



City of Seattle

Department of Planning and Development

Diane M. Sugimura, Director

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

INTRODUCTION

This document pertains to the Director’s analysis and decision for two (2) separate but related Master Use Permits (MUPs).

The application reviewed in this analysis is for the Project 3012585 SR 520 Portage Bridge Portion. There is one off-site mitigation area proposed as mitigation for aquatic impacts that cannot be eliminated or mitigated within the Portage Bay project area.

The related applications include:

Project 3012591 7400 Sand Point Way NE – Magnuson Park Mitigation Site

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ANALYSIS AND DECISION

1 Application 3012585 – SR 520 Portage Bay Bridge Portion

Application Number: 3012585

Applicant Name: Kerry Pihlstrom for Washington State Department of Transportation

Addresses of Proposal: 2548 B Boyer Ave. E

1.1 SUMMARY OF PROPOSED ACTION

SR 520 Replacement Project – Portage Bay Bridge Portion. Shoreline Substantial Development Permit to allow replacement of the existing Portage Bay Bridge in an environmentally critical area. Proposed bridge will be 6 lanes (3 lanes in each direction) with a height of 84' from the water line to the top of guardrail on the west end and a height of 27' from the water line to the top of guardrail on the east end, with a total length of 2,700'. Work includes 50,341 cubic yards of grading. Project includes construction of temporary work bridges and off-site mitigation. Mitigation site review under Project 3012591.

The SR 520 Project includes a lid over a portion of the new roadway; however that portion of the project is outside of the Shoreline District and not subject to this shoreline permit decision.

Environmental documents have been prepared by Washington State Department of Transportation (WSDOT) and the Federal Highway Administration (FHWA). The Draft Environmental Impact Statement for the SR 520 Bridge Replacement and HOV Program was released in August 2006. A Supplemental Draft Environmental Impact Statement prepared by FHWA and WSDOT was released in January 2010. The Final EIS was issued on June 17, 2011.

The 2006 Draft Environmental Impact Statement (EIS) analyzed proposed corridor construction from the I-5 interchange in Seattle to just west of I-405 in Bellevue. The Supplemental Draft EIS in 2010 evaluated the effects of a No Build Alternative and three 6-lane design options for the SR 520 corridor from I-5 to Medina. A Preferred Alternative, similar to Option A, was identified in April 2011 following consideration of comments on the SDEIS.

The Final Environmental Impact Statement and Final Section 4(f) and 6(f) Evaluations analyzed a No Build Alternative along with a Preferred Alternative and the three SDEIS design options for the I-5 to Medina corridor. The Preferred Alternative and the design options would replace existing bridge structures, add continuous HOV lanes, and include landscaped lids over SR 520 to reconnect neighborhoods that are now separated by the highway.

The aging floating bridge is vulnerable to failure in a severe windstorm, and the fixed bridges along the corridor do not meet current seismic standards and are vulnerable to collapse in an earthquake. In addition, due to growth in jobs and housing, the corridor currently carries nearly twice as many vehicles as it was originally designed for, resulting in extended congestion and impaired mobility.

The following approvals are required:

Shoreline Substantial Development Permit to allow construction of a bridge in the Conservancy Recreation, Conservancy Management and Urban Residential (CR, CM, and UR) Shoreline Environments.

SEPA – To approve, condition or deny pursuant to Seattle’s SEPA policies. Chapter 25.05.660, Seattle Municipal Code.

1.1.1 Background Information

1.1.1.1 SR520 Bridge Replacement and HOV Program

The SR 520, I-5 to Medina Project would widen the SR 520 corridor to six lanes from I-5 in Seattle to Evergreen Point Road in Medina and would restripe and reconfigure the lane channelization in the corridor from Evergreen Point Road to 92nd Avenue Northeast in Yarrow Point. It would replace the vulnerable Evergreen Point Bridge, including the floating bridge and west and east approaches, and the Portage Bay Bridge with new structures.

Because of the difference in types of new structures, and the difference in shoreline environments in which those structures would be located, the Washington Department of Transportation (WSDOT) has applied to the City of Seattle for four separate Shoreline Substantial Development Permits (SSDP). This decision pertains only to the Portage Bay Bridge portion of the project. See Figure 1 Project Location.

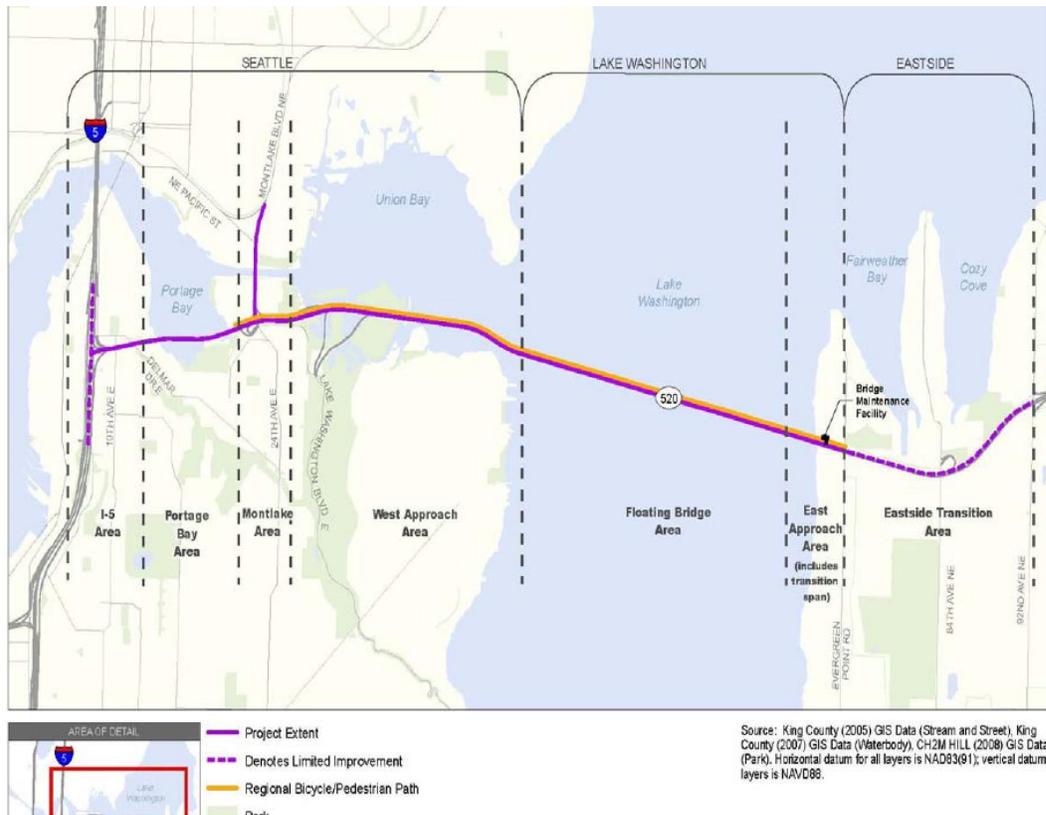


Figure 1 Project Location

The new bridge will begin just east of Delmar Drive, extend across Portage Bay, and end west of Montlake Boulevard. See Figure 2 Vicinity Map.

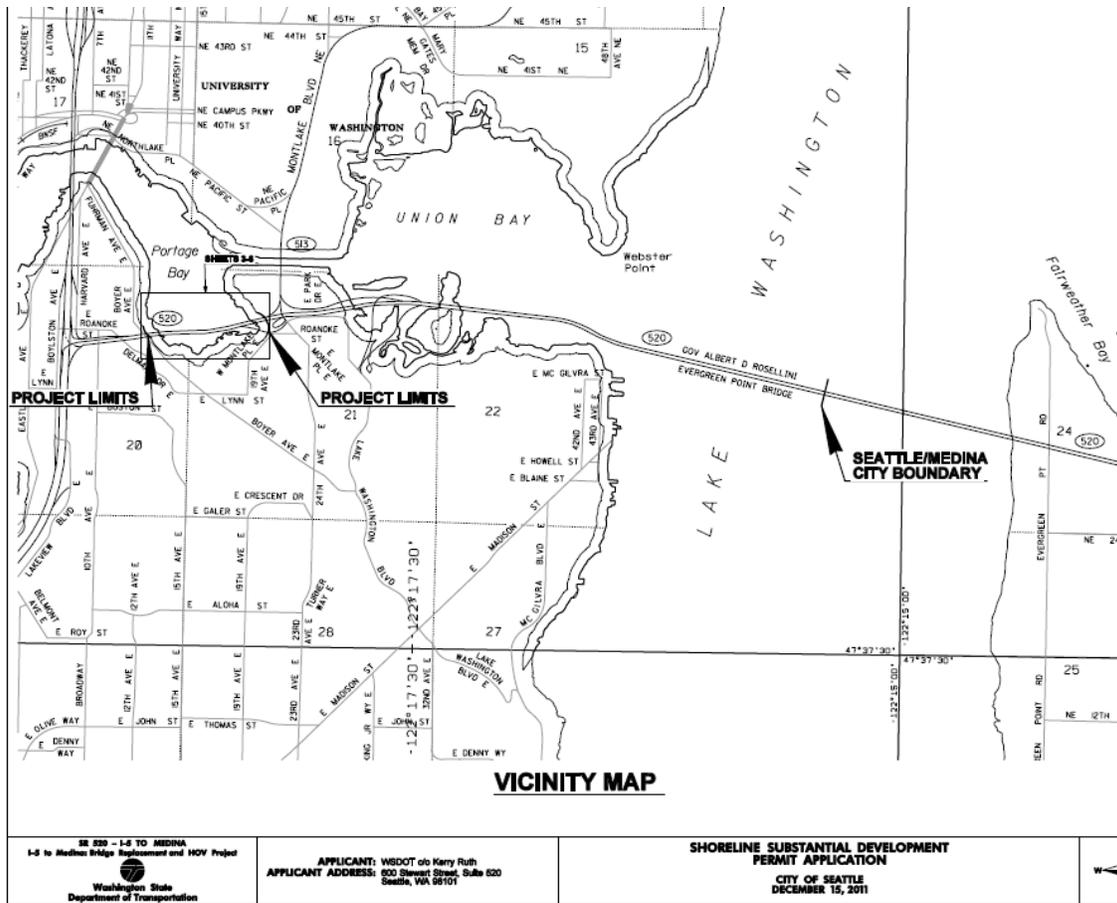
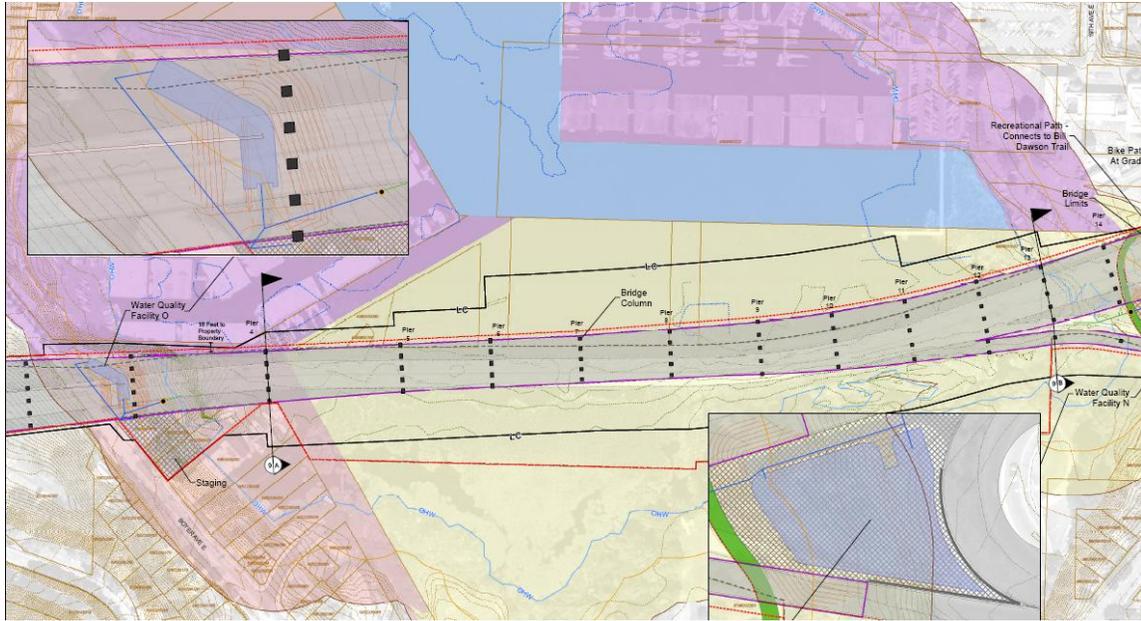


Figure 2 Vicinity Map

1.1.1.2 Site and Vicinity Description

The Portage Bay Bridge portion of the SR 520 corridor will occur within the Conservancy Recreation (CR), Conservancy Management (CM), and Urban Residential (UR) shoreline environments. New wider and higher structures will replace the existing Portage Bay Bridge. See Figure 3 for location of shoreline environments.



- Shoreline Designation**
- Conservancy Preservation
 - Conservancy Navigation
 - Conservancy Management
 - Conservancy Recreation
 - Urban Residential

Figure 3 Shoreline Environments

The existing Portage Bay Bridge is approximately 50 feet above high water at the west shoreline, 10 feet above water at the midpoint, and 8 feet above water at the east shoreline. (Table 5.11-3 in the Final EIS)

The visual character of Portage Bay is defined by the bay itself and by the density and diversity of development around and in Portage Bay. Portage Bay is lined by University of Washington facilities, commercial and marina facilities, and houseboats. Development is continuous around the shoreline except for the more natural area of shoreline and wetland vegetation at the edge of the Montlake Playfield, a Seattle Parks and Recreation facility. This southeastern portion of Portage Bay has an area of freshwater marsh habitat and naturally sloped shoreline, while the remainder of the shoreline is developed with little natural riparian vegetation. There are covered docks and boat slips near the existing bridge.

Most views of the bridge from the Montlake Playfield and neighborhoods are screened in summer and fall by trees along the shoreline. SR 520 is clearly visible from the north part of Portage Bay. The bridge dominates the views from the Queen City Yacht Club and homes along Boyer Avenue, while still allowing for views to north Portage Bay because of its height.

1.1.2 Proposal Description

Construction activities for the Portage Bay Bridge portion of the project that would occur within the Shoreline District include:

- The existing Portage Bay Bridge would be replaced by a new six-lane structure, including two general-purpose lanes and an HOV lane in each direction, plus a westbound managed shoulder.
- The bridge will include bridge approaches, embankments, retaining walls, lighting, roadway on the bridge, utilities on the bridge, a bike/pedestrian path that begins on the bridge and connects to the Bill Dawson Trail, and two stormwater facilities that receive stormwater from the bridge structure.
- The new structure would be continuous fixed span bridge throughout its length supported by concrete columns. The columns would be larger but fewer than those supporting the existing bridge.
- The overall height of the new bridge, including traffic barriers, would range from approximately 70 feet above grade along the shoreline on the west end, down to as low as approximately 27 feet above water near the east end.
- At 55 feet above the high water line, the height of the western half of the new bridge would generally match the 50-foot height of the existing bridge as it approaches grade, however the eastern half would be higher than the existing structure. The mid-point of the replacement structure would be 30 feet above water as compared to 10 feet for the existing bridge, and the eastern end would be 18 feet above water as compared to the existing 8 feet above water. (Table 5.11-3 in the Final EIS)
- The length of the new bridge would be approximately 2,700 feet.
- The over-water width of the new bridge would range from 124 feet on the west end, narrowing to 105 feet near the middle, and 158 feet on the east end.
- Two existing stormwater outfalls would be rebuilt to accommodate increased flow volumes.
- Also included is all construction associated with the bridges, such as temporary work trestles and bridge sections, demolition and construction staging and storage.
- In addition to the proposed bridge improvements, construction would affect the existing Bill Dawson Trail. The Bill Dawson Trail is a designated multi-use pathway that extends under SR 520 between the northeast corner of the Montlake Playfield and the southern edge of the NOAA Northwest Fisheries Science Center. The portion of the trail affected by the construction lies both on NOAA property and within the existing WSDOT SR 520 right-of-way. Access from the north is at Montlake Boulevard, and access from the south is at Montlake Playfield at Calhoun Street. During construction of the Portage Bay Bridge, the segment of the Bill Dawson Trail within the WSDOT right-of-way and north of SR 520 would be closed. Detours for pedestrians and bicyclists would be provided using on-street and sidewalk connections to maintain trail connectivity between Montlake Boulevard and Montlake Playfield. After construction, the location where the trail crosses beneath SR 520 would be moved approximately 42 feet west, heading north. Because of the widened highway, the length of the trail under SR 520 would increase from 100 to 120 feet. The relocation of the alignment would maintain continuity of the trail.

1.1.3 WSDOT Proposed Aquatic and Wetland Mitigation Measures

1.1.3.1 Best Management Practices

WSDOT has proposed to use the following Best Management Practices (BMPs)¹ during all construction activities to eliminate or minimize potential environmental effects:

Temporary Stormwater Management Strategy - The temporary stormwater management strategy is to aid in reducing the risk of potential pollutants being discharged to a watercourse that may cause or contribute to the exceedences of water quality standards during construction activities. The plans that will be implemented include:

- Stormwater Pollution Prevention Plan
- Temporary Erosion and Sediment Control Plan
- Spill Prevention, Control, and Countermeasures Plan
- Concrete Containment and Disposal Plan
- Water Quality Sampling, Recording and Reporting Procedures

Land Based Construction BMPs – Land based BMPs are intended to minimize or eliminate the discharge of potential pollutants to a watercourse or waters of the state. These procedures would be implemented for construction materials and wastes (solids and liquids), soil or dredging materials, or any other materials that may cause or contribute to exceedence of water quality standards. The BMPs include:

- Clear definition of construction limits
- Minimize vegetation and soil disturbance to the extent possible
- Avoid or reduce adverse impacts on critical areas including shoreline buffers
- Protect designated sensitive areas, including the shoreline, with silt fencing
- Control of stormwater discharges from construction sites
- Ensure that NPDES permit requirements are met

Construction BMPs to Control Dust and Limit Impacts on Air Quality– These BMPs are intended to reduce the risk of exceeding local air quality standards during construction. The methods include:

- Wet down fill material and dust on site
- Ensure adequate freeboard to prevent soil particles from blowing away during transport
- Remove dirt, dust and debris from the roadway on a regular basis
- Minimize potential erosion from areas of disturbed soil by stabilizing and/or revegetating cleared areas in accordance with the TESC plan
- Wet down concrete structures during construction activities

Over-Water Work – BMPs– Over-water work BMPs would be implemented for the proper use, storage, and disposal of materials and equipment on barges, boats, temporary construction pads

¹ The information included in this decision is a summary of the BMPs listed in greater detail in Attachment 2 of the MUP Application package.

(work bridges), or similar locations. Their purpose is to minimize or eliminate the discharge of potential pollutants to a watercourse or waters of the state. These procedures would be implemented for construction materials and wastes (solid and liquid), soil or dredging materials, or any other materials that may cause or contribute to exceedance of water quality standards. The plans or methods include:

- Construction Stormwater Pollution Prevention Planning
- Watertight Curbs, Bull Rails, or Toe Boards
- Oil Containment Boom
- Tie Downs to secure all materials
- Absorbent Materials to be placed under all vehicles and equipment on docks, barges, and other over-water structures
- Equipment Maintenance and Inspection
- Cover and Catchment Measures
- Construction Water Treatment Systems
- Spill Containment Kits and Containment Products
- Alternative Lubricants and Fuels
- Barges and Floats – used to stockpile materials, store construction equipment, transport demolition debris, and store water containment systems and water storage tanks

In-Water Work – BMPs – BMPs for in-water work are intended to both protect water quality and to protect resident or migrating aquatic species. The proposed BMPs include:

- Underwater Containment System/Temporary Cofferdam
- Sediment Testing
- Noise Attenuation
- Timing Restrictions – for Portage Bay Bridge, work bridge pile installation limited to September 1 to April 30; vibratory drilled shaft work limited to August 16 to April 30, and pile removal limited to August 16 to April 30 (Table 5-2, *Draft Aquatic Mitigation Plan*, August, 2011).

1.1.3.2 Wetlands and Wetland Buffers

WSDOT has designed the project to avoid or minimize the permanent and temporary wetland and wetland buffer impacts of the project while still meeting the project's engineering standards and design criteria. Specific design features to avoid impacts to wetlands were identified in the Ecosystems Discipline Report (WSDOT 2009). Measures incorporated into the project design to minimize impacts to critical areas include:

- Increasing the bridge height to increase available light;
- Using work bridges instead of work roads over wetlands;
- Constructing the new roadway within the existing road footprint to the extent feasible;
- Overlapping the temporary work areas with permanent footprint;
- Minimizing the number and total area of in-water structures; and
- Spanning wetlands with bridges rather than filling them.

