

**USEPA Comments and Port Responses – Port of Portland, Terminal 4 Phase I Removal Action
September 30, 2011 Updated Mitigation Conceptual Plan Memorandum**

Comment No.	Page No. (Document page, not PDF page)	USEPA Comment	Port Response
GENERAL COMMENTS			
1		<p>In general, EPA supports Wildlands proposed restoration project at the Alder Creek site. The project will create much needed shallow water off-channel habitat in the Lower Willamette River. This habitat will benefit fish and wildlife including salmonid species listed as threatened under the Endangered Species Act. In addition, it appears that the proposed restoration plan will meet the Port’s mitigation requirements. However, EPA would like to caution the Port that the proposed Wildlands restoration project has not been completed. As a result, EPA will need assurances that should the Wildlands project fall through for any reason or should the project not be completed in the required timeframe, the Port will still be required to provide compensatory mitigation by October 2015 in accordance with the agreed upon schedule.</p>	<p>The Port of Portland (Port) agrees with the U.S. Environmental Protection Agency (USEPA) that the proposed purchase of mitigation acres from Wildlands will meet the Port’s mitigation requirements and is pleased that USEPA supports the proposal. The Port is aware of the risks associated with the Wildlands project not moving forward and has taken those risks under consideration. Based on all the effort expended to date by Wildlands to move this project forward, the Port believes there is minimal risk that this project will not be completed. However, if it is not completed, the Port understands that it is still obligated to complete its mitigation requirement in accordance with the agreed upon schedule.</p>
SPECIFIC COMMENTS			
1		<p>The Wildlands Alder Creek project is not yet an official mitigation bank with an approved mitigation bank instrument and does not appear ready or able to sell mitigation credits to the Port at this time. Wildlands must still successfully maneuver through many steps before the mitigation bank would be considered complete. Mitigation banks must have an approved mitigation plan and other assurances in place before credits can be provided to purchasers (CFR 230.93(b)(2)). Credit release schedules are tied to performance milestones and banks must have a mitigation bank instrument approved by the U.S. Army Corps of Engineers (USACE) District Engineer before credits can be sold (CFR 230.93 (d)(6)(iii)(B)). The Port</p>	<p>The Alder Creek project has been set up as a conservation bank. The National Oceanic and Atmospheric Administration (NOAA) approached Wildlands about adding the Alder Creek site as a conservation bank under the Umbrella Banking Agreement for the Columbia Basin. The conservation bank program is administered by NOAA/National Marine Fisheries Service (NMFS) or the U.S. Fish and Wildlife Service (USFWS) and is consistent with recovery plans and local/regional conservation planning efforts. In addition, the conservation bank provisions are consistent with the General Compensatory Mitigation Requirements identified in 40 Code of Federal Regulation (CFR), Part 230, §332.3 of the Final</p>

**USEPA Comments and Port Responses – Port of Portland, Terminal 4 Phase I Removal Action
September 30, 2011 Updated Mitigation Conceptual Plan Memorandum**

Comment No.	Page No. (Document page, not PDF page)	USEPA Comment	Port Response
		<p>should include a copy of the Alder Creek mitigation bank instrument and credit release schedule in the Mitigation Work Plan so that EPA can evaluate the Port’s proposal to use mitigation bank credits for the Phase I Removal Action project.</p>	<p>Mitigation Rule. The focus of the program is on recovery of listed species and the protection of habitat for those species. This focus on local/regional conservation planning and recovery of listed species and their habitat is consistent with the general mitigation project requirements that USEPA previously identified for the Terminal 4 Early Action project in the Action Memorandum (Action Memo; USEPA 2006), as well as information contained in the Terminal 4 Phase I Removal Action 404(b)(1) Evaluation (USEPA 2008). The Action Memo states that “All compensatory mitigation must be consistent to the maximum extent practicable with any established mitigation strategies or conservation initiatives supported by state and federal resource agencies for the Lower Willamette River basin.” The Action Memo and the Terminal 4 Phase I Removal Action 404(b)(1) Evaluation further state that “USEPA may consider mitigation proposals that do not meet all of the performance criteria if the Port demonstrates that the proposal otherwise contributes to conservation and recovery of Endangered Species Act (ESA) listed species and/or other relevant conservation initiatives for the Lower Willamette River basin.” As such, purchasing mitigation acres from an approved conservation bank with a focus on ESA-listed species and their habitat is appropriate and consistent with past and current requirements.</p> <p>In addition, Wildlands has been working with the Portland Harbor Trustees on establishing the site as a restoration site for settling Natural Resource Damage (NRD) liability. Through this approach, the area served by the site will be mainly the</p>

