursuant to various federal laws including the Endangered Species Act, 16 U.S.C. §§ 1531 *et seq.* (“ESA”), the Fish and Wildlife Coordination Act, 16 U.S.C. §§ 661-666c, the Magnuson-Stevens Act (“MSA”) as amended (16 U.S.C. §§ 1801 *et seq.*) and the Fish and Wildlife Act of 1956 (16 U.S.C. §§742(f) *et seq.*).

H. Grantor intends to convey to Grantee the right to preserve, protect, sustain, and enhance and/or restore the Conservation Values of the Property in perpetuity.

April 2014

## COVENANTS, TERMS, CONDITIONS AND RESTRICTIONS

NOW, THEREFORE, in consideration of the above recitals and the mutual covenants, terms, conditions, and restrictions contained herein, and pursuant to the laws of the United States and the State of Oregon, Grantor hereby voluntarily grants and conveys to Grantee the Conservation Easement in perpetuity over the Property of the nature and character consistent with the Conservation Agreement to the extent hereinafter set forth.

1. Purpose. The purpose of this Conservation Easement is to ensure that the Property will be retained forever in a condition contemplated by the Conservation Agreement and to prevent any use of the Property that will significantly impair or interfere with the Conservation Values of the Property. Grantor intends that this Conservation Easement will confine the use of the Property to such activities including, without limitation, those involving the preservation and enhancement of native species and their habitats in a manner consistent with the conservation purposes of this Conservation Easement and the Conservation Agreement.

2. Rights of Grantee. To accomplish the purposes of this Conservation Easement, Grantor hereby grants and conveys the following rights to Grantee, along with the right of enforcement to the National Oceanic and Atmospheric Administration on behalf of the United States Department of Commerce, the United States Fish and Wildlife Service on behalf of the United States Department of the Interior, the Oregon Department of Fish and Wildlife on behalf of the State of Oregon, the Confederated Tribes of the Grand Ronde Community of Oregon, the Confederated Tribes of Siletz Indians, the Confederated Tribes of the Umatilla Indian Reservation, the Confederated Tribes of the Warm Springs Reservation of Oregon, and the Nez Perce Tribe (referred to collectively hereafter as “the Trustee Council”) or their designee(s) as third party beneficiaries hereof, consistent with the Conservation Agreement:

A. To preserve, protect, sustain, enhance, and/or restore the Conservation Values of the Property.

B. To enter upon the Property at reasonable times, subject to giving Grantor forty-eight (48) hours notice, except in cases where Grantee determines that immediate entry is required to prevent, terminate, or mitigate a violation of the Agreement, to monitor Grantor's compliance with and to otherwise enforce the terms of this Conservation Easement; provided that Grantee shall not unreasonably interfere with Grantor's authorized use and quiet enjoyment of the Property.

C. To prevent any activity on or use of the Property that is inconsistent with the habitat conservation purposes of this Conservation Easement and to require the restoration of such areas or features of the Property that may be damaged by any act, failure to act, or any use or activity that is inconsistent with the purposes of this Conservation Easement.

D. All mineral, air and water rights necessary to preserve, protect and sustain the biological resources and Conservation Values of the Property, unless specifically excluded from this Conservation Easement, including Grantor's right, title and interest in and to any waters consisting of: (a) any riparian water rights appurtenant to the Property; (b) any

April 2014

appropriative water rights held by Grantor to the extent those rights are appurtenant to the Property; (c) any waters, the rights to which are secured under contract between the Grantor and any irrigation or water district, to the extent such waters are customarily applied to the Property; and (d) any water from wells that are in existence or may be constructed in the future on the Property or on those lands described as excepted from the Property in the legal description and that were historically used by the Grantor to maintain the Property in a flooded condition (collectively, "Easement Waters"). The Easement Waters, mineral, air and water rights are limited to the amount of Grantor's waters reasonably required to maintain the Conservation Values of the Property.

E. All present and future development rights.

3. Prohibited Uses. Any activity on or use of the Property inconsistent with the conservation purposes of this Conservation Easement and the Conservation Agreement is prohibited. Without limiting the generality of the foregoing, Grantor, its personal representatives, heirs, successors, assigns, employees, agents, lessees, licensees and invitees are expressly prohibited from doing or permitting any of the following on the Property unless specifically authorized by the Grantee, Restoration Plan, the Development Plan or the Stewardship Plan:

A. Construction, reconstruction or placement of any permanent building or structure.

B. Unseasonable watering; use of fertilizers, biocides, or other agricultural chemicals; incompatible fire protection activities; and any and all other uses which may adversely affect the conservation purposes of this Conservation Easement.

C. Grazing and agricultural activity of any kind.

D. Commercial or industrial uses.

E. Depositing or accumulating soil, trash, ashes, refuse, waste, bio-solids or any other material.

F. Filling, dumping, excavating, draining, dredging, mining, drilling, removing, exploring for or extracting minerals, loam, gravel, soil, rock, sand or other material on or to a depth of 100 ft below the surface of the Property, or granting or authorizing surface entry for any of these purposes of the Property, or granting or authorizing surface entry for any of these purposes.

G. Altering the surface or general topography of the Property, including building roads, paving or otherwise covering the Property with concrete, asphalt, or any other impervious material.

H. Removing, destroying, or cutting trees, shrubs or other vegetation, except as required for: (i) fire breaks; (ii) maintenance of existing foot trails or roads; (iii) prevention or treatment of disease; (iv) utility line clearance; (v) levee easement clearance; or (vi) invasive species management.

April 2014

I. Use of motorized vehicles, including off-road vehicles, except on existing roadways, inasmuch as they are harmful or adverse to the conservation purposes of the Conservation Easement, otherwise they shall be allowed for the purposes of land management, maintenance, and monitoring.

J. Transferring any water right necessary to maintain or restore the biological resources of the Property.

K. Planting, introduction, or dispersal of invasive or exotic plant or animal species.

L. Manipulating, impounding or altering any natural watercourse, body of water or water circulation on the Property and any activities or uses detrimental to water quality, including but not limited to degradation or pollution of any surface or sub-surface waters.

M. Permitting a general right of access to the Property.

4. Grantor's Duties. Grantor shall undertake all reasonable actions to prevent the unlawful entry and trespass by persons whose activities may degrade or harm the Conservation Values of the Property and are inconsistent with the Conservation Agreement.

5. Grantor's Reserved Rights. All rights accruing from Grantor's ownership of the Property, including the right to engage in or permit or invite others to engage in all uses of the Property that are not prohibited herein and are not inconsistent with the purposes of this Conservation Easement, are reserved to Grantor and Grantor's personal representatives, heirs, successors, and assigns.

6. Remedies for Violation and Corrective Action. If Grantee, Grantor, or the Trustee Council or the Trustee Council's designee(s) determines there is a violation of the terms of this Conservation Easement or that a violation is threatened, written notice of such violation and a demand for corrective action sufficient to cure the violation shall be given to Grantor or Grantee. Within ten (10) days of the receipt of written notice of such violation, the notice recipient shall provide a written response to each of the parties to this Conservation Easement, including the Trustee Council or the Trustee Council's designee(s), pursuant to section 12 of this Conservation Easement. In any instance, measures to cure the violation shall be reviewed and approved by the Trustee Council or the Trustee Council's designee(s). If a violation is not cured within thirty (30) days after receipt of written notice and demand, or if the cure reasonably requires more than thirty (30) days to complete and there is failure to begin the cure within the thirty-day period or failure to continue diligently to complete the cure, the Parties shall first engage in the following dispute resolution process to resolve any disputes arising related to the violation and cure. The Grantor, Grantee, or Trustee Council or the Trustee Council's designee(s), shall issue a written Notice of Deficiencies to all Parties, detailing the claimed deficiencies concerning the violation and cure. The Notice of Deficiencies shall identify a higher-level administrative officer within the issuing Party's organization who shall represent the Party in the dispute resolution process ("Dispute Resolution Representative"). The Notice of Deficiencies shall include the Dispute Resolution Representative's contact information. Within

April 2014

fourteen (14) days of the receipt of the Notice of Deficiencies, the remaining Parties shall identify corresponding Dispute Resolution Representatives within their respective organizations and communicate to schedule a joint conference to be held at the earliest opportunity. The Dispute Resolution Representatives shall engage in a reasonable, good-faith effort to review the dispute and decide upon a mutually agreeable cure, which shall be diligently implemented. If, after a reasonable period of time, the Dispute Resolution Representatives are unable to reach agreement, the Grantor, Grantee, or the Trustee Council or the Trustee Council's designee(s) may bring an action at law or in equity in a court of competent jurisdiction to enforce compliance with the terms of this Conservation Easement, to recover any damages to which Grantee, Grantor, or the Trustee Council or the Trustee Council's designee(s) may be entitled for violation of the terms of this Conservation Easement or for any injury to the Conservation Values of the Property, or for other equitable relief, including, but not limited to, the restoration of the Property to the condition in which it existed prior to any violation or injury. Without limiting violator's liability therefore, any damages recovered may be applied to the cost of undertaking any corrective action on the Property.

6.1 Injunctive Relief. If Grantee, Grantor, or the Trustee Council or the Trustee Council's designee(s), in each its sole discretion, determines that circumstances require immediate action to prevent or mitigate significant damage to the Conservation Values of the Property, Grantee, Grantor, or the Trustee Council or the Trustee Council's designee(s) may pursue its remedies under this Section without prior notice or without waiting for the period provided for cure to expire to enjoin the violation, *ex parte* as necessary, by temporary or permanent injunction without the necessity of proving either actual damages or the inadequacy of otherwise available legal remedies, and to require the restoration of the Property to the condition that existed prior to any such injury. The remedies described in this Section shall be cumulative and shall be in addition to all remedies now or hereafter existing at law or in equity. The failure of Grantee, Grantor, the Trustee Council or the Trustee Council's designee(s) to discover a violation or to take immediate legal action shall not bar taking such action at a later time.

6.2 Standing. If at any time Grantee, Grantor, or any successor in interest or subsequent transferee uses or threatens to use the Property for purposes not in conformance with the stated conservation purposes contained herein, or releases or threatens to abandon this Conservation Easement in whole or in part, then, the Trustee Council or the Trustee Council's designee(s) shall have standing as an interested party in any proceeding affecting this Conservation Easement.

6.3 Costs of Enforcement. All reasonable costs incurred in enforcing the terms of this Conservation Easement including, but not limited to, costs of suit and attorneys' fees, and any costs of restoration necessitated by violation or negligence under the terms of this Conservation Easement shall be borne by the violator.

6.4 Enforcement Discretion. Enforcement of the terms of this Conservation Easement shall be at the discretion of Grantee, Grantor, or the Trustee Council or the Trustee Council's designee(s), and any forbearance to exercise rights of enforcement under this Conservation Easement in the event of any breach of any term of this Conservation Easement



April 2014

shall not be deemed or construed to be a waiver of such term or of any subsequent breach of the same or any other term of this Conservation Easement or of any rights under this Conservation Easement. No delay or omission in the exercise of any right or remedy upon any breach shall impair such right or remedy or be construed as a waiver.

6.5 Catastrophic Acts Beyond Grantee's or Grantor's Control. Nothing contained in this Conservation Easement shall be construed to entitle Grantee, Grantor, or the Trustee Council or the Trustee Council's designee(s) to bring any action for any injury to or change in the Property resulting from causes beyond Grantee or Grantor's control, including, without limitation, fire, flood, storm, and earth movement, or from any prudent action taken by Grantee or Grantor under emergency conditions to prevent, abate, or mitigate significant injury to the Property resulting from such causes. The Grantor, Grantee, and Trustee Council or the Trustee Council's designee(s) shall be notified of the catastrophic event within forty-eight (48) hours of its discovery. The Grantor, Grantee, and the Trustee Council or the Trustee Council's designee(s) shall meet as soon as reasonably possible to determine a response to such catastrophic event. In the interim, the Grantor shall continue to the fullest extent possible to manage and maintain the Property consistent with the conservation purposes of the Conservation Easement and Conservation Agreement.

6.6 Third Party Beneficiary Right of Enforcement. All rights and remedies conveyed under this Conservation Easement shall extend to and are enforceable by the Trustee Council or its designee(s) as a third party beneficiary. These rights of enforcement are in addition to, and do not limit, the rights of enforcement under the Conservation Agreement.

7. Costs and Liabilities. Grantor retains all responsibilities and shall bear all costs and liabilities of any kind related to the ownership, operation, upkeep, and maintenance of the Property, including transfer costs, costs of title and documentation review, and maintenance of adequate liability insurance coverage. Grantor remains solely responsible for obtaining any applicable permits and approvals required for any activity or use permitted on the Property by this Conservation Easement, and any such activity or use shall be undertaken in accordance with all applicable federal, state, local and administrative agency laws, statutes, ordinances, rules, regulations, orders and requirements.

7.1 Taxes; No Liens. Grantor shall pay before delinquency all taxes, assessments, fees, and charges of whatever description levied on or assessed against the Property by competent authority (collectively, "taxes"), including any taxes imposed upon, or incurred as a result of, this Conservation Easement, and shall furnish Grantee with satisfactory evidence of payment upon request. Grantor shall keep Grantee's interest in the Property free from any liens, including those arising out of any obligations incurred by Grantor for any labor or materials furnished or alleged to have been furnished at or for use on the Property.

7.2 Hold Harmless. Grantor shall hold harmless, indemnify, and defend Grantee, Trustee Council or the Trustee Council's designee(s), ; and their respective members, directors, officers, employees, agents, and contractors and the heirs, personal representatives, successors, and assigns of each of them (collectively, "Indemnified Parties"), from and against all liabilities, penalties, costs, losses, damages, expenses, causes of action, claims, demands, orders, liens, or judgments, including, without limitation, reasonable attorneys' fees, arising from

April 2014

or in any way connected with (a) injury to or the death of any person, or physical damage to any property, resulting from any act, omission, condition, or other matter related to or occurring on or about the Property, unless due to the negligence of any of the Indemnified Parties, and (b) the obligations, covenants, representations, and warranties of this Conservation Easement relating to Costs and Liabilities of this Section 7.

7.3 No Hazardous Materials Liability. Other than as described in the Work Plan, Phase I Environmental Site Assessment, Phase II Environmental Assessment, and the Hazardous Building and Material Survey, Grantor represents and warrants that it has no knowledge of any release or threatened release of hazardous materials in, on, under, about, or affecting the Property. Without limiting the obligations of Grantor as otherwise provided in this instrument, Grantor agrees to indemnify, protect, and hold harmless the Indemnified Parties against any and all Claims arising from or connected with any hazardous materials present, released in, on, from, or about the Property, at any time, of any substance now or hereafter defined, listed, or otherwise classified pursuant to any federal state, or local law, regulation, or requirement as hazardous, toxic, polluting, or otherwise contaminating to the air, water, or soil, or in any way harmful or threatening to human health or the environment, unless caused solely by any of the Indemnified Parties.

8. Best and Most Necessary Use. The habitat conservation purposes of the Conservation Easement are presumed to be the best and most necessary public use.

9. Conservation Easement Assignment or Transfer. This Conservation Easement may be assigned or transferred by Grantee or any successor in interest upon written approval of the Trustee Council or its designee(s) and Grantor, which approval shall not be unreasonably withheld, but Grantee shall give Grantor and the Trustee Council or the Trustee Council's designee(s) at least thirty (30) days prior written notice of the transfer. Approval of any assignment or transfer may be withheld whenever it will result in a merger of the Conservation Easement and the Property in a single Property owner (thereby extinguishing the Conservation Easement) if no method or mechanism deemed adequate to preserve, protect, and sustain the Property in perpetuity has been established. Grantee or any successor in interest may assign or transfer its rights and obligations under this Conservation Easement only to an entity or organization as approved by the Trustee Council or the Trustee Council's designee(s) and Grantor. As a condition of such assignment or transfer, Grantee shall require that the conservation purposes of this Conservation Easement and the Conservation Agreement are carried out and notice of such restrictions, including the Conservation Agreement, shall be recorded in the County where the Property is located. The failure of Grantee to perform any act required by this paragraph shall not impair the validity of this Conservation Easement or its enforcement in any way.

10. Subsequent Property Transfer. This Conservation Easement may be assigned or transferred by Grantor or any successor in interest upon written approval of the Trustee Council or its designee(s), which approval shall not be unreasonably withheld. Grantor agrees to give Grantee and the Trustee Council or the Trustee Council's designee(s) written notice of its intent

April 2014

to transfer any interest in this Conservation Easement at least thirty (30) days prior to the date of such transfer. Grantor or any successor in interest may assign or transfer its rights and obligations under this Conservation Easement only to an entity or organization as approved by the Trustee Council or its designee(s). Grantor further agrees to incorporate the terms of this Conservation Easement in any deed or other legal instrument by which Grantor divests itself of any interest in all or a portion of the Property, including, without limitation, a leasehold interest. Grantee or the Trustee Council or the Trustee Council's designee(s) shall have the right to prevent subsequent transfers in which prospective subsequent claimants or transferees are not given notice of the terms, covenants, conditions and restrictions of this Conservation Easement or whenever a subsequent Property transfer will result in a merger of the Conservation Easement and the Property in a single Property owner (thereby extinguishing the Conservation Easement) if no method or mechanism deemed adequate to preserve, protect, and sustain the Property in perpetuity has been established. The failure of Grantor to perform any act required by this section shall not impair the validity of this Conservation Easement or limit its enforcement in any way.

11. Estoppel Certificates. Grantee shall, within 30 business days after receiving Grantor's request therefore, execute and deliver to Grantor a document certifying, to the best knowledge of the person executing the document, that Grantor is in compliance with any obligation of Grantor contained in this Conservation Easement, or otherwise evidencing the status of such obligation to the extent of Grantee's knowledge thereof, as may be reasonably requested by Grantor.

12. Notices. Any notice, demand, request, consent, approval, or other communication that Grantor, Grantee, or the Trustee Council or the Trustee Council's designee(s) desires or is required to give to the others shall be in writing and either served personally or sent by first-class mail, postage prepaid or by recognized overnight courier that guarantees next-day delivery addressed as follows:

To Grantor: Portland Harbor Holdings II, LLC  
c/o Wildlands  
Attn: General Counsel  
3855 Atherton Road  
Rocklin, CA 95765

To Grantee: [Insert Grantee information]

To Trustee Council: NOAA  
Restoration Center  
1201 NE Lloyd Blvd., Suite 1100  
Portland, OR 97232

April 2014

United States Fish and Wildlife Service  
Pacific Region  
Attn: Field Supervisor  
911 NE 11<sup>th</sup> Ave. # 1  
Portland, OR 97232

Oregon Department of Fish and Wildlife  
3406 Cherry Avenue N.E.  
Salem, OR 97303

Confederated Tribes of the Grand Ronde  
Community of Oregon  
Portland Office  
4445 S.W. Barbur Blvd.  
Portland, OR 97239

Confederated Tribes of Siletz Indians  
ATTN: Natural Resources Manager  
P.O. Box 549  
Siletz, OR 97380

Confederated Tribes of the Umatilla Indian Reservation  
Nixyáawii Governance Center  
46411 Timíne Way  
Pendleton, OR 97801

Confederated Tribes of the Warm Springs Reservation of  
Oregon  
1107 Wasco Street  
Warm Springs, OR 97761

Nez Perce Tribe  
P.O. Box 305  
Lapwai, ID 83540

April 2014

or to such other address as a party shall designate by written notice to the others. Notice shall be deemed effective upon delivery in the case of personal delivery or delivery by overnight courier or, in the case of delivery by first class mail, five (5) days after deposit into the United States mail.