A more comprehensive list of the minimization measures used for the project can be found in Section 4.1 of the *SR 520, I-5 to Medina: Bridge Replacement and HOV Project Conceptual Wetland Mitigation Report* (WSDOT 2011).

Unavoidable impacts to wetlands resulting from Portage Bay Bridge project will require compensatory mitigation to replace the wetland and wetland buffer area and function lost due to the project. These unavoidable impacts will be mitigated according to the requirements of the Federal Rule on Compensatory Mitigation and will be consistent with federal and state “no net loss” policies, as well as meeting the mitigation sequencing, compensation, reporting, and monitoring requirements described in SMC 25.09.

WSDOT proposes to mitigate project impacts to wetlands, FWHCA, and their buffers on-site within the study area and at the Magnuson Park Mitigation Site, located on a peninsula on the western shore of Lake Washington in the city of Seattle. The site is north of the University of Washington and about 2.5 miles north of the SR 520. The site is owned and operated by the City of Seattle as a municipal park. Within Magnuson Park, the SR 520 mitigation site is located adjacent to and north east of a wetland mitigation project completed in 2009 as part of Phase 2 of the Magnuson Park Master Plan (Otak 2010). The eastern boundary of the site is Beach Drive. This area is currently viewed by WSDOT as the best area for anticipated SR520 mitigation needs within the park. The following sections describe the mitigation strategy by critical area.

1.1.3.2.1 Temporary Wetland Impact Mitigation

The majority of wetland impacts would be from temporary filling and clearing of wetlands, and would not require permanent filling of wetlands. The non-fill impacts do not result in a loss of wetland area, but rather a diminishment in wetland function for some period of time. Within the Portage Bay study area, temporary impacts to wetlands and wetland buffers include:

- 1.26 acres of temporary clearing within wetlands
- 0.73 acre of temporary clearing within the wetland buffers
- 0.06 acre of temporary fill within wetlands, and
- 1.33 acres of temporary shading to wetlands

See Table 8 in the *Portage Bay Area Environmental Critical Areas Technical Memorandum, November 2011*.

To mitigate for temporary impacts to wetlands and wetland buffers, temporarily filled and cleared wetland and buffer areas will be revegetated at a ratio of 1:1 with appropriate native vegetation after construction of the project (including removal of temporary fill) is complete to restore functions in these areas (Table 8, *Portage Bay Area Environmental Critical Areas Technical Memorandum, November 2011*). Because vegetation types are similar across critical areas (i.e. wetlands and FWHCA), a unified planting scheme has been developed. Details in the planting scheme are presented in the Wetland and FWHCA Planting Scheme section, following the discussion of the FWHCA mitigation strategy in the Technical Memorandum. In addition, restored areas will be monitored as described in Chapters 6 and 7 of the *SR 520, I-5 to Medina: Bridge Replacement and HOV Project Conceptual Wetland Mitigation Report* (WSDOT 2011).

1.1.3.2.2 Permanent Wetland Impact Mitigation

Permanent impacts result in the permanent loss of wetland (Ecology et al. 2006). Permanent impacts associated with the Portage Bay project will result from widening the roadway surface from four lanes to six lanes, improving existing off-ramps, and constructing new bridge structures over Portage Bay. The extent of the permanent fill impacts has been calculated based on the footprint of columns and/or shafts, roadway embankments, bike paths, and stormwater facilities, overlaid atop all wetlands and buffers. One wetland (PBS-1) will be permanently impacted by the Portage Bay project. The impacts include 0.14 acre of permanent fill and 0.54 acre of permanent shading (Table 8, *Portage Bay Area Environmental Critical Areas Technical Memorandum, November 2011*). Additional details on permanent impacts in Portage Bay can be found in Chapter 3 and Appendix A of the *SR 520, I-5 to Medina: Bridge Replacement and HOV Project Conceptual Wetland Mitigation Report* (WSDOT 2011a).

Permanent impacts to wetland buffers generally result from the actual loss of vegetated buffer areas and from other factors that reduce the function of the buffers, such as clearing. Permanent impacts to wetland buffers in the Portage Bay study area will result from construction of paved road surfaces, adjacent roadbed and prism, bridges, footings, and associated facilities (such as stormwater treatment facilities and conveyances), and from shading caused by new or expanded structures. Permanent shading will occur to 0.04 acre of wetland buffers (Table 8, *Portage Bay Area Environmental Critical Areas Technical Memorandum, November 2011*). The Portage Bay Bridge project will permanently fill portions of PBS-1 and PBS-1A buffers, resulting from the total 0.35 acre of fill in Category III wetland buffers (Table 4, Figure 4). Permanent buffer impacts are discussed in greater detail in Chapter 3 of the *SR 520, I-5 to Medina: Bridge Replacement and HOV Project Conceptual Wetland Mitigation Report* (WSDOT 2011). Graphics showing the impact areas are included in Appendix A of that document.

Wetland PBS-1, while rated as Category III, provides a moderate level of habitat function and has an overall score that approaches the threshold for Category II wetlands. Due to the interconnected nature of the wetlands systems in the Portage Bay study area, and the relatively high quality of these Category III wetlands, WSDOT will provide compensatory mitigation for all of the Category III wetlands in the study area at the same ratio as the Category II wetlands; thus exceeding the mitigation requirements described in SMC 25.09.

WSDOT is proposing that compensatory mitigation in excess of actual project needs may be reserved as a contingency measure, and may be considered by the team and agencies as mitigation for impacts that develop as the project design continues to 100 percent, or in the event that the full mitigation potential of the site selected is not realized due to project site limitations. With this increased mitigation ratios for permanent impacts, WSDOT has calculated the mitigation need for the Portage Bay study area to be 0.43 acre of establishing or re-establishing wetland. (Table 8 in the *Portage Bay Area Environmental Critical Areas Technical Memorandum*).

Permanent wetland buffer impacts would be mitigated for onsite by enhancing the wetland buffer with native vegetation once construction is complete. Since permanent wetland fill impacts cannot be mitigated for on-site, WSDOT has identified the Magnuson Park Mitigation site as suitable to satisfy compensatory mitigation requirements for impacts in Portage Bay. The proposed SR 520 mitigation at the Magnuson Park Mitigation Site would be aligned with the

larger overall ecological restoration vision and concept for the park documented in the park master plan. The basic elements of the mitigation design include:

- Grading the site and harvesting additional water from nearby areas and off-site facilities to establish new seasonally and permanently inundated wetland areas and extend the hydroperiods of existing wetlands.
- Replacing the topsoil on-site with material conducive to native plant growth and wetland functions such as water storage and water quality improvements.
- Removing non-native species and replanting with native species, retaining clumps of native trees.
- Locating the wetlands farther from Beach Drive and major trails to provide a wider and more densely-planted buffer with more vertical structure to increase wildlife use in the wetland and buffer.

The Magnuson Park Mitigation Site will also incorporate a 100-foot buffer around the mitigation area as required under SMC 29.05.160 to protect wetland functions on the site. A detailed description of the improvement in wetland and wetland buffer functions provided by the Magnuson Park Mitigation Site can be found in Appendix C *Portage Bay Area Environmental Critical Areas Technical Memorandum*, WSDOT 2011. The Magnuson Park Mitigation site is large enough to provide the following acreages, more than enough to meet the mitigation requirements for impacts from the Portage Bay Bridge Project (Table 8, *Portage Bay Area Environmental Critical Areas Technical Memorandum, November 2011*):

- a total of 4.67 acres of wetland creation,
- 2.44 acres of wetland rehabilitation,
- 2.65 acres of wetland enhancement, and
- 10.06 acres of wetland buffer enhancement.

1.1.3.3 Fish and Wildlife Habitat Conservation Area Mitigation

While WSDOT has included measures to avoid or minimize impacts to the Fish and Wildlife Habitat Conservation Area (FWHCA) and its buffer, some project elements and activities will require compensatory mitigation for unavoidable impacts to aquatic habitat or shoreline buffer habitat.

SMC 25.09.200(B)(3)(b) pertains to over-water structures and states that the “Mitigation is provided for all impacts to the ecological functions of fish habitat on the parcel resulting from any permitted increase in or alteration of existing over-water coverage.” Many of the potential impacts to fish and other aquatic species will be indirect. For example, partial shading impacts from the new bridge structures could alter juvenile salmon migration patterns or timing, or influence the distribution of salmonid predators in the study area. These potential impacts could reduce the number of juvenile salmon completing successful outmigration to marine waters. Impacts on individual fish or populations of fish, resulting from habitat alterations are generally mitigated by increasing the quality and quantity of habitat for the species of interest.

1.1.3.3.1 Temporary Shoreline Habitat Mitigation

To mitigate for unavoidable, temporary, aquatic impacts, WSDOT used a conceptual model and assessment methods to calculate the required mitigation. Temporary impacts were calculated in terms of weighted acre-years. Restoration actions that are intended to mitigate for these temporary impacts were also valued in terms of their temporal contribution to aquatic functions and values. The acreage of each mitigation action (adjusted by Fish Function Modifier and Project Type scores) is multiplied by the percent aquatic function that the project provides on an annual basis for the first 18 years after completion of each mitigation project. For example, if a mitigation project was completed in 2012, temporary mitigation credit will be counted until 2030 (18 years after the mitigation site was constructed).

- Projects that have full and immediate benefits are multiplied by 1.0 (i.e., 100% function) for all 18 years.
- Projects that take time to realize full function are multiplied by an increasing proportion (i.e., percent function) over time.
- Riparian restoration projects are assumed to realize 10% function during years 1 through 5, 50% function during years 6 through 10, and 100% function thereafter.
- The acre-years for all 18 years are summed to yield a total mitigation value that can be credited toward temporary impacts.

Based on these methods, WSDOT calculated that the Portage Bay Bridge project would result in temporary impacts of 4.45 acre-years (*Portage Bay Area Environmental Critical Areas Technical Memorandum*, WSDOT 2011). To mitigate for these impacts, WSDOT sought off-site mitigation at the Magnuson Park Mitigation site because the site is large enough to provide the required mitigation area. Mitigation here can address the same functions and values that would be affected by the project (Table 9, *Portage Bay Area Environmental Critical Areas Technical Memorandum*, WSDOT 2011). The mitigation would include shoreline restoration, removal of hard structures along the shore, and riparian enhancement. Figure 9 (*Portage Bay Area Environmental Critical Areas Technical Memorandum*, WSDOT 2011) shows the conceptual restoration of Magnuson Park to compensate for temporary impacts to the FWHCA

As shown on Table 9 (*Portage Bay Area Environmental Critical Areas Technical Memorandum*, WSDOT 2011), WSDOT has proposed 4.77 acre-years of mitigation at Magnuson Park and 22.22 acre-years of mitigation at Bear Creek mitigation site in the City of Redmond. Combined the Magnuson Park site and the Bear Creek site will provide a total of 26.98 acre-years of credit, resulting in a surplus of 22.53 acre-years of credit.

1.1.3.3.2 Temporary Shoreline Buffer Mitigation

Temporary shoreline buffer impacts associated with vegetation clearing will be mitigated for by replanting all shoreline areas where clearing activities were required for project construction (Table 10, *Portage Bay Area Environmental Critical Areas Technical Memorandum*, WSDOT 2011). All 1.22 acres of temporary clearing areas within the study area will be replanted with native vegetation. Because vegetation types are similar across critical areas (i.e., wetlands and FWHCA), a unified planting scheme has been developed. Details in the planting scheme are presented in the Wetland and FWHCA Planting Scheme section of the *Portage Bay Area Environmental Critical Areas Technical Memorandum*, WSDOT 2011.

1.1.3.3.3 Permanent Shoreline Habitat Mitigation

Although removal of the existing bridge deck and columns serves to offset impacts in-kind and on-site, additional in-kind and on-site opportunities to compensate for permanent impacts were not feasible. Therefore, WSDOT sought off-site mitigation that addressed the same functions and values that could be affected by the project, as allowed under SMC 25.09.200(B)(3)(b).

To mitigate for unavoidable, permanent shoreline habitat (aquatic) impacts, WSDOT used the conceptual model and assessment methodology. Unfortunately, these impacts cannot be mitigated for on-site because of project constraints. Based on these methods, the Portage Bay Bridge project would result in permanent impacts to 2.41 acres.

During the off-site selection process, WSDOT identified the Bear Creek restoration site (stream channel component) to provide sufficient mitigation area for permanent aquatic impacts for the Portage Bay Bridge project and mitigation at this site can offset the functions and values that would be affected by the project (Table 9). The Bear Creek channel restoration component would provide 2.50 acres (adjusted with fish function and mitigation type modifiers) of mitigation credit to offset permanent shoreline habitat (aquatic) impacts associated with the Portage Bay Bridge project (Table 9 *Portage Bay Area Environmental Critical Areas Technical Memorandum*, WSDOT 2011, Appendix E). Detailed information regarding the Bear Creek restoration site is provided in Appendix C (Figure C-10) and Appendix D of this Environmental Critical Area Technical Memorandum for the Portage Bay project. For additional details of these sites, please refer to Section 6 of the Final Aquatic Mitigation Plan (WSDOT 2011).

1.1.3.3.4 Permanent Shoreline Buffer Mitigation

To mitigate for 0.35 acres of unavoidable, permanent shoreline buffer impacts, WSDOT proposes to utilize some of the surplus shoreline buffer mitigation credit at the WSDOT Peninsula mitigation site. Because the mitigation is not within ¼ mile of the proposed shoreline buffer impact, a 3:1 mitigation ratio would apply (SMC 25.09.200.B.4.e.(4).(b)). Therefore, 0.35 acres of impact would require 1.05 acres of mitigation. The WSDOT Peninsula mitigation site provides 7.66 acres of surplus mitigation credit, sufficient to offset permanent shoreline buffer impacts from the Portage Bay Bridge project.

1.1.4 Additional Mitigation Measures

In addition to the aquatic and wetland habitat mitigation measures summarized above, WSDOT is proposing numerous additional measures to avoid, minimize and mitigate for effects to the built environment and local neighborhoods and communities within the City of Seattle. These measures are addressed in the FEIS and associated discipline reports and will be captured more specifically in the following plans:

- Community Construction Management Plan (CCMP)
- Neighborhood Traffic Management Plan
- Tree and Vegetation Management and Protection Plan
- Seattle Community Design Process

Further details on these plans are found in the SEPA analysis of this decision as well as in application submittal for this project (Attachment 2, Section 6.0).

1.1.5 Project Construction Duration

WSDOT estimates that project construction will require 5.5 years for completion (from spring 2013 to fall 2018). WSDOT has requested that the permit expiration date be 6 years from permit issuance to allow for complete project closeout including cleanup, dismantling of staging areas, and restoration where required by permit conditions. DPD expects to determine the time limits the permit (per SMC 23.60.074) upon review of final design details of the project, prior to issuance of the shoreline substantial development permit.

1.1.5 Public Comments

The comment period for this project ended on September 16, 2011. DPD held a public meeting and open house at the Museum of History and Industry (MOHAI) on the evening of October 5, 2011. Approximately 120 public comments were received either at the meeting or in writing to DPD. Overall, most of the comments pertained to the entire 520 bridge project, though many of these comments included focused comments on the Portage Bay project and area. Most of the Portage Bay project comments expressed numerous concerns about both the short and long term impacts of the construction of a larger bridge in the Portage Bay area. These concerns were primarily focused on the environmental and recreational impacts of the bridge construction in sensitive wetland and aquatic/nearshore habitats. A large number of comments expressed concern about the length of construction, timing of the permits, stormwater control, increased traffic and road impacts during construction, the larger size and greater impacts of the proposed design for the replaced bridge, and potential for substantial impacts during construction to local vegetation, mature trees, water/sediment quality, wildlife and recreational opportunities. A clear theme present in many of the comments was that WSDOT (the applicant) should include or substitute more environmental and recreational mitigation in the immediate area of project impacts rather than further away (off-site) or outside the City. Concerns were also expressed about inadequate or incorrect information in the project application for the project.

1.2 ESSENTIAL PUBLIC FACILITY

1.2.1 Background

SR 520 is designated as a highway of statewide significance (HSS) pursuant to RCW 47.06.140 and RCW 47.05.022 (Resolution 660, dated January 21, 2004). Pursuant to RCW 36.70A.200, the proposed SR 520, I-5 to Medina: Bridge Replacement and HOV Project (Project) is defined by the State of Washington as an EPF due to its HSS designation. RCW 47.01.260 grants WSDOT plenary authority over state highways and provides that WSDOT shall exercise all the powers and perform all the duties necessary for the siting, design, and construction of state highways. Additionally, RCW 36.70.200(5) and WAC 365-196-550(3)(a) provides that no local development regulation may preclude the siting of EPFs. WAC 365-196-550(1)(b) further states that "Essential public facilities include the expansion of existing essential public facilities or support activities and facilities necessary for an essential public facility."

1.2.2 The City's EPF Criteria

SMC 23.80.004 (adopted 2004, revised 2006) identifies the following criteria to be considered in the review of an essential public facility:

SMC 23.80.004 (A)(1): Interjurisdictional Analysis. A review to determine the extent to which an interjurisdictional approach may be appropriate, including consideration of possible alternatives sites for the facility in other jurisdictions and an analysis of the extent to which the proposed facility is of a county-wide, regional or state-wide nature, and whether uniformity among jurisdictions should be considered.

Opened in 1963, the existing SR 520 is a facility of state-wide nature. The floating span of the bridge now carries approximately 115,000 vehicles per day across the lake, providing east-west access for commuters, freight, transit, and general-purpose traffic. Existing state legislation directs the State Transportation Commission to give high priority to correcting deficiencies on highways of statewide significance.

The aging floating bridge is vulnerable to failure in a severe windstorm, and the fixed bridges along the corridor do not meet current seismic standards and are vulnerable to collapse in an earthquake. In addition, due to growth in jobs and housing, the corridor currently carries nearly twice as many vehicles as it was originally designed for, resulting in extended congestion and impaired mobility. The uninterrupted movement of people and goods across SR 520 and the floating bridge is essential to the region's economic vitality and quality of life.

WSDOT initiated interjurisdictional coordination in 1998 with a 47-member stakeholder group that included three City of Seattle representatives to explore ways of improving mobility and access around Lake Washington. The interjurisdictional group considered and evaluated alternatives, including potential travel modes, project corridors, and crossing locations. The result, titled the Trans-Lake Washington Study, included recommendations to WSDOT on how to improve the SR 520 corridor. WSDOT used the study results to initiate a scoping study of alternatives to be considered in the environmental impact statement.

As part of its interjurisdictional approach, WSDOT engaged all agencies with jurisdiction in a Regulatory Agency Coordination process (RACp). The RACp included smaller technical working groups that met to discuss more specific project issues such as impacts to wetlands and parks, compliance with the Endangered Species Act compliance, and mitigation concepts. WSDOT has worked with agencies and stakeholders through legislative workgroups created by Engrossed Substitute Senate Bills 6099 and 6392, and Engrossed Substitute House Bill 2211. Additionally, WSDOT initiated technical coordination and executive management briefings with City of Seattle as needed or requested.

The interjurisdictional coordination, of which Seattle is a member, informed the Trans-Lake Washington Study, and provided input on alternatives for WSDOT's three subsequent environmental documents, including the draft environmental impact statement (2006), supplemental draft environmental impact statement (2010) and final environmental impact statement (2011). All technical design options for crossing Lake Washington were considered as part of the alternatives analysis, and evaluated within the context of state, regional, and local

plans. A floating bridge, sited within the existing corridor, remained the lowest-cost and lowest-impact solution.

SMC 23.80.004 (A)(2): Financial Analysis. A review to determine if the financial impacts upon the City of Seattle can be reduced or avoided by intergovernmental agreement.

Financial impacts to the City of Seattle would occur from the loss of property tax revenue from properties acquired by WSDOT for additional right-of-way, and loss of park land and open space.

Construction of the project would require WSDOT to permanently acquire additional right-of-way in the SR 520 corridor, including 6 residential structures. This would result in taxable property being removed from the City of Seattle's tax base, and a decrease in the City's overall property tax revenue. By applying the 2008 tax levy rate, it is estimated that the loss of property tax revenue for the City of Seattle would be approximately \$8,600. This amounts to less than 0.01 percent of the City's 2008 budgeted property tax revenue, and would not substantially affect the city's overall tax revenue.

Approximately 8.6 acres of park or open space would be acquired by WSDOT for project right-of-way. The park and open space that would be acquired is not subject to property tax. This area would be purchased by WSDOT at fair market value, in accordance with the federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended. The monetary compensation for these acquisitions would mitigate for the potential financial impact to the City of Seattle. WSDOT will mitigate for the project's conversion of land that is protected by Section 6(f) of the Land and Water Conservation Fund Act by providing the City of Seattle with funding for the purchase and/or development of a replacement site.