**USEPA Comments and Port Responses – Port of Portland, Terminal 4 Phase I Removal Action
September 30, 2011 Updated Mitigation Conceptual Plan Memorandum**

Comment No.	Page No. (Document page, not PDF page)	USEPA Comment	Port Response
			<p>Portland Harbor Superfund Site. The credit evaluation is being done using the Habitat Equivalency Analysis (HEA) method which was developed by NOAA for use in NRD assessments to scale compensation for habitat damage resulting from oil spills and other contaminant-related impacts. In addition, the USACE has also used the method to scale compensation for habitat impacts resulting from large projects. The HEA method is based on replacing lost ecological services (functions and values) resulting from an impact rather than replacing lost acreage of similar habitat. This method is consistent with the 2008 Compensatory Mitigation Rule, as well as the Action Memo, which states that “Preference will be given to compensatory mitigation plans that are consistent with habitat function.”</p> <p>The conservation bank development has been modeled after the mitigation bank process and will result in the preparation of similar documents. As stated previously, the conservation bank elements are consistent with USACE and USEPA’s compensatory mitigation requirements identified in the Final Mitigation Rule. Wildlands is preparing a Conservation Bank Document, which will be used, in part, as the basis for the submittal for the Mitigation Work Plan. This document will contain the following pieces:</p> <ul style="list-style-type: none"> • Habitat Development Plan, including Performance Standards • Long-term Management Plan • Service Area • Title Report and Legal Parcel Map

**USEPA Comments and Port Responses – Port of Portland, Terminal 4 Phase I Removal Action
September 30, 2011 Updated Mitigation Conceptual Plan Memorandum**

Comment No.	Page No. (Document page, not PDF page)	USEPA Comment	Port Response
			<ul style="list-style-type: none"> • Credit Evaluation • Conservation Easement Form • Property Assessment and Acknowledgment • Phase 1 and 2 Environmental Site Assessments • Sales Agreement/Credit Receipt form • Financial Assurances • Other Environmental Documentation, including the Cultural Resources Report and Biological Assessment <p>As discussed at the conference call meeting on December 5, 2011, this document is expected to be available on April 1, 2012. As part of the Mitigation Work Plan submittal, the Port will provide a cover memorandum that details how the Alder Creek restoration project complies with the mitigation requirement for the T4 Phase I Removal Action project. As such, this cover memorandum along with components of the Conservation Bank Document will be the Mitigation Work Plan submittal.</p>
2		<p>The costs associated with compensatory mitigation may be significant. The Interagency Review Team (IRT) has made a preliminary estimate that the Alder Creek site will be able to produce 28 acres of mitigation area that translates into 630 discounted service acres-years (dsays). Therefore, at this estimated rate of 22.5 dsays/acre, the Port of Portland would need to purchase over 8.7 dsays to comply with the requirement for 0.39 acres of mitigation. The Port will need to carefully describe the costs associated with this purchase in the planned Mitigation Work Plan and demonstrate the ability to finance a purchase of this magnitude.</p>	<p>The Port agrees that the cost associated for settling its compensatory mitigation requirements is significant. The Port is committed to following through with the purchase of 0.39 acre of mitigation. Pursuant to the Administrative Settlement Agreement and Order on Consent (AOC) for Removal Action, the Port must demonstrate financial assurance for the obligations under the AOC each year. The most recent financial assurance demonstration was provided on October 28, 2011, thus, demonstrating the Port’s ability to finance such a project.</p>

**USEPA Comments and Port Responses – Port of Portland, Terminal 4 Phase I Removal Action
September 30, 2011 Updated Mitigation Conceptual Plan Memorandum**

