SR 520 FLOATING BRIDGE PROJECT - PROJECT DESCRIPTION AND SUPPLEMENTAL INFORMATION

In support of the Shoreline Substantial Development Permit

Washington State Department of Transportation
SR 520 I-5 to Medina Bridge Replacement and HOV Project

November 2011

1.0 Introduction

The Washington State Department of Transportation (WSDOT) is submitting this Master Use Permit (MUP) application for a shoreline permit for the SR 520: Floating Bridge Replacement Project (Project). The Project will require several shoreline permits, as further described below. This application is one of several shoreline permit applications to be submitted for the project evaluated by the Final Environmental Impact Statement (FEIS) for the SR 520, Interstate 5 (I-5) to Medina: Bridge Replacement and High Occupancy Vehicle (HOV) Project (July 2011). Shoreline permit applications are also being submitted for the following projects associated with the FEIS: Portage Bay Bridge Project, Montlake Bascule Bridge Project, and the West Approach Project, as well as several associated mitigation sites.

This Project Description and Supplemental Information document provides the following information:

2.0 – Regulatory Compliance Summary
3.0 – Project Description
4.0 – Shoreline District Project Elements – Description and Use
5.0 – Request for Waivers or Modifications of Preclusive Regulations
6.0 – Additional Mitigation Elements
7.0 – Best Management Practices

2.0 Regulatory Compliance Summary

The scale and scope of the project have required substantial coordination between WSDOT and DPD to develop a framework for the review and approval of the proposal. While certain standard processes are applicable, there are many complexities that do not fit within a standard approach. As such, WSDOT and the City have agreed upon a permitting approach for this project as shown in Attachment 8 – Permitting Approach to this application (please see attachment for full details that outline the review process).

In addition to the unique permitting approach, there are several regulatory elements that require further discussion and/or specific clarification on how they apply to this project. These items are EPF status, preclusive regulations, the definition of a "bridge" use, in-water excavation as a use, and height limitations.

<u>How does Essential Public Facility status apply to this project?</u>

Response: As described in Attachment 8 – Permitting Approach, SR 520 is an Essential Public Facility (EPF) pursuant to RCW 36.70A.200 due to its designation as a highway of statewide significance (RCW 47.06.140). The EPF status applies broadly to the Project, not just individual elements of the Project. WAC 365-196-550(3)(d) states that "If the essential public facility and its location have been evaluated through a state or local siting process, the county or city may not require the facility to go through the local siting process." Since the Project has undergone a state siting process, as part of the joint NEPA/SEPA analysis, the Project is not required to go through the local siting process. However, Attachment 9 – Essential Public Facility Criteria describes how the Project meets the City's specific requirements in SMC 23.80.004.

How do preclusive regulations apply to this project?

Response: WAC 365-196-550(3)(b) states that "A local jurisdiction may not include criteria in its land use approval process which would allow the EPF to be denied, but may impose reasonable permitting requirements and require mitigation of the essential public facility's adverse effects." The Project has many elements that are necessary to meet the purpose of the EPF, but not all the elements comply with the prescriptive requirements of the relevant Shoreline District Use and General Development standards. Therefore, WSDOT requests the DPD Director to waive or modify any regulations that would preclude the siting and design of the EPF. See section 5.0 Requests for Waivers or Modifications of Preclusive Regulations, below, for additional details.

How has bridge use been defined by DPD?

Response: For purposes of permitting uses, WSDOT and DPD agreed that the use "bridge" encompasses all components of a bridge, such as bridge approaches, embankments, retaining walls, lighting, roadway on the bridge, utilities on the bridge, and bike/pedestrian paths on the bridge. This also includes all construction associated with the bridge, such as temporary work trestles, demolition, and construction staging/storage. This is further described in the section titled Shoreline District Project Elements – Description and Use. This Project will require several permits and approvals as further described in section 3.0 Project Description.

Does in-water excavation apply to this project as defined by the SMC?

Response: WSDOT proposes several in-water excavations and believes that these activities are not regulated as dredging, but rather as part of the overall construction of a bridge. For example, SMC 23.60.244(E)(4) requires a conditional use permit for dredging necessary to install a bridge within CN; however, WSDOT believes this is intended to address alteration of lake-bottom depth and is not intended to address the minor excavation of lake-bottom materials for the purpose of installing typical bridge components such as columns, shafts, and anchors.

How do the height limitations for the Shoreline Management Act apply to this project?