Representatives of Seattle Parks and Recreation participated in the SR 520 Parks Technical Working Group. Through the work of the group and ongoing coordination with stakeholders, the total acquisition required by the Preferred Alternative would be less than the amount of acquisition required by previously evaluated design options. Therefore, the financial impact to the City of Seattle would be less than the other design options evaluated, and would be mitigated through monetary compensation and replacement of park property.

In addition, WSDOT and Seattle's Department of Planning and Development have reached a separate financial Memorandum of Agreement (MOA) to address Project fees. It will be necessary to amend this MOA in order to reimburse costs connected with staff time for future work associated with the mitigating conditions of City permits. Staff time will include activities such as reviews of plans, documents, inspections, and meetings. WSDOT has also offered to reimburse Seattle Parks and Recreation for their review and coordination efforts associated with this project. WSDOT has also committed to funding \$200,000 for implementation of the Seattle Department of Transportation's traffic calming efforts within the Arboretum, as described in the 2010 ESSB 6392 Arboretum Mitigation Plan.

SMC 23.80.004 (A)(3): Special Purpose Districts. When the public facility is being proposed by a special purpose district, the City should consider the facility in the context of the district's overall plan and the extent to which the plan and facility are consistent with the Comprehensive Plan.

The Washington State Department of Transportation is not a Special Purpose District

SMC 23.80.004 (A)(4): Measures to Facilitate Siting. The factors that make a particular facility difficult to site should be considered when a facility is proposed, and measures should be taken to facilitate siting of the facility in light of those factors (such as the availability of land, access to transportation, compatibility with neighboring uses, and the impact on the physical environment).

The SR 520 corridor is an important link between Seattle and the Eastside. While developing and refining the design, WSDOT, in partnership with affected jurisdictions, agencies, tribes, and the public, considered key constraints that ultimately guided siting of the facility. Measures to minimize the footprint and locate the project within the existing corridor while maintaining traffic during construction were prioritized. These measures included narrowing the roadway design to minimize right of way acquisitions and impacts on neighborhoods, parks and the environment, and minimizing structure impacts on the Arboretum by making alignment and structural engineering adjustments. The project alignment was also further modified to avoid and minimize right of way effects away from Section 4f resources, which include historic and park properties.

Although wider than the existing facility, the proposed project would be similar to the existing configuration and would be primarily located on land that already exists as part of the transportation facility. The new roadway alignment for SR 520 through the Seattle area falls predominately within the existing WSDOT right-of-way in order to avoid impacts to existing structures and to minimize property acquisitions and displacements. Due to the density of the built and urban environment, a more efficient, straight-line alternative was not selected because it was not compatible with existing and neighboring uses throughout the corridor.

In comparison to other designs that were considered, the proposed project would result in the least overall harm to public parks, significant historic properties, and environmental resources such as wetlands and fish habitat. Adverse effects resulting from the project could not be entirely eliminated because of the density of development in the project vicinity, the narrow existing highway right-of-way, and community fragmentation caused by the original highway bisecting several parklands and neighborhoods.

Chapter 9 of the Final EIS discusses the constraints that led to the final siting and alignment of the Preferred Alternative.

SMC 23.80.004 (B): If the decision maker determines that attaching conditions to the permit approval will facilitate project siting in light of the considerations identified above, the decision maker may establish conditions for the project for that purpose.

As previously mentioned and further described in Chapter 9 of the Final EIS, WSDOT has conducted an extensive siting process in an effort to reduce environmental harm from the proposed replacement facility. The siting process began with the Trans-Lake Washington Study and has extended through the final design refinements included as part of the Preferred Alternative, and analyzed in the Final EIS. The proposed project includes extensive mitigation measures in order to site the facility; no additional conditions are needed pursuant to the criteria of this section.

City development regulations that are preclusive to the siting of SR520 and therefore necessitate a waiver from the identified standards are documented in this report. Table 1-1 summarizes the waivers that are required a result of preclusive development standards.

Table 1-1
3012585 – Portage Bay Identified EPF Waivers

SMC 25.09.060 ECA Development Standards
25.09.160.B.1: “Development, including but not limited to grading, filling, or draining, is prohibited within or over [most wetlands].
25.09.160.C.2: Development is prohibited in wetland buffers, except as approved by the Director under subsection 25.09.160.D.[buffer averaging and reductions]
SMC 23.60 Shoreline Development Standards
23.60.152 Q. <i>Submerged public right-of-way shall be subject to the following standards:</i>
<i>1. All structures shall be floating except as permitted in subsection Q2 below;</i>
<i>3. The maximum height of structures shall be fifteen feet (15');</i>
<i>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</i>

1.3 ENVIRONMENTALLY CRITICAL AREAS (SMC 25.09)

The Environmentally Critical Areas Ordinance was adopted to promote safe, stable, and compatible development that avoids adverse environmental impacts and potential harm on the parcel and to adjacent property, the surrounding neighborhood, and the drainage basin.

Because the project requires development in both wetlands and wetland buffers, the project cannot meet the development standards of SMC 25.09.160.B.1 and 25.09.160.C.2, which prohibit most development in wetlands and wetland buffers. Since State regulations prohibit local development standards that would preclude the siting of an essential public facility, the City must therefore waive such standards. While the project cannot prescriptively meet the avoidance requirements of SMC 25.09, WSDOT is proposing mitigation to offset impacts (see subsection 1.1.3 WSDOT Proposed Mitigation Measures) in such a way that the proposed mitigation meets the intent of SMC 25.09 and meets or exceeds the mitigation ratio requirements described in SMC 25.09.160 and 25.09.200.

Applicable ECA development standards are discussed below, and those that are preclusive are specifically identified.

1.3.1 SMC 25.09.160 Development Standards for Wetlands

WSDOT's proposed 10 year monitoring program would meet and exceed SMC 25.09.160.G's requirement that monitoring for successful wetland establishment be performed for a period of five growing seasons. The proposal would also meet SMC 25.09.160.H which requires that the review of projects subject to wetland provisions be coordinated with the appropriate state and federal agencies.

The other standards of SMC 25.09.160 that cannot be met are discussed below:

Development Restrictions in Wetlands and Wetland Buffers: Because the project requires development in both wetlands and wetland buffers, the project cannot meet the development standards of SMC 25.09.160.B.1 and 25.09.160.C.2 which prohibit most development in wetlands and wetland buffers. WSDOT's proposed mitigation for temporary and permanent wetland impacts is summarized above in Subsection 1.1.3.2 Wetlands and Wetland Buffers. While the project cannot prescriptively meet the avoidance requirements of SMC 25.09, WSDOT is proposing mitigation to offset impacts (see subsection 1.1.3 WSDOT Proposed Mitigation Measures) in such a way that the proposed mitigation meets the intent of SMC 25.09 and meets or exceeds the mitigation ratio requirements described in SMC 25.09.160.E.

1.3.2 SMC 25.09.200 Development Standards for Fish and Wildlife Habitat Conservation Areas

Construction of the Portage Bay Bridge replacement project, as described previously, will require temporary and permanent development in the ECA shoreline habitat and ECA shoreline habitat buffer in the Portage Bay area, as defined in SMC 25.09.020. This development and its resulting impacts trigger habitat mitigation requirements per SMC 25.09.200 B.

The WSDOT proposed mitigation for temporary and permanent shoreline habitat and shoreline buffer habitat is summarized in Subsection 1.1.3.3 Fish and Wildlife Habitat Conservation Area Mitigation above, and described more fully in the Final Aquatic Mitigation Plan, SR 520, I-5 to Medina: Bridge Replacement and HOV Project (Dec. 2011) and the Portage Bay Area Environmental Critical Areas Technical Memorandum (Nov. 2011). The mitigation sites were selected based on their size being large enough to provide the required mitigation area, and the same function and values to replace loss of ecological function. Per the calculations included in the Aquatic Mitigation Plan and the Portage Bay Environmental Critical Areas Technical Memorandum, WSDOT is proposing to replace more habitat than is being lost through the development of the replacement bridge project.

The Portage Bay Bridge project would result in permanent impacts to 2.41 acres of shoreline habitat. Although removal of the existing bridge deck and columns serves to offset impacts in-kind and on-site, additional in-kind and on-site opportunities to compensate for permanent impacts were determined to be not feasible by WSDOT. Therefore, WSDOT sought off-site mitigation that addressed the same functions and values that could be affected by the project, as allowed under SMC 25.09.200(B)(3)(b).

During the off-site selection process, WSDOT identified the Bear Creek restoration site (stream channel component) to provide sufficient mitigation area for permanent aquatic impacts for the

Portage Bay Bridge project and mitigation at this site can offset the functions and values that would be affected by the project (Table 9). The Bear Creek channel restoration component would provide 2.50 acres (adjusted with fish function and mitigation type modifiers) of mitigation credit to offset permanent shoreline habitat (aquatic) impacts associated with the Portage Bay Bridge project (Table 9 *Portage Bay Area Environmental Critical Areas Technical Memorandum*, WSDOT 2011, Appendix E). Detailed information regarding the Bear Creek restoration site is provided in Appendix C (Figure C-10) and Appendix D.

To mitigate for 0.35 acres of unavoidable, permanent shoreline buffer impacts, WSDOT proposes to utilize some of the surplus shoreline buffer mitigation credit at the WSDOT Peninsula mitigation site, located adjacent to the Arboretum (see MUP 3012593). Because the mitigation is not within ¼ mile of the proposed shoreline buffer impact, a 3:1 mitigation ratio would apply. Therefore, 0.35 acres of impact would require 1.05 acres of mitigation. The WSDOT Peninsula mitigation site provides 7.66 acres of surplus mitigation credit, sufficient to offset permanent shoreline buffer impacts from the Portage Bay Bridge project.

1.4 ANALYSIS - SHORELINE SUBSTANTIAL DEVELOPMENT PERMIT

The proposal is located within the following Shoreline Environments as designated by the Seattle Shoreline Master Program (SSMP): Conservancy Recreation (CR), Conservancy Management (CM), and Urban Residential (UR). 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.

1.4.1 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.

1.4.2 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 of the lands adjacent to the Portage Bay Bridge include Single Family 5000, Lowrise 1 and Lowrise 3. The underlying zoning allows for primarily residential uses, however SMC 23.51A.002.F Public Facilities in Single Family Zones and SMC 23.51A.004.F Public Facilities in Multifamily Zones, allow for the location of essential public facilities subject to the review criteria in SMC 23.80.

1.4.2.1 SMP 23.60.004 - Shoreline Policies

Goals and policies governing approval of development in shoreline districts are set out in the Land Use Element of the Seattle Comprehensive Plan and in SMC 23.60.220, the purpose and location criteria for each shoreline designation.

1.4.2.1.1 Environmentally Critical Areas (LUG 36)

Seattle's Comprehensive Plan Environmentally Critical Areas encourage protection of the ecological functions and values of wetlands, and fish and wildlife habitat conservation areas (LUG 36). As described above in Section 1.1.3.2 Wetlands and Wetland Buffer Mitigation and Section 1.1.3.3, WSDOT has acknowledged that there will be both temporary and permanent

impacts to existing wetlands and wetland buffers as well as shoreline habitat and shoreline habitat buffers. For the Portage Bay Bridge study area, temporary impacts to wetlands and wetland buffers include 0.06 acre of temporary fill and 1.27 acres of temporary clearing within wetlands and 0.73 acres of temporary clearing within wetland buffers.

To mitigate for temporary impacts to wetlands and wetland buffers:

- Temporarily filled and cleared wetland and buffer areas will be revegetated at a ratio of 1:1 with appropriate native vegetation after construction of the project (including removal of temporary fill) is complete to restore functions in these areas.
- Restored areas will be monitored as described in Chapters 6 and 7 of the *SR 520, I-5 to Medina: Bridge Replacement and HOV Project Conceptual Wetland Mitigation Report* (WSDOT 2011).

For the Portage Bay Bridge study area, permanent impacts to wetlands and wetland buffers include 0.14 acre of permanent fill within wetlands, and .35 acres of permanent fill within wetland buffers. WSDOT has calculated the mitigation need for the Portage Bay Bridge study area to be 0.43 acre of establishing or re-establishing wetland area along with the enhancement or rehabilitation of 0.54 acre of wetlands to compensate for permanent shading, and 0.39 acre of wetland buffer (Table 8 in the *Portage Bay Area Environmental Critical Areas Technical Memorandum*). Since permanent wetland and wetland buffer impacts cannot be mitigated for on-site, WSDOT has identified the Magnuson Park Mitigation Site to satisfy compensatory mitigation requirements for wetland impacts associated with the Portage Bay Bridge project.

WSDOT has also proposed habitat mitigation to address impacts to ECA shoreline habitat and shoreline habitat buffer areas, which is summarized in Section 1.1.3.3 and immediately below.

1.4.2.1.2 Shoreline Goals LUG 43, LUG 48, and LUG 49 – Protection of Shoreline and Aquatic Environment

The Shoreline Goals and Policies are located in Section C-4 of the Land Use Element. There are three goals specific to the protection of the shoreline and aquatic environment: LUG 43, “Protect those areas of shoreline that are geologically dangerous or fragile, or biologically fragile.”; LUG 48, “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.”; and LUG 49, “Insure that all future uses will preserve and protect environmental systems, including wild and aquatic life.”

As described above in Section 1.3.3.3 Fish and Wildlife Habitat Conservation Area Mitigation, while WSDOT has included measures to avoid or minimize impacts to the FWHCA and its buffer, some project elements and activities will require compensatory mitigation for unavoidable impacts to aquatic habitat or shoreline buffer habitat.

Many of the potential impacts to fish and other aquatic species will be indirect. For example, partial shading impacts from the new bridge structures could alter juvenile salmon migration patterns or timing, or influence the distribution of salmonid predators in the study area.

Temporary Shoreline Impacts and Mitigation: WSDOT calculated that the Portage Bay Bridge project would result in temporary impacts of 4.45 acre-years (*Portage Bay Area*

Environmental Critical Areas Technical Memorandum, WSDOT 2011). To mitigate for these impacts, WSDOT sought off-site mitigation at the Magnuson Park Mitigation site because the site is large enough to provide the required mitigation area and mitigation here can address the same functions and values that would be affected by the project (*Portage Bay Area Environmental Critical Areas Technical Memorandum*, WSDOT 2011). The mitigation would include shoreline restoration, removal of hard structures along the shore, and riparian enhancement. Figure 9 (Table 9, *Portage Bay Area Environmental Critical Areas Technical Memorandum*, WSDOT 2011) shows the conceptual restoration of Magnuson Park to compensate for temporary impacts to the FWHCA. As shown on Table 9 (*Portage Bay Area Environmental Critical Areas Technical Memorandum*, WSDOT 2011), WSDOT has proposed 4.77 acre-years of mitigation at Magnuson Park.

Temporary Shoreline Buffer Impacts and Mitigation: Temporary shoreline buffer impacts associated with vegetation clearing will be mitigated for by replanting all shoreline areas where clearing activities were required for project construction (Table 10, *Portage Bay Area Environmental Critical Areas Technical Memorandum*, WSDOT 2011). Any slight degradation in vegetation form or function in these areas is considered to be minor, and would be fully restored quickly (within several years) once the structures are removed. Because vegetation types are similar across critical areas (i.e., wetlands and FWHCA), a unified planting scheme has been developed. Details in the planting scheme are presented in the Wetland and FWHCA Planting Scheme section of the *Portage Bay Area Environmental Critical Areas Technical Memorandum*, WSDOT 2011.

Permanent Shoreline Impacts and Mitigation: The Portage Bay Bridge project would result in permanent impacts to 2.41 acres of shoreline habitat. Although removal of the existing bridge deck and columns serves to offset impacts in-kind and on-site, additional in-kind and on-site opportunities to compensate for permanent impacts were not feasible. Therefore, WSDOT sought off-site mitigation that addressed the same functions and values that could be affected by the project, as allowed under SMC 25.09.200(B)(3)(b).

During the off-site selection process, WSDOT identified the Bear Creek restoration site (stream channel component) to provide sufficient mitigation area for permanent aquatic impacts for the Portage Bay Bridge project and mitigation at this site can offset the functions and values that would be affected by the project (Table 9). The Bear Creek channel restoration component would provide 2.50 acres (adjusted with fish function and mitigation type modifiers) of mitigation credit to offset permanent shoreline habitat (aquatic) impacts associated with the Portage Bay Bridge project (Table 9 *Portage Bay Area Environmental Critical Areas Technical Memorandum*, WSDOT 2011, Appendix E). Detailed information regarding the Bear Creek restoration site is provided in Appendix C (Figure C-10) and Appendix D. For additional details of these sites, please refer to Section 6 of the Draft Aquatic Mitigation Plan (WSDOT 2011). A Final Aquatic Mitigation Plan is anticipated to be available in December 2011.

Permanent Shoreline Buffer Impacts and Mitigation: To mitigate for 0.35 acres of unavoidable, permanent shoreline buffer impacts, WSDOT proposes to utilize some of the surplus shoreline buffer mitigation credit at the WSDOT Peninsula mitigation site. Because the mitigation is not within ¼ mile of the proposed shoreline buffer impact, a 3:1 mitigation ratio would apply. Therefore, 0.35 acres of impact would require 1.05 acres of mitigation. The

WSDOT Peninsula mitigation site provides 7.66 acres of surplus mitigation credit, sufficient to offset permanent shoreline buffer impacts from the Portage Bay Bridge project.

1.4.2.1.3 Shoreline Goals LUG 44 – Public Access, LUG 45 – View Preservation, and LUG 46 – Transportation Network

Goal LUG 44 provides for “the optimum amount of public access – both physical and visual – to the shorelines of Seattle”. The proposed bike/pedestrian pathway will begin on the bridge and connect to the existing Bill Dawson Trail to allow for greater opportunities than currently exist for the public to access and enjoy the shoreline environment along Lake Washington.

LUG 45 describes that views of the shoreline and water from upland areas shall be preserved and enhanced where appropriate. Most existing views of the bridge from the Montlake Playfield and neighborhoods are screened in summer and fall by trees along the shoreline. SR 520 is clearly visible from the north part of Portage Bay. The bridge dominates the views from the Queen City Yacht Club and homes along Boyer Avenue, while still allowing for views to north Portage Bay because of its height. Some water views will be diminished by the wider span of the bridge.

LUG 46 promotes development of “a transportation network that supports and enhances use of and access to the shorelines.” The proposed Portage Bay Bridge will replace an existing bridge and allow for a continuation of the transportation network to the shoreline and across Lake Washington.

1.4.2.1.4 Shoreline Policy LU 270 – Heights in Shoreline Environment

There is one land use policy, LU 270, which is specific to heights in the Shoreline Environment: “The 35-foot height limit of the Shoreline Management Act shall be the standard for maximum height in the Seattle Shoreline District. Exceptions in the development standards of a shoreline environment may be made consistent with the Act and with the underlying zoning where:

- a. a greater height will not obstruct views of a substantial number of residences and the public interest will be served; and
- b. greater height is necessary for bridges or the operational needs of water dependent or water-related uses or manufacturing uses.”

As described above in the Proposal description, the overall height of the new bridge, including traffic barriers, would range from approximately 70 feet above grade along the shoreline on the west end, down to as low as approximately 27 feet above water near the east end. The height of the western half of the new bridge would generally match the height of the existing bridge as it approaches grade, however the eastern half would be higher than the existing structure. The height of the bridge (up to approximately 75 feet) is necessary to achieve the design profile to match into existing grades and infrastructure.

1.4.2.2 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 to a total of six (6) years from the date of permit issuance. Given the scope of the proposed project, the construction of the new bridge and associated structures, and active use of the staging area within the shoreline area is expected to occur until fall of 2018. Due to the unusual scale and complexity of constructing a new bridge while keeping the existing bridge in operation until traffic can be moved to the new structure, it is determined that an extension of this time limit is likely warranted. The time limits for the permit, per SMC 23.60.074A and B, will be determined prior to issuance and be based on the based on the time needed to complete the construction of the project (about 6 years).

1.4.2.3 Shoreline Uses

The proposed shoreline development is located in the Conservancy Recreation (CR), Conservancy Management (CM) and Urban Residential (UR) Shoreline Environments.

The proposed uses include:

- Bridge – Construction of a fixed-span bridge, including all components of the bridge, such as approaches, embankments, retaining walls, lighting, roadway on the bridge, and utilities on the bridge, a bicycle/pedestrian pathway that begins on the bridge and connects to the Bill Dawson Trail, and two stormwater facilities that receive stormwater from the bridge.
- Stormwater Lines Off-bridge – Two existing stormwater outfalls will be rebuilt with an 18- to 24-inch diameter outfall pipe and a 24- to 30-inch diameter outfall pipe to accommodate the increased flow volumes.

A summary of the uses proposed in each of the three shoreline environments is provided on the following table:

**Table 1-2
Summary of Uses Proposed in Shoreline Environment**

Proposed Use	CR Environment	CM Environment	UR Environment
Bridge	SU	SU	Permitted Outright
Stormwater Lines	SU		

Both of the proposed uses are allowed either outright or as a special use.

