



City of Seattle

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**Department of Planning and Development**  
D. M. Sugimura, Director

**CITY OF SEATTLE  
ANALYSIS AND DECISION OF THE DIRECTOR  
OF THE DEPARTMENT OF PLANNING AND DEVELOPMENT**

**Application Number:** 3013171  
**Applicant Name:** Mark Mazzola for SDOT  
**Address of Proposal:** 1915 R Alaskan Way

**SUMMARY OF PROPOSED ACTION**

Shoreline Substantial Development Application to replace the Elliott Bay Seawall with a new wall 10 to 15 feet east of the existing wall alignment. The replaced seawall will extend from Broad Street to S. Washington Street. Project includes restoration of sidewalks and roadway, grading of 500,000 cubic yards of material and installation of habitat enhancement features waterward of the seawall. Environmental documents prepared by City of Seattle Department of Transportation. \*

The following approvals are required:

**Shoreline Substantial Development Permit:** to allow development in an Urban Harborfront (UH) Shoreline Environment. (SMC 23.60.660)

**Shoreline Conditional Use:** to allow landfill on submerged lands for habitat enhancement in the Urban Harborfront (UH) Shoreline Environment (SMC 23.60.034)

**Shoreline Special Use:** to allow bulkhead, utility lines and landfill on submerged lands in the Urban Harborfront (UH) Shoreline Environment (SMC 23.60.662)

**SEPA - Conditioning pursuant to Seattle's SEPA policies.** Chapter 25.05.660, Seattle Municipal Code.

**SEPA DETERMINATION:**  Exempt  DNS  MDNS  EIS\*

DNS with conditions

DNS involving non-exempt grading or

\* Environmental documents have been prepared by Seattle Department of Transportation (SDOT). The Draft Environmental Impact Statement (DEIS) for the Seawall Replacement Project was released in November 2012. The Final EIS (FEIS) was issued on March 14, 2013.

## **Background, Summary of Proposal**

The City of Seattle Department of Transportation (SDOT) proposes to construct the Elliott Bay Seawall Project (EBSP) in order to replace the existing seawall along the shoreline of downtown Seattle. Extending from S. Washington Street to Broad Street, the existing seawall includes three types of structures, all constructed between 1911 and 1936 and ranging in size from approximately 15 feet to 60 feet wide. The seawall supports and protects the adjacent upland areas, which contain residences, commercial businesses and restaurants, parks, public facilities, transportation infrastructure and a large number of utilities.

Over time these structures have deteriorated as a result of natural and physical processes. The seawall's current condition makes it vulnerable to significant damage during a major storm or seismic event. The project's purpose is to reduce the risks of coastal storm and seismic damages and to protect public safety, critical infrastructure, and associated economic activities along Seattle's waterfront. The new seawall would provide the foundation and structural support for the downtown waterfront area, including future improvements planned as part of future improvements to the Seattle Waterfront. The project also includes elements that will enhance the ecosystem functions and processes of the Elliott Bay nearshore in the vicinity of the seawall. The project originally included construction of a public pier/deck at Spring Street, which has since been removed from the project.

The project area extends from S. Washington Street to Broad Street and from the eastern edge of pavement below State Route 99 to the waters of Elliott Bay. The western boundary generally extends 400 feet into Elliott Bay. The project has been divided into six zones, which are shown on the plan sets for the project. Zones 1 through 4 constitute the Central Seawall phase. The two remaining zones, Zones 5 and 6, make up the North Seawall phases.

The Central Seawall Phase includes the following:

- Zone 1, the Pioneer Square/Washington Street Boat Landing Zone, runs from S. Washington Street to Yesler Way;
- Zone 2, the Ferry Terminal Zone, stretches from Yesler Way to Madison Street, and includes the Colman Dock ferry terminal and Fire Station No. 5.
- Zone 3, the Central Pier Zone, includes the historic waterfront piers (Piers 54 to 57) and runs from Madison Street to just north of University Street.
- Zone 4, the Park/Aquarium Zone, includes Waterfront Park, the Seattle Aquarium, and Piers 62/63. This zone runs from north of University Street to approximately Virginia Street.

The North Seawall Phase includes the following:

- Zone 5, the Bell Harbor Zone, runs from Virginia Street to Battery Street. This zone includes the Bell Harbor Conference Center, Cruise Ship Terminals, and Marina.
- Zone 6, the North Pier Zone, stretches from Battery Street to Broad Street, and includes the Edgewater Hotel, Port of Seattle offices, and Pier 70.

The project is comprised of three main categories of features: a replaced seawall, improvements to aquatic habitat, and improvements to upland areas.

## **Replaced Seawall**

The primary functions of the new seawall are to provide protection from storm erosion, wave erosion, and impacts from floating objects, and resistance from lateral pressures such as those caused by an earthquake. The new seawall would be reconstructed approximately 10 to 15 feet landward of its existing alignment, as follows:

- Zones 1 and 2 (S. Washington Street to Madison Street) – 15 feet landward
- Zone 3 (Madison Street to University Street) – 10 to 15 feet landward
- Zones 4, 5 and 6 (University Street to Broad Street) – 10 feet landward

By moving the new seawall landward, the amount of shallow aquatic habitat adjacent to the seawall would increase by approximately 1.8 acres (with cantilevered sidewalks with light penetrating surfaces (LPS) above the newly exposed habitat), improving nearshore habitat conditions for a variety of aquatic organisms that will be able to utilize this area.

Once the project is complete and the cantilevered sidewalks are installed, the project will result in no change to overwater coverage (from a plan perspective) as compared to the existing condition, though LPS will be installed in the sidewalk to allow natural light to the aquatic environment below.

More details on project elements of the new seawall are contained in the permit application and the FEIS (March 2013), particularly Chapters 2 and 4.

During construction of the seawall, the existing Alaskan Way roadway would be relocated beneath the Alaskan Way Viaduct. Three lanes of traffic would be maintained underneath the viaduct during construction of the Central Seawall. During North Seawall construction, this dedicated construction work zone would not be available and the temporary roadway would be accommodated in the available right-of-way.

The construction work zone would extend from the western edge of the existing multi-use path on Alaskan Way to the water. Existing street trees would be removed to provide additional space within this area. For the Central Seawall, approximately 56 trees would be removed on the west side of Alaskan Way and 160 would be removed on the east side. For the North Seawall, 8 trees would be removed on the west side and 127 would be removed on the east side. These trees would be replaced as riparian plantings as part of the project or replaced during future waterfront improvement projects. The existing streetcar tracks that run along Alaskan Way would also be removed during construction.

Construction would be staged from several locations within the project work zone. Staging areas would vary in size and would be used for delivery and storage of construction materials and equipment. The staging areas would be sited to avoid disrupting access to piers, residences, and businesses along the waterfront. In addition to the upland staging areas, construction activities would also be staged from barges and tugs in Elliott Bay.

To the greatest extent possible, construction materials and personnel would be transported to the construction work zone and staging areas via freeways and arterials. However, other city streets could provide access to the site when needed. The eastern border of the construction work zone along Alaskan Way would serve as a haul road to channel truck traffic within the project area. The existing multi-use trail would be maintained (with the potential for temporary detours), and access to the piers would be maintained throughout construction.

Soil improvement is a general term for a variety of techniques that are used to stabilize existing soils by improving their internal structure and strength. Two techniques that have been discussed for the EBSP are jet grouting and deep soil mixing. Jet grouting consists of adding grout to existing soils to form a “block” of improved soil mass that extends down to the competent foundation below. This technique has been identified as a feasible way to strengthen the material underlying the project area, which includes an existing timber relieving platform, buried timber piles, utilities, and other potential obstructions.

Jet grouting creates circular columns of soil cement by means of a hollow drill pipe measuring a few inches in diameter that is inserted into the soil. Grout is then sprayed under high pressure through horizontal nozzles in the rotating drill pipe. This process cuts the existing soil and mixes the soil with the grout. The strength of the soil would be substantially improved through this process, thus greatly reducing the soil’s potential for liquefaction during an earthquake.

The grout columns would be constructed in a grid pattern to create a jet-grouted block of improved soil. The grid pattern would be installed between the timber piles of the existing seawall relieving platform to eliminate the need to remove the existing piles. The finished arrangement of the grouted columns would create a “spine” for the new seawall. The grouting process generates spoils that would be disposed of at appropriate upland facility using appropriate means, in accordance with applicable regulations.

Deep soil mixing, another technique that could be used for soil improvement, uses an auger that penetrates the ground surface to mix and consolidate the underlying soils to a depth of up to 20 feet. With deep soil mixing, no grout is applied under pressure and there are minimal spoils for disposal.

During construction of the project, avoidance and minimization measures, including BMPs, would be implemented to avoid or minimize the potential for release of jet grout into Elliott Bay. Additionally, the location of the improved soil mass has been moved eastward, which would provide additional space between the grout columns and the face of the existing wall (10 to 15 feet), increasing the amount of existing material between the grout columns and the existing seawall face.

Excavations into soils in the construction zone would need to be dewatered, which generally involves disposing of the wastewater offsite or pumping the excess water to a location where it can settle and/or be treated prior to discharge. Wet spoils from jet grouting or other soil improvement activities must be managed or disposed of, as well. Details for the methods to be used to manage and dispose of wastewater and jet grout spoils will be contained the project’s dewatering and erosion control submittals required as part of the Clean Water Act Section 401 and National Pollutant Discharge Elimination System construction general stormwater permit processes, as well as by the City’s standard construction specifications.

The installation and removal of the temporary containment wall would require three major actions: removal or displacement of riprap, placement of a sheetpile wall in the nearshore, and removal of the sheetpile wall at the end of construction.

The removal or displacement of riprap would be necessary to access the substrate for installation of the temporary containment wall. Originally, the riprap was installed for protection and stabilization of the seawall. Over time, movement of the riprap has occurred due to processes such as sinking and wave and tidal action, requiring subsequent placement of additional riprap to maintain the required protection. Together, these past actions have resulted in a large amount of riprap present along the majority of the length of the existing seawall.

A temporary sheet pile containment wall would be installed prior to soil improvement processes and demolition of the existing seawall to provide water quality protection during these activities. The temporary sheet pile containment wall would act as the primary containment measure throughout project; however, turbidity curtains may also be used to supplement the water quality protection provided by the temporary sheet pile containment wall. For example, turbidity curtains would be used, as needed, during installation of the temporary sheet pile containment wall (to minimize turbidity) and during the placement of the expanded habitat areas.

In addition to the temporary sheet pile containment wall, the following BMPs would be implemented to avoid or minimize the potential for release of grout into Elliott Bay during soil improvement activities.

- Filling or plugging voids or holes in the existing seawall prior to beginning soil improvement activities, as feasible;
- Directing jets away from the existing seawall during installation of the westernmost row of jet grout columns to reduce the velocity of grout directed toward the wall face and thereby reducing the potential for grout to displace unconsolidated materials and to migrate closer to the existing seawall and Elliott Bay;
- Visual monitoring of the area between the existing seawall and the temporary sheet pile containment wall for any releases during soil improvement;
- Adhering to provisions identified in the Section 401 Water Quality Monitoring and Protection Plan and Water Quality Certification.

The EBSP would require pile removal and installation for both in-water and upland work to occur. Existing creosote-treated timber and cement piles located outside or waterward of the existing seawall face would be removed in whole, wherever possible, using a vibratory extraction method. These piles are primarily stray piles in the vicinity of the piers requiring removal in order to properly install the temporary containment wall and remove the existing sidewalk, and would otherwise obstruct construction. During removal, if a timber pile were to break above the mudline, the pile would be removed 2 feet below the mudline. All creosote-treated timber that is removed would be disposed of in accordance with Washington State's Dangerous Waste Regulations (Washington Administrative Code [WAC] 173-303) and Excluded Categories of Waste (WAC 173-303-071). Upland piles would be pulled in a similar manner, where practicable. Additionally, timber pile removal is expected in the upland areas of the timber relieving platforms of the existing seawall. Removal of old piles that are in the way of construction would occur in Elliott Bay following removal of the cantilevered sidewalk.

Permanent concrete piles would be installed to support certain segments of the sidewalk where loading is heavy (such as at Colman Dock ferry terminal). An estimated 190 permanent concrete piles would be installed in the water using vibratory pile-driving equipment, prior to removing the temporary containment wall.