Response: The Shoreline Management Act (RCW 90.58.320) and implementing regulations [WAC 173-27-140(2)] prohibit shoreline structures taller than thirty-five feet except when certain criteria are met;

> "no permit shall be issued for any new or expanded building or structure of more than thirty-five feet above average grade level on shorelines of the state that will obstruct the view of a substantial number of residences on areas adjoining such shorelines except where a master program does not prohibit the same and then only when overriding considerations of the public interest will be served."

At the highest point, the west end, the Floating Bridge will be approximately 57 feet above the surface of the water. Because the bridge will be visible from a substantial number of residences WSDOT

assumes that it will be judged to obstruct their view. Therefore to be approved it must meet the exception criteria of the regulations.

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." As discussed above and in more detail in Attachment 9 – Essential Public Facility Criteria, 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.

3.0 Project Description

Floating Bridge

The floating span of the Evergreen Point Bridge will be replaced with a new structure composed of support columns and a roadway deck constructed on a foundation of hollow concrete pontoons that will be connected in series across the deeper portion of the lake. Also the "west highrise" will be replaced with a new transition span that will connect the floating span to a single pier bent comprised of five columns. The new floating span will be located between 190 and 160 feet north of the existing bridge. It will consist of two 11-foot-wide general purpose lanes and one 12-foot-wide 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 several scenic vantage points and pullouts will be located on the north side of the bridge.

The foundation of the floating bridge will 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 will be larger than the existing ones to provide the flotation needed for wider lanes and shoulders, and the supplemental stability pontoons will provide additional buoyancy and stability for a six-lane configuration. The new pontoons will 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. The overall length of the new floating span (which extends

into the City of Medina) will be 7,710 feet, compared to the existing 7,580 feet, and the width will vary from 75 feet to 195 feet. The length of the new bridge within Seattle city limits is 3,790 feet.

The roadway will be supported above the pontoons by concrete columns and rows of three steel trusses spaced 30 to 35 feet apart. Concrete columns will support the higher portions of the roadway at either end of the floating bridge, and the steel trusses will support the lower middle portion of the elevated roadway. The middle portions of the roadway deck of the new bridge will be approximately 10 feet higher than the existing bridge. The traffic barrier will be no more than 21 feet above the lake surface in the mid-span portions. The west transition span will rise approximately 60 feet above the lake surface, including the traffic barrier. In the City of Medina the east transition span will rise to as much as 88 feet above the water. Construction will take place primarily from barges adjacent to the new bridge alignment.

As with the existing floating bridge, the floating pontoons for the new bridge will be anchored to the lake bottom to hold the bridge in place. The anchor types are likely to consist of fluke anchors for the deepest anchor locations (180 feet deep or more), gravity anchors for shallower, sloped anchor locations (likely between 60 to 180 feet), and shaft anchors in the shallowest locations (likely less than 60 feet). A total of 58 anchors are proposed: 45 fluke anchors, up to 13 gravity anchors (if no shaft anchors are used), or a combination of gravity anchors and up to 6 shaft anchors. Shaft anchors are most likely to be used in the shallower waters in the northeastern and southwestern corners of the floating span layout.WSDOT anticipates constructing an interim western connection bridge (WCB) between the west terminus of the floating bridge and the existing west approach bridge that will be in place until construction of a new permanent west approach span. The interim connection will be four lanes wide and approximately 1,500 feet long. The WCB structure will be a fixed-span bridge with substructure elements including drilled shafts and concrete support columns. The superstructure will consist of precast-concrete girders (which will not require falsework) and the roadway deck. The height of the WCB, including traffic barriers, would transition from 60 feet at the transition span down to about 18 feet above water where it will tie into the existing west approach. The WCB would be supported on columns that would later be used for the new west approach bridge (eastbound structure) when it is constructed in a later phase. When the new west approach bridge is constructed, the interim bridge deck would be removed and the columns heightened to support the WCB at its planned grade.

The following table is a summary of preliminary grading quantities for the project. These grading quantities are preliminary estimates only and subject to change upon final design.

Floating Bridge Preliminary Grading Quantities

Component	EXC (C.Y.)	Fill (C.Y.)
Anchors	2500	2500
Bridge Piers	3183	3183
Total	**5683**	**5683**

The Project will result in temporary and permanent impacts to aquatic habitat, defined as an environmentally critical area. The Project will provide compensatory mitigation to offset effects on this resource, as required by local, state, and federal regulations. Mitigation is proposed at locations inside and outside the City of Seattle to provide ecological benefits to meet those requirements. These mitigation proposals are the Cedar River/Elliot Bridge Site in King County, and the East Approach Mitigation Site in the City of Medina, and are described in more detail below. Please also see Attachment 4 – Environmental Critical Areas Technical Memorandum for additional information on natural resources impacts and mitigation. These mitigation sites will also provide compensatory mitigation for the proposed construction of other elements of the SR 520 corridor improvements that are subject to independent permit application processes.

