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 includes the Director's analysis and decision for Application 3011843, the Master Use Permit (MUP) for the Seattle portion of the SR 520 floating bridge. This is one of nine MUPs related to the Seattle portion of the SR 520 project.

TABLE OF CONTENTS

1 APPLICATION 3011843 – SR 520 FLOATING BRIDGE (SEATTLE PORTION) 3

1.1 SUMMARY OF PROPOSED ACTION 3

1.1.1 Background Information 4

1.1.1.1 SR520 Bridge Replacement and HOV Program 4

1.1.1.2 Site and Vicinity Description 4

1.1.2 Proposal Description 6

1.1.3 WSDOT Proposed Aquatic Habitat Mitigation Measures 7

1.1.3.1 Best Management Practices 7

1.1.3.2 Fish and Wildlife Habitat Conservation Area Mitigation 8

1.1.3.2.1 Cedar River/Elliott Bridge Site 9

1.1.3.2.2 East Approach Site 9

1.1.4 Additional Mitigation Measures 10

1.1.5 Project Construction Duration 10

1.1.6 Public Comments 10

1.2 ANALYSIS - ESSENTIAL PUBLIC FACILITY 11

1.2.1 Background 11

1.2.2 The City's EPF Criteria 11

1.3 ANALYSIS – ENVIRONMENTALLY CRITICAL AREAS 14

1.3.1 SMC 25.09.200 Development Standards for Fish and Wildlife Habitat Conservation Areas 15

1.4 ANALYSIS - SHORELINE SUBSTANTIAL DEVELOPMENT PERMIT 16

1.4.1 The Policies and Procedures of Chapter 90.58 RCW 16

1.4.2 The Regulations of Chapter 23.60 17

1.4.2.1 SMP 23.60.004 - Shoreline Policies 17

1.4.2.1.1 Environmentally Critical Areas (LUG 36) 17

1.4.2.1.2 Shoreline Goals LUG 43, LUG 48, and LUG 49 – Protection of Shoreline and Aquatic Environment 18

1.4.2.1.3 Shoreline Goals LUG 44 – Public Access, LUG 45 – View Preservation, LUG 46 – Transportation Network 19

1.4.2.1.4 Shoreline Policy LU 270 – Heights in Shoreline Environment 19

1.4.2.2 Effective Date of Shoreline Permit ..... **Error! Bookmark not defined.**

1.4.2.3 Shoreline Uses 19

1.4.2.3.1 Analysis – Shoreline Special Use 20
1.4.2.3.2 Decision – Shoreline Special Use 21
1.4.2.4 Shoreline Development Standards 22
1.4.2.4.1 SMC 23.60.152 - General Development Standards for all Shoreline Environments 22
1.4.2.4.2 SMC 23.60.206 - Development Standards Applicable to Specific Uses 30
1.4.2.4.3 Development Standards Applicable to CN Environment 31
1.4.2.4.4 Development Standards Applicable to CR Environment 31
1.4.3 The Provisions of Chapter 173-27 WAC 32
1.4.4 Decision – Shoreline Substantial Development Permit 32
1.5 ANALYSIS – STATE ENVIRONMENTAL POLICY ACT (SEPA) 32
1.5.1 Short-Term and Temporary Impacts 33
1.5.1.1 General Construction Impacts 33
1.5.1.1.1 Short Term or Temporary Impacts 33
1.5.1.1.2 General Proposed Mitigation 33
1.5.1.2 Air Quality 34
1.5.1.2.1 Short Term or Temporary Impacts 34
1.5.1.2.2 Proposed Mitigation: Air Quality 35
1.5.1.3 Surface Water Quality 35
1.5.1.3.1 Short Term or Temporary Impacts 35
1.5.1.3.2 Proposed Mitigation: Water Quality 35
1.5.1.4 Traffic and Parking 36
1.5.1.4.1 Short Term or Temporary Impacts 36
1.5.1.4.2 Proposed Mitigation: Traffic and Parking 37
1.5.1.5 Noise 39
1.5.1.5.1 Short Term or Temporary Impacts 39
1.5.1.5.2 Proposed Mitigation: Noise 40
1.5.1.6 Plants and Animals 41
1.5.1.6.1 Short Term or Temporary Impacts 41
1.5.1.6.2 Proposed Mitigation: Plants and Animals 42
1.5.2 Long-Term Impacts 43
1.5.2.1 Public Views 44
1.5.2.1.1 Long Term Impacts 44
1.5.2.1.2 Proposed Mitigation: Public Views 44
1.5.2.2 Air Quality 45
1.5.2.2.1 Long Term Impacts 45
1.5.2.2.2 Proposed Mitigation: Air Quality 45
1.5.2.3 Surface Water Quality 45
1.5.2.3.1 Long Term Impacts 45
1.5.2.3.2 Proposed Mitigation: Surface Water Quality 46
1.5.2.4 Plants and Animals 46
1.5.2.4.1 Long Term Impacts 46
1.5.2.4.2 Proposed Mitigation: Plants and Animals 47
1.5.2.5 Other Impacts 48
1.5.3 Conclusion - SEPA 48
1.5.4 Decision - SEPA 49

THE PROPOSAL IS CONDITIONALLY GRANTED 49

1.6 SHORELINE CONDITIONS **49**
Signature: (signature on file) Date: 52

ANALYSIS AND DECISION

1 Application 3011843 – SR 520 Floating Bridge (Seattle Portion)

Application Number: 3011843

Applicant Name: Kerry Pihlstrom for Washington State Department of Transportation

Addresses of Proposal: 2430 43rd Avenue East

1.1 SUMMARY OF PROPOSED ACTION

SR 520 Replacement Project - Floating Bridge (Seattle Portion). Shoreline Substantial Development Permit to allow replacement of the existing floating bridge in an environmentally critical area. Proposed bridge will be 6 lanes wide, measure 21' in height from the water line to the top of the railing, and be 3,790 feet in length in the City of Seattle portion. Work includes 11,366 cu. yds. of grading. Project includes construction of a temporary 4 lane bridge.

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 EIS was made final 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 development in the Conservancy Navigation and Conservancy Recreation (CN and CR) 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 Seattle portion of the floating bridge. See Figure 1 Geographic Areas along 520.