In-water piles installed for the temporary containment wall would be installed using vibratory methods to the extent practicable and proofed (if required for load bearing) using an impact hammer from a derrick barge or land-based crane. BMPs and noise attenuation measures would be implemented to avoid or minimize impacts to surrounding properties and aquatic organisms during this process.

Construction would be staged from several locations within the construction work zone. The staging areas, which would vary in size, would be used for delivery and storage of construction materials and equipment. Each work segment would have its own construction storage areas for equipment and construction materials. The larger construction work zone would exist between the western boundary of the multi-use trail and Elliott Bay. Construction could occur within the construction work zone 24 hours per day, 7 days per week (for example, during jet grouting, two 10-hour shifts would be required, with 4 hours of maintenance at the end of the second shift). Only one 10-hour shift would be needed on some days, and some weeks could only require 6 days of work.

The construction work zone would be established with general site prep and installation of the temporary road. Changes would be made to pedestrian and traffic flow, and intersections on Alaskan Way, as traffic is moved underneath the Alaskan Way Viaduct. Curbs, gutters, and traffic islands would be demolished near Alaskan Way. On the west side of the project area, guardrail, sidewalk, curb, and gutter would be demolished. This prep work, and the transition of traffic off Alaskan Way, would prepare the work zone for construction activities and staging.

Laydown areas would be used to stockpile equipment such as sheetpile, face panels, marine mattresses (rock-filled containers), and other construction-related materials. However, most materials would be delivered on an as-needed basis due to limited available space. Laydown and staging areas would move from north to south with construction and specific locations have not been identified. Larger laydown areas may be acquired at off-site locations. Off-site staging or laydown areas would also accommodate worker parking, and shuttles or other transportation alternatives would be provided between these locations and the construction work zone.

The staging areas would be sited to avoid disrupting access to piers, residences, and businesses along the waterfront. In addition to the upland staging areas, construction activities may also be staged from barges and tugboats in Elliott Bay.

### **Habitat Improvements**

The intertidal migration corridor for juvenile salmonids would be improved by:

- Constructing a habitat bench at Mean Lower Low Water to provide continuous, shallower depths that are optimal for juvenile salmonid migration
- Increasing daylight illumination of the habitat bench and other nearshore habitat by including a light-penetrating surface in a cantilevered or pile-supported sidewalk
- Increasing textures on the seawall face to enhance intertidal habitat by encouraging the growth and attachment of aquatic organisms and algae

- Adding riparian plants to provide food and nutrient inputs (insects and detritus) for migrating salmonids, and including upland plantings where possible along the sidewalk

Enhanced ecosystem productivity would generally be accomplished by:

- Providing smaller, more naturally sized substrates
- Placing various substrates waterward of the habitat bench to diversify shallow-water habitats
- Constructing a textured seawall face
- Adding riparian plants to provide food and nutrient inputs (insects and detritus) for migrating salmonids, and including upland plantings where possible along the sidewalk
- Adding light-penetrating surfaces to increase light to the habitat corridor

Habitat improvements would generally extend 10 to 45 feet from the face of the new seawall. The Zone 1 habitat area (located on Washington State Department of Transportation owned property just south of the Colman Dock ferry terminal and north of WSDOT-owned Pier 48) would extend approximately 300 feet from the face of the new seawall and measure approximately 250 feet at its widest point. An intertidal bench would be installed at the base of the seawall to form a more shallow slope to the seafloor and provide shallower water for juvenile salmon migration. The bench's elevation will range from -3.7 to +14.8 feet mean lower low water with slopes between 8 horizontal to 1 vertical.

Materials will be placed to provide gradual slopes throughout the intertidal range and will connect directly with the habitat bench that continues north throughout the project area. Existing substrates and bathymetry in this nearshore area will be diversified and designed to include materials that have proven to be resilient to storm conditions and also effective as juvenile salmon habitat. To confine and retain the bench materials, and provide additional stability for the profile, confining "rock arms" consisting of large angular rock will be installed on the north and south ends of the bench (see Sheets 5, 8 in plan sets). A 3-foot wide saltmarsh "eco-bench" will be included on the north rock arm at an elevation of approximately +10.3 feet and planted with indigenous high saltmarsh vegetation. Above the intertidal zone, indigenous riparian trees, shrubs, ground cover vegetation, and rounded boulders will provide a 30-foot wide backshore riparian zone.

More details regarding project elements of the habitat improvements are contained in the permit application material, the FEIS and appendices, and the JARPA for this project.

### **Upland Improvements**

Following construction of the new seawall, the existing Alaskan Way roadway, multi-use trail, and parking would be restored to their original function and capacity. The restored sidewalk along the waterfront would include a cantilevered portion (7,100 linear feet, approximately) with light penetrating surface (74,000 square feet, approximately) that would allow natural light to the aquatic habitat below. Vegetation would be installed along the sidewalk at select areas, which will enhance the refuge habitat and provide food for migrating salmon. New railings, formal and informal seating, bicycle racks, wayfinding elements and other design amenities would also be included in the overall project.

There are currently no water quality facilities for treating surface water runoff from Alaskan Way that discharges directly into Elliott Bay. The project would include reconstructed stormwater drainage pipes and stormwater treatment facilities that will improve water quality in the nearshore environment along the waterfront.

More details for project elements of the upland improvements for this project are contained in the permit application and the FEIS, particularly Chapters 2 and 4.

### Project Construction Duration

Central Seawall construction is expected to begin in the fall of 2013 and will progress from north to south. Based on current schedules, Central Seawall construction will last up to three seasons over a 3-year period, with construction seasons extending from approximately Labor Day weekend to Memorial Day weekend to avoid disruption during the peak tourist season. Construction will shut down during the peak summer months (Memorial Day weekend through Labor Day weekend) to minimize impacts on visitor-oriented businesses. After Labor Day, mobilization and construction is proposed to begin gradually to minimize effects during September, which is a busy month for many waterfront businesses, in order to help preserve as much parking as possible. Work will occur during the designated in-water work window or approved extension periods each year. The North Seawall would be built as a separate construction phase beginning in 2017 or later and would require an additional four construction seasons.

### Public Comment

One public comment was received during the public comment period that began on November 15, 2012, and ended on December 14, 2012.

## **ANALYSIS - SHORELINE SUBSTANTIAL DEVELOPMENT PERMIT**

The proposal is located within the Urban Harborfront Shoreline Environment as designated by the Seattle Shoreline Master Program (SSMP). The Shoreline Master Program, Chapter 23.60 of the Seattle Municipal Code, regulates use and development in the City's shoreline districts to implement the policy and provisions of the Shoreline Management Act of 1971 and the Shoreline Goals and Policies.

The SSMP requires that a shoreline permit be obtained prior to the undertaking of any substantial development within a shoreline environment. SMC Section 23.60.030 includes criteria for evaluating a shoreline permit. A substantial development permit shall be issued only when the development proposed is consistent with:

- A. The policies and procedures of Chapter 90.58 RCW;
- B. The regulations of this Chapter; and
- C. The provisions of Chapter 173-27 WAC.

Conditions may be attached to the approval of a permit as necessary to assure consistency of the proposed development with the Seattle Shoreline Master Program and the Shoreline Management Act.

### The Policies and Procedures of Chapter 90.58 RCW

The State of Washington Shoreline policies (RCW Chapter 90.58) provide for the control of pollution and prevention of damage to the natural environment, and for the protection of the resources and ecology of the shoreline over the long term. It is the policy of the state to provide for the management of the shorelines of the state by planning for and fostering all reasonable and appropriate uses. The Shoreline Management Act of 1971 provides definitions and concepts, and

gives primary responsibility for initiating and administering the regulatory program of the Act to local governments. The Department of Ecology is to primarily act in a supportive and review capacity, with primary emphasis on insuring compliance with the policy and provisions of the Act. As a result of this Act, the City of Seattle adopted a local shoreline master program, codified in the Seattle Municipal Code at Chapter 23.60 that also incorporates the provisions of Chapter 173.27 WAC. Development on the shorelines of the State is not to be undertaken unless it is consistent with the policies and provisions of the Act, and with the local master program. The Act sets out procedures, such as public notice and appeal requirements, and penalties for violating its provisions.

The City of Seattle Shoreline policies incorporate these goals by reference and include area objectives pursuant to these goals. These policies contemplate protecting against adverse effects to the public health, the land and its vegetation and wildlife, and the waters of the state and their aquatic life, while protecting public rights of navigation and corollary incidental rights. Permitted uses in the shorelines shall be designed and conducted in a manner to minimize, insofar as practical, any resultant damage to the ecology and environment of the shoreline area and any interference with the public's use of the water.

As discussed below, the City's Shoreline policies encourage public access and discourage disrupting the shoreline environment. This proposal is consistent with the policies and procedures of the RCW Chapter 90.58.

#### The Regulations of Chapter 23.60

The regulations of SSMP Section 23.60.064 require that the proposed use: 1) conform to all applicable development standards of both the shoreline environment and underlying zoning; 2) be permitted in the shoreline environment and the underlying zoning district 3) satisfy the criteria of shoreline variance, conditional use, and/or special use permits as may be required and 4) SMC 23.60.014 C. for standards applicable to environmentally critical areas as provided in Seattle Municipal Code Chapter 25.09, Regulations for Environmentally Critical Areas, shall apply in the Shoreline District. If there are any conflicts between the Seattle Shoreline Master Program and Seattle Municipal Code Chapter 25.09, the most restrictive requirements shall apply.

The underlying zoning for upland areas is Downtown Harborfront 1. Per SMC 23.49.300 A., "uses that shall be permitted or prohibited in Downtown Harborfront 1 are determined by the Seattle Shoreline Master Program." The analysis below demonstrates the proposal is consistent with shoreline uses allowed in by the City of Seattle's Shoreline Master Program and therefore consistent with the Downtown Harborfront 1 underlying zoning.

### **SMP 23.60.004 - Shoreline Policies**

Policies governing approval of development in shoreline districts are set out in the Land Use Element of the Seattle Comprehensive Plan. Seattle's Comprehensive Plan Shoreline Goals and Policies encourage improved public access along shorelines. Land Use Goal 46 promotes development of "a transportation network that supports and enhances use of and access to the shorelines." The proposed seawall replacement will allow for greater opportunities than currently exist for the public to access and enjoy the shoreline environment along the waterfront and upon completion, the project will enhance the functional and aesthetic qualities of the shoreline environment (consistent with Land Use Goal 47).

### **Effective Date of Shoreline Permit**

Seattle's SMP allows the Director to adopt different time limits for the life of a shoreline substantial development permit. SMC 23.60.074.A states that : *" Upon finding of good cause, based on the requirements and circumstances of the project proposed and consistent with the policy and provisions of WAC 173-27 and this chapter, the Director may adopt different time limits from those set forth ...this section ... as part of the decision on a shoreline substantial development permit... "Good cause, based on the requirements and circumstances of the project," means that the time limits established are reasonably related to the time actually necessary to perform the development on the ground and complete the project that is being permitted, and/or are necessary for the protection of shoreline resources."*

The applicant has requested an extension to the standard time limits applicable to shoreline substantial development permits. Given the scope of the proposed project, the construction of the seawall within the shoreline area is expected to occur until 2022. Due to the unusual scale and complexity of constructing a new seawall, it is determined that the proposed extension of the time line is granted.

### **Shoreline Development Standards**

The proposed shoreline development is located in the Urban Harborfront (UH) Shoreline Environment. Pursuant to the Seattle Shoreline Master Plan, the proposed action is subject to the:

1. general development standards (SMC 23.60.152);
2. development standards for uses in the UH environments (SMC 23.60.660 SMC).

#### **1. SMC 23.60.152 - General Development Standards for all Shoreline Environments**

General standards for all uses and development in all shoreline environments are established in SMC Section 23.60.152. Generally, these standards require that all shoreline activity be designed, constructed, and operated in an environmentally sound manner consistent with the Shoreline Master Program and with best management practices for the specific use or activity, in order to have minimal impact on the shoreline environment. The following general development standards are relevant to the proposed project:

- A. *The location, design, construction and management of all shoreline developments and uses shall protect the quality and quantity of surface and ground water on and adjacent to the lot and shall adhere to the guidelines, policies, standards and regulations of applicable water quality management programs and regulatory agencies. Best management practices such as paving and berming of drum storage areas, fugitive dust controls and other good housekeeping measures to prevent contamination of land or water shall be required.*

The seawall would be replaced in compliance with applicable guidelines, policies, standards, and regulations regarding protection of surface and groundwater quality, through the implementation of BMPs for protection of water quality pursuant to City of Seattle Construction Stormwater Control Technical Requirements (DR-16-2009), Seattle Municipal Stormwater Code (Ordinance 123105), and 401 Water Quality Certification and NPDES permits obtained for the project.

