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AAPA Environmental Improvement Awards

Formation of PORTfolio Line of Business

Prepared by



Summary of the Project or Program

In 2016, the Port of Seattle created the PORTfolio line of business to promote habitat restoration using market-based conservation models. The PORTfolio utilizes port expertise in engineering, ecological design, construction, legal services, finance, accounting, survey, GIS, real estate management, landscape maintenance, soil/sediment remediation, community affairs and government relations to create saleable “credits” that can be used for wetland mitigation, floodplain storage compensation, and endangered species conservation. These credits are used in-part to offset the impacts of Port development actions; surplus credits can be sold to other development sponsors to offset the Port’s costs, as well as fund research and development into environmental innovations. The PORTfolio is a creative solution to the typical project-based response to compensatory mitigation and environmental offsets. By leveraging the Port’s organizational bandwidth and competencies, the PORTfolio turns environmental liabilities into profit centers.

The Port of Seattle has 30 years of habitat restoration experience in the Seattle area. This experience forms the foundation of a unique line of business that provides social, environmental and financial returns on investment. The PORTfolio formalizes existing port practices in the habitat restoration and green stormwater infrastructure space to provide an environmental mitigation service for public, private, and tribal clients.

The Port of Seattle intends to grow the PORTfolio into a premier habitat restoration and mitigation service in the Green-Duwamish Watershed, Elliott Bay, Lake Washington Ship Canal and Puget Sound. The PORTfolio will utilize Port of Seattle assets to provide habitat restoration

services for Natural Resource Damage settlements, advanced mitigation, carbon sequestration, and floodplain storage credits through the creation of an umbrella mitigation bank.

Goals and Objectives

The Port of Seattle's Century Agenda provides a framework for growth up to 2037. Century Agenda goals includes being the greenest and most energy efficient port in North America. Another includes that the Port will create, restore, or enhance 40 acres of fish and wildlife habitat in the Green/Duwamish watershed and Elliott Bay. The PORTfolio provides a clear path towards achieving this goal while generating a sustainable source of revenue for future habitat restoration.

The PORTfolio has triple bottom line benefits. Revenue generated from the sale of habitat credits directly funds habitat restoration projects. These projects provide community benefits by contributing to community trust and increasing or enhancing public shoreline access. Habitat restoration provides environmental benefits through the restoration of marine, nearshore, intertidal, wetland, and riparian habitat in predominately urban industrial areas.

Discussion - Background

Over the past 30 years, the Port of Seattle has implemented significant environmental restoration, cleanup, and habitat enhancement projects as part of its capital improvement programs and ongoing operations and management of port facilities. As a result, the port has a great deal of experience designing, developing, and maintaining environmental restoration sites.

The Port has successfully completed several estuarine restoration projects in the Lower Duwamish Waterway. These projects include critically important, mature, fully-functional habitat attributes that demonstrate successful and durable estuarine wetland establishment, native riparian buffer planting, and off-channel habitat development. Examples include a 3.4-acre wetland complex at Turning Basin Number 3 (at the upstream limit of the Duwamish Waterway navigation channel) and a 3.2-acre marsh and off-channel slough at Terminal 105 (near the southern tip of Harbor Island on the west bank of the river). The projects serve as important testing grounds for restoration techniques in the area and will provide good models for future restoration efforts. Importantly, they indicate that cleanup and restoration efforts in the industrialized Lower Duwamish Waterway can result in successful, self-sustaining habitat for fish and wildlife.

The Port's current restoration sites total approximately 95 acres, including 77 acres of compensatory mitigation projects and 18 acres of voluntary habitat initiatives. A performance monitoring period to demonstrate that standards have been met has been successfully completed for most of the mitigation sites. Other sites are still undergoing monitoring and maintenance. Mitigation sites and riparian planting areas are maintained regularly as part of normal operations by the Port's Marine Maintenance Division.

As a major landowner in the Lower Duwamish Waterway, the Port is in a unique position to design and construct additional estuarine habitat projects in critically important transition areas and manage those projects in perpetuity.

