

## **SECTION 106 TECHNICAL REPORT**

### **SR 520 BRIDGE REPLACEMENT AND HOV PROGRAM, I-5 TO MEDINA: BRIDGE REPLACEMENT AND HOV PROJECT**

**PREPARED FOR:**

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I-5 to Medina: Bridge Replacement and HOV Project  
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**June 2011**



# Executive Summary

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The Washington State Department of Transportation (WSDOT) proposes to replace the State Route (SR) 520 Portage Bay and Lake Washington bridges and make other highway improvements under the Interstate 5 (I-5) to Medina: Bridge Replacement and High-Occupancy Vehicle (HOV) Project (I-5 to Medina project). As part of the environmental documentation for this project and to comply with Section 106 of the National Historic Preservation Act (NHPA), WSDOT, acting on behalf of the Federal Highway Administration (FHWA), is required to determine if significant historic properties are located within the area of potential effects (APE) established for the project and evaluate project effects on these properties.

WSDOT established the APE for this project (the geographic area within which an undertaking may directly or indirectly cause alterations to the character or use of historic properties) in consultation with affected tribes, the State Historic Preservation Officer (SHPO), and other consulting parties. WSDOT retained consultants to conduct investigations in the project APE to identify and evaluate cultural resources for historic significance; assess project effects on identified historic properties; and to recommend mitigation measures or additional investigation, as needed. Since the initiation of the environmental review for the I-5 to Medina project, both the details of construction and the project APE have changed. Along with these changes, WSDOT has contracted for several cultural resources investigations of the APE to support project environmental review and Section 106 compliance.

WSDOT, on behalf of FHWA, has determined that there are 367 properties that are eligible for or listed in the National Register of Historic Places (NRHP), which are historic properties for the purposes of Section 106. Analysis of the proposed project determined that the project has the potential to affect these historic properties. These historic properties include eight historic bridges, three historic landscapes, two historic districts, one historic waterway, one historic boulevard, one traditional cultural property (TCP), and 351 historic buildings that are listed in or eligible for listing in the NRHP. Because of the prolonged construction period, as well as some direct and indirect effects once the project is built, WSDOT, on behalf of FHWA, has determined that the project would affect historic properties within the APE. Together, these effects constitute an Adverse Effect on Historic Properties. Different aspects of the Preferred Alternative would permanently or temporarily, and directly or indirectly, affect the integrity of historic properties. WSDOT, on behalf of FHWA, has evaluated each historic property within the APE, and assessed the Preferred Alternative's effects on each property's seven aspects of integrity. The assessment resulted in one of four potential findings:

- **Does Not Alter Integrity:** Either no historic properties are present, or there is no effect of any kind, neither harmful nor beneficial, on historic properties.
- **Alters Integrity:** The undertaking affects historic properties, but does not diminish the characteristics that qualify the property for listing in the NRHP.
- **Diminishes Integrity:** There is an effect from the undertaking, and that effect alters the characteristics that qualify the property for listing in the NRHP in a way that diminishes the integrity of the historic property. This includes diminishing the integrity of the property's location, design, setting, materials, workmanship, feeling, or association.

- **Temporarily Diminishes Integrity:** There is an effect from the undertaking, and that effect temporarily (during construction of the project) alters the characteristics that qualify the property for listing in the NRHP in a way that diminishes the integrity of the historic property. This includes diminishing the integrity of the property's location, design, setting, materials, workmanship, feeling, or association.

This report has been prepared in two volumes and presents the methods, results, conclusions, and recommendations for conducting an inventory and evaluation of historic properties within the APE. Volume 1 includes all work conducted to identify, evaluate, and assess archaeological resources and TCPs; Volume 2 presents the methods and results of the identification and evaluation process for historic built environment resources within the APE and also includes an affects assessment and potential mitigation measures.

## Summary of Volume 1—Archaeology and Traditional Cultural Properties

Volume 1 summarizes the ethnographic, geomorphologic, and subsurface archaeological research and investigations conducted by BOAS, CH2M Hill, ICF International (ICF) and others in support of this project. Investigations were conducted in all areas of the APE, including the anticipated construction footprint and staging and laydown areas to support construction and parcels at the Port of Olympia and the Port of Tacoma that were considered for pontoon construction and staging, but are not part of the contiguous APE. Of the two port sites considered for pontoon construction and staging, the Port of Olympia site is no longer under consideration; however the results of the evaluation and the archaeological monitoring are included in this document. Although no archaeology sites eligible for listing on the NRHP were found in any of the studies conducted to date, study results indicate that there is the potential for the project to affect unknown and potentially significant archaeological resources within the limits of construction within the APE. Several specific areas within the limits of construction were called out as sensitive for intact archaeological sites (or were inaccessible during the initial investigations) and were flagged for additional investigation prior to construction or monitoring during construction. Details for this monitoring or investigation will be included in a project Programmatic Agreement (PA). One of the stipulations of this PA will be the preparation and execution of an Archaeological Treatment Plan, which will provide a detailed, yet flexible process by which the WSDOT and FHWA can comply with the stipulations of the PA to complete the Section 106 process for the project. This Archaeological Treatment Plan will outline the identification and evaluation program for the portions of the APE within the limits of construction that have not been sufficiently investigated for the presence of intact archaeological resources and the as-yet undetermined additions to the APE including natural resources mitigation sites. The Archaeological Treatment Plan will also provide for the treatment of newly discovered resources by presenting excavation and analyses procedures, tools for assessing resource significance and eligibility, and curation procedures if archaeological materials are collected.

Volume 1 also discusses the Foster Island TCP located within the APE. Foster Island was determined eligible for the NRHP as a TCP. The project would have an effect on the TCP that contributes to the project-wide adverse effect determination. A Memorandum of Understanding (MOU) is currently being developed to identify mitigation measures for the project effects on the Foster Island TCP.

## Summary of Volume 2—Historic Built Environment

Volume 2 discusses the several investigations conducted by WSDOT, CH2M Hill, ICF, and others to identify, evaluate, and assess the historic built environment properties located in the APE. The APE includes the anticipated construction footprint (including staging and laydown areas); a buffer area (one property deep or 200 to 300 feet from the limits of construction, as appropriate); additional areas outside the limits of construction, determined through consultation, such as the entire Roanoke Park Historic District, the entire Washington Park Arboretum (Arboretum)<sup>1</sup>, the navigable waters of Portage Bay, potential construction haul routes, and possible 6(f) mitigation sites; and sites at the Port of Olympia and the Port of Tacoma that were considered for pontoon construction and staging that are not contiguous with the rest of the APE.

Volume 2 presents the results of the inventory by geographic segment<sup>2</sup>: I-5/Roanoke, Portage Bay, West Approach, Lake Washington, Eastside Transition, and the additional sites at Port of Olympia and Port of Tacoma that were investigated for pontoon construction.

- **I-5/Roanoke, Portage Bay, Montlake, and West Approach Segments:** A total of 354 built environment historic properties were identified and evaluated in these geographical segments of the APE, including two historic districts, the contributing elements to the districts, and individual properties outside district boundaries that are listed in or eligible for listing in the NRHP.
- **Lake Washington Segment:** Four historic built environment properties were identified and determined eligible for listing in the NRHP in this geographical segment of the project APE: the Governor Albert D. Rosellini/Evergreen Point Bridge, which was identified and determined eligible for listing in the NRHP in this portion of the APE, and three properties that were once, but no longer, under consideration as potential 6(f) replacement sites.
- **Eastside Transition Segment:** Two historic properties of the built environment were identified in this segment.
- **Pontoon Alternative Sites:** Five historic properties listed in the NRHP or eligible for listing in the NRHP are located within the APE at the Port of Tacoma; the WHR-eligible Hylebos Bridge has previously been determined not to be eligible for listing in the NRHP but eligible for listing in the WHR. Of the five historic properties, four NRHP-eligible buildings are elements of the CTC facility, and have been recommended as a historic district. The remaining historic property at the Port of Tacoma is the NRHP-listed Fire Station #15. At the Port of Olympia site, there is one identified historic property within the APE that is eligible for listing in the NRHP. As a result of this analysis, WSDOT, on behalf of FHWA, has determined that the Preferred Alternative would adversely affect historic properties. Study results indicate that the prolonged construction period, as well as some direct and indirect effects once the project is built, would affect historic properties within the APE. Consequently, the Preferred Alternative would adversely affect historic properties. A PA is being developed, in consultation with SHPO, ACHP, affected tribes,

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<sup>1</sup> A small, non-contiguous portion of the Arboretum, east of the main park and southeast of Foster Island, is not included in the APE.