- Bridges are allowed as a special use (SU) in the CR Environment (SMC 23.60.364.B) and CM Environment (SMC 23.60.424.D) and subject to the special use criteria of Section 23.60.032, and allowed outright on waterfront lots in the UR Environment (SMC 23.60.540.C).
- Utility lines are allowed as special uses (SU) in the CR Environment (SMC 23.60.364.C), subject to the Special Use Criteria (23.60 032).

An analysis of whether the proposed uses meet the special use criteria of Section 23.60.032 is provided in the following Subsection 1.4.2.3.1.

1.4.2.3.1 Analysis – Shoreline Special Use

As summarized in Table 1-2, the following uses are subject to the special use criteria of Section 23.60.032:

- Bridges are allowed as a special use (SU) in the CR Environment (SMC 23.60.364.B) and CM Environment (SMC 23.60.424.D) and subject to the special use criteria of Section 23.60.032.
- Utility lines are allowed as special uses (SU) in the CR Environment (SMC 23.60.364.C), subject to the Special Use Criteria (23.60 032).

SMC 23.60.032 provides the following:

Uses which are identified as requiring special use approval in a particular environment may be approved, approved with conditions or denied by the Director. 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;

See Section 1.4.2. The Director has determined that the proposed uses are consistent with the policies of RCW 90.58.020.

See Section 1.4.2.1 for an analysis of compliance with Shoreline Policies. The proposed uses (bridge and utility lines) are in compliance with the Shoreline Policies.

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

The proposed uses (bridge and utility lines) will not interfere with the normal public use of public shorelines. The proposed bike/pedestrian pathway that starts on the bridge will connect to the existing Bill Dawson Trail and will allow for greater opportunities than currently exist for the public to access and enjoy the shoreline environment along Lake Washington.

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

The proposed bridge structure would replace the existing bridge structure. The project design includes features, such as landscaped lids and connections to new bicycle/pedestrian pathways, intended to enhance the compatibility with nearby neighborhoods. The new utility lines will replace those that already exist in the surrounding area, and will be compatible with those uses.

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

See analysis above in Subsection 1.4.2.1- Shoreline Goals LUG 43, LUG 48, and LUG 49 – Protection of Shoreline and Aquatic Environment. There will be temporary and permanent impacts to wetlands and aquatic habitat from the construction of the new facilities. WSDOT has proposed compensatory mitigation to replace the lost functions and values, as described in more detail elsewhere in this decision.

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

The proposed bridge and associated utility lines will serve the transportation needs of commuters, travelers, and commerce in the city, as well as the larger region. As a public transportation corridor, the proposal would not result in a substantial detrimental effect on the public interest. In addition to the shoreline and wetland habitat mitigation discussed above and in more detail elsewhere in this decision, WSDOT is proposing numerous measures to avoid, minimize and mitigate for the impacts to the public interest of this project, which are discussed in considerable detail in the FEIS and the application submittal material for this project, including Attachment 2, Section 6.0 Additional Mitigation Elements.

1.4.2.3.2 Decision – Shoreline Special Use

The Director has determined that the proposed uses of bridge and utility lines meet the Special Use Criteria of SMC 23.60.032 and **are approved as follows:**

- The bridge structure as proposed is approved as a special use (SU) in the CR Environment (SMC 23.60.364.B) and the CM Environment (SMC 23.60.424.D).
- The utility lines as proposed are approved as a special use (SU) in the CR zone (SMC 23.60.364.C).

1.4.2.4 Shoreline Development Standards

The proposed shoreline development is located in the Conservancy Recreation (CR), Conservancy Management (CM), and Urban Residential (UR) and Shoreline Environments. Pursuant to the Seattle Shoreline Master Plan, the proposed action is subject to the:

1. general development standards (SMC 23.60.150, 23.60.152, 23.60.160, and 23.60.162);
2. development standards applicable to specific uses (SMC 23.60.179 – 23.60.210);

3. development standards for uses in the CR Environment (SMC 23.60.390, SMC 23.80.392, SMC 23.60.394, SMC 23.60.396, SMC 23.60.398, and SMC 23.60.400)
4. development standards for uses in the CM Environment (SMC 23.60.450, SMC 23.60.452, SMC 23.60.454, SMC 23.60.456, SMC 23.60.458, and SMC 23.60.460);
5. development standards for uses in the UR Environment (SMC 23.60.570, SMC 23.80.572, SMC 23.60.574, SMC 23.60.576, and SMC 23.60.578)

1.4.2.4.1 SMC 23.60.150 -23.60.162 - Development Standards

SMC 23.60.150 - Applicable Development Standards.

All uses and developments in the Shoreline District shall be subject to the general development standards applicable to all environments, to the development standards for the specific environment in which the use or development is located, and to any development standards associated with the particular use or development.

See analysis below for each shoreline environment.

SMC 23.60.152 - General Development

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.*

As described in Chapter 5 of the Final EIS, possible negative impacts to surface and ground water quality could result from construction of this project due to earthwork, concrete work, paving, stockpiling, erosion of disturbed soils or soil stockpiles by stormwater runoff, fugitive dust from demolition, equipment leaks or spills, material transport, storm drainage and/or combined sewer utility work, and dewatering. If not properly controlled through use of Best Management Practices, these project actions could result in construction-related pollutants that could increase turbidity and pH in portions of Portage Bay as well as affect other water quality parameters, such as the amount of available oxygen in the water.

Construction of the project would require the development and implementation of temporary erosion and sediment control (TESC) and spill prevention, control, and countermeasures (SPCC) plans (WSDOT 2008a). A TESC plan would detail the risk of erosion in different parts of the study area and would specify best management practices (BMPs) to be installed prior to

construction activities and periodic maintenance and inspection procedures during construction. 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. A SPCC plan would also be prepared to prevent, control, and identify countermeasures for potential spills of hazardous materials during construction, as required by WSDOT Standard Specification 1-07.15(1) (WSDOT 2008d).

The project will employ numerous Best Management Practices and mitigation measures to protect groundwater and surface water quality, which are summarized above in the Proposal Description, briefly discussed below, and discussed in substantial detail in the FEIS in Chapter 6 Construction Effects of the FEIS, and in the associated discipline reports and plans attached as addendums to the FEIS including the Geology and Soils Discipline Report; Water Resources Discipline Report; Hazardous Materials Discipline Report, and the Aquatic and Wetland Mitigation Plans, as well as WSDOT Standard Specifications for Road, Bridge, and Municipal Construction and submittal materials for this project application.

1. Construction Stormwater Pollution Prevention Plan. This plan will describe overall BMPs, including location, size, maintenance requirements, and monitoring; specify methods for handling dewatering water, including storage, treatment, and discharge or disposal; discuss fugitive dust control, including surface protection and wetting techniques; outline flow control, including methods for routing off-site stormwater around the construction area and for controlling on-site stormwater discharges; address detention requirements and protocols to meet requirements and maintain existing conveyance system capacity; describe temporary water quality treatment for on-site stormwater runoff and/or dewatering water, including methods, location, and treatment goals; specify storm drain protection, maintenance, and monitoring; provide a list of Certified Erosion and Sediment Control Leads who would monitor and manage implementation and maintenance of BMPs; and outline water quality monitoring requirements, including location, frequency, and reporting. This plan would serve as the overall stormwater mitigation plan and would include each of the plans discussed below as appendices:
2. Temporary Erosion and Sediment Control Plan: This plan would outline the design and construction specifications for BMPs to be used to identify, reduce, eliminate, or prevent sediment and erosion problems. BMPs will be installed prior to earth disturbing activities and maintained until project completion and Notice of Termination is obtained.
3. Spill Prevention, Control, and Countermeasures Plan: This plan would outline measures and BMPs to prevent any discharge of petroleum based products into surface waters and/or adjoining shorelines during construction. It will include requirements for spill prevention, inspection protocols, equipment, material containment measures, and spill response procedures.
4. Concrete Collection, Containment and Disposal Plan: This plan would outline the management, containment, and disposal of concrete and concrete wastes and discuss BMPs that would be used to reduce high pH.

5. Fugitive Dust Plan. This plan would outline measures to prevent generation of fugitive dust from exposed soil, construction traffic, and material stockpiles.
6. Water Quality Monitoring. This plan will be a component of the TESC plan and in compliance with the NPDES permit and other approvals and include monitoring or sampling locations, procedures, reporting and identification of the applicable water quality standards from regulations or project approvals.

These plans, once completed, will be submitted to DPD prior to issuance of the shoreline substantial development permit for this project.

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

In addition to the above BMPs, WSDOT would implement the following procedures as appropriate for construction or demolition to prevent the discharge of solid and liquid wastes into the water or on land.

- Floating sediment curtain. This barrier is designed to control the settling of suspended solids (silt) in water by providing a controlled area of containment. This turbidity is usually created by disrupting natural conditions through construction or dredging in the marine environment. The containment of settleable solids is desirable to reduce the impact area.
- Underwater containment system/temporary cofferdam. This system would be implemented to prevent sediment, concrete, and steel debris from mixing with surface waters. Examples could include a temporary cofferdam, an oversized steel casing, or another type of underwater containment system developed by the contractor. This application would allow demolition work to be completed on and around an underwater structure and isolate the work zone. The system would also allow work to be completed at or below the mudline as determined by removal requirements by the state. Construction water and slurry within the containment system could be removed, treated, and pumped to an approved discharge location upon completion of the demolition.
- Construction water treatment systems. These systems consist of temporary settling storage tanks, filtration systems, transfer pumps, and an outlet. The temporary settling storage tank provides residence time for the large solids to settle out. The filtration system is provided to remove additional suspended solids below an acceptable size (typically 25 microns). The pumps provide the pressure needed to move the water through the filter and then to an acceptable discharge location. Once the solid contaminants are filtered out, the clean effluent is then suitable for discharge to a municipal storm drain or an acceptable discharge location. These systems can be located on a work bridge or a barge.

Additional information on in-water construction activities, effects from these activities, and associated BMPs is provided in Section 6.11, Ecosystems of the FEIS.

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 leak proof condition. If there is evidence of leakage, the further use of such equipment shall be suspended until the deficiency has been satisfactorily corrected.

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. Relevant BMPs and mitigation measures are discussed in substantial detail in Chapter 6 Construction Effects of the FEIS, and in the discipline reports and plans attached as addendums to the FEIS including the Geology and Soils Discipline Report; Water Resources Discipline Report; and Hazardous Materials Discipline Report. See discussion above regarding implementation of Construction Stormwater Pollution Prevention Plan and, in particular, Spill Prevention, Control, and Countermeasures Plan.

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.

The contractor is responsible for the preparation and implementation of a number of water quality pollution control measures that will be outline in the required TESC, SPCC and Concrete Containment and Disposal plans, as described above. Relevant BMPs, including this SPCC plan, and mitigation measures are discussed in substantial detail in Chapter 6 Construction Effects of the FEIS, and in the discipline reports and plans attached as addendums to the FEIS including the Geology and Soils Discipline Report; Water Resources Discipline Report; and Hazardous Materials Discipline Report.

Two facility types incorporating Ecology-approved stormwater best management practices have been identified for the project: biofiltration swales and constructed stormwater wetlands. Overall, these facilities and BMPs would reduce current pollutant loading levels to water bodies in the study area. Stormwater discharges from these areas would meet water quality criteria according to the HRM's evaluation methods.

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

Permeable surfacing is not practical for the bridge and street surfaces in part due to the need for collection and treatment of stormwater to occur.

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

The contractor for the project is responsible for the preparation and implementation of a Temporary Erosion and Sediment Control Plan (TESCP). The TESC plan would detail the risk of erosion in different parts of the study area and would specify best management practices (BMPs) to be installed prior to construction activities and periodic maintenance and inspection procedures during construction. 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. Relevant BMPs and mitigation measures are discussed in substantial detail in Chapter 6 Construction Effects of the FEIS, and in the discipline reports and plans attached as addendums to the FEIS including the Geology and Soils Discipline Report; Water Resources Discipline Report; and Hazardous Materials Discipline Report. See discussion above regarding implementation of Construction Stormwater Pollution Prevention Plan.

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.

All in-water construction activities, such as pile-driving, would occur during project-specific work windows approved by the regulatory agencies. WSDOT has coordinated with the regulatory agencies and the Muckleshoot Indian Tribe to establish site- and project-specific in-water work windows to minimize the potential for project activities to affect juvenile or adult salmonids.

In some instances, project-specific work windows may extend outside the published Washington State Department of Fish and Wildlife (WDFW) work window. While the work window extension has the potential to expose fish to construction effects, several factors would contribute to minimizing and reducing those effects. For instance, the proposed work windows continue to exclude months when a majority of juvenile salmonids are expected to migrate into Lake Washington, and few juvenile or adult salmonids are likely to occur in the project area during the construction period. Also, adult salmonids are anticipated to use deep waters, away from construction activities that could induce behavioral effects or injury. And finally, best management practices would minimize the size of the area affected by water quality and sound levels that could cause effects to fish.

Based on the types and locations of potential impacts, the project has the greatest potential to affect juvenile salmonids in the rearing/feeding and migration life history stages; impacts during these life history stages could result in decreases in juvenile growth, survival, and fitness. The impact assessment characterized effects on aquatic resources based on area (acreage) of bridge structures and related changes to salmonid life history stages. The raw area calculations were adjusted based on the use of specific impact zones by salmonids, including the amount and type of fish utilization. This application of the Fish Function Modifier factor adjusted the impacts

according to their ecological relevance (in most cases the modified impact acreage is less than the un-modified impact area).

Mitigation measures and actions proposed by WSDOT to address temporary and permanent impacts to shoreline habitat (aquatic) and shoreline habitat buffer impacts are detailed elsewhere in this decision as well as in the Portage Bay Environmental Critical Areas Technical Memorandum (Nov. 2011) and the Final Aquatic Mitigation Plan (Dec. 2011).

Standard over-water and in-water construction and demolition BMPs would be implemented in accordance with environmental regulatory permit requirements and WSDOT specifications. Specific in-water construction time periods would also be established through the project permitting process to minimize potential effects of pile-driving and other in-water construction activities on salmonid species. During column and bridge construction, BMPs would be used to avoid unintentional effects on habitat and water quality. Cofferdams, shaft castings, or other appropriate measures would be used to isolate work areas from open-water areas, particularly for concrete pouring activities, and work bridges would be used to minimize the use of barges in shallow water areas. Bibs would be used to contain falling debris during construction of the new bridge decking and demolition of the existing decking. A temporary erosion and sediment control plan, a spill prevention, control, and countermeasures plan, and a stormwater pollution prevention plan would be developed and implemented. Appropriate BMPs and noise attenuation methods will be developed in coordination with the regulatory agencies, the Muckleshoot Indian Tribe, and environmental permitting processes, and implemented to minimize potential effects of pile-driving activities.

Other BMPs could include:

- Avoiding or minimizing any spillage of concrete or other construction material into the water
- Avoiding or minimizing direct lighting effects from entering Lake Washington from construction activities by adjusting the angle of the lights and/or using bulbs in a non-white light spectrum
- Operating construction equipment from work bridges and barges where possible to minimize ground disturbance when working in or near sensitive areas
- Restoring cleared areas to preconstruction grades and replanting the areas with appropriate native herbaceous and woody species after construction

The Final Aquatic Mitigation Plan (WSDOT, December 2011) describes mitigation for aquatic resources effects. Temporary project effects that would likely require compensatory mitigation include partial shading and fill from the construction work bridges and falsework, which could increase predator use. These temporary effects would have the largest effect on juvenile Chinook as they migrate toward the Ship Canal in the shallow nearshore, where these work bridges are proposed to occur.

Again, mitigation measures and actions proposed by WSDOT to address temporary and permanent impacts to shoreline habitat (aquatic) and shoreline habitat buffer impacts are detailed elsewhere in this decision (see Environmental Critical Area analysis above) as well as in the

Portage Bay Environmental Critical Areas Technical Memorandum (Nov. 2011) and the Final Aquatic Mitigation Plan (WSDOT, Dec. 2011.).

In addition to the shoreline and wetland mitigation actions proposed by WSDOT to mitigate for this project's impacts (summarized above), additional mitigation will be required as a condition of this permit (see Conditions at the end of this report in Section 1.6) to further address the local impacts to shoreline and wetland habitat that will result from the lengthy and intense construction period for this project. Details of this additional mitigation shall be developed through a Recreational and Environmental Improvement Plan (REIP) outlined in Section 1.6. The habitat mitigation portion of the REIP shall focus on upland and wetland invasive vegetation removal and native plant revegetation in selected public areas in the vicinity of the project impacts, including the south Portage Bay area.

- 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.*

The project has been designed to avoid, minimize and/or mitigate for project impacts. The replacement bridge will be constructed in deeper water, which is generally better for the natural shoreline processes listed here. The number of in-water columns will be reduced relative to existing conditions. Best Management Practices to protect the shoreline environment during construction of the project are summarized elsewhere in this decision and discussed in substantial detail in the FEIS (Chapter 6) and associated Discipline Reports, as well as submittal material for this project's application.

- 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.*

As described elsewhere in this decision and analysis of shoreline development standards, WSDOT is proposing a number of actions and measures to avoid and minimize impacts to the surrounding land uses and areas, including Best Management Practices during construction that are summarized above and in greater detail in the FEIS and relevant Discipline Reports (e.g., Land Use, Economics, and Relocation Discipline Report and the Visual Quality and Aesthetics Discipline Report). The Record of Decision for the 520 Bridge Replacement Project also contains a summary of relevant measures (pages 24 to 26) to address this standard.

In addition to the mitigation actions and measures proposed by WSDOT to minimize impacts and mitigate for the impacts of this project to surrounding land uses, additional mitigation will be required as a condition of this permit (see Conditions at the end of this report in Section 1.6) to further address the local impacts to recreational access and opportunities in the project area that will result from the lengthy and intense construction period for this project, including trail closures and disruptions to shoreline and water access. Details of this additional mitigation will be developed through a Recreational and Environmental Improvement Plan outlined in Section 1.6, but will focus on trail and park improvements in selected public areas in the vicinity of the project impacts, including the south Portage Bay area.

- K. Land clearing, grading, filling and alteration of natural drainage features and landforms shall be limited to the minimum necessary for development. Surfaces cleared of vegetation and not to be developed shall be replanted. Surface drainage systems or substantial earth modifications shall be professionally designed to prevent maintenance problems or adverse impacts on shoreline features.*

Relevant BMPs and mitigation measures for consistency with these general development standards are discussed in substantial detail in Chapters 5 and 6 of the FEIS and, in particular, the Geology and Soils Discipline Report, Water Resources Discipline Report, and Land Use, Economics, Ecosystem Discipline Report and Relocation Discipline Report, all included in the FEIS as Addendums. See discussion above regarding implementation of Construction Stormwater Pollution Prevention Plan as well as other upland Best Management Practices that will be employed during construction of this project, including ensuring that a Certified Erosion and Sediment Control Lead is consulted and on-site during construction activities, clearly define construction limits with stakes and high visibility fence before beginning ground disturbing activities, minimizing vegetation and soil disturbance to the extent possible. For additional details for avoidance and minimization measures, please see relevant sections of the FEIS, including the Ecosystem Discipline Report and discussion of project-specific BMPs in the Portage Bay Area Environmental Critical Areas Technical Memorandum and other submittal material for this project application.

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

Replacing the existing Portage Bay Bridge, which has been found to be vulnerable to damage from earthquakes, with a new structure designed to meet current engineering standards should improve public safety in the project corridor. The staging and construction areas and the bridge, bike/pedestrian pathways and access ramps will be developed and operated in accordance with applicable safety standards and regulations. A Worker and Public Health and Safety Plan will be developed and implemented to ensure health and safety during construction of the project. The project site and staging areas shall be appropriately secured to prevent potential hazards to public health and safety, including installation of informational signs prior to performing hazardous activities within the project area.

- 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.*

Neither the bridge replacement project nor the staging area use within the Shoreline District will require the implementation of such measures. Use of a similar alignment for the new bridge reduces or eliminates the need for substantial site regarding or stabilization.

- 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.*

Potential impacts of construction-related pollutants and/or erosion are summarized above and discussed in more detail in Chapter 6 of the FEIS. The contractor will provide for the disposal of

all debris and other waste material associated with the proposed facilities in a manner that prevents their entry into any water body.

Relevant BMPs and mitigation measures are discussed in substantial detail in Chapter 6 Construction Effects of the FEIS, and in the discipline reports and plans attached as addendums to the FEIS including the Geology and Soils Discipline Report; Water Resources Discipline Report; and Hazardous Materials Discipline Report. See discussion above regarding implementation of Construction Stormwater Pollution Prevention Plan.

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;*

The design of the Portage Bay Bridge cannot comply with this standard. The Portage Bay Bridge is located entirely within WSDOT right-of-way and is intended to provide an area under the bridge for navigation of water vessels and to connect to upland portions of SR 520. If the entire bridge structure were floating, it would effectively block water vessels on the lake to areas either north or south of the bridge.