13. Recordation. Grantor shall submit an original, signed and notarized Conservation Easement to Grantee and Grantee shall promptly record this instrument in the official records of the County in which the Property is located, and shall thereafter promptly provide a conformed copy of the recorded Conservation Easement to the Grantor and to the Trustee Council or the Trustee Council's designee(s). Grantee may re-record at any time as may be required to preserve its rights in this Conservation Easement.

14. Amendment. This Conservation Easement may be amended by Grantor and Grantee only by mutual written agreement and written approval by the Trustee Council or the Trustee Council's designee(s). Any such amendment shall be consistent with the purposes of this Conservation Easement and shall not affect its perpetual duration, and Grantee shall promptly record this amended instrument in the official records of the County in which the Property is located, and shall thereafter promptly provide a conformed copy of the recorded amended Conservation Easement to the Grantor and to the Trustee Council or its designee(s).

15. Warranty. Grantor represents and warrants that, except for the authorized encumbrances set forth in Exhibit C, which is attached hereto and incorporated herein, there is no outstanding mortgage, lien, encumbrance, or other interest in the Property which has not been expressly subordinated to this Conservation Easement, and that, except for another Conservation Easement established in accordance with the Conservation Agreement and which is not adverse to the Conservation Easement established herein, the Property is not subject to any other easement or interest that is adverse to or is not subordinate to this Conservation Easement.

16. Additional Interests. Except for another conservation easement established in accordance with the Conservation Agreement and which is not adverse to the Conservation Easement established herein, Grantor shall not grant any additional interest in the Property that is not subordinate to this Conservation Easement, nor shall Grantor grant, transfer, abandon, or relinquish any water or water right associated with the Property, including without limitation any Easement Waters, without the prior written authorization of Grantee and the Trustee Council or the Trustee Council's designee(s). Such consent may be withheld if the proposed interest or transfer is inconsistent with the purposes of this Conservation Easement and the Conservation Agreement or will impair or interfere with the Conservation Values of the Property. This Section shall not prohibit the transfer of a fee title or leasehold interest in the Property that is otherwise subject to and complies with the terms of this Conservation Easement.

April 2014

18. Third-Party Beneficiaries and Access. Grantor and Grantee acknowledge that the Trustee Council and its designee(s) are third-party beneficiaries of this Conservation Easement with rights of access to the Property for monitoring or conservation activities contemplated by this Conservation Easement or the Conservation Agreement, except in cases where the Trustee Council or its designee(s) determine that immediate entry is required to prevent, terminate, or mitigate a violation of the Agreement, such access is subject to providing the Grantor with forty-eight (48) hours notice, and with rights to enforce all of the provisions of this Conservation Easement.

19. General Provisions.

19.1 Controlling Law. The interpretation and performance of this Conservation Easement shall be governed by the laws of the State of Oregon and applicable Federal law including the ESA.

19.2 Liberal Construction. Any general rule of construction to the contrary notwithstanding, this Conservation Easement shall be liberally construed in favor of the deed to affect the purposes of this Conservation Easement. If any provision in this instrument is found to be ambiguous, an interpretation consistent with the purposes of this Conservation Easement that would render the provision valid shall be favored over any interpretation that would render it invalid.

19.3 Severability. If any provision of this Conservation Easement or the application thereof is found to be invalid the remaining provisions of this Conservation Easement or the application of such provisions other than that found to be invalid shall not be affected thereby.

19.4 Entire Agreement. This Conservation Easement and the Conservation Agreement incorporated by reference herein, including all of the exhibits thereto, together set forth the entire agreement of the parties and supersede all prior discussions, negotiations, understandings, or agreements relating to the Conservation Easement, all of which are merged herein. No alteration or variation of this instrument shall be valid or binding unless contained in an amendment in accordance with the provisions herein.

19.5 No Forfeiture. Nothing contained herein will result in a forfeiture or reversion of Grantor's title in any respect.

19.6 Successors. The covenants, terms, conditions, and restrictions of this Conservation Easement shall be binding upon, and inure to the benefit of, the parties hereto and their respective personal representatives, heirs, successors, and assigns and shall constitute a servitude running in perpetuity with the Property. This Conservation Easement shall remain valid consistent with the terms of ORS 271-745.

19.7 Termination of Rights and Obligations. A party's rights and obligations under this Conservation Easement terminate upon transfer of the party's interest in the

April 2014

Conservation Easement or Property, except that liability for acts, omissions or breaches occurring prior to transfer shall survive transfer.

19.8 Captions. The captions in this instrument have been inserted solely for convenience of reference and are not a part of this instrument and shall have no effect upon its construction or interpretation.

19.9 Counterparts. The parties may execute this instrument in two or more counterparts, which shall, in the aggregate, be signed by both parties; each counterpart shall be deemed an original instrument as against any party who has signed it. In the event of any disparity between the counterparts produced, the recorded counterpart shall be controlling.

April 2014

IN WITNESS WHEREOF, Grantor has executed and delivered this Conservation Easement Deed as of the day and year first above written.

GRANTOR (Portland Harbor Holdings II, LLC):

By: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

GRANTEE:

By: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_



April 2014

**Exhibit A**  
**Overall Property**

**[legal description of overall property]**

## EXHIBIT A

### Parcel 1 (Adjusted TL 700)

A tract of land located in the James Menzie Donation Land Claim Number 45 also being located in Sections 27 and 28, Township 2 North, Range 1 West, Willamette Meridian, Multnomah County, Oregon, and being more particularly described as follows:

Beginning at a 4 inch brass disk at the most Northerly Corner of the James Menzie Donation Land Claim Number 45, thence South 57°04'51" East 1961.55 feet to a point on the centerline of Gillihan Road; thence along said centerline South 60°16'26" West 2254.26 feet to a 1/2 inch iron pipe; thence continuing along said centerline South 60°42'26" West 149.38 feet to a point; thence leaving said centerline South 59°01'00" East 23.03 feet to a point on the southeast right-of-way of Gillihan Road (20.00 feet from centerline) from which a 1 inch iron pipe bears South 59°01'00" East 0.76 feet; thence along the westerly northeast line of the tract per Book 524 Page 330 (recorded 09/01/1966) South 59°01'00" East 2630.64 feet to a point; thence along the northwest line of the tract per Book 2759 Page 2103 (recorded 09/29/1993) North 30°59'00" East 507.27 feet to a point; thence along the northeast line of said tract per Book 2759 Page 2103 South 59°01'00" East 915.32 feet to a point on the centerline of the Levee Easement per Book 490 Page 435 (Recorded 04/05/1939), Book 497 Page 251 (Recorded 05/19/1939), Book 518 Page 250 (Recorded 10/18/1939), Book 523 Page 91 (Recorded 11/22/1939), Book 535 Page 51 (Recorded 02/16/1940) and Book 2086 Page 291 (Recorded 10/18/1961), hereinafter called "Levee Easement", also being the True Point of Beginning; thence along said "Levee Easement" along a non-tangent curve to the right (Radial North 53°55'48" West) with a Radius of 1637.02 feet, a Delta of 36°46'12", a Length of 1050.57 feet, and a Chord of South 54°27'18" West 1032.63 feet to a point; thence leaving said "Levee Easement" North 19°14'19" West 593.80 feet to a point; thence along a line offset 60.00 feet southwesterly from said westerly northeast line of the tract per Book 524 Page 330 North 59°01'00" West 141.19 feet to a point; thence along the southeast line of the tract per Book 1968 Page 1822 (recorded 12/30/1986) South 30°59'00" West 675.87 feet to a point; thence along the southwest line of said tract per 1968 Page 1822 North 59°01'00" West 1008.31 feet to a 5/8 inch iron rod with a yellow plastic cap inscribed "W&H PACIFIC"; thence along the southeast line of the tract per Document Number 2006-199633 South 30°59'00" West 423 feet, more or less, to a point on the mean low water line of the Multnomah Channel; thence southeasterly along the mean low water line of the Multnomah Channel and northerly along the mean low water line of the Willamette River and to a point on the northeast line of said tract per Book 2759 Page 2103; thence along said northeast line North 59°01'00" West 423 feet, more or less, to the True Point of Beginning.

The above described tract contains 50.25 acres, more or less.

### Parcel 2 (Adjusted TL 800)

A tract of land located in the James Menzie Donation Land Claim Number 45 also being located in Sections 27 and 28, Township 2 North, Range 1 West, Willamette Meridian, Multnomah County, Oregon, and being more particularly described as follows:

Beginning at a 4 inch brass disk at the most Northerly Corner of the James Menzie Donation Land Claim Number 45, thence South 57°04'51" East 1961.55 feet to a point on the centerline of Gillihan Road; thence along said centerline South 60°16'26" West 2254.26 feet to a 1/2 inch iron pipe; thence

continuing along said centerline South 60°42'26" West 149.38 feet to a point; thence leaving said centerline South 59°01'00" East 23.03 feet to a point on the southeast right-of-way of Gillihan Road (20.00 feet from centerline) from which a 1 inch iron pipe bears South 59°01'00" East 0.76 feet; thence along said southeast right-of-way South 60°42'26" West 69.09 feet to a point; thence along a line offset 60.00 feet southwesterly from the westerly northeast line of the tract per Book 524 Page 330 (recorded 09/01/1966) South 59°01'00" East 1563.07 feet to a 5/8 inch iron rod with a yellow plastic cap inscribed "W&H PACIFIC"; thence along the northwest line of the tract per Book 1968 Page 1822 (recorded 12/30/1986) South 30°59'00" West 240.22 feet to the True Point of Beginning; thence leaving said northwest line South 59°01'00" East 363.00 feet to a point; thence North 30°59'00" East 240.22 feet to a point; thence along said line offset 60.00 feet southwesterly from said westerly northeast line of the tract per Book 524 Page 330 (recorded 09/01/1966) South 59°01'00" East 645.31 feet to a point; thence along the southeast line of said tract per Book 1968 Page 1822 (recorded 12/30/1986) South 30°59'00" West 675.87 feet to a point; thence along the southwest line of said tract per Book 1968 Page 1822 (recorded 12/30/1986) North 59°01'00" West 1008.31 feet to a 5/8 inch iron rod with a yellow plastic cap inscribed "W&H PACIFIC"; thence along said northwest line of Book 1968 Page 1822 (recorded 12/30/1986) North 30°59'00" East 435.65 feet to the True Point of Beginning.

The above described tract contains 13.64 acres, more or less (Tax Lot 800).

### Parcel 3

Easements for access and temporary construction as set forth in Declaration of Access Easement and Temporary Construction Easement recorded March 7, 2012 at Recording No. 2012-026639.

April 2014

**Exhibit B  
Property**

**[legal description of conservation easement area]**

**ENGINEERING PLANNING  
FORESTRY**

13910 S.W. Galbreath Dr., Suite 100  
Sherwood, Oregon 97140  
Phone: (503) 925-8799  
Fax: (503) 925-8969



**LANDSCAPE ARCHITECTURE  
SURVEYING**

AKS Group of Companies:  
SHERWOOD, OREGON  
SALEM, OREGON  
VANCOUVER, WASHINGTON  
[www.aks-eng.com](http://www.aks-eng.com)

**EXHIBIT B**

**OVERALL TRACT:**

A tract of land located in the James Menzie Donation Land Claim Number 45 also being located in Sections 27 and 28, Township 2 North, Range 1 West, Willamette Meridian, Multnomah County, Oregon, and being more particularly described as follows:

Beginning at a 4 inch brass disk at the most northerly corner of the James Menzie Donation Land Claim Number 45, thence South 12°30'05" East 3393.60 feet to a 5/8 inch iron rod with a yellow plastic cap inscribed "AKS ENGR." at the westerly northern corner of the tract per Document Number 2012-031855 and the True Point of Beginning; thence along the northeasterly line of said Document Number 2012-031855 South 59°01'00" East 363.00 feet to a 5/8 inch iron rod with a yellow plastic cap inscribed "AKS ENGR."; thence continuing along said northeasterly line North 30°59'00" East 240.22 feet to 5/8 inch iron rod with a yellow plastic cap inscribed "AKS ENGR."; thence along the northeasterly lines of the tracts per Document Number 2012-031855 and Document Number 2011-145120 South 59°01'00" East 786.50 feet to a 5/8 inch iron rod with a yellow plastic cap inscribed "AKS ENGR."; thence continuing along the northeasterly line of said Document Number 2011-145120 South 19°14'19" East 593.80 feet to a 5/8 inch iron rod with a yellow plastic cap inscribed "AKS ENGR."; thence along the centerline of the Levee Easement per Book 490 Page 435 (recorded 04/05/1939), Book 497 Page 251 (recorded 05/19/1939), Book 518 Page 250 (recorded 10/18/1939), Book 523 Page 91 (recorded 11/22/1939), Book 535 Page 51 (recorded 02/16/1940) and Book 2086 Page 291 (recorded 10/18/1961), partially quitclaimed per Document Number 2012-026638 hereinafter called "Levee Easement", along a non-tangent curve to the left (Radial: North 17°09'37" West) with a Radius of 1637.02 feet, a Delta of 36°46'12", a Length of 1050.57 feet, and a Chord of North 54°27'18" East 1032.63 feet to a 5/8 inch iron rod with a yellow plastic cap inscribed "AKS ENGR."; thence leaving said Levee Easement centerline along the northeasterly line of said Document Number 2011-145120 South 59°01'00" East 423 feet, more or less to the Mean Low Water line of the Willamette River; thence southerly along the Mean Low Water line of the Willamette River and northwesterly along the Mean Low Water line of the Multnomah Channel 4330 feet, more or less to a point on the northwest line of said tract per Document Number 2011-145120; thence along the northwest line of said tracts per Document Number 2011-145120 and Document Number 2012-031855 North 30°59'00" East 859 feet, more or less to the True Point of Beginning.

**EXCEPTING THEREFROM:**

A tract of land located in the James Menzie Donation Land Claim Number 45 also being located in Section 27, Township 2 North, Range 1 West, Willamette Meridian, Multnomah County, Oregon, and being more particularly described as follows:

Beginning at a 4 inch brass disk at the most northerly corner of the James Menzie Donation Land Claim Number 45, thence South  $12^{\circ}30'05''$  East 3393.60 feet to a 5/8 inch iron rod with a yellow plastic cap inscribed "AKS ENGR." at the westerly northern corner of the tract per Document Number 2012-031855; thence along the northeasterly line of said Document Number 2012-031855 South  $59^{\circ}01'00''$  East 363.00 feet to a 5/8 inch iron rod with a yellow plastic cap inscribed "AKS ENGR."; thence continuing along said northeasterly line North  $30^{\circ}59'00''$  East 240.22 feet to 5/8 inch iron rod with a yellow plastic cap inscribed " AKS ENGR."; thence along the northeasterly line of the tract per Document Number 2012-031855 South  $59^{\circ}01'00''$  East 431.01 feet to a point on the westerly line of the 30.00 foot pipeline easement per Book 265 Page 113 (Recorded 04/05/1965) and the True Point of Beginning; thence along said westerly line South  $11^{\circ}44'00''$  West 89.00 feet to a point; thence continuing along said westerly line South  $05^{\circ}48'00''$  East 593.55 feet to a point; thence leaving said pipeline easement along the westerly line of the communications easement per Document Number 98179149 South  $39^{\circ}12'00''$  West 31.82 feet to a point; thence continuing along said westerly line South  $05^{\circ}48'00''$  East 525.01 feet to a point on the Mean Low Water Line of the Multnomah Channel; thence along said Mean Low Water line South  $66^{\circ}23'34''$  East 60 feet, more or less to a point on the easterly line of said pipeline easement; thence along said easterly line North  $05^{\circ}48'00''$  West 1166.02 feet to a point; thence continuing along said easterly line North  $11^{\circ}44'00''$  East 73.90 feet to a point on the northeasterly line of said Document Number 2012-031855; thence along said northeasterly line North  $59^{\circ}01'00''$  West 31.78 feet to the True Point of Beginning.

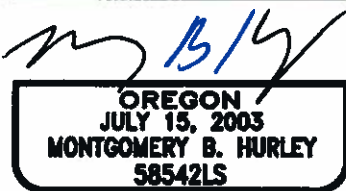
**ALSO EXCEPTING THEREFROM:**

A tract of land located in the James Menzie Donation Land Claim Number 45 also being located in Sections 27 and 28, Township 2 North, Range 1 West, Willamette Meridian, Multnomah County, Oregon, and being more particularly described as follows:

Beginning at a 4 inch brass disk at the most northerly corner of the James Menzie Donation Land Claim Number 45, thence South  $12^{\circ}30'05''$  East 3393.60 feet to a 5/8 inch iron rod with a yellow plastic cap inscribed "AKS ENGR." at the westerly northern corner of the tract per Document Number 2012-031855; thence along the northwesterly line of the tracts per Document Number 2012-031855 and Document Number 2011-145120 South  $30^{\circ}59'00''$  West 544.67 feet to a point on northerly line of the "Levee Easement" (115.00 feet from centerline) and the True Point of Beginning; thence along the northerly line of said "Levee Easement" South  $54^{\circ}44'34''$  East 289.67 feet to a point; thence continuing along said northerly line along a non-tangent curve to the left (Radial: North  $34^{\circ}39'49''$  East) with a Radius of 1522.02 feet, a Delta of  $39^{\circ}47'41''$ , a Length of 1057.12 feet, and a Chord of South  $75^{\circ}14'01''$  East 1036.00 feet to a point; thence continuing along said north line South  $05^{\circ}07'52''$  East 10.00 feet to a point; thence continuing along said northerly line (105.00 feet from centerline) along a non-tangent curve to the left (Radial: North  $05^{\circ}07'52''$  West) with a Radius of 1532.02 feet, a Delta of  $11^{\circ}53'11''$ , a Length of

317.83 feet, a Chord of North 78°55'32" East 317.26 feet to a point on the northeasterly line of said Document Number 2011-145120; thence along said northeasterly line South 19°14'19" East 105.07 feet to a point on the centerline of said "Levee Easement"; thence along said centerline along a non-tangent curve to the left (Radial: North 17°09'37" West) with a Radius of 1637.02 feet, a Delta of 36°46'12", a Length of 1050.57 feet, and a Chord of North 54°27'18" East 1032.63 feet to a 5/8 inch iron rod with a yellow plastic cap inscribed "AKS ENGR." on the northeasterly line of said Document Number 2011-145120; thence along said northeasterly line South 59°01'00" East 90.34 feet to a point on the southerly line of said "Levee Easement" (90.00 feet from centerline); thence along said southerly line along a non-tangent curve to the right (Radial: North 54°11'45" West) with a Radius of 1727.02 feet, a Delta of 17°33'53", a Length of 529.44 feet, a Chord of South 44°35'11" West 527.37 feet to a point; thence continuing along said southerly line South 36°37'52" East 15.00 feet to a point; thence continuing along said southerly line (105.00 feet from centerline) along a non-tangent curve to the right (Radial: North 36°37'52" West) with a Radius of 1742.02 feet, a Delta of 07°00'00", a Length of 212.83 feet, and a Chord of South 56°52'08" West 212.70 feet to a point; thence North 29°37'52" West 10.00 feet to a point; thence continuing along said southerly line (95.00 feet from centerline) along a non-tangent curve to the right (Radial: North 29°37'52" West) with a Radius of 1732.02 feet, a Delta of 64°19'55", a Length of 1944.72 feet, and a Chord of North 87°27'55" West 1844.17 feet to a point; thence North 54°44'34" West 275.03 feet to a point on the northwest line of said Document Number 2011-145120; thence along said northwest line North 30°59'00" East 210.59 feet to the True Point of Beginning.

The above described conservation easement boundary contains 52.28 acres, more or less.