<sup>2</sup> The geographic segments in this document were established to organize the cultural resources within the APE in an organized and manageable framework. The geographic segments discussed herein, and depicted in the exhibits in this document, may differ slightly from the supporting tables and from the segments used in other environmental documents prepared for the SR 520 Bridge Replacement and HOV Program. However, the number of historic properties within the APE is constant among all current analyses for the Program.

and other Section 106 consulting parties, which would identify means to avoid, minimize, and mitigate the adverse effect.

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- Appendix C. Tribal History of the SR 520 Corridor and Archaeological Field Investigations
- Appendix D. Ground-Penetrating Radar Survey
- Appendix E. Historic Records and Map Research of Foster Island and the Miller Street Landfill
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- Appendix G. NRHP Analysis for the Miller Street Landfill
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# Introduction

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WSDOT proposes to replace the SR 520 Portage Bay and Lake Washington bridges and make other highway improvements under the I-5 to Medina project. As part of the environmental documentation for the project and to comply with Section 106 of the National Historic Preservation Act (NHPA), WSDOT, acting on behalf of the Federal Highway Administration (FHWA), is required to determine if significant historic properties are located in the project's APE and to evaluate the project's effects on these properties. This report describes the cultural resource investigations conducted as a component of the preconstruction environmental review in accordance with Section 106 of the NHPA.

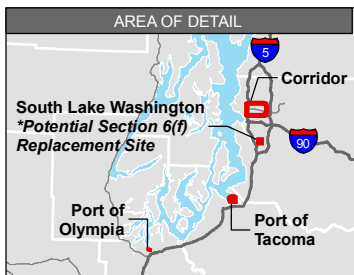
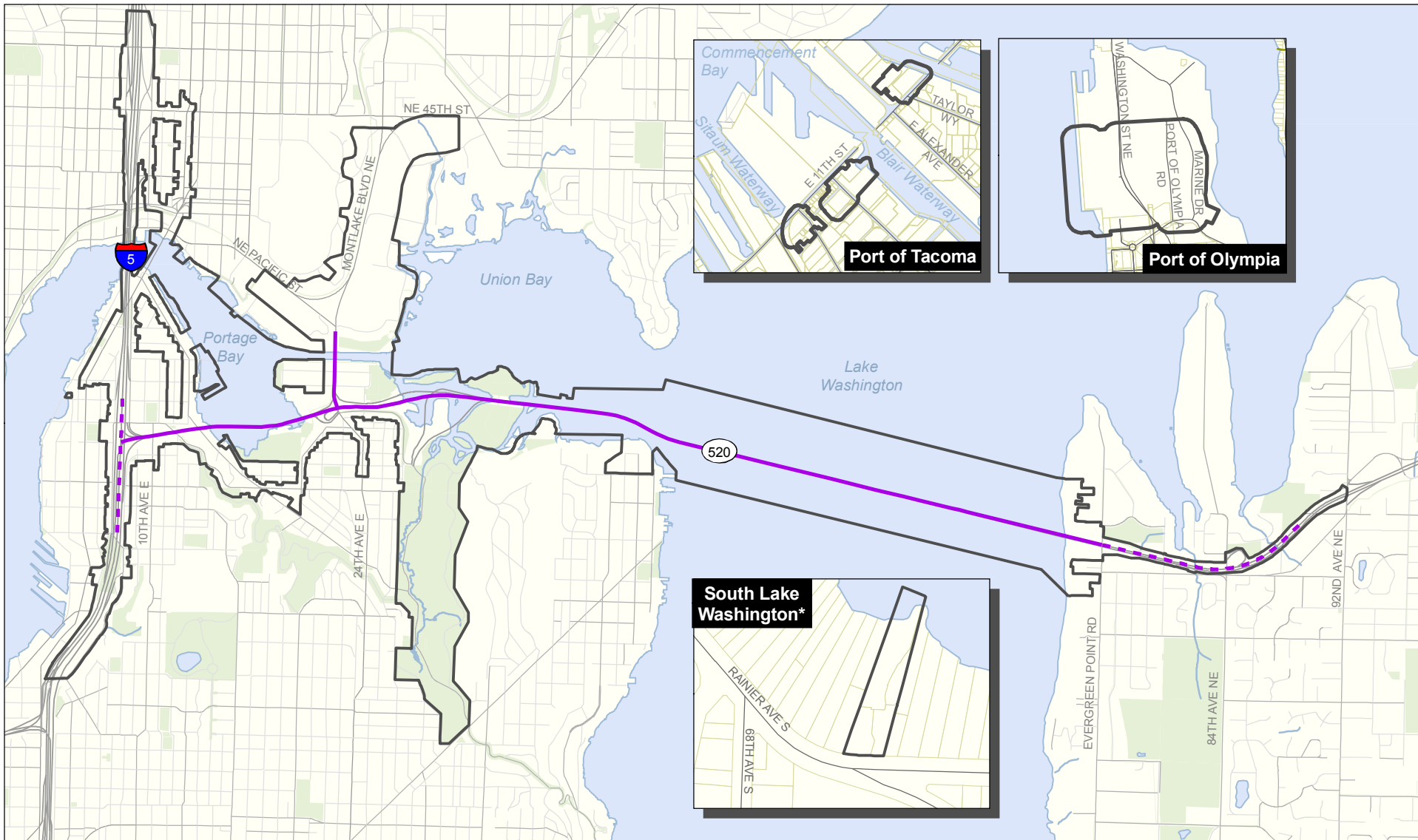
WSDOT retained consultants to conduct investigations in the APE to identify and evaluate cultural resources for historic significance; assess project effects on identified historic properties; and to recommend mitigation measures or additional investigation, as needed. Since the initiation of the environmental review for the I-5 to Medina project, both the details of construction and the project APE have changed. Along with these changes, WSDOT has contracted for several cultural resources investigations of the APE to support project environmental review and Section 106 consultation.

WSDOT retained ICF and Gray Lane Preservation and Planning (Gray Lane) in 2010 to prepare a technical report in support of compliance with Section 106 of the NHPA, that presents the methods used to inventory, evaluate, and assess the project's effect on historic properties, synthesizes results of the numerous investigations conducted within the APE, analyzes the effects of the project on historic properties, and discusses recommendations for additional investigations. This report has been prepared in two volumes: Volume 1 includes all work conducted to identify, evaluate, and assess archaeological resources and archaeological sensitivity of the limits of construction; Volume 2 presents the methods and results of the identification and evaluation process for historic built environment resources within the APE and also includes an effects assessment and potential mitigation measures.

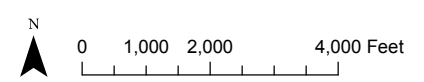
This introduction presents an overview of the project description, a detailed discussion of the Preferred Alternative, description of the APE, and the regulatory context for the cultural resources studies conducted in support of the project.

## Project Description

The project is part of the SR 520 Bridge Replacement and HOV Program (SR 520 Program). The project encompasses parts of three study areas—Seattle, Lake Washington, and the Eastside. Within these study areas, project elements are described by their location within smaller geographic segments across the SR 520 corridor. Project limits for this project extend from I-5 in Seattle to 92nd Avenue NE in Yarrow Point, where it transitions into the SR 520, Medina to SR 202: Eastside Transit and HOV Project (Medina to SR 202 project). Exhibit i-1 shows the APE; Exhibit i-2 shows the geographic segments within the APE.