WSDOT has requested and DPD grants a waiver of this standard because the project is an Essential Public Facility and cannot comply with the standard given the necessary design and location of the structure (e.g., matching existing grades and providing positive stormwater drainage and meeting seismic safety regulations). RCW 36.70.200(5) and WAC 365-196-550(3)(a) provides that no local development regulation may preclude the siting of EPFs.

- 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;*

Given the waiver to allow a non-floating structure in the right-of-way, this standard is not applicable.

- 3. The maximum height of structures shall be fifteen feet (15');*

The Portage Bay Bridge design cannot comply with this standard. As described above in the Proposal description, the overall height of the new bridge, including traffic barriers, would range from approximately 70 feet above grade along the shoreline on the west end, down to as low as approximately 27 feet above water near the east end. The height of the western half of the new bridge would generally match the height of the existing bridge as it approaches grade, however the eastern half would be higher than the existing structure.

WSDOT has requested and DPD grants a waiver of this standard because the project is an Essential Public Facility and cannot comply with the standard given the necessary design and location of the structure.

- 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;

The project will occupy approximately 96% of the right-of-way area and occupies up to a maximum of 91% of the right-of-way width.

WSDOT has requested and DPD grants a waiver of this standard because the project is an Essential Public Facility and cannot comply with the standard given the design elements described in Q(1) above as well the proposed width of the structure is necessary to accommodate the land configuration of the selected design alternative.

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.*

The bridge structures that are part of this project will provide view corridors, and those corridors will exceed 50 percent of the width of the right-of-way, so the project meets this development standard.

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 shall be maintained.*

The project has been designed to provide the appropriate public navigation and access to adjacent properties. The Portage Bay Bridge is designed as a raised structure to provide an open channel for public navigation on Portage Bay between north and south of the bridge.

SMC 23.60.160 Standards for Regulated Public Access

A. 1. Regulated public access shall be a physical improvement in the form of any one (1) or combination of the following: Walkway, bikeway, corridor, viewpoint, park, deck, observation tower, pier, boat-launching ramp, transient moorage, or other areas serving as a means of view and/or physical approach to public waters for the public. Public access may also include, but not be limited to, interpretive centers and displays explaining maritime history and industry.

2. The minimum regulated public access shall consist of an improved walkway at least five (5) feet wide on an easement ten (10) feet wide, leading from the street or from a public walkway directly to a waterfront use area or to an area on the property from which the water and water activities can be observed. There shall be no significant obstruction of the view from this viewpoint.

WSDOT's proposal includes a bicycle/pedestrian pathway to begin on the bridge and connect to the existing Bill Dawson Trail along the restored waterfront. The proposal meets the standard for regulated public access.

SMC 23.60.162 View Corridors

- A. View corridors shall be provided for uses and developments in the Shoreline District as required in the development standards of the environment in which the use or development is located.*

The development standards for each of the shoreline environments associated with the project site (Conservancy Recreation, Conservancy Management and Urban Residential) require a view corridor. However, the code requirement regarding view corridors is specific to work in "lots", both within SMC 23.60.162.B and within the individual shoreline environment development standards. The right-of-way does not meet the definition for "lot" (SMC 23.84A.024).

The more specific view corridor development standard for submerged public right-of-way (SMC 23.60.152.Q.6) is applicable and is discussed above.

SMC 23.60.179 - 210 – Additional Development Standards Applicable to Specific Uses

Development standards applicable to specific uses in all shoreline environments are established in SMC Sections 23.60.179 through 23.60.210. The following development standards are relevant to the proposed project:

- SMC 23.60.180 Sign standards

In subsection B.1, it is stated that signs permitted in the CR, CM, and UR environments shall be limited to identification signs, on-premises directional signs, and interpretive signs. The signs associated with the project would be identification and directional roadway signs. Their type, size, and lettering are regulated by federal and state highway signage standards.

- SMC 23.60.192 Standards for utility lines

The project will meet these standards by constructing all new utility lines within existing utility corridors to the extent practical. Where the project installs utility lines outside of existing utility corridors, the project will meet SMC 23.60.192 (B) by installing utilities underground. The project will avoid installed overhead utilities, meeting SMC 23.60.192(C). And the project will meet SMC 23.60.192(D) by restoring shoreline to pre-project configuration, replanting vegetation, and maintaining the new vegetation until it is reestablished.

- SMC 23.60.194 Standards for intakes and outfalls

The project does not propose any intakes. The project proposes to replace existing outfalls above ordinary high water; therefore, SMC 23.60.194(A) is not applicable. The project does not propose to install any new outfalls below the waterline; therefore SMC 23.60.194(B) is not applicable.

1.4.2.4.2 Development Standards Applicable to CR Environment

- SMC 23.60.392 Natural Area Protection in the CR Environment

Developments in the CR Environment shall be located and designed to minimize adverse impacts to natural areas of biological or geological significance and to enhance the enjoyment by the public of those natural areas. Development in critical natural areas shall be minimized.

See discussion of temporary and permanent impacts and mitigation above in Sections 1.1.3.2 Wetlands and Wetland Buffers, 1.1.3.3, Fish and Wildlife Habitat Conservation Area Mitigation, and 1.3.2.1 Shoreline Policies. Development in critical natural areas has been avoided where possible, and minimized to the extent feasible. Where impacts have been found to be unavoidable, adequate on and off-site mitigation has been proposed.

- SMC 23.60.394 Height in the CR Environment

SMC 23.60.394.A sets a maximum height in the CR environment at fifteen (15) feet except as modified by Sections C through E of the section. In SMC 23.60.394.E, the code states “bridges may extend above the maximum height limit.” The need for increased height for the bridge structure has been previously discussed.

- SMC 23.60.400 Regulated public access in the CR Environment

On public property, public access shall be provided and maintained on all publicly owned and publicly controlled waterfront whether leased to private lessees or not, except when the property is submerged land which does not abut dry land. The proposal includes a bike/pedestrian pathway that starts on the bridge and connects to the existing Bill Dawson Trail off the bridge. This new pathway and connection to the existing trail will provide and maintain public access.

1.4.2.4.3 Development Standards Applicable to CM Environment

- SMC 23.60.452 Critical habitat protection in the CM Environment

All developments in the CM Environment shall be located and designed to minimize disturbance of any critical habitat area.

See discussion of temporary and permanent impacts and mitigation above in Sections 1.1.3.2 Wetlands and Wetland Buffers, 1.1.3.3, Fish and Wildlife Habitat Conservation Area Mitigation, and 1.3.2.1 Shoreline Policies. Development in critical natural areas has been avoided where possible, and minimized to the extent feasible. Where impacts have been found to be unavoidable, adequate on and off-site mitigation has been proposed.

- SMC 23.60.454 Height in the CM Environment

SMC 23.60.454.A sets a maximum height in the CM environment for Lake Washington at fifteen (15) feet. In SMC 23.60.454.E, the code states “bridges may extend above the maximum

height limit.” The need for increased height for the bridge structure has been previously discussed.

- SMC 23.60.460 Regulated Public Access

On public property, public access shall be provided and maintained on all publicly owned and publicly controlled waterfront whether leased to private lessees or not, except when the property is submerged land which does not abut dry land. The proposal includes a bike/pedestrian pathway that starts on the on the bridge and connects to the Bill Dawson Trail off the bridge. This new pathway and connection to the existing trail will provide and maintain public access.

1.4.2.4.4 Development Standards Applicable to UR Environment

- SMC 23.60.570 Development Standards in the UR Environment

All development in the Urban Residential Environment shall meet the requirements of this Part 2 as well as the development standards applicable to all environments contained in Subchapter III, General Provisions.

See analysis below.

- SMC 23.60.572 Height in the UR Environment

SMC 23.60.572.A sets a maximum height in the UR environment at thirty (30) feet except as modified by Sections B through E of the section. In SMC 23.60.572.E, the code states “bridges may extend above the maximum height limit.” The need for increased height for the bridge structure has been previously discussed.

- SMC 23.60.574 Lot Coverage in the UR Environment

In SMC 23.60.574.A, structures are limited to 35% of the waterfront upland lot, except as modified by subsection B. This development standard applies to “lots”; the project site is submerged public right-of-way and does not meet the definition for “lot” (SMC 23.84.A.042). More specific standards for right-of-way coverage is found above under SMC 23.60.152.Q4.

- SMC 23.60.578 Regulated public access in the UR Environment

On public property, public access shall be provided and maintained on all publicly owned and publicly controlled waterfront whether leased to private lessees or not, except when the property for harbor areas, shorelands, tidelands, and beds of navigable waters not abutting dry land. The proposal includes a bike/pedestrian pathway that starts on the bridge and connects to the Bill Dawson Trail off the bridge. This new pathway and connection to the existing trail will provide and maintain public access.

1.4.3 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.

1.4.4 Decision – Shoreline Substantial Development Permit

The proposed shoreline substantial development permit is **CONDITIONALLY GRANTED**. Shoreline Substantial Development conditions are listed in Section 1.6 below.

1.5 ANALYSIS – STATE ENVIRONMENTAL POLICY ACT (SEPA)

WSDOT's 2006 Draft Environmental Impact Statement (EIS) analyzed proposed corridor construction from the I-5 interchange in Seattle to just west of I-405 in Bellevue. The 2010 Supplemental Draft EIS evaluated the effects of a No Build Alternative and three 6-lane design options for the SR 520 corridor from I-5 to Medina. A Preferred Alternative, similar to Option A, was identified in April 2011 following consideration of comments on the SDEIS.

The June 2011 Final EIS and Final Section 4(f) and 6(f) Evaluations analyzed a No Build Alternative along with a Preferred Alternative and the three SDEIS design options for the I-5 to Medina corridor. The Preferred Alternative and the design options would replace vulnerable structures, add continuous HOV lanes, and include landscaped lids over SR 520 to reconnect neighborhoods that are now separated by the highway.

DPD's SEPA review of the SR 520 Seattle-side projects 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 WSDOT, 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 SR 520 Replacement projects 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 WSDOT's environmental documents and the City's SEPA policies are provided below.

1.5.1 Short-Term and Temporary Impacts

A number of temporary or construction-related impacts are expected from the anticipated 5.5-6 year construction period for this project, which are discussed in detail in the Final EIS (Chapter 6) and relevant Appendices or Addendums.

Several adopted City codes and/or ordinances provide mitigation for some of the identified impacts. Specifically these are: Stormwater Code (grading, site excavation and soil erosion); Street Use Ordinance (watering streets to suppress dust, removal of debris, and obstruction of the pedestrian right-of-way); 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.

1.5.1.1 General Construction Impacts

1.5.1.1.1 Short Term or Temporary Impacts

Seattle's SEPA policy regarding construction impacts recognizes that the construction process creates temporary impacts on the site and the surrounding area. The proposal is identified as having significant adverse impacts and mitigation measures have been planned in order to address the usual and direct impacts of noise, vibration, truck traffic, and air quality to name a few. There are also specific environmental policies for most of these types of impacts that may occur in the short-term and/or the long-term. Those impacts and the related SEPA policy discussion are detailed in the following paragraphs. Construction-related impacts not specifically addressed by a related SEPA policy (such as recreation or vibration) can be addressed under the authority of the Construction Impacts policy. The Community Construction Management Plan (CCMP) is the tool identified to address construction-related impacts and is included below as the proposed mitigation for these impacts.

Recreation. As described in the Project Description, construction would affect the existing Bill Dawson Trail. The Bill Dawson Trail is a designated multi-use pathway that extends under SR 520 between the northeast corner of the Montlake Playfield and the southern edge of the NOAA Northwest Fisheries Science Center. The portion of the trail affected by the construction lies both on NOAA property and within the existing WSDOT SR 520 right-of-way. Access from the north is at Montlake Boulevard, and access from the south is at Montlake Playfield at Calhoun Street. During construction of the Portage Bay Bridge, the segment of the Bill Dawson Trail within the WSDOT right-of-way and north of SR 520 would be closed. Detours for pedestrians and bicyclists who would normally use this trail would be provided using on-street and sidewalk connections to maintain trail connectivity between Montlake Boulevard and Montlake Playfield.

The project construction footprint, including staging areas, has been kept to the minimum area needed, which would help avoid negative effects to any property, including recreation resources. In addition, the following measures have been or would be implemented to avoid or minimize recreation effects during construction.

- BMPs, including those already developed and used as a matter of policy by WSDOT, would be implemented to protect recreation resources from construction-related effects

such as dust, vibration, noise, light and glare, and accidental damage from construction equipment. *See the Construction Techniques and Activities and Noise Discipline Reports (WSDOT 2009d and WSDOT 2009h) for more specific avoidance and minimization possibilities.*

- Detours would be provided for trails and bicycle routes to temporarily route traffic around construction sites to minimize trail closures. Trails would be kept open as often as safely possible and simultaneous closures of alternate trails and paths would be avoided.
- Detour routes and traffic control measures would be implemented to provide access to UW recreational activities. Construction closures of roads would be timed to minimize effects on large events.
- Construction activities, including barge traffic and moorage, would be timed to avoid recreational boating events the week before and week after opening day of boating season.
- Where practicable, access for boats moored in South Portage Bay would be maintained under the Portage Bay Bridge work bridges and the existing bridge when possible. If access and traffic could not be maintained, WSDOT would work with boat owners in South Portage Bay to find temporary alternate moorage. Passage for small boats would be maintained through the same areas, except when not possible because overhead work or demolition of the existing bridge structure would not allow for safe passage.
- Mitigation measures regarding public notices, which are included in the Navigable Waterways Discipline Report Addendum and Errata (WSDOT 2011), apply to recreational boating and would assist in preventing or mitigating effects to boating.

In response to concerns expressed during the shoreline permit application review process by the City of Seattle and local community, WSDOT is prepared to offer additional mitigation to address temporary, construction-related effects to recreational access in the Portage Bay area. To enhance recreational access and mitigate for project construction-related effects, WSDOT will provide Seattle Parks and Recreation (Seattle Parks) with funding to advance the design of Phase 5 of Seattle Parks' Montlake Waterfront Master Plan. Phase 5 of the Montlake Waterfront Master Plan, which is currently unfunded, would potentially include the following enhancements:

- Construction of a trail near the shoreline of Portage Bay from the existing beach launch, connecting to the Bill Dawson Trail.
- Construction of viewpoints.
- Installation of large woody debris.
- Removal of invasive species and planting of native vegetation

The scope of the construction activities in area, intensity, and time will result in continual displacement or degradation of recreational pursuits in the area surrounding the project during project construction. Use and enjoyment of the nearby parks, natural areas, and trails will significantly affect large numbers of people in the vicinity for the 5.5-6 year construction period. The Construction Impacts Policy provides authority to mitigate adverse impacts of the construction process, subject to the Overview Policy. There is no City code or regulation that mitigates the recreational impacts caused by the construction of this project; therefore, the Overview policy provides that mitigation is permissible. Additional recreational amenities shall be required in the project vicinity to offer improved and/or additional opportunities as mitigation

for the construction-related impacts of the proposal. More specific detail is provided in the conditions of approval at the end of this report (Section 1.6); generally this mitigation identifies specific improvements and a planning process to implement the mitigation through a Recreational and Environmental Improvement Plan.

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 Chapter 6 of the Final EIS and in the Air Quality Discipline Report Addendum and Errata address project-related impacts due to greenhouse gas emissions. Mitigation measures are discussed in Chapter 6 of the Final EIS to reduce fuel usage. Because GHG emissions are related to fuel consumption, any steps taken to minimize fuel use would reduce GHG emissions as well, and mitigate for these impacts. No additional mitigation pursuant to SEPA is warranted.

1.5.1.1.2 General Proposed Mitigation

As requested by the Department of Archaeological and Historic Preservation, and outlined in the Section 106 Programmatic Agreement, WSDOT and the construction contractor will develop a community construction management plan (CCMP) for each funded phase of project construction. The final CCMP will be developed and implemented prior to construction. The development of a CCMP is also identified as a commitment in the Memorandum of Understanding (MOU) between the WSDOT and the City of Seattle. The MOU was signed by the Mayor and City Council in October 2011.

A CCMP is a set of tools and commitments to help minimize the effects of construction on the public by providing timely and responsive information, as well as implementing standard specifications and best practices. A CCMP is in development for the floating bridge and landings portion of the corridor, which has received funding for construction. A CCMP will be developed with public input for each future construction phase in Seattle that receives funding, including natural resources mitigation sites. Key topics that will be addressed in the CCMP will include:

- Noise
- Vibration
- Air quality and fugitive dust
- Visual quality: aesthetics, glare, lighting
- Traffic and transportation (haul routes, traffic, detours, street parking, damage resulting
 - from heavy trucks and hauling, access, including emergency service access
- Utilities and services
- Vegetation management and erosion control
- In-water work (construction barges, work bridges, pontoon moorage, pontoon towing)

For each of the topics listed above, the CCMP will address the following questions:

- 1) What can the public expect?

- 2) What are the applicable commitments from the Section 106 Programmatic Agreement?
- 3) What regulations must WSDOT and the contractor comply with?
- 4) What else are WSDOT and the contractor doing to avoid, minimize, and mitigate for construction effects on local communities and historic properties?
 - a. BMPs and WSDOT standard specifications.
 - b. Additional agreements, such as environmental commitments made through other regulatory and permitting processes.
 - c. Additional tools that will be used to avoid, minimize, and mitigate construction effects on local communities and historic properties.
- 5) Specific communication tools to address this concern: How can the public get more information or talk to someone about concerns?

Additional processes that will implement the goals of the Community Construction Management Plan are the Neighborhood Traffic Management Plan and the Tree and Vegetation Management and Protection Plan. These are described in more detail below, and will have a separate final product. The final work product will be a Community Construction Management Plan, and this document will be submitted to the City.

1.5.1.2 Air Quality

1.5.1.2.1 Short Term or Temporary Impacts

Construction impacts for the project are discussed in Chapter 6 of the Final EIS (2011) and Attachments, including the Air Quality Discipline Report Addendum and Errata. Information provided in the Final EIS includes the results of a quantitative analysis prepared for the peak construction year for the Portage Bay Bridge (Table 6.8-1).

Air quality effects from construction of the SR 520 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). Dust emissions would also occur and would be associated with demolition, land clearing, ground excavation, cut-and-fill operations, and roadway and interchange construction.

1.5.1.2.2 Proposed Mitigation: Air Quality

Chapter 6 of the Final EIS included description and discussion of mitigation measures to address the potential impacts identified in these analyses, including implementation of WSDOT's Memorandum of Understanding with Puget Sound Clean Air Agency (PSCAA) to comply with PSCAA regulations that require dust control during construction and to prevent deposition of mud on paved streets. The CCMP will also provide mitigation for short term or temporary impacts to air quality. With these measures in place, no additional mitigation pursuant to Seattle's SEPA policy on Air Quality or Construction Impacts is warranted.

1.5.1.3 Surface Water Quality

1.5.1.3.1 Short Term or Temporary

Construction impacts for the project are discussed in Chapter 6 of the Final EIS (2011) and Attachments, including the Water Resources Discipline Report Addendum and Errata and the Hazardous Materials Discipline Report Addendum and Errata. Temporary construction-related effects on water quality and mitigation for these effects are addressed in more detail in each of the two Discipline Reports.

1.5.1.3.2 Proposed Mitigation: Water Quality

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 Chapter 6 of the Final EIS. Construction of the project would require the development and implementation of temporary erosion and sediment control (TESC) and spill prevention, control, and countermeasures (SPCC) plans (WSDOT 2008a). A TESC plan would detail the risk of erosion in different parts of the study area and would specify best management practices (BMPs) to be installed prior to construction activities and periodic maintenance and inspection procedures during construction. 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.

A SPCC plan would also be prepared to prevent, control, and identify countermeasures for potential spills of hazardous materials during construction, as required by WSDOT Standard Specification 1-07.15(1) (WSDOT 2008d). Additional information on the requirements of SPCC plans is provided in the 2009 Hazardous Materials Discipline Report (Attachment 7 to the Final EIS).

Construction of the project would require compliance with approved TESC and SPCC plans. The project would also require a concrete containment and disposal plan (CCDP). The CCDP would outline how concrete would be managed, contained, and disposed, and what pH levels would be mitigated to ensure that pH changes due to concrete construction and demolition activities do not harm aquatic species.

Containment of pollutants during in-water construction is key to maintaining water quality. In addition to the above BMPs, WSDOT would implement the following procedures as appropriate for construction or demolition.