Cedar River/ Elliott Bridge Site

The Cedar River/Elliott Bridge site is located on the main stem 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. On the right bank, the levee and riprap will be removed. The floodplain behind the levee will undergo significant excavation, reducing the overall elevation by 3 to 5 feet. Excavation to this elevation will provide opportunities for wetland and off channel habitat creation. A blind channel will be cut into the floodplain, with the entrance near the old 149th Street bridge abutment. Buried LWD structures will be installed to provide fish cover and pool habitat and protect the north bank of the channel. Riparian vegetation on the floodplain will be restored with wetland and upland planting zones.

Project Element	Implementing Agency	Schedule
Pre-Design	WSDOT	2011
Technical Studies	WSDOT	2011- 2012
Design and Permitting	WSDOT	2011- 2012
Construction	WSDOT	2012- 2014
Monitoring and Maintenance	WSDOT	2014-2024
Long-Term Management	King County	NA
Protection Mechanism	Memorandum of Agreement	

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. Vegetation enhancement will include a live stakes community near high lake level elevation and transition to a riparian upland community.

Project Element	Implementing Agency	Schedule
Pre-Design	WSDOT	2011
Technical Studies	WSDOT	2011-2012
Design and Permitting	WSDOT	2011-2012
Construction	WSDOT	2014
Monitoring and Maintenance	WSDOT	2014-2019
Long-Term Management	WSDOT	NA
Protection Mechanism	WSDOT Ownership	

Required Shoreline Permits and Approvals

The Project occurs in both Seattle and Medina jurisdictions and will occur within the Conservancy Navigation (CN) and Conservancy Recreation (CR) environmental designations within the City of Seattle. The Project will require the following shoreline approvals:

Overall Project	Master Use Permit. SSDP – Overall project. SEPA Substantive Authority Review.
Bridge	Special Use Permit for Bridge in CR. Special Use Permit for Bridge in CN.

WSDOT and DPD agreed to the following approach to permitting the Project:

- The Project will obtain one Master Use Permit (MUP) for the Floating Bridge Project.
- The MUP for the Floating Bridge project site will be used to track the application and decision package as a whole.
- The final published decision will consist of a consolidated decision document encompassing the MUP and all associated shoreline permits and approvals.
- One public notice will be published by the City.
- The Project will be permitted as a Type II decision.
- No public hearings are required by the City for Type II decisions, but DPD may decide public meetings are needed.

Construction activities associated with bridge installation are anticipated to begin in spring 2012 and be completed in 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. Per the Seattle Municipal Code (SMC) 23.60.074(A) and consistent with the policy and provisions of

Washington Administrative Code (WAC) 173-27-090(1), the DPD Director may adopt different time limits from those set forth in subsection B of SMC 23.60.074 as part of the decision on a SSDP. Therefore, WSDOT requests that the permit expiration date be 6 years from permit issuance.

4.0 Shoreline District Project Elements – Description and Use

The Project proposes the following uses:

- **Bridge –** Replacement of the bridge, including all components of the bridge, such as pontoons, anchors, lighting, utilities, and bike/pedestrian paths on the bridge. This also includes all construction associated with the bridge, such as temporary work trestles, a temporary bridge section, demolition, and construction staging/storage.

Each of these major project elements are discussed below, including descriptions, locations, current and proposed uses, and any special use permits required. Note that compliance with criteria for special use approvals is documented within Attachment 1 to this permit application.

4.1 Bridge

Description: This bridge will replace the existing floating span of the Albert D. Rossellini Bridge. The bridge will include lighting, utilities (including stormwater collection and conveyance systems), and pedestrian/bike path on the bridge structure. Demolition of the existing bridge is also part of the overall bridge project.

Location: The bridge will extend across Lake Washington, within the CN and CR shoreline environmental designations.

Current Use: This bridge will occur within right-of-way with a current use of "bridge."

Proposed Use: The proposed use is "bridge." Bridges are permitted as a special use in the CN environment (SMC 23.60.424) and in the CR environment (SMC 23.60.364). DPD has agreed that all components of the bridge that are customary, incidental, or necessary for the construction of the bridge are permitted consistent with the standards of the appropriate shoreline environment. The following components of the bridge are customary, incidental, or necessary for the construction of the bridge: lighting, utilities (including stormwater collection and conveyance systems), sidewalks, and bike paths on the bridge structure.