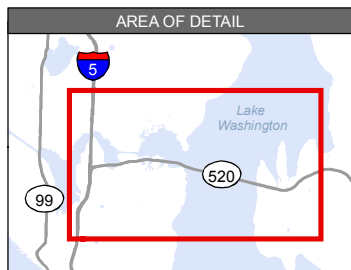
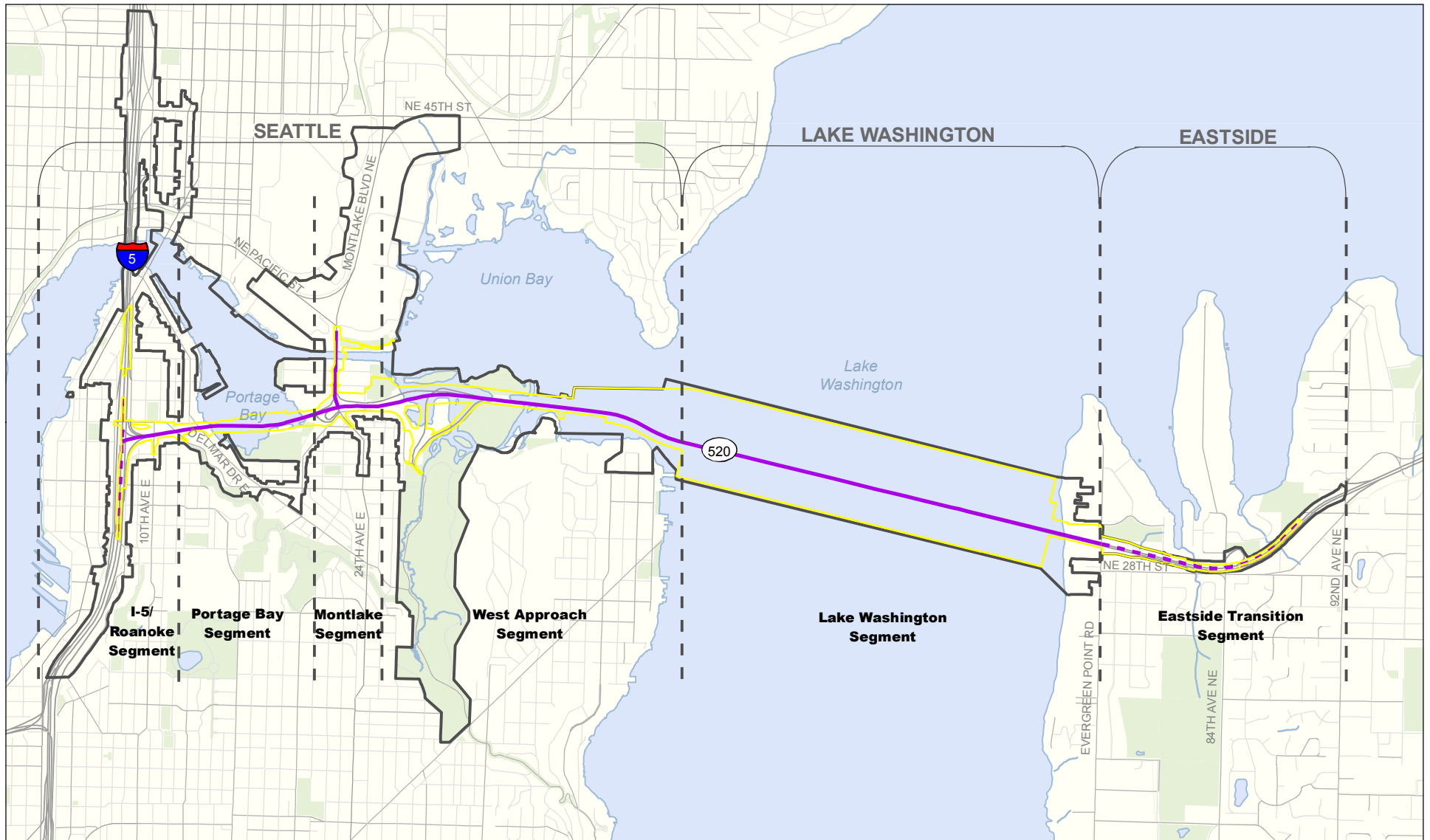


- Project Extent
- - - Limited Improvement
- Area of Potential Effects
- Park

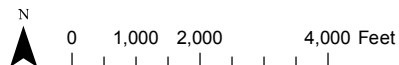


Source: King County (2005) GIS Data (Streams and Streets), King County (2007) GIS Data (Water Bodies), CH2M HILL (2008) GIS Data (Parks). Horizontal datum for all layers is NAD83(91); vertical datum for layers is NAVD88.

**Exhibit i-1. Area of Potential Effects for the SR 520, I-5 to Medina Bridge Replacement and HOV Project**  
 SR 520, I-5 to Medina Bridge Replacement and HOV Project



- Limits of Construction
- Area of Potential Effects
- Project Extent
- Limited Improvement
- Stream
- Park



Source: King County (2005) GIS Data (Streams and Streets), King County (2007) GIS Data (Water Bodies), CH2M HILL (2008) GIS Data (Parks). Horizontal datum for all layers is NAD83(91); vertical datum for layers is NAVD88.



**Exhibit i-2. Area of Potential Effects and Geographic Segments**  
 SR 520, I-5 to Medina: Bridge Replacement and HOV Project

The *SR 520, I-5 to Medina: Bridge Replacement and HOV Project Supplemental Draft Environmental Impact Statement* (SDEIS), published in January 2010, evaluated a six-lane alternative with three design options (Options A, K, and L) for the Seattle portion of the SR 520 corridor, and a No-Build Alternative. Since the SDEIS was published, WSDOT and FHWA announced a Preferred Alternative for the project. All components of the Preferred Alternative were evaluated in the SDEIS, and the design of the SR 520 corridor has been further refined in response to comments received during public review of the SDEIS. This report presents the inventory and evaluation of the APE and an analysis of the Preferred Alternative effects on historic properties. The Preferred Alternative is summarized below.

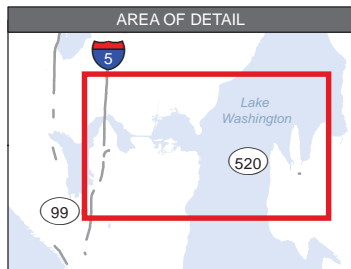
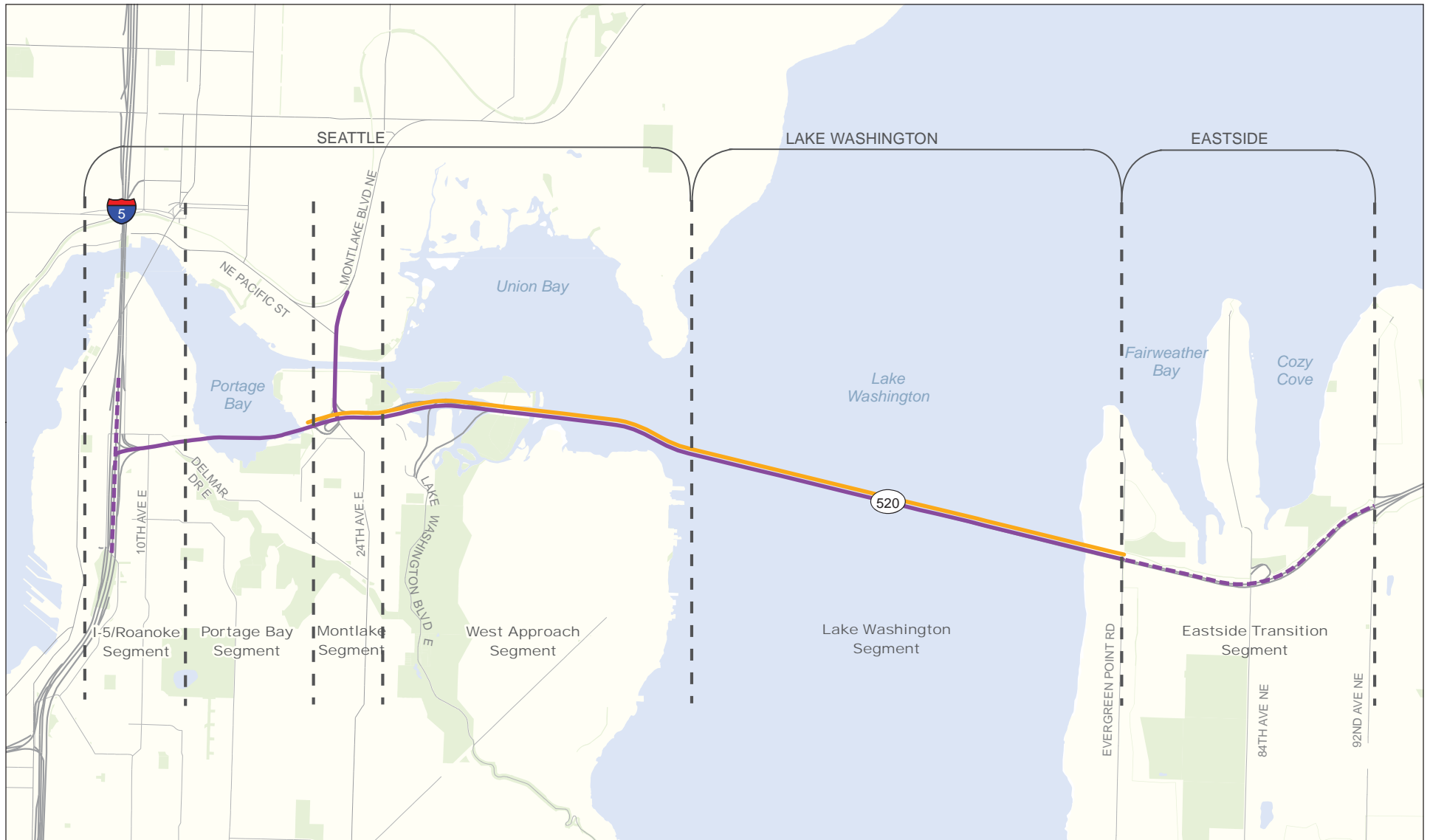
## Preferred Alternative