- Floating sediment curtain - This barrier is designed to control the settling of suspended solids (silt) in water by providing a controlled area of containment. This turbidity is usually created by disrupting natural conditions through construction or dredging in the marine environment. The containment of settleable solids is desirable to reduce the impact area.
- Underwater containment system/temporary cofferdam – This system would be implemented to prevent sediment, concrete, and steel debris from mixing with surface waters. Examples could include a temporary cofferdam, an oversized steel casing, or another type of underwater containment system developed by the contractor. This application would allow

demolition work to be completed on and around an underwater structure and isolate the work zone. The system would also allow work to be completed at or below the mudline as determined by removal requirements by the state. Construction water and slurry within the containment system could be removed, treated, and pumped to an approved discharge location upon completion of the demolition.

- Construction water treatment systems - These systems consist of temporary settling storage tanks, filtration systems, transfer pumps, and an outlet. The temporary settling storage tank provides residence time for the large solids to settle out. The filtration system is provided to remove additional suspended solids below an acceptable size (typically 25 microns). The pumps provide the pressure needed to move the water through the filter and then to an acceptable discharge location. Once the solid contaminants are filtered out, the clean effluent is then suitable for discharge to a municipal storm drain or an acceptable discharge location. These systems can be located on a work bridge or a barge.

Additional information on in-water construction activities, effects from these activities, and associated BMPs is provided in Section 6.11, Ecosystems, of the Final EIS.

Seattle's SEPA Water Quality policy anticipates that local, state and federal regulations address potential impacts from construction site runoff. In addition, Seattle's Environmental Critical Areas Ordinance and Shoreline Master Program provide regulatory authority for mitigating water quality impacts on wetland and shoreline habitats. See discussion above in Shoreline analysis section regarding implementation of the Construction Stormwater Pollution Prevention Plan and the ECP. No additional mitigation for construction-related impacts to surface water quality pursuant to SEPA is warranted.

1.5.1.4 Drainage and Earth

1.5.1.4.1 Short Term or Temporary Impacts

The construction-related effects from this project on earth and groundwater are addressed in Chapter 6 of the Final EIS and in the Geology and Soils Discipline Report Addendum and Errata.

1.5.1.4.2 Proposed Mitigation: 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 Chapter 6 of the Final EIS and in the Geology and Soils Discipline Report Addendum and Errata. 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. See discussion above in Shoreline analysis section regarding implementation of the Construction Stormwater Pollution Prevention Plan and the ECP.

A TESC plan will be required to adequately and systematically identify and minimize project risk. The purpose of the TESC plan is to clearly establish when and where specific best management practices (BMPs) will be implemented to prevent erosion and the transport of sediment from a site during construction. The TESC plan sheets will show the BMP locations and other features such as topography and sensitive area locations for multiple project stages.

Potential BMPs are as follows:

- Maintaining vegetative growth and providing adequate surface water runoff systems
- Using quarry spalls and, possibly, truck washes at construction vehicle exits from the construction site
- Regularly sweeping and washing adjacent roadways
- Constructing silt fences downslope of all exposed soil
- Using quarry spall lined temporary ditches, with periodic straw bales or other sediment catchment dams
- Providing temporary covers over soil stockpiles and exposed soil
- Using temporary erosion-control blankets and mulching to minimize erosion prior to vegetation establishment
- Constructing temporary sedimentation ponds for removal of settleable solids prior to discharge
- Limiting the area exposed to runoff at any given time
- Frequently watering exposed surface soils to minimize visible dust

Where construction dewatering could result in settlement that might damage adjacent facilities, mitigation could include the following:

- Re-injecting the pumped groundwater between the dewatering wells and the affected facility
- Using construction methods that do not require dewatering

The CCMP will also provide mitigation for short term or temporary impacts to Drainage and Earth. With these measures in place, no additional mitigation pursuant to Seattle's SEPA policy on Drainage and Earth is warranted.

1.5.1.5 Traffic and Parking

1.5.1.5.1 Short Term or Temporary Impacts

The construction-related effects related to traffic and parking are addressed in Chapter 6 of the Final EIS and in the Final Transportation Discipline Report attached to the Final EIS. The analysis includes effects on local streets, the regional freeway system, truck transportation, transit, and bicycle and pedestrian travel.

Construction of the project, including demolition of structures and use of some areas for contractor staging, would require adjustments to the existing lanes and intersections on roadways. Construction equipment and activities would occupy a portion of the transportation right-of-way and construction truck traffic would be present on the roadways. These could affect the capacity of the roadway and pose distractions to drivers. During off-peak traffic periods, some travelers would encounter lane closures. Some local street delays can be expected during reconstruction of the Montlake Boulevard East bridge over SR 520, but during most of the construction period, congestion is expected to be similar to existing conditions due to temporary roadway improvements.

WSDOT obtained traffic counts for 16 Seattle intersections. Trucks and buses currently represent between 2 and 4 percent of the total traffic volumes on local streets in the project vicinity, numbering from 90 per day along Lake Washington Boulevard to 1,430 per day along NE 45th. (Exhibit 10-9 *Daily Construction Trucks on Local Streets, Final Transportation Discipline Report, FEIS*, WSDOT, May 2011). On average over the length of the construction period, there would be an additional 2 to 30 trucks per day, representing an increase of less than 0.5 percent in volume. On days when peak construction activities occur, there would be an additional 60 to 290 trucks per day with the highest volume (290 trucks per day) occurring at East Roanoke Street at Montlake Boulevard East because of its proximity to work bridges on the south side of the Portage Bay Bridge. This would increase the volume of trucks and buses from the existing 140 per day to approximately 290 per day at this location. Trucks and buses currently make up approximately 3 percent of total traffic at East Roanoke Street at Montlake Boulevard, and the increased number of trucks would raise this percentage to about 6 percent of existing vehicle volumes. Of the remaining locations, those with truck traffic near the high end of the 2 to 4 percent range would be Lake Washington Boulevard East in Montlake and Boyer Avenue East near Portage Bay. The added trucks on Montlake Boulevard East during peak construction would be just under 1 percent at the interchange and less than 0.5 percent in the Shelby-Hamlin area.

The temporary roadway capacity improvements during construction would allow traffic conditions to remain similar to existing conditions throughout most of the construction period. Throughout construction, there would be intermittent short-term lane closures along ramps, local streets, and the highway. These closures would be limited to nights and weekends when traffic volumes are lowest. Lane closures are not expected to substantially affect traffic operations during off-peak travel times. However, travelers can expect intermittent delays and, during isolated construction activities, some travelers would need to use alternate routes to reach their destinations. WSDOT would notify the public of all times when travel through the project area could be disrupted.

1.5.1.5.2 Proposed Mitigation: Traffic and Parking

WSDOT has proposed a number of mitigation measures designed to minimize impacts to traffic and parking during the construction phase of the Portage Bay Bridge. These measures include construction timing and coordination with jurisdictions and neighborhoods, development of and implementation of a Transportation Management Plan (TMP), and a more neighborhood specific Neighborhood Transportation Management Plan (NTMP). The proposed measures are summarized below.

Construction Timing and Coordination: WSDOT will perform the following:

- Restrict lane closures to nights and weekends, when traffic volumes are lowest (to the maximum extent practicable).
- Engage in regular, ongoing coordination with all affected jurisdictions to identify potential conflicts with other projects or public events, and plan for isolated construction activities that require special transportation considerations.
- Implement a continuous public information program to inform travelers, nearby residents, and businesses about transportation conditions, upcoming changes, and travel options during construction.

- Work to manage the flow of traffic and minimize traffic demand during construction using a combination of methods, all of which will be incorporated into the construction traffic management plan (TMP). The traffic management plan will be coordinated with the public outreach communications plan.

Other mitigation options include developing and implementing work zone management strategies. These strategies may include using intelligent transportation systems, traveler information, real-time work zone monitoring, traffic incident management, and enforcement techniques. More details on strategies feasible for this project are described in Chapter 6 of the Final EIS and are summarized below.

- Traveler Information Systems - Traveler information systems are designed to inform the general public of construction activities and transportation system operating conditions. Examples include, but are not limited to, dynamic and variable message signs, highway advisory radio, e-mail alerts, and project Web sites that provide real-time information on traffic conditions around construction and outlying areas.
- Incident Management Systems - Incident management systems are planned and coordinated strategies to detect, respond to, and remove traffic incidents to restore traffic capacity as safely and quickly as possible. The process of restoring traffic capacity involves law enforcement, fire and rescue, emergency medical services, transportation, public safety communications, emergency management, towing and recovery services, hazardous materials contractors, and traffic information media.
- Active Traffic Management - Active traffic management technology controls traffic based on the prevailing conditions. Potential tools include: overhead sign bridges to display variable speed limit and real-time traffic information; variable speed limit to reduce speed limits approaching areas of congestion, collisions, or special events; queue warning to warn commuters of downstream queues (or backups) and direct through-traffic to alternate lanes; and travel time signs to display estimated travel time and other condition reports..
- Construction Worker Shuttle Service - This service shuttles workers from outlying temporary or permanent parking facilities into the work zones, thereby reducing the number of vehicles arriving at and leaving the work zone areas and the parking demand in the work zones.

Several strategies would be used to help mitigate construction activities during special events, including graduations, city functions, and sporting events at the UW:

- Tailor special event traffic management plans to consider project construction congestion, including transit priority and special event shuttle services.
- Increase shuttle services so access is provided both to and from events.
- Provide event discounts with the use of transit shuttles.
- Implement additional event date/time-specific parking restrictions.
- Add police officer traffic control as needed.
- Provide a Web site and other outreach regarding construction and travel options to special events that is accessible and understandable.
- Restrict construction activities during major events.

Transportation Management Plan (TMP): WSDOT will prepare a construction TMP, in coordination with other stakeholders, to ensure that construction effects on local streets, property owners, and businesses are minimized. The TMP will include, as a minimum, the following measures:

- Details on required street and lane closures (duration and timing)
- Proposed detours and signing plans (for vehicles, pedestrians, freight, and bicycles)
- Compliance with Americans with Disabilities Act accessibility requirements.
- Measures to minimize effects on transit operations and access to/from transit facilities (in coordination with transit service providers)
- Traffic enforcement measures, including deployment of police officers
- Coordination with emergency service providers
- Measures to minimize traffic and parking effects from construction employees
- Measures to minimize effects of truck traffic for equipment and material delivery
- Measures to minimize disruption of access to businesses and properties
- Measures to minimize conflicts between construction activities and traffic during events

As part of the construction TMP, WSDOT will evaluate a set of temporary Transportation Demand Management (TDM) and transit enhancements to provide additional travel options to the public during construction. WSDOT will focus on supporting existing programs rather than implementing an entirely new program during the construction period.

TDM includes a variety of strategies that provide alternatives to driving in single-occupant vehicles, particularly during peak traffic periods. TDM programs include financial incentives, outreach to increase public awareness about travel options, services that help people choose a new travel option, and new travel options such as vanpools to encourage a shift away from travel in single occupant vehicles. The goal of TDM is to increase the efficiency of travel on roadways by moving more people in fewer vehicles. Transit is typically a primary consideration for any comprehensive TDM program because it is a reliable mode of moving many people in fewer vehicles. The people-moving capacity of transit is necessary for many TDM strategies to be successful. WSDOT is coordinating with King County Metro and Sound Transit to develop construction management plans that maintain the reliability of transit as an alternative to driving. WSDOT will continue this coordination throughout construction.

The TDM strategy and goals for the project will be developed during the final planning phase of the project. WSDOT will develop demand management goals based on the estimated construction effects on traffic for the project. The goals will be designed to complement the other construction traffic management techniques that will be implemented. WSDOT will evaluate areas of greatest need and benefit to maximize traveler options in those areas.

Neighborhood Traffic Management Plan (NTMP): To ensure that neighborhood specific traffic issues are adequately addressed, WSDOT and the Seattle Department of Transportation (SDOT) will collaborate to develop a NTMP. The final NTMP will be developed and implemented prior to construction. The final NTMP will be developed and implemented prior to construction. The purpose of the NTMP will be to catalog and develop solutions for community traffic concerns in the corridor and surrounding neighborhoods, and to identify potential funding sources for projects consistent with the recommendations and findings of the ESSB 6392 Final

Workgroup Technical Report. The NTMP will define traffic management measures to proactively reduce project construction effects and develop long term traffic management strategies that work in management practices. A timeline and schedule for the development of the NTMP will be completed by the end of 2011. Public outreach efforts, including the formation of a community advisory group, will begin in 2012.

As conditioned, the proposal's construction-related impacts can be adequately mitigated, pursuant to the authority in SEPA's Traffic and Transportation and Construction Impacts policies.

1.5.1.6 Noise

1.5.1.6.1 Short Term or Temporary Impacts

Construction-related impacts related to noise are addressed in Chapter 6 of the Final EIS and in the Noise Discipline Report Addendum and Errata attached to the Final EIS. Noise would include the use of typical construction equipment, impact construction equipment (e.g., pavement breakers, pile-drivers, jackhammers, and sandblasting tools), and non-impact noise-producing equipment such as concrete pumps, cranes, excavators, haul trucks, loaders, and tractor trailers.

The City of Seattle has developed a set of construction-specific allowable noise-level limits that would apply to construction within the Seattle city limits. Unlike the Washington Administrative Code, the Seattle Municipal Code does not exempt daytime construction activities from regulation. Table 6.7-2 in Chapter 6 of the Final EIS includes the maximum permissible sound levels depending on the district designations of the sound source and receiving properties (rural, residential, commercial, or industrial). Most project construction could be performed within the indicated noise limits shown in Tables 6.7-2 if the work was performed during normal daytime hours. If construction occurred at night, WSDOT would be required to meet the noise level requirements for night-time construction or obtain a noise variance from the governing jurisdiction.

1.5.1.6.2 Proposed Mitigation: Noise

The project will need to meet the requirements of the City of Seattle noise ordinance and the conditions of any variance that may be obtained. Several construction noise and vibration abatement methods—including operational methods, equipment choice, or acoustical treatments—could be implemented to limit the effects of construction. The methods used might vary in the project corridor, depending on the type of construction. The following list describes some of the more common construction noise and vibration abatement methods that could be used.

- Operation of construction equipment could be limited wherever possible within 500 feet of any occupied dwelling unit during nighttime hours or on Sundays or legal holidays, when noise and vibration would have the most severe effect.
- Mufflers would be required on all engine-powered equipment, and all equipment would be required to comply with EPA equipment noise standards.
- WSDOT could limit activities that produce the highest noise levels (such as hauling, loading spoils, jackhammering, and using other demolition equipment) to daytime hours.

- Minimization of the noise associated with pile-driving could include limiting the time the activity could take place.
- Other less effective methods of reducing noise from pile-driving are coating the piles, using pile pads, or using piston mufflers.

A construction log could be kept for each of the construction staging areas. The log could contain general construction information such as the time an activity took place, type of equipment used, and any other information that might help identify the equipment and activities causing any noise exceedences or generating complaints about noise. Tracking this type of information would help the contractor manage noise effects by pinpointing problematic activities or equipment, and facilitating quick resolution of any issues or exceedences.

A complaint hotline could also be established to investigate noise complaints and compare them to the construction logs. A construction monitoring and compliance program could help to ensure that all equipment met state, local, and manufacturer's specifications for noise emissions. Equipment not meeting the standards could be removed from service until proper repairs were made, and the equipment re-tested for compliance. This procedure could be used for all haul trucks, loaders, excavators, and other equipment that would be used extensively at the construction sites and that would contribute to potential noise effects.

The following is a list of potential noise mitigation measures that could be included in the construction contract specifications:

- Minimize noise by regular inspection and replacement of defective mufflers and parts that do not meet the manufacturer's specifications.
- Install temporary or portable acoustic barriers around stationary construction noise sources and along the sides of the temporary bridge structures, where feasible and practical.
- Locate stationary construction equipment as far from nearby noise-sensitive properties as possible.
- Shut off idling equipment.
- Reschedule construction operations to avoid periods of noise annoyance identified in complaints.
- Notify nearby residents and institutions whenever extremely noisy work would be occurring.
- Restrict the use of back-up beepers during evening and nighttime hours, or other hours if warranted by complaints.

Additional noise mitigation measures may be implemented as more details on the actual construction processes are developed and as part of any noise variance that may be required.

Any requests from WSDOT for construction noise variances for this project will generate specific mitigation requirements from the Seattle Department of Planning and Development that will be specified in any issued noise variance. As conditioned, the proposal's construction-related noise impacts can be adequately mitigated, pursuant to the authority in SEPA's Noise and Construction Impacts policies.

1.5.1.7 Plants and Animals

1.5.1.7.1 Short Term or Temporary Impacts

Section 6.11 of Chapter 6 of the Final EIS describes the construction impacts on ecosystems (including wetlands, fish, fish and aquatic habitat, wildlife, and federally and state listed species). Construction activities in the waters of Lake Washington could have a variety of effects on fish and other aquatic species. These activities include noise and vibration from pile-driving; temporary shading from work and detour bridges; and turbidity resulting from anchor placement and column removal in the lake. Wildlife and habitat may be affected by temporary clearing and shading of vegetation. The Ecosystems Discipline Report Addendum and Errata (Attachment 7 to the Final EIS) provides a detailed technical discussion on potential effects.

The average noise levels near wildlife habitat along SR 520 (within 100 feet) would rise during general construction. Noise levels would decrease with distance from the construction area. In most cases, noise levels at distances of 750 to 1,000 feet from areas of active construction would be similar to existing noise levels. Pile-driving in the Portage Bay area is anticipated to raise noise levels. See Section 6.7 of the Final EIS and the Noise Discipline Report Addendum and Errata (Attachment 7), for more details on construction noise. Noise from construction could cause wildlife to avoid this area during construction. In addition, pile-driving could increase noise in an area that waterfowl and bald eagles use for foraging during the day. This could displace bald eagles and waterfowl during foraging.

In addition to the pile-driving activities, in-water construction would also include installing temporary cofferdams to isolate some work areas from the aquatic environment and minimize the overall effects. Cofferdams are generally constructed with steel sheet piling vibrated into the mud with a vibratory hammer—typically to approximately 20 feet below the mud line. The area within the cofferdam is then de-watered to effectively isolate additional construction activities from the aquatic environment. While the cofferdams are intended to minimize biological and water quality effects of construction, the dewatering process can result in stranded fish within the enclosure. To minimize such effects, WSDOT fish handling and exclusion protocols (WSDOT 2009g) and any additional measure specified in the environmental permits for the project would be implemented.

Construction activities would also include replacing upland and in-water permanent bridge support structures (piers). The types of piers used would vary based on geological conditions, groundwater depth, water depth (if the structure is placed in water), and weight of the superstructure and the load it will carry. Substructure foundation types expected for this project include spread footings (upland only), drilled shafts, concrete columns, and water or mudline shaft caps. Regardless of the type of substructure, construction BMPs would be implemented to minimize the potential adverse effects of installing these structures on fish or aquatic habitat.

Other potential short-term construction effects could include spills of hazardous materials (e.g., oil and gasoline), chemical contaminants, or other pollutants. To reduce potential spills of petroleum and hydraulic fluids in sensitive areas, maintenance or fueling of construction equipment, vehicles, or vessels would not be allowed within 200 feet of the area waterways

without the implementation of appropriate spill prevention and control measures. Materials that modify pH—including cement, cement grindings, and cement saw cuttings—would be managed so that they will not contaminate surface water runoff or otherwise enter the area waterways.

1.5.1.7.2 Proposed Mitigation: Plants and Animals

A spill prevention, control, and countermeasures plan and a concrete containment and disposal plan will be developed before beginning construction (see discussion above in Shoreline Substantial Development Permit analysis).

In-water construction would occur from construction bridges where water depths would allow construction staging from barges. Construction work bridges would remain in place for up to 59 months.

All in-water construction activities, like pile-driving, would occur during project-specific work windows approved by the regulatory agencies. WSDOT has coordinated with the regulatory agencies and the Muckleshoot Indian Tribe to establish site- and project-specific in-water work windows to minimize the potential for project activities to affect juvenile or adult salmonids.

Standard over-water and in-water construction and demolition BMPs would be implemented in accordance with environmental regulatory permit requirements and WSDOT specifications. Specific in-water construction time periods would also be established through the project permitting process to minimize potential effects of pile-driving and other in-water construction activities on salmonid species.

During column and bridge construction, BMPs would be used to avoid unintentional effects on habitat and water quality. Cofferdams, shaft castings, or other appropriate measures would be used to isolate work areas from open-water areas, particularly for concrete pouring activities, and work bridges would be used to minimize the use of barges in shallow water areas. Bibs would be used to contain falling debris during construction of the new bridge decking and demolition of the existing decking. A temporary erosion and sediment control plan, a spill prevention, control, and countermeasures plan, and a stormwater pollution prevention plan would be developed and implemented.

Appropriate BMPs and noise attenuation methods will be developed in coordination with the regulatory agencies, the Muckleshoot Indian Tribe, and environmental permitting processes, and implemented to minimize potential effects of pile-driving activities.

