

FINAL ENVIRONMENTAL IMPACT STATEMENT  
AND FINAL SECTION 4(f) AND 6(f) EVALUATIONS  
SR 520 BRIDGE REPLACEMENT AND HOV PROGRAM

MAY 2011

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

Land Use, Economics, and Relocations  
Discipline Report Addendum and Errata



SR 520, I-5 to Medina:  
Bridge Replacement and HOV Project  
Final Environmental Impact Statement  
and Final Section 4(f) and 6(f) Evaluations

**Land Use, Economics, and  
Relocations Discipline Report  
Addendum and Errata**



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Washington State Department of Transportation

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# Contents

**Introduction ..... 1**

- What is the purpose of this addendum? ..... 1
- What key issues were identified in the public and agency comments on the SDEIS? ..... 1
- What are the key points of this addendum?..... 2
- What is the SR 520, I-5 to Medina: Bridge Replacement and HOV Project? ..... 4
- What is the Preferred Alternative? ..... 4
- When will the project be built?..... 8
- Are pontoons being constructed as part of this project?..... 9

**Affected Environment..... 10**

**Potential Effects..... 10**

- How would construction of the Preferred Alternative affect land use and economics?..... 10
- How would right-of-way acquisition and operation of the Preferred Alternative affect land use, relocations, and economics? ..... 22
- Would the project be consistent with state, regional, and local plans and development regulations? ..... 29

**Mitigation..... 29**

- What has been done to avoid or minimize negative effects? ..... 29
- What would be done to mitigate negative effects that could not be avoided or minimized? ..... 29
- What negative effects would remain after mitigation? ..... 31

**References ..... 31**

## Attachments

- 1 Errata
- 2 Preferred Alternative Required Permanent Property Acquisitions

## List of Exhibits

- 1 Preferred Alternative Acres Converted to WSDOT Right-of-Way by Type of Existing Land Use and Study Area (Update to Exhibit 1 of the 2009 Discipline Report)
- 2 Number of Preferred Alternative Relocation Effects (Update to Exhibit 2 of the 2009 Discipline Report)
- 3 Preferred Alternative Project Elements
- 4 Preferred Alternative and Comparison to SDEIS Options
- 5 Preferred Alternative Construction Stages and Durations



- 6 Affected Property and Structures in the I-5 and Portage Bay Areas (Update to Exhibits 24 and 25 of the 2009 Discipline Report)
- 7 Affected Property and Structures in the Montlake and the University of Washington Areas (Update to Exhibit 26 of the 2009 Discipline Report)
- 8 Affected Property and Structures in the West and East Approach Areas (Update to Exhibits 27 and 28 of the 2009 Discipline Report)
- 9 Employment Estimates during Construction (Update to Exhibit 30 of the 2009 Discipline Report)
- 10 Businesses and Institutions Located in Montlake Area (Update to Exhibit 31 of the 2009 Discipline Report)
- 11 Parking Effects at the University of Washington during Construction (Update to Exhibit 32 of the 2009 Discipline Report)
- 12 Summary Comparison of Construction Effects of the Preferred Alternative and the SDEIS Options
- 13 Amount of Land Converted to WSDOT Right-of-Way by Type of Existing Land Use (Update to Exhibit 33 of the 2009 Discipline Report)
- 14 Parcel Acquisitions (Update to Exhibit 34 of the 2009 Discipline Report)
- 15 Permanent Right-of-Way Effects (acres) (Update to Exhibit 35 of the 2009 Discipline Report)
- 16 Number of Preferred Alternative Relocation Effects (Update to Exhibit 42 of the 2009 Discipline Report)
- 17 Estimated Property Tax Effect – Seattle Area (Update to Exhibit 45 of the 2009 Discipline Report)
- 18 Permanent Parking Acquisitions (Update to Exhibit 46 of the 2009 Discipline Report)
- 19 Summary Comparison of Operation Effects of the Preferred Alternative and the SDEIS Options



# Acronyms and Abbreviations

Final EIS	Final Environmental Impact Statement
HOV	high-occupancy vehicle
MOHAI	Museum of History and Industry
NOAA	National Oceanic and Atmospheric Administration
SDEIS	Supplemental Draft Environmental Impact Statement
UW	University of Washington
WAC	Waterfront Activities Center
WSDOT	Washington State Department of Transportation







# Introduction

## What is the purpose of this addendum?

This addendum to the SR 520, I-5 to Medina: Bridge Replacement and HOV Project Supplemental Draft Environmental Impact Statement (SDEIS) Land Use, Economics, and Relocations Discipline Report (Washington State Department of Transportation [WSDOT] 2009) presents the environmental consequences of the Preferred Alternative for the SR 520, I-5 to Medina: Bridge Replacement and HOV Project; compares its effects to the design options A, K, and L discussed in the SDEIS for the project (WSDOT 2010), and reflects additional analyses that resulted from the public and agency comments received on the SDEIS. These analyses are shown in the context of the Preferred Alternative.