The Preferred Alternative 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 lanes in the corridor from Evergreen Point Road to 92nd Avenue Northeast in Yarrow Point. It would replace the vulnerable Evergreen Point Bridge (including the west approach) and Portage Bay Bridge, as well as the existing local street bridges across SR 520. The Preferred Alternative would complete the regional HOV lane system across SR 520, as called for in regional and local transportation plans. New stormwater facilities would be constructed for the project to provide stormwater treatment.

The new SR 520 corridor would be six lanes wide (two 11-foot-wide outer general-purpose lanes and one 12 foot-wide inside HOV lane in each direction), with 4-foot-wide inside shoulders and 10-foot-wide outside shoulders across the floating bridge. In response to community interests expressed during public review of the SDEIS, the SR 520 corridor between I-5 and the Montlake area would operate as a boulevard or parkway with median plantings and a posted speed limit of 45 miles per hour. To support the boulevard concept, the width of the inside shoulders in this section of SR 520 would be narrowed from 4 feet to 2 feet, and the width of the outside shoulders would be reduced from 10 feet to 8 feet.

The Preferred Alternative would include design elements that would also provide noise reduction such as reduced speed limits between I-5 and the Montlake area, 4-foot concrete traffic barriers, noise absorptive material on the inside of the traffic barriers and around the lid portals, and encapsulated bridge joints. The Preferred Alternative, like the SDEIS options, would also include quieter concrete pavement along the mainline between I-5 and the floating bridge. Noise modeling completed for the project indicates that where recommended along the SR 520 corridor, noise walls would meet all FHWA and WSDOT requirements for avoidance and minimization of negative noise effects. In areas where noise walls are warranted, they would only be constructed if approved by the affected communities.

As previously noted, the description of the Preferred Alternative is organized by three study areas along the project corridor: Seattle, Lake Washington, and the Eastside. Within the larger area Seattle segment, project elements are described by geographic segment, as illustrated in Exhibit i-3 and as identified in Exhibit i-4. The Preferred Alternative is depicted in Exhibits i-5 through i-8.



- Project Extent
- - - Denotes Limited or Optional Improvement
- Regional Bicycle/Pedestrian Path
- Park

Source: King County (2005) GIS Data (Stream and Street), King County (2007) GIS Data (Waterbody), CH2M HILL (2008) GIS Data (Park). Horizontal datum for all layers is NAD83(91); vertical datum for layers is NAVD88.



0 1,000 2,000 4,000 Feet



### Exhibit i-3. Geographic Segments along SR 520 Evaluated in FEIS

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

**Exhibit i-4. Summary of Preferred Alternative by Geographic Segment**

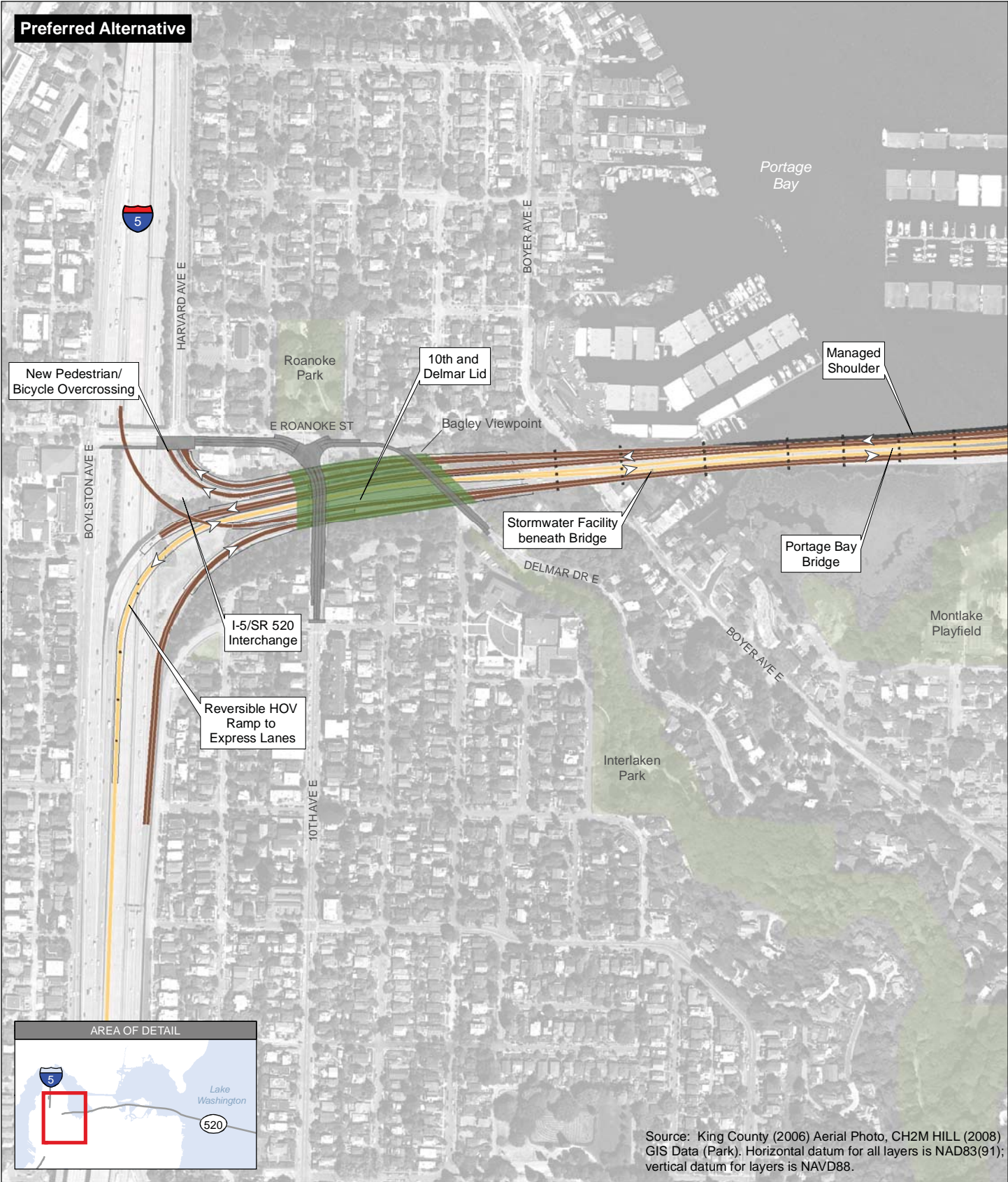
<b>Geographic Segment</b>	<b>Preferred Alternative Design Elements</b>
I-5/Roanoke	The SR 520 and I-5 interchange ramps would be reconstructed with generally the same ramp configuration as the ramps for the existing interchange. A new reversible transit/HOV ramp would connect with the I-5 express lanes.
Portage Bay	The Portage Bay Bridge would be replaced with a wider and, in some locations, higher structure with six travel lanes and a westbound managed shoulder.
Montlake	The Montlake interchange would remain in a similar location as today. A new bascule bridge would be constructed over the Montlake Cut. A 1,400-foot-long lid would be constructed between Montlake Boulevard and the Lake Washington shoreline, and would include direct-access ramps. Access would be provided to Lake Washington Boulevard via a new intersection at 24th Avenue East.
West Approach	The west approach bridge would be replaced with wider and higher structures, maintaining a constant profile rising from the shoreline at Montlake out to the west transition span. Bridge structures would be compatible with potential future light rail construction through the corridor.
Lake Washington	A new floating span would be located approximately 190 feet north of the existing bridge at the west end and 160 feet north of the existing bridge at the east end. The floating bridge would be 20 feet above the water surface (about 10-12 feet higher than the existing bridge deck).
Eastside Transition	A new east approach for the floating bridge and a new SR 520 roadway would be constructed between the floating bridge and Evergreen Point Road.