During construction, groundwater flows may be temporarily pumped out of work areas and either cleaned and discharged to Elliott Bay or routed into the wastewater system. Only minor localized changes to groundwater flows are expected during construction. Groundwater flows would not be interrupted as a result of the long-term operation of the EBSP. Elements in the design would include weep holes or piping to allow groundwater to continue to drain to Elliott Bay as currently occurs. Tidal fluctuations would also occur behind the wall via the same system. The EBSP would not explicitly clean up any contaminated areas in the uplands that may currently be affecting groundwater quality except by removal of soils or grouting soils in place within the project footprint that might incrementally improve groundwater quality conditions.

BMPs include construction staging barrier berms, filter fabric fences, temporary sediment detention basins, and use of slope coverings to contain sediment on site. Other BMPs include installing a temporary containment wall and/or other temporary containment measures (e.g., turbidity curtains) to isolate Elliott Bay from the construction work zone to reduce turbidity, resuspension of contaminants, and pH leaching; and treating stormwater and process water runoff from the construction zones prior to discharge. The contractor would also be responsible for developing and implementing a Fugitive Dust Control Plan and a Stormwater Pollution Prevention Plan.

Utilities would be relocated in order to replace the seawall. Therefore, relocated utilities would be constructed in compliance with applicable guidelines, policies, standards, and regulations regarding protection of surface and groundwater quality, through the implementation of BMPs described above for the overall project.

Streets and sidewalks would be restored in compliance with applicable guidelines, policies, standards, and regulations regarding protection of surface and groundwater quality, through the implementation of BMPs for protection of water quality pursuant to City of Seattle Construction Stormwater Control Technical Requirements (DR-16-2009), Seattle Municipal Stormwater Code (Ordinance 123105), and NPDES permits obtained for the project.

Currently, stormwater runoff is not treated before discharging to Elliott Bay. The project would provide basic stormwater treatment, which would reduce the overall input of stormwater pollutants into Elliott Bay following construction. The additional northbound lane would result in a slight increase in impervious area (estimated to be an increase of 0.4 acre compared to existing conditions), and therefore, a slight increase of surface runoff volume. The restored sidewalk would include non-pollutant generating impervious surfaces to the extent practicable.

Potential water quality impacts from street and sidewalk construction work would be avoided or minimized to the extent feasible through implementing construction stormwater BMPs as described above for the overall project.

Habitat restoration and enhancement measures would be implemented in compliance with applicable guidelines, policies, standards, and regulations regarding protection of water quality, by complying with water quality monitoring requirements for in-water work following the 401 Water Quality Certification and related Water Quality Monitoring and Protection Plan approved for the project by Ecology. Standard pollution prevention BMPs would be implemented for construction equipment operating in the water, such as barges and cranes, to minimize the potential for spills and leaks of petroleum products or other toxic materials into Elliott Bay. In-water work areas for habitat feature construction would be temporarily isolated using turbidity curtains or silt booms (or similar) to contain short-term turbidity plumes. The new habitat substrate would be placed gradually rather than by dumping through the water column, minimizing the disturbance of existing bottom sediments. Habitat restoration and enhancement measures proposed as a part of the project would result in long-term improvements to aquatic habitat conditions resulting from installation of habitat features.

Relevant BMPs and mitigation measures are discussed in substantial detail in the DEIS, FEIS and, in particular, the Fish, Wildlife and Vegetation Report (Appendix L); Water Resources Discipline Report (Appendix M); Geology and Soils Discipline Report (Appendix N); and the Contaminated Materials Discipline Report (Appendix O). See discussion above regarding implementation of Stormwater Pollution Prevention Plan and Construction Stormwater and Erosion Control Plan.

*B. Solid and liquid wastes and untreated effluents shall not enter any bodies of water or be discharged onto the land.*

SDOT contract specifications include requirements for contractors to manage solid and liquid wastes. No untreated effluent or solid or liquid waste would be discharged to land or to storm drains. Relevant BMPs and mitigation measures are discussed in substantial detail in the DEIS, FEIS and, in particular, the Fish, Wildlife and Vegetation Report (Appendix L); Water Resources Discipline Report (Appendix M); Geology and Soils Discipline Report (Appendix N); and the Contaminated Materials Discipline Report (Appendix O). See discussion above regarding implementation of Stormwater Pollution Prevention Plan and Construction Stormwater and Erosion Control Plan.

The contractor would be required to follow an approved Spill Prevention, Control and Countermeasure (SPCC) plan, including maintaining spill response materials on site. The contractor would implement construction BMPs to avoid or minimize the potential for the release of oil, chemicals, or other hazardous materials onto or into the water. Standard pollution prevention would also include implementation of BMPs for construction equipment operating in the water, such as barges and cranes, to minimize the potential for spills and leaks of petroleum products or other toxic materials into Elliott Bay. This includes the use of oil booms, as needed.

No petroleum products, fresh cement, lime or concrete, chemicals or other toxic or deleterious materials that may be used during construction will be allowed to enter surface waters. Equipment in use at the staging and construction areas will be maintained in a safe and leak-proof condition and will be inspected regularly. Appropriate repairs will be made to prevent the release of such materials.

- D. The release of oil, chemicals or other hazardous materials onto or into the water shall be prohibited. Equipment for the transportation, storage, handling or application of such materials shall be maintained in a safe and leakproof condition. If there is evidence of leakage, the further use of such equipment shall be suspended until the deficiency has been satisfactorily corrected.*

The contractor would be required to follow an approved SPCC plan, including maintaining spill response materials on site. The contractor would implement construction BMPs to avoid or minimize the potential for the release of oil, chemicals, or other hazardous materials onto or into the water including (but are not limited to) properly maintaining construction equipment and vehicles to prevent them from leaking fuel or lubricants. For equipment used in and over water, only nonpetroleum lubricants would be specified to the extent feasible. If there is evidence of leakage, the further use of such equipment would be suspended until the deficiency has been satisfactorily corrected.

- E. All shoreline developments and uses shall minimize any increases in surface runoff, and control, treat and release surface water runoff so that receiving water quality and shore properties and features are not adversely affected. Control measures may include, but are not limited to, dikes, catch basins or settling ponds, interceptor drains and planted buffers.*

Streets and sidewalks would be restored in compliance with applicable guidelines, policies, standards, and regulations regarding stormwater, through the implementation of stormwater control BMPs pursuant to City of Seattle Construction Stormwater Control Technical Requirements (DR-16-2009), Seattle Municipal Stormwater Code (Ordinance 123105), and NPDES permits obtained for the project.

Currently, stormwater runoff is not treated before discharging to Elliott Bay. The project would provide basic stormwater treatment, which would reduce the overall input of stormwater pollutants into Elliott Bay following construction. The additional northbound lane would result in a slight increase in impervious area (estimated to be an increase of 0.4 acres compared to existing conditions), and therefore, a slight increase of surface runoff volume. The restored sidewalk would include non-PGIS surfaces to the extent practicable.

Potential water quality impacts from street and sidewalk construction work would be avoided or minimized to the extent feasible through implementing construction stormwater BMPs as described above.

Relevant BMPs and mitigation measures are discussed in substantial detail in the DEIS, FEIS and, in particular, the Water Resources Discipline Report (Appendix M); Geology and Soils Discipline Report (Appendix N); and the Contaminated Materials Discipline Report (Appendix O).

*F. All shoreline developments and uses shall utilize permeable surfacing where practicable to minimize surface water accumulation and runoff.*

This development standard is not applicable to most of project. Permeable surfacing is not proposed for the restored streets. The restored sidewalk would include non-pollutant generating impervious surfaces to the extent practicable.

Stormwater management will be provided for the project and at the construction staging areas in accordance with applicable requirements. The contractor is responsible for the preparation and implementation of a Spill Prevention, Control and Countermeasure plan to be used for the duration of the proposed project.

Relevant BMPs and mitigation measures are discussed in substantial detail in the SEIS, FEIS and, in particular, the Water Resources Discipline Report (Appendix M); Geology and Soils Discipline Report (Appendix N); and the Contaminated Materials Discipline Report (Appendix O).

*G. All shoreline developments and uses shall control erosion during project construction and operation.*

The new seawall is intended to reduce the potential of erosion from coastal storm and seismic damages for the life of the project. Erosion and sediment control BMPs would be in place before any clearing, grading, or construction. BMPs include installing temporary containment walls or curtains as needed, and employing Temporary Erosion and Sediment Control (TESC) measures to prevent negative impacts to adjacent surface waters.

The Zone 1 habitat bench and beach is designed to control erosion using natural processes by installing planted buffers along the backshore. This standard does not apply to other habitat restoration and enhancement measures.

Other relevant BMPs and mitigation measures are discussed in substantial detail in the EIS and, in particular, the Geology and Soils Discipline Report (Appendix N).

*H. All shoreline developments and uses shall be located, designed, constructed and managed to avoid disturbance, minimize adverse impacts and protect fish and wildlife habitat conservation areas including, but not limited to, spawning, nesting, rearing and habitat areas, commercial and recreational shellfish areas, kelp and eel grass beds, and migratory routes. Where avoidance of adverse impacts is not practicable, project mitigation measures relating the type, quantity and extent of mitigation to the protection of species and habitat functions may be approved by the Director in consultation with state resource management agencies and federally recognized tribes.*

To fulfill the project's purpose and need, SDOT is proposing to replace the existing seawall adjacent to a navigable water to reduce the risks of coastal storm and seismic damages and to protect public safety, critical infrastructure, and associated economic activities along Seattle's central waterfront. The seawall is also designed to be relocated up to 10 to 15 feet landward of its existing location, which would result in an increase of approximately 1.8 acres of aquatic habitat. This would be accomplished during and post-construction through the implementation of conservation measures and BMPs and through coordination with resource agencies, tribes, and other consulting parties.

During installation of the temporary containment wall, BMPs would be implemented to avoid or minimize impacts to the aquatic environment including (but not limited to) employing vibratory pile-driving equipment as practicable and implementing sound attenuation measures, as feasible, for impact driving and/or proofing of concrete piles; working during designated in-water work window (with approved extension) when few fish are present; employing a turbidity curtain as needed; and monitoring for the presence of marine mammals during in-water work.

Currently, stormwater runoff is not treated before discharging to Elliott Bay. The project would provide basic stormwater treatment, which would reduce the overall input of stormwater pollutants into Elliott Bay following construction. The additional northbound lane would result in a slight increase in impervious area (estimated to be an increase of 0.4 acres compared to existing conditions), and therefore, a slight increase of surface runoff volume. The restored sidewalk would include non-PGIS surfaces to the extent practicable. In addition, treated timber piles (e.g., creosote) are not proposed as part of the EBSP, including new piles used for pile-supported sidewalks.

Sidewalks would be restored in their original location over areas where the existing seawall would be demolished and setback 10 to 15 feet landward from its current location. Increased amounts of natural light would be transmitted to adjacent aquatic areas from overwater sidewalk surfaces by installing LPS in structural concrete framing elements within the restored sidewalk. The LPS is intended to increase ecosystem productivity and improve migratory conditions for juvenile salmonids in the vicinity of the seawall.

Potential water quality impacts from street and sidewalk construction work would be avoided or minimized to the extent feasible through implementing construction stormwater BMPs as described above.

Habitat restoration and enhancement measures intended to promote improved ecosystem structure and function would incrementally enhance the food web of Elliott Bay, thus benefiting offshore marine areas. It is not expected that construction actions would affect water quality in offshore areas; turbidity and other temporary effects would be contained within the nearshore zone and reduced overall through implementation of BMPs during construction.

Relevant BMPs and mitigation measures are discussed in substantial detail in the DEIS, FEIS and, in particular, the Fish, Wildlife and Vegetation Report (Appendix L); Water Resources Discipline Report (Appendix M); Geology and Soils Discipline Report (Appendix N); and the Contaminated Materials Discipline Report (Appendix O). See discussion above regarding implementation of Construction Stormwater Pollution Prevention Plan.

- I. *All shoreline developments and uses shall be located, designed, constructed and managed to minimize interference with or adverse impacts to beneficial natural shoreline processes such as water circulation, littoral drift, sand movement, erosion and accretion.*

There would be minor short-term effects on littoral drift, waves, and current patterns in the project area due to the presence of vessels during construction and related construction activities. Any long-term effects on littoral drift, waves, and current patterns in the project area would be negligible because they would be insignificant localized impacts within Elliott Bay.