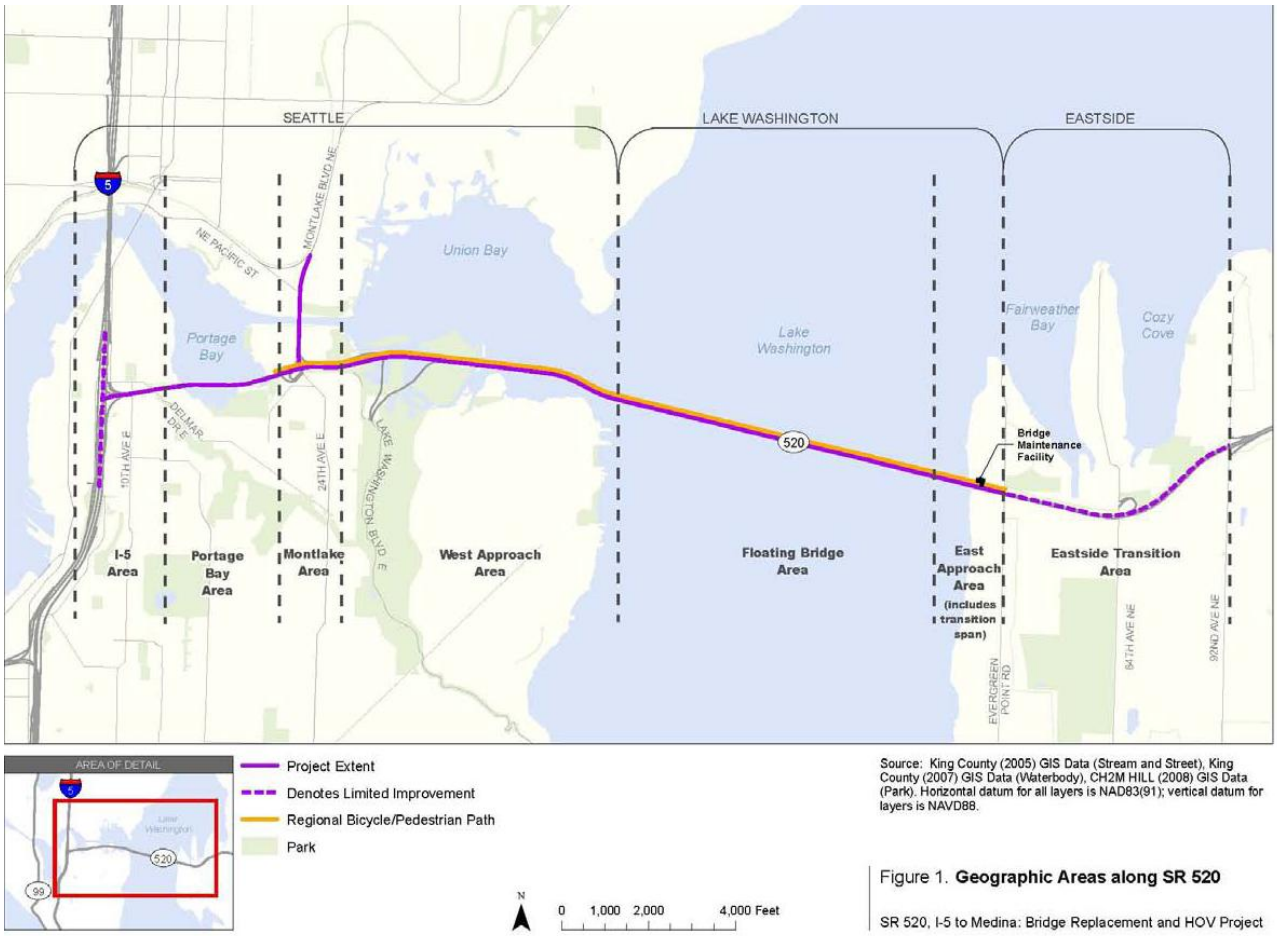

Figure 1. **Geographic Areas along SR 520**

SR 520, I-5 to Medina: Bridge Replacement and HOV Project

1.1.1.2 Site and Vicinity Description

The Seattle portion of the floating bridge will occur within the Conservancy Navigation (CN) and Conservancy Recreation (CR) shoreline environments. See Figure 2 Shoreline Environments.

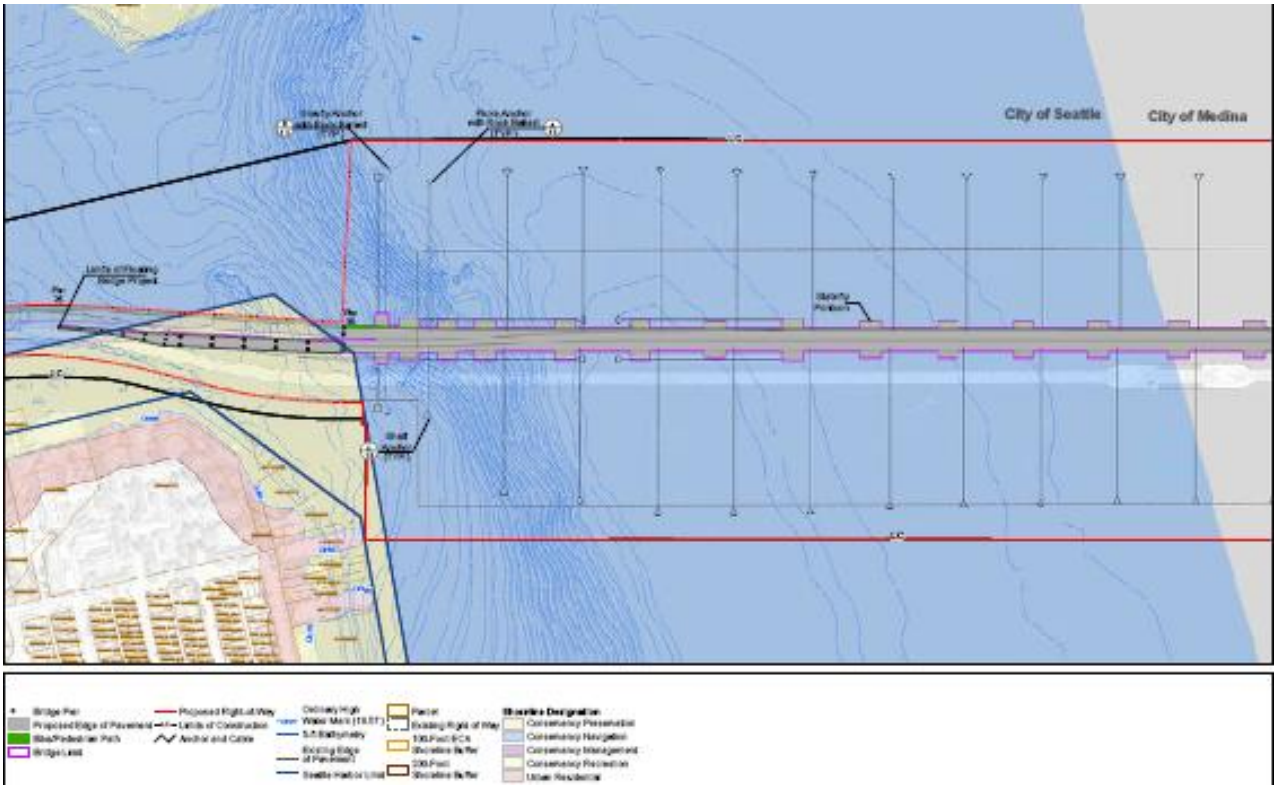

Figure 2 Shoreline Environments

The floating span of the Evergreen Point Bridge will be replaced with a new structure composed of support columns and a roadway deck to be located between 160 to 190 feet north of the existing bridge.