**I-5/Roanoke Segment**

SR 520 would connect to I-5 in a configuration similar to the way it connects today. Improvements to the I-5/SR 520 interchange would include a new reversible HOV ramp connecting the new SR 520 HOV lanes to existing I-5 reversible express lanes, shown in Exhibit 1-5. The project would include an enhanced bicycle/pedestrian crossing across I-5 near Roanoke Street, and a landscaped lid across SR 520 at 10th Avenue East and Delmar Drive East to help reconnect the communities on either side of the roadway.

**Portage Bay Segment**

The new Portage Bay Bridge design under the Preferred Alternative would have two general-purpose lanes and an HOV lane in each direction, plus a managed westbound shoulder. In response to community interest and public comment on the SDEIS, the width of the new Portage Bay Bridge at the midpoint has been reduced from previous designs, and a planted median would separate the eastbound and westbound travel lanes. The Preferred Alternative design of the Portage Bay Bridge would operate traffic at 45 miles per hour (mph) as a boulevard.



Source: King County (2006) Aerial Photo, CH2M HILL (2008) GIS Data (Park). Horizontal datum for all layers is NAD83(91); vertical datum for layers is NAVD88.

• Column	General-Purpose Lane	Westbound Managed Shoulder
Lid	HOV, Direct Access, and/or Transit-Only Lane	Park
Proposed Bicycle/ Pedestrian Path		
Stormwater Treatment Facility		

0
125
250
500 Feet



**Exhibit i-5. Preferred Alternative from I-5/Roanoke to Portage Bay**  
 SR 520, I-5 to Medina: Bridge Replacement and HOV Project

## Montlake Segment

Under the Preferred Alternative, the SR 520 interchange with Montlake Boulevard would be similar to today's interchange, connecting to the University District via Montlake Boulevard and the Montlake bascule bridge (Exhibit i-6). A new bascule bridge would be added to Montlake Boulevard NE, parallel and to the east of the existing bridge, and Montlake Boulevard would be restriped and reconfigured between SR 520 and the Montlake Cut to include two general-purpose lanes and one HOV lane for improved transit connectivity.

A large new lid would be provided over SR 520 in the Montlake area, configured for transit and bicycle/pedestrian connectivity, and designed to reconnect communities on either side of SR 520. The lid would function as a vehicle crossing for eastbound SR 520 traffic exiting to Montlake Boulevard and Lake Washington Boulevard. The lid would also serve as a pedestrian crossing, a landscaped area, and open space. The Lake Washington Boulevard ramps and the Montlake Freeway Transit Station would be removed.

## West Approach Segment

The SR 520 roadway would maintain a constant-slope profile rising from the east portal of the new Montlake lid, through Union Bay, across Foster Island, out to the west transition span of the Evergreen Point Bridge. This profile is slightly steeper than previous designs considered for the west approach structure for improved stormwater management.

The bridge design for the Preferred Alternative as it crosses Foster Island has been refined from previous conceptual designs to address concerns raised during tribal consultations. The new bridge across Foster Island would have a higher profile than previous designs, and has been engineered to utilize the fewest number of columns possible to minimize the amount of ground disturbance on the island. In contrast to existing conditions, the new SR 520 bridge over Foster Island would reconnect the north and south sides of the island. Construction activities would include building a construction work bridge on the island that would be removed after the permanent structure has been completed.

## Lake Washington Segment

The floating span would be located approximately 190 feet north of the existing bridge at the west end and 160 feet north at the east end. The new floating bridge would be supported by 21 longitudinal pontoons, 2 cross pontoons, and 54 supplemental stability pontoons. The longitudinal pontoons would not be sized to carry future high-capacity transit (HCT), but would be equipped with connections for additional supplemental stability pontoons to support HCT in the future.

The new bridge would have two 11-foot-wide general-purpose lanes in each direction, one 12-foot-wide HOV lane in each direction, 4-foot-wide inside shoulders, and 10-foot-wide outside shoulders. As a result of comments on the SDEIS, the height of the bridge deck above the water has been lowered from previous designs to reduce visual effects. At midspan, the floating bridge would now rise approximately 20 feet above the water, about 10 feet higher than the existing bridge deck. At each end of the floating bridge, the roadway would be supported by rows of concrete columns. The remainder of the roadway across the pontoons would be supported by steel trusses. Exhibit i-7 shows the alignment, cross section, and profile of the new floating bridge.



Routine access, maintenance, monitoring, inspections, and emergency response for the floating bridge would be based out of a new bridge maintenance facility located underneath SR 520 between the east shore of Lake Washington and Evergreen Point Road in Medina. This bridge maintenance facility would include a working dock, an approximately 7,200-square-foot maintenance building, and a parking area.

## Eastside Transition Segment

The SR 520, I-5 to Medina project and the SR 520, Medina to SR 202 project overlap between Evergreen Point Road and 92nd Avenue NE in Yarrow Point. Work planned as part of the SR 520, I-5 to Medina project between Evergreen Point Road and 92nd Avenue NE would include moving the Evergreen Point Road transit stop west to the lid (part of the SR 520, Medina to SR 202 project) at Evergreen Point Road, adding new lane and ramp striping from the Evergreen Point lid to 92nd Avenue NE, and moving and realigning traffic barriers as a result of the new lane striping. The restriping would transition the SR 520, I-5 to Medina project improvements into the improvements to be completed as part of the Medina to SR 202 project, shown in Exhibit i-8.

## Pontoon Construction

WSDOT is in the process of planning and permitting a facility at Grays Harbor that would build and store the 33 pontoons needed to replace the existing capacity of the floating portion of the Evergreen Point Bridge in the event of a catastrophic failure. If the bridge does not fail before its planned replacement, WSDOT would use the 33 pontoons constructed and stored as part of the SR 520 Pontoon Construction Project in the SR 520, I-5 to Medina project.

An additional 44 pontoons would be needed to complete the new six-lane floating bridge planned for the SR 520, I-5 to Medina project. The additional pontoons could be constructed as part of this project at one or more locations, including the Port of Tacoma, the pontoon construction facility in Grays Harbor, or other yet to be determined areas. Final pontoon construction locations would be identified at the discretion of the contractor.

As part of the SR 520, I-5 to Medina project, the pontoons built and stored in Grays Harbor would be towed from a moorage location in Grays Harbor to Puget Sound for outfitting, or would be towed directly to Lake Washington for incorporation into the floating bridge. Pontoons constructed at Port of Tacoma or Port of Olympia would be towed to Lake Washington for incorporation into the floating bridge. Towing would occur as weather permits during the months of March through October.

## Section 6(f) Properties

Under the Preferred Alternative, selected properties that are protected under Section 6(f) of the Land and Water Conservation Fund (LWCF) Act would be converted from public outdoor recreation land to transportation right-of-way. This includes a portion of Foster Island, a portion of the Arboretum, and a portion of East Montlake Park and the Ship Canal Waterside Trail which are within the Montlake Historic District.

Four historic properties were identified on sites that were considered for replacement property to fulfill the requirements of Section 6(f): the Bryant Building site at 1139-1299 NE Boat Street, 10034 Rainier Avenue, 10036 Rainier Avenue, and 10038 Rainier Avenue. This undertaking identified and

evaluated those historic properties to help inform the decision by the Section 6(f) grantees—the University of Washington and the City of Seattle—of which sites they would select to serve as replacement properties for park and recreation use.

As of publication of this document, the Section 6(f) replacement site selected by the University of Washington and the City of Seattle is the Bryant Building site, a multi-component warehouse and commercial building with several docks. The site containing three historic properties located on Rainier Avenue was not chosen for Section 6(f) replacement property and would be unaffected by the project.