Habitat restoration and enhancement measures are proposed to restore natural shoreline processes that have been degraded by development occurring along the Elliott Bay shoreline over the past century. There would be minor short-term effects on littoral drift, waves, and current patterns in the project area due to the presence of vessels during construction and related construction activities. Any long-term effects on littoral drift, waves, and current patterns in the project area would be negligible because they would be insignificant localized impacts within Elliott Bay.

Relevant BMPs and mitigation measures are discussed in substantial detail in the DEIS, FEIS and, in particular, the Fish, Wildlife and Vegetation Report (Appendix L); Water Resources Discipline Report (Appendix M); and the Geology and Soils Discipline Report (Appendix N).

- J. All shoreline developments and uses shall be located, designed, constructed and managed in a manner that minimizes adverse impacts to surrounding land and water uses and is compatible with the affected area.*

Improvements to the seawall and adjacent areas are intended to support the existing activities and land use plans for the Seattle waterfront. The project team is working closely with the Seattle Waterfront Program, a program also led by the City, to ensure compatibility between these and other future projects. The project is compatible with other authorized uses, including the State Route 99 Bored Tunnel Project, within the area and with uses planned for the area under the Comprehensive Plan and the Shoreline Master Program.

Habitat enhancement measures are proposed to restore natural shoreline processes that have been degraded by development occurring along the Elliott Bay shoreline over the past century. These habitat enhancements are an integral part of the project and will enhance the nearshore environment as well as the enjoyment of these resources by the public that will utilize this area.

Relevant BMPs and mitigation measures are discussed in substantial detail in the DEIS, FEIS and, in particular, the Social Resources and Environmental Justice Discipline Report (Appendix B); Transportation Discipline Report (Appendix C); Noise and Vibration Discipline Report (Appendix E); Cultural, Historic and Archaeological Resources Discipline Report (Appendix F); Air Quality Report (Appendix G); Land Use, Shorelines, and Parks and Recreation Discipline Report (Appendix I); Public Services and Utilities Discipline Report (Appendix J); Visual Quality Assessment (Appendix K); Fish, Wildlife and Vegetation Report (Appendix L); Water Resources Discipline Report (Appendix M); Geology and Soils Discipline Report (Appendix N); and the Contaminated Materials Discipline Report (Appendix O).

- L. All shoreline development shall be located, constructed and operated so as not to be a hazard to public health and safety.*

The primary purpose of this project element is to improve public safety. Seawall repair and replacement would reduce the risks of coastal storm and seismic damages, and protect public safety and critical infrastructure along Seattle's central waterfront. During construction, the contractor would implement BMPs to avoid or minimize hazards to public health and safety. BMPs include following a construction summer shutdown period to accommodate businesses between Memorial Day weekend and Labor Day weekend of each year of construction; isolating the construction activities to ensure public safety by employing measures such as corridor fencing, temporary road closures, and traffic detours; marking pedestrian pathways in

the construction area to ensure public safety and to facilitate access; monitoring installed signage during construction to ensure effective communication to all pedestrians and bicyclists; and helping arrange pedestrian detours that comply with ADA accessibility guidelines and meet the safety needs of those who have disabilities. Minor preparation work or work-zone maintenance would occur as necessary during the summer shutdown periods to minimize public safety concerns and fix minor problems between construction seasons.

Habitat restoration and enhancement measures would be located and constructed so as not to be a hazard to public health and safety. BMPs implemented during construction to avoid or minimize hazards to public health and safety include following a construction summer shutdown period to accommodate businesses between Memorial Day weekend and Labor Day weekend of each year of construction. Habitat restoration and enhancement measures would not interfere with existing or potential navigational uses after construction, and would have minimal impacts to navigation during construction as a result of the use of barges in the area.

Relevant BMPs and mitigation measures are discussed in substantial detail in the DEIS, FEIS and, in particular, the Social Resources and Environmental Justice Discipline Report (Appendix B); Transportation Discipline Report (Appendix C); Noise and Vibration Discipline Report (Appendix E); Cultural, Historic and Archaeological Resources Discipline Report (Appendix F); Air Quality Report (Appendix G); Land Use, Shorelines, and Parks and Recreation Discipline Report (Appendix I); Public Services and Utilities Discipline Report (Appendix J); Visual Quality Assessment (Appendix K); Fish, Wildlife and Vegetation Report (Appendix L); Water Resources Discipline Report (Appendix M); Geology and Soils Discipline Report (Appendix N); and the Contaminated Materials Discipline Report (Appendix O).

*M. All development activities shall be located and designed to minimize or prevent the need for shoreline defense and stabilization measures and flood protection works such as bulkheads, other bank stabilization, landfills, levees, dikes, groins, jetties or substantial site regrades.*

Replacement of the seawall would reduce the risks of coastal storm and seismic damages and protect public safety, critical infrastructure, and associated economic activities along Seattle's central waterfront. Because the project is located in an active urban waterfront, natural beach protection along the entire seawall is not a practical alternative.

No shoreline stabilization measures are required for habitat restoration and enhancement measures above and beyond what is already proposed as part of the overall project.

Relevant BMPs and mitigation measures are discussed in substantial detail in the DEIS, FEIS and, in particular, the Fish, Wildlife and Vegetation Report (Appendix L); Water Resources Discipline Report (Appendix M); and the Geology and Soils Discipline Report (Appendix N).

*N. All debris, overburden and other waste materials from construction shall be disposed of in such a way as to prevent their entry by erosion from drainage, high water or other means into any water body.*

Debris and waste materials potentially generated from seawall replacement would be removed from the site or managed on site in compliance with SDOT contract specifications to prevent erosion and/or spillage into Elliott Bay. BMPs would be implemented during construction to avoid or minimize potential impacts to adjacent waterbodies including, but not limited to, installing netting and/or tarping to catch any falling debris from over-water activities (e.g., sidewalk removal and installation) prior to entering the water; and installing a temporary containment wall and other temporary containment measures (e.g., silt curtains) to isolate Elliott Bay from the construction work zone.

BMPs would be implemented during construction to avoid or minimize potential impacts to adjacent waterbodies as described above.

Relevant BMPs and mitigation measures are discussed in substantial detail in the DEIS, FEIS and, in particular, the Fish, Wildlife and Vegetation Report (Appendix L); Water Resources Discipline Report (Appendix M); and the Geology and Soils Discipline Report (Appendix N). See discussion above regarding implementation of Stormwater Pollution Prevention Plan.

*O. Navigation channels shall be kept free of hazardous or obstructing development or uses.*

Navigation in the project area would be temporarily affected during construction due to barge use. Any disruptions would be coordinated with the appropriate entities (e.g., Washington State Ferries, Coast Guard) and the information would be made readily available to the public. Replacement of the seawall would not interfere with existing or potential navigational uses after construction.

The habitat enhancement areas have been designed to minimize impacts to navigation along the seawall to the extent practicable. These features would not interfere with the public's ability to move through and perform water-dependent business within the harbor area waters. Disruption of typical use patterns is not anticipated.

In Zone 1, a 200-foot buffer would be maintained between the habitat feature and the existing ferry terminals and vessel routes to the north and the Washington State Department of Transportation (WSDOT)-owned maintenance dock to the south. Ferries navigating to and from Colman Dock, maintenance boats accessing Pier 48, and occasional use by hand-carried vessels (e.g., kayaks) would not be disrupted by the proposed habitat feature, and public use of this area would be maintained. Therefore, impacts to typical navigational use patterns in Zone 1 would be negligible. In Zones 2 through 6, the intertidal habitat bench is proposed within the City of Seattle right-of-way along the seawall face and beneath the cantilevered sidewalk; therefore, navigation within this section of the harbor area would not be affected. The design for habitat restoration and enhancement activities throughout the project area is being coordinated to minimize impacts to existing navigation.

Additionally, moorage and space for loading and unloading would remain along the piers and waterward of the planned habitat areas. With the continued availability of moorage space and navigable water, impacts to water-dependent businesses and public access would be negligible.

Relevant BMPs and mitigation measures are discussed in substantial detail in the DEIS, FEIS and, in particular, the Social Resources and Environmental Justice Discipline Report (Appendix B); Transportation Discipline Report (Appendix C); Noise and Vibration Discipline Report (Appendix E); Cultural, Historic and Archaeological Resources Discipline Report (Appendix F); Air Quality Report (Appendix G); Land Use, Shorelines, and Parks and Recreation Discipline Report (Appendix I); Public Services and Utilities Discipline Report (Appendix J); Visual Quality Assessment (Appendix K); Fish, Wildlife and Vegetation Report (Appendix L); Water Resources Discipline Report (Appendix M); Geology and Soils Discipline Report (Appendix N); and the Contaminated Materials Discipline Report (Appendix O).

Q. *Submerged public right-of-way shall be subject to the following standards:*

1. *All structures shall be floating except as permitted in subsection Q2 below;*
2. *Piling and dolphins may be permitted to secure floating structures only if the structures cannot be safely secured with anchors or with pilings or dolphins located outside of the right-of-way;*
3. *The maximum height of structures shall be fifteen feet (15');*
4. *Structures shall not occupy more than thirty-five (35) percent of the right-of-way and shall not occupy more than forty (40) percent of the width of the right-of-way;*
5. *A view corridor or corridors of not less than fifty (50) percent of the width of the right-of-way shall be provided and maintained.*
6. *An open channel, unobstructed by vessels or structures for access to and from the water for public navigation and for access to adjacent properties*

The existing seawall would be demolished and setback up to 10 to 15 feet landward from its current location, away from existing submerged public ROW; therefore, this standard is not applicable. No structures are proposed in submerged public right of way.

Street and sidewalk restoration is proposed to occur within existing upland ROW; therefore, this standard is not applicable

### **SMC 23.60.690 - Development Standards in the UH Environment**

In addition to development standards applicable to all environments contained in the General Provisions subchapter, developments in the Urban Harborfront Environment shall be located and designed to encourage economically viable water-dependent uses to meet the needs of waterborne commerce, facilitate the revitalization of Downtown's waterfront, provide opportunities for public access and recreational enjoyment of the shoreline, preserve and enhance elements of historic and cultural significance and preserve views of Elliott Bay and the land forms beyond, which are consistent with the goals and objectives of the viaduct replacement project for a safe transportation corridor in this area of downtown Seattle.

The development standards set forth in the Urban Harborfront (UH) Environment relate to height, maximum size limits, lot coverage, view corridors, regulated public access, and location of uses (SMC 23.60.690). The proposed development has been reviewed and is consistent with these development standards, where applicable.

The proposed uses for this project in the UH Environment are described in more detail above and are generally limited to the seawall replacement, upland improvements, and habitat enhancement elements and the construction activities and development associated with the seawall replacement.

The seawall is a permitted as a special use in the UH Shoreline Environment pursuant to SMC 23.60.662 (B) (2) (See analysis below). Staging and outdoor storage of construction materials for this project is permitted as clearly incidental and necessary for the construction of permitted uses. The proposed utility line use is permitted as a special use per SMC 23.60.662 (A) (2) (See analysis below). The substrate habitat enhancements and habitat benches that do not create dry land are permitted as special use pursuant to SMC 23.60.662 (D) (2) (See analysis below). The applicant has also requested a conditional use approval for the Zone 1 beach enhancement area, which is an unlisted use as landfill on submerged lands that creates dry land for habitat enhancement, and thus requires analysis for consistency with conditional use criteria (SMC 23.60.034), which is provided below.

#### **Special Use Analysis: Replaced Seawall/Bulkhead**

The UH environment allows a seawall/bulkhead as a shoreline special use (SMC 23.60.662 B 2) subject to criteria for special uses which are described in SMC 23.60.032, which indicates that the Director may approve or conditionally approve a special use only if the applicant can demonstrate all of the following:

- A. *The proposed use will be consistent with the policies of RCW 90.58.020 and the Shoreline Policies.*

Seawall replacement is consistent with the policies of Revised Code of Washington (RCW) 90.58.020 and the SMP. RCW 90.58.020 states that "...It is the policy of the state to provide for the management of the shorelines of the state by planning for and fostering all reasonable and appropriate uses." Seawall replacement is proposed to reduce the risks of coastal storm and seismic damages, and protect public safety and critical infrastructure along Seattle's central waterfront; therefore, seawall replacement is a reasonable and appropriate use within the shoreline district. Seawall replacement would be permitted as a special use and is therefore not prohibited within the shoreline environment. Additionally, the EBSP is identified in the Comprehensive Plan as an important project within the Shoreline District for protecting critical transportation infrastructure (DPD 2005). Seawall replacement meets the standards of the SMP and meets the applicable development standards of the UH, as demonstrated in this decision.