The Evergreen Point Bridge is the only built structure in this area of Lake Washington. A three-story control house is located midspan, with equipment for the retractable drawspan and two overhead walkways. Within the Seattle portion of the bridge, the west highrise has steel-framed truss superstructures that add to the apparent height. Overhead roadway facilities include freeway light standards and sign structures.

The road deck of the floating bridge is approximately 7 feet above water level, giving commuters the sense of being at water level. Because of the openness of the lake, especially to the north and south, Evergreen Point Bridge offers expansive views of the Cascade and Olympic mountains, Mount Rainier, the wooded hillside communities around the lake, and Husky Stadium. The floating span and east and west highrises are visible from almost anywhere on Lake Washington, but these structures become less visible with distance. The dark gray of the pontoons and road deck helps to soften the visual presence of the structure when seen from distant locations. The bridge appears as an 8-foot-tall concrete wall when seen from the lake and near the bridge; however, this is a transitory view for most people boating on the lake. Boaters, water skiers, and people fishing on Lake Washington are the largest group with the opportunity to have close-up

views of the bridge. Motorists and their passengers are the only viewer group with views from the bridge and also represent a large group because of the high daily traffic volumes.

1.1.2 Proposal Description

The Seattle portion of the floating span of the Evergreen Point Bridge would be replaced with a new structure composed of support columns and a roadway deck on a foundation of hollow concrete pontoons. The pontoons will be connected in series across the deeper portion of Lake Washington. The "west highrise" would be replaced with a new transition span that will connect the floating span to a single pier comprised of five columns. The new floating span would be located between 160 to 190 feet north of the existing floating span.

Construction activities for this portion of the project that would occur within the Shoreline District include:

- The new floating span would consist of two 11-foot wide general purpose lanes and one 12-foot wide high-occupancy vehicle (HOV) lane in each direction, along with 4-foot wide inside shoulders and 10-foot wide outside shoulders.
- A 14-foot wide bicycle and pedestrian path with pullouts would be located on the north side of the bridge.
- The overall length of the new floating span (from Seattle to Medina) would be 7,710 feet, compared to the existing 7,580 feet. The length of the floating span within Seattle city limits would be 3,790 feet.
- The middle portion of the roadway deck of the new floating span would be approximately 10 feet higher than the existing bridge.
- The west transition span, including the traffic barrier, would rise approximately 60 feet above the lake surface before joining the West Approach (see Application 3012587 for the analysis and decision on the West Approach).
- The traffic barrier would be approximately 21 feet above the lake surface in the mid-span portions.
- The foundation of the entire floating span (Seattle to Medina) would consist of a single row of 21 longitudinal pontoons connected end to end, two cross pontoons (one at each end), and 54 supplemental stability pontoons spaced out along the row of longitudinal pontoons (27 on each side). The new longitudinal pontoons would be larger than the existing ones to provide the floatation needed for wider lanes and shoulders. The supplemental stability pontoons would provide additional buoyancy and stability for a six-lane configuration.
- The new pontoons would have a deeper draft than the existing pontoons, extending between 21 and 29 feet below the surface of the water, compared to the existing pontoons which extend 7 to 11 feet below the water surface.
- As with the existing floating bridge, the floating pontoons would be anchored to the lake bottom to hold the bridge in place. The anchor types are likely to consist of: (1) fluke anchors for the deepest anchor locations (180 feet deep or more); (2) gravity anchors for shallower, sloped anchor locations (likely between 60 and 180 feet deep); and shaft anchors in the shallowest locations (likely less than 60 feet deep).
- WSDOT anticipates constructing an interim western connection bridge between the west terminus of the floating bridge and the existing west approach bridge, and the interim

connection would be in place until construction of a new permanent West Approach span (see Application 3012587).

- The interim west connection bridge would be a four lane fixed span bridge of approximately 1,500 feet in length. Substructure elements would include precast-concrete girders (which would not require falsework) and the roadway deck.
- The height of the interim west connection bridge, including traffic barriers, would transition from 60 feet at the transition span down to approximately 18 feet above the water where it would tie into the existing west approach.
- The interim west connection bridge would be supported on columns that would later be used for the new eastbound structure of the West Approach bridge when it is constructed in a later phase.
- When the new West Approach bridge (see Application 3012587) is constructed, the interim bridge deck would be removed and the columns heightened to support the western connection bridge at its planned grade.
- Construction would take place primarily from barges located adjacent to the new bridge alignment. No land-based construction within Seattle is proposed for the Seattle portion of the floating bridge replacement.

1.1.3 WSDOT Proposed Aquatic Habitat 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
- Spill Prevention, Control, and Countermeasures Plan
- Concrete Containment and Disposal Plan
- Water Quality Sampling, Recording and Reporting Procedures

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 (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

[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.

- Oil Containment Boom
- Floating Sediment Curtain
- 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
- Pontoon Outfitting

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 the west portion of the Floating Bridge, vibratory temporary anchor installation and gravity or shaft installation work limited to July 16 to March 15, and pile removal limited to July 16 to March 15.

1.1.3.2 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.

Policy 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.

WSDOT has proposed off-site mitigation at two sites to compensate for temporary and permanent aquatic impacts: (1) Cedar River/Elliott Bridge Site in unincorporated King County; and (2) East Approach Site. Neither site is located within the City of Seattle.

1.1.3.2.1 Cedar River/Elliott Bridge Site

The Cedar River/Elliott Bridge site is located on the main stem of the Cedar River in unincorporated King County, Washington. The project area is between the 154th Place SE Bridge and the City of Renton Ron Regis Park. The project area includes the properties acquired by King County as part of its floodplain property acquisition plan.

Mitigation actions at this site will include the following:

- Restoration of riparian vegetation within the floodplain with wetland and upland planting zones.
- Removal of the levee and riprap from the right bank.
- Excavation of the floodplain behind the levee, reducing the overall elevation by 3 to 5 feet, to provide opportunities to create wetland and off channel habitat.
- Cutting a blind channel into the floodplain, with the entrance near the old 149th Street bridge abutment.
- Placement of LWD structures to provide fish cover and pool habitat, and to protect the north bank of the channel.

The river margin and aquatic off-channel creation at the Cedar River site would provide 0.56 acre of mitigation credit to offset a portion of the permanent shoreline habitat (aquatic) impacts from the Floating Bridge project. For more details, see the *SR 520 Floating Bridge Project Environmental Critical Areas Technical Memorandum* (WSDOT Nov. 2011).

1.1.3.2.2 East Approach Site

The East Approach Site is located along the shore of Lake Washington at the east end of the 520 bridge within the City of Medina.