Comment No.	Page No. (Document page, not PDF page)	USEPA Comment	Port Response
3		<p>The October 2011 <i>Restoration Work Plan for the Alder Creek Mill Site</i>, prepared by URS and presented in Attachment D of the PPA, describes a Phase II Environmental Site Assessment (ESA) completed at the Alder Creek site which identified the presence of polychlorinated biphenyls (PCBs), semi-volatile organic compounds (SVOCs), total petroleum hydrocarbons (TPH) and metals at the site. The PPA specifies that the material with significant or visible contamination will be taken off site for disposal at a permitted landfill, that lightly contaminated soil and wood waste will be managed upland through a Solid Waste Letter of Authorization and that follow-up porewater and sediment sampling will be performed following excavation of the habitat area. However, unanticipated environmental conditions may delay implementation of the restoration project and completion of compensatory mitigation in the required time frame.</p>	<p>Comment noted. The Port is aware of the risk of developing a mitigation project in an industrial area like Portland Harbor. Uncovering unanticipated environmental conditions as the uplands are disturbed is a risk that can exist in most locations in Portland Harbor and is not unique to the Alder Creek site. In fact, this is a risk that the Port would encounter in any of the sites it considered to satisfy its mitigation requirements. Wildlands has experience dealing with unanticipated conditions. For example, Wildlands constructed a restoration project along Hylebos Creek near Commencement Bay in Tacoma, Washington, and found an unexpected area of chemical contamination. Due to their extensive coordination with the agencies prior to construction, Wildlands was able to address the issue and move construction forward without substantial delays.</p>
4		<p>The Alder Creek project proposes to remove a levee along the river front to facilitate inundation of much of the site. The Portland Harbor Natural Resource Trustee Council notes that the removal of this levee would require coordination with the Sauvie Island Drainage District. EPA will need assurances that the Port will still be able to meet the previously approved schedule regardless of any obstacles that Wildlands may encounter with their plan to complete construction in 2012.</p>	<p>Again, as noted in the previous response, the Port is aware that there are challenges with implementing a project that excavates upland industrial area and creates new aquatic habitat. This is not a challenge that is unique to the Alder Creek site. Wildlands is experienced at developing aquatic restoration areas out of industrial uplands and has spent a great deal of effort evaluating the feasibility of this project. To date, there has been no identified obstacle that would make this project infeasible. The levee that is proposed for removal as part of the Alder Creek project is actually a private berm that is not managed by the Sauvie Island Drainage and Irrigation District (SIDID) or the USACE. Wildlands has discussed the removal of this berm with both the SIDID and</p>

**USEPA Comments and Port Responses – Port of Portland, Terminal 4 Phase I Removal Action
September 30, 2011 Updated Mitigation Conceptual Plan Memorandum**

Comment No.	Page No. (Document page, not PDF page)	USEPA Comment	Port Response
			the USACE, and neither agency has any issues with its removal.
5		Although the Conceptual Mitigation Plan appears to satisfy the compensatory mitigation requirements, the Conceptual Mitigation Plan does not describe the linkage between the T4 mitigation requirements and the proposed restoration project. In addition, the Conceptual Mitigation Plan does not describe the necessary performance standards. The Mitigation Work Plan will need to document that the restoration plan will meet the compensatory mitigation requirements. In particular, the Port will need to demonstrate that the mix of habitat types, functions, and values produced at Alder Creek include those that are required for mitigation by the Phase I Removal Action project.	The Mitigation Work Plan will document that the Alder Creek project will meet the compensatory mitigation requirements. In particular, the documentation will demonstrate that the mix of habitat types, functions, and values produced at Alder Creek include those that are required for mitigation for the Terminal 4 Phase I Removal Action project. The specifics are provided in Attachment 1 to this response as requested by USEPA and CDM during the December 5, 2011 conference call. In addition, the performance standards are currently being developed by Wildlands in conjunction with the Portland Harbor Trustees and their expert panel (which includes representatives from NOAA), and are expected to be completed by April 1, 2012.
ADDITIONAL SPECIFIC COMMENTS			
1		The Draft Mitigation Work Plan must demonstrate how the Wildlands Alder Creek project will be consistent with the proposed action that the Biological Opinion is based upon and how it will meet the terms and conditions.	The Mitigation Work Plan will demonstrate how the Alder Creek project is consistent with the “Habitat Improvements” section of the proposed action in the 2008 Biological Opinion (BiOp), as well as how the proposed project will offset impacts that occurred as part of the Terminal 4 Phase I Removal Action, as detailed in the BiOp. The specifics are provided in Attachment 2 to this response as requested by USEPA and CDM during the December 5, 2011 conference call.
2		In accordance with the agreed upon schedule, the compensatory mitigation must be completed by 2015. It is	This is a new interpretation of the schedule. The BiOp does not clearly state this interpretation, and for the last 2 years

**USEPA Comments and Port Responses – Port of Portland, Terminal 4 Phase I Removal Action
September 30, 2011 Updated Mitigation Conceptual Plan Memorandum**