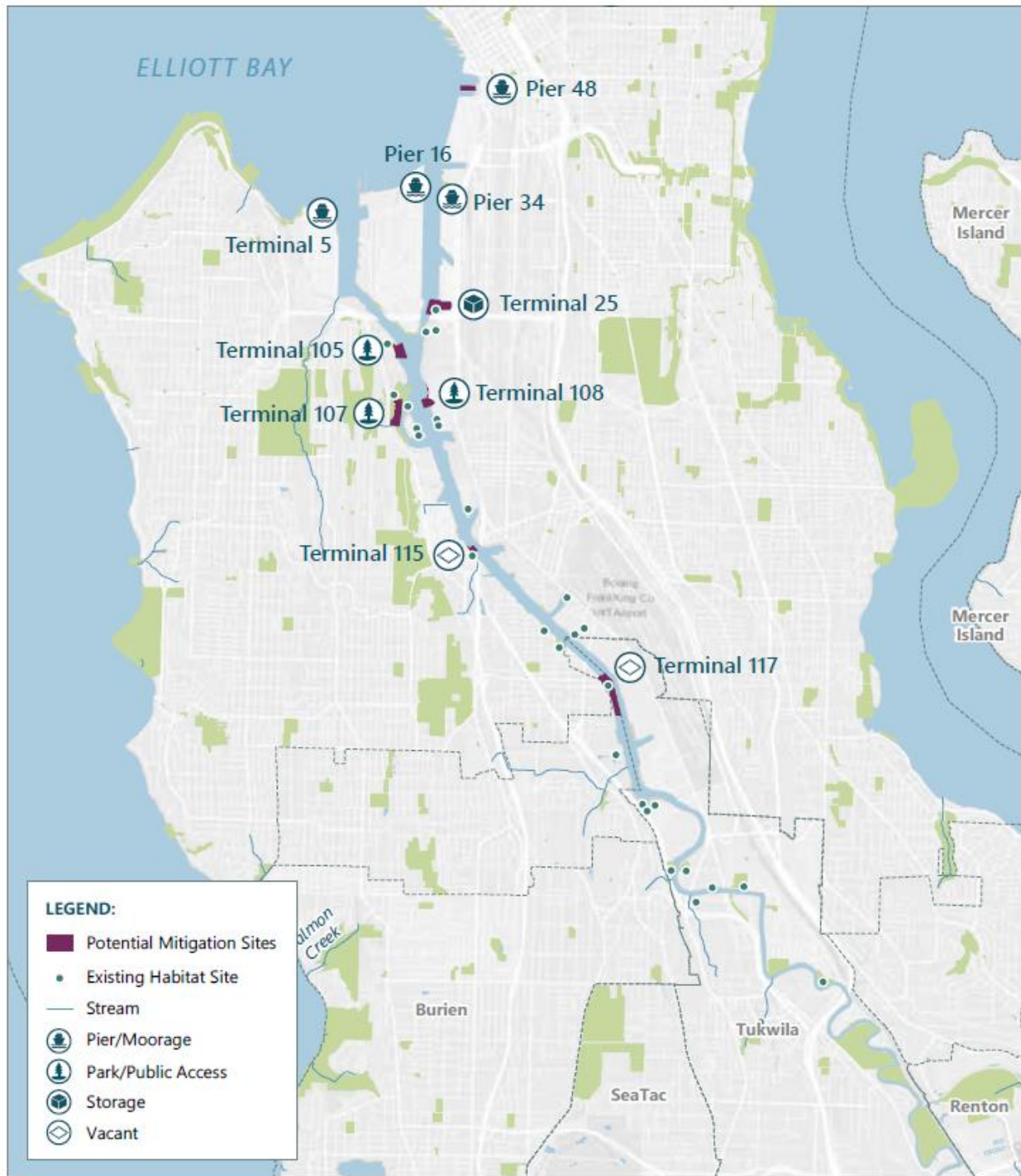
In recent years, the Port has been contacted by waterfront facility owners and development sponsors seeking compensatory mitigation opportunities to offset the expansion of waterfront structures and shoreline development. In addition, more common requirements for habitat mitigation, associated with waterfront structure repair, maintenance, rehabilitation, and replacement, have increased potential demand for compensatory mitigation credits associated with endangered salmon habitat impacts.

The Port has completed several transactions to that end. In 2011, the Port entered a contract with the Boeing Company to provide a restoration site adjacent to their Plant 2 Facility. Shortly after that, the Port supported compensatory mitigation needs for King County as part of the South Park Bridge replacement, and later provided mitigation services to the Washington State Department of Transportation for improvements to Highway 509.