Mitigation actions at this site will include the following:

- Approximately 1,210 yards of gravel will be offloaded in water depths of approximately 20 to 50 feet and spread to a depth of 1 foot. Although the substrate size and distribution will be determined during final design, the substrate will be installed within the suitable range for beach spawning sockeye, to the greatest extent practicable.
- An existing wooden bulkhead and adjacent boulder-sized riprap will be removed.
- The shoreline behind the bulkhead will be re-graded to a gradually sloped shoreline and supplemented with appropriately sized gravel.
- The grass upland immediately landward of the bulkhead will be enhanced with native riparian vegetation.
- Vegetation enhancement will include a live stakes community near high lake level elevation and transition to a riparian upland community.

The East Approach mitigation project would provide an additional 0.6 acre of mitigation credit for the Floating Bridge project from riparian and shoreline enhancements and from spawning gravel supplementation. For more details, see the *SR 520 Floating Bridge Project Environmental Critical Areas Technical Memorandum* (WSDOT Nov. 2011).

1.1.4 Additional Mitigation Measures

In addition to the aquatic 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 Community Construction Management Plan, which is discussed in more detail in the SEPA analysis of this decision as well as in application submittal for this project.

1.1.5 Project Construction Duration

WSDOT estimates that project construction associated with bridge installation will require 3 years for completion (from spring 2012 to spring 2015). Additional time may be required for mobilization and project closeout including cleanup, dismantling of staging areas, and restoration where required by permit conditions.

1.1.6 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 a few of these comments included focused comments on the Floating Bridge project and area and those were generally about impacts of the increased height and size of the replacement bridge. The comments expressed numerous concerns about both the short and long term impacts of the construction of a larger bridge throughout the project 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 ANALYSIS - 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 interjurisidictional 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 further 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 less 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 decisionmaker determines that attaching conditions to the permit approval will facilitate project siting in light of the considerations identified above, the decisionmaker 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 document in this report. Table 1-1 summarizes the waivers that are required as a result of preclusive development standards.

Table 1-1
3011843 – Floating Bridge Identified EPF Waivers

Shoreline Development Standards
23.60.152 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;
3. The maximum height of structures shall be fifteen feet (15')

1.3 ANALYSIS – ENVIRONMENTALLY CRITICAL AREAS

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 properties.

The proposed activities include development over water within the shoreline habitat environmentally critical area, per SMC 25.09.020. The activities are allowed within the Shoreline regulations, as analyzed below, and therefore are consistent with allowed development in the ECA shoreline habitat per SMC 25.09.200, as long as sufficient habitat mitigation is provided, which is discussed below.

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

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 25.09.200 (B) (3), which requires mitigation for increases in overwater coverage.

The WSDOT proposed mitigation for temporary and permanent fish and wildlife habitat conservation areas is summarized in Subsection 1.1.3.2 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 and the SR 520 Floating Bridge Project 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.

WSDOT is proposing to provide replacement habitat by providing habitat and removal of hard structures in two off-site shoreline locations. The proposed mitigation activities include:

- Cedar River/Elliott Bridge Site. Restoration of riparian vegetation within the floodplain with wetland and upland planting zones; Removal of the levee and riprap from the right bank; Excavation of the floodplain behind the levee, reducing the overall elevation by 3 to 5 feet, to provide opportunities to create wetland and off channel habitat; Cutting a blind channel into the floodplain, with the entrance near the old 149th Street bridge abutment; and Placement of LWD structures to provide fish cover and pool habitat, and to protect the north bank of the channel.

The river margin and aquatic off-channel creation at the Cedar River site would provide 0.56 acre of mitigation credit to offset a portion of the permanent shoreline habitat (aquatic) impacts from the Floating Bridge project. For more details, see the *SR 520 Floating Bridge Project Environmental Critical Areas Technical Memorandum* (WSDOT Nov. 2011).

- East Approach Site: Approximately 1,210 yards of gravel will be offloaded in water depths of approximately 20 to 50 feet and spread to a depth of 1 foot. Although the substrate size and distribution will be determined during final design, the substrate will be installed within the suitable range for beach spawning sockeye, to the greatest extent practicable; An existing wooden bulkhead and adjacent boulder-sized riprap will be removed; The shoreline behind the bulkhead will be re-graded to a gradually sloped shoreline and supplemented with appropriately sized gravel; The grass upland immediately landward of the bulkhead will be enhanced with native riparian vegetation; and Vegetation enhancement will include a live stakes community near high lake level elevation and transition to a riparian upland community.

The East Approach mitigation project would provide an additional 0.6 acre of mitigation credit for the Floating Bridge project from riparian and shoreline enhancements and from spawning gravel supplementation. For more details, see the *SR 520 Floating Bridge Project Environmental Critical Areas Technical Memorandum* (WSDOT Nov. 2011).

Because WSDOT cannot mitigate for the aquatic impacts on-site, WSDOT sought offsite mitigation. After considerable analysis, WSDOT proposes to mitigate project impacts to FWHCA from the Floating Bridge project, off-site, within the Lake Washington watershed, but outside of the City's jurisdiction. The mitigation proposals described herein are still at a conceptual level of design, which is typical to satisfy state and federal permitting requirements. The level of detail included in the conceptual design is intended to provide sufficient information to establish that the necessary ecological lift can be achieved to offset project impacts. If modifications to the conceptual design occur during the final design phases, WSDOT will provide the rationale and justification for any such changes to all applicable regulatory agencies and update the documentation as appropriate. Final design plans, including detailed grading and planting plans, quantities, and specifications will be made available to DPD upon their completion, which is anticipated to be concurrent with the final design for the Floating Bridge.

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 Navigation (CN) and Conservancy Recreation (CR). 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.

At the west end of the floating span, the underlying zoning for the land and adjacent upland areas is Single Family 5000 and Lowrise 3. The underlying zoning allows for primarily residential uses, however SMC 23.51A.002 Public Facilities in Single Family Zones and SMC 23.51A.004 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.

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 Fish and Wildlife Habitat Conservation Mitigation, WSDOT has acknowledged that there will be both temporary and permanent impacts to existing aquatic resources.

As described beginning on page 15 of the *Floating Bridge Project Environmental Critical Areas Technical Memorandum*, there will be temporary and permanent impacts to the shoreline habitat from shading, benthic fill, and reduction in habitat complexity. WSDOT has calculated that

there will be a total of 0.28 acre of temporary impacts for a period of 2 years, and a total of 0.69 acre of permanent impacts.

Mitigation for unavoidable, temporary impacts caused by the Floating Bridge project is not required because the area that will be affected by temporary impacts will also be permanently impacted by the construction associated with the West Approach project. Therefore, WSDOT will mitigate the temporary impacts associated with the Floating Bridge project as part of the mitigation for permanent impacts associated with the West Approach project. The West Approach project Environmental Critical Area Technical Memorandum (WSDOT 2011d) and the Final Aquatic Mitigation Plan (WSDOT 2011) describe the mitigation for permanent impacts associated with the West Approach project.

