



Port of Portland Terminal 4 Phase I Removal

Dahl Beach Mitigation Project

Performance Standards and Monitoring Activities

To meet the Port of Portland's (Port's) mitigation requirements for the Terminal 4 (T4) Phase I Removal Action project, Dahl Beach Mitigation, LLC in conjunction with the Port, is proposing to restore 0.41 acre at Dahl Beach. The Dahl Beach Mitigation project would focus on removing approximately 0.41 acre of existing concrete and riprap at the confluence of the Clackamas and Willamette Rivers, below the Ordinary High Water Mark (OHWM), and restoring the site through grading and native vegetation establishment (Figure 1). The property is owned by the City of Gladstone and is managed as a park. The site is currently a parking lot used seasonally for fishing access; the site is frequently submerged by high flows from the Clackamas and Willamette Rivers during winter months and does not provide riparian habitat value (Figure 2). The parking lot and associated riprap armoring would be removed and recycled or repurposed outside of Water of the United States, typical shoreline contours would be restored, and suitable native riparian flora would be established. The project was identified as a priority for restoration by the Clackamas River Basin Council and the Oregon Department of Fish and Wildlife. The Council is funded to implement a nearby riparian and shallow water habitat restoration project just 100 yards upstream on the Clackamas River (construction in 2016), and this proposed Dahl Beach Mitigation project would complement this restoration effort.

As part of this mitigation effort, the following performance standards and monitoring activities are proposed. The performance standards and monitoring activities are based on comments received to date by the Port from US Environmental Protection Agency (EPA) on previous proposed mitigation options for T4 and are consistent with those provided by other regularly monitored environmental restoration sites. Monitoring and reporting of the site conditions will occur for 5 years immediately following project implementation.

- Shallow Water Habitat
 - Restore 0.41 acres at approximately 17 feet NAVD 88 and all below OHWM, overlapping with elevations of the impact site at Wheeler Bay.
 - Monitoring will demonstrate that the areal extent and elevations are appropriate through comparison of post-construction as-built surveys and annual monitoring. Three cross sections will be monitored annually to confirm restored elevations.
- Habitat Structure—Woody Debris and Rock
 - Include woody debris and natural rock from the site into the shallow water habitat to increase complexity and provide structure.
 - Visual observation will be used to demonstrate retention of these habitat structures. The structures may be modified depending on monitoring results, but given this is an active river system, some degree of movement of woody debris and rocks is expected and desired.

- Habitat Structure—Vegetation
 - Plant native vegetation to increase habitat complexity.
 - Monitoring will measure native stem survival, stem density, and vegetative cover.
 - A suitable reference site will be established to help inform the performance target for vegetation coverage by year 5, with progress towards that target reported annually.
 - Supplemental planting may be added if vegetative coverage is tracking below performance target as determined by appropriate reference site.
 - Monitoring will measure cover of invasive species
 - If invasive species coverage exceeds 20% of the flora on the project site, it will be removed and replaced with appropriate native stock.
 - Full eradication of invasive species is not an appropriate requirement given that the project team cannot control the various seed sources up river from the site.

- Hydrology—Inundation
 - Inundation of the restored area by river flows.
 - Monitoring will include inspection of the mitigation area after periods of inundation. Photographs will be taken to document site conditions after water recedes.

- Signage
 - Site will include signage identifying the restoration area and discouraging public access.
 - Monitoring will consist of confirming that the signage remains in place.

- Documentation and Reporting
 - Upon completion of the mitigation work, as-built surveys to document the post-construction condition of the site will be prepared. The as-built surveys will be used as baseline conditions for comparison during future monitoring events, as necessary. These as-built surveys will include:
 - Site grading and extent of mitigation area
 - Habitat structures (woody debris, rock, and vegetation)
 - Trail access adjacent to the restoration project site
 - Results of the monitoring activities will be summarized in an annual report, with submission to EPA.



Date: 11/21/2014
 Data Source: Clackamas County GIS, 2013
 Scale: 1 inch = 200 feet



Figure 1. Project Concept and Vicinity

Dahl Beach Park Mitigation Site

Figure 2. Site Photos



Existing parking lot to be removed; slopes to be re-contoured and re-vegetated



Existing riprap associated with parking lot to be removed and typical shoreline conditions restored.



Parking lot under winter high water (the ducks are over the lot), at less than a 2 year flow (24 feet NAVD 88)