DPD has provided interpretation that demolition of the existing bridge will be treated as part of the overall project and reviewed as consistent with accessory uses per SMC 23.60.092, as applicable. All storage areas are proposed within the right-of-way or on properties already identified as part of the project.

Anchors will be used to hold the floating bridge in place and occur within the CN environment. The anchor types are likely to consist of fluke anchors for the deepest anchor locations (180 feet deep or more), gravity anchors for shallower, sloped anchor locations (likely between 60 to 180 feet), and shaft anchors in the shallowest locations (likely less than 60 feet). A total of 58 anchors are proposed: 45

fluke anchors, up to 13 gravity anchors (if no shaft anchors are used), or a combination of gravity anchors and up to 6 shaft anchors. Shaft anchors are most likely to be used in the

Compliance with Development Standards: Documentation of the Project's compliance with shoreline development standards is provided in Attachment 10 – Compliance With Development Standards. Please see that attachment for compliance with specific shoreline development standards. Section 5 (below) describes shoreline development standards that would be preclusive if applied to the Project. Please note that zoning regulations do not apply within State right-of-way. As such, no zoning development standards have been noted as preclusive.

Permits Required: As summarized in the permits and approvals table, above, the Project will require special use permits for bridge in CR and CN.

5.0 Request for Waivers or Modifications of Preclusive Regulations

This section summarizes shoreline development standards that would be preclusive if applied to the Project. Please note that zoning regulations do not apply within State right-of-way. As such, no zoning development standards have been noted as preclusive. We are requesting waivers or modifications for the following preclusive shoreline regulations:

- 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 is an EPF, and therefore a waiver or modification from this requirement is requested. 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.

- 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 Project is an EPF, and therefore a waiver or modification from this requirement is requested. 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.

6.0 Additional Mitigation Elements

This section summarizes additional mitigation elements outside of the natural resource mitigation described in the Environmental Critical Areas Technical Memorandum. This includes a variety of commitments to avoid, minimize, or mitigate for effects to the built environment and local neighborhoods and communities within the City of Seattle.

Additional mitigation elements for the construction and operation of the floating bridge include the following:

6.1 Community Construction Management Plan (CCMP)

- As requested by the Department of Archaeological and Historic Preservation, and outlined in the Section 106 Programmatic Agreement, WSDOT and the construction contractor will develop a community construction management plan (CCMP) for each funded phase of project construction. The final CCMP will be developed and implemented prior to construction.
- The development of a CCMP is also identified as a commitment in the Memorandum of Understanding (MOU) between the WSDOT and the City of Seattle. The MOU was signed by the Mayor and City Council in October 2011.
- A CCMP is a set of tools and commitments to help minimize the effects of construction on the public by providing timely and responsive information, as well as implementing standard specifications and best practices.
- A CCMP is in development for the floating bridge and landings portion of the corridor, which has received funding for construction. A CCMP will be developed with public input for each future construction phase in Seattle that receives funding, including natural resources mitigation sites.
- Key topics that will be addressed in the CCMP will include:
    - Noise
    - Vibration
    - Air quality and fugitive dust
    - Visual quality: aesthetics, glare, lighting
    - Traffic and transportation (haul routes, traffic, detours, street parking, damage resulting from heavy trucks and hauling, access, including emergency service access
    - Utilities and services
    - Vegetation management and erosion control
    - In-water work (construction barges, work bridges, pontoon moorage, pontoon towing
- For each of the topics listed above, the CCMP will address the following questions:
    1) What can the public expect?
    2) What are the applicable commitments from the Section 106 Programmatic Agreement?
    3) What regulations must WSDOT and the contractor comply with?
    4) What else are WSDOT and the contractor doing to avoid, minimize, and mitigate for construction effects on local communities and historic properties?
        a. BMPs and WSDOT standard specifications.
        b. Additional agreements, such as environmental commitments made through other regulatory and permitting processes.

c. Additional tools that will be used to avoid, minimize, and mitigate construction effects on local communities and historic properties.

5) Specific communication tools to address this concern: How can the public get more information or talk to someone about concerns?

- Additional processes that will implement the goals of the Community Construction Management Plan are the Neighborhood Traffic Management Plan (where applicable), and the Tree and Vegetation Management and Protection Plan. These are described in more detail below, and will have a separate final product.

- Final work product - Community Construction Management Plan.