Since permanent impacts to aquatic resources cannot be mitigated for on-site within the floating span area, WSDOT has identified two off-site mitigation areas to provide compensatory mitigation: (1) Cedar River/Elliott Bridge Site in unincorporated King County; and (2) East Approach Site on the shore of Lake Washington within the city of Medina.

During the off-site selection process, WSDOT identified the Cedar River mitigation site and the East Approach mitigation opportunity to provide sufficient mitigation area for permanent aquatic impacts for the Floating Bridge project and mitigation at these sites can address the same functions and values that would be affected by the project. The river margin and aquatic off-channel creation at the Cedar River would provide 0.56 acre of mitigation credit to offset a portion of the permanent shoreline habitat (aquatic) impacts from the Floating Bridge project (Table 3). The East Approach mitigation project would provide an additional 0.6 acres of mitigation credit from riparian and shoreline enhancements, and from spawning gravel supplementation.

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

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

Goal LUG 44 provides for "the optimum amount of public access – both physical and visual – to the shorelines of Seattle. LUG 45 describes that views of the shoreline and water from upland areas shall be preserved and enhanced where appropriate. LUG 46 promotes development of "a transportation network that supports and enhances use of and access to the shorelines." The proposed bike/pedestrian pathway along the bridge will allow for greater opportunities than currently exist for the public to access and enjoy the shoreline environment along 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 profile of the west transition span, including the traffic barrier, would rise approximately 60 feet above the lake surface before joining the West Approach (see Application 3012587 for the analysis and decision on the West Approach).

The Floating Bridge occurs in two shoreline environments. The majority occurs in the CN environment with a small corner of the west end also occurring in the CR environment. The maximum height of the bridge in both environments is approximately 57 feet. The City master program does not contain any height prohibitions within the CN environment. The CR environment does contain height prohibitions but bridges are specifically exempt [SMC 23.60.394(E)]. Since the proposed height of the bridge is not prohibited by the master program, it is not prohibited by the criteria of RCW 90.58.320. Because the proposed height is not otherwise prohibited the bridge will be in compliance with the regulations if "overriding considerations of the public interest will be served." The project has been designated as an EPF and is needed to both improve traffic conditions and maintain public safety. The specific portion of the bridge that would exceed 35 feet is necessary to provide for a navigational channel for boats in compliance with U.S. Coast Guard requirements. A navigation channel with a minimum height of 40 feet is required to pass the City of Seattle Fire Department boats. Therefore the public interest is served in allowing the increased height of the bridge and the project is in compliance with the criteria of Shoreline Management Act and implementing regulations.

1.4.2.2 Shoreline Uses

The proposed shoreline development is located in the Conservancy Navigation (CN) and Conservancy Recreation (CR) Shoreline Environments. Bridges are allowed as a special use (SU) in the CN Environment (SMC 23.60.242) and CR Environment (SMC 23.60.364) subject to the special use criteria of Section 23.60.032.

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

Table 1-2
Summary of Uses Proposed in Shoreline Environment

Proposed Use	CN Environment	CR Environment
Bridge (including the Bike/Pedestrian Pathway on the Bridge)	SU	SU

An analysis of whether the proposed uses that are allowed as "special uses" is provided in the following Subsection 1.4.2.3.1.

1.4.2.2.1 Analysis – Shoreline Special Use

As summarized in Table 1-3, bridges are allowed as a special use (SU) in the CN Environment (SMC 23.60.242) and CR Environment (SMC 23.60.364) subject to the special use criteria of Section 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 1.4.1. 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 use (bridge) is in compliance with the Shoreline Policies. Shoreline Policy LU 270 – Heights in Shoreline Environment, 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."* WSDOT has demonstrated that the higher height is needed for the transition span to the West Approach for the operational needs of water vessels traveling north and south underneath the bridge on Lake Washington, that the public interest will be served by the project, and that the greater height will not obstruct views of a substantial number of residences.

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

The proposed use will not interfere with the normal public use of public shorelines. The proposed bike/pedestrian pathway along the bridge 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 use would replace the existing floating bridge structure. The SR 520 project design includes features, such as landscaped lids, intended to enhance the compatibility with nearby neighborhoods. The project would be consistent with policies of the Seattle Comprehensive Plan related to competing and promoting use of a regional HOV system, limiting freeway capacity expansions to those accommodating "non-single-occupancy vehicle users," protecting the Seattle neighborhoods from noise and traffic congestion, and improving transit connections. The project's addition of new HOV lanes and a regional bicycle and pedestrian path is consistent with the Puget Sound Regional Council's (PSRC's) Vision 2040 and Transportation 2040 plans as well as King County's Countywide Planning Policies. These documents emphasize the need to provide transportation system continuity and the use of alternative transportation modes, and to improve linkages between urban centers (See pages 5.2-12 to 5.2-14 of the Final EIS). To maintain consistency with the Shoreline Master Program, the project has developed best management practices and other site-specific mitigation measures to protect shoreline areas and ensure compliance with the City of Seattle's Environmental Critical Areas Ordinance (see Supplemental Information in Attachment 2 of the Master Use Permit Application).

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 1.3.2.1.2 - Shoreline Goals LUG 43, LUG 48, and LUG 49 – Protection of Shoreline and Aquatic Environment. There will be temporary and permanent impacts to fish and wildlife habitat conservation area habitat. WSDOT has proposed compensatory mitigation to replace the lost functions and values that are discussed in more detail elsewhere in this decision.

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

The proposed bridge and associated bicycle/pedestrian pathway 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 will not result in a substantial detrimental effect on the public interest.

1.4.2.2.2 Decision – Shoreline Special Use

The Director has determined that the proposed uses of bridge, street, bicycle/pedestrian paths, and utility lines meet the Special Use Criteria of SMC 23.60.032 and **<u>are approved as follows</u>**:

- The bridge structure as proposed is approved as a special use (SU) in the CN Environment (SMC 23.60.242) and CR Environment (SMC 23.60.364).

1.4.2.3 Shoreline Development Standards

The proposed shoreline development is located in the Conservancy Navigation (CN) and Conservancy Recreation (CR) Shoreline Environments. Pursuant to the Seattle Shoreline Master Plan, the proposed action is subject to the:

1. general development standards (SMC 23.60.152);
2. development standards applicable to specific uses (SMC 23.60.179 – 23.60.210);
3. development standards for uses in the CN Environment (SMC 23.60.270); and
4. 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)

1.4.2.3.1 SMC 23.60.152 - General Development Standards for all Shoreline Environments

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

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

The 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 (see page 5), briefly discussed below, and discussed in substantial detail in the FEIS 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; Hazardous Materials Discipline Report; as well as the Environmental Critical Areas Technical Memorandum for this project and the Final Aquatic Mitigation Plan.

1. <u>Construction Stormwater Pollution Prevention Plan</u>. 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. Spill Prevention, Control, and Countermeasures Plan: This plan would outline requirements for spill prevention, inspection protocols, equipment, material containment measures, and spill response procedures.

3. Concrete Containment and Disposal Plan: This plan would outline the management, containment, and disposal of concrete and discuss BMPs that would be used to reduce high pH.