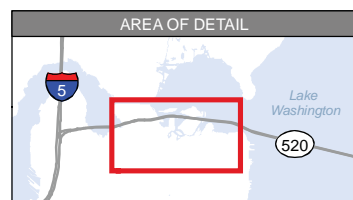
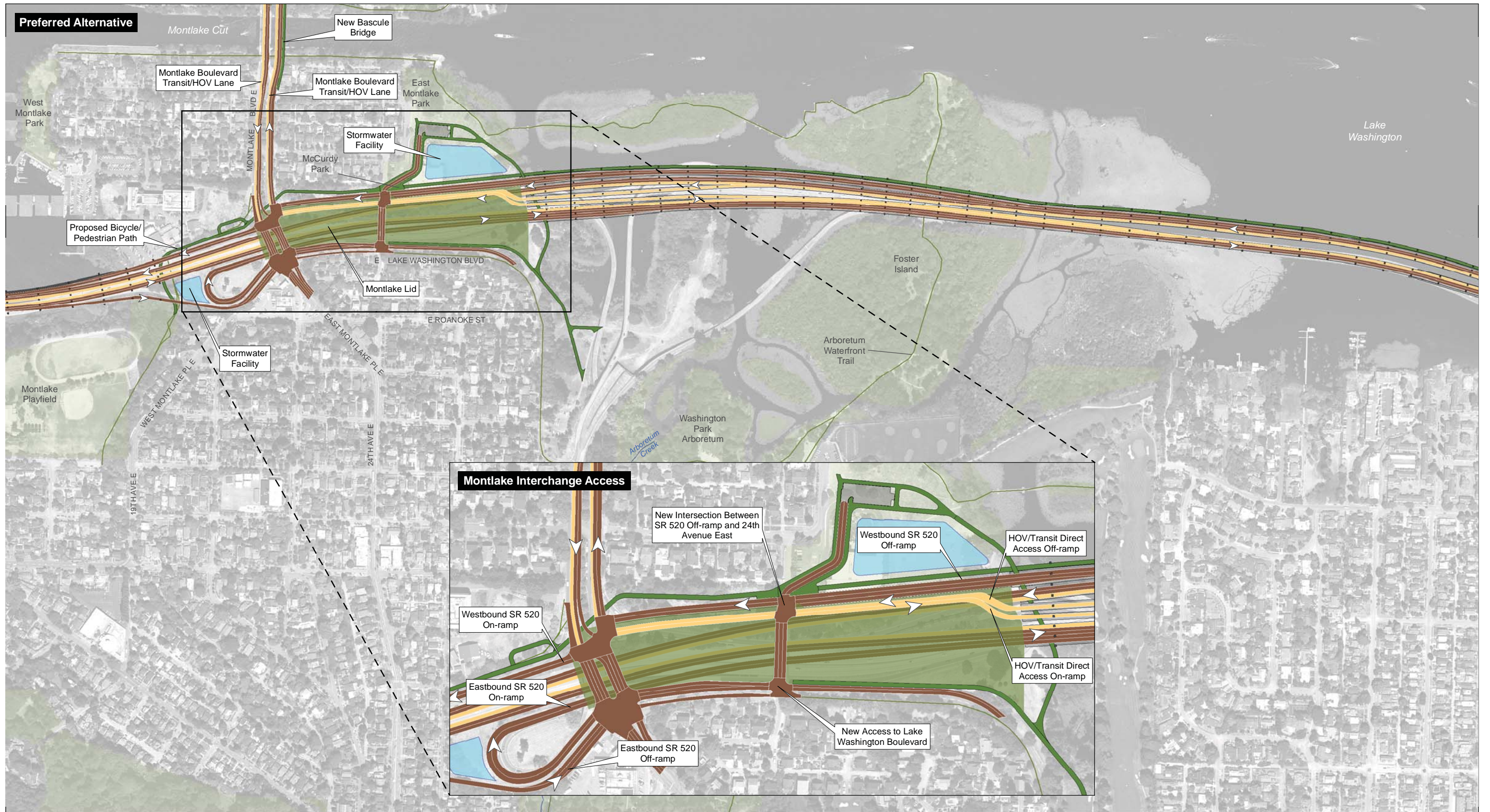
## Area of Potential Effects

The APE for a project is defined as the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties (i.e., archaeological sites, traditional cultural properties, and/or built environment resources listed or eligible for listing in the NRHP).

For this project, the APE consists of four footprints (Exhibits i-2 and i-3):

1. The known or anticipated construction footprint (referred to as the limits of construction) that includes staging and laydown areas,
2. A buffer area (one property deep or 200 to 300 feet from the limits of construction, as appropriate) that includes sufficient area to encompass historic structures, commercial buildings and residences, historic districts, and public facilities (including parks and bridges) that might be directly or indirectly affected by demolition, change of land use, noise, dust, vibration, degraded visual quality, or other effects,
3. Additional areas outside the construction footprint, determined through consultation, such as the entire Roanoke Park Historic District, the entire Arboretum, known potential construction haul routes, potential 6(f) replacement sites, and all the navigable waters of Portage Bay,
4. Additional Pontoon Construction sites at the Port of Olympia and the Port of Tacoma that were considered for pontoon construction and staging that are not contiguous with the rest of the APE.

The limits of construction boundary are defined as the area within which potential archaeological deposits could be affected. This boundary includes all potential vertical and horizontal ground disturbance associated with the project. The vertical extent of the limits of construction varies across the limits of construction. A detailed discussion of the vertical APE is presented in Volume 1.