*B. The proposed use will not interfere with normal public use of public shorelines.*

During seawall construction (including temporary contractor staging and access), potential effects to normal public use of public shorelines would be avoided or minimized to the greatest extent practicable by implementing a construction summer shutdown period to accommodate businesses when access to the waterfront and public shorelines is at peak levels. The summer shutdown of construction activity would occur from Memorial Day weekend through Labor Day weekend. Additionally, an active public information effort would be undertaken to let residents and visitors know how to access the waterfront during construction, where parking is available, and how to reach the area by transit. Pedestrian access to the piers would be maintained throughout the construction zone and would not be disrupted by staging areas. Additionally, provisions would be made for the access of emergency services and the delivery of goods to businesses on and along the piers during construction.

The final location of the replacement seawall would be up to 10 to 15 feet landward from its existing location. Existing public access would be maintained and improved through street and sidewalk restoration proposed as part of the overall project including cantilevered sidewalks over the seawall setback area to maintain public access to the waterfront. Therefore, the replacement seawall would not interfere with the normal public use of public shorelines during operation. Contractor staging and access would be temporary in nature and would not interfere with the normal public use of public shorelines over the long-term.

*C. The proposed use of the site and design of the project is compatible with other allowed uses within the area.*

The EBSP is designed to support the existing activities and land use plans for the Seattle waterfront. The project team is working closely with the Seattle Waterfront Program, a program also led by the City, to ensure compatibility between the two separate and independent projects. The project is compatible with other authorized uses within the area, including the SR 99 Bored Tunnel Project, and with uses planned for the area under the Comprehensive Plan and the SMP. Contractor staging and access is also compatible with other authorized uses within the area and with uses planned for the area under the Comprehensive Plan and the SMP because it is an accessory use (per SMC 23.60.092 – Accessory Uses) associated with seawall replacement.

*D. The proposed use can achieve no net loss of ecological functions except when the applicant obtains a variance from this requirement under subsection 23.60A.036.C.*

Construction of the seawall has the potential to affect the surrounding shoreline environment. During construction, the seawall would be replaced in compliance with applicable guidelines, policies, standards, and regulations regarding protection of the shoreline environment. Additionally, BMPs and minimization measures summarized elsewhere in this decision would be implemented during construction to avoid or minimize impacts to the shoreline environment. Overall, seawall replacement is intended to eliminate the risk of catastrophic failure of the seawall, thereby preventing unreasonably adverse effects to the shoreline in which it is located. Therefore, no unreasonably adverse impacts to the shoreline resources or ecology are anticipated to result from the project.

*E. The public interest suffers no substantial detrimental effect.*

In order to ensure that the public interest suffers no substantial detrimental effect from the project, SDOT continues to provide materials and offer formal and informal opportunities for public feedback through the EBSP website, email address, hotline, ongoing public coordination, fairs and festivals, EBSP tours, organizational briefings, and public meetings. SDOT would continue to look for opportunities to engage a broader range of people, particularly local stakeholders/property owners, to provide opportunities for feedback as the design process moves forward. Obtaining public input during the design process is intended to ensure that the public interest suffers no substantial detrimental effect from the project. Timely and efficient construction within an important center of commerce and recreation along the waterfront is in the public's interest.

The proposed shoreline special use approval for the seawall/bulkhead in the UH Shoreline Environment is **CONDITIONALLY GRANTED**.

Special Use Analysis: Utility Lines

The UH environment allows utility lines as a shoreline special use (SMC 23.60.662 A) subject to criteria for special uses which are described in SMC 23.60.032, which indicates that the Director may approve or conditionally approve a special use only if the applicant can demonstrate all of the following:

*F. The proposed use will be consistent with the policies of RCW 90.58.020 and the Shoreline Policies.*

Utility relocation is an integral part of seawall replacement and is thereby a reasonable and appropriate use within the Shoreline District per RCW 90.58.020. Additionally, utility relocation within the shoreline district is consistent with the policies of the SMP as demonstrated in this application.

*A. The proposed use will not interfere with normal public use of public shorelines.*

SDOT's objective would be to maintain utility service to the greatest extent possible during construction. Additionally, the contractor would implement BMPs to avoid or minimize hazards to public health and safety during construction. BMPs would include isolating the construction activities to ensure public safety by employing measures such as corridor fencing, temporary road closures, and traffic detours; marking pedestrian pathways in the construction area to ensure public safety and to facilitate access; monitoring installed signage during construction to ensure effective communication to all pedestrians and bicyclists; and helping arrange pedestrian detours that comply with Americans with Disabilities Act accessibility guidelines and meet the safety needs of those who have disabilities.

Both upland and in-water utilities would be protected in place to the extent feasible. Replaced or relocated utilities would be configured so as to not interfere with the normal public use of public shorelines.

*B. The proposed use of the site and design of the project is compatible with other allowed uses within the area.*

The EBSP is designed to support the existing activities and land use plans for the Seattle waterfront. The project team is working closely with the Seattle Waterfront Program, a program also led by the City, to ensure compatibility between the two separate and independent projects. The project is compatible with other authorized uses within the area, including the SR 99 Bored Tunnel Project, and with uses planned for the area under the Comprehensive Plan and the SMP. Contractor staging and access is also compatible with other authorized uses within the area and with uses planned for the area under the Comprehensive Plan and the SMP because it is an accessory use (per SMC 23.60.092 – Accessory Uses) associated with seawall replacement.

*C. The proposed use can achieve no net loss of ecological functions except when the applicant obtains a variance from this requirement under subsection 23.60A.036.C.*

During construction, utilities would be relocated in compliance with applicable guidelines, policies, standards, and regulations regarding protection of the shoreline environment. BMPs and minimization measures, as summarized in this decision, would be implemented during construction to prevent impacts to the shoreline environment.

Both upland and in-water utilities would be protected in place to the extent feasible. Utilities would be replaced or relocated so as to avoid or minimize any unreasonably adverse effects to the surrounding shoreline environment. Long-term beneficial effects include improved water quality as a result of stormwater treatment. Additionally, lowering and vertically/horizontally separating rebuilt outfall ends from new habitat benches would minimize exposure of salmonids to stormwater pollutants. Therefore, no unreasonably adverse impacts to the shoreline resources or ecology are anticipated to result from utility relocation.

*E. The public interest suffers no substantial detrimental effect.*

SDOT continues to provide materials and offer formal and informal opportunities for public feedback through the EBSP website, email address, hotline, ongoing public coordination, fairs and festivals, EBSP tours, organizational briefings, and public meetings. SDOT would continue to look for opportunities to engage a broader range of people, particularly local stakeholders/property owners, to provide opportunities for feedback as the design process moves forward. Obtaining public input during the design process is intended to ensure that the public interest suffers no substantial detrimental effect from the project

The proposed shoreline special use approval for utility lines in the UH Shoreline Environment is **CONDITIONALLY GRANTED.**

**Special Use Analysis: Landfill in submerged lands for habitat enhancement**

The UH environment allows landfill on submerged lands that does not create dry land, where necessary for a water-dependent or water-related use as a shoreline special use (SMC 23.60.662 DB 2) subject to criteria for special uses which are described in SMC 23.60.032, which indicates that the Director may approve or conditionally approve a special use only if the applicant can demonstrate all of the following:

*A. That the proposed use will be consistent with the policies of RCW 90.58.020 and the Shoreline Policies.*

The proposed substrate enhancements and habitat benches would be consistent the policies of RCW 90.58.020 and the SMP. RCW 90.58.020 states that "...It is the policy of the state to provide for the management of the shorelines of the state by planning for and fostering all reasonable and appropriate uses." Habitat restoration and enhancement measures are proposed as part of the overall project purpose to improve the degraded ecosystem functions and processes of the Elliott Bay nearshore in the vicinity of the existing seawall. Therefore, substrate enhancements and habitat benches within the Shoreline District are reasonable and appropriate uses. Substrate enhancements and habitat benches meet the standards of the SMP and meet the applicable development standards of the UH, as demonstrated in this decision.

*B. That the proposed use will not interfere with the normal public use of public shorelines.*

The substrate enhancements and habitat benches are designed so as not to interfere with the normal public use of public shorelines during construction and throughout the life of the project. During construction, potential effects to normal public use of public shorelines would be avoided or minimized to the greatest extent practicable by implementing a construction summer shutdown period to accommodate businesses when access to the waterfront and public shorelines is at peak levels. The summer shutdown of construction activity would occur from Memorial Day weekend through Labor Day weekend. Pedestrian access to the piers would be maintained throughout the construction zone and would not be disrupted by staging areas. Additionally, provisions would be made for the access of emergency services and the delivery of goods to businesses on and along the piers during construction.

The substrate enhancements and habitat benches are intended to improve the currently degraded aquatic ecosystem and provide a migratory corridor for juvenile salmon, and would not displace any current uses of the shoreline by the public. The substrate enhancements and habitat benches were designed to avoid interference with existing or potential navigational uses within the project area. Periodic maintenance of these features may be required over the life of the project, but any impacts to public use of the shoreline would be negligible. Therefore, the proposed substrate enhancements and habitat benches would not interfere with the normal public use of public shorelines over the life of the project.

*C. That the proposed use of the site and design of the project will be compatible with other permitted uses within the area.*

The EBSP, including habitat restoration and enhancement measures, is designed to support the existing activities and land use plans for the Seattle waterfront. The project team is working closely with the Seattle Waterfront Program, a program also led by the City, to ensure compatibility between the two separate and independent projects. The project is compatible with other authorized uses, such as the SR 99 Tunnel Project, within the area and with uses planned for the area under the Comprehensive Plan and the SMP.

*D. That the proposed use will cause no unreasonably adverse effects to the shoreline environment in which it is to be located.*

Construction of the substrate enhancements and habitat benches has the potential to affect the surrounding shoreline environment. During construction, these features would be placed in compliance with applicable guidelines, policies, standards, and regulations regarding protection of the shoreline environment. Additionally, BMPs and minimization measures would be implemented during construction to avoid or minimize impacts to the shoreline environment. Overall, the substrate enhancements and habitat benches are intended to improve the currently degraded aquatic ecosystem and provide a migratory corridor for juvenile salmon. Therefore, no unreasonably adverse impacts to the shoreline resources or ecology are anticipated to result from the project.

The final Post-Construction Monitoring and Adaptive Management Plan will be submitted to DPD prior to construction of relevant habitat enhancement measures and approval of any grading/building permits required for the Zone 1 habitat enhancement area.

*E. That the public interest suffers no substantial detrimental effect.*

SDOT continues to provide materials and offer formal and informal opportunities for public feedback through the EBSP website, email address, hotline, ongoing public coordination, fairs and festivals, EBSP tours, organizational briefings, and public meetings. SDOT would continue to look for opportunities to engage a broader range of people, particularly local stakeholders/property owners, to provide opportunities for feedback as the design process moves forward. Obtaining public input during the design process is intended to ensure that the public interest suffers no substantial detrimental effect from the project.

The proposed shoreline special use approval for habitat enhancement in submerged lands in the UH Shoreline Environment is **CONDITIONALLY GRANTED**.

### **Conditional Use Analysis: Zone 1 Habitat Area**

The applicant has requested a shoreline conditional use for the Zone 1 Beach enhancement area (see description of this habitat enhancement element in project description above) as an unlisted use in the UH environment, as landfill in submerged lands that creates dry land for habitat enhancement. The following provides analysis of this portion of the project with respect to conditional use criteria as described in WAC 173-27-160.

1. Uses that are classified or set forth in the applicable master program as conditional uses may be authorized provided that the applicant demonstrates all of the following:

- a. That the proposed use is consistent with the policies of RCW 90.58.020 and the master program;*

The proposed substrate enhancements and habitat benches, including the Zone 1 beach and habitat bench, would be consistent with the policies of the Revised Code of Washington (RCW) 90.58.020 and the Shoreline Master Program (SMP). RCW 90.58.020 states that "...It is the policy of the state to provide for the management of the shorelines of the state by planning for and fostering all reasonable and appropriate uses." Habitat restoration and enhancement measures are proposed as part of the overall project purpose to improve the degraded ecosystem functions and processes of the Elliott Bay nearshore in the vicinity of the existing seawall.