4. Dewatering Plan. This plan would outline the management, containment, and disposal of concrete debris, slurry, and dust 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. Contaminated Soil Management Plan (CSMP). This plan will be developed by the contractor to address details, including all BMPs, for handling and disposal of known and unanticipated contaminated soil material and spoils.

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 leakproof 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.

Stormwater management will be provided for the project and at the construction staging areas in accordance with applicable requirements. The contractor is responsible for the preparation and implementation of a Spill Prevention, Control and Countermeasure (SPCC) plan to be used for the duration of the proposed project. 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. See discussion above regarding implementation of Construction Stormwater Pollution Prevention Plan.

Stormwater on the floating bridge would be treated in the manner as detailed in two AKART ("all known, available, and reasonable technologies") studies (WSDOT 2009k, 2009l). Stormwater treatment on the floating bridge would differ from treatment elsewhere in the corridor. Standard stormwater treatment facilities are difficult or infeasible to construct on floating bridges. Conventional BMPs would add weight to the floating bridge, and turbulence during storms would limit the stormwater facilities' ability to settle out sediments. To address these challenges, WSDOT conducted the AKART analyses to evaluate the technologies that could be applied in the bridge setting (WSDOT 2009k, 2009l).

After application of a set of screening criteria, the AKART analyses determined that the most effective stormwater treatment technology would be high-efficiency sweeping of the paved roadway in conjunction with modified catch basin stormwater BMPs on the floating portion of the proposed bridge. The proposed floating bridge design creates separate, enclosed spill-containment lagoons (see Exhibit 5.10-2 in the FEIS) within the supplemental stability pontoons. Exhibit 5.10-2 also provides a schematic plan view drawing of the spill containment lagoon proposed for the SR 520, I-5 to Medina project. In addition to providing structural stability, the supplemental stability pontoons would create an area where roadway spills of petroleum or other pollutants would be contained. Surface pollutants in the lagoons would be removed on a periodic basis under normal monitoring and maintenance activities. The lagoons would also allow dilution of remaining pollutants prior to mixing with lake waters beneath the bridge. Ecology has reviewed and has conditionally approved the AKART studies (Fitzpatrick 2010).

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

WSDOT considered the practicability of permeable surfacing during design. However, in order for the collection and treatment of stormwater to occur, permeable surfaces may not be used on road or bridge surfaces.

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

There is no land-based construction in Seattle proposed for this portion of the 520 bridge replacement project. See discussion of Best Management Practices above and in Chapter 6 of the FEIS and associated Discipline Reports for more details.

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.

See Chapter 6 of the FEIS for more details about Best Management Practices to be employed during construction. 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.

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 spill prevention, control, and countermeasures plan and a stormwater pollution prevention plan will 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

The Final Aquatic Mitigation Plan (Attachment 9 to the FEIS) 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. Mitigation for these effects would occur at the two mitigation sites identified in *SR 520 Floating Bridge Project Environmental Critical Areas Technical Memorandum*, November 2011 and discussed elsewhere in this decision.

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 construction within the Shoreline District will not require permanent development that would negatively impact natural shoreline processes such as water circulation, littoral drift, sand movement, erosion and accretion. Relevant BMPs and mitigation measures are discussed in substantial detail in the FEIS and, in particular Chapter 5 Operation Effects, Chapter 6 Construction Effects, and the Ecosystems Discipline Report included as an Addendum to the FEIS. See discussion above regarding implementation of Construction Stormwater Pollution Prevention Plan.

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.

See Chapters 5 and 6 of the FEIS and the Land Use, Economics, and Relocation Discipline Report, and the Visual Quality and Aesthetics Discipline Report, both attached as Addendum to the FEIS, as well as discussion above regarding Best Management Practices that will be employed during construction.

During 2010, WSDOT sponsored several technical workgroups with resource agencies, with the intention of refining the proposal to further avoid or minimize negative land use and visual effects. The Parks and Natural Resource technical working groups collaborated on mitigating for impacts on parks, shorelines, wetlands, aquatic habitat, and other natural resources. These discussions have established minimization and mitigation concepts that will be further developed as the design progresses. These concepts, in turn, have influenced planning for the project's landscape and urban design.

In addition to the technical working groups, the workgroup established under Engrossed Substitute Senate Bill (ESSB) 6392 (discussed in Chapters 1 and 2 of the FEIS) refined specific areas and elements of the SR 520, I-5 to Medina project through a multi-agency process. Based on legislative direction, WSDOT and the Mayor and City Council of the City of Seattle established a workgroup that brought together King County Metro, University of Washington, Sound Transit, and other designees to consider design refinements and transit connections within the Preferred Alternative. These refinements have been included in the landscape and urban design concepts of the proposal.

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, and Relocation Discipline Report, all included in the FEIS as Addendum. See discussion above regarding implementation of Construction Stormwater Pollution Prevention Plan. No land-based construction activities are proposed for this portion of the 520 bridge replacement project.

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

The replacement of the existing SR 520 project within the Shoreline District will not result in hazards to public health and safety. The staging and construction areas and the bridge will be developed and operated in accordance with applicable safety standards and regulations. The project site and staging areas shall be appropriately secured to prevent potential hazards to public health and safety. To ensure health and safety during construction, a Worker and Public Health and Safety Plan will be implemented.

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.

The bridge replacement project within the Shoreline District will not require the implementation of such measures.

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.

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

Construction activities are anticipated to necessitate periodic temporary closures or complete blockages of both navigation channels under the bridge. At no time shall the existing east and west navigation channels be closed or blocked simultaneously. Open-water navigation routes

are appropriately incorporated into the bridge design. More details on how this standard will be met are found in Attachment 10 of the application materials and in the FEIS and associated Discipline Reports.

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 Seattle portion of the floating span and the west connection cannot comply with this standard. As described in Subsection 1.1.2 Project Description, the foundation of the entire floating span (Seattle to Medina) would be located entirely within WSDOT right-of-way, and would consist of a single row of 21 longitudinal pontoons connected end to end, two cross pontoons (one at each end), and 54 supplemental stability pontoons spaced out along the row of longitudinal pontoons (27 on each side). The new longitudinal pontoons would be larger than the existing ones to provide the floatation needed for wider lanes and shoulders. The supplemental stability pontoons would provide additional buoyancy and stability for a six-lane configuration.

Seattle Municipal Code (SMC) 23.60.152 (Q)(1) requires that all structures within submerged public right-of-way shall be floating except for some piling and dolphins. If this requirement was applied to the Project, it would be preclusive to some elements of the Project. The Project proposes a floating bridge and a fixed span connection (i.e. west connection bridge) to the existing west approach supported by columns. An entirely floating structure is not feasible to meet the design profile (e.g. matching existing grades and providing positive stormwater drainage) and seismic safety requirements. The west connection bridge must also provide the federally required navigation channels and necessary navigation clearances. The bridge type has previously been evaluated as part of the EPF's design process.