Comment No.	Page No. (Document page, not PDF page)	USEPA Comment	Port Response
		clear that the intent was for the mitigation action to be constructed and well established (not newly planted) by 2015. The Port must demonstrate how the Wildlands Alder Creek project will meet this expectation that the mitigation plan be “carried out” by 2015.	the Port and USEPA have been defining the 5-year clause as 5 years until completing construction of the mitigation project. USEPA and NMFS have never before indicated that the first 5 years of monitoring was included in that timeframe. In addition, the USEPA-approved schedule assumes completing construction of the mitigation project by 2015. In any event, the Alder Creek site is anticipated to be constructed in 2012 and no later than 2014, which is well ahead of the 2015 requirement date.
3		The Biological Opinion included several other terms and conditions related to habitat mitigation at the Wheeler Bay site including the condition that aerial coverage of established (not newly planted) vegetation achieve 80 percent by year 5. The first five years of a mitigation project involve a fairly intensive amount of work including planting, replanting to replace vegetation that did not survive, monitoring, and maintenance to promote survival and control invasive species. The Biological Opinion clearly indicates that the time frame for the mitigation activities is to include this first 5 year period. Construction and initial planting in year 5 would not be an acceptable proposal. The Port will need to demonstrate how the Wildlands Alder Creek project will be able to meet this expectation of an established mitigation site by 2015.	The Wheeler Bay aerial coverage vegetation goals for Year 5 apply to the vegetation that was planted as part of the bioengineered portion of the shoreline stabilization action. This is not part of the compensatory mitigation requirement. Although the Port proposed this as compensatory mitigation in the Draft Mitigation Work Plan in September 2010, it was rejected. As such, this term and condition does not apply to the compensatory mitigation, although it is likely that a similar performance standard for vegetation will be included as part of the mitigation performance standards. Please also see the response to Additional Specific Comment No. 2, above. The Port disagrees that the BiOp clearly indicates that the timeframe for compensatory mitigation activities is to include this first 5-year period of monitoring.
4		The compensatory mitigation for the Phase 1 Removal Action must be functional by 2015. The Port will need to demonstrate how that goal will be achieved given the current schedule and inherent risks associated with the Wildlands proposal.	Please see responses to Additional Specific Comments No. 2 and No. 3, above.

**USEPA Comments and Port Responses – Port of Portland, Terminal 4 Phase I Removal Action
September 30, 2011 Updated Mitigation Conceptual Plan Memorandum**

Comment No.	Page No. (Document page, not PDF page)	USEPA Comment	Port Response
5		<p>The September 30th memorandum does not appear to address EPA’s June 25, 2011, comments which requested a clear correlation between the impacts (elevations and habitat types impacted) and the proposed mitigation (elevations, mitigation measures proposed). The mitigation acreage required is presented as 0.39 acres and the memorandum does not enumerate the elevations or habitat types affected to arrive at that figure. The Mitigation Work Plan will need to include a detailed description of the habitat types, elevations, and acreages affected and the calculations used to arrive at the compensatory mitigation acreage. The Mitigation Work Plan will need to demonstrate a direct correlation between the habitat types affected and those to be provided by the Wildlands Alder Creek project.</p>	<p>Please see response to Specific Comment No. 5, above, and Attachment 1.</p>

ATTACHMENT 1 TO USEPA COMMENTS
AND PORT RESPONSES – PORT OF
PORTLAND, TERMINAL 4 PHASE I
REMOVAL ACTION

SEPTEMBER 30, 2011 UPDATED
MITIGATION CONCEPTUAL PLAN
MEMORANDUM

WHEELER BAY IMPACTS AND ALDER CREEK RESTORATION BENEFITS

The impact requiring mitigation per the 2008 Biological Opinion (BiOp) and the 2008 Terminal 4 (T4) Phase I Removal Action 404(b)(1) Evaluation is the placement of riprap over 0.33 acres (X1.5) of shoreline habitat in Wheeler Bay between elevations +10 and +15 feet National Geodetic Vertical Datum (NGVD). The U.S. Environmental Protection Agency (USEPA) updated the required acreage to be 0.39 acres of substantial enhancement of shallow water habitat after considering the amount of sand and gravel material, placed over the riprap during construction as a pilot study, that still remained after 2 years of monitoring (see Attachment 2 for the 12/7/10 email from Sean Sheldrake to Kelly Madalinski). Also, see the BiOp and Attachment 2 for specifics related to the sand and gravel material placed as a pilot study. The proposed purchase of 0.39 acres of mitigation from the Alder Creek site is sufficient to offset these impacts, as described in more detail in the following sections.

