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MEMORANDUM

To:	Kelly Madalinski, Port of Portland	**Date:**	September 30, 2011
From:	Elizabeth Appy and Anna Spooner, Anchor QEA	**Project:**	050332-01.20
Cc:	Mike Schiewe, Anchor QEA		
Re:	Terminal 4 Phase I Removal Action Updated Mitigation Conceptual Plan		

INTRODUCTION

This memorandum is an update to the May 20, 2011 Draft Terminal 4 Phase I Removal Action Mitigation Conceptual Plan memorandum, and describes the Port of Portland's (Port's) selected mitigation conceptual plan for the compensatory mitigation activities associated with the Terminal 4 Phase I Removal Action project that was implemented in 2008. Pursuant to the U.S. Environmental Protection Agency (USEPA)-approved schedule for development of the revised Mitigation Work Plan, the Port requests that USEPA and its partners review the proposed mitigation concept in this memorandum and provide feedback before the Port submits a Mitigation Work Plan.

CONCEPTUAL MITIGATION PLAN

The Port has selected to purchase the equivalent of 0.39 acres of mitigation at a habitat restoration site being developed by Wildlands, Inc. (Wildlands) at the Alder Creek site on the southern tip of Sauvie Island, Oregon.

The following sections summarize the background; the Alder Creek restoration concept; the status of the property purchase by Wildlands, the status of project feasibility studies that have been completed or are currently being implemented; long-term monitoring and maintenance; the anticipated schedule; and next steps.

BACKGROUND

At the time of submittal of the May 20, 2011 Draft Mitigation Conceptual Plan memorandum, the Port was in the process of evaluating two mitigation opportunities: (1)

0.39 acres of enhancement on the Swan Island South shoreline; and (2) the purchase of 0.39 acres of mitigation from a habitat restoration site being developed by Wildlands at the Alder Creek site on the southern tip of Sauvie Island.

After evaluation and as discussed further below, the Port has opted to move forward on the Wildlands option. The Alder Creek project will create a habitat complex comprised of new active channel margin, shallow water, and riparian components that will improve critical habitat conditions for the species whose critical habitat was impacted by the placement of the riprap cap armor in Wheeler Bay as part of the Phase I Removal Action, as determined in the 2008 Biological Opinion (BiOp; NMFS 2008). Specifically, those species include the Upper Willamette River (UWR) spring-run Chinook salmon (*Oncorhynchus tshawytscha*), UWR steelhead (*O. mykiss*), Lower Columbia River (LCR) Chinook salmon, and LCR steelhead. LCR coho (*O. kisutch*) also reside in the Lower Willamette River, although their critical habitat has not yet been designated.

DESCRIPTION OF ALDER CREEK CONCEPT

The Port proposes to buy the equivalent of 0.39 acres, which is the amount determined by USEPA as mitigation for the Terminal 4 Phase I Removal Action project. The mitigation was deemed necessary under the 2008 BiOp because of the riprap placed for armoring in Wheeler Bay. The purchase of mitigation acreage from Wildlands at the Alder Creek site on the southern end of Sauvie Island will satisfy the Port's mitigation requirement for those activities covered under the BiOp. As part of the 2011 Wheeler Bay repair activities, additional riprap is expected to be placed where there currently is no existing riprap over 150 square feet (0.003 acre) between elevation 15 feet National Geodetic Vertical Datum (NGVD) and 16.7 feet NGVD (ordinary high water), which does not substantially change the overall acreage requirement of 0.39 acres. This additional acreage will be updated or confirmed after the repair activities have been constructed and as-built drawings have been developed.

The proposed project concept for Alder Creek is shown on Figures 1 and 2 and involves removing the existing 32-acre sawmill complex, removing an associated private levee, and restoring the site with a mosaic of active channel margin (mudflats and tidal marsh), shallow water channels, and riparian habitats. The sawmill complex is located at the southernmost tip of Sauvie Island, outside the U.S. Army Corps of Engineers (USACE) levee (Wildlands

2011). The preliminary project design consists of four main elements. The following descriptions generally describe the type of enhancement and/or restoration activities proposed for each element as provided by Wildlands (2011).