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. 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');

SMC 23.60.152 (Q)(3) limits the maximum height of structures within submerged public right-of-way to 15 feet. The Project proposes a bridge exceeding the 15-foot height requirement. The bridge height (maximum 56.5 feet) has previously been evaluated as part of the EPF's design process. The bridge height exceeds 15 feet within the floating span to provide safety from wave hazards and to provide forward compatibility with light rail. The bridge height exceeds 15 feet

within the west connection bridge to meet the design profile (e.g. matching existing grades and providing positive stormwater drainage). The west connection bridge must also exceed 15 feet in order to provide for a navigational channel for boats in compliance with U.S. Coast Guard requirements. A navigation channel with a minimum height of 40 feet is required to pass the City of Seattle Fire Department boats.

WSDOT has requested 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. RCW 36.70.200(5) and WAC 365-196-550(3)(a) provides that no local development regulation may preclude the siting of EPFs.

> 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 9% of the right-of-way area and occupies up to a maximum of 18% of the right-of-way width. The area percentage is based on a geographic information system (GIS) analysis that measured the footprint of the proposed bridge and related structures against the right-of way-area. The width measurement was taken at the widest point of the proposed bridge structure within the right-of-way. Therefore, the project meets this development standard.

> 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.

1.4.2.3.2 SMC 23.60.206 - 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 CN and CR 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 23.60.210 Aquatic noxious weed control

SMC 23.60.210 allows for the removal or control of aquatic noxious weeds by a number of methods, including: A. by hand-pulling, mechanical harvesting, or placement of aquascreens; B. by derooting, rotovating or other method which disturbs the bottom sediment or benthos; and C. through the use of herbicides or other treatment methods applicable to the control of aquatic noxious weeds. Depending on the method used and the depth, some activities require a shoreline permit or permit approval from the Department of Ecology. WSDOT has not proposed to control the milfoil that exists in the vicinity of the floating span, however such control could be permitted or allowed outright depending on the methodology.

1.4.2.3.3 Development Standards Applicable to CN Environment

- SMC 23.60.270 Development standards in the CN Environment

In addition to development standards applicable to all environments contained in Subchapter III, General Provisions, developments in the Conservancy Navigation Environment shall be located and designed to avoid interference with navigation. Buoys or other markings may be required to warn of navigation hazards. The proposal has been designed to avoid interference with navigation. Markings, including lighting, will be provided along the edges of the bridge structure to warn boaters of potential hazards.

1.4.2.3.4 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 Fish and Wildlife Habitat Conservation Area Mitigation, and 1.4.2.1 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 on the bridge. The new pathway 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. Thus, a more detailed discussion of some of the impacts is cited below.

1.5.1 Short-Term and Temporary Impacts

A number of temporary or construction-related impacts are expected from 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, Grading and Drainage Control 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 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.

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?

The final work product will be a Community Construction Management Plan, which 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 West Approach (Table 6.8-1).

Air quality effects from construction of the floating structure portion of the SR 520 Replacement Project would occur primarily as a result of emissions from heavy-duty construction equipment (such as 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, 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 Impacts

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 a spill prevention, control, and countermeasures (SPCC) plans (WSDOT 2008a).

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 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.

See discussion above in Shoreline analysis section regarding implementation of the Construction Stormwater Pollution Prevention Plan and the ECP.

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

1.5.1.4 Traffic and Parking

1.5.1.4.1 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. WSDOT is proposing an interim connection between the new floating structure and the existing west approach until the new West Approach structure in completed. At that time, traffic will be redirected between the new floating structure and the new West Approach.

1.5.1.4.2 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 Floating Bridge. These measures include construction timing and coordination with jurisdictions and neighborhoods, development of and implementation of a Transportation Management Plan (TMP). 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.

WSDOT will evaluate a set of temporary 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.

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.

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.

1.5.1.5 Noise

1.5.1.5.1 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.

1.5.1.5.2 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) during 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 exceedances 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 exceedances.

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.

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.

1.5.1.6 Plants and Animals

1.5.1.6.1 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. The Ecosystems Discipline Report Addendum and Errata (Attachment 7 to the Final EIS) provides a detailed technical discussion on potential effects.

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 measured specified in the environmental permits for the project would be implemented.

Construction activities would also include replacing 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.

1.5.1.6.2 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. All in-water construction activities 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 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 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

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.

The Final Aquatic Mitigation Plan (Attachment 9 to this Final EIS) 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.

As described beginning on page 15 of the *Floating Bridge Project Environmental Critical Areas Technical Memorandum*, there will be temporary impacts to the shoreline habitat from shading, benthic fill, and reduction in habitat complexity. WSDOT has calculated that there will be a total of 0.28 acre of temporary impacts for a period of 2 years. Mitigation for unavoidable, temporary impacts caused by the Floating Bridge project is not required because the area that will be affected by temporary impacts will also be permanently impacted by the construction associated with the West Approach project. Therefore, WSDOT will mitigate the temporary impacts associated with the Floating Bridge project as part of the mitigation for permanent impacts associated with the West Approach project. The West Approach project technical memorandum (WSDOT 2011d) and the Final Aquatic Mitigation Plan (WSDOT 2011c) describe the mitigation for permanent impacts associated with the West Approach project.

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.

1.5.2 Long-Term Impacts

Several long-term or use-related impacts are anticipated as a result of approval of this proposal in including impacts on visual quality, air quality, surface water quality, and plants and animals (ecosystems), and beneficial impacts to traffic and transportation. The SR 520 Project would improve bicycle and pedestrian connections across the SR 520 corridor. The proposed regional bicycle/pedestrian path across SR 520 would provide a new connection between the City of Seattle’s bicycle and pedestrian system and the Points Loop Trail in Medina. Bicyclists crossing SR 520 would have convenient access to the Burke-Gilman Trail and other portions of the regional recreational trail system.

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 SR 520 Project would result in wider bridges and roadways that would be shifted from the existing alignment in some areas and raised or lowered. The views most affected would be in the vicinity of the Portage Bay Bridge, the Montlake area, and the wetlands in Washington Park Arboretum. Changes to the scale and appearance of the west approach and floating bridge would be noticeable when seen from relatively distant shoreline neighborhoods such as Laurelhurst, but would not significantly change the quality or character of those views because the bridge is an existing, small element in the distance (Exhibit 5.5-8 in Chapter 5 of the Final EIS).

Sweeping views from the Evergreen Point Bridge of the Cascade and Olympic mountains and Mount Rainier, which currently exist only for motorists, would be available to users of the new bicycle/pedestrian path. The path would create a new opportunity for viewing those landscapes because of the slower pace of pedestrians and cyclists. The bicycle/pedestrian path and vantage points would be a new visual element, but small relative to the scale of the bridge. Views for boaters and kayakers on the lake would change moderately because the column-pontoon structure would raise the roadway, making the structure more noticeable from viewpoints close to the bridge. However, while the bridge structure would be wider and taller, the increased column spacing (from 30 feet apart to 90 feet apart) would open up views of the lake through the structure.