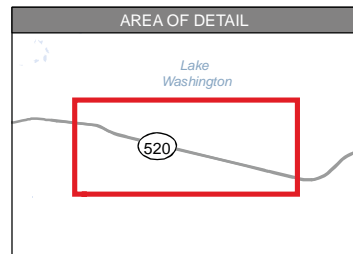
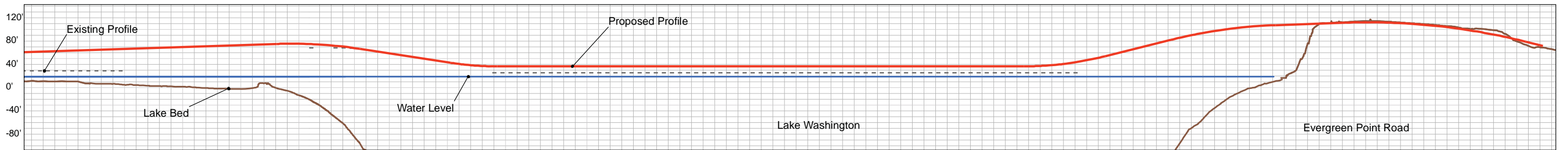
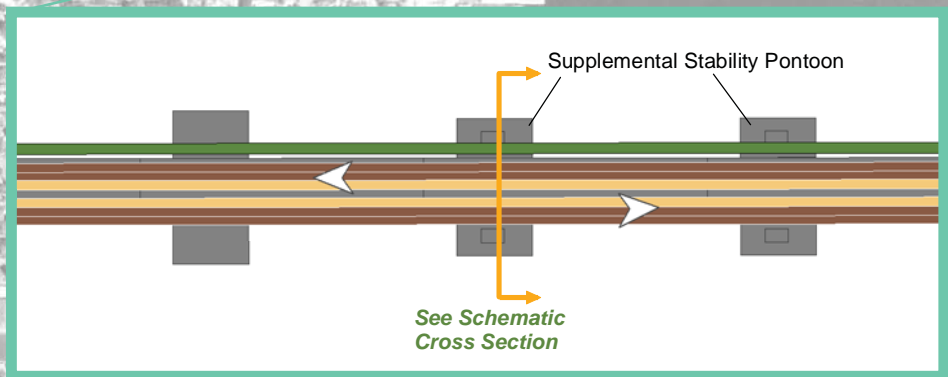
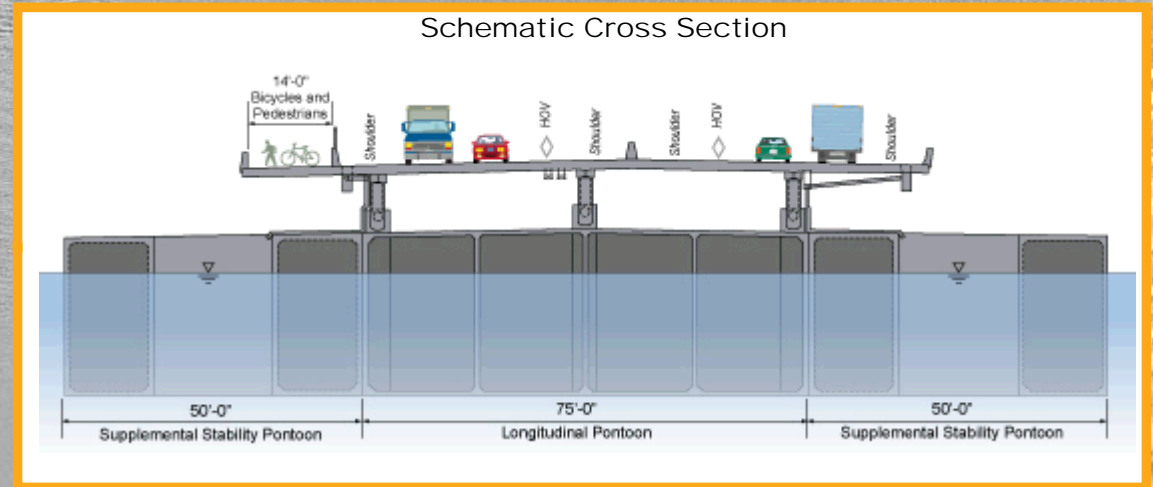
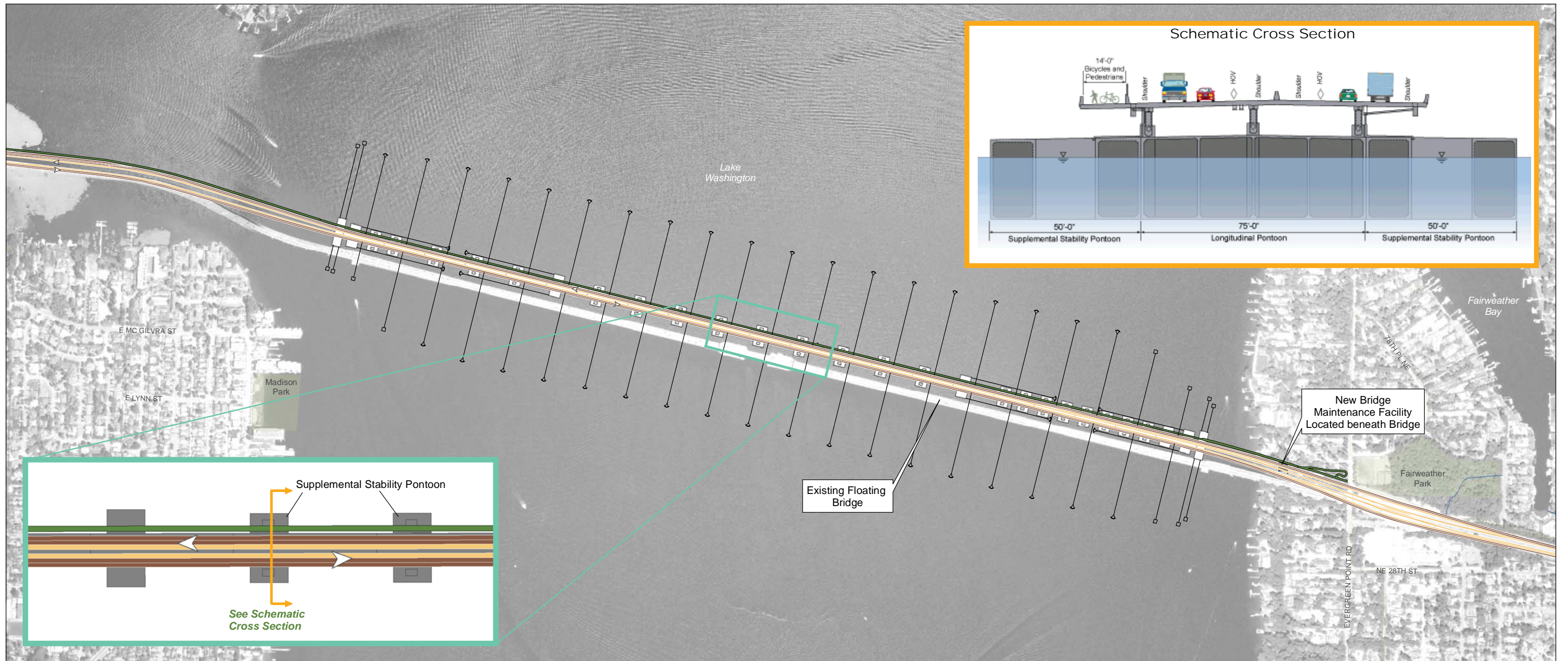
- Column
- Existing Regional Bicycle/Pedestrian Path
- Lid
- Proposed Bicycle/Pedestrian Path
- General-Purpose Lane
- HOV, Direct Access, and/or Transit-Only Lane
- Westbound Managed Shoulder
- Park
- Stormwater Treatment Facility



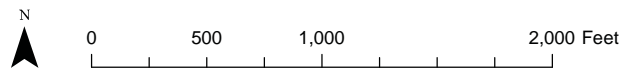
Source: King County (2006) Aerial Photo, King County (2008) GIS Data (Stream), CH2M HILL (2008) GIS Data (Park). Horizontal datum for all layers is NAD83(91); vertical datum for layers is NAVD88.







- Anchor and Cable
- Pontoons
- Proposed Bicycle/Pedestrian Path
- General-Purpose Lane
- HOV, Direct Access, and/or Transit-Only Lane
- Park

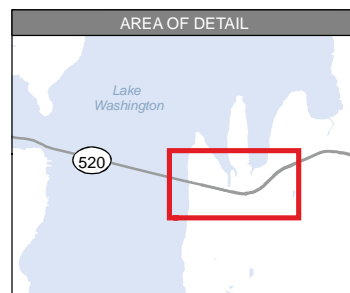


Source: King County (2006) Aerial Photo, CH2M HILL (2008) GIS Data (Park). Horizontal datum for all layers is NAD83(91); vertical datum for layers is NAVD88.



**Exhibit i-7. Preferred Alternative from the Evergreen Point Bridge**  
SR 520, I-5 to Medina: Bridge Replacement and HOV Project





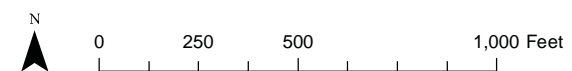
**I-5 to Medina Project Elements**

- Limits of Construction
- Proposed Bicycle/Pedestrian Path
- General-Purpose Lane
- HOV, Direct Access, and/or Transit-Only Lanes
- Restriping Improvements
- Bridge Maintenance Facility

**Medina to SR 202 Project Elements**

- General-purpose lane
- HOV lane
- Bike path
- Points Loop Trail
- Eastside Project Lid
- Park

Source: King County (2006) Aerial Photo, CH2M HILL (2008) GIS Data (Park). Horizontal datum for all layers is NAD83(91); vertical datum for layers is NAVD88.



**Exhibit i-8. Preferred Alternative of the Eastside Transition Area**

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





## Consultation

WSDOT consulted with the Department of Archaeology and Historic Preservation (DAHP), affected tribes, and other consulting parties to develop the project APE. WSDOT conducted outreach and held regular briefings with DAHP and area tribes between 2008 and the present. Affected tribes were formally invited to participate in the National Environmental Policy Act (NEPA) process and Section 106 consultation in 2007. WSDOT sent letters of request to six area tribes to initiate government-to-government consultation:

- Muckleshoot Indian Tribe,
- Suquamish Tribe,
- Snoqualmie Tribe,
- Tulalip Tribes,
- Puyallup Tribe,
- Nisqually Tribe,
- Cowlitz Indian Tribe, and
- Squaxin Island Tribe.

The Puyallup, Nisqually, Cowlitz Indian, and Squaxin Island tribes were invited to participate in Section 106 consultation in August 2010.

WSDOT initiated formal consultation with DAHP under Section 106 of the NHPA in December 2008. The initial consultation with DAHP included a request for a review of the initial APE; DAHP agreed with the initial APE on April 16, 2009. Comments from the consulting parties were received and taken into consideration. The APE was amended to accommodate these concerns and WSDOT formally requested DAHP review on revisions to the APE in July 2009 and June 2010, and DAHP agreed with the revisions in August 2009 and June 2010, respectively. The APE was expanded to include the Port of Olympia and the Port of Tacoma sites, and the 6(f) mitigation sites that are not contiguous with the rest of the APE in August 2010. SHPO responded to this revised APE on August 17, 2010, with no additional comments. Exhibit i-3 shows the APE for the Port of Olympia and Port of Tacoma sites.

Due to the size and scope of the project, as well as the historic and cultural significance of many resources within the APE, WSDOT invited numerous groups to participate as Section 106 consulting parties, per provisions in 36 CFR 800.2(c)(5)(d)(i). The majority of these parties were invited to participate in Section 106 consultation on March 2, 2009. Below is a list of the participating non-tribal consulting parties. For more information on consultation please see Volume 2 of this report.