Other BMPs could include:

- Avoiding or minimizing any spillage of concrete or other construction material into the water
- Avoiding or minimizing direct lighting effects from entering Lake Washington from construction activities by adjusting the angle of the lights and/or using bulbs in a non-white light spectrum
- Operating construction equipment from work bridges and barges where possible to minimize ground disturbance when working in or near sensitive areas

- Restoring cleared areas to preconstruction grades and replanting the areas with appropriate native herbaceous and woody species after construction

Areas affected by construction of the SR 520, I-5 to Medina project would require mitigation. Through the NRTWG, WSDOT engaged regulatory agencies and the Muckleshoot Indian Tribe in developing appropriate mitigation for project construction effects.

WSDOT calculated that the Portage Bay Bridge project would result in temporary impacts to shoreline habitat areas in the project area of 4.45 acre-years (*Portage Bay Area Environmental Critical Areas Technical Memorandum*, WSDOT 2011). To mitigate for these impacts, WSDOT sought off-site mitigation at the Magnuson Park Mitigation site because the site is large enough to provide the required mitigation area and mitigation here can address the same functions and values that would be affected by the project (Table 9, *Portage Bay Area Environmental Critical Areas Technical Memorandum*, WSDOT 2011). The mitigation would include shoreline restoration, removal of hard structures along the shore, and riparian enhancement. Figure 9 (*Portage Bay Area Environmental Critical Areas Technical Memorandum*, WSDOT 2011) shows the conceptual restoration of Magnuson Park to compensate for temporary impacts to the FWHCA. As shown on Table 9 (*Portage Bay Area Environmental Critical Areas Technical Memorandum*, WSDOT 2011), WSDOT has proposed 4.77 acre-years of mitigation at Magnuson Park.

Temporary shoreline buffer impacts associated with vegetation clearing will be mitigated for by replanting all shoreline areas where clearing activities were required for project construction (Table 10, *Portage Bay Area Environmental Critical Areas Technical Memorandum*, WSDOT 2011). All 1.22 acres of temporary clearing areas within the study area will be replanted with native vegetation. Because vegetation types are similar across critical areas (i.e., wetlands and FWHCA), a unified planting scheme has been developed. Details in the planting scheme are presented in the Wetland and FWHCA Planting Scheme section of the *Portage Bay Area Environmental Critical Areas Technical Memorandum*, WSDOT 2011.

The majority of wetland impacts would be from temporary filling and clearing of wetlands, and would not require permanent filling of wetlands. The non-fill impacts do not result in a loss of wetland area, but rather a diminishment in wetland function for some period of time. Within the Portage Bay study area, temporary impacts to wetlands and wetland buffers include:

- 1.26 acres of temporary clearing within wetlands
- 0.73 acre of temporary clearing within the wetland buffers
- 0.06 acre of temporary fill within wetlands, and
- 1.33 acres of temporary shading to wetlands

For more details on temporary wetland mitigation proposed for this project, refer to the *Portage Bay Area Environmental Critical Areas Technical Memorandum*, November 2011.

The Surface Water Discipline Report and Hazardous 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. See discussion above regarding implementation of

Construction Stormwater Pollution Prevention Plan. Based on consultation with wildlife experts at Washington Department of Fish and Wildlife, WSDOT will also be implementing specific measures (outlined in the application submittal) to avoid and minimize impacts to wildlife during construction.

Tree and Vegetation Management and Protection Plan: As part of the Community Construction Management Plan process, and as agreed to in the signed MOA between the State and the City of Seattle, WSDOT will develop a Tree and Vegetation Management and Protection Plan (TVMPP). The final TVMPP will be developed and implemented prior to construction. The plan will be developed in collaboration with the City, neighborhoods, and organized groups, such as the ABGC, and will address areas of the corridor where specific trees and or vegetation are to be removed or disturbed as part of the construction or resulting project improvements.

The plan will identify areas of mature tree removal, protection, potential relocation, and restoration of project areas including areas temporarily dedicated to construction, including staging and lay down areas. The goal of the plan is to minimize affects to trees where feasible. WSDOT will ensure that contractors adhere to the plan, notify neighborhoods prior to impacts, and that tree and vegetation removal would only occur at the approximate time required for construction.

1.5.2 Long-Term Impacts

Several long-term or use-related impacts are anticipated as a result of approval of this proposal including impacts on recreation, visual quality, air quality, surface water quality, and plants and animals (ecosystems), and beneficial impacts to traffic and transportation.

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. The Environmental Critical Areas Ordinance provides protection for plants and animals and their habitat. 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.

1.5.2.1 Public Views

1.5.2.1.1 Long Term Impacts

Changes in visual quality are described in Chapter 5 of the Final EIS and in the Visual Quality Discipline Report Addendum and Errata included in Attachment 7 to the Final EIS.

The City's SEPA Public View Protection Policy specifically addresses impacts on public views of significant natural and human-made features from identified public locations. These include public parks and viewpoints, scenic routes, and view corridors. For the project, the Bagley Viewpoint (2548 Delmar Dr. E.), Montlake Park (E. Shelby and E. Park Dr. E.) and Montlake Playfield are identified. Delmar Dr. E, 10th Ave. E. and the existing SR520 Portage Bay Bridge are scenic routes in the vicinity of the project. SEPA does not provide authority to mitigate impacts from private properties.

Views around the Portage Bay Bridge from low-lying land, including Montlake Park and the Montlake Playfield, or from the water would either remain the same as today or be more open. Intactness of views would range from moderate to high depending on the location of the viewpoint. The south side of the new bridge would be closer to the Montlake Playfield than it is currently, but the structure would still be seasonally screened by the existing tree canopy.

Views from sites above the roadway, including the Bagley Viewpoint, 10th Ave. E. and Delmar Dr. E., would be similar to that which currently exist. The SR 520 roadway is an element within the panoramic view from some of these points, and the view would be similar after construction of the proposal.

The wider new bridge and the addition of structures such as traffic barriers on top of the bridge structure or arch designs between columns would increase the physical bulk of the bridge (see Exhibit 5.5-3 in the Final EIS). This would make the bridge somewhat more dominant in north/south or eastward views, but the change would not affect overall visual quality since the bridge is already a dominant feature of the view in those directions. The areas under and around the west end of the bridge would be landscaped after construction and new views, primarily from the water, would open up along Boyer Avenue.

Views for drivers on the new Portage Bay Bridge would be diminished from today's views due to the use of the 4-foot-tall traffic barriers and the addition of the planted median. Depending on their height, spacing, and density, small shrubs that would be planted in the median could also obscure side views of the Portage Bay area over the traffic barriers (across the oncoming traffic lanes). Eastward views of the Cascade Mountains and Lake Washington would still be panoramic, but the expansiveness of these views would be reduced by the traffic barriers and median plantings.

1.5.2.1.2 Proposed Mitigation: Public Views

The following mitigation measures would be performed by WSDOT:

- Establish and follow design guidelines, developed in conjunction with the standards of both state and local jurisdictions, that include visual standards for the corridor. The guidelines and standards would present ways to ensure visual unity and consistency throughout the SR 520 corridor. These include defining the appearance and style of built elements, such as lighting, railings, sign bridges, structures, and walls. The guidelines would also address the use of public art in the corridor, including the process for selection and location of any art in cooperation with municipal and county jurisdictions and art organizations.
- Revegetate areas where natural habitat, vegetation, or neighborhood tree screens were removed during construction. These areas include under Portage Bay Bridge in Roanoke Park. The *Roadside Classification Plan* (WSDOT 2007) requires that areas within the right-of-way and construction easements be revegetated to align with the goals for the designated roadside classification. Mature vegetation would generally be used to revegetate parks and re-establish tree screens in these areas in consultation with local

jurisdictions and agencies. Revegetation plans would also provide for adequate irrigation and monitoring until trees and plants are well established.

- Follow the guidelines of the *Roadside Classification Plan* to blend the project into the adjacent land uses, while creating a unified experience for the roadway user. Refer also to the Seattle Department of Transportation's Streetscape Design Guidelines in the *Seattle Right-of-Way Improvement Manual* (City of Seattle 2009).
- Establish landscaping that would be compatible with the character of the existing vegetation, especially along Ship Canal Waterside Trail, Montlake Playfield, and Interlaken Park/Delmar Drive East.
- Establish guidelines to ensure the design of structures are aesthetically compatible with the surrounding land and waterscapes in scale and architectural style, and unified in appearance.

WSDOT will collaborate with the Seattle Design Commission (SDC), City of Seattle, UW Architectural Commission, Arboretum and Botanical Garden Committee (ABGC), Seattle Bicycle Advisory Board, Seattle Pedestrian Advisory Board, and Seattle neighborhoods to expand and refine an aesthetic vision, establish goals, and suggest design treatments for urban design and streetscapes within the project area. This collaboration will include identifying the existing urban amenities that will remain after construction of SR 520, and co-developing a community engagement process for refining the goals and principles. It will ultimately result in a set of urban design guidelines to inform and direct final design and construction of SR 520.

The FEIS evaluated potential effects on the visual quality from many locations, including those identified in this section as having potential protection under Seattle's SEPA Public View Protection policy. No significant adverse impacts on views from the above-identified public viewpoints, parks, or scenic routes will result from the proposed action; no additional mitigation is warranted.

1.5.2.2 Air Quality

1.5.2.2.1 Long Term Impacts

Operational effects of the project on air quality are addressed in Chapter 5 of the Final EIS and, in particular, the Air Quality Discipline Report Addendum and Errata included in Attachment 7 to the Final EIS. Seattle's SEPA Air Quality Policy provides that air quality impacts associated with auto emissions are primarily mitigated by federal emissions controls, the state inspection/maintenance program, and public transportation improvements. The Puget Sound Clean Air Agency (PSCAA) is responsible for monitoring air quality in the Seattle area and oversees compliance with applicable standards.

1.5.2.2.2 Proposed Mitigation: Air Quality

No additional mitigation pursuant to SEPA is warranted.

1.5.2.3 Surface Water Quality

1.5.2.3.1 Long Term Impacts

Operational effects of the project to surface water quality are analyzed and discussed in Chapter 5 of the Final EIS and in the Water Resources Discipline Report included in Attachment 7 to the Final EIS.

The SR 520 Project would increase pollutant generating impervious surface (PGIS) areas because of the wider roadways and bridges. The project includes different designs to convey the stormwater to treatment facilities, and the facilities will be located to meet those conveyance needs. The treatment facilities will be sized to meet the HRM requirements

The project will offset the increase in the amount of land covered by impervious surface in the study area by treating a comparable amount of existing untreated impervious areas through a number of stormwater treatment facilities. The project would construct a stormwater system that, overall, would reduce pollutant-loading to stormwater discharged to Portage Bay compared with existing conditions. Stormwater discharges from these areas would meet water quality according to the Highway Runoff Manual (HRM) presumptive approach. Stormwater discharges to Portage Bay would receive enhanced treatment that would exceed the minimum level of treatment required by the HRM.

1.5.2.3.2 Proposed Mitigation: Surface Water Quality

The Washington State Department of Ecology is the primary agency that regulates stormwater in the state. Ecology requires stormwater from all new pollutant-generating impervious surfaces, such as highways, to be treated before it is discharged. Ecology and WSDOT have agreed that runoff from highway projects will be treated using best management practices (BMPs) from the *Highway Runoff Manual (HRM)* (WSDOT 2008a) before discharged into Lake Washington.

Two facility types incorporating Ecology-approved stormwater best management practices have been indentified for the project: biofiltration swales and constructed stormwater wetlands. Overall, these facilities and BMPs would reduce current pollutant loading levels to water bodies in the study area, providing a benefit compared to the existing conditions. In addition, negative effects on surface water bodies during operation would be minimized by implementing water quality pollution control measures outlined in the required TESC, SPCC, and Concrete Containment and Disposal plans, including compliance with permit conditions.

Seattle's SEPA Water Quality policy anticipates that local, state and federal regulations address potential impacts from construction site runoff. In addition, Seattle's Environmental Critical Areas Ordinance and Shoreline Master Program provide regulatory authority for mitigating water quality impacts on wetland and shoreline habitats. See discussion above in Shoreline section regarding implementation of the Construction Stormwater Pollution Prevention Plan and the ECP.

No additional mitigation for operation-related impacts to surface water quality pursuant to SEPA is warranted.

1.5.2.4 Noise

1.5.2.4.1 Long Term Impacts

The Noise Discipline Report Addendum and Errata presents additional noise analysis completed for the Preferred Alternative (WSDOT 2011). As a result of that analysis and as described in Chapter 2 of the Final EIS, a number of design features were added to the Preferred Alternative design that may reduce noise effects during operation such as:

- Use of 4-foot tall concrete traffic barriers coated with noise absorptive materials along the mainline SR 520 from I-5 to Lake Washington.
- Encapsulating bridge expansion joints and applying noise absorptive materials to lid portals.

1.5.2.4.2 Proposed Mitigation: Noise

No additional mitigation for operation-related impacts to noise pursuant to SEPA is warranted.

1.5.2.5 Plants and Animals

1.5.2.5.1 Long Term Impacts

Operational effects of the project on natural resources (i.e., fish, wildlife and vegetation) are analyzed and discussed in more detail in Chapter 5 of Final EIS and in the Ecosystems Discipline Report Addendum and Errata included in Attachment 7 to the Final EIS.

Impacts would occur to wetlands, fish, wildlife and habitat. Some wetland areas will be filled or vegetation altered by shading, both of which reduce the wetland's capacity to store stormwater, filter pollutants, protect stream banks and lakeshores, and provide wildlife habitat. These alterations can also reduce the uniqueness of wetlands (by decreasing vegetation diversity) or decrease their educational or scientific value by limiting access, reducing wetland size, or changing the wetland character. Loss of wetland area reduces the wetland's potential to remove pollutants from stormwater. Filling parts of project area wetlands may reduce their capacity to provide flood storage, although this capacity is very limited in the project area. Some of the shoreline habitat functions provided by wetlands would be lost.

The Project would create larger areas of reduced fisheries habitat function compared to existing conditions, primarily due to increased shading by the larger overwater structures. The Project would also eliminate some aquatic habitat due to placement of columns and other in-water structures. Compared to the existing structures, the proposed overwater structures are about twice as wide.

Nearshore habitats would also experience shading effects. Shading in these areas could affect fish and alter fish movement and distribution by reducing the growth of aquatic vegetation in shallower areas (WSDOT 2009c). This would alter the habitat conditions and potential fish use of these areas, including juvenile salmonids and their predators. Juvenile salmonids also tend to avoid or hesitate entering shaded areas such as under docks and bridges.

The increased height and reduced shade of the Project structures, the reduced number of in-water structures compared to existing conditions, and the increased spacing between in-water structures would reduce overall habitat complexity. Because predator species use shade and structures to conceal themselves from their prey, these changes in the Portage Bay bridge configuration would likely decrease the predation rates along the migratory corridor.

All anadromous salmonids (fish that migrate to the ocean) in the Lake Washington watershed travel under or adjacent to the Portage Bay and Evergreen Point bridges. The project has the potential to negatively affect individual fish in the Lake Washington watershed—including the ESA-listed populations of Chinook salmon, steelhead, and bull trout—by altering a portion of their rearing and migration habitat. However, the project is not expected to adversely affect overall salmonid populations or evolutionarily significant units in the watershed, as reported in the 2010 Biological Assessment (included in Attachment 18 to the Final EIS).

The Project would affect wildlife by permanently removing vegetation and wildlife habitat, increasing shading, and decreasing noise disturbance from increased highway operations. The new roadway would displace some high quality wildlife habitat, principally wetlands and forested uplands, in the corridor and thereby reduce cover, nesting, and foraging habitat for some wildlife species. However, the area is already highly fragmented by the existing roadway and surrounding development.

Vegetation would be removed from areas where new roadway would be on the ground, and some vegetation would be removed for columns to support the roadway (Table 5.11-6 in the Final EIS). Removing vegetation would reduce cover for urban-adapted species such as black-capped chickadees, American robins, and eastern gray squirrels. Habitat quality is generally low for the Urban Matrix cover type.

At 55 feet above the high water line, the height of the western half of the new bridge would generally match the 50-foot height of the existing bridge as it approaches grade, however the eastern half would be higher than the existing structure. The mid-point of the replacement structure would be 30 feet above water as compared to 10 feet for the existing bridge, and the eastern end would be 18 feet above water as compared to the existing 8 feet above water. (Table 5.11-3 in the Final EIS)

Operation of the Project would have minimal effects on bald eagles and peregrine falcons, since those that forage in the area are accustomed to the presence of traffic.

Vegetation would be shaded where the roadway (bridges and approaches) would be elevated. The elevated roadway would also shade open water, but shading in open-water areas would likely have only a minor effect on wildlife.

There would be no effects on any wildlife species protected under the ESA or state lists from the operation of the project, because none occur in these portions of the project. Operation of any of the options would have minimal effects on bald eagles, which are protected under the Bald and Golden Eagle Protection Act as described above.

1.5.2.5.2 Proposed Mitigation: Plants and Animals

Chapter 5 and the Discipline Report also contain mitigation measures that will be employed to minimize and mitigate for potential impacts to these resources. The Water Resources Discipline Report and the Hazardous Materials Discipline Report, both included in Attachment 7 to the Final EIS, also contain mitigation measures that will minimize and mitigate impacts to natural resources during operation of the proposed project.

Consistent with regulatory guidance, WSDOT has designed the project to avoid and minimize the effects of the Project. Specific aspects of the design that have been incorporated to avoid and minimize effects on ecosystems are as follows:

- As discussed in Section 5.10 of the Final EIS, stormwater treatment facilities would be constructed to treat roadway runoff before it is discharged to downstream aquatic habitat. This would improve water quality in the study area.
- The Project would include fewer bridge columns, spaced farther apart than the existing columns, to reduce impacts on wetlands, wetland buffers, and open waters. Fewer columns also help reduce potential habitat for salmonid predators.
- Although the elevated structures would be wider than existing structures, in many areas the bridges would be higher than they are today, allowing more light under the elevated roadway sections. This would improve aquatic habitat conditions in some areas and offset and minimize potential negative effects in other areas.

Wetlands. Compensatory mitigation would be provided by WSDOT for effects to wetlands. The information presented in this section is from the conceptual wetland and aquatic habitat mitigation plans, which are included as Attachment 9 to the Final EIS. As described in Chapter 1 of the Final EIS, WSDOT engaged the regulatory agencies with jurisdiction over wetlands and aquatic habitat as well as the Muckleshoot Indian Tribe in the Natural Resources Technical Working Group (NRTWG) to assist in the development of appropriate mitigation for project effects. WSDOT identified candidate mitigation sites using a hierarchical selection process based on the watersheds in the study area. The SR 520, I-5 to Medina project will provide compensatory wetland mitigation in five locations for the project's wetland effects.

Permanent wetland buffer impacts would be mitigated for onsite by enhancing the wetland buffer with native vegetation once construction is complete. Since permanent wetland fill impacts cannot be mitigated for on-site, WSDOT has identified the Magnuson Park Mitigation site as suitable to satisfy compensatory mitigation requirements for impacts in Portage Bay. Using increased mitigation ratios for permanent impacts, WSDOT has calculated the mitigation need for permanent fill impacts in the Portage Bay study area to be 0.43 acres of wetland creation or reestablishment (Table 8 in the Environmental Critical Areas Technical Memorandum for Portage Bay). Since permanent wetland fill impacts cannot be mitigated for on-site, WSDOT has identified the Magnuson Park Mitigation site as suitable to satisfy compensatory mitigation requirements for impacts in Portage Bay. The Magnuson Park Mitigation site is large enough to provide a total of 4.67 acres of wetland creation, resulting in a surplus of 4.24 acres of wetland mitigation credit. Additionally, WSDOT proposes to

compensate for lost wetland functions due to 0.54 acres of permanent wetland shading by rehabilitating or enhancing an equivalent area (minimum) of wetland. Approximately 2.44 acres of rehabilitation credit and 2.65 acres of enhancement credit are available to offset permanent shade impacts, resulting in a surplus of 4.55 acres of wetland mitigation credit. Permanent wetland buffer impacts will be mitigated for onsite by enhancing the wetland buffer with native vegetation once construction is complete.

The proposed SR 520 mitigation at the Magnuson Park Mitigation Site would be aligned with the larger overall ecological restoration vision and concept for the park documented in the park master plan.

The basic elements of the mitigation design include:

- Grading the site and harvesting additional water from nearby areas and off-site facilities to establish new seasonally and permanently inundated wetland areas and extend the hydroperiods of existing wetlands.
- Replacing the topsoil on-site with material conducive to native plant growth and wetland functions such as water storage and water quality improvements.
- Removing non-native species and replanting with native species, retaining clumps of native trees.
- Locating the wetlands farther from Beach Drive and major trails to provide a wider and more densely-planted buffer with more vertical structure to increase wildlife use in the wetland and buffer.