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 Madison Park Beach is identified. East Lake Washington Blvd. and the existing SR520 are scenic routes in the vicinity of the project. No adverse
impacts on public views from these locations are anticipated to occur as a result of the proposal; therefore, no mitigation is warranted. SEPA does not provide authority to mitigate impacts from private properties.

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.

- 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 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 is 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.

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 were located to meet those conveyance needs. The treatment facilities were sized to meet the HRM requirements

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.

Stormwater treatment on the floating bridge would differ from treatment elsewhere in the corridor. Standard stormwater treatment facilities are difficult or infeasible to construct on floating bridges. Conventional BMPs would add weight to the floating bridge, and turbulence during storms would limit the stormwater facilities' ability to settle out sediments. To address these challenges, WSDOT conducted the AKART analyses to evaluate the technologies that could be applied in the bridge setting (WSDOT 2009k, 2009l).

After application of a set of screening criteria, the AKART analyses determined that the most effective stormwater treatment technology would be high-efficiency sweeping of the paved roadway in conjunction with modified catch basin stormwater BMPs on the floating portion of the proposed bridge (see sidebar). The proposed floating bridge design creates separate, enclosed spill-containment lagoons (Exhibit 5.10-2 in Chapter 5 of the Final EIS) within the supplemental stability pontoons. Exhibit 5.10-2 (Chapter 5 of the Final EIS) also provides a schematic plan view drawing of the spill containment lagoon proposed for the SR 520, I-5 to Medina project. In addition to providing structural stability, the supplemental stability pontoons would create an area where roadway spills of petroleum or other pollutants would be contained. Surface pollutants in the lagoons would be removed on a periodic basis under normal monitoring and maintenance activities. The lagoons would also allow dilution of remaining pollutants prior to mixing with lake waters beneath the bridge. Ecology has reviewed and has conditionally approved the AKART studies (Fitzpatrick 2010). As part of the approval conditions, WSDOT will develop and implement a Department of Ecology approved monitoring program to verify the effectiveness of the treatment technologies.

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

1.5.2.4 Plants and Animals

1.5.2.4.1 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 from the floating portion of the project would occur to fish, wildlife and habitat. 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. In the Floating Bridge area, the shadow of the bridge may delay, but not prohibit, outmigration of juvenile salmonids (Celedonia et al. 2008). Such delays could result in an increase in predation.

As described beginning on page 15 of the *Floating Bridge Project Environmental Critical Areas Technical Memorandum*, WSDOT has calculated that there will be 0.69 acre of permanent impacts to the shoreline habitat from shading, benthic fill, and reduction in habitat complexity.

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 Floating 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).

1.5.2.4.2 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. More details on the project's mitigation are contained in the Environmental Critical Areas Technical Memorandum for the Floating Bridge project.

Consistent with regulatory guidance and discussed in more detail in the FEIS and associated Discipline Reports, WSDOT has designed the project to avoid and minimize the effects of the Project.

Fish and Aquatic Resources. In cooperation with resource agencies and the Muckleshoot Indian Tribe through the NRTWG, WSDOT has developed conceptual plans for habitat improvements, restoration, or construction to mitigate the effects of bridge construction, the increased width of shoreline and open-water crossings, and direct physical impacts from construction activities. Permanent impacts to fish and aquatic resources and proposed compensatory mitigation actions for these impacts are outlined in Section 1.1.3.2 above and in more detail in the SR 520 Floating Bridge Project Environmental Critical Areas Technical Memorandum (WSDOT Nov. 2011) and the Final Aquatic Mitigation Plan (WSDOT Dec. 2011).

Since permanent impacts to aquatic resources cannot be mitigated for on-site within the floating span area, WSDOT has identified two off-site mitigation areas to provide compensatory mitigation specifically for the Seattle portion of the Floating Bridge: (1) Cedar River/Elliott Bridge Site in unincorporated King County; and (2) East Approach Site on the shore of Lake Washington within the city of Medina.

During the off-site selection process, WSDOT identified the Cedar River mitigation site and the East Approach mitigation opportunity to provide sufficient mitigation area for permanent aquatic impacts for the Floating Bridge project and mitigation at these sites can address the same functions and values that would be affected by the project. The river margin and aquatic off-channel creation at the Cedar River would provide 0.56 acre of mitigation credit to offset a portion of the permanent shoreline habitat (aquatic) impacts from the Floating Bridge project (Table 3). The East Approach mitigation project would provide an additional 0.6 acres of mitigation credit from riparian and shoreline enhancements, and from spawning gravel supplementation.

1.5.2.5 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 Floating Bridge 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 Section 1.1.3, WSDOT proposes the following mitigation measures as part of their proposal for this permit application:

- Community Construction Management Plan

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.

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 Section 1.1.3 above. Additional mitigation measures for habitat impacts described in this analysis and in the following conditions are required.

Prior to Issuance of Master Use Permit

2. **Final Design**

WSDOT or its contractor shall provide revised plan sheets, as needed, showing final design for all development approved for the Floating Bridge project (3011843). Any changes to current plan sheets for the Floating Bridge Replacement shall be clearly identified on these revised plans, including any revisions that change the impacts of the project to aquatic and shoreline habitat in the project area.

3. **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 project's environmental impacts and/or mitigation based on the final design for the Floating Bridge.

4. **Additional Plan Submittals**

In addition to the information described above, WSDOT or its contractor shall prepare and provide copies to DPD of the Community Construction Management Plan, described in the conditions below, and maintained in both the contractor's construction office and any on-site construction offices.

More information on this plan is contained or referenced in the application submittal materials for this project to DPD, including the Floating Bridge 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.

5. **The Community Construction Management Plan**

The Community Construction Management Plan (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 Floating Bridge Project section (Master Use Permit No. 3011843)

Key topics that will be addressed in the CCMP for this project 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 baseline for potential impacts due to vibration during construction. This section shall include details for how 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 (as applicable)
h. In-water work (construction barges, work bridges, pontoon moorage, pontoon towing, and boat navigation)

<u>Prior to the Start of Construction</u>

6. 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 (SWPP)

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.

b. 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, stile information including site plans inspection protocols, equipment, material containment measures, and spill response procedures.

c. 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.

d. 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.

e. 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.

7. 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.

<u>During Construction</u>

8. 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 Floating Bridge project.

9. 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.

10. 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.

11. 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.

<u>Within Six Months of Completion of Habitat Mitigation and Revegetation Efforts</u>

12. 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 (i.e., East Approach, Cedar River) proposed for this project

For Life of the Project

13. All operational Best Management Practices identified in the 2011 FEIS for this project and associated Discipline Reports and the Floating Bridge ECAR shall be implemented and enforced.

14. WSDOT or its contractor shall provide DPD copies of monitoring reports associated with performance of aquatic and shoreline habitat mitigation projects.

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