As part of the EBSP, a large intertidal bench with a narrow beach area would be constructed in Zone 1. This beach and habitat bench has been designed as one of the project's primary habitat elements and would aid in the overall improvement of ecosystem health and restored habitat for species such as juvenile salmon and forage fish. The Zone 1 beach and habitat bench is intended to act as the entrance to the habitat corridor. The habitat corridor is generally at mean lower low water or slightly above, and this elevation wraps continuously around to the north side of the north rock arm and connects to the habitat bench at Colman Dock. The proposed beach and habitat bench is primarily designed to provide habitat improvements to the shoreline environment. Incidental public access would not be precluded; the intensity of incidental public access is not anticipated to degrade or interfere with the restoration values provided by the Zone 1 beach and habitat bench. SDOT has submitted a draft Post-Construction Monitoring and Adaptive Management Plan that will be finalized and implemented and includes specific habitat enhancement targets and goals for this Zone 1 beach area. The proper and complete implementation of this plan will be critical to the success of the primary goal of this area for habitat enhancement and to ensure that passive public uses of this area, as well as other factors, do not interfere with the primary habitat goals for this area.

Allowing public access to the shoreline with habitat restoration and enhancement measures is consistent with the purposes of the SMP (SMC 23.60.002), which are to: 1) protect the ecosystems of the shoreline areas; 2) encourage water-dependent uses; 3) provide for maximum public use and enjoyment of the shorelines of Seattle; and 4) preserve, enhance, and increase views of the water and access to the water. This habitat enhancement feature along the waterfront at the proposed location is also consistent with the purpose of the Urban Harborfront Environment (SMC 23.60.220 C 8) to "encourage economically viable water-dependent uses to meet the needs to waterborne commerce, facilitate the revitalization of Downtown's waterfront, provide opportunities for public access and enhance elements of historic and cultural significance and preserve views of Elliott Bay and the land forms beyond." Additionally, this project element is consistent with Seattle Comprehensive Plan Goal Land Use Goal 46, which promotes development of "a transportation network that supports and enhances use of and access to the shorelines" and Land Use Goal 58 to "upgrade/beautify the public shoreline" and Land use Goal 48 to "preserve, protect and restore areas such as those necessary for the support of wild and aquatic life or those identified as having geological or biological significance." Therefore, substrate enhancements and habitat benches, including the Zone 1 beach and habitat bench, within the Shoreline District are reasonable and foster appropriate uses.

- b. That the proposed use will not interfere with the normal public use of public shorelines;*

The substrate enhancements and habitat benches, including the Zone 1 beach and habitat bench, are designed to avoid or minimize interference with the normal public use of public shorelines throughout the life of the project. The design for these features is intended to be compatible with navigational uses in the vicinity of the seawall and would not preclude existing or potential water-borne commerce or water-dependent uses. Therefore, disruption of typical use patterns is not anticipated. Continued coordination with property owners would occur to ensure that potential construction or operational impacts to navigation are avoided or minimized.

During construction, potential effects to normal public use of public shorelines would be avoided or minimized by implementing a summer construction shutdown period to accommodate businesses when access to the waterfront and public shorelines is at peak levels. The summer shutdown of construction activity would occur from Memorial Day weekend through Labor Day weekend. Pedestrian access would be maintained throughout the construction zone year-round. Efforts would also be undertaken to minimize parking loss during September, which is a busy month for many waterfront businesses. Additionally, the project team is coordinating with other waterfront projects to provide a unified and comprehensive approach to continued accessibility to the waterfront, available parking, and transit options during construction.

In Zone 1, a 200-foot buffer would be maintained between the habitat feature and the existing ferry terminals and vessel routes to the north and the Washington State Department of Transportation (WSDOT)-owned maintenance dock to the south in order to avoid potential conflict with terminal operations. Ferries navigating to and from Colman Dock, maintenance boats accessing Pier 48, and occasional use by hand-carried vessels (e.g., kayaks) would not be disrupted by the proposed habitat feature, and public use of this area would be maintained. Therefore, impacts to typical navigational use patterns in Zone 1 would be negligible. In Zones 2 through 6, the intertidal habitat bench is proposed within the City of Seattle right-of-way along the seawall face and beneath the cantilevered sidewalk; therefore, navigation within this section of the harbor area would not be affected. The design for habitat restoration and enhancement activities throughout the project area is being coordinated to minimize impacts to existing navigation.

Additionally, moorage and space for loading and unloading would remain along the piers and waterward of the planned habitat areas. With the continued availability of moorage space and navigable water, impacts to water-dependent businesses and public access would be negligible. Overall, the habitat elements are intended to improve the currently degraded aquatic ecosystem and provide a migratory corridor for juvenile salmon without displacing or interfering with any current uses of the shoreline by the public. Incidental public access would be provided as passive recreation within the Zone 1 beach area. Periodic maintenance of these features may be required over the life of the project, but any impacts to public use of the shoreline would be negligible.

Therefore, the proposed substrate enhancements, habitat benches, and Zone 1 beach would not interfere with the normal public use of public shorelines over the life of the project.

Again, SDOT has submitted a draft Post-Construction Monitoring and Adaptive Management Plan that will be finalized and implemented and includes specific habitat enhancement targets and goals for this Zone 1 beach area. The proper and complete implementation of this plan will be critical to the success of the primary goal of this area for habitat enhancement and to ensure that passive public uses of this area, as well as other factors, do not interfere with the primary habitat goals for this area, which is the stated priority for this area.

- c. That the proposed use of the site and design of the project is compatible with other authorized uses within the area and with uses planned for the area under the comprehensive plan and shoreline master program;*

The EBSP, including habitat restoration and enhancement measures, is designed to support the existing activities and land use plans for the Seattle waterfront. The project team is working closely with the Seattle Waterfront Program, a program also led by the City of Seattle, to ensure compatibility between the two separate and independent projects. Through close coordination with WSDOT, SDOT is also ensuring that project construction and design are compatible with the Alaskan Way Viaduct Replacement Project and the Seattle Multimodal Terminal at Colman Dock Project. The project is also compatible with other authorized uses within the area, including those of the Port of Seattle and their lessees, and those planned for under the Seattle Comprehensive Plan and the SMP.

- d. That the proposed use will cause no significant adverse effects to the shoreline environment in which it is to be located;*

The Zone 1 beach and habitat bench design is similar to that created in 2007 at the Olympic Sculpture Park on the north end of the Seattle waterfront, although it has a much wider lower intertidal bench area. Specifically, the 2.5-inch minus angular rock is the same material that was used at the Olympic Sculpture Park bench, which has been shown to be suitable for this type of application (Toft et al. 2012).

This material is resistant to scour and also traps finer sediments naturally moving along Elliott Bay. Per discussions with coastal modelers and the Washington Department of Fish and Wildlife (WDFW), this material is preferred to rounded rock due to its resistance to scour; it also provides suitable material for salmonid prey species. Annual monitoring of the Olympic Sculpture Park beach over the past 5 years has shown an increase in ecological function and use by juvenile salmon (Toft et al. 2012).

Construction of the substrate enhancements and habitat benches, including the Zone 1 beach and habitat bench, are not anticipated to have significant adverse effects to the shoreline environment. The addition of fill into the shoreline environment would have temporary impacts due to disturbance of the nearshore and coverage of existing habitats, which could result in short-term, localized increases in turbidity, resuspension of contaminated sediments, and harm to algal plants and invertebrate animals that cannot move out of the construction area. During construction, substrate enhancements and habitat benches would be placed in compliance with applicable guidelines, policies, standards, and regulations regarding protection of the shoreline environment. Additionally, best management practices (BMPs) and minimization measures, included in Section 9 of Attachment 2 of the SSDP Application, would be implemented during construction to avoid or minimize impacts to the shoreline environment.

Although the installation and construction of these habitat features would result in some detrimental short-term effects on the existing environment, once completed, they would provide substantial long-term benefits to individual species and the ecosystem. Salmonids would benefit by gaining an improved migration corridor with higher quality refuge and rearing habitat from existing conditions (Anchor Environmental 2003; Anchor QEA 2012; Goetz et al. 2012; Myers et al. 1998; SDOT 2012; Weitkamp et al. 2000). National Marine Fisheries Service (NMFS) considers rockfish to be likely present in these nearshore areas and kelp beds until fall (Jim Muck, U.S. Fish and Wildlife Service, personal communication 2011). Juvenile rockfish would benefit from the placement of diverse underwater substrates and expanded bull kelp beds and macroalgae expected to colonize the subtidal substrate and outer slopes of the habitat benches (Love et al. 1991 and 2002; NMFS 2010; SDOT 2012; WDFW 2011; Weis 2004). Substrates and bathymetry in the nearshore would be diversified, which would provide improved habitat for various marine plants, invertebrates, and vertebrates. A secondary benefit of the placement of fill for the habitat features is that placement of new, clean substrate would cover existing sediments that contain low to moderate levels of contaminants, reducing the potential for disturbance and resuspension by future events. This benefit would not only provide its intended habitat enhancement function but would also improve the nearshore through the isolation of some areas of existing contaminated substrate.

The Zone 1 beach and habitat bench is being proposed for habitat enhancement purposes and not as mitigation for project impacts or to provide structural stability for the seawall; however, it is anticipated that in addition to the habitat goals and objectives for this area, there will be incidental public use and passive recreation. This issue is discussed in the criteria above and will be addressed post-construction through the proper and complete implementation of the Monitoring and Adaptive Management Plan. It is important to note that the University of Washington observations at the Olympic Sculpture Park have indicated that human use of the beach has not resulted in detrimental impacts to fish use of the constructed pocket beach (J. Toft, University of Washington, personal communication 2012).

*e. That the public interest suffers no substantial detrimental effect.*

As described above, the proposed project would be compatible with other authorized uses within the area and with uses planned for the area under the Seattle Comprehensive Plan and SMP. Throughout the design of the project, SDOT solicited public input from businesses, special interest organizations, tribes, government agencies, and the general public to ensure that the public interest suffers no substantial detrimental effect from the project. SDOT continues to provide materials and offer formal and informal opportunities for public feedback through the EBSP website, email, hotline, ongoing public coordination, fairs and festivals, EBSP tours, organizational briefings, and public meetings. SDOT would continue to look for opportunities to engage a broader range of people, particularly local stakeholders/property owners, to provide opportunities for feedback as the design process moves forward.

- 2. In the granting of all conditional use permits, consideration shall be given to the cumulative impact of additional requests for like actions in the area. For example, if conditional use permits were granted for other developments in the area where similar circumstances exist, the total of the conditional uses shall also remain consistent with the policies of RCW 90.58.020 and shall not produce substantial adverse effects to the shoreline environment.*

Concurrent construction of the EBSP and the WSDOT Alaskan Way Viaduct Replacement Project (especially the south portal) would cumulatively and temporarily hamper access to local waterfront businesses due to the addition of more construction staging areas, construction vehicle traffic, and compounding detours. However, once completed, the EBSP would restore the roadway to existing conditions with the addition of a second northbound lane adjacent to Colman Dock. Therefore, the EBSP would make a positive contribution to the improvements in conjunction with the reasonably foreseeable future actions, which would enhance the functionality of the transportation network by reducing congestion and improving traffic flow.

Additionally, previously completed projects in the surrounding area have improved habitat quality (e.g., Olympic Sculpture Park); concurrent and future projects in Water Resource Inventory Areas 8 and 9 that include the Green/Duwamish system and Elliott Bay are slated to continue this theme. A specific cumulative beneficial effect of these projects would result from the creation of a shoreline migratory corridor for juvenile salmon and other aquatic animals and vegetation. Through the combination of these projects, habitat features for salmonids would continue to improve along the Seattle waterfront and should enhance juvenile salmon movements. Furthermore, the EBSP would slightly reduce contaminants in the nearshore sediments through placement of clean materials for the proposed habitat enhancements. Therefore, the combined effects of the EBSP and reasonably foreseeable future actions would have a long-term beneficial cumulative effect on fish, wildlife, and vegetation and would result in improved environmental quality along the downtown Seattle waterfront.

It is important to note that the primary goal and objectives of the Zone 1 beach area are for habitat enhancement, as described in the application material and summarized in this decision. Proper and complete implementation of the Post Construction Monitoring and Adaptive Management will be critical to meeting these habitat goals and minimizing factors that interfere with these goals, as discussed elsewhere in this decision. It is presumed that any future proposals for similar or like actions would also be required to be designed, monitored, maintained and managed with habitat enhancement as the primary goal, thus providing confidence that the cumulative impact of this conditional use request shall be similarly consistent with the policies of RCW 90.58.020 as this project, as well as not producing substantial adverse effects to the shoreline environment.