6.2 Neighborhood Traffic Management Plan

- As part of the Community Construction Management Plan, WSDOT and the Seattle Department of Transportation (SDOT) will collaborate to develop a Neighborhood Traffic Management Plan (NTMP). The final NTMP will be developed and implemented prior to construction.
- The purpose of the NTMP will be to catalog and develop solutions for community traffic concerns in the corridor and surrounding neighborhoods, and to identify potential funding sources for projects consistent with the recommendations and findings of the ESSB 6392 Final Workgroup Technical Report. The NTMP will define traffic management measures to proactively reduce project construction effects and develop long term traffic management strategies that work in management practices.
- A timeline and schedule for the development of the NTMP will be completed by the end of 2011. Public outreach efforts, including the formation of a community advisory group, will begin in 2012.
- Final work product – Neighborhood Traffic Management Plan.

6.3 Parks and Recreational Access – Impacts and Mitigation

Construction-related impacts to parks and recreational access

- Navigational access beneath the SR 520 floating bridge will be maintained for the duration of project construction.

Avoidance and minimization of effects to parks and recreational access

A. During project construction

- The project construction footprint, including staging areas, has been kept to the minimum area needed, which would help avoid negative effects to any property, including recreation resources. In addition, the following measures have been or would be implemented to avoid or minimize recreation effects during construction.
    - BMPs, including those already developed and used as a matter of policy by WSDOT, would be implemented to protect recreation resources from construction-related effects such as dust, vibration, noise, light and glare, and accidental damage from construction equipment. *See the Construction Techniques and Activities and Noise*

Discipline Reports (WSDOT 2009d and WSDOT 2009h) for more specific avoidance and minimization possibilities.

- Detours would be provided for trails and bicycle routes to temporarily route traffic around construction sites to minimize trail closures. Trails would be kept open as often as safely possible and simultaneous closures of alternate trails and paths would be avoided.
- Detour routes and traffic control measures would be implemented to provide access to UW recreational activities. Construction closures of roads would be timed to minimize effects on large events.
- Construction activities, including barge traffic and moorage, would be timed to avoid recreational boating events the week before and week after opening day of boating season.

B. During project operation

- As discussed on page 73 of the Recreation Discipline Report (WSDOT 2009a), care has been taken throughout the project development process to first avoid and then minimize adverse effects where possible. Because of the density of development in the project vicinity, the narrow existing highway right-of-way, and the fact that the original highway bisected several parklands, effects on parks could not be totally avoided, but permanent acquisition has been reduced compared to all SDEIS options.
- After publication of the SDEIS, WSDOT also continued to work with the City of Seattle and UW through the Section 4(f) and Section 6(f) coordination processes to further reduce the effects to parks. *The Section 6(f) Environmental Evaluation (WSDOT 2011c) and Section 4(f) Evaluation (WSDOT 2011k) provide more information on those coordination processes and findings.*
- The Noise Discipline Report Addendum and Errata presents additional noise analysis completed for the Preferred Alternative (WSDOT 2011i). As a result of that analysis and as described in Chapter 2 of the Final EIS, a number of design features were added to the Preferred Alternative design that may reduce noise effects during operation such as:
    - Use of 4-foot tall concrete traffic barriers coated with noise absorptive materials along the mainline SR 520 from I-5 to Lake Washington.
    - A higher vertical profile for the west approach from the shoreline at Montlake through Union Bay, across Foster Island, and out towards the floating bridge.
    - Encapsulating bridge expansion joints and applying noise absorptive materials to lid portals.

Mitigation for effects to parks and recreational access

A. Construction mitigation

- Mitigation measures regarding public notice, which are included in the Navigable Waterways Discipline Report Addendum and Errata (WSDOT 2011j), apply to recreational boating and would assist in preventing or mitigating effects to boating.

B. Operations mitigation

- Areas that were used for construction within parks would be regraded, landscaped, and returned to usable condition, although the vegetation would not be as mature as has previously existed at the time of replanting.
- WSDOT will provide new recreation and commuting options with a new bicycle/ pedestrian path built on the north side of the new SR 520 floating bridge. The bicycle/pedestrian path will connect to local and regional trails on both sides of Lake Washington, including the Points Loop Trail, the Bill Dawson Trail, and East Montlake Park.