Pre-construction Habitat in Wheeler Bay

The habitat impacted at Wheeler Bay was less suitable foraging and rearing habitat for Endangered Species Act (ESA) listed species than what is being proposed at Alder Creek. For example, the habitat at Wheeler Bay consisted of steep sloped shorelines, substrate with scattered debris and concrete, and a shoreline with little, if any, riparian vegetation that could overhang and provide cover in shallow water areas. These habitat elements provided benthic foraging opportunities for juvenile salmon species, although the substrate was degraded due to the presence of chemical contaminants. The habitat also consisted of shallow water, which is an important element for juvenile rearing. The rearing areas contained natural cover from large woody debris (LWD) accumulations but lacked overhanging riparian cover elements.

Specifically, prior to the Phase I construction, Wheeler Bay was characterized as follows:

- Generally over-steepened bank slopes and beach areas with adjacent scattered shrubs and grasses in the riparian area; however, there was a less steep beach area in the back of the bay (“pocket area”).
- Abundant debris (concrete and asphalt) was present on the banks that eroded onto the beach and there was scattered debris on the beach areas; the “pocket area” at the

back of the bay contained LWD accumulations.

- The area that was impacted by placement of riprap consisted of sandy beach material and a mix of sand and scattered debris (see Photo 1).
- The area that was impacted by placement of riprap also contained chemical contaminants in the sediment.

Impacts to Habitat in Wheeler Bay

The impacts to the Wheeler Bay shoreline, as stated in the BiOp, include those related to the placement of riprap on sandy beach material in Wheeler Bay between elevations +10 and +15 feet NGVD as follows:

- Displacement of beach habitat that could provide benthic feeding opportunities in the winter
- Loss of benthic feeding habitat that is inundated at higher flows

It should be noted that the area covered by riprap was chemically contaminated, and placement of the riprap for shoreline stabilization effectively isolated the area from active foraging by juvenile salmonids and other species. It should also be noted that a sand and gravel material was placed over the riprap material as a pilot study to see if it would stay in place. Photo 2 shows the Wheeler Bay shoreline stabilization area after construction and the 2010 repair activities.

Benefits of the Proposed Alder Creek Restoration Project

The Alder Creek project proposes to restore approximately 57.7 acres of an industrial upland site to a mosaic of shallow water channels, marsh, mudflat, riparian, and forest habitats. The site currently consists of a 32-acre lumber mill complex on the water side of the levee, surrounded by an earthen berm, which was constructed by the landowners in 1996 to protect the lumber mill from flood damage. There is a large log storage yard and associated buildings located on the 26 acres landward of the levee. The areas both landward and waterward of the levee have been extensively modified for uses associated with the lumber mill. Any existing habitats on the site will be enhanced by the proposed restoration activities, including invasive species management. Following restoration, the site will

include approximately 4.4 acres of riparian habitat, 2.1 acres of shallow water habitat (i.e., side channels), 25.4 acres of active channel margin beach/mudflat/marsh habitat, and 25.7 acres of forested upland habitat.

Elements of the proposed restoration project are shown on Figures 1 and 2 and include the following:

- Shallow water channels located off of the main channel that are protected from high velocity flows will provide year-round rearing and forage habitat that is rare in the Lower Willamette River for listed species and other aquatic species. The elevations of the proposed shallow water channels are between -1.5 and +1.6 feet NGVD. These shallow water channels are essentially off-channel habitat, as there is a protective riparian berm between the main channel and the shallow water channels, which is shown on Figures 1 and 2. The elevations at the Alder Creek site span a wider range than the impact area at Wheeler Bay, which provides newly created year-round benthic forage habitat, while the benthic forage habitat impacted at Wheeler Bay was only provided during the winter at higher flows.
- Freshwater marsh/mudflat/vegetation habitat will be the most abundant habitat type, which is expected to span elevations between 1.5 and 16.6 feet NGVD. Specifically, beach/mudflat habitat is expected to occur between approximate elevations 1.5 and 4.5 feet NGVD; herbaceous vegetation between approximate elevations 4.5 and 8.5 feet NGVD; and woody vegetation between approximate elevations 8.5 and 16.6 feet NGVD. This area is also essentially off-channel habitat and will provide rearing, forage, and cover habitat for juvenile salmon and steelhead, as well as other aquatic species. The substrate will provide habitat for invertebrates, which are an important prey source for listed species. The habitat impacted at Wheeler Bay occurred within this elevation range, although the impacted habitat was not completely protected from high velocity flows and did not contain ideal foraging conditions due to the chemical contaminants present, the scattered debris and concrete on the substrate, and the lack of adjacent riparian area.
- Establish, preserve, and enhance riparian habitat. As previously stated, the elevations of the Alder Creek project span a wider range than the impact area at Wheeler Bay and include adjacent riparian areas. This riparian habitat is expected to span between

approximate elevations 16.6 and 28.6 feet NGVD and will improve the function of the adjacent shallow water areas by shading open water, which helps to reduce water temperatures, and providing both cover from prey and food supply for fry, juvenile, and smolt salmon and steelhead. This will not only improve forage opportunities for listed species but also provides cover and habitat complexity. Forage habitat was impacted at Wheeler Bay according to the BiOp, and this restoration element will improve the forage function.