The information contained in the 2009 Land Use, Economics, and Relocations Discipline Report on affected environment and project effects is pertinent to the Preferred Alternative except where this addendum specifically revises it. Text updated to reflect the Preferred Alternative has been cross-referenced using the page numbers within the 2009 Land Use, Economics, and Relocations Discipline Report. Where an addendum exhibit updates or adds new data and/or different potential effects to an exhibit contained in the 2009 Discipline Report, the exhibit name is followed by “(Update to Exhibit # of the 2009 Discipline Report).”

Project design and construction information used to analyze potential effects of the Preferred Alternative on land use, economics, and relocations is included in the Description of Alternatives Discipline Report Addendum (WSDOT 2011a) and the Construction Techniques and Activities Discipline Report Addendum and Errata (WSDOT 2011b).

An errata sheet is attached to this addendum (Attachment 1) to show revisions and clarifications to the 2009 Land Use, Economics, and Relocations Discipline Report that do not constitute new findings or analysis.

## What key issues were identified in the public and agency comments on the SDEIS?

Key land use concerns identified in public comments were as follows:

- Construction effects on properties adjacent to the Portage Bay Bridge
- Construction-related traffic congestion and its effect on the local economy
- Property acquisitions and relocation effects and mitigation



The errata sheet in Attachment 1 presents revisions to the 2009 Land Use, Economics, and Relocations Discipline Report that respond to the public and agency comments.

## What are the key points of this addendum?

The primary effects on land use, economics, and relocations related to the Preferred Alternative are summarized in the bullets below. In general, many of the effects would be similar to those of SDEIS Option A, except for the differences shown in bold below. The effects of the Preferred Alternative are discussed in the sections that follow.

### Effects During Construction

- Construction easements would affect a portion of the Seattle Fire Station 22 property on East Roanoke Street. During construction, the station would be fully operational, access would be maintained, and emergency response would not be affected.
- Construction easements for the north and south work bridges would remove several boat slips on the south side of the Queen City Yacht Club and at the Bayshore Condominiums.
- Construction easements in the Montlake area would be most similar to Option A, except that the Preferred Alternative would not remove the Montlake 76 station.
- Construction of the Preferred Alternative would directly and indirectly create approximately the same number of jobs as Option A during the peak year of construction (2015). Construction estimates range from 7,683 for the Preferred Alternative and Option A to 12,620 for Option K.
- Construction would temporarily increase congestion and affect access for some businesses and residents. Some businesses could experience fluctuations in retail sales if project construction affected typical access routes.

### Effects During Operation

- The Preferred Alternative would convert approximately 10.1 acres of land from existing uses to a transportation land use as WSDOT right-of-way for the completed project. All or part of 19 parcels would be acquired for WSDOT right-of-way. Exhibit 1 compares the direct land use effects of the Preferred Alternative to those of the SDEIS options.
- The Preferred Alternative would relocate four single-family residences and one civic use (Museum of History and Industry [MOHAI]). The Preferred Alternative would not remove buildings at National Oceanic and Atmospheric Administration (NOAA) Fisheries Science Center, but would convert approximately 0.5 acre to right-of-way for the new alignment of the Bill Dawson trail. Exhibit 2 compares the relocation effects of the Preferred Alternative to those of the SDEIS options.



Exhibit 1. Preferred Alternative Acres Converted to WSDOT Right-of-Way by Type of Existing Land Use and Study Area (Update to Exhibit 1 of the 2009 Discipline Report)

Existing Land Use	Seattle Study Area <sup>a</sup>				Lake Washington Study Area (All Options) <sup>b</sup>
	Preferred Alternative	Option A	Option K	Option L	
Civic/Other	5.0	4.9	10.3	7.5	0.0
Park/open Space	3.6	4.4	3.5	3.1	0.0
Single-family Residential	0.8	0.4 <sup>c</sup>	0.1 <sup>c</sup>	0.1 <sup>c</sup>	1.2
Commercial	0	0.2	0.0	0.0	0.0
<b>Total</b>	<b>9.4</b>	<b>9.9</b>	<b>13.9</b>	<b>10.7</b>	<b>1.2</b>

<sup>a</sup> Seattle study area includes I-5 area, Portage Bay area, Montlake area, and west approach area.

<sup>b</sup> Lake Washington study area includes Evergreen Point Bridge and Eastside approach area.

<sup>c</sup> Since the SDEIS was published, refinement of the project's construction staging requirements has identified the need for two additional property acquisitions (0.4 acre) south of the existing Portage Bay Bridge. Although the totals for Options A, K, and L have not been updated, these options would also include this effect.