The Magnuson Park Mitigation Site will also incorporate a 100-foot buffer around the mitigation area as required under SMC 29.05.160 to protect wetland functions on the site. A detailed description of the improvement in wetland and wetland buffer functions provided by the Magnuson Park Mitigation Site can be found in the Ecological benefits section of the individual wetland mitigation site descriptions (5.1.17, 5.2.17, 5.3.17, 5.4.17, and 5.5.17) in *The Conceptual Wetland Mitigation Report, SR 520, I-5 to Medina: Bridge Replacement and HOV Project* (WSDOT 2011).

In addition, wetlands and wetland buffers that are restored or enhanced onsite or at the Magnuson Park Site will be monitored as described in Chapters 6 and 7 of the *SR 520, I-5 to Medina: Bridge Replacement and HOV Project Conceptual Wetland Mitigation Report* (WSDOT 2011).

The compensatory mitigation for the project is a comprehensive package designed to follow Ecology and U.S. Army Corps of Engineers' joint guidance, as found in *Wetland Mitigation in Washington State: Part 1: Agency Policies and Guidance* (Ecology et al. 2006a) as well as local "no net loss" policies. The project was also designed to meet the mitigation sequencing, compensation, reporting, and monitoring requirements typically used in WSDOT projects.

Fish and Aquatic Resources. Although removal of the existing bridge deck and columns serves to offset impacts in-kind and on-site, additional in-kind and on-site opportunities to compensate for permanent impacts were not feasible. Therefore, WSDOT sought off-site mitigation that addressed the same functions and values that could be affected by the project, as allowed under SMC 25.09.200(B)(3)(b).

To mitigate for unavoidable, permanent shoreline habitat (aquatic) impacts, WSDOT used the conceptual model and assessment methodology. Unfortunately, these impacts cannot be mitigated for on-site because of project constraints. Based on these methods, the Portage Bay Bridge project would result in permanent impacts to 2.41 acres.

During the off-site selection process, WSDOT identified the Bear Creek restoration site (stream channel component) to provide sufficient mitigation area for permanent aquatic impacts for the Portage Bay Bridge project and mitigation at this site can offset the functions and values that would be affected by the project (Table 9). The Bear Creek channel restoration component would provide 2.50 acres (adjusted with fish function and mitigation type modifiers) of mitigation credit to offset permanent shoreline habitat (aquatic) impacts associated with the Portage Bay Bridge project (Table 9 *Portage Bay Area Environmental Critical Areas Technical Memorandum*, WSDOT 2011, Appendix E). Detailed information regarding the Bear Creek restoration site is provided in Appendix C (Figure C-10) and Appendix D of this Environmental Critical Area Technical Memorandum for the Portage Bay project. For additional details of these sites, please refer to Section 6 of the Final Aquatic Mitigation Plan (WSDOT 2011).

To mitigate for 0.35 acres of unavoidable, permanent shoreline buffer impacts, WSDOT proposes to utilize some of the surplus shoreline buffer mitigation credit at the WSDOT Peninsula mitigation site. Because the mitigation is not within ¼ mile of the proposed shoreline buffer impact, a 3:1 mitigation ratio would apply. Therefore, 0.35 acres of impact would require 1.05 acres of mitigation. The WSDOT Peninsula mitigation site provides 7.66 acres of surplus mitigation credit, sufficient to offset permanent shoreline buffer impacts from the Portage Bay Bridge project.

Wildlife and Habitat. WSDOT has coordinated with the City of Seattle, the University of Washington, Seattle Parks and Recreation, and the Arboretum Foundation in developing a planting strategy to offset the project's effects on regulated shoreline habitat under the City's shoreline management regulations. Many shoreline areas of Union Bay and the Montlake Playfield are not fully vegetated and/or contain invasive species. Some of these areas could be replanted with native trees and shrubs and the invasive species removed. WSDOT has also coordinated with wildlife experts with Washington Department of Fish and Wildlife to implement measures (e.g., specific plant species with wildlife values will be included in the revegetation plans) to enhance wildlife habitat in the project area following construction.

1.5.2.6 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).

1.5.3 Conclusion - SEPA

As part of the project proposal WSDOT has included substantial mitigation for identified impacts. A summary of these mitigation measures is in the project file, including the Portage Bay Area Environmental Critical Area Technical Memorandum (ECAR, Nov. 2011), as well as in the shoreline and SEPA analysis in this decision.

In addition to the wetland and aquatic mitigation measures detailed in the ECAR and described in Sections 1.1.3 and 1.1.4 above, WSDOT proposes the following mitigation measures as part of their proposal for this permit application:

- Community Construction Management Plan
- Neighborhood Transportation Management Plan
- Tree and Vegetation Management and Protection Plan
- Seattle Community Design Process

DPD's analysis of the application is based on the proposal together with these mitigation measures and views this mitigation as appropriate pursuant to the City's SEPA policies. If the applicant proposes substantive revisions at a future date, additional SEPA review may be required.

Because of the length and intensity of construction activities in the Portage Bay area due to this project and the disturbance this work will cause to local residents as well as impacts to wildlife from habitat loss and disruption (e.g., noise, lights, vegetation removal), DPD has determined further mitigation is required in addition to what has been proposed by the applicant (see discussion above). The details of this additional mitigation shall be captured through the development and implementation of the Recreational and Environmental Improvement Plan (REIP), as summarized in the permit conditions below. WSDOT shall also cover expenses of property damage that occurs due to vibrations from construction activities, which shall be a component of the CCMP as summarized below.

1.5.4 Decision – SEPA

The proposal is **CONDITIONALLY GRANTED**

1.6 SHORELINE AND SEPA 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, including the mitigation measures described in Sections 1.1.3 and 1.1.4 above. Additional mitigation measures (Recreational and Environmental Improvement Plan) for recreational and habitat impacts described in this analysis and in the following conditions are required.

2. The time limits for the permit, per SMC 23.60.074A and B will be determined prior to issuance and will be based on the time needed to complete the construction of the project, currently estimated by WSDOT to be 6 years.

Prior to Issuance of Master Use Permit

3. Updates to Financial Memorandum of Agreement

WSDOT and Seattle's Department of Planning and Development have reached a separate financial Memorandum of Agreement (MOA) to address Project fees. It will be necessary to amend this MOA in order to reimburse costs connected with staff time for future work associated with the mitigating conditions of City permits. Staff time will include activities such as reviews of plans, documents, inspections, and meetings.

4. Final Design

WSDOT or its contractor shall provide revised plan sheets, as needed, showing final design for all development approved for the Portage Bay Bridge Replacement (3012585). Any changes to current plan sheets for the Portage Bay Bridge Replacement shall be clearly identified on these revised plans, including any revisions that change the project's impacts on aquatic, shoreline buffer, and/or wetland habitat. Changes may be subject to a revision of the SSDP or a new SSDP may be required.

5. Environmental Critical Area Technical Memorandum

A revised Environmental Critical Area Technical Memorandum or addendum to the report shall be provided to DPD that clearly updates, as needed, all information in this report relevant to the environmental impacts and/or mitigation based on the final design for the Portage Bay Bridge.

6. Magnuson Park and Bear Creek Mitigation Sites

WSDOT or its contractor shall provide DPD with final construction grading plans and final landscaping plans for the Magnuson Park Mitigation Site (project 3012591) as well as the wetland mitigation plans outside the Shoreline District at Magnuson Park and the Bear Creek riparian project (City of Redmond). DPD will verify that these plans are substantially consistent with the wetland and shoreline habitat mitigation presented for these sites in the current Portage Bay Environmentally Critical Area Technical Memorandum (ECAR).

The revised plans shall also clearly show any changes from current mitigation plans and demonstrate clearly that mitigation requirements proposed under these permits have been met or exceeded by the final design plans. This information will also include final maintenance and monitoring plans for the mitigation projects. This submittal shall include all pertinent technical reports supporting development of the final plans.

For the mitigation proposed at Magnuson Park, the grading plans shall include all substantive elements (not necessarily all submittal requirements) needed for a grading permit under SMC 22.170.070 of the Seattle Grading Code as verified by DPD. WSDOT shall also provide DPD written concurrence from Seattle Parks for the final design. DPD may opt to assign a mutually agreed upon expert third party reviewer(s) to review technical aspects of the final mitigation

plans to ensure implementation of the plans will adequately meet ECA/Shoreline mitigation requirements as provided in the ECAR. Reviews may include, but are not limited to, review of design elements relating to wetland and buffer vegetation planting and invasive vegetation management, hydrology and drainage design, and soils/geology.

7. Additional Plan Submittals

In addition to the information described above, WSDOT or its contractor shall prepare and provide copies to DPD of the plans identified in the conditions below (#8 – 12), to be referenced on all permit submittals. The Community Construction Management Plan and the Tree and Vegetation Management and Protection Plan shall be maintained in both the contractor's construction office and any on-site construction offices.

More information on these plans is contained or referenced in the application submittal materials for this project to DPD, including the Portage Bay ECAR, the FEIS (e.g., Chapter 6) and the relevant Discipline Reports for the EIS, as well as WSDOT's Highway Runoff Manual (HRM). These plans shall also include all project-specific Best Management Practices that go beyond standard BMPs described in the HRM and are necessary due to the nature of this project and its location. These project-specific BMPs are summarized in the application material for this project (e.g., Sections 6.0 and 7.0 of the Shoreline Application project description and supplemental information, dated November 29, 2011) as well as the Shoreline and SEPA analysis above.

8. The Community Construction Management Plan

WSDOT and the City of Seattle have entered into a Memorandum of Understanding (MOU), signed Nov. 17, 2011, to address many aspect of the construction and operation of the expanded SR520 facilities. The MOU identifies numerous WSDOT commitments for public involvement and mitigation actions. A significant component of the MOU is the Community Construction Management (CCMP). The CCMP will be developed with public input for each future construction phase of the 520 Bridge Replacement Project in Seattle that receives funding, including the Portage Bay Bridge section (Master Use Permit No. 3012585) and the Magnuson Park Mitigation Site (Master Use Permit No. 3012591).

Key topics that will be addressed in the CCMP for 3012585 and 3012591 will include:

- a. Noise
- b. Vibration. Note: This section of the CCMP should include details regarding how WSDOT will conduct outreach to potentially affected property owners in the project area and provide pre-construction surveys of residences or other privately-owned structures to establish a baseline condition for potential impacts due to vibration during construction. This section shall include details for how any claims of damage clearly caused by construction will be resolved.
- c. Air quality and fugitive dust
- d. Visual quality: aesthetics, glare, lighting
- e. Traffic and transportation (haul routes, traffic, detours, street parking, damage resulting from heavy trucks and hauling, access, including emergency service access)
- f. Utilities and services

- g. Vegetation management and erosion control
- h. In-water work (construction barges, work bridges, pontoon moorage, pontoon towing, and boat navigation)

Final work products that will be developed and implemented as part of the CCMP process will include the CCMP, Neighborhood Traffic Management Plan, Tree and Vegetation Management and Protection Plan, and Seattle Community Design Process, which are summarized below.

9. Neighborhood Traffic Management Plan

WSDOT and the Seattle Department of Transportation will collaborate to develop the Neighborhood Traffic Management Plan. The purpose of the plan will be to catalog and develop mitigation for community traffic impacts in the corridor and surrounding neighborhoods and to identify potential funding sources for projects consistent with the recommendations and findings of the ESSB 6392 Final Workgroup Technical Report.

10. Tree and Vegetation Management and Protection Plan

As part of the Community Construction Management Plan process, and as agreed to in the signed MOU between the State and the City of Seattle, WSDOT will develop a Tree and Vegetation Management and Protection Plan (TVMPP). The final TVMPP will be developed and implemented prior to construction. The plan will be developed in collaboration with the City, neighborhoods, and organized groups, such as the ABGC, and will address areas of the corridor where specific trees and or vegetation are to be removed or disturbed as part of the construction or resulting project improvements.

The plan will identify areas of mature tree removal, protection, potential relocation, and restoration of project areas including areas temporarily dedicated to construction, including staging and lay down areas. The goal of the plan is to minimize affects to trees where feasible. WSDOT will ensure that contractors adhere to the plan, notify neighborhoods prior to impacts, and that tree and vegetation removal would only occur at the approximate time required for construction. A DPD planner or designated representative shall be a participant in this process.

11. Seattle Community Design Process

The Seattle Community Design Process (SCDP) fulfills a recommendation made by the 2010 ESSB 6392 Workgroup to “expand and refine an aesthetic vision, establish goals, and suggest design treatments for urban design and streetscapes within the project area.”

This collaboration would include identifying the existing urban amenities that will remain after construction of SR 520, and co-developing a community engagement process for refining the goals and principles. It would ultimately result in a set of urban design guidelines that would inform and direct final design and construction of SR 520.” (Urban Design and Streetscape Technical White Paper)

At the conclusion of the SCDP, WSDOT will develop a progress report that will include the results of the feedback collected from an Expert Review Panel, an agency and community design group and the broader public. This feedback will guide WSDOT as they continue to refine the urban and sustainable design elements of the preferred alternative.

12. Recreational and Environmental Improvement Plan

WSDOT, Seattle Parks and Recreation (Parks), Seattle Department of Transportation (SDOT) and other relevant local or state agencies, as required depending on the project location, will collaborate to develop a Recreational and Environmental Improvement Plan (REIP).

The REIP shall coordinate with and not conflict with other commitments made by WSDOT for the avoidance, minimization and mitigation of 520 project impacts, such as the CCMP, Seattle Community Design Process and the Arboretum Mitigation Plan, which are separate but related efforts.

The purpose of the REIP will be to develop implementation plans and cost estimate for specific projects in the 520 project area as additional mitigation for construction-related effects to recreational access and local environmental conditions and habitat in the 520 project corridor, prioritizing unfunded projects already identified and partially designed in the Montlake Community Park Waterfront Master Plan Report (July 2006), hereafter referred to as the Montlake Plan.

WSDOT shall fund the planning, design, implementation, construction and maintenance costs for the establishment of landscaping and trail amenities. Local citizens shall have input in the design of the projects identified and developed through the REIP. It is the intent of the REIP that Seattle Parks will lead a public involvement process to verify and update, as needed, the project concepts in the Montlake Plan. This process will occur following completion of the REIP, depending on Seattle Parks' project priorities. Although estimated project costs may be identified prior to this public process, WSDOT will participate as necessary to facilitate trail construction within WSDOT right-of-way.

Top priority projects for the REIP identified in the Montlake Plan include:

- a. Design, permitting and construction of a boardwalk trail connecting the public shoreline along the Fuhrman Street Right of Way to the pathways at South Portage Bay. (See Phase 1 of Montlake Plan for more details)
- b. Design, permitting and construction of a trail near the shoreline of Portage Bay from the existing beach launch, connecting to the Bill Dawson Trail (see Phase 5 of the Montlake Plan for more details).
- c. Removal of upland and wetland invasive species within trail corridors and planting of native vegetation associated with and in coordination with the design and construction of both of these new trails and associated habitat areas.

The following projects were not identified in the Montlake Plan but also shall be considered top priority projects for the REIP:

- d. Removal of upland and wetland invasive species, planting of native vegetation and other wetland and wetland buffer enhancements at the former *Frolund* property under the west side of the Portage Bay Bridge, currently owned by WSDOT. In addition to habitat enhancements in this area, an ADA-accessible trail from Boyer Ave to a series of shoreline viewpoints shall be designed and constructed at this property in cooperation with Seattle Parks. This trail shall include appropriate landscaping for the location.

- e. Removal of upland and wetland invasive species and native plant revegetation and establishment, as feasible and appropriate given site conditions and constraints, at the following public street ends or waterways in the project area: E. Hamlin, E. Edgar, E. Roanoke and Waterway One. Design and implementation shall be in cooperation with WSDOT and Seattle Parks and DNR, where needed. Repair and maintenance to the Waterfront Trail from the MOHAI parking lot to the western edge of Foster Island, including revegetation in the trail corridor, as designed by Seattle Parks, shall be funded by WSDOT prior to issuance of West Approach Shoreline Substantial Development Permit (see MUP # 3012587).

The REIP will produce implementation plans and cost estimates for these projects. The REIP will also identify the implementing party for the individual projects. While the REIP will contain a general project schedule, the implementing parties will be responsible for developing a final implementation schedule as well as permitting for the project. The implementing party will also be responsible for developing a contingency plan if a top priority project (cited above) is determined to be infeasible through the public process and collaboration with relevant permitting authorities. The contingency plan will identify alternative, unfunded projects in the 520 project corridor that have similar or equivalent value to the affected community as the top priority projects. Preliminary cost estimates for portions of the Montlake Plan are available in the Montlake Plan but will be revised through the REIP process. Project funding identified through this process shall be used for a replacement contingency project to ensure that equivalent value to the community is achieved.

The REIP shall be completed prior to the issuance of the Portage Bay Shoreline Substantial Development Permit. WSDOT shall be responsible for providing full funding for the following costs associated with each REIP-identified project: design, permitting, construction, and maintenance costs for the establishment of landscaping and trail amenities. WSDOT and the City of Seattle shall develop a Memorandum of Agreement to ensure that WSDOT covers the REIP project costs in a timely and reasonable manner given the objectives summarized above.

Prior to the Start of Construction

13. The following plans shall also be fully prepared and provided to DPD prior to the start of any construction activities for this project:

- a. **Stormwater Pollution Prevention Plan (SWPPP)**

The SWPPP for this project shall be completed and provided to DPD prior to any construction activities on this project. This plan is intended to address water quality concerns from stormwater and other project related process water. The Temporary Erosion and Sediment Control (TESC) Plan and the Spill Prevention, Control, and Countermeasures (SPCC) Plan will implement the requirements of the SWPPP.

- b. **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. This Plan will address the following elements:

- 1) Marking clearing limits
- 2) Establishing construction access
- 3) Controlling flow rates
- 4) Installing sediment controls
- 5) Stabilizing soils
- 6) Protecting slopes
- 7) Protecting drain inlets
- 8) Stabilizing channels and outlets
- 9) Controlling pollutants
- 10) Controlling dewatering
- 11) Maintaining BMPs
- 12) Managing the project

c. 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.

d. Concrete Containment and Disposal Plan

The Concrete Containment and Disposal Plan shall outline the management, containment, and disposal of concrete and discuss BMPs that would be used to prevent the discharge of stormwater or other materials with an elevated pH. Any collected wastes with an elevated pH will be treated prior to discharge to surface or groundwater or will be discharged to a sanitary sewer or similar system in the compliance with regulatory approvals.

e. Water Quality Monitoring Plan

The contents of the Water Quality Monitoring Plan are described in the HRM and include monitoring or sampling locations, procedures, reporting and identification of the applicable water quality standards from regulations or project approvals.

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. This plan will be prepared to address air quality in compliance with a Memorandum of Agreement between WSDOT and the Puget Sound Clean Air Agency.

g. Geotechnical Issues and Impact to Private Property

Plans shall be submitted to DPD that clearly demonstrate, at least conceptually, that all aspects of the development including temporary structures and earthwork activities needed to construct the proposed development will be confined to the public right-of-way. Building permits may be required if temporary or permanent encroachments on or beneath adjacent private property are needed to construct the development.

14. WSDOT and/or its contractor shall obtain all required permits and approvals from other local, state and federal authorities, including King County, Washington Department of Fish

and Wildlife, Washington Department of Natural Resources, Washington Department of Ecology, U.S. Army Corps of Engineers, Puget Sound Clean Air Agency, OSHA, and any others that apply to this project.

During Construction

15. The contractor and WSDOT shall be responsible for compliance with each of the plans described above, including all components of the CCMP and all construction-related Best Management Practices summarized in the FEIS and associated Discipline Reports and submittal materials for the application for this project, including the Environmental Critical Area Technical Memorandum for Portage Bay Area.
16. The contractor and WSDOT shall be responsible for compliance with the City of Seattle Noise Regulations or the modified requirements listed in any approved Noise Variances.
17. The contractor and WSDOT shall be responsible for implementing fish and wildlife protection and enhancement recommendations made by Washington Department of Fish and Wildlife to WSDOT through the HPA process and consultation with WDFW's wildlife experts.
18. WSDOT or its contractor shall make available to DPD, upon request, the results of all monitoring reports produced during construction that relate to potential construction-related impacts such as water quality monitoring, sediment quality monitoring, spill activity, fish or wildlife disturbances, etc.

Within Six Months of Completion of Habitat and Revegetation Actions Identified in Project Decision:

19. WSDOT or its contractor shall provide DPD with as-built plans showing all development, including landscape planting, completed at the aquatic and shoreline mitigation sites for the project (e.g., Magnuson Park, Bear Creek and other projects implemented by WSDOT through the REIP) proposed for this project, including on-site revegetation actions.

For Life of the Project

20. All operational Best Management Practices identified in the 2011 FEIS for this project and associated Discipline Reports and the Portage Bay ECAR shall be implemented and enforced.
21. WSDOT or its contractor shall provide DPD copies of monitoring reports associated with performance of aquatic and wetland habitat mitigation projects.

Signature: _____ (signature on file) Date: January 17, 2012
Ben Perkowski, Senior Land Use Planner
Department of Planning and Development