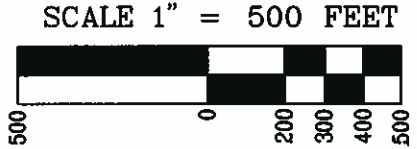
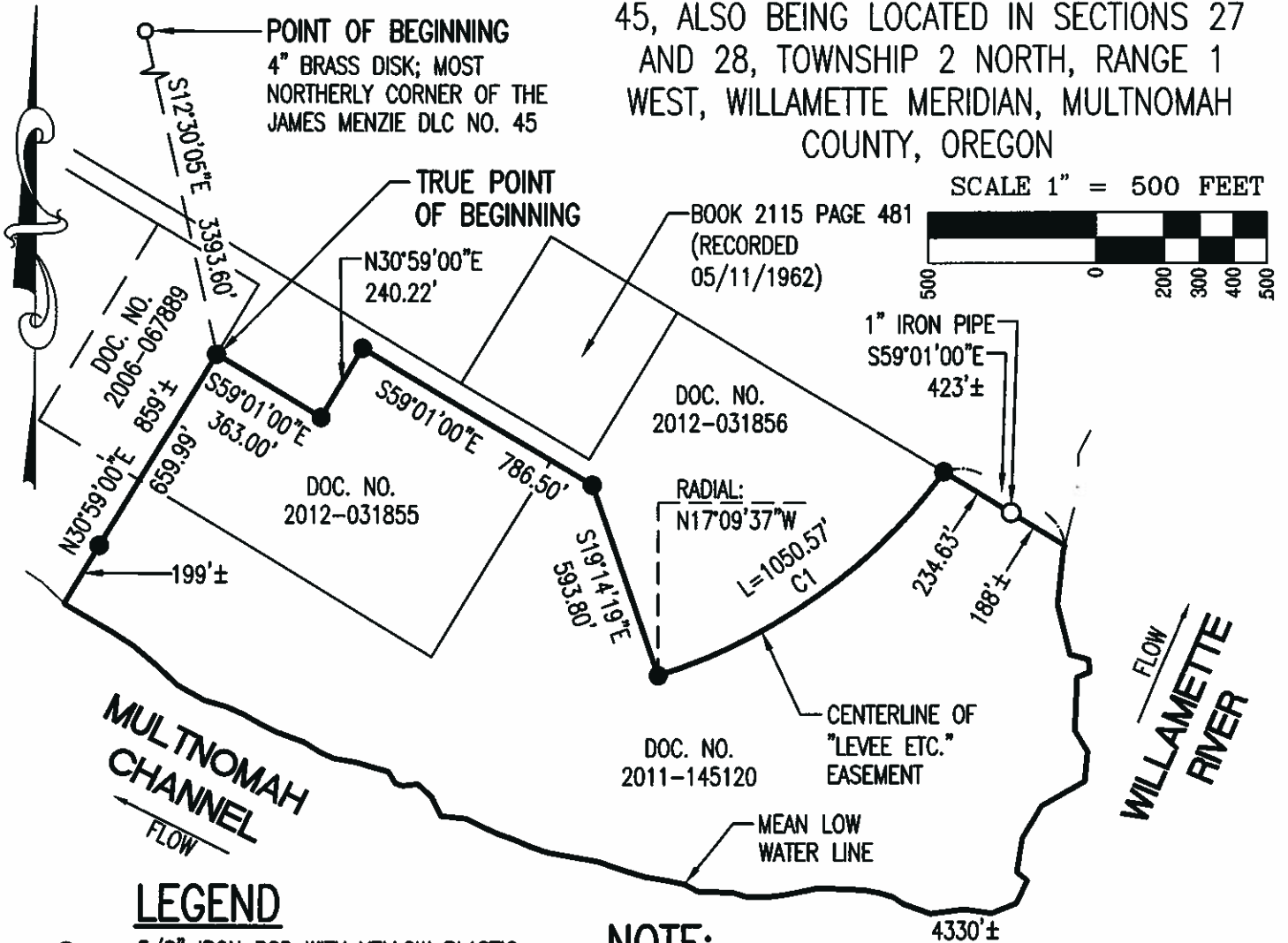
RENEWS: 6/30/13

# PREPARED FOR

PORTLAND HARBOR HOLDINGS II, LLC.  
3855 ATHERTON ROAD  
ROCKLIN, CA 95765

# EXHIBIT B

LOCATED IN THE JAMES MENZIE DLC NO. 45, ALSO BEING LOCATED IN SECTIONS 27 AND 28, TOWNSHIP 2 NORTH, RANGE 1 WEST, WILLAMETTE MERIDIAN, MULTNOMAH COUNTY, OREGON



## LEGEND

- 5/8" IRON ROD WITH YELLOW PLASTIC CAP INSCRIBED "AKS ENGR."
  - MONUMENT AS NOTED
- DOC. NO. DOCUMENT NUMBER PER MULTNOMAH COUNTY DEED RECORDS

## NOTE:

"LEVEE ETC." EASEMENT IS PER BOOK 490 PAGE 435 (04/05/1939), BOOK 497 PAGE 251 (05/19/1939), BOOK 523 PAGE 91 (11/22/1939), BOOK 535 PAGE 51 (02/16/1940), AND BOOK 2086 PAGE 291 (10/18/1961), PARTIALLY QUITCLAIMED PER DOC. NO. 2012-026638

## CURVE TABLE

CURVE	RADIUS	DELTA	LENGTH	CHORD
C1	1637.02'	36°46'12"	1050.57'	N54°27'18"E 1032.63'

3-6-13

**REGISTERED PROFESSIONAL LAND SURVEYOR**

*M B H*

OREGON  
JULY 15, 2003  
MONTGOMERY B. HURLEY  
58542LS

RENEWS: 6/30/13

JOB NAME: ALDER CREEK
JOB NUMBER: 2641
DRAWN BY: JOH
CHECKED BY: NSW
DWG NO.: 022813 2641EXB

ENGINEERING • PLANNING • LANDSCAPE ARCHITECTURE  
FORESTRY • SURVEYING



LICENSED IN OR & WA

13910 SW GALBREATH DRIVE, SUITE 100  
SHERWOOD, OR 97140  
PHONE: (503) 925-8799  
FAX: (503) 925-8969

OFFICES LOCATED IN REDMOND, OR & VANCOUVER, WA



DOC. NO.  
2012-031856

S59°01'00"E 363.00'

N30°59'00"E 240.22'

S59°01'00"E 431.01'

N59°01'00"W 31.78'

N11°44'00"E 73.90'

POINT OF BEGINNING  
BEARS S12°30'05"E 3393.60'  
FROM A 4" BRASS DISK; MOST  
NORTHERLY CORNER OF THE  
JAMES MENZIE DLC NO. 45

TRUE POINT  
OF BEGINNING

S11°44'00"W 89.00'

DOC. NO.  
2012-031855

30.00' PIPELINE EASEMENT PER 265  
PAGE 113 (04/05/1965) AND  
COMMUNICATIONS EASEMENT PER  
DOC. NO. 98179149

S05°48'00"E 593.55'

S05°48'00"E 1166.02'

S39°12'00"W 31.82'

DOC. NO.  
2011-145120

EASEMENT  
EXCEPTION AREA

15.00' COMMUNICATIONS  
EASEMENT PER DOC.  
NO. 98179149

S05°48'00"E 525.01'

S05°48'00"E 1166.02'

30.00' PIPELINE  
EASEMENT PER  
265 PAGE 113  
(04/05/1965)

S66°23'34"E 60'±

### EXHIBIT B

LOCATED IN THE JAMES MENZIE DLC  
NO. 45, ALSO BEING LOCATED IN  
SECTIONS 27, TOWNSHIP 2 NORTH,  
RANGE 1 WEST, WILLAMETTE MERIDIAN,  
MULTNOMAH COUNTY, OREGON

MEAN LOW  
WATER LINE

### PREPARED FOR

PORTLAND HARBOR HOLDINGS II, LLC.  
3855 ATHERTON ROAD  
ROCKLIN, CA 95765

SCALE 1" = 200 FEET



MULTNOMAH  
CHANNEL  
FLOW

3-6-13

REGISTERED  
PROFESSIONAL  
LAND SURVEYOR

*M B/H*

OREGON  
JULY 15, 2003  
MONTGOMERY B. HURLEY  
58542LS

RENEWS: 6/30/13

JOB NAME: ALDER CREEK

JOB NUMBER: 2641

DRAWN BY: JOH

CHECKED BY: NSW

DWG NO.: 022813 2641EXB

ENGINEERING • PLANNING • LANDSCAPE ARCHITECTURE  
FORESTRY • SURVEYING



LICENSED IN OR & WA

13910 SW GALBREATH  
DRIVE, SUITE 100  
SHERWOOD, OR 97140  
PHONE: (503) 925-8799  
FAX: (503) 925-8969

OFFICES LOCATED IN REDMOND, OR & VANCOUVER, WA

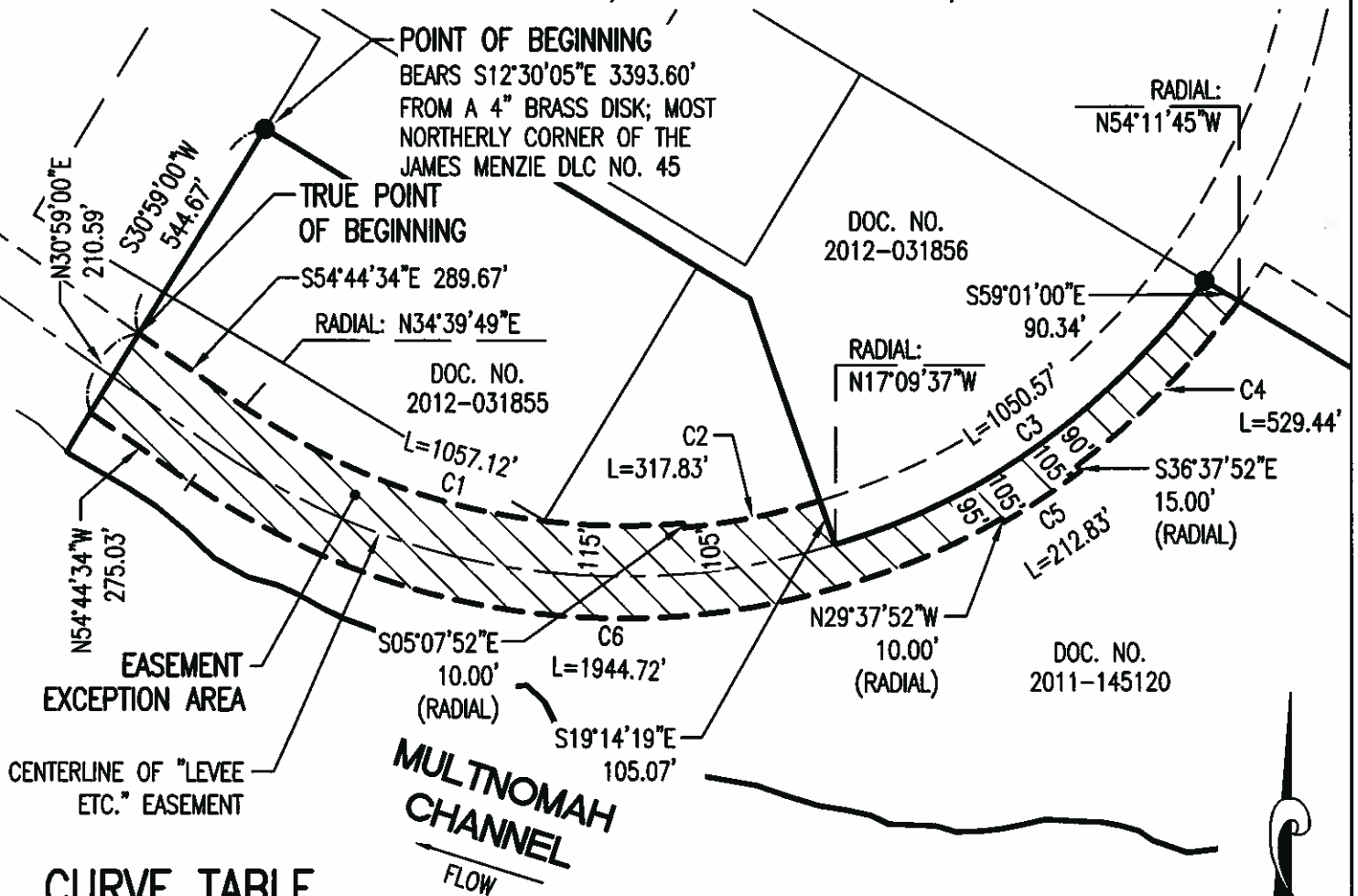
# EXHIBIT B

SHEET 3 OF 4

## PREPARED FOR

PORTLAND HARBOR HOLDINGS II, LLC.  
3855 ATHERTON ROAD  
ROCKLIN, CA 95765

LOCATED IN THE JAMES MENZIE DLC NO. 45,  
ALSO BEING LOCATED IN SECTIONS 27 AND 28,  
TOWNSHIP 2 NORTH, RANGE 1 WEST, WILLAMETTE  
MERIDIAN, MULTNOMAH COUNTY, OREGON



## CURVE TABLE

CURVE	RADIUS	DELTA	LENGTH	CHORD
C1	1522.02'	39°47'41"	1057.12'	S75°14'01"E 1036.00'
C2	1532.02'	11°53'11"	317.83'	N78°55'32"E 317.26'
C3	1637.02'	36°46'12"	1050.57'	N54°27'18"E 1032.63'
C4	1727.02'	17°33'53"	529.44'	S44°35'11"W 527.37'
C5	1742.02'	7°00'00"	212.83'	S56°52'08"W 212.70'
C6	1732.02'	64°19'55"	1944.72'	N87°27'55"W 1844.17'

SCALE 1" = 400 FEET



3-6-13

REGISTERED  
PROFESSIONAL  
LAND SURVEYOR

*Handwritten signature*

OREGON  
JULY 15, 2003  
MONTGOMERY B. HURLEY  
58542LS

RENEWS: 6/30/13

JOB NAME: ALDER CREEK

JOB NUMBER: 2641

DRAWN BY: JOH

CHECKED BY: NSW

DWG NO.: 022813 2641EXB

ENGINEERING • PLANNING • LANDSCAPE ARCHITECTURE  
FORESTRY • SURVEYING



LICENSED IN OR & WA

13910 SW GALBREATH  
DRIVE, SUITE 100  
SHERWOOD, OR 97140  
PHONE: (503) 925-8799  
FAX: (503) 925-8969

OFFICES LOCATED IN REDMOND, OR & VANCOUVER, WA

# PREPARED FOR

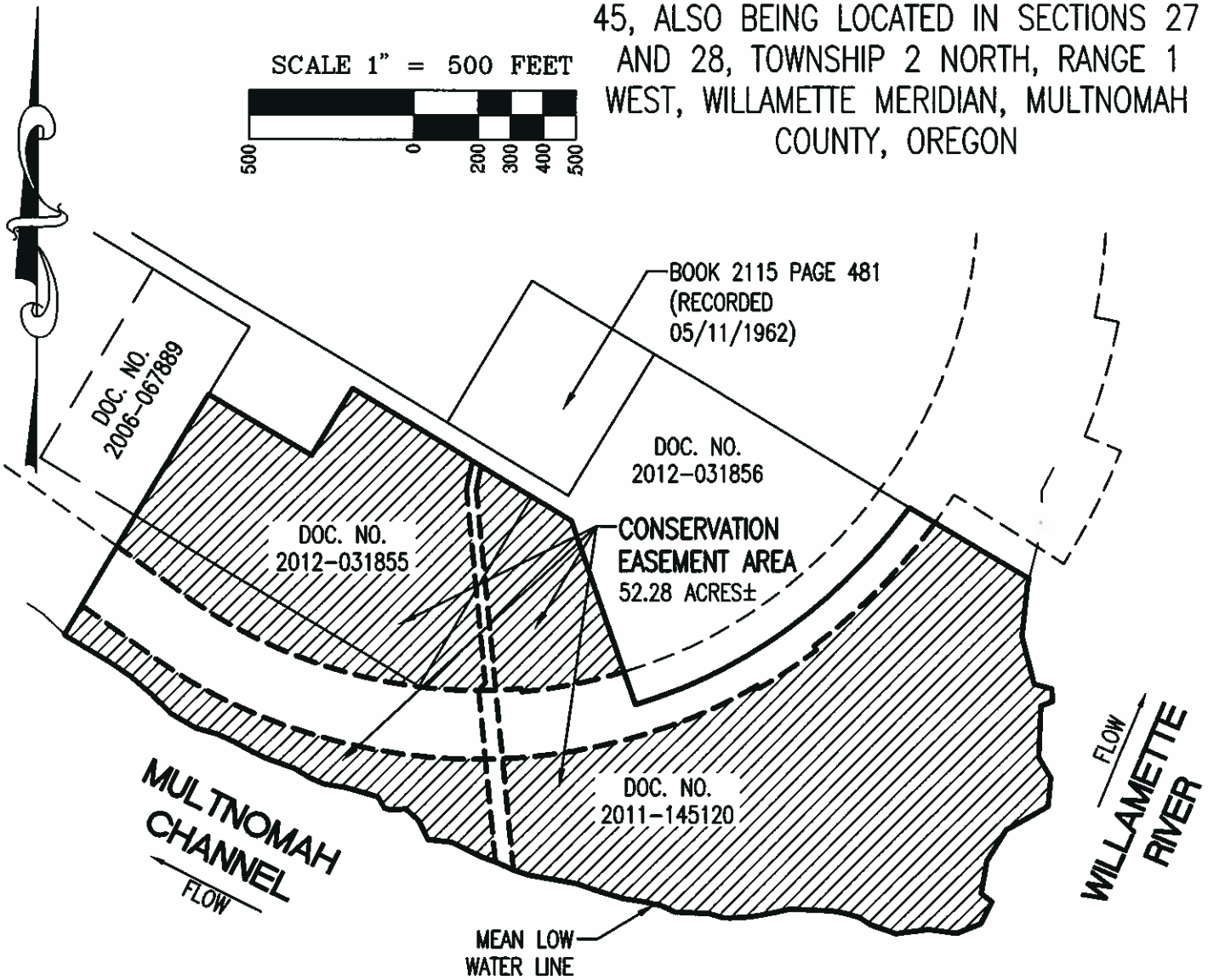
PORTLAND HARBOR HOLDINGS II, LLC.  
3855 ATHERTON ROAD  
ROCKLIN, CA 95765

SHEET 4 OF 4

# EXHIBIT B

LOCATED IN THE JAMES MENZIE DLC NO. 45, ALSO BEING LOCATED IN SECTIONS 27 AND 28, TOWNSHIP 2 NORTH, RANGE 1 WEST, WILLAMETTE MERIDIAN, MULTNOMAH COUNTY, OREGON

SCALE 1" = 500 FEET



## LEGEND

DOC. NO. DOCUMENT NUMBER PER MULTNOMAH COUNTY DEED RECORDS

3-6-13

REGISTERED  
PROFESSIONAL  
LAND SURVEYOR

OREGON  
JULY 15, 2003  
MONTGOMERY B. HURLEY  
58542LS

RENEWS: 6/30/13

JOB NAME: ALDER CREEK

JOB NUMBER: 2641

DRAWN BY: JOH

CHECKED BY: NSW

DWG NO.: 022813 2641EXB

ENGINEERING • PLANNING • LANDSCAPE ARCHITECTURE  
FORESTRY • SURVEYING



LICENSED IN OR & WA

13910 SW GALBREATH  
DRIVE, SUITE 100  
SHERWOOD, OR 97140  
PHONE: (503) 925-8799  
FAX: (503) 925-8969

OFFICES LOCATED IN REDMOND, OR & VANCOUVER, WA

April 2014

**Exhibit C**  
**Authorized Encumbrances**

**EXHIBIT C**  
**AUTHORIZED ENCUMBRANCES**

The authorized encumbrances consist of liens for non-delinquent real property taxes and assessments and the following listed exceptions taken from that certain Order Number 3626057811TO-TTPOR51 issued by Ticor Title Company. The following eleven encumbrances are allowed to be conserved:

- **Title Report Exception or Exclusion #5:**  
Statutory non-delinquent tax and assessment liens and standard exceptions on title for the fiscal year 2012-2013.
  