Exhibit 2. Number of Preferred Alternative Relocation Effects (Update to Exhibit 2 of the 2009 Discipline Report)

Option	Seattle Study Area		
	Single-Family	Business	Civic/Other
Preferred Alternative	4	0	1
Option A	3 <sup>a</sup>	1	2
Option K	1 <sup>a</sup>	0	2
Option L	1 <sup>a</sup>	0	1

<sup>a</sup> Since the SDEIS was published, refinement of the project's construction staging requirements has identified the need for an additional residential relocation south of the existing Portage Bay Bridge. Although the totals for Options A, K, and L have not been updated, these options would also include this effect.

- The taxable property that would be removed from the local jurisdictions' tax bases would decrease property tax revenues. It is estimated that the loss of property tax revenue for the City of Seattle would be less than 0.01 percent of the City's 2008 budgeted property tax revenues.
- The Preferred Alternative would improve traffic circulation and reduce congestion in the SR 520 corridor. These effects would likely improve access to businesses for customers, improve mobility, and reduce travel times, resulting in a small improvement in the economic prospects of businesses that operate in the SR 520, I-5 to Medina project corridor.
- The Preferred Alternative would be consistent with all applicable state, regional, and local transportation plans, land use plans, and local development regulations. The detailed consistency analysis of the 6-Lane Alternative that was provided in the 2009 Land Use, Relocations, and Economics Discipline Report (pages 90 through 100) also applies to the Preferred Alternative (WSDOT 2009a).



- The Preferred Alternative would contribute to achieving jurisdictional and regional land use and transportation goals by improving connections between urban centers; supporting the completion of the regional high-occupancy vehicle (HOV) system by implementing HOV lanes in the SR 520 corridor; supporting transit mobility and use; and reducing the existing noise and visual effects related to the operation of SR 520. The proposed 10th and Delmar and Montlake lids would reconnect neighborhoods divided by the original construction of SR 520.

## What is the SR 520, I-5 to Medina: Bridge Replacement and HOV Project?

The SR 520, I-5 to Medina: Bridge Replacement and HOV Project would widen the SR 520 corridor to six lanes from I-5 in Seattle to Evergreen Point Road in Medina, and would restripe and reconfigure the lanes in the corridor from Evergreen Point Road to 92nd Avenue NE in Yarrow Point. It would replace the vulnerable Evergreen Point Bridge (including the west and east approach structures) and Portage Bay Bridge, as well as the existing local street bridges across SR 520. The project would complete the regional HOV lane system across SR 520, as called for in regional and local transportation plans.

## What is the Preferred Alternative?

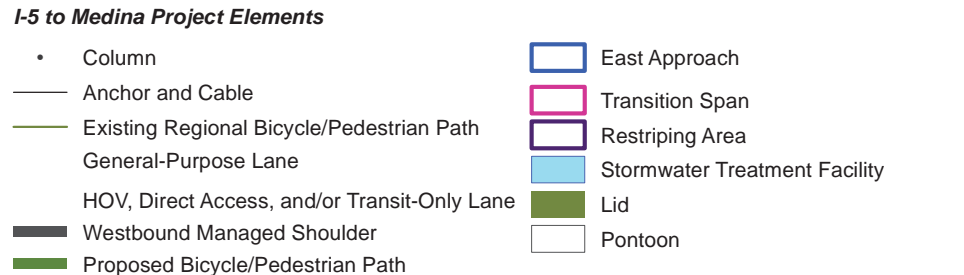
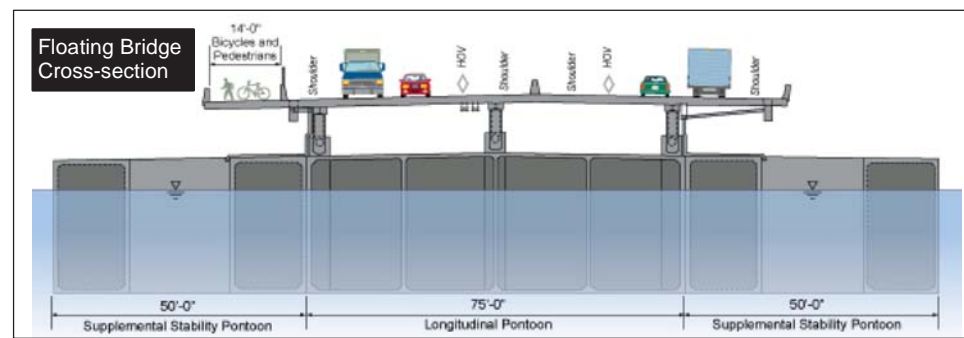