- Overall, the placement of riprap at Wheeler Bay impacted juvenile salmon forage habitat during the winter, as described in the BiOp. The Alder Creek project will create a mosaic of habitat types that together will provide not only new forage areas that are inundated year-round (including during the winter) but will also provide valuable rearing and cover habitat for listed species and other aquatic species. The Alder Creek project will result in habitat elements that are more suitable for ESA listed species as foraging and rearing areas than what was impacted at Wheeler Bay. In addition, the Alder Creek project is large, continuous, and will vastly improve habitat conditions for listed species, as well as all aquatic species within Portland Harbor. Due to the size and scope of the project, the potential for success is higher than for a much smaller sized project. These considerations increase the value of the proposed 0.39 acres of mitigation versus a stand-alone 0.39 acre project.

PHOTOS

ATTACHMENT 1 PHOTOS



Photo 1
Wheeler Bay shoreline looking east prior to the 2008
Phase I Removal Action

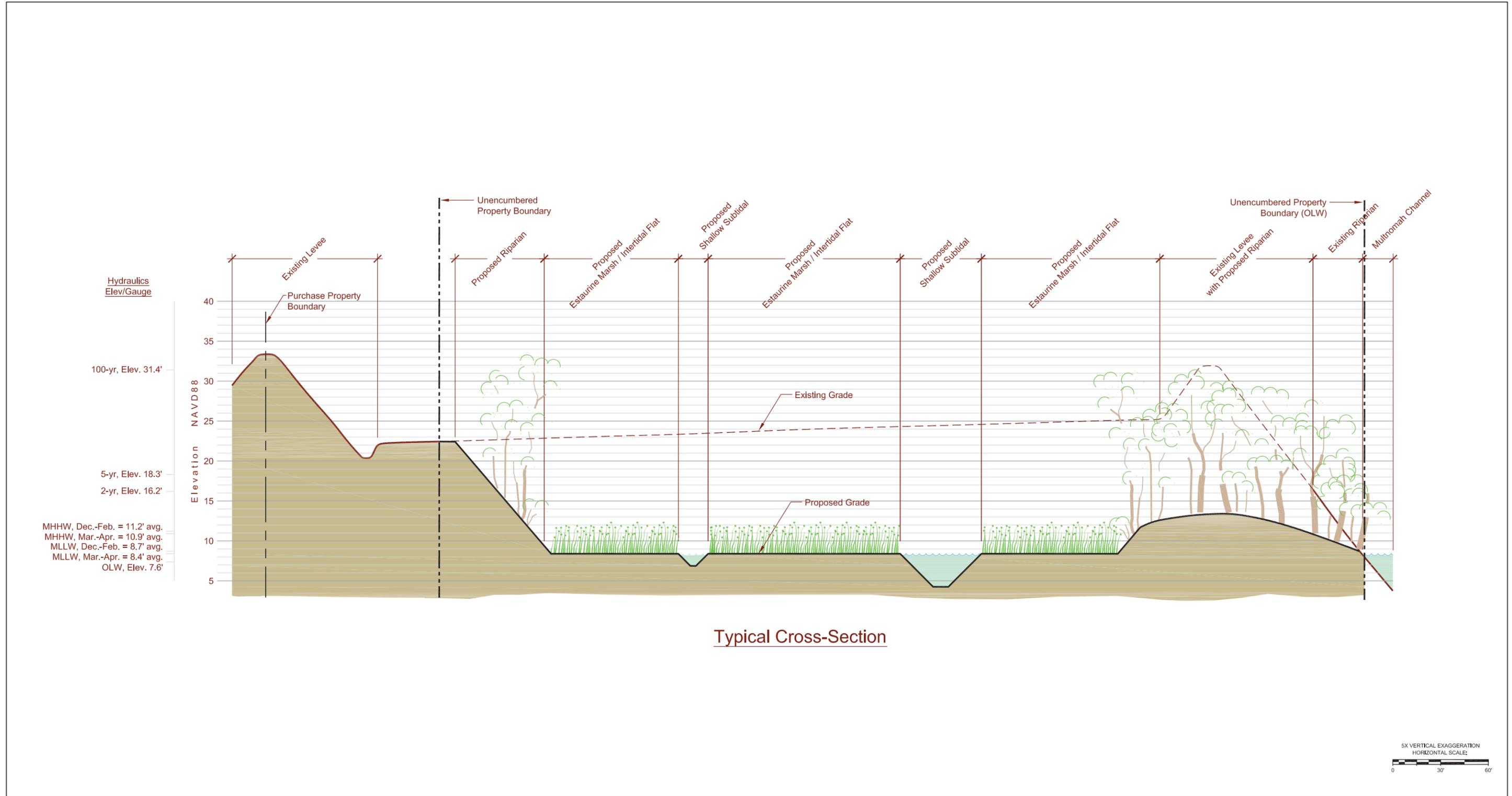


Photo 2
Wheeler Bay shoreline looking east after the 2010 Repair Activities

FIGURES



Provided by Wildlands (URS, 2011)



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

ATTACHMENT 2 TO USEPA COMMENTS
AND PORT RESPONSES – PORT OF
PORTLAND, TERMINAL 4 PHASE I
REMOVAL ACTION

SEPTEMBER 30, 2011 UPDATED
MITIGATION CONCEPTUAL PLAN
MEMORANDUM

CONSISTENCY BETWEEN ALDER CREEK PROJECT AND BiOp PROPOSED ACTION

The proposed action analyzed in the 2008 Biological Opinion (BiOp) for the Terminal 4 (T4) Phase I Removal Action Project included mitigation described under the “Habitat Improvements” subsection. As such, it is important to show that the Alder Creek project is consistent with this description to confirm that the analysis conducted in the BiOp is valid for the Alder Creek project. The “Habitat Improvements” portion of the proposed action is provided below in grey, italicized text, along with a description of how the Alder Creek project is consistent with it.

- *The Port will plan, carry out, and manage compensatory mitigation activities using performance standards and criteria described in 40 CFR Part 230 to compensate for the degradation or loss of 0.33 acres of shallow water habitat and other aquatic resources that will be adversely affected by the proposed removal action.*