- **Title Report Exception or Exclusion #6:**  
The Land has been classified as Unzoned Farm Land, as disclosed by the tax roll. If the Land becomes disqualified, said Land may be subject to additional taxes and/or penalties.
  
- **Title Report Exception or Exclusion #7:**  
The Land is within and subject to the statutory power including the power of assessment of the Sauvie Island Drainage Improvement Company.
  
- **Title Report Exception or Exclusion #10:**  
Description: Any adverse claim based upon the assertion that:
  - A) Some portion of said land has been brought within the boundaries thereof by an avulsive movement of the Willamette River, Multnomah Channel and Willamette Slough or has been formed by accretion or reliction to any such portion.
  - B) Some portion of said property has been created by deposit of artificial fill.  
And Excepting;
  - C) The rights of the public and governmental bodies for fishing, navigation and commerce in and to any portion of the premises herein described, lying below the low water line of the Willamette River, Multnomah Channel, and Willamette Slough.
  - D) The right, title and interest of the State of Oregon in and to any portion lying below the low water line of Willamette River, Multnomah Channel, and Willamette Slough.
  
- **Title Report Exception or Exclusion #12:**  
Landowners' Notice, including the terms and provisions thereof,  
Filed by:                   Sauvie Island Drainage Improvement Company  
Recording Date:         June 26, 2009  
Recording No.:         2009-091286

- **Title Report Exception or Exclusion #13:**  
 Requirements of the Consent Judgment entered on or about October 27, 2011, in the Circuit Court of Oregon for Multnomah County, Case No. 1110-14072, that affect the Land, a copy of which was:  
 Recorded: November 14, 2011  
 Recording No.: 2011-126393, Records of Multnomah County
- **Title Report Exception or Exclusion #14:**  
 Terms and provisions of the Declaration of Access Easement and Temporary Construction Easement,  
 Dated: February 28, 2012  
 Recorded Date: March 7, 2012  
 Recording No.: 2012-026639
- **Title Report Exception or Exclusion #15:**  
 Conditions, restrictions and easements contained in Quitclaim Deed  
 From: Sauvie Island Drainage Improvement Company  
 Recorded Date: March 7, 2012  
 Recording No.: 2012-026638
- **Title Report Exception or Exclusion #16:**  
 Date: March 21, 2012  
 Description: Any rights, interests, or claims which may exist or arise by reason of the following matters disclosed by survey,  
 Job no.: 2641  
 Dated: March 21, 2012  
 Prepared by: AKS Engineering and Forestry  
 Matters shown:  
 a. Utility lines servicing the property cross through adjacent property without the benefit of a recorded easement.  
 b. Water line runs between Tax Lot 700 and TL 600  
 c. Utility poles, guy anchors and transformers located on Parcel 1  
 d. Communication lines located outside easement area  
 e. Various culverts  
 f. Pumphouse and catwalk located outside property line
- **Title Report Exception or Exclusion #18:**  
 An unrecorded lease dated March 28, 2012, with certain terms, covenants, conditions and provisions set forth therein as disclosed by deed  
 Executed by: Portland Harbor Holdings II, LLC, a Delaware limited liability company  
 Lessor: Portland Harbor Holdings II, LLC, a Delaware limited liability company  
 Lessee: David Koennecke  
 Recording Date: March 28, 2012  
 Recording No.: 2012-036501

- **Title Report Exception or Exclusion #20:**  
Temporary Water Well License, including the terms and provisions thereof,  
In favor of: David Koennecke  
Recording Date: March 28, 2012  
Recording No.: 2012-036504

# **Exhibit G**

## **Property Assessment and Acknowledgement**



Exhibit G

PROPERTY ASSESSMENT AND ACKNOWLEDGEMENT

REVIEW OF EXCEPTIONS TO THE ALDER CREEK RESTORATION PROJECT  
PRELIMINARY TITLE REPORT, ISSUED BY TICOR TITLE INSURANCE  
COMPANY

This report addresses the 52.28-acre Alder Creek Restoration Project (“Project” or “Restoration Project”). Portland Harbor Holdings II, LLC owns fee title to Multnomah County Assessor’s Tax Lot Numbers 700 and 800 containing the Alder Creek Restoration Project.

Exception #5

Description: Taxes for the fiscal year 2012-2013 shown paid in full.

Analysis: These are statutory non-delinquent tax and assessment liens and standard exceptions on title.

- A. Tax Lot 2N1W27-00800 in the amount of \$2,925.12
- B. Tax Lot 2N1W27-00700 in the amount of \$9,004.69
- C. Tax Lot 2N1W27-00700-A1 in the amount of \$514.30
- D. Tax Lot 2N1W27-00700-A2 in the amount of \$652.41

Exception #6

Description: The Land has been classified as Unzoned Farm Land, as disclosed by the tax roll. If the Land becomes disqualified, said Land may be subject to additional taxes and/or penalties.

Analysis: The proposed land use, open space, is consistent with the current tax assessment for the property.

Exception #7

Description: The Land is within and subject to the statutory power including the power of assessment of the Sauvie Island Drainage Improvement Company.

Analysis: The Sauvie Island Drainage Improvement Company is aware of and supportive of the project.

Exception #10

Description: Any adverse claim based upon the assertion that:

- A) Some portion of said land has been brought within the boundaries thereof by an avulsive movement of the Willamette River, Multnomah Channel and Willamette Slough or has been formed by accretion or reliction to any such portion.
- B) Some portion of said property has been created by deposit of artificial fill. And Excepting;
- C) The rights of the public and governmental bodies for fishing, navigation and commerce in and to any portion of the premises herein described, lying below

the low water line of the Willamette River, Multnomah Channel, and Willamette Slough.

- D) The right, title and interest of the State of Oregon in and to any portion lying below the low water line of Willamette River, Multnomah Channel, and Willamette Slough.

Analysis: Any changes in the course of the waterways and the rights of the general public will not affect the functionality of the Project. The survey prepared for the property shows the current boundary line for the property.

Exception #12

Holder: Sauvie Island Drainage Company

Date: June 26, 2009

Description: Landowners Notice

Analysis: Land located within the Drainage District will be assessed an annual tax determined by its zone classification. This tax assessment will not affect the conservation values of the Restoration Project.

Exception #13

Holder: Portland Harbor Holdings II, LLC

Date: November 14, 2011

Description: A Consent Judgment issued by Oregon Department of Environmental Quality and the Oregon Department of Justice to describe project implementation.

Analysis: The Consent Judgment outlines project objectives, design, and construction processes for the Restoration Project.

Exception #14

Holder: Portland Harbor Holdings II, LLC

Date: February 28, 2012

Description: Declaration of Access Easement and Temporary Construction Easement

Analysis: The easement is located outside the property boundary but benefits the property by providing access from NW Gillihan Loop Road to the Restoration Project.

Exception #15

Holder: Alder Creek Lumber Co., Inc.

Date: March 7, 2012

Description: Quitclaim Deed

Analysis: SIDIC released a portion of the original levee construction easement to allow Portland Harbor Holdings II, LLC to construct the conservation project. The quitclaim area is shown a Survey by AKS Engineering and Forestry dated March 22, 2012. Portland Harbor Holdings II, LLC has worked with SIDIC and the U.S. Army Corps of Engineers to obtain the necessary approvals for levee improvements within the Project area.

Exception #16

Date: March 21, 2012

Description: Any rights, interests or claims which may exist or arise by reason of the matters shown in a March 21, 2012 survey prepared by AKS Engineering and Forestry

Analysis:

- a. The project will not require power from the local utilities. All poles located within the project boundary will be removed.
- b. Water lines on the property will be removed prior to construction.
- c. Utility poles within the project boundary will be removed.
- d. Communication lines are outside the project boundary.
- e. Culverts located within the property boundary will be removed. Culverts located outside the project boundary will not be affected.
- f. The pumphouse and catwalk are located outside the property boundary but within the Department of State Lands Submerged Land Lease per ML -9962. The upland property associated with this lease is owned by Portland Harbor Holdings II, LLC.

Exception #18

Lessee: David Koennecke

Date: March 28, 2012

Description: Temporary Land Lease

Analysis: Temporary Land Lease between Portland Harbor Holdings II, LLC and David Koennecke. The Land Lease has expired.

Exception #20

In favor of: David Koennecke

Date: March 28, 2012

Description: Temporary Well License

Analysis: Temporary Well License between Portland Harbor Holdings II, LLC and David Koennecke. The Temporary Well License has expired.

# **Exhibit H**

## **Environmental Site Assessment**

**The following documents are included on the enclosed Compact Disc (hard copies are available upon request):**

Exhibit H-1 Phase 1 Environmental Site Assessment

Exhibit H-2 Phase 2 Environmental Site Assessment

# **Exhibit I**

## **Sales Agreement/Credit Receipt**

**AGREEMENT FOR SALE OF CONSERVATION CREDITS  
(Alder Creek Restoration Project)**

This Agreement is made and entered into this \_\_\_ day of \_\_\_\_\_, 20\_\_ by and between PORTLAND HARBOR HOLDINGS II, LLC (“Restoration Implementer”) and \_\_\_\_\_, (“Potentially Responsible Party” or “PRP”) as follows:

**RECITALS**

A. Restoration Implementer has entitlements to the Alder Creek Restoration Project (“Project”) located in Multnomah County, Oregon; and

B. Restoration Implementer represents that the Portland Harbor Natural Resource Trustee Council (Trustees) has acknowledged that the Project, if implemented according to [insert appropriate language], will provide credits that may be proposed by the Trustees as part of a settlement, subject to approval by all appropriate public officials, public review and comment, and court approval.

C. PRP is seeking to offset its liability for natural resource damages for injury to natural resources in Portland Harbor, which has resulted in adverse impacts to those natural resources, by purchasing Conservation Credits or DSAYs from the Project; and

D. PRP desires to purchase from Restoration Implementer, and Restoration Implementer desires to sell to PRP \_\_\_\_\_ Conservation Credits or DSAYs.

**NOW, THEREFORE, THE PARTIES AGREE AS FOLLOWS:**

1. Restoration Implementer hereby agrees to sell to PRP and PRP hereby purchases from Restoration Implementer \_\_\_\_\_ Conservation Credits or DSAYs for the purchase price of \$\_\_\_\_\_ (“Purchase Price”). Upon receipt of the Purchase Price, Restoration Implementer will deliver to PRP an executed Bill of Sale in the form attached hereto and marked Exhibit “A.” The Purchase Price for said Conservation Credits or DSAYs shall be paid by wire transfer of funds, or by check payable to “Portland Harbor Holdings II, LLC.”

2. The sale and transfer herein is not intended as a sale or transfer to PRP of a security, license, lease, easement, or possessory or non-possessory interest in real property, nor the granting of any interest of the foregoing.

3. PRP shall have no obligation whatsoever by reason of the purchase of the Conservation Credits or DSAYs, to support, pay for, monitor, report on, sustain, continue in perpetuity, or otherwise be obligated or liable for the success or continued expense or maintenance in perpetuity of the Conservation Credits or DSAYs sold, or the Project. As required by law, Restoration Implementer shall monitor and make reports to the appropriate agency or agencies on the status of any Conservation Credits or DSAYs sold to PRP.

Restoration Implementer shall be fully and completely responsible for satisfying any and all conditions placed on the Project or the Conservation Credits or DSAYs, by all state or federal jurisdictional agencies. Restoration Implementer hereby shall indemnify PRP of and from all such liabilities and obligations.

4. The Conservation Credits or DSAYs sold and transferred to PRP shall be nontransferable and non-assignable, and shall not be used as conservation or mitigation for any other purpose, except as set forth herein.

5. PRP must deliver the Purchase Price to Restoration Implementer within 30 days of the date of this Agreement. After the 30 day period this Agreement will be considered null and void and Restoration Implementer shall have no further obligations hereunder.

6. Upon purchase of the Conservation Credits or DSAYs specified above, Restoration Implementer shall (i) complete the Payment Receipt form attached hereto as Exhibit "B"; and (ii) submit the completed Payment Receipt to the Trustees.

7. If requested by the Trustees, Restoration Implementer will be a party to any natural resource damages settlement accepting the credits purchased by PRP, the final form and substance of which shall be subject to the approval of Restoration Implementer and the Trustees, each in their sole and absolute discretion.

IN WITNESS WHEREOF, the parties have executed this Agreement the day and year first above written.

**RESTORATION IMPLEMENTER**

PORTLAND HARBOR HOLDINGS II, LLC

By: \_\_\_\_\_  
Name:  
Its:

**POTENTIALLY RESPONSIBLE PARTY**

[PRP NAME HERE]

By: \_\_\_\_\_  
Name:  
Its:

**Exhibit “A”**

**BILL OF SALE**

**Contract #: ACRP-\_\_\_\_-\_\_\_\_**

In consideration of \$ \_\_\_\_\_, receipt of which is hereby acknowledged, PORTLAND HARBOR HOLDINGS II, LLC (“Restoration Implementer”) does hereby bargain, sell and transfer to \_\_\_\_\_ Conservation Credits or DSAYs from the Alder Creek Restoration Project in Multnomah County, Oregon.

Restoration Implementer represents and warrants that it has good title to the credits, has good right to sell the same, and that they are free and clear of all claims, liens, or encumbrances.

Restoration Implementer covenants and agrees with the buyer to warrant and defend the sale of the credits hereinbefore described against all and every person and persons whomsoever lawfully claiming or to claim the same.

DATED: \_\_\_\_\_

PORTLAND HARBOR HOLDINGS II, LLC

By: \_\_\_\_\_

Name:

Its:



**Exhibit "B"**

**ALDER CREEK RESTORATION PROJECT**

**CONSERVATION CREDITS/DSAYS: PAYMENT RECEIPT**

PARTICIPANT INFORMATION

Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
Telephone: \_\_\_\_\_  
Contact: \_\_\_\_\_  
Reference Number (if applicable): \_\_\_\_\_

PAYMENT INFORMATION

Payee: \_\_\_\_\_  
Payer: \_\_\_\_\_  
Credits/DSAYs Purchased: \_\_\_\_\_  
Payment Amount: \_\_\_\_\_ (\$ \_\_\_\_\_ )  
Method of Payment: Cash \_\_\_\_\_ Check# \_\_\_\_\_ Other \_\_\_\_\_  
Received By: \_\_\_\_\_  
(Signature)  
Name: \_\_\_\_\_  
Title: \_\_\_\_\_  
Date: \_\_\_\_\_

# **Exhibit J**

## **Endowment Fund Information**

Exhibit J-1	Construction Security
Exhibit J-2	Interim Management and Contingency Security (IMCS)
Exhibit J-3	Endowment Fund Information and Analysis (PAR)
Exhibit J-4	Lamprey Monitoring Funding Information
Exhibit J-5	Trustee Council Oversight Funding Information

Exhibit J Financial Assurances Summary Table							
SECURITY	PURPOSE	CALCULATION METHOD	AMOUNT	FINANCIAL INSTRUMENT	WHEN FUNDED	WHEN RELEASED	HELD BY
<b>Construction Security (Exhibit J-1)</b>	Ensures that construction will be completed as proposed.	100% of an average of three (3) reasonable third party estimates for construction and the cost estimate for planting/seeding, plus a 15% contingency	\$2,757,472	Bond	Prior to the first Credit Release	Upon completion of construction activities in accordance with the Habitat Development Plan as demonstrated by: <ul style="list-style-type: none"> <li>• Submission of as-built drawings</li> <li>• Written approval of the Trustee Council or its designee(s)</li> </ul>	NOAA or other entity approved by the Trustee Council.
<b>Interim Management and Contingency Security (Exhibit J-2)</b>	An amount set aside to fund management of the site for the 10- year Establishment Period	An amount equal to the estimated cost for monitoring and management during the first 10 years following habitat construction and a 15% contingency. The IMCS also includes an adaptive management security in the amount of \$250,000.	\$457,288	Bond or Irrevocable Letter of Credit	Prior to the first Credit Release	Upon meeting Year 5 performance standards, the bond or LOC will be reduced by half to \$228,644. Upon meeting the Year 10 performance standards or when the Restoration Implementer and the Trustee Council agree that the Establishment Period is complete, the amount remaining in the IMCS will be released.	NOAA or other entity approved by the Trustee Council.
<b>Management Endowment Fund (Exhibit J-3)</b>	An account set aside to fund the management expenses of the site in perpetuity.	See PAR (Exhibit J-3)	\$323,250	The Endowment Fund shall be held in trust by the Endowment Manager, pursuant to the terms of the Endowment Funding Agreement.	Deposits will be made concurrent with the first 50% of Credit sales, but only until the Endowment is fully funded (as described in Exhibit J-3 of the Restoration Plan).	Remains in perpetuity.	Wildlife Heritage Foundation or other qualified entity approved by Trustee Council

Exhibit J Financial Assurances Summary Table							
SECURITY	PURPOSE	CALCULATION METHOD	AMOUNT	FINANCIAL INSTRUMENT	WHEN FUNDED	WHEN RELEASED	HELD BY
<b>Pacific Lamprey Monitoring (Exhibit J-4)</b>	To provide funding for Pacific lamprey monitoring	Based on the preliminary cost estimate provided by the Trustee Council (11/11/2013)	\$358,177	Funds will be provided to USFWS.	Monitoring conducted in Years 0, 1, 2, 3, 4, and 5 will be funded prior to the monitoring event. The remainder will be provided to USFWS prior to the Year 10, 15, and 20 monitoring event as long as at least 112.45 Credits have been sold. <sup>2</sup>	Not Applicable	USFWS
<b>Trustee Council Oversight (Exhibit J-5)</b>	Ensures funds for Trustee Council oversight for pre-implementation, the Establishment Period (Years 1 – 10), and Years 15 and 20	Amount estimated by the Trustee Council for pre-implementation and Years 1 through 20 (provided 04/11/14)	\$271,505.03	Funds will be provided in the form of a check to the DOI NRDAR account.	For Years 0-5, a check to cover that year's costs will be provided to the DOI NRDAR account prior to the beginning of each year. Costs for Years 6-20 will be funded in the same manner provided at least 112.45 Credits have been sold by the end of Year 5. <sup>2</sup>	Not Applicable	Trustee Council

<sup>1</sup> A Credit will be considered transferred when it has been recognized for purposes of settlement following negotiation of individual settlement agreements, public review and comment, and court approval or when credits are purchased by the Trustee Council or its members using cash-out settlement funds.

<sup>2</sup> If 112.45 credits have not been sold prior to the end of Year 5 for Trustee Oversight or prior to Year 10 for Lamprey Monitoring, the Trustee Council or its designee(s) and the Restoration Implementer will meet and confer about extensions of funding timeline and discuss the market and potential activities that could stimulate sales; and one-year extensions will be granted on an annual basis until such time as 15% of the credits are sold upon which time all amounts scheduled at that time or past-due because of extensions will become due and payable.

# **Exhibit J-1**

## **Construction Security**

## **CONSTRUCTION SECURITY**

Construction Security ..... **\$2,757,472**

Construction Security means the financial assurance to be provided by Portland Harbor Holdings, II, LLC, as Restoration Implementer, to guarantee the completion of habitat construction in accordance with the Habitat Development Plan in Exhibit B-1.