In 2017, the Port partnered with a tenant to provide compensatory mitigation for a project at Terminal 86 which increased overwater coverage in Puget Sound. The Port had already designed, budgeted and awarded a contract for the removal of 2,000 creosote piling and 5,000 square feet of overwater coverage in Elliott Bay. The tenant contacted the Port at the recommendation of the U.S. Army Corps of Engineers knowing that the Port was removing piling and overwater coverage in the same aquatic environment. The Port worked with the tenant, the U.S. Army Corps of Engineers, the Washington Department of Fish and Wildlife, and the City of Seattle to develop a solution involving removal of additional piling and overwater coverage equivalent to the tenant's impact. This project demonstrated that partnering on mitigation was both practical, feasible, cost-effective and profitable.

The PORTfolio builds on this success through the creation of an umbrella mitigation bank, continuing to provide advanced mitigation, and by piloting carbon sequestration projects in Elliott Bay. An Umbrella Mitigation Banking Prospectus was submitted to the Corps of Engineers in May 2019. The proposed bank would restore, create or enhance approximately 120 acres of habitat in marine, estuarine, and freshwater environments. Terminal 25 South will provide substantial off-channel saltmarsh and marine shoreline habitat at the south end of the East Waterway, where habitat is otherwise lacking. Terminal 117, located in the heart of Seattle's South Park neighborhood, will provide brackish water marsh and mudflat, which is critical for Chinook salmon as they migrate through the transition zone. In Auburn, an existing 60-acre compensatory mitigation site on the banks of the Green River, will be enhanced and expanded to include an additional 34 acres of floodplain wetlands and buffers. Future sites could include restoration at Terminals 105, 107, 108, and 115 South; Pier 48; and others, depending on availability, feasibility, market conditions, and agency approval. These projects represent a \$75 million investment in the Port's natural resources.

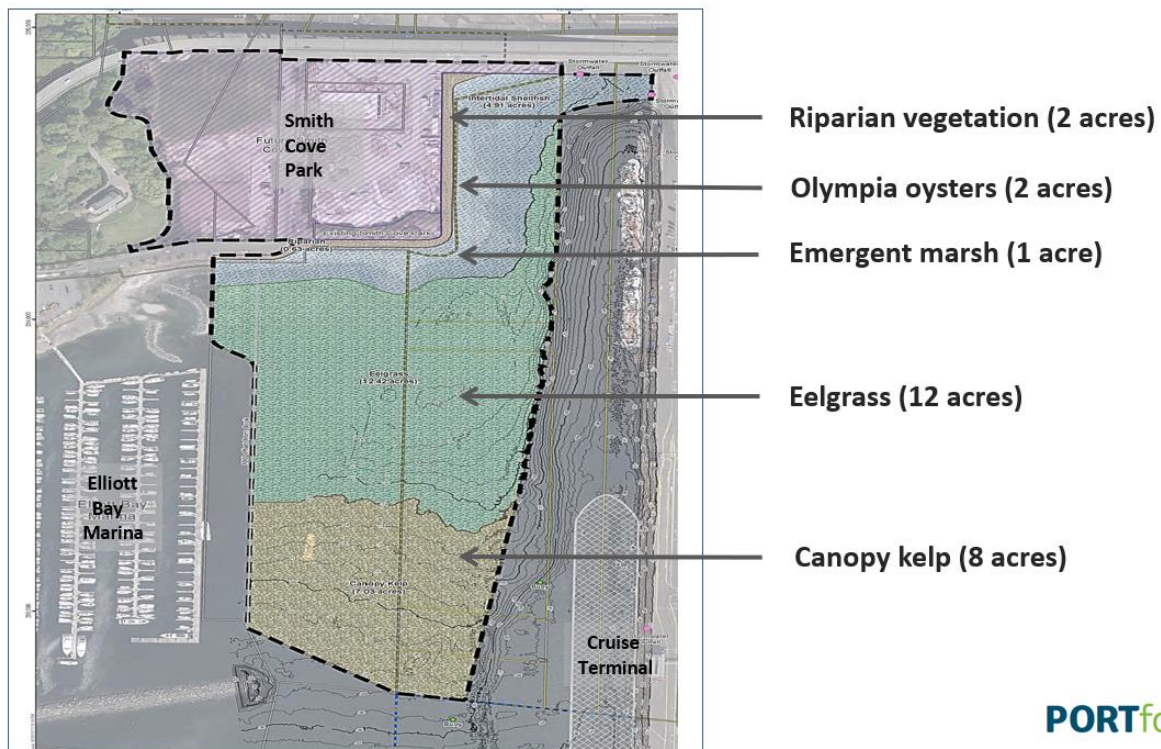
Figure 1 - Proposed Umbrella Mitigation Bank Sites