SDOT continues to coordinate with WSDOT to procure a lease agreement for habitat restoration and enhancement activities proposed on WSDOT-owned property in Zone 1. As part of this agreement, SDOT would be responsible for the long-term management, maintenance, and monitoring of the Zone 1 beach and habitat bench and the other habitat improvements associated with the EBSP. To ensure that SDOT is strategic in how maintenance and beach nourishment would occur, consistent with restoration goals, a *Draft Post-Construction Monitoring and Adaptive Management Plan* is being developed to describe monitoring methods and targets, data analysis and reporting, and adaptive management protocols (see discussion of this plan above in responses to other criteria).

The final Post-Construction Monitoring and Adaptive Management Plan will be submitted to DPD prior to construction of relevant habitat enhancement measures and approval of any grading/building permits required for the Zone 1 habitat enhancement area.

3. *Other uses that are not classified or set forth in the applicable master program may be authorized as conditional uses provided the applicant can demonstrate consistency with the requirements of this section and the requirements for conditional uses contained in the master program.*

Substrate enhancements and habitat benches, including the Zone 1 beach and habitat bench, as landfill on submerged lands for habitat restoration and enhancement purposes, is not specifically addressed in the code. However, these uses are consistent with the SMP as demonstrated in the response above.

4. *Uses that are specifically prohibited by the master program may not be authorized pursuant to either Subsection (1) or (2) of this section.*

Substrate enhancements and habitat benches, including the Zone 1 beach and habitat bench, as landfill on submerged lands for habitat restoration and enhancement purposes is not specifically prohibited by the SMP.

The proposed shoreline conditional use approval to allow landfill in submerged lands that creates dry land to provide habitat enhancement in a UH environment is **CONDITIONALLY GRANTED**.

#### The Provisions of Chapter 173-27 WAC

Chapter 173-27 WAC sets forth permit requirements for development in shoreline environments, and gives the authority for administering the permit system to local governments. The State acts in a review capacity. The Seattle Municipal Code Section 23.60 (Shoreline Development) incorporates the policies of the WAC by reference. These policies have been addressed in the foregoing analysis and have fulfilled the intent of WAC 173-27.

#### Conclusion – Shoreline Substantial Development Permit

The proposed shoreline substantial development permit is **CONDITIONALLY GRANTED**. Shoreline Substantial Development conditions are listed below.

#### **ANALYSIS – STATE ENVIRONMENTAL POLICY ACT (SEPA)**

DPD's SEPA review of the Elliott Bay Seawall Replacement project is limited to application of substantive authority and mitigation, as found in Seattle's Environmental Policies and Procedures ([SMC 25.05.660](#)). This is because SDOT, as lead agency, has already completed the threshold determination process, which resulted in a Determination of Significance, and publication of the subsequent Environmental Impact Statement (EIS).

The substantive authority role allows the City to consider mitigation for impacts that were identified in the EIS for the Elliott Bay Seawall Replacement project using the 'policies, plans, rules, or regulations' designated in the city's SEPA ordinance (SMC 25.05).

The SEPA Overview Policy (SMC 25.05.665) establishes the relationship among codes, policies, and environmental review. Specific policies for specific elements of the environment, certain neighborhood plans, and other policies explicitly referenced may serve as the basis for exercising substantive SEPA authority. The Overview Policy states in part:

"[W]here City regulations have been adopted to address an environmental impact; it shall be presumed that such regulations are adequate to achieve sufficient mitigation" (subject to some limitations).

Under certain limitations/circumstances (SMC 25.05.665 D 1-7) additional mitigation can be considered. The impacts identified in SDOT's environmental documents and the City's SEPA policies are provided below.

The Final EIS and the Draft EIS evaluated a No Action Alternative and three build alternatives: Alternatives A, B, and C. As required by SEPA, the three build alternatives represent different ways of achieving the project purpose, but they share certain basic components:

- A new seawall structure
- Habitat enhancements
- Upland improvements and public amenities

**Alternative A** would rebuild the face of the seawall as close as possible to its current location. Alternative A combines the lowest cost structural option and a cost-effective suite of ecosystem restoration measures and upland improvements.

**Alternative B** consists of a different type of structural solution and additional ecosystem restoration measures and upland improvements. Alternative B would rebuild the face of the seawall as far landward as practical.

**Alternative C** was developed as a hybrid of Alternatives A and B. Alternative C uses the structural solution from Alternative A and includes many of the additional ecosystem restoration measures and upland improvements from Alternative B. Alternative C would move the face of the seawall slightly landward.

The **No Action Alternative** provides a baseline for comparison to the potential effects of the build alternatives and is projected over the next 50 years. The scenarios evaluated under this alternative include minimal damage, loss of functionality and collapse of the seawall.

Alternative C was selected as the preferred alternative, as discussed in the Final EIS.

The information in the EIS documents, supplemental information provided by the applicant (plans, further project descriptions), and the experience of the City with review of similar projects form the basis for this analysis and decision.

### Short-term Impacts

A number of temporary or construction-related impacts are expected from this project, which are discussed in detail in the DEIS and FEIS (Chapters 4 and 8) and relevant Appendices.

Several adopted City codes and/or ordinances provide mitigation for some of the identified impacts. Specifically these are: Stormwater Code (SMC 22.800-808), Grading Code (SMC 22.170); Street Use Ordinance (SMC Title 15); the Building Code (construction measures in general); and the Noise Ordinance (construction noise). In addition Federal and State regulations and permitting authority are effective to control short-term impacts on water quality. Compliance with these applicable codes and ordinances will reduce or eliminate most of the short-term impacts to the environment. Some of these impacts are further discussed below.

### *Air Quality*

Construction impacts for the project are discussed in Chapter 4 of the FEIS (2013) and Appendices, including Appendix G (Air Quality Discipline Report). Air quality effects from construction of the Seawall Replacement Project would occur primarily as a result of emissions from heavy-duty construction equipment (such as bulldozers, backhoes, and cranes), diesel-fueled mobile sources (such as trucks, brooms, and sweepers), diesel- and gasoline-fueled generators, and on- and offsite project-related vehicles (such as service trucks and pickups). Chapter 4.14 of the FEIS and the Air Quality Discipline Report addresses construction-related air quality impacts from the project, including the results of analyses conducted to evaluate the potential effects during project-related construction and focused on estimates and modeling of criteria pollutant emissions from construction activities and associated construction-related vehicle traffic.

Chapters 4 and 8 of the FEIS and the Discipline Report also include description and discussion of mitigation measures to address the potential impacts identified in these analyses, including normal fugitive dust control practices (primarily periodic sprinkling of exposed open areas with water trucks) and daily sprinkling of exposed soil areas and daily street sweeper cleanup of dirt and mud tracked onto local roadways. More frequent sprinkling and street sweeping was assumed during temporary and final restorations of the Alaskan Way surface street. No additional mitigation pursuant to SEPA is warranted.

### *Greenhouse Gas Impacts*

Construction activities including construction worker commutes, truck trips, the operation of construction equipment and machinery, and the manufacture of the construction materials themselves result in increases in carbon dioxide and other greenhouse gas emissions that adversely impact air quality and contribute to climate change and global warming. The analyses described above in the Air Quality Discipline Report address project-related impacts due to greenhouse gas emissions. Mitigation measures are discussed in Chapters 4 and 8 of the FEIS and the Discipline Report to reduce and mitigate for these impacts. No additional mitigation pursuant to SEPA is warranted.

### *Surface Water Quality*

Construction impacts for the project are discussed in Chapter 4 of the DEIS and FEIS and in the Appendices, including Chapter 5 of Appendix M (Water Resources Discipline Report) and Appendix O (Contaminated Materials Discipline Report). Mitigation measures for these effects are addressed in more detail in the EIS (Chapter 8) and Chapter 5 of these appendices as well.

A construction Stormwater Pollution Prevention Plan (SWPPP) would be required to comply with NPDES permit requirements. A comparable Construction Stormwater and Erosion Control Plan would be required to comply with the City's permitting requirements. A single document satisfying both the State and City permit requirements would likely be prepared. The SWPPP would identify the measures that would be used to collect, treat and discharge dewatering water. Because of the large volumes of water to be managed at times during the construction period, water management would be a major focus in the SWPPP. Construction dewatering control would be accomplished in one or more of the following ways:

- Installation of an on-site treatment facility and re-injection of water into the ground.
- Use of tanks to temporarily store water coupled with a water treatment collection service for collection and transport to an off-site certified facility (SDOT 2011a).
- Installation of an on-site treatment facility and discharge of treated water to Elliott Bay and/or the combined sewer system as permitted by King County.

Reinjection of dewatering water to groundwater could be the preferred method of discharge back to the environment. However, this and other on-site treatment and discharge options may not be feasible in some areas of the roadway corridor due to the limited amount of space within the project area. Dewatering treatment and discharge systems generally consist of temporary water storage tanks, filtration systems, transfer pumps and outlet discharge piping.

Construction dewatering flows would be treated with the appropriate method(s) to meet provisions of the applicable permits (for example City permits, NPDES construction stormwater permit, and Section 401 Water Quality Certification) and, if discharge to the combined sewer system is planned, a King County Industrial Wastewater Discharge Permit/Authorization. After collection and treatment, dewatering water would be monitored and discharged per the specified provisions of the applicable permits. In addition, water quality monitoring of Elliott Bay would be required (as part of the project permits) during construction to ensure the project is not adversely impacting water quality.

Dewatering systems to limit the drawdown of the local groundwater table may be utilized to limit the potential for ground surface settlement in the areas adjacent to the excavation. These potential mitigation measures are discussed in Chapters 4 and 8 of the FEIS and the Geology and Soils Discipline Report. In addition, a recharge/reinjection system may be needed to mitigate for potential drawdown-induced ground surface settlement that could damage nearby buildings and/or infrastructure.

Mitigation for potential stormwater runoff effects throughout the duration of construction would be provided via preparing, implementing, and continually updating the construction SWPPP to address evolving site conditions and any water quality problems that are observed in Elliott Bay. Much of the SWPPP content would focus on erosion and sediment control BMPs tailored to specific site work activities (including an on-site grout batch facility) and proximity of storm drains. Typical upland construction stormwater BMPs that would likely be used for construction include:

- Silt fencing,
- Temporary sedimentation tanks/ponds/traps,
- Storm drain inlet protection,
- Street sweeping,
- Straw or compost-filled wattles to contain and filter turbid water,
- Temporary mulch cover on areas of exposed soils,
- A wheel wash for cleaning of construction vehicles to prevent “trackout” of mud and sediments from the work area,
- Temporary plastic or other covering on erodible material stockpiles,
- Active runoff treatment using chitosan enhanced sand filtration (if needed in the event that the BMPs listed above are not effective enough), and
- Active runoff treatment using electrocoagulation subtractive technology (if needed in the event that the BMPs listed above are not effective enough).

In addition, to satisfy applicable requirements in the City of Seattle standard specifications for construction, the SWPPP would include a Spill Plan that addresses prevention, containment, and control of hazardous material spills and leaks during construction. With diligent implementation of the BMPs outlined in the SWPPP, it is expected that stormwater runoff from areas under construction would not cause significant adverse impacts on Elliott Bay water quality, nor on groundwater quality.

Excavated soils and demolition debris would be loaded onto trucks, train cars, or onto barges, to quickly and efficiently remove them from the project area. Within the project area, stockpiling of excavated soils and debris would be minimized.

Mitigation for removal of the existing seawall would be provided by directly isolating the work area from Elliott Bay with temporary containment walls as described previously. Depending on which type of seawall exists in the active work zone, the isolation technique and sequence of removal would vary. Any concrete waste generated during demolition of the existing seawall would be contained, collected and disposed of consistent with permit requirements. This includes any concrete debris in the work zone inside of the containment walls. The containment system would not allow concrete to fall into or drop into Elliott Bay. Proposed mitigation for handling contaminated concrete is discussed in Chapters 4 and 8 of the FEIS and the Contaminated Materials Discipline Report (SDOT 2012).

While the existing seawall structure is relatively porous, and allows soil to sluice through it with the rising and falling tide levels that interact with groundwater inland of the wall, the temporary containment walls used for isolation of shoreline work areas would be built tall enough and tightly enough to prevent fast-moving water from entering the work area. This in turn would prevent sluicing of soil and contaminants possibly present in the soil from escaping containment.