7.0 Best Management Practices

7.1 Avoidance and Minimization Measures

Best Management Practices (BMPs) will be used during all construction activities to eliminate or minimize potential environmental effects. Many of these BMPs are part of WSDOT's standard practices and will be used during most project construction activities, including upland staging areas. These BMP's are applied to the project specific conditions through the development and implementation of several construction plans such as a Temporary Erosion and Sediment Control Plan (TESC) which are discussed below. Please note that minimization measures and BMPs specifically associated with mitigation activities for the project are addressed within Attachment 4 – Environmental Critical Areas Technical Memorandum.

i. BMP Implementation Strategy and Plans

BMPs are generally designed to help the project maintain water quality and air quality standards and comply with regulatory and permit conditions. Water quality BMPs typically address stormwater and erosion concerns or the introduction of other foreign substances such as fluid spills or construction debris. Air quality BMPs typically address dust and other emissions from the site. Because by their very nature BMPs are generic, project specific plans are needed to tailor the implementation of the BMPs to the specific construction activities and sites. These implementation plans are not available at this time and will be prepared by WSDOT and its construction contractors prior to applicable construction activities beginning. Descriptions of the plans that will be prepared for this project are included below including any applicable WSDOT guidance documents.

1. Stormwater Pollution Prevention Plan

The National Pollutant Discharge Elimination System (NPDES) permit that the project will obtain requires the development of a stormwater pollution prevention plan (SWPPP). The SWPPP is intended to addresses water quality concerns from stormwater and other project related process water. WSDOT utilizes two separate plans, a TESC plan and a Spill Prevention, Control and Countermeasures (SPCC) plan to implement the requirements of the SWPPP.

2. Temporary Erosion and Sediment Control Plan

TESC is required to prevent erosive forces from damaging project sites, adjacent properties, and the environment. A TESC plan will be prepared and implemented to minimize and control pollution and erosion due to stormwater runoff. It will address the following elements:

- Marking clearing limits
- Establishing construction access
- Controlling flow rates
- Installing sediment controls
- Stabilizing soils
- Protecting slopes
- Protecting drain inlets
- Stabilizing channels and outlets
- Controlling pollutants
- Controlling dewatering
- Maintaining BMPs
- Managing the project

Development of a TESC plan is guided by the WSDOT *Highway Runoff Manual* (HRM). The HRM is a Washington Department of Ecology approved document that controls many aspects of highway runoff design including permanent stormwater treatment and TESC elements. Section 6-2 of the HRM discusses the content and process for preparing a TESC Plan. Appendix 6A of the HRM contains a list of potential BMPs to use and when their use is appropriate. Many of these BMPs originate from WSDOT's *Standard Specifications* and *Standard Plans*.

For construction activities within City of Seattle right-of-way the TESC plan will be prepared in compliance with the Seattle Stormwater Manual Volume 2, Construction Stormwater Control Technical Requirements Manual.

3. Spill Prevention, Control, and Countermeasures Plan

WSDOT requires the implementation of an SPCC plan on all projects to prevent and minimize spills that may contaminate soil or nearby waters. The plan is prepared by the contractor as a contract requirement and is submitted to the project engineer before the initiation of any onsite construction activities.

Spill avoidance and containment BMPs will include the following:

- Maintain all construction equipment in order to minimize the risk of fuel and fluid leaks or spills.
- Implement spill control and emergency response plans for fueling and concrete activity areas. All spill-control materials will be present on the site before and during construction.
- If a leak or spill should occur, cease all work until the source of the leak is identified and corrected and the contaminants have been removed from the site.
- Clean all equipment that is used for in-water work before operations waterward of the OHWM. Remove external oil and grease as well as dirt and mud. Prohibit the discharge of untreated wash

and rinse water into local waters. Ensure that all construction equipment working in the water, particularly pile-driving machines, use vegetable-based hydraulic fluid.

- Conduct refueling activities within a designated refueling area away from the shoreline, streams, or any designated wetland areas.
- Minimize refueling activities on work bridges whenever feasible, and ensure that appropriate spill containment and cleanup equipment is on hand and in use as needed during any refueling of equipment on work bridges.
- Inspect daily all vehicles operating within 150 feet of any water body for fluid leaks before leaving the vehicle staging area. Repair any leaks detected before the vehicle resumes operation. When not in use, store vehicles in the vehicle staging area.
- Modify off-pavement construction entrances according to WSDOT standard plans to reduce the spread of dirt from the project site.

Development of a SPCCC plan is guided by the WSDOT *Standard Specifications* (1-07.15(1) and Section 6-3 of the HRM. Required components of the SPCC plan include; responsible personnel, spill reporting processes and forms, site information including site plans and potential spill sources, and the specific BMPs that will be used for spill prevention and spill response.