Prior to the first Credit Release, Portland Harbor Holdings II, LLC, as Restoration Implementer, shall furnish to NOAA or other Trustee Council-approved entity a Construction Security in the amount of 100% of a reasonable third party estimate for habitat construction on the Restoration property in accordance with the Habitat Development Plan. The reasonable third party cost estimate for the habitat construction was determined by soliciting proposals for habitat construction and then taking the average of the three low bids (\$2,197,674), adding the cost estimate for planting and seeding (\$200,127), and adding a 15% contingency (\$359,670) for a total construction security of \$2,757,472.

The Construction Security shall be in the form of a construction bond (see attached). Portland Harbor Holdings II, LLC, as Restoration Implementer, shall ensure that the full amount of the Construction Security shall remain in effect throughout the performance of habitat construction on the Restoration Property in accordance with the Habitat Development Plan.

## Construction Bond Form

# PERFORMANCE BOND

Bond No. \_\_\_\_\_

## KNOW ALL BY THESE PRESENTS:

That we, Portland Harbor Holdings II, LLC, as Principal, hereinafter called Principal, and Hartford Fire Insurance Company, a Connecticut corporation, as Surety, hereinafter called Surety, are held and firmly bound unto the National Oceanic and Atmospheric Administration (NOAA), known as Obligee, in the amount of Two Million Seven Hundred Fifty Seven Thousand, Four Hundred Seven Two and No/100 Dollars (\$2,757,472) for the payment of which sum, well and truly to be made, and the said Principal and Surety bind themselves, and their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, Principal and the Obligee have developed a document entitled MEMORANDUM OF AGREEMENT BETWEEN THE NATURAL RESOURCE TRUSTEES, PORTLAND HARBOR HOLDINGS I, LLC, PORTLAND HARBOR HOLDINGS II, LLC AND PORTLAND HARBOR HOLDINGS III, LLC, as further amended by that certain FIRST ADDENDUM TO MEMORANDUM OF AGREEMENT dated \_\_\_\_\_, 2014, hereinafter collectively called the Agreement. Under the guidelines set forth in the Agreement, the Principal must provide financial assurance to guarantee the construction of a natural resource restoration project in accordance with the Agreement.

The habitat restoration project to be guaranteed through the issuance of this performance bond is detailed in the Agreement and more particularly described in Exhibit A attached hereto and incorporated, which shall hereinafter be called the "Guaranteed Work."

NOW, THEREFORE, THE CONDITION OF THE ABOVE OBLIGATION IS SUCH, That if Principal shall promptly, faithfully, fully and finally complete the Guaranteed Work, the Surety's obligation shall be null and void, otherwise to remain in full force and effect.

## PROVIDED, HOWEVER, That:

1. The Surety shall become liable on the obligation evidenced hereby only upon receipt of a written notice from the Obligee that the Obligee has determined that the Principal has failed to perform the Guaranteed Work. Such notice shall include a description of the Principal's failure to perform and shall be forwarded to the Principal, with a copy to the Surety, within thirty (30) days after the Obligee has determined the Principal is in default. The notice to the Surety shall be delivered by registered mail to Surety at its Home Office located at One Hartford Plaza, Hartford, Connecticut 06155. In the event of default, the Surety will have the right and opportunity, at its discretion, to: a) cure the Principal's default; b) assume the



remainder of the Principal's obligations under the bond and to perform or sublet same; or c) to tender to the Obligee funds sufficient (as determined by the Obligee) to pay the cost, or remaining cost, of the Guaranteed Work, up to an amount not to exceed the penal sum of the bond. In no event shall the Surety be liable for fines, penalties, or forfeitures assessed against the Principal.

2. Any action, lawsuit or proceeding that may arise pursuant to this Performance Bond must instituted in the US District Court for the District of Oregon, in which any Consent Decree or other type of settlement was reached in which a potentially responsible party (PRP) funded implementation of a portion of the project described in the Guaranteed Work, whether in whole or in part, to resolve alleged natural resource damage liability in or proximate to the Portland Harbor. That no action, lawsuit or proceeding under the Performance Bond shall be had or maintained against the Surety unless the same be filed and properly served upon the Surety within one year from the effective date of the cancellation of the Bond.
3. That no right of action shall accrue under this Bond to or for the use of a person or entity other than the Obligee, and its successors and assigns.
4. The aggregate liability of the surety is limited to the penal sum stated herein regardless of the number or amount of claims brought against this bond and regardless of the number of years this bond remains in force. The liability of the Surety shall not be discharged by any payment or succession of payments hereunder, unless and until such payment or payments shall amount in the aggregate to the Total Dollar Amount of this Performance Bond. The Surety's aggregate liability hereunder shall in no event exceed the amount set forth above.
5. Any modification, revision, or amendment which may be made in the terms of the Guaranteed Work or in the work to be done thereunder, or any extension of the Guaranteed Work, or other forbearance on the part of either the Principal or Obligee to the other, shall not in any way release the Principal and the Surety, or either of them, or their heirs, executors, administrators, successors or assigns from liability hereunder. The Surety hereby expressly waives notice of any change, revision, or amendment to the Guaranteed Work or to any related obligations between the Principal and Obligee.
6. The Surety hereby agrees that the obligations of the Surety under this Performance Bond shall be in no way impaired or affected by any winding up, insolvency, bankruptcy or reorganization of the Principal or by any other arrangement or rearrangement of the Principal for the benefit of creditors.
7. The Surety will notify the Obligee in writing of any of the following events: (a) the filing by the Surety of a petition seeking to take advantage of any laws relating to bankruptcy, insolvency, reorganization, winding up or composition or adjustment of

debts; (b) the Surety's consent to (or failure to contest in a timely manner) any petition filed against it in an involuntary case under such bankruptcy or other laws; (c) the Surety's application for (or consent to or failure to contest in a timely manner) the appointment of, or the taking of possession by, a receiver, custodian, trustee, liquidator, or the like of itself or of all or a substantial part of its assets; (d) the Surety's making a general assignment for the benefit of creditors; or (e) the Surety's taking any corporate action for the purpose of effecting any of the foregoing. Such notice shall be provided within thirty (30) days to the Obligees so as to provide the Obligees time to respond to any of the noted events.

8. All notices, consents, approvals and requests required or permitted hereunder shall be given in writing and shall be effective for all purposes if hand delivered or sent by (a) certified or registered United States mail, postage prepaid, return receipt requested or (b) expedited prepaid delivery service, either commercial or United States Postal Service, with proof of attempted delivery, to the address shown in this Performance Bond. Notice to Obligees shall not be effective unless notice is sent to the National Oceanic and Atmospheric Administration, Attention: Katherine Pease. All notices, elections, requests and demands under this Performance Bond shall be effective and deemed received upon the earliest of (a) the actual receipt of the same by personal delivery or otherwise, (b) one business day after being deposited with a nationally recognized overnight courier service as required above, or (c) three business days after being deposited in the United States mail as required above. Rejection or other refusal to accept or the inability to deliver because of changed address of which no notice was given as herein required shall be deemed to be receipt of the notice, election, request, or demand sent.
9. Any provision in this Performance Bond that conflicts with any applicable statutory or legal requirement shall be deemed deleted here from and provisions conforming to such statutory or legal requirement shall be deemed incorporated herein.
10. The Principal may terminate this Performance Bond only by sending written notice of termination to the Surety and to the Obligees; provided, however, that no such termination shall become effective unless and until the Surety receives written authorization for termination of this Performance Bond by the Obligees.

IN WITNESS WHEREOF, The said Principal and Surety have signed and sealed this instrument on this \_\_\_\_\_ day of \_\_\_\_\_, 2014.

\_\_\_\_\_  
Hartford Fire Insurance Company

\_\_\_\_\_  
Neil Brian Biller  
Attorney-in-Fact

**BOND RELEASE – Bond \_\_\_\_\_**

Effective the date shown below, the Obligor confirms that the required work has been completed and accepted. We hereby fully release and exonerate this bond.

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Name/Title

**EXHIBIT A**

**DEFINITION OF GUARANTEED WORK**

## **DEFINITION OF GUARANTEED WORK**

The habitat construction of the Alder Creek Restoration Project includes preparation of the site for construction, removing and disposing of infrastructure that impede the construction of the habitats, earthwork necessary for the construction of the habitat features, stabilization of the site for erosion and sediment control purposes, and final planting of trees, shrubs, marsh plugs, and other vegetation necessary for each habitat (as depicted on the attached Alder Creek Restoration Project Construction Drawings dated April 26, 2013 and the Planting Plan dated February 21, 2014) .

Site preparation shall include mobilization and demobilization, environmental controls (good house-keeping, dust control, etc, for project duration), site security and management (fencing and gates, as needed), construction staking and surveying, construction fencing (installation and removal), sediment fencing (installation and removal), bio-bag check dams (installation and removal), sediment curtains (as necessary during in-water work), and protection of existing installations to ensure protection of underground utilities, etc, for the duration of the project.

Temporary electricity and water shall be supplied by the contractor and removed upon project completion.

The off-site floating fire suppression pump house and associated catwalk, pilings, footings, etc., shall be removed and disposed of off-site. Log booms associated with the fire suppression pump shall be salvaged. If the log booms are intact, they may be used for habitat structures as directed by the engineer, otherwise they shall be disposed of off-site.

Gravel and rock shall be salvaged and stockpiled for reuse in the roughened riffle. Trees shall be salvaged for reuse as habitat complexity structures and large woody debris. Underground culverts shall be removed and disposed of.

An existing well shall be abandoned. All permits associated with abandoning the well will be obtained. The casing shall be cut 3' below the final proposed ground surface.

Miscellaneous debris and structures along the shoreline of Multnomah Channel shall be removed and disposed of off-site. Approximately 30 in-water pilings and 250 LF of piling retaining walls shall be removed and disposed of, for a total of approximately 75 pilings.

Rough grading shall include approximately 442,000 cubic yards of excavated material. Cut and fill is balanced on-site. The material shall be excavated to and placed at the final ground elevations proposed to establish the different habitat types including subtidal channels, marsh, scrub-shrub, riparian, and upland. Approximately 400 cubic yards of contaminated material shall be placed according to contaminated soil placement requirements. Woody habitat structures shall be placed using trees salvaged from on-site and the roughened riffle shall be built using salvaged gravel and rock.

Final grading across approximately 52 acres shall prepare the site for seeding. Site stabilization measures shall be installed including, but not limited to, fiber rolls, bio-bag check dams, hydro-seeding (approximately 52 acres), and straw and tackifier.

Final planting and seeding shall include the handling and installation of approximately 90,000 plants over 47 acres.

## **Exhibit J-2**

### **Interim Management and Contingency Security (IMCS)**

## **EXHIBIT J-2**

# **INTERIM MANAGEMENT AND CONTINGENCY SECURITY**

### Executive Summary

The Alder Creek Restoration Project (“Project”) Interim Management and Contingency Security (“IMCS”) is being established to provide a security for anticipated monitoring, initial management, and maintenance activities at the Project site, as well as unanticipated adaptive management activities, during the Establishment Period (e.g., Years 1-10).

The Project is located on the southernmost tip of Sauvie Island and a large portion of the Project site is located outside of the levee, owned and maintained by Sauvie Island Drainage Improvement Company (SIDIC), and within the floodplain of the Willamette River. The amount of the IMCS was determined by estimating the costs for activities expected within the first 10 years after restoration plus a 15% contingency. The activities covered by the IMCS include vegetation and biological monitoring, monitoring reports, invasive plant management, trash removal, adaptive management, insurance, conservation easement holder fee, and maintenance. The IMCS includes a \$250,000 adaptive management security. The IMCS will be furnished as a letter of credit or performance bond. If the Restoration Implementer fails to conduct the necessary and agreed upon management, monitoring, and/or adaptive management activities within the 10-year Establishment Period (Years 1 – 10), the Trustee Council or its designee(s) could access the security to implement the activities as shown in Table J-2 in order to complete the establishment of the Restoration Project and generally leave the Project site in a state where it can be effectively managed with the Endowment Funding once the Project moves from the Performance Period into the long-term stewardship.

The IMCS will be funded prior to the first credit release by establishing a letter of credit or performance bond for the full amount. Upon meeting Year 5 performance standards, the bond or LOC will be reduced by half. Upon meeting the Year 10 performance standards or when the Restoration Implementer and the Trustee Council agree that the Performance Period is complete, the remaining amount will be released.

## Alder Creek Restoration Project

**TABLE J-2 Interim Management and Contingency Security (IMCS)**

Task	Description	YEAR										
		1	2	3	4	5	6	7	8	9	10	
Hydrology and Geomorphology	Visual assessments of channels and LWD, topographic surveys	\$2,600	\$400	\$3,000		\$3,000		\$3,000				\$3,000
Habitat Monitoring	Native vegetation surveys and invasive plant surveys including photo documentation, and general qualitative assessment	\$600	\$2,800	\$2,800	\$2,800	\$2,800	\$600	\$2,800	\$600	\$600	\$2,800	
Wildlife Monitoring	Fish, Bald Eagle, Bird Assemblage, and Mink as described in the HDP	\$4,300		\$8,700		\$8,700		\$8,700				\$8,700
Reporting	Monitoring Reports	\$1,500	\$2,250	\$2,250	\$1,500	\$2,250	\$1,500	\$2,250	\$1,500	\$1,500	\$2,250	
Maintenance	Trash removal, invasive species control, no-tresspass signs, herbicide application, herbivory prevention, labor	\$5,000	\$5,000	\$5,000	\$4,000	\$4,000	\$2,500	\$2,500	\$2,500	\$2,000	\$2,000	
Aerial Photograph	Photos (2 sets) and Interpretation	\$1,740		\$1,740		\$1,740		\$1,740				\$1,740
Conservation Easement	Monitoring Fee	\$4,300	\$4,300	\$4,300	\$4,300	\$4,300	\$4,300	\$4,300	\$4,300	\$4,300	\$4,300	\$4,300
Insurance	General	\$200	\$200	\$200	\$200	\$200	\$200	\$200	\$200	\$200	\$200	\$200
<b>SUBTOTAL</b>		\$20,240	\$14,950	\$27,990	\$12,800	\$26,990	\$9,100	\$25,490	\$9,100	\$8,600	\$24,990	
Contingency	15%	\$3,036	\$2,243	\$4,199	\$1,920	\$4,049	\$1,365	\$3,824	\$1,365	\$1,290	\$3,749	
<b>TOTAL</b>		\$23,276	\$17,193	\$32,189	\$14,720	\$31,039	\$10,465	\$29,314	\$10,465	\$9,890	\$28,739	
Adaptive Management	Adaptive Management contingency as required by Trustee Council in the amount of \$250,000	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000
<b>TOTAL IMCS</b>									<b>\$457,288</b>			

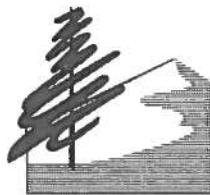


## **Exhibit J-3**

### **Endowment Fund Information and Analysis (PAR)**

## ALDER CREEK RESTORATION PROJECT ENDOWMENT FUND INFORMATION

<b>Financial Obligation</b>	<b>Alder Creek Restoration Project</b>
Endowment deposit per credit (for the first 50% credits sold) <sup>a</sup>	\$862.00
Target amount (equals total endowment)	\$323,250 <sup>b</sup>
Notes:  <sup>a</sup> Per credit endowment deposits will be made when the credits are recognized for purposes of settlement following negotiation of individual settlement agreements, public review and comment, and court approval or when credits are purchased by the Trustee Council or its members using cash-out settlement funds. <sup>b</sup> The full amount of the endowment must be funded prior to the final credit release (see Exhibit E, Credit Evaluation).	



# PAR

## Habitat Planning In Perpetuity

The Property Analysis Record

Title: Alder Creek

Par Code: ACRP

Prepared by: Julie Mentzer

Date: 07/10/2013

The Center for Natural Lands Management prepared this software to assist habitat conservation planners to develop the management tasks and costs of long-term stewardship. While the sources are thought to be reliable, the Center makes no representations about the accuracy of cost estimates. The date of the cost information is 2007. The operation of the program is not guaranteed by the Center. Management requirements are determined by the user. Users should consult with their own financial advisors before relying on the results of their analysis.

# Section 15 - Ongoing Tasks and Costs

Property Title: Alder Creek

PAR ID: ACRP

07/10/2013

Task List	Specific Description	Unit	Number of Units	Cost / Unit	Annual Cost	Years Divide	Cont %	Total Cost
<b>BIOTIC SURVEYS</b>								
Annual General		Not	8.00	75.00	600.00	1.0	10.0	660.00
Annual General		Not	8.00	55.00	440.00	1.0	10.0	484.00
Vegetation/habitat	Monitor/map Vegetation	Not	16.00	75.00	1,200.00	10.0	10.0	132.00
Vegetation/habitat	Monitor/map Vegetation	Not	16.00	55.00	880.00	10.0	10.0	96.80
Sub-Total								1,372.80
<b>FIELD EQUIPMENT</b>								
Quad Runners, 4WD	Magnum, High Quality	Item	0.10	7,500.00	750.00	8.0	10.0	103.12
Vehicle	Boat	Item	0.10	7,500.00	750.00	8.0	10.0	103.12
Vehicle	Fuel	Gallon	100.00	3.80	380.00	1.0	10.0	418.00
Vehicle	Pickup	Item	0.10	35,000.00	3,500.00	8.0	10.0	481.25
Sub-Total								1,105.50
<b>GENERAL MAINTENANCE</b>								
Trash Removal		L. Hours	12.00	25.00	300.00	1.0	10.0	330.00
Sub-Total								330.00
<b>HABITAT MAINTENANCE</b>								
Exotic Plant Control	Herbicide	Item	1.00	500.00	500.00	2.0	10.0	275.00
Exotic Plant Control	Labor-Hand/Mechanical	L. Hours	8.00	75.00	600.00	1.0	10.0	660.00
Exotic Plant Control	Labor-Hand/Mechanical	L. Hours	38.00	25.00	950.00	1.0	10.0	1,045.00
Levee Vegetation	Woody Vegetation	L. Hours	8.00	25.00	200.00	2.0	10.0	110.00
Sub-Total								2,090.00
<b>OPERATIONS</b>								
Conservation Easement	Monitoring Fee	Item	1.00	4,300.00	4,300.00	1.0	10.0	4,730.00
Insurance	General	Acre	52.28	2.16	112.92	1.0	10.0	124.21
Sub-Total								4,854.21
<b>PUBLIC SERVICES</b>								
Sign	Boundary 8" X 13.5"	Item	20.00	5.25	105.00	5.0	10.0	23.10
Sign	T-posts	Item	20.00	5.00	100.00	5.0	10.0	22.00
Sub-Total								45.10
<b>REPORTING</b>								
Aerial Photo	Interpretation	L. Hours	8.00	55.00	440.00	10.0	10.0	48.40
Aerial Photo, 2 sets	Standard 9"x 9"	Flight	1.00	1,300.00	1,300.00	10.0	10.0	143.00
Annual Reports	Summary	L. Hours	16.00	55.00	880.00	1.0	10.0	968.00
Annual Reports	Summary	L. Hours	4.00	75.00	300.00	1.0	10.0	330.00
Monitoring Reports	Monitoring Documentation	L. Hours	8.00	75.00	600.00	10.0	10.0	66.00
Monitoring Reports	Monitoring Documentation	L. Hours	30.00	55.00	1,650.00	10.0	10.0	181.50
Sub-Total								1,736.90
<b>WATER MANAGEMENT</b>								
Other	Channel Maintenance	Item	1.00	1,000.00	1,000.00	5.0	10.0	220.00
Sub-Total								220.00

# Section 15 - Ongoing Tasks and Costs

Property Title: Alder Creek

PAR ID: ACRP

07/10/2013

<b>Task List</b>	<b>Specific Description</b>	<b>Unit</b>	<b>Number of Units</b>	<b>Cost / Unit</b>	<b>Annual Cost</b>	<b>Years Divide</b>	<b>Cont %</b>	<b>Total Cost</b>
<b>Subtotal</b>								11,754.51
<b>Administration</b>								1,175.45
<b>Total</b>								12,929.96

## Section 16 - Financial Summary

Property Title: Alder Creek

Date: 07/10/2013

1st Budget Year: 2013

State:

PAR Code: ACRP

<i>Item Descriptions</i>	<i>Total</i>
<b><i>Initial &amp; Capital Financial Requirements</i></b>	
Revenues	\$0
Management Costs	\$0
Contingency Expense	\$0
<b><i>Initial &amp; Capital Management Total Costs</i></b>	<b>\$0</b>
Administrative Costs of Total Management Costs	\$0
<b><i>Initial &amp; Capital Gross Costs</i></b>	<b>\$0</b>
<b><i>Initial &amp; Capital Net Costs</i></b>	<b>\$0</b>
<b><i>Annual Ongoing Financial Requirements</i></b>	
Revenues	\$0
Ongoing Costs	\$10,686
Contingency Expense	\$1,069
<b><i>Ongoing Management Total Costs</i></b>	<b>\$11,755</b>
Administrative Costs of Total Management Costs	\$1,175
<b><i>Ongoing Gross Costs</i></b>	<b>\$12,930</b>
<b><i>Ongoing Net Costs</i></b>	<b>\$12,930</b>
<b><i>Endowment Requirements for Ongoing Stewardship</i></b>	
<b><i>Endowment to Produce Income of \$12,930</i></b>	<b>\$323,249</b>
<p><i>Endowment per acre \$6,216</i></p> <p><i>Stewardship costs are based on 4.00% of Endowment Earnings per Year</i></p> <p><i>Ongoing management funding per year is \$12,930</i></p> <p><i>Resulting in a per acre per year cost of \$249</i></p>	
<b><i>Total Funding Required</i></b>	<b>\$323,249</b>

## **Exhibit J-4**

### **Lamprey Monitoring Funding Information**

## LAMPREY MONITORING FUNDING INFORMATION FOR THE ALDER CREEK RESTORATION PROJECT

In the Pre-implementation year and in Years 1 through 5, lamprey monitoring will be conducted by U.S. Fish and Wildlife Service (USFWS). This lamprey monitoring effort will be funded by Portland Harbor Holdings II, LLC (PHH) prior to the monitoring event in each monitoring year in the amount shown in Table 1 below.