The PORTfolio, having already accomplished significant compensatory mitigation and restoration services, has plans for additional piling and derelict structure removal as well as shoreline restoration at Pier 34, Terminal 91, Centennial Park, and at various locations on the Duwamish Waterway. The projects will remove over 3,000 creosote-treated piling, remove nearly 5 acres of overwater cover, and restore over 1,600 feet of urban industrial shoreline.

The PORTfolio also provides a research and development function that seeks to innovate in the urban habitat restoration space. The Smith Cove Blue Carbon Pilot Project is exploring the utility of blue carbon habitat in Elliott Bay to improve water quality, enhance saltwater habitat, and sequester carbon. The Bio-Barge Pilot Project, a partnership with the University of Washington, is investigating ways to create wetland functions on floating platforms in areas where space is otherwise lacking.

Figure 2 - Smith Cove Blue Carbon Pilot Project



Objectives and Methodology

The PORTfolio was created in 2016 while the Port was designing a large habitat restoration site at Terminal 117. The site includes 13.5 acres of habitat, including emergent marsh, mudflat, and riparian areas, and approximately 2,050 linear feet of shallow subtidal and deep subtidal habitat. The Port utilized in-house engineering and environmental resources in designing Terminal 117. Recognizing the availability of in-house expertise, and the demand for mitigation services, the Port used the Terminal 117 project as a catalyst for creating the PORTfolio line of business.

As discussed in the “Background’ section above, the Port has 30 years of habitat restoration experience. The techniques used in past projects are continuously evaluated, refined, and applied to new projects. Figure 3 below shows the Terminal 108 site before restoration.

Figure 3 - Terminal 108 Before



The Port used alternative shoreline techniques to restore habitat in a former marine industrial site. Figure 4 below shows the site after restoration. The Port has set the standard for habitat restoration in urban industrial areas to the point that regulatory agencies look to Port habitat sites as examples.

Figure 4 - Terminal 108 After



In creating the PORTfolio, the Port recognized the niche area of expertise available internally. The Port created the line of business seeing the potential for a sustainable stream of funding for future restoration. Creation of the line of business justified staff support. Permitting staff were shifted to the PORTfolio line of business and one additional full time equivalent with habitat restoration experience was hired to support the line of business.

Fulfillment of Award Criteria

Level and nature of benefits to environmental quality, beautification, or community involvement

The PORTfolio provides triple bottom line benefits to the Port of Seattle. Revenue collected from the sale of habitat, floodplain, carbon, and endangered species credits will go directly to maintaining restored habitat, creating additional habitat, and piloting further environmental projects.

Level of independent involvement and effort by the port

The Port of Seattle independently created the PORTfolio recognizing the available in-house expertise for habitat restoration and other environmental offsets, the demand for mitigation services, and the limited availability of urban industrial habitat restoration practitioners. The Port of Seattle independently justified the PORTfolio as a line of business using a triple bottom line approach ensuring that habitat restoration projects provide economic, social, and environmental benefits.

Creativity of the solution or programs

Developing a habitat restoration line of business is a creative approach to the typical ad-hoc mitigation delivery system. Habitat is created in a more efficient, predictable, large scale, and environmentally beneficial manner.

Whether the project or program results are apparent

The PORTfolio has already provided successful habitat restoration projects and mitigation services to private, public, and tribal clients. The Port has successfully reorganized organizational responsibilities to support the PORTfolio line of business.

Additionally, the Port has already submitted an umbrella mitigation bank prospectus to the U.S. Army Corps of Engineers for approval.

Cost effectiveness of the activity or the program

Habitat restoration through the PORTfolio is designed to pay for itself. Creating saleable habitat restoration credits provides a sustainable source of revenue for future habitat restoration projects.

Transferability of the technology or idea to the port industry

Ports are well-suited to create their own habitat restoration lines of business. Ports have available assets, expertise, and potential for capital to restore habitat through a market-based approach.