Construction equipment operating in the water and over the water during seawall structure removal could use vegetable-based oil and lubricants to prevent the potential for release of toxic materials into the water column resulting from minor leaks or accidental ruptures of hydraulic lines.

The 1934 Type A wall (see Chapter 2 of FEIS for more details) would be partially removed to allow for soil improvement wall construction. A portion of the existing wall exposed to the water column would be removed to allow for the setback of the new soil improvement seawall. This area would be isolated from Elliott Bay with the construction of a temporary containment wall.

The 1934 Type B Wall (see Chapter 2 of FEIS for more details) would not be removed with construction of the soil improvement wall. A concrete face panel would be installed immediately waterward of the existing seawall face, within the isolated area protected by a temporary containment wall, to allow for soil improvement work to take place.

The 1916 gravity wall (see Chapter 2 FEIS) and pile-supported sidewalk structures would be removed completely only in Zone 1 during the early stages of construction. The 1916 gravity wall and pile-supported structures would be partially removed in Zone 2 (or south of Colman Dock). A temporary containment wall would be installed in Elliott Bay prior to removal of the 1916 wall blocks. A permanent containment wall would then be constructed in the upland area to allow installation of the soil improvement wall. If barges are used to remove excavated materials or demolition debris from the construction area, containment measures would be implemented to minimize and prevent potential spillage into the water during loading and unloading of this material to comply with applicable permit requirements.

Construction effects on surface water would be avoided, minimized, and mitigated, and the amount of required treatment would be minimized and mitigated by the development, implementation, and ongoing updating of certain management plans, listed and summarized in FEIS and relevant appendices.

Measures proposed to avoid or minimize adverse impacts to the aquatic environment include removing the existing seawall structure, removing up to 80 creosote-treated piles from the aquatic environment, and increasing the aquatic habitat area in seawall setback areas (landward of the existing seawall).

Additional measures to reduce or eliminate disturbance, turbidity, resuspension of contaminants, removal of biota, noise, debris falling into the water, fish handling, and juvenile fish stranding would be implemented during construction, including:

- In-water work would occur during the approved regulatory work window, or during an approved extension of the work window as necessary.
- Construction of the proposed project would comply with water quality requirements (such as from the Section 401 WQC) for turbidity and pH.
- All ground disturbing activities proposed as part of the project will comply with temporary and permanent stormwater control measures identified in the *City of Seattle Construction Stormwater Control Technical Requirements Manual* (Director's Rule 16-2009, Volume 2).
- Stormwater and process water runoff from the construction zones would be treated prior to discharge to either Elliott Bay or the King County sewer system.
- Netting and/or tarping would be installed to catch any falling debris from over-water activities (e.g., sidewalk removal and installation) prior to entering the water.
- A Stormwater Pollution Prevention Plan would be developed prior to construction.
- A temporary containment wall and/or other temporary containment measures (e.g., turbidity curtains) would be installed to isolate Elliott Bay from the construction work zone to reduce turbidity, resuspension of contaminants, and pH leaching.

- The final segment of the temporary containment wall or other temporary containment measures would be left open to first sweep with nets to push fish out into Elliott Bay prior to fully closing, to reduce fish stranding and reduce fish handling.
- Vibratory pile-driving equipment would be employed to reduce sound levels to below fish-injury thresholds. Sound attenuation measures would be used, as feasible, for impact driving of concrete piles and the limited number of impact-protected sheetpiles.
- Water would be temporarily dewatered behind the containment wall as feasible (or conducted at low tide) and fish salvage would be conducted behind the containment wall per an authorized Scientific Collection Permit.
- Turbidity curtains would be deployed during construction as necessary during soil stabilization installation, riprap removal/displacement, installation of temporary containment wall, and placement of habitat features.
- Riprap would be removed in such a way as to avoid removing associated biota, minimize turbidity, and avoid resuspension of contaminants.
- Monitoring would be conducted for the presence of marine mammals, and Marine Mammal Protection Act authorization requirements would be followed for temporary shutdowns or other measures.
- Where material would be placed (e.g., habitat benches), only clean and coarse materials would be used and they would be placed via bucket close to the substrate surface to minimize sediment resuspension; fill material quantities have been balanced during design to minimize fill while maximizing habitat area and function.

See discussion above in Shoreline analysis section regarding implementation of the Construction Stormwater Pollution Prevention Plan. No additional mitigation for construction-related impacts to surface water quality pursuant to SEPA is warranted.

#### Drainage and Earth

The construction-related effects from this project on earth and groundwater and mitigation measures to address and minimize these effects are addressed in Appendix N (Geology and Soils Discipline Report) of the FEIS, as well as Chapters 4 and 8. Any additional information required to verify conformance with applicable ordinances and codes (The Stormwater Code and Director's Rule 16-2009) will be required prior to issuance of any required building permits or demolition permits.

No additional mitigation pursuant to SEPA is warranted.

#### Traffic and Parking

The construction-related effects related to traffic and parking are addressed in Chapter 4 of the FEIS and Appendix C (Transportation Discipline Report) and, more specifically, in Chapter 5 of that report. Construction-related mitigation measures are discussed in Chapters 4 and 8 of the FEIS and Appendix C and will be further developed in a Traffic Management Plan that will be reviewed and approved by the City of Seattle. No additional mitigation pursuant to SEPA is warranted.

### Noise

Construction-related impacts related to noise are addressed in Appendix E of the FEIS (Noise and Vibration Discipline Report) and, more specifically, Chapter 5 of that report. Chapters 5 and 8 provide mitigation measures to minimize the potential noise impacts of this project. Substantial nighttime activities are expected for this project, which will generate specific mitigation requirements from the Seattle Department of Planning and Development that will be specified in a noise variance to be reviewed and approved by DPD. Additional temporary noise variances may be required. No additional mitigation pursuant to SEPA is warranted.

### Plants and Animals

Several significant construction activities for this project are concentrated over and adjacent to the nearshore environment in Elliott Bay. These activities are described in more detail above and in the FEIS, in particular the Fish, Wildlife, and Vegetation Discipline Report (Appendix L). Numerous marine fish species occur along the Seattle shoreline and Elliott Bay. These include ESA-listed fish species of Puget Sound Chinook salmon (*Oncorhynchus tshawytscha*), steelhead (*O. mykiss*), and bull trout (*Salvelinus confluentus*). Nearshore marine areas of Elliott Bay are designated as Chinook salmon and bull trout critical habitat (USFWS 2005; NMFS 2005). Elliott Bay is also expected to support the three Georgia Basin rockfish species recently listed under the ESA: bocaccio (*Sebastes paucispinis*), and canary (*S. pinniger*), and yelloweye (*S. ruberrimus*) rockfish (NMFS 2010b). A more comprehensive list and discussion of affected aquatic and wildlife species potentially impacted by this project along the Seattle shoreline is contained in Appendix L of the FEIS.

Construction-related effects on natural resources (i.e., fish, wildlife and vegetation) are analyzed and discussed in more detail in Chapter 5 of Appendix L of the EIS. This chapter and Chapter 8 also contain mitigation measures that will be employed to minimize and mitigate for potential impacts to these resources. Appendix M (Water Resources Discipline Report) and Appendix O (Contaminated Materials Discipline Report) also contain mitigation measures that will minimize and mitigate impacts to natural resources, primarily with respect to Best Management Practices that will be employed for protection of water quality and aquatic habitat during construction activities for the seawall replacement as well as the habitat enhancement features. No additional mitigation pursuant to SEPA is warranted.

### Long Term Impacts

Several long-term or use-related impacts are anticipated as a result of approval of this proposal including impacts on air quality, surface water quality, and plants and animals.

Several adopted City codes and/or ordinances provide mitigation for some of the identified impacts. The Stormwater Code requires on-site collection of stormwater, with provisions for controlled tightline release to an approved outlet, and additional design elements to prevent isolated flooding. The Land Use Code controls site coverage, setbacks, building height and use, and contains other development and use regulations to assure compatible development. Generally, compliance with these applicable codes and ordinances is adequate to achieve sufficient mitigation of most long-term impacts. However, due to the nature of the proposal, some of the potential impacts warrant further analysis.

*Air Quality*

Operational effects of the project on air quality is addressed in the FEIS and, in particular, Chapter 6 of Appendix G (Air Quality Discipline Report). This chapter and Chapter 8 also contain mitigation measures that will be employed to minimize and mitigate potential impacts to air resources following completion of the project. No additional mitigation pursuant to SEPA is warranted.

*Plants and Animals*

Operational effects of the project on natural resources (i.e., fish, wildlife and vegetation) are analyzed and discussed in more detail in Chapter 6 of Appendix L of the EIS (Fish, Wildlife and Vegetation Discipline Report). This chapter and Chapter 8 also contain mitigation measures that will be employed to minimize and mitigate for potential impacts to these resources.

Chapter 8 of the FEIS and Appendix M (Water Resources Discipline Report) and Appendix O (Hazardous Materials Discipline Report) and the Post-Construction Monitoring and Adaptive Management Plan also contain mitigation measures that will minimize and mitigate impacts to natural resources during operation of the proposed project, including measures that will be employed for consistency with City of Seattle's Stormwater Code that will serve to protect water and habitat quality for potentially affected plants and animals.

No additional mitigation pursuant to SEPA is warranted.

*Transportation*

Operational effects of the project to traffic and parking are analyzed and discussed in Chapters 5 and 8 of the FEIS and Appendix C (Transportation Discipline Report). No additional mitigation pursuant to SEPA is warranted.

*Surface Water Quality*

Operational effects of the project to surface water quality are analyzed and discussed in Chapter 6 of Appendix M of the F and FEIS (Water Resources Discipline Report). This chapter and Chapter 8 also addresses conventional water quality and peak flow control BMPs that will be employed as well as green stormwater infrastructure practices required by the City's Stormwater Code that will address potential adverse effects of the project to surface water quality during operation of the proposed tunnel. No additional mitigation pursuant to SEPA is warranted.

*Other Impacts*

Several adopted Codes and Ordinances and other Agencies will appropriately mitigate the other use-related adverse impacts created by the proposal, such as the Puget Sound Clean Air Agency and the Seattle Energy Code (long-term energy consumption).

## **Conclusion - SEPA**

Environmental impacts for the proposal were identified and analyzed in the DEIS and FEIS issued by SDOT. While DPD has the authority to mitigate impacts pursuant to the city's SEPA practices, existing City codes and regulations are adequate to achieve sufficient mitigation for the proposal's environmental impacts. The Director hereby incorporates by reference the mitigation measures and commitments in the FEIS. A summary of these mitigation measures is in the project file. No additional SEPA conditions are required.

## **SHORELINE CONDITIONS**

1. The project must be designed and built in substantial conformance to the site plan and project specifications submitted to the City of Seattle with the Application for Shoreline Substantial Development Permit.

### **Prior to Building Permit Issuance**

2. The following plans, as referenced in the application material and the FEIS, shall be fully prepared, as applicable, and provided to DPD prior to the start of any construction activities for this project. These plans should also be referenced on all applicable building permit plans for this project.
  - a. **The Stormwater Pollution Prevention Plan** as well as any **Contaminated Soils Management Plans** relevant to construction or handling of materials in the Shoreline District (e.g., staging, stockpiling, handling, transporting of excavated soils and/or demolition debris)
  - b. Final plans for use of temporary barges during construction that includes details on location, size, draft relative to substrate, uses, and operational Best Management Practices for protection of aquatic habitat.
  - c. **The Post-Construction Monitoring and Adaptive Management Plan.**
  - d. **Temporary Erosion and Sediment Control Plan (TESCP):** The TESCP shall outline the design and construction specifications for BMPs to be used to identify, reduce, eliminate, or prevent sediment and erosion problems. It would include environmental standards based on state regulations, such as turbidity and total suspended solids (TSS) levels in stormwater discharged from construction staging and work areas.
  - e. **Spill Prevention, Control and Countermeasures Plan:** The Spill Prevention, Control and Countermeasures Plan shall outline requirements for spill prevention, responsible personnel, spill reporting processes and forms, site information including site plans inspection protocols, equipment, material containment measures, and spill response procedures.
  - f. **Fugitive Dust Control Plan:** The Fugitive Dust Control Plan shall outline measures to prevent generation of fugitive dust from exposed soil, construction traffic, and material stockpiles.