Element 1 – Create shallow subtidal (i.e., shallow water) channels: Material will be excavated to create meandering shallow water channels throughout the site. The shallow water channels will be connected to Multnomah Channel to the west and the Willamette River to the east. These connections will allow for flow to enter the newly created channels, providing high-value, year-round, rearing habitat for juvenile salmon and steelhead as well as lamprey ammocoetes. (Wildlands 2011)

Element 2 – Create tidally influenced freshwater marsh/mudflat (i.e., active channel margin habitat): Created tidally influenced freshwater marsh/mudflat will be the most abundant habitat type on the site once it is fully restored. Material will be excavated to an elevation that will naturally sustain tidally influenced freshwater marsh/mudflat habitat. This habitat will be contoured to facilitate flooding and draining with the tidal fluctuations. The tide will flow into and out of the area, creating a complex of both vegetated marsh and mudflat. Clumps of tule root matter will be planted sporadically throughout the marsh habitat, as needed, to promote marsh habitat establishment. This area will provide rearing, foraging, and cover habitat for juvenile salmon and steelhead, as well as lamprey ammocoetes. The substrate in this habitat will provide habitat for invertebrates, an important prey source for fish, shorebirds, and other wildlife. (Wildlands 2011)

Element 3 – Establish, preserve, and enhance riparian habitat: The southern portion of the site that borders the river supports small patches of riparian trees and shrubs. In some areas, this riparian habitat will be enhanced with native shrub and tree plantings. The existing high-quality habitat will be preserved, except where the created channels will be connected to Multnomah Channel and the Willamette River. A riparian buffer will be established around the marsh and channels created on the southern portion of the site by planting native riparian shrub and tree species. Several small islands planted with riparian species will be established within the proposed marsh/mudflat area. Establishing and preserving riparian habitat along the channels and marsh/mudflat 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, and Pacific lamprey. The material excavated to create the channels and the marsh/mudflat areas will be moved to the northern portion of the site, landward of the USACE levee. Upland riparian habitat will be established over this entire area. Upland riparian habitat established landward of the USACE levee is expected to provide a buffer from adjacent land uses and habitat for birds and terrestrial wildlife, as well as contributing additional organic material to Multnomah Channel. The riparian areas will be established by planting container stock, bare root, and/or live stakes of native riparian shrub and tree species. (Wildlands 2011)

Element 4 – Provide habitat complexity: Engineered log jams will be installed along the outer edge of the site along Multnomah Channel and the Willamette River. In addition to the log jams, large woody debris will be anchored along the created channels. Log jams and large woody debris provide cover 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 may be installed on the site. (Wildlands 2011)

STATUS OF PROPERTY PURCHASE AND PROJECT FEASIBILITY STUDIES

Wildlands is in the process of purchasing the Alder Creek site and is working with the Portland Harbor Natural Resource Trustees (Trustees) on an implementation plan for the proposed project. As part of the purchasing process, Wildlands submitted a Prospective Purchaser Agreement (PPA) application to the Oregon Department of Environmental Quality (DEQ) on September 3, 2010 (URS 2011) notifying DEQ of their plan to purchase the property. The proposal for DEQ to enter into this PPA is currently out for public comment, and comments are due October 3, 2011. A PPA is a legally binding agreement between DEQ and a prospective purchaser of real property that facilitates the acquisition, cleanup, and redevelopment of contaminated property in a manner that provides public benefit. A PPA must be negotiated with DEQ before the purchaser acquires an interest in the property (DEQ 2011). Wildlands has been coordinating with DEQ to determine the nature and extent of site contamination and to develop a work plan for the proposed restoration project.