The Port proposes to purchase 0.39 acres of mitigation from the Alder Creek site as the compensatory mitigation for the T4 Phase I Removal Action project. The Alder Creek project proposes to restore a former lumber mill site to a mosaic of shallow water channels, marsh, mudflat, riparian, and forest habitats. These types of habitat complexes are not common in the Lower Willamette River but are important habitat for listed species, as well as other aquatic species. The restored shallow water habitat, including the marsh and mudflat habitats, at the Alder Creek site will be more suitable for Endangered Species Act (ESA) listed species as foraging and rearing areas than what was impacted at Wheeler Bay. In addition to the shallow water habitat, the Alder Creek site will also restore riparian habitat, which increases the function of the adjacent shallow water habitats by shading open water, which helps to reduce water temperatures, and providing both cover from prey and food supply for fry, juvenile, and smolt salmon and steelhead. This will not only improve forage opportunities for listed species but also provides cover and habitat complexity. The performance standards are in the process of being developed and will at a minimum be consistent with performance standards and criteria described in 40 Code of Federal Regulations (CFR) Part 230.

- *Among other things the compensatory mitigation plan will be based on:*
 1. *Measureable, enforceable ecological performance standards, including a mitigation ratio of 1.5: 1.0 to offset resource losses due to the time lag between permitted impacts and completion of the compensatory mitigation actions*

It was determined that 0.39 acres be the required amount of mitigation after the U.S. Environmental Protection Agency (USEPA) considered monitoring results of the sand and gravel material that was placed over the riprap surface of the Wheeler Bay shoreline stabilization area. The acreage requirement is described in an email dated December 7, 2010 from Sean Sheldrake to Kelly Madalinski (see Attachment 2a).

2. *Regular monitoring to ensure completion*

As described in the September 30, 2011 memo, 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. 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 established to generate funds to cover the maintenance and monitoring activities in perpetuity.

3. *Assurances of long-term protection of compensation sites*

To provide permanent protection of the site, a conservation easement or deed restriction for the site will be recorded over the property and will be held by a Trustee-approved non-profit entity or government organization.