4. Concrete Collection, Containment and Disposal Plan

A concrete collection, containment and disposal plan will be developed in conjunction with the TESC and SPCC plans. The concrete plan identifies specific BMP's for the handling of concrete wastes including excess concrete, slurry from any concrete cuts and any stormwater or groundwater that may come into contact with curing concrete. The intent of the plan is to prevent the discharge of stormwater or other materials with an elevated pH level. 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 compliance with regulatory approvals.

Concrete plan BMPs are discussed in the TESC section of the HRM as well as a special contract provision that WSDOT includes in all construction contracts that involve significant concrete work.

5. Water Quality Monitoring

As a component of the TESC plan and in compliance with the NPDES permit and other approvals WSDOT will develop a construction water quality monitoring plan. The content requirements are described in the HRM and included monitoring or sampling locations, procedures, reporting and identification of the applicable water quality standards from regulations or project approvals.

6. Fugitive Dust Control Plan

In addition to the water quality plans discussed above, a fugitive dust control plan will be prepared to address air quality in compliance with a Memorandum of Agreement between WSDOT and the Puget Sound Clean Air Agency. The BMPs focus on minimizing dust through a variety of methods including covering disturbed soil, using chemical or water dust suppressants and regularly cleaning vehicles and other equipment that can carry dust.

7.2 Project Specific Best Management Practices

In addition to the standard BMPs described in the HRM, WSDOT will utilize several project specific BMPs in the development of the plans discussed above. These BMPs are necessary due to the unique nature of this project with significant over and in-water work activities. The sections below contain additional details on BMPs that will be utilized for specific construction activities.

ii. Land-Based Construction – Best Management Practices

The following BMPs and procedures are to be implemented for the proper use, storage, and disposal of materials and equipment on land-based construction limits, staging areas, or similar locations that minimize or eliminate the discharge of potential pollutants to a watercourse or waters of the state. These procedures will 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.

Upland construction BMPs will involve the following:

- Clearly define construction limits with stakes and a high-visibility fence before beginning ground-disturbing activities. No disturbance will occur beyond these limits.
- Minimize vegetation and soil disturbance to the extent possible.
- Avoid or reduce adverse impacts on critical areas during project construction, including shoreline buffers. These measures will include clearing, grading, and stormwater management.
- Protect designated sensitive areas, including the shoreline, with silt fencing. All silt fencing will be removed when construction is completed.
- Control all stormwater discharges from construction sites and ensure that NPDES permit requirements are met.

Construction BMPs to control dust and limit impacts on air quality include the following:

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

iii. Over-Water Work – Best Management Practices

The following BMPs and procedures are expected to be implemented at a minimum for the proper use, storage, and disposal of materials and equipment on barges, boats, temporary construction pads (e.g., work bridges), or similar locations that minimize or eliminate the discharge of potential pollutants to a watercourse or waters of the state. These procedures will 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.

1. Watertight Curbs, Bull Rails, or Toe Boards

Watertight curbs, bull rails, or toe boards will be installed around the perimeter of a work bridge, platform, or barge to contain potential spills and prevent materials, tools, and debris from leaving the over-water structure. These applications will be installed with a minimum vertical height of 10 inches.

2. Oil Containment Boom

An oil containment boom is a floating barrier that can be used to contain oil and helps to prevent the spread of an oil spill by confining the oil to the area in which it has been discharged. The purpose of containment is not only to localize the spill and thus minimize pollution but also to assist in the removal of the oil.

3. Floating Sediment Curtain

These barriers can aid in controlling the settling of suspended solids (silt) in water by providing a controlled area of containment. This condition of suspension (turbidity) is usually created by the disruption of natural conditions resulting from construction or dredging in the aquatic environment. The containment of solids that can settle out is desirable to reduce the impact area.

4. Tie Downs

Tie downs can be used to secure all materials, which can aid in preventing discharges to receiving waters via wind.

5. Absorbent Materials

Absorbent materials will be placed under all vehicles and equipment on docks, barges, or other over-water structures. Absorbent materials will be applied immediately on small spills and promptly removed and disposed of properly. An adequate supply of spill cleanup materials such as absorbent materials will be maintained and available on site.

6. Equipment Maintenance and Inspection

Inspections of vehicles and construction equipment will occur daily. Vehicles will be inspected before they enter any over-water work zone. Vehicles and equipment will be kept free of excessive buildup of oil and grease.

Land-based fueling stations will be used to the extent practicable.

Offsite repair shops will also be used to the extent practicable. These businesses are better equipped to properly handle vehicle fluids and spills. Performing this work off site can also be economical by eliminating the need for a separate maintenance area. If a leaking line cannot be repaired, the equipment will be removed from over-water areas.