<b>Table 1. Lamprey Monitoring Funding for Pre-implementation and Years 1 through 5</b>	
Pre-Implementation and Years 1 through 5: Lamprey monitoring will be funded each year prior to the monitoring event.	
Monitoring Year	Financial Obligation
Pre-implementation Year	\$40,412
Year 1	\$30,410
Year 2	\$31,098
Year 3	\$31,802
Year 4	\$32,522
Year 5	\$33,258
<b>Total Amount for Pre-implementation and Years 1 – 5</b>	<b>\$199,502</b>

All funding provided for the Alder Creek Restoration Project lamprey monitoring shall be used exclusively for the Alder Creek Restoration Project. The Trustee Council will provide cost documentation annually within 120 days of the end of the monitoring year. Actual costs will be compared to estimated costs at the end of each monitoring year and any excess funds will be applied to subsequent monitoring years. Payments due for subsequent monitoring events will not be withheld or delayed if cost documentation has not been received. Any excess funds will be credited to the next payment due.

For Years 10, 15, and 20, lamprey monitoring will be funded by PHH prior to the monitoring event once 15% of the credits (112.45 credits) have been sold (Table 2). If PHH has not sold 15% of the credits prior to the Year 10 monitoring event, then:

1. PHH and the Trustee Council will meet and confer about extensions of the funding timeline and discuss the market and potential activities that could stimulate sales; and
2. One-year extensions will be granted on an annual basis until 15% of the credits are sold, upon which time all amounts scheduled at that time or past-due because of extensions will become due and payable.



The total target amount, \$358,177, corresponds to the cost estimate for lamprey monitoring (for pre-implementation year, Years 1-5, 10, 15, and 20) provided by the Trustee Council on November 11, 2013. The lamprey monitoring will be considered fully funded once USFWS has been given a total of \$358,177 (“Target Amount”). However, since the Target Amount is an estimate and includes funds for monitoring a reference site that may also serve as a reference site for other restoration sites in Portland Harbor as well as a 20% contingency, it is possible that not all of the funds will be utilized. Therefore, the budgeted amount for lamprey monitoring will be reassessed in Year 6 by comparing the previous years’ budgets to the actual costs, and then reviewing the estimated costs for the remaining monitoring events. The Target Amount will be decreased based on actual costs, if appropriate. While the Target Amount may be adjusted down, the amount paid to USFWS for the 20-year lamprey monitoring will not exceed the original Target Amount, \$358,177.

<b>Table 2. Lamprey Monitoring Funding for Years 10, 15, and 20</b>	
Once 15% of the credits have been sold, funding for Years 10, 15, and 20 will be provided prior to each monitoring year. <sup>a</sup>	
<b>Monitoring Year</b>	<b>Financial Obligation</b>
Year 10	\$70,555
Year 15	\$41,598
Year 20	\$46,522
<b>Target Amount for Years 10, 15, and 20</b>	<b>\$158,675</b>
<b>Target Amount for Pre-implementation and Years 1 – 5 (from Table 1)</b>	<b>\$199,502</b>
<b>Total Target Amount for Lamprey Monitoring <sup>b</sup></b>	<b>\$358,177<sup>cd</sup></b>
Notes:	
<sup>a</sup> Credits will be considered sold when the credits are recognized for purposes of settlement following negotiation of individual settlement agreements, public review and comment, and court approval or when credits are purchased by the Trustee Council or its members using cash-out settlement funds. <sup>b</sup> Once the Target Amount is reached, no further funds will be furnished to USFWS. <sup>c</sup> The original Target Amount may be revised prior to the first monitoring event; however, while the cost may be adjusted down, the amount paid to USFWS for post-construction monitoring will not exceed the original Target Amount (\$358,177). <sup>d</sup> During Year 6, the Target Amount may be decreased based on real costs from the Pre-implementation year and Years 1-5 and future estimated costs. While the cost may be adjusted down, the amount paid to USFWS for post-construction lamprey monitoring will not exceed the original Target Amount.	

## **Exhibit J-5**

### **Trustee Council Oversight Funding Information**

## ALDER CREEK RESTORATION PROJECT

### TRUSTEE COUNCIL OVERSIGHT FUNDING INFORMATION

The Trustee Council is expected to provide oversight of the Alder Creek Restoration Project in the following years: pre-implementation, 1 – 10, 15, and 20. In the pre-implementation year and in Years 1 through 5, Trustee Council oversight will be funded by Portland Harbor Holdings II, LLC (PHH) prior to the beginning of each year by way of a check furnished to the Department of Interior’s Natural Resource Damage Assessment and Restoration (DOI NRDAR) account in the amount shown in Table 1 below.

<b>Table 1. Trustee Oversight Funding for Pre-implementation and Years 1-5</b>	
Pre-Implementation and Years 1 through 5: Trustee Oversight monitoring will be funded (in the form of a check to the DOI NRDAR account) prior to the beginning of each year.	
Year	Financial Obligation
Pre-implementation Year	\$8,515.22
Year 1	\$35,102.91
Year 2	\$27,291.38
Year 3	\$27,866.83
Year 4	\$24,233.59
Year 5	\$29,054.39
<b>Target amount for Implementation Year and Years 1 – 5</b>	<b>\$152,064.32</b>

All funding provided for Trustee Council oversight of the Alder Creek Restoration Project shall be used exclusively for the Alder Creek Restoration Project. The Trustee Council will provide cost documentation annually within 120 days of the end of the year. Actual costs will be compared to estimated costs at the end of each year and any excess funds will be applied to subsequent years or refunded to PHH within 60 days of providing the cost documentation. Payments due for subsequent years will not be withheld or delayed if cost documentation has not been received. Any excess funds that have not been refunded will be credited to the next payment due.

For Years 6 – 10, 15, and 20, Trustee Council oversight will be funded by PHH prior to the beginning of the year once 15% of the credits (112.45 credits) have been sold (Table 2). If PHH has not sold 15% of the credits prior to Year 6, then:

1. PHH and the Trustee Council will meet and confer about extensions of the funding timeline and discuss the market and potential activities that could stimulate sales; and

2. One-year extensions will be granted on an annual basis until 15% of the credits are sold, upon which time all amounts scheduled at that time or past-due because of extensions will become due and payable.

The total target amount, \$271,505.03, corresponds to the cost estimate for Trustee Council oversight (for pre-implementation year, Years 1 – 10, 15, and 20) provided by the Trustee Council on April 11, 2014. The Trustee Council oversight will be considered fully funded once PHH has funded a total of \$271,505.03 (“Target Amount”) or the actual combined cost of Trustee Council oversight (for pre-implementation year, Years 1 – 10, 15, and 20), whichever is lower. While the Target Amount may be adjusted down, the amount paid to the Trustee Council for the oversight will not exceed the original Target Amount, \$271,505.03.

<b>Table 2. Trustee Council Oversight Funding for Years 6 – 10, 15, and 20</b>	
Once 15% of the credits have been sold, funding for Years 6 – 10, 15, and 20 will be provided (in the form of a check to the DOI NRDAR account) prior to each year. <sup>a</sup>	
<b>Year</b>	<b>Financial Obligation</b>
Year 6	\$12,364.99
Year 7	\$12,625.71
Year 8	\$19,300.53
Year 9	\$13,163.76
Year 10	\$31,319.25
Year 15	\$14,534.10
Year 20	\$16,132.37
<b>Target Amount for Years 6 – 10, 15, and 20</b>	<b>\$119,440.71</b>
<b>Target Amount for Pre-implementation and Years 1 – 5 (from Table 1)</b>	<b>\$152,064.32</b>
<b>Total Target Amount for Trustee Council Oversight <sup>b</sup></b>	<b>\$271,505.03<sup>b</sup></b>
Notes:	
<sup>a</sup> Credits will be considered sold when the credits are recognized for purposes of settlement following negotiation of individual settlement agreements, public review and comment, and court approval or when credits are purchased by the Trustee Council or its members using cash-out settlement funds.	
<sup>b</sup> Once the Target Amount is reached, no further funds will be furnished to the Trustee Council.	

# **Exhibit K**

## **Endowment Funding Agreement Form**

**ENDOWMENT FUNDING AND MANAGEMENT AGREEMENT  
FOR THE ALDER CREEK RESTORATION PROJECT**

THIS AGREEMENT ("Agreement") is made and entered into on \_\_\_\_\_, 2014 (the "Effective Date"), by and among **PORTLAND HARBOR HOLDINGS II, LLC**, a Delaware limited liability company ("**Restoration Implementer**" and "**Steward**"), and the **NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION** ("**NOAA**"), on behalf of the Department of the Commerce, the **UNITED STATES FISH AND WILDLIFE SERVICE** ("**USFWS**"), on behalf of the Department of Interior, the **OREGON DEPARTMENT OF FISH AND WILDLIFE** ("**ODFW**"), the **CONFEDERATED TRIBES OF THE GRAND RONDE COMMUNITY OF OREGON**, the **CONFEDERATED TRIBES OF SILETZ INDIANS**, the **CONFEDERATED TRIBES OF THE UMATILLA INDIAN RESERVATION**, the **CONFEDERATED TRIBES OF THE WARM SPRINGS INDIAN RESERVATION OF OREGON**, and the **NEZ PERCE TRIBE** (collectively the "**Trustees**"), and the **WILDLIFE HERITAGE FOUNDATION** (the "**Endowment Manager**"). The Restoration Implementer, the Trustees, Steward, and the Endowment Manager are collectively referred to herein as the "**Parties.**"

WITNESSETH:

WHEREAS, the Restoration Implementer has received approval from the Trustees to develop a restoration project known as the Alder Creek Restoration Project (or sometimes simply, the "Restoration Project") located on certain real property containing approximately 64 acres on the southern tip of Sauvie Island in Multnomah County, Oregon. The approximately 52.3-acre Restoration Project is more particularly described in **Exhibit A** attached hereto and incorporated herein by this reference.

WHEREAS, the Restoration Plan requires that Restoration Implementer fund a permanent endowment for the long-term stewardship of the Restoration Project.

WHEREAS, the Endowment Manager is a nonprofit corporation exempt from taxation under Section 501(c)(3) of the Internal Revenue Code ("**Code**"), a public charity described in section 170(b)(1)(A)(vi) of the Code, and accordingly, an appropriate institution within which to establish such an endowment.

WHEREAS, under this Agreement, the Restoration Implementer is required to fund the endowment, the Endowment Manager is required to manage the endowment and make payments to the Steward who is required to utilize the payments from the endowment for long term management, maintenance, and monitoring of the Restoration Project, and

WHEREAS, the Restoration Implementer and Trustees desire, and the Endowment Manager is willing and able, to create such an endowment, subject to the terms and conditions hereof;

NOW THEREFORE, the Parties agree as follows:

---

1. NAME OF ENDOWMENT FUND. There is hereby established in the Endowment Manager, and as a part thereof, a fund designated as the Alder Creek Restoration Project Endowment Fund (hereinafter referred to as “the Endowment”) to receive contributions in the form of money, and to administer the same.

2. PURPOSE. The primary purpose of the Endowment shall be to fund Steward’s management, maintenance, and monitoring as described in the Long-term Management Framework for the Restoration Project (“Management Framework”), attached hereto as **Exhibit B-2** to the Restoration Plan, the Alder Creek Site-specific Long-term Stewardship Plan (“Stewardship Plan) once it is developed, and Property Analysis Record (“PAR”) for the Restoration Project, attached as **Exhibit J-3** to the Restoration Plan.

3. FUNDING. Per the Restoration Plan, Restoration Implementer is required to provide \$323,250 as the Principal Amount of the Endowment for the Restoration Project. The Endowment Manager has the discretion to accept additional funds acceptable to the Endowment Manager from time to time from any individuals, entities, and other sources to be added to the Endowment, all subject to the provisions hereof. All grants, bequests, and devises to this Endowment shall be irrevocable once accepted by the Endowment Manager. For the avoidance of doubt, nothing contained in this Section 3 shall preclude a transfer of the Endowment to a subsequent non-profit entity that has been approved by both the Trustees and the Restoration Implementer. Restoration Implementer shall fund the Endowment in the following manner:

a. Funds in the following amounts shall be deposited into the Endowment for each of the first Credits sold until the Endowment is fully funded:

i. \$ 862.00 per Credit for 375 Credits sold;

b. From time to time Restoration Implementer may elect to pre-fund portions of the Endowment or to make lump sum deposits.

4. DISTRIBUTION. Upon full funding of the Endowment at the Principal Amount, the annual earnings allocable to the Endowment, net of the fees and expenses shall be committed, granted or expended solely for the purposes of the endowment as set forth in Section 2 above. The Annual Fee shall be paid to the Endowment Manager per Section 12 below. No distribution shall be made from the Endowment to any individual or entity if such distribution will, in the judgment of the Endowment Manager, endanger the Endowment Manager’s Code Section 501(c)(3) status.

a. Payments. Payments from the Endowment to the Steward will be made, at a minimum on October 1 of every year in accordance with the following guidelines:

i. Generally, the Parties agree that the default annual distribution will be \$4,913.00 (**Exhibit B**) an amount less than the annual costs calculated in the PAR, such that a maximum amount will remain for investment in the Endowment, allowing for larger annual costs periodically in years when large capital improvements are required. In years when the Steward requires a larger distribution, the Steward can request such an amount. The amount to be

disbursed shall generally be as requested, except where the requested amount would jeopardize the principal amount, which is not permitted per Section 11 below, or the Endowment Manager's 501(c)(3) status, which is not permitted per this Section 4;

ii. The Steward shall submit an annual work plan on July 1 of each year, including associated costs for the upcoming year;

iii. Prior to August 31 of each year, the Steward, the Endowment Manager, and the Trustees or their designee(s) shall discuss the annual work plan and agree upon the distribution to be paid from the Endowment for that year, which amount shall generally be as requested, except where the requested amount would jeopardize the principal amount, which is not permitted per Section 11 below, or the Endowment Manager's 501(c)(3) status, which is not permitted per this Section 4;

iv. The Endowment Manager shall issue a check to the Steward in the agreed upon amount no later than October 1 of each year or at such time as is agreed to by Steward and Endowment Manager;

v. In the case of emergencies or unforeseen funding needs, the Steward may submit a request for additional disbursement at any time during the year, which amount shall generally be as requested, except where the requested amount would jeopardize the principal amount, which is not permitted per Section 11 below, or the Endowment Manager's 501(c)(3) status, which is not permitted per this Section 4;

vi. The Endowment Manager shall provide the Restoration Implementer, Steward, and the Trustees or the Trustees' designee(s) with an annual accounting of the Endowment that includes the rate of return received, the payments distributed, and remaining total on October 1 of each year.

b. Commencement of Payment. Payments to the Steward shall not commence until one year after the Principal Amount of the Endowment is funded in full pursuant to Section 3, above.

5. VARIANCE. If the Endowment Manager ceases to be a qualified charitable organization or, if the Endowment Manager proposes to dissolve, if the Endowment Manager goes into bankruptcy, if the endowment is dissolved, or if this Agreement is terminated, the assets of the Endowment shall be distributed to a qualified third-party entity designated by the Trustees or the Trustees' designee(s) in agreement with the Restoration Implementer and the Steward. Bankruptcy shall include (i) the filing of a voluntary petition under any federal or state law for the relief of debts; (ii) the continued pendency of an involuntary proceeding under any such law on the 60<sup>th</sup> day after its filing, or the entry of an order for relief under any such involuntary proceeding, whichever occurs first; (iii) the making of a general assignment for the benefit of the Endowment Manager's creditors; (iv) the seizure by a sheriff, receiver, or trustee of a substantial portion of the Endowment Manager's assets.

6. ADMINISTRATIVE PROVISIONS. Notwithstanding anything herein to the contrary, the Endowment Manager shall hold the Endowment, and all contributions to the



Endowment, subject to the provisions of the applicable federal and Oregon laws, and the Endowment Manager's Articles of Incorporation and Bylaws.

Upon request by Restoration Implementer, Trustees or the Trustees' designee(s), or the Steward, the Endowment Manager agrees to provide a copy of the annual examination of the finances of the Endowment Manager as reported on by independent certified public accountants.

7. AMENDMENT. This Agreement may be amended only by written agreement of the Parties.

8. CONDITIONS FOR ACCEPTANCE OF FUNDS. The Parties agree and acknowledge that the Endowment is subject to such terms and conditions, including but not by way of limitation, provisions from:

- a. The Restoration Plan for the Alder Creek Restoration Project; and
- b. The Alder Creek Deed Restriction and any future Conservation Easements as recorded in the official records of Multnomah County.

9. NOT A SEPARATE TRUST. The Endowment shall be a component part of the Endowment Manager. All money and property in the Endowment shall be held as permanently restricted general assets of the Endowment Manager, but shall not be segregated as trust property of a separate trust. For the avoidance of doubt, nothing contained in this Section 9 shall preclude a transfer of the Endowment to a subsequent non-profit entity that has been approved by both the Trustees and the Restoration Implementer.

10. ACCOUNTING. The receipts and disbursements of this Endowment shall be accounted for separately and apart from those of the other conservation endowment funds of the Endowment Manager.