4. *Financial assurances*

Wildlands proposes to establish a letter of credit or bond for construction and performance. These financial assurances are posted to guarantee completion of habitat construction and performance in accordance with the Habitat Development Plan. As mentioned previously, an endowment fund will be set up to fund the long-term maintenance and monitoring activities.

5. *Identification of the parties responsible for specific project tasks*

See the responses to 2 and 3.

- *The Port will submit the Plan to NMFS for approval or disapproval within 2 years of the start of operations, and complete all actions necessary to mitigate the adverse effects of operations within 5 years of Plan approval. As described in 40 CFR 232.3(f)(2), NMFS will consider any time lag between commencement of sediment removal and the start of compensatory mitigation activities that exceeds 2 years to be an additional temporal loss of aquatic resource function when determining whether to approve or disapprove the proposed mitigation ratio.*

The Port initiated discussions with National Marine Fisheries Service (NMFS) and USEPA regarding a mitigation plan in July 2010, which was within 2 years of the start of the Phase I operation. Because the Port did not submit a Draft Mitigation Work Plan until September 2010, the Port committed to completing a mitigation project within 5 years from the end of October 2010. This commitment was formalized in a schedule modification, which is also captured in the current mitigation schedule.

- *The Port will also place sand and gravel over the riprap surface of the Wheeler Bay bank stabilization and cap to create a more natural habitat. The Port recognizes that the long-term viability of sand placement over a riprap surface depends on site-specific conditions such as wave action, the shape of the shoreline, nearby river activities, and river dynamics. The Port will place the sand at this location because the Wheeler Bay conditions may be conducive to sand staying in place. The Port will monitor the area as a pilot project to determine whether the site-specific conditions are conducive to maintaining a sand habitat layer over the riprap. If monitoring demonstrates that a sandy surface can be maintained long-term, this may be considered by NMFS and EPA when determining the appropriate mitigation project for the Wheeler Bay bank stabilization and cap.*

As mentioned previously, USEPA adjusted the amount of required mitigation based on the results of monitoring the habitat layer over two years.

ATTACHMENT 2a
USEPA EMAIL DATED
DECEMBER 7, 2010

From: Sheldrake.Sean@epamail.epa.gov
To: [Madalinski, Kelly](#)
Cc: [Elizabeth Appy](#); [Genevieve.Angle](#); [Ken Fellows](#); [Hollis, Michelle](#)
Subject: Re: Follow-up on the T4 Phase I Removal Action Mitigation Scope
Date: Tuesday, December 07, 2010 7:38:15 PM
Attachments: [T4 Ph I Description of Mitigation Sites and Concept 11-08-10.pdf](#)
[05033201-RP-YR1-007-MWP FIG 3.pdf](#)

Kelly,

EPA has reviewed the Port conceptual mitigation project scope, and has the following general comments.

BACKGROUND:

The original requirement per BiOp: $0.33 \text{ acres} \times 1.5 = 0.50 \text{ acres}$, with the caveat that if the sand stays in place, there may be an adjustment to the mitigation project (BiOp does not indicate the acreage).

In 2009 there was erosion upslope of the armor layer, and the Port repaired the erosion in fall 2010 by increasing, on 0.15 acres, the armor layer thickness and steepness to bring it up to a higher elevation, over the same footprint as before. No sand was placed. Therefore, 0.15 acres requires mitigation.

The Port indicates sand has stayed over the 0.18 acres of 0.33 acres that was not repaired, and say that is self mitigating, leaves $0.15 \text{ acres} \times 1.5 = 0.23 \text{ acres}$ to mitigate.

PROPOSAL FOR MITIGATION SITE

EPA and NMFS proposes to reduce the mitigation ratio to 1.0 due to sand retention at Wheeler Bay.

Original area where sand stayed: $0.18 \times 1.0 = 0.18 \text{ acres}$
Repaired area: $0.15 \times 1.5 = 0.23 \text{ acres}$

Total = 0.39 acres

This mitigation area is proposed assuming that "substantial enhancement" is completed as mitigation, not just preservation of an existing site with good habitat already, or just removing a bit of debris or similar.

Please revise the Port's submittals to conform to the above requirements and clearly indicate with some detail and photographs (if appropriate) the nature of the proposed mitigation (substantial enhancement or preservation) within 30 days.

Thank you.

S

Sean Sheldrake, RPM, Unit Diving Officer
USEPA, Region 10
Environmental Cleanup Office
1200 Sixth Avenue, Suite 900, ECL-110
Seattle WA 98101-3140
sheldrake.sean@epa.gov
Phone: 206/553-1220