The Section 106 consulting parties (non-tribal) include:

- DAHP,
- City of Seattle Department of Neighborhoods, Historic Preservation Program,
- King County Historic Preservation Office,
- University of Washington,

- National Oceanic and Atmospheric Administration (NOAA) Northwest Fisheries Science Center,
- Washington Trust for Historic Preservation,
- Historic Seattle Preservation Foundation,
- Friends of Seattle’s Olmsted Parks,
- Arboretum Foundation,
- Portage Bay/Roanoke Park Community Council,
- Montlake Community Council,
- Concerned Citizens of Montlake—SR 520,
- North Capitol Hill Neighborhood Association,
- Seattle Yacht Club,
- Documentation and Conservation of the Modern Movement, Western Washington (Docomomo WEWA),
- Historic Bridge Foundation,
- Eastlake Community Council, and
- Shelby/Hamlin Residents.

In June 2010, WSDOT retained the services of SRI Foundation, who lead the Section 106 consultation process in order to better understand the parties’ issues regarding the Preferred Alternative’s potential effects on historic properties.

## Regulatory Context

Federal, state, and local regulations recognize the public’s interest in cultural resources and the public benefit of preserving them. These laws and regulations require analysts to consider how a project might affect cultural resources and take steps to avoid or reduce potential damage to them. A cultural resource can be considered as any property valued (be it monetary, aesthetic, religious, or other value) by a group of people. Valued properties can be historical in character or date to the prehistoric past—the time prior to written records.

The SR 520, I-5 to Medina project involves federal funding and permits; therefore, this project is required to satisfy requirements established under NEPA (United States Code Title 42, Chapters 4321 through 4347 [42 U.S.C. 4321-4347]) and Section 106 of the NHPA of 1966, as amended (16 U.S.C. 470 et seq.). The NHPA is the primary mandate governing projects under federal jurisdiction that might affect cultural resources.

## Federal Regulations

### National Historic Preservation Act - Section 106

Section 106 of the NHPA requires federal agencies to consider the effects of actions they fund or approve on any district, site, building, structure, or object that is listed in or eligible for listing in the

NRHP, defined as “historic properties.” The regulations implementing Section 106 are codified at 36 Code of Federal Regulations (CFR) 800. The Section 106 review process involves four steps:

1. Initiate the Section 106 process by establishing the undertaking, developing a plan for public involvement, and identifying other consulting parties.
2. Identify historic properties within an APE, and evaluate their eligibility for inclusion in the NRHP.
3. Assess adverse effects by applying the criteria of adverse effect on historic properties.
4. Resolve adverse effects by consulting with the SHPO and other agencies and consulting parties, including the Advisory Council on Historic Preservation (ACHP), if necessary, to develop an agreement that addresses the treatment of historic properties.

To determine whether an undertaking could affect historic properties, cultural resources (including archaeological, historic, and ethnographic properties) must be inventoried and evaluated for listing in the NRHP.

## Section 4(f) of the Department of Transportation Act

For transportation-related projects, Section 4(f) of the Department of Transportation Act of 1966 (49 U.S.C. 303) and its implementing regulations (23 CFR 774) is another federal regulation that protects historic properties. Section 4(f) resources include any significant publicly owned park, recreation area, or wildlife refuge, or any publicly or privately owned historic property listed in, or eligible for listing in, the NRHP. Section 4(f) applies to all projects that require approval by an agency of the U.S. Department of Transportation, including FHWA. For more information on Section 4(f), see the Draft Section 4(f)/6(f) Evaluation (WSDOT 2009a).

## National Environmental Policy Act

NEPA requires that all major actions sponsored, funded, permitted, or approved by federal agencies (generally referred to as federal undertakings) undergo planning to ensure that environmental considerations, such as effects on historical, cultural, and archaeological resources, are given due weight in decision-making. The federal implementing regulations for NEPA are in the Code of Federal Regulations, Title 40 Part 1500s through 1508 (40 CFR 1500-1508; Council on Environmental Quality [CEQ]), and for FHWA actions, 23 CFR 771. The CEQ regulations include sections on urban quality, historic and cultural resources, and the design of the built environment [Sec. 1502.16(g)].

## State Regulations

### State Environmental Policy Act

Washington’s State Environmental Policy Act (SEPA) requires that all major actions sponsored, funded, permitted, or approved by state and/or local agencies be planned so that environmental considerations—such as effects on historic and cultural resources—are considered when state agency-enabled projects affect properties of historical, archaeological, scientific, or cultural importance (Washington Administrative Code Title 197, Chapter 11, Section 960 [WAC 197-11-960]); these regulations closely resemble NEPA. Similar to NEPA, SEPA considers cultural resources

to be properties listed in or eligible for the WHR, which is the state equivalent of the NRHP and sets forth similar criteria for evaluating cultural resources. The WHR, which is administered by the DAHP, identifies and records significant historic and prehistoric resources at the state level. Any NRHP-eligible property is listed in the WHR.

## Local Regulations

The Seattle Landmarks Preservation Board may designate historic properties within the Seattle city limits as local landmarks or landmark districts. Once Seattle landmarks or landmark districts are designated by a City ordinance and approved by the Seattle City Council, they are protected under a Controls and Incentives Agreement from demolition and unsympathetic changes. Certificates of Approval are necessary to permit specific changes to the landmark building or within the district. The steps necessary to permit demolition of a designated landmark are detailed in Seattle Municipal Code 25.12.835. The eligibility of properties noted as “eligible Seattle landmarks” in this report is based on professional judgment of their potential eligibility; they are not officially designated.

City regulations support and relate to SEPA as detailed in Seattle Municipal Code 25.05. For projects involving structures or sites that have been designated as historic landmarks, compliance with the Landmarks Preservation Ordinance is required. For projects involving structures or sites that are not yet designated as historic landmarks but appear to meet the criteria for designation, the site or structure may be referred to the Seattle Landmarks Preservation Board for consideration. If the Board approves the site or structure for nomination as a historic landmark, consideration of the site or structure for designation as a historic landmark and application of controls and incentives will proceed as provided by the Landmarks Preservation Ordinance. If the property is rejected for nomination, the project would not be conditioned or denied for historic preservation reasons.

When a project is proposed adjacent to or across the street from a designated site or structure, the proposal must be referred to the City’s Historic Preservation Officer for an assessment of adverse effects on the designated landmark and for comments on possible mitigating measures. Mitigation may be required to ensure the compatibility of the proposed project with the designated landmark and to reduce effects on the character of the landmark’s site. For sites with potential archaeological significance, an assessment of the archaeological potential of the site may be required.

Unlike the City of Seattle, the City of Medina has no specific historic property or landmarks regulation or recognition.

## Key Personnel

A complete list of the key contributors to this report and their respective roles is located in Exhibit i-9.

**Exhibit i-9. Key Personnel**

<b>Name</b>	<b>Qualifications</b>	<b>Responsibilities</b>
<b>LEAD AUTHORS</b>		
Connie Walker Gray (Gray Lane)	MA	Project management and oversight, technical writing, document review
Stacy Schneyder (ICF)	MA	Project management and oversight, report writing, document review
J. Tait Elder (ICF) Sara S. Orton (CH2M Hill)	MA MPS	Principal investigator for Foster Island Investigations, technical writing Technical writing, survey for the built environment, NRHP evaluations
Lori Durio Price (CH2M Hill)	MFA	Project management and oversight, report writing, document review, technical writing, survey for the built environment, NRHP evaluations
<b>REPORT CO-AUTHORS</b>		
Christopher Hetzel (ICF) Shane Sparks (ICF) Melissa Cascella (ICF) Stephanie Simmons (ICF) Kurt Perkins (ICF)	MA MA in progress MA MA in progress MA in progress	Technical writing, survey for the built environment, NRHP evaluations Report writing Report writing Report writing Report writing
<b>GIS SPECIALISTS</b>		
Angela Johnson (Critigen) Jaime Crawford (Critigen) Rori Perkins (ICF)	BS MS BS	Map and figure production Map and figure production Map and figure production
<b>PROJECT COORDINATORS</b>		
Tessa Gardner Brown (Parametrix) Erica Hall (ICF)	BA BS	Project delivery Project delivery
<b>EDITOR AND PUBLICATION SPECIALIST</b>		
Kristen Lundstrom (ICF)	BA	Report editing, formatting, and publication preparation
Note: Contributors to individual reports conducted during supporting cultural resources investigations are listed in the individual appendices.		