11. INVESTMENT OF FUNDS. The Endowment Manager shall:

a. Have all powers necessary or in its sole discretion desirable to carry out the purposes of the Endowment, including, but not limited to, the power to retain, invest, and reinvest the Endowment; provided that the Endowment Manager shall use these powers only as consistent with the investment objectives set forth in paragraph 11.c. below.

b. Have a duty as provided in paragraph 11.e to invest the Endowment prudently with the objective that the Endowment principal shall not be invaded and the Endowment does not suffer financial loss. However, the Endowment may suffer an investment loss from time to time; and, provided that the Endowment was prudently invested, the Endowment Manager is not responsible or liable for such loss of the Endowment principal.

c. Implement the following investment objectives for the Endowment: (1) preserving the real (after inflation) value of the endowment portfolio assets; and (2) growing the total value of the assets. The Endowment Manager's primary investment objective is the preservation of principal with investment growth being secondary. While an objective, the Parties do not guarantee that the Endowment will produce without exception an annual revenue

stream adequate to support the costs of implementing the Site-specific Long-term Stewardship Plan expenses.

i. If the Steward, Restoration Implementer, or the Trustees or the Trustees' designee(s) are concerned that the Endowment Manager is not achieving a sufficient rate of return to support the primary purpose set forth in Section 2 while preserving the principal amount, then at the request of the Steward, Restoration Implementer, or the Trustees or the Trustees' designee(s), the Endowment Manager, Steward, Restoration Implementer, and the Trustees or the Trustees' designee(s) shall discuss adjusting the asset allocation of the Endowment in order to achieve a better rate of return. The Endowment Manager shall consider in good faith any suggestions by the Steward, Restoration Implementer, or the Trustees or the Trustees' designee(s) for asset reallocation.

d. Credit the Endowment for all interest earned and, as appropriate, re-invest all such interest.

e. Discharge its duties with respect to the Endowment with the care, skill, prudence, and diligence under the circumstances then prevailing, which persons of prudence, acting in a like capacity and familiar with such matters, would use in the conduct of an enterprise of a like character and with like aims, and shall exercise wise and prudent investment strategies in order to minimize risk, while maximizing the value of the Endowment.

12. ANNUAL FEE. It is understood and agreed that the Endowment Manager shall require \$750.00 as an annual fee to administer the Endowment upon such time as the Endowment is fully funded, which fee shall be charged annually against the Endowment, and shall be withdrawn on October 1 of each year. Until the principal of the Endowment is funded at the Principal Amount pursuant to Section 3 above, the Restoration Implementer shall be responsible for paying the annual fee to the Endowment Manager.

13. CONSTRUCTION.

a. As used in this Agreement:

i. "Qualified charitable conservation organization" means an organization described in Section 501(c)(3) and that is other than a private foundation under Section 509(a) of the Internal Revenue Code.

ii. References to any provision of the Internal Revenue Code shall be deemed references to the U.S. Internal Revenue Code of 1986 as the same may be amended from time to time and the corresponding provision of any future U.S. Internal Revenue Code.

b. It is intended that the Endowment shall be a component part of the Endowment Manager and that nothing in this Agreement shall affect the status of the Endowment Manager as an entity that is a qualified charitable conservation organization. This Agreement shall be interpreted in a manner consistent with the foregoing intention and so as to conform to the requirements of the Internal Revenue Code and any regulations issued pursuant thereto applicable to the intended status of the Endowment Manager.

14. TERMINATION. This Agreement may be terminated under the following circumstances:

a. Upon mutual written agreement of the Endowment Manager, the Trustees or the Trustees' designee(s), and the Steward.

b. If either the Endowment Manager or the Steward fails to observe the terms and conditions of this Agreement, the other party may terminate this Agreement upon thirty (30) days written notice of termination. Any notice for termination of this Agreement for default shall specify the nature of the default. The defaulting party shall have thirty (30) days following the receipt of such notice to cure the specified default. Timely cure of a specified default will avoid termination for that default.

c. If the Restoration Implementer, Steward and/or the Trustees determines that the Endowment as managed by the Endowment Manager has failed to achieve a sufficient rate of return, consistent with Section 11.c, to support the primary purpose set forth in Sections 2 and 4.a.i while preserving the principal amount over a two-year period:

i. The Steward shall send a written notice of such a determination, and within 60 days, the Endowment Manager, Steward, and the Trustees or the Trustees' designee(s) shall discuss adjusting the asset allocation of the Endowment in order to achieve a better rate of return. The Endowment Manager, Steward, and the Trustees or the Trustees' designee(s) shall work collaboratively during this discussion, and the Endowment Manager shall consider in good faith any suggestions by the Steward and the Trustees or the Trustees' designee(s) for asset reallocation. The Endowment Manager shall have two years following this discussion to improve the rate of return of the Endowment. The failure to achieve a desired rate of return shall not be a default of the Endowment Manager of any of its obligations under this Agreement.

ii. If after two years the rate of return of the Endowment has not improved to achieve a sufficient rate of return, consistent with Section 11.c, to support the primary purpose set forth in Sections 2 and 4.a.i while preserving the principal amount, the Steward with written approval of the Trustees or the Trustees' designee(s) may terminate this Agreement, provided that the Steward has identified a qualified third-party entity who is qualified to hold and shall accept the Endowment. Any third-party successor Endowment Manager identified by the Steward pursuant to this Section, Section 14.c.ii, is subject to the approval of the Trustees or the Trustees' designee(s) and such approval shall not be unreasonably withheld.

15. TRANSFER PROVISIONS.

a. Endowment Manager - The Parties acknowledge that the Wildlife Heritage Foundation as the Endowment Manager is intended initially to act as an interim manager of the Endowment and that the Parties desire to identify a long-term manager for the Endowment. The Trustees and the Restoration Implementer may elect to transfer the Endowment to a third-party non-profit entity subject to the written approval of the Trustees and the Restoration Implementer, which shall not be unreasonably withheld, and written notice to the

Endowment Manager. In the event the Trustees and the Restoration Implementer deliver written notice of their election to transfer the Endowment then the Endowment Manager shall cooperate and promptly transfer the Endowment as directed in the notice within a reasonable period of time.

b. Steward - The Parties acknowledge that the Trustees desire to identify a long-term Steward for the Restoration Project that may not be the Restoration Implementer. Nothing contained in this Agreement shall preclude a transfer of the funding of the long-term stewardship activities to a subsequently approved Steward, subject to the written approval of the Trustees and the Restoration Implementer. Such written approval shall not be unreasonably withheld.

*[The remainder of this page has been intentionally left blank.]*

IN WITNESS WHEREOF, the Restoration Implementer, Steward, Trustee Council or the Trustee Council's designee(s), and the Endowment Manager have executed this Agreement and the Foundation has caused this Agreement to be approved by its Board of Directors and to be executed by a duly authorized officer, all as of the day and year first above written.

**RESTORATION IMPLEMENTER:**

By: \_\_\_\_\_  
(Signature) (Date)

Name: \_\_\_\_\_  
(Printed Name and Title)

**STEWARD:**

By: \_\_\_\_\_  
(Signature) (Date)

Name: \_\_\_\_\_  
(Printed Name and Title)

**TRUSTEE COUNCIL:**

**Confederated Tribes of the Grand Ronde Community of Oregon**

By: \_\_\_\_\_  
(Signature) (Date)

Name: \_\_\_\_\_  
(Printed Name and Title)

**Confederated Tribes of Siletz Indians**

By: \_\_\_\_\_  
(Signature) (Date)

Name: \_\_\_\_\_  
(Printed Name and Title)

**Nez Perce Tribe**

By: \_\_\_\_\_  
(Signature) (Date)

Name: \_\_\_\_\_  
(Printed Name and Title)

**Confederated Tribes of the Umatilla Indian Reservation**

By: \_\_\_\_\_  
(Signature) (Date)

Name: \_\_\_\_\_  
(Printed Name and Title)

**Confederated Tribes of the Warm Springs Indian Reservation of Oregon**

By: \_\_\_\_\_  
(Signature) (Date)

Name: \_\_\_\_\_  
(Printed Name and Title)

**Oregon Department of Fish and Wildlife**

By: \_\_\_\_\_  
(Signature) (Date)

Name: \_\_\_\_\_  
(Printed Name and Title)

**United States Department of the Interior**

By: \_\_\_\_\_  
(Signature) (Date)

Name: \_\_\_\_\_  
(Printed Name and Title)

**National Oceanic and Atmospheric Administration**

By: \_\_\_\_\_  
(Signature) (Date)

Name: \_\_\_\_\_  
(Printed Name and Title)

**ENDOWMENT MANAGER:**

By: \_\_\_\_\_  
(Signature) (Date)

Name: \_\_\_\_\_  
(Printed Name and Title)

**EXHIBIT A**

**Restoration Project Legal Description**

**ENGINEERING PLANNING  
FORESTRY**

13910 S.W. Galbreath Dr., Suite 100  
Sherwood, Oregon 97140  
Phone: (503) 925-8799  
Fax: (503) 925-8969



**LANDSCAPE ARCHITECTURE  
SURVEYING**

AKS Group of Companies:  
SHERWOOD, OREGON  
SALEM, OREGON  
VANCOUVER, WASHINGTON  
[www.aks-eng.com](http://www.aks-eng.com)

**EXHIBIT A**

**OVERALL TRACT:**

A tract of land located in the James Menzie Donation Land Claim Number 45 also being located in Sections 27 and 28, Township 2 North, Range 1 West, Willamette Meridian, Multnomah County, Oregon, and being more particularly described as follows:

Beginning at a 4 inch brass disk at the most northerly corner of the James Menzie Donation Land Claim Number 45, thence South  $12^{\circ}30'05''$  East 3393.60 feet to a 5/8 inch iron rod with a yellow plastic cap inscribed "AKS ENGR." at the westerly northern corner of the tract per Document Number 2012-031855 and the True Point of Beginning; thence along the northeasterly line of said Document Number 2012-031855 South  $59^{\circ}01'00''$  East 363.00 feet to a 5/8 inch iron rod with a yellow plastic cap inscribed "AKS ENGR."; thence continuing along said northeasterly line North  $30^{\circ}59'00''$  East 240.22 feet to 5/8 inch iron rod with a yellow plastic cap inscribed "AKS ENGR."; thence along the northeasterly lines of the tracts per Document Number 2012-031855 and Document Number 2011-145120 South  $59^{\circ}01'00''$  East 786.50 feet to a 5/8 inch iron rod with a yellow plastic cap inscribed "AKS ENGR."; thence continuing along the northeasterly line of said Document Number 2011-145120 South  $19^{\circ}14'19''$  East 593.80 feet to a 5/8 inch iron rod with a yellow plastic cap inscribed "AKS ENGR."; thence along the centerline of the Levee Easement per Book 490 Page 435 (recorded 04/05/1939), Book 497 Page 251 (recorded 05/19/1939), Book 518 Page 250 (recorded 10/18/1939), Book 523 Page 91 (recorded 11/22/1939), Book 535 Page 51 (recorded 02/16/1940) and Book 2086 Page 291 (recorded 10/18/1961), partially quitclaimed per Document Number 2012-026638 hereinafter called "Levee Easement", along a non-tangent curve to the left (Radial: North  $17^{\circ}09'37''$  West) with a Radius of 1637.02 feet, a Delta of  $36^{\circ}46'12''$ , a Length of 1050.57 feet, and a Chord of North  $54^{\circ}27'18''$  East 1032.63 feet to a 5/8 inch iron rod with a yellow plastic cap inscribed "AKS ENGR."; thence leaving said Levee Easement centerline along the northeasterly line of said Document Number 2011-145120 South  $59^{\circ}01'00''$  East 423 feet, more or less to the Mean Low Water line of the Willamette River; thence southerly along the Mean Low Water line of the Willamette River and northwesterly along the Mean Low Water line of the Multnomah Channel 4330 feet, more or less to a point on the northwest line of said tract per Document Number 2011-145120; thence along the northwest line of said tracts per Document Number 2011-145120 and Document Number 2012-031855 North  $30^{\circ}59'00''$  East 859 feet, more or less to the True Point of Beginning.



**EXCEPTING THEREFROM:**

A tract of land located in the James Menzie Donation Land Claim Number 45 also being located in Section 27, Township 2 North, Range 1 West, Willamette Meridian, Multnomah County, Oregon, and being more particularly described as follows:

Beginning at a 4 inch brass disk at the most northerly corner of the James Menzie Donation Land Claim Number 45, thence South  $12^{\circ}30'05''$  East 3393.60 feet to a 5/8 inch iron rod with a yellow plastic cap inscribed "AKS ENGR." at the westerly northern corner of the tract per Document Number 2012-031855; thence along the northeasterly line of said Document Number 2012-031855 South  $59^{\circ}01'00''$  East 363.00 feet to a 5/8 inch iron rod with a yellow plastic cap inscribed "AKS ENGR."; thence continuing along said northeasterly line North  $30^{\circ}59'00''$  East 240.22 feet to 5/8 inch iron rod with a yellow plastic cap inscribed " AKS ENGR."; thence along the northeasterly line of the tract per Document Number 2012-031855 South  $59^{\circ}01'00''$  East 431.01 feet to a point on the westerly line of the 30.00 foot pipeline easement per Book 265 Page 113 (Recorded 04/05/1965) and the True Point of Beginning; thence along said westerly line South  $11^{\circ}44'00''$  West 89.00 feet to a point; thence continuing along said westerly line South  $05^{\circ}48'00''$  East 593.55 feet to a point; thence leaving said pipeline easement along the westerly line of the communications easement per Document Number 98179149 South  $39^{\circ}12'00''$  West 31.82 feet to a point; thence continuing along said westerly line South  $05^{\circ}48'00''$  East 525.01 feet to a point on the Mean Low Water Line of the Multnomah Channel; thence along said Mean Low Water line South  $66^{\circ}23'34''$  East 60 feet, more or less to a point on the easterly line of said pipeline easement; thence along said easterly line North  $05^{\circ}48'00''$  West 1166.02 feet to a point; thence continuing along said easterly line North  $11^{\circ}44'00''$  East 73.90 feet to a point on the northeasterly line of said Document Number 2012-031855; thence along said northeasterly line North  $59^{\circ}01'00''$  West 31.78 feet to the True Point of Beginning.

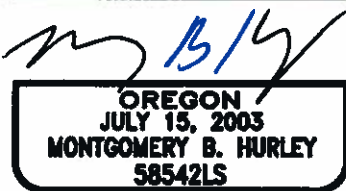
**ALSO EXCEPTING THEREFROM:**

A tract of land located in the James Menzie Donation Land Claim Number 45 also being located in Sections 27 and 28, Township 2 North, Range 1 West, Willamette Meridian, Multnomah County, Oregon, and being more particularly described as follows:

Beginning at a 4 inch brass disk at the most northerly corner of the James Menzie Donation Land Claim Number 45, thence South  $12^{\circ}30'05''$  East 3393.60 feet to a 5/8 inch iron rod with a yellow plastic cap inscribed "AKS ENGR." at the westerly northern corner of the tract per Document Number 2012-031855; thence along the northwesterly line of the tracts per Document Number 2012-031855 and Document Number 2011-145120 South  $30^{\circ}59'00''$  West 544.67 feet to a point on northerly line of the "Levee Easement" (115.00 feet from centerline) and the True Point of Beginning; thence along the northerly line of said "Levee Easement" South  $54^{\circ}44'34''$  East 289.67 feet to a point; thence continuing along said northerly line along a non-tangent curve to the left (Radial: North  $34^{\circ}39'49''$  East) with a Radius of 1522.02 feet, a Delta of  $39^{\circ}47'41''$ , a Length of 1057.12 feet, and a Chord of South  $75^{\circ}14'01''$  East 1036.00 feet to a point; thence continuing along said north line South  $05^{\circ}07'52''$  East 10.00 feet to a point; thence continuing along said northerly line (105.00 feet from centerline) along a non-tangent curve to the left (Radial: North  $05^{\circ}07'52''$  West) with a Radius of 1532.02 feet, a Delta of  $11^{\circ}53'11''$ , a Length of

317.83 feet, a Chord of North 78°55'32" East 317.26 feet to a point on the northeasterly line of said Document Number 2011-145120; thence along said northeasterly line South 19°14'19" East 105.07 feet to a point on the centerline of said "Levee Easement"; thence along said centerline along a non-tangent curve to the left (Radial: North 17°09'37" West) with a Radius of 1637.02 feet, a Delta of 36°46'12", a Length of 1050.57 feet, and a Chord of North 54°27'18" East 1032.63 feet to a 5/8 inch iron rod with a yellow plastic cap inscribed "AKS ENGR." on the northeasterly line of said Document Number 2011-145120; thence along said northeasterly line South 59°01'00" East 90.34 feet to a point on the southerly line of said "Levee Easement" (90.00 feet from centerline); thence along said southerly line along a non-tangent curve to the right (Radial: North 54°11'45" West) with a Radius of 1727.02 feet, a Delta of 17°33'53", a Length of 529.44 feet, a Chord of South 44°35'11" West 527.37 feet to a point; thence continuing along said southerly line South 36°37'52" East 15.00 feet to a point; thence continuing along said southerly line (105.00 feet from centerline) along a non-tangent curve to the right (Radial: North 36°37'52" West) with a Radius of 1742.02 feet, a Delta of 07°00'00", a Length of 212.83 feet, and a Chord of South 56°52'08" West 212.70 feet to a point; thence North 29°37'52" West 10.00 feet to a point; thence continuing along said southerly line (95.00 feet from centerline) along a non-tangent curve to the right (Radial: North 29°37'52" West) with a Radius of 1732.02 feet, a Delta of 64°19'55", a Length of 1944.72 feet, and a Chord of North 87°27'55" West 1844.17 feet to a point; thence North 54°44'34" West 275.03 feet to a point on the northwest line of said Document Number 2011-145120; thence along said northwest line North 30°59'00" East 210.59 feet to the True Point of Beginning.

The above described conservation easement boundary contains 52.28 acres, more or less.