If maintenance must take place on site, only designated areas located away from drainage courses, will be used. Dedicated maintenance areas will be protected from stormwater run-on and runoff.

7. Cover and Catchment Measures

Portable tents, drop cloths, tarps, blankets, sheeting, netting, and plywood panels will be used to cover work areas, temporary stockpile materials, and demolition debris. Nets, tarps, platforms, scaffolds, blankets, barges, and/or floats will be used to contain and control debris beneath structures being constructed or demolished. Vacuums, diverters, squeegees, absorption materials, holding tanks, and existing drainage systems will be used to control and contain concrete-laden water. These BMPs will also facilitate the suppression and dispersal of fugitive dust generated during the demolition process.

8. Construction Water Treatment Systems

These systems generally 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 will be provided to remove additional suspended solids less than 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 will be located on work bridges and barges.

9. Spill Containment Kits and Containment Products

These pre-manufactured products will aid in spill containment and cleanup. These kits and products will be kept on site and within construction vehicles for easy deployment.

10. Alternative Lubricants and Fuels

Eco-friendly lubricants and fuel sources (e.g., vegetable-based products) will be used for in-water and over-water construction where practicable.

11. Barges and Floats

Barges and floats can be used to store stockpile materials, store construction equipment, transport demolition debris, and store water containment systems and water storage tanks. The barges and floats can also be used as a catchment for demolition debris if located below a proposed demolition activity.

Protection will be required to prevent debris and water from entering adjacent live traffic lanes and prevent the spread of such material over a larger area. Such occurrences can be prevented by installing temporary barriers and protective panels, and containing or vacuuming water generated during the use of concrete saws.

12. Pontoon Outfitting

Pontoons will be moored in water at least as deep as -20 feet MLLW and located so submerged vegetation will not be shaded and, except for periods during inclement weather or moving heavy loads on and off the pontoons, the pontoon will be moored to provide at least 15 feet of separation between the pier and the pontoon.

iv. In-Water Work – Best Management Practices

In addition to applicable BMPs described above for over-water work, the following BMPs apply where demolition activity will occur in waters of the state. These procedures will be implemented to contain

construction materials and wastes (solid and liquid), soil or dredging materials, or any other materials that may cause or contribute to the exceedances of water quality standards.

1. Underwater Containment System/Temporary Cofferdam

These systems will be implemented to prevent sediment, concrete, and steel debris from mixing with waters of the state. Examples include a temporary cofferdam, an oversized steel casing, or another type of approved underwater containment system. This application will allow demolition work to be completed on and around an underwater structure, while isolating the work zone. The system will also allow work to be completed at or below the mudline. Construction water and slurry within the containment system will be removed, treated, and pumped to an acceptable discharge location upon completion of the demolition. Fresh concrete will be prevented from coming in contact with waters of the state.

2. Sediment Testing

Prior to their disposal, sediments excavated from the lakebed will be tested for the presence of contaminants. If contaminated sediments are encountered, containment BMPs will be implemented to avoid or minimize the introduction of contaminated sediments to the water column.

3. Noise Attenuation

Bubble curtains will be installed during in-water impact pile driving.

4. Timing Restrictions

In-water construction will adhere to the proposed in-water construction timing dates shown in the table below. The proposed dates were developed through a series of in-water construction technical working groups consisting of representatives from WSDOT, the services, WDFW, the Muckleshoot Indian Tribe, and local fish experts. Each in-water construction period is predicated on the nature of the construction activity, the habitat function zones, and the expected timing of fish use in the habitat function zone.

PROPOSED IN-WATER CONSTRUCTION PERIODS FOR THE VARIOUS PROJECT ELEMENTS

Project Element	Proposed In-Water Construction Timing
West Approach Connection Bridge	
Work bridge deck	N/A
Drilled shaft – vibratory	August 1 to March 31
Bridge superstructure	N/A
Materials transport	N/A
Column demolition	N/A
Floating Bridge	
Temporary pile anchors – vibratory	July 16 to March 15
Gravity or shaft anchor installation –west end	July 16 to March 15
Gravity or shaft anchor installation – east end	September 1 to May 15
Fluke anchor installation	N/A
Pontoon assembly	N/A

PROPOSED IN-WATER CONSTRUCTION PERIODS FOR THE VARIOUS PROJECT ELEMENTS

Project Element	Proposed In-Water Construction Timing
Bridge outfitting/superstructure	N/A
Materials transport	N/A
Pile removal	July 16 to March 15