The locations and types of restoration and enhancement activities proposed for the site were chosen based on a preliminary opportunities and constraints analysis, existing topography,

and limiting factors for salmon and steelhead (Wildlands 2011). Prior to finalizing the restoration design, additional environmental, cultural, biological, geomorphologic, hydrologic, and hydraulic studies will be conducted to ensure that the design is both feasible and sustainable (Wildlands 2011). Wildlands has already completed nature and extent of chemical contamination and other feasibility analyses for the Alder Creek site as follows:

- Phase I Environmental Site Assessment (ESA)
- Phase II ESA, which included collection and analysis of surface and subsurface soils (test pits and borings), and groundwater
- Cultural Resources Survey and Report (for water-side restoration area)
- Preliminary Title Report (and resolution of title matters)
- Boundary Survey
- Topographic Survey
- Geotechnical Assessment

Additional site analyses that are either in progress or are planned include the following:

- Property Line Adjustment
- Wetland Delineation
- Biological Resources Report
- Hazardous Building Materials Assessment
- Cultural Resources Documentation of Existing Structures
- Cultural Resources Survey and Report (for upland restoration area)
- Hydraulic and Hydrologic Assessment

Overall, studies done to date have not identified any feasibility issues that would prevent this project from moving forward.

LONG-TERM MONITORING AND MAINTENANCE AND PERMANENT SITE PROTECTION

Wildlands will provide long-term monitoring and maintenance for the site. Initially, there is an establishment period in which project performance criteria will be monitored and maintenance activities would occur as necessary. The establishment period consists of the 5 years following construction and planting of the site, or until the performance standards

have been met, whichever occurs later. During the establishment period, measures will be taken to control invasive species (including Himalayan blackberry and reed canary grass) so that the native species are able to establish and thrive, thereby reducing or eliminating the need for invasive species control after the establishment period. During the establishment period, the maintenance, monitoring, and management activities for the site will be conducted by Wildlands. The site is expected to become fully self-sustaining by the end of the establishment period (Wildlands 2011). Specific performance criteria for this establishment period will be developed by Wildlands in the future in conjunction with the Trustees. It is expected that Wildlands will develop performance standards for each year of the 5-year establishment period for hydrology, native vegetation, log jams and large woody debris, invasive species, and permanent protection to ensure that the restored habitats on the site function as designed (Wildlands 2011).

After the 5-year establishment period, the long-term maintenance and monitoring period will begin. An endowment fund managed by a third party will be set up to generate interest, which would cover the maintenance and monitoring activities in perpetuity. To provide permanent protection of the site, a conservation easement or deed restriction for the site will be granted to a Trustee-approved non-profit entity or government organization (URS 2011).

ANTICIPATED SCHEDULE

Wildlands anticipates completing the land ownership transaction in early 2012 and developing the project during the 2012 in-water work window. Wildlands proposes the following preliminary schedule for the Alder Creek project (pursuant to receiving necessary permits and regulatory approvals and the completion of the restoration design plans and specifications):

Timeframe	Activities
Fall/Winter 2011	• Finalize Prospective Purchaser Agreement; acquire/close on property acquisition • Conduct hazardous building material assessment • Finalize restoration design and plans and specifications
Spring 2012	• Obtain regulatory permits • Procure restoration contractors

Timeframe	Activities
Summer 2012	• Demolish existing structures. Excavate site to final grades. Collect sediment samples for laboratory analysis from final excavation footprint. Install temporary erosion control best management practices at restoration and disposal sites. Install marsh vegetation plantings and woody species.
Fall 2012	• Install native woody bare root plants • Excavate connections to establish surface water connections with Willamette River and Multnomah Channel
Winter 2012	• Submit post-construction report, including sediment analytical data, to DEQ • Record conservation easement or deed restriction over site
2013-2016	• Monitor site to ensure that success criteria are being met (success criteria will be developed in the future in consultation with the Portland Harbor Trustees); conduct maintenance as needed
Summer 2015	• Conduct porewater sampling (if appropriate based on site conditions)
Fall 2015	• Submit porewater sampling report to DEQ
2016	• Begin long-term monitoring and maintenance of site

Source: URS (2011)

NEXT STEPS

- The Port will continue coordination with Wildlands to secure the 0.39 acres of mitigation.
- The Port will plan to set up a meeting with USEPA and Wildlands to further discuss the details related to the proposed project.
- After USEPA and its partners provide feedback, the Port will provide a Mitigation Work Plan to USEPA. This Mitigation Work Plan is anticipated to be a restoration work plan that Wildlands is currently developing for the Alder Creek site.

REFERENCES

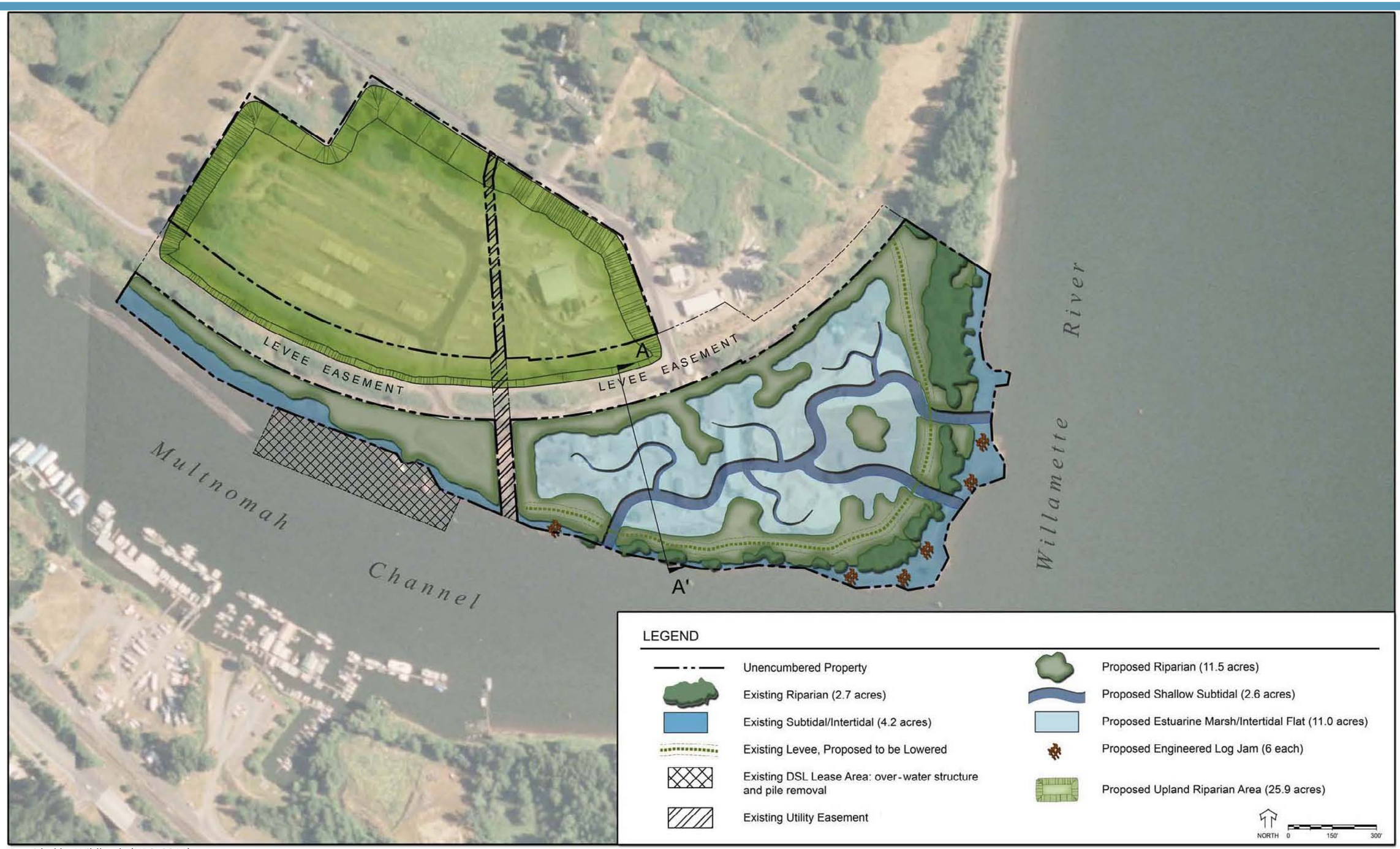
National Marine Fisheries Service (NMFS), 2008. Endangered Species Act Section 7 Formal Consultation and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Consultation for the U.S. Environmental Protection Agency and Port of Portland Terminal 4 Superfund Phase I of the Removal Action, Willamette River (HUC 17090012), Multnomah County, Oregon. NMFS Number 2007/08174, July 22, 2008.

Oregon Department of Environmental Quality (DEQ), 2011. Proposal for Restoration and Consent Judgment for the Alder Creek Lumber Company Site. Public Notice issued on September 1, 2011 by DEQ.

URS, 2011. Restoration Work Plan for the Alder Creek Mill Site. Prepared for Portland Harbor Holdings II, LLC. August 2011.

Wildlands, 2011. Alder Creek Restoration Project, Sauvie Island, Oregon. Prepared by Wildlands, Inc. August 2011.

FIGURES



Provided by Wildlands (URS, 2011)

Figure 1
Wildlands Alder Creek Conceptual Restoration Design
Terminal 4 Phase I Removal Action Mitigation
Port of Portland

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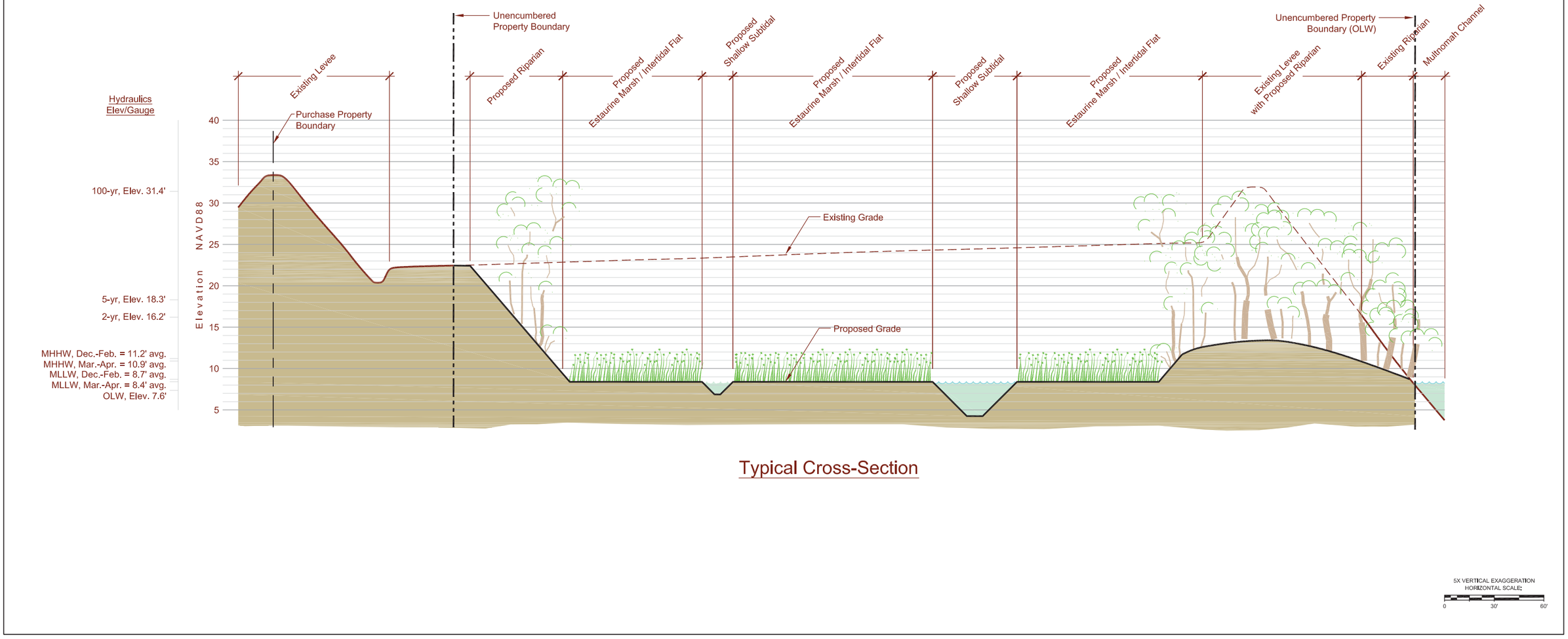

Typical Cross-Section

Provided by Wildlands (URS, 2011)

Figure 2
Wildlands Alder Creek Conceptual Restoration Typical Cross Section
Terminal 4 Phase I Removal Action Mitigation
Port of Portland

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