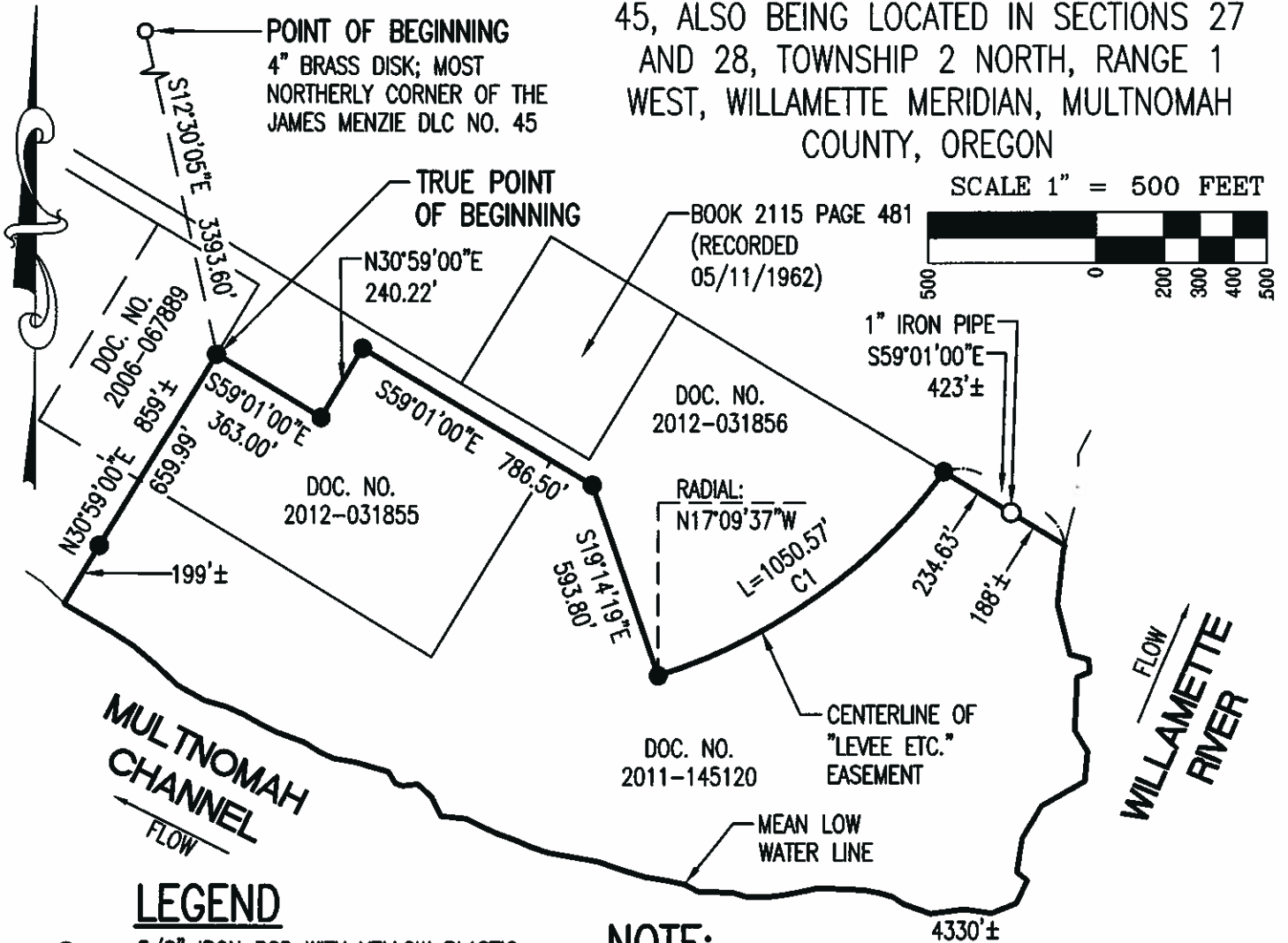
RENEWS: 6/30/13

# PREPARED FOR

PORTLAND HARBOR HOLDINGS II, LLC.  
3855 ATHERTON ROAD  
ROCKLIN, CA 95765

# EXHIBIT B

LOCATED IN THE JAMES MENZIE DLC NO. 45, ALSO BEING LOCATED IN SECTIONS 27 AND 28, TOWNSHIP 2 NORTH, RANGE 1 WEST, WILLAMETTE MERIDIAN, MULTNOMAH COUNTY, OREGON



SCALE 1" = 500 FEET



## LEGEND

- 5/8" IRON ROD WITH YELLOW PLASTIC CAP INSCRIBED "AKS ENGR."
  - MONUMENT AS NOTED
- DOC. NO. DOCUMENT NUMBER PER MULTNOMAH COUNTY DEED RECORDS

## NOTE:

"LEVEE ETC." EASEMENT IS PER BOOK 490 PAGE 435 (04/05/1939), BOOK 497 PAGE 251 (05/19/1939), BOOK 523 PAGE 91 (11/22/1939), BOOK 535 PAGE 51 (02/16/1940), AND BOOK 2086 PAGE 291 (10/18/1961), PARTIALLY QUITCLAIMED PER DOC. NO. 2012-026638

## CURVE TABLE

CURVE	RADIUS	DELTA	LENGTH	CHORD
C1	1637.02'	36°46'12"	1050.57'	N54°27'18"E 1032.63'

3-6-13

**REGISTERED PROFESSIONAL LAND SURVEYOR**

*M B H*

OREGON  
JULY 15, 2003  
MONTGOMERY B. HURLEY  
58542LS

RENEWS: 6/30/13

JOB NAME: ALDER CREEK
JOB NUMBER: 2641
DRAWN BY: JOH
CHECKED BY: NSW
DWG NO.: 022813 2641EXB

ENGINEERING • PLANNING • LANDSCAPE ARCHITECTURE  
FORESTRY • SURVEYING



LICENSED IN OR & WA

13910 SW GALBREATH DRIVE, SUITE 100  
SHERWOOD, OR 97140  
PHONE: (503) 925-8799  
FAX: (503) 925-8969

OFFICES LOCATED IN REDMOND, OR & VANCOUVER, WA

DOC. NO.  
2012-031856

S59°01'00"E 363.00'

N30°59'00"E 240.22'

S59°01'00"E 431.01'

N59°01'00"W 31.78'

N11°44'00"E 73.90'

POINT OF BEGINNING  
BEARS S12°30'05"E 3393.60'  
FROM A 4" BRASS DISK; MOST  
NORTHERLY CORNER OF THE  
JAMES MENZIE DLC NO. 45

TRUE POINT  
OF BEGINNING

S11°44'00"W 89.00'

DOC. NO.  
2012-031855

30.00' PIPELINE EASEMENT PER 265  
PAGE 113 (04/05/1965) AND  
COMMUNICATIONS EASEMENT PER  
DOC. NO. 98179149

S05°48'00"E 593.55'

S05°48'00"E 1166.02'

S39°12'00"W 31.82'

DOC. NO.  
2011-145120

EASEMENT  
EXCEPTION AREA

15.00' COMMUNICATIONS  
EASEMENT PER DOC.  
NO. 98179149

S05°48'00"E 525.01'

S05°48'00"E

30.00' PIPELINE  
EASEMENT PER  
265 PAGE 113  
(04/05/1965)

S66°23'34"E 60'±

### EXHIBIT B

LOCATED IN THE JAMES MENZIE DLC  
NO. 45, ALSO BEING LOCATED IN  
SECTIONS 27, TOWNSHIP 2 NORTH,  
RANGE 1 WEST, WILLAMETTE MERIDIAN,  
MULTNOMAH COUNTY, OREGON

MEAN LOW  
WATER LINE

### PREPARED FOR

PORTLAND HARBOR HOLDINGS II, LLC.  
3855 ATHERTON ROAD  
ROCKLIN, CA 95765

SCALE 1" = 200 FEET



MULTNOMAH  
CHANNEL  
FLOW

3-6-13

REGISTERED  
PROFESSIONAL  
LAND SURVEYOR

*M B/H*

OREGON  
JULY 15, 2003  
MONTGOMERY B. HURLEY  
58542LS

RENEWS: 6/30/13

JOB NAME: ALDER CREEK

JOB NUMBER: 2641

DRAWN BY: JOH

CHECKED BY: NSW

DWG NO.: 022813 2641EXB

ENGINEERING • PLANNING • LANDSCAPE ARCHITECTURE  
FORESTRY • SURVEYING



LICENSED IN OR & WA

13910 SW GALBREATH  
DRIVE, SUITE 100  
SHERWOOD, OR 97140  
PHONE: (503) 925-8799  
FAX: (503) 925-8969

OFFICES LOCATED IN REDMOND, OR & VANCOUVER, WA

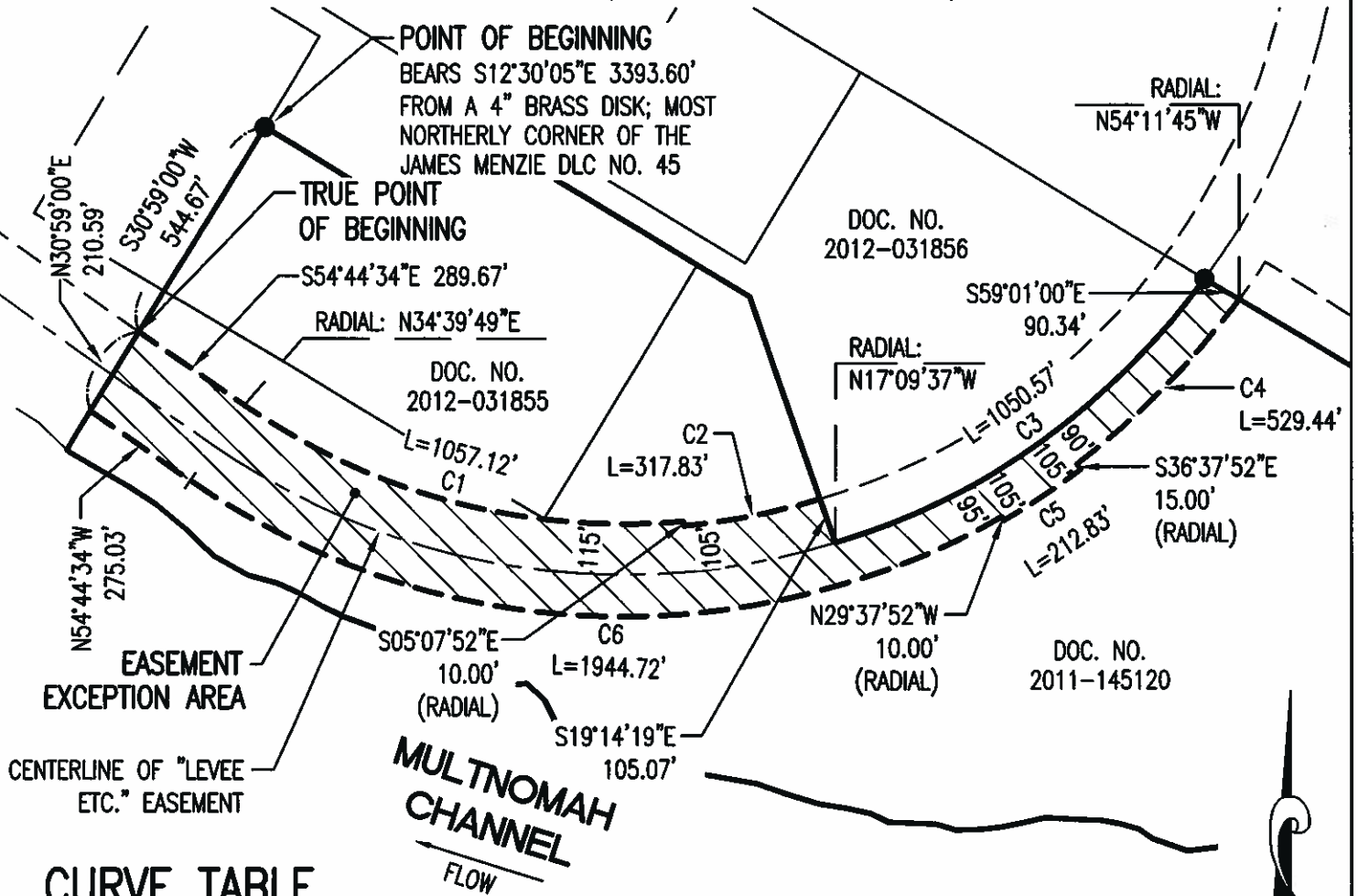
# EXHIBIT B

SHEET 3 OF 4

## PREPARED FOR

PORTLAND HARBOR HOLDINGS II, LLC.  
3855 ATHERTON ROAD  
ROCKLIN, CA 95765

LOCATED IN THE JAMES MENZIE DLC NO. 45,  
ALSO BEING LOCATED IN SECTIONS 27 AND 28,  
TOWNSHIP 2 NORTH, RANGE 1 WEST, WILLAMETTE  
MERIDIAN, MULTNOMAH COUNTY, OREGON



## CURVE TABLE

CURVE	RADIUS	DELTA	LENGTH	CHORD
C1	1522.02'	39°47'41"	1057.12'	S75°14'01"E 1036.00'
C2	1532.02'	11°53'11"	317.83'	N78°55'32"E 317.26'
C3	1637.02'	36°46'12"	1050.57'	N54°27'18"E 1032.63'
C4	1727.02'	17°33'53"	529.44'	S44°35'11"W 527.37'
C5	1742.02'	7°00'00"	212.83'	S56°52'08"W 212.70'
C6	1732.02'	64°19'55"	1944.72'	N87°27'55"W 1844.17'

SCALE 1" = 400 FEET



3-6-13

REGISTERED  
PROFESSIONAL  
LAND SURVEYOR

*Handwritten signature*

OREGON  
JULY 15, 2003  
MONTGOMERY B. HURLEY  
58542LS

RENEWS: 6/30/13

JOB NAME: ALDER CREEK

JOB NUMBER: 2641

DRAWN BY: JOH

CHECKED BY: NSW

DWG NO.: 022813 2641EXB

ENGINEERING • PLANNING • LANDSCAPE ARCHITECTURE  
FORESTRY • SURVEYING



LICENSED IN OR & WA

13910 SW GALBREATH  
DRIVE, SUITE 100  
SHERWOOD, OR 97140  
PHONE: (503) 925-8799  
FAX: (503) 925-8969

OFFICES LOCATED IN REDMOND, OR & VANCOUVER, WA

# PREPARED FOR

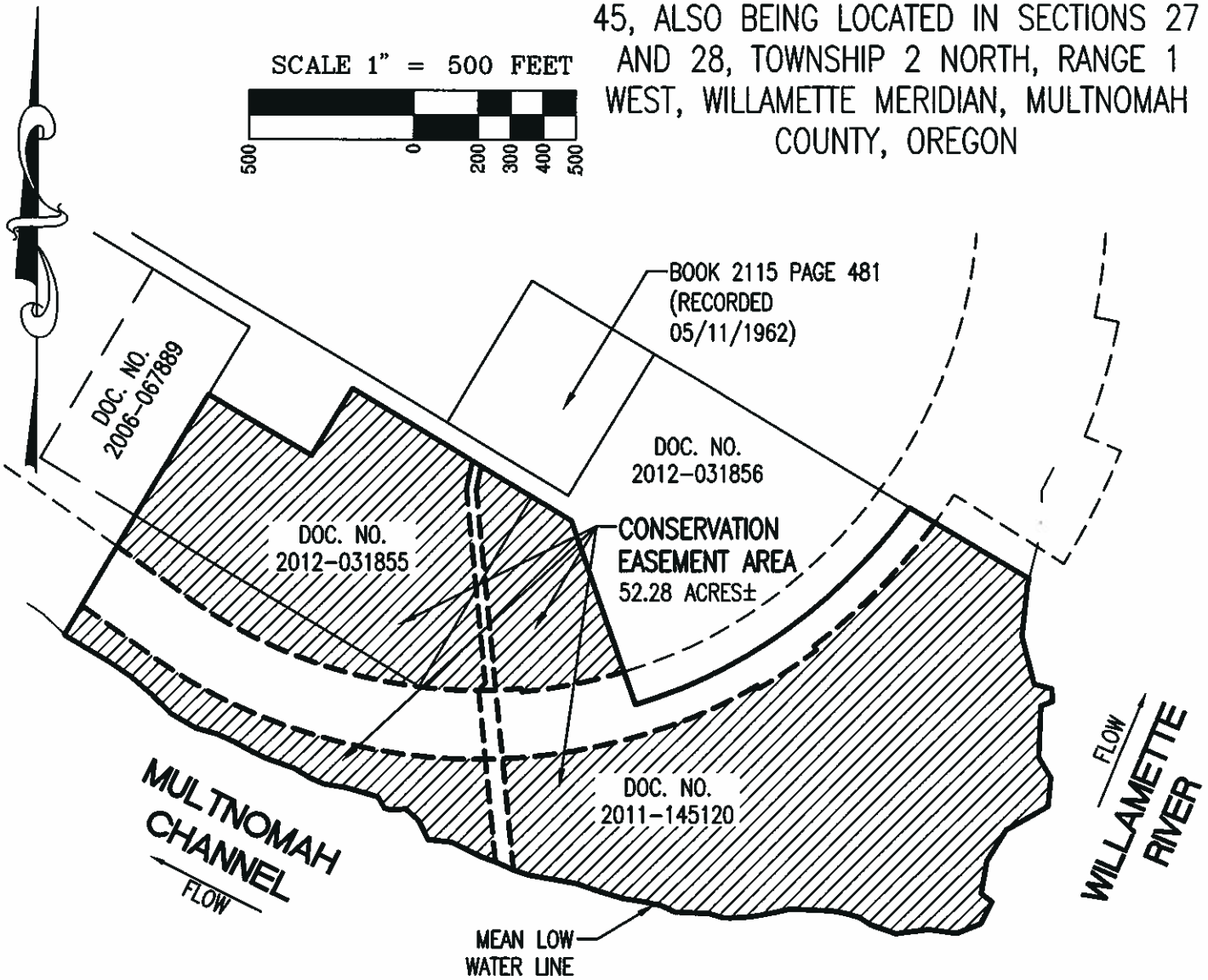
PORTLAND HARBOR HOLDINGS II, LLC.  
3855 ATHERTON ROAD  
ROCKLIN, CA 95765

SHEET 4 OF 4

# EXHIBIT B

LOCATED IN THE JAMES MENZIE DLC NO. 45, ALSO BEING LOCATED IN SECTIONS 27 AND 28, TOWNSHIP 2 NORTH, RANGE 1 WEST, WILLAMETTE MERIDIAN, MULTNOMAH COUNTY, OREGON

SCALE 1" = 500 FEET



## LEGEND

DOC. NO. DOCUMENT NUMBER PER MULTNOMAH COUNTY DEED RECORDS

3-6-13

REGISTERED  
PROFESSIONAL  
LAND SURVEYOR

OREGON  
JULY 15, 2003  
MONTGOMERY B. HURLEY  
58542LS

RENEWS: 6/30/13

JOB NAME: ALDER CREEK
JOB NUMBER: 2641
DRAWN BY: JOH
CHECKED BY: NSW
DWG NO.: 022813 2641EXB

ENGINEERING • PLANNING • LANDSCAPE ARCHITECTURE  
FORESTRY • SURVEYING



LICENSED IN OR & WA

13910 SW GALBREATH  
DRIVE, SUITE 100  
SHERWOOD, OR 97140  
PHONE: (503) 925-8799  
FAX: (503) 925-8969

OFFICES LOCATED IN REDMOND, OR & VANCOUVER, WA

**TABLE FROM ALDER CREEK EFA**

**EXHIBIT B**

**Annual Default Distribution**

<b>Task</b>	<b>Total Cost</b>	<b>Recurrence Interval (in years)</b>	<b>Annual Distribution</b>
Annual Bio/Habitat Survey	\$1,040	1	\$1,040
Vehicle (fuel)	\$380	1	\$380
Invasive Plant Control (herbicide)	\$500	2	\$250
Invasive Plant Control (labor)	\$1,550	1	\$1,550
Levee Vegetation Removal	\$200	2	\$100
Trash Collection/disposal	\$300	1	\$300
Insurance – General	\$113	1	\$113
Annual Report Prep	\$1,180	1	\$1,180
<b>Total Average Annual Expenses</b>			<b>\$4,913.00</b>

# Exhibit L

## Other Environmental Documentation

**The following documents are included on the enclosed Compact Disc (hard copies are available upon request):**

Exhibit L-1	Wetland Delineation and Verification Letter from DSL
Exhibit L-2	Cultural Resources Report and Addendum
Exhibit L-3	Nationwide Permit 27 Authorization from the USACE
Exhibit L-4	Biological Opinion
Exhibit L-5	Removal/Fill Permit from DSL
Exhibit L-6	Letter of Approval from SIDIC
Exhibit L-7	Multnomah County Permits (Large Fills, Design Review, Greenway, and Hillside Development)
Exhibit L-8	Drainage Report
Exhibit L-9	Seepage Analysis
Exhibit L-10	Erosion and Sediment Control Plan
Exhibit L-11	Geotechnical Report
Exhibit L-12	Hydraulic and Hydrologic Report



# **Exhibit M**

## **Construction Drawings**

**The construction drawings are included on the enclosed Compact Disc (hard copies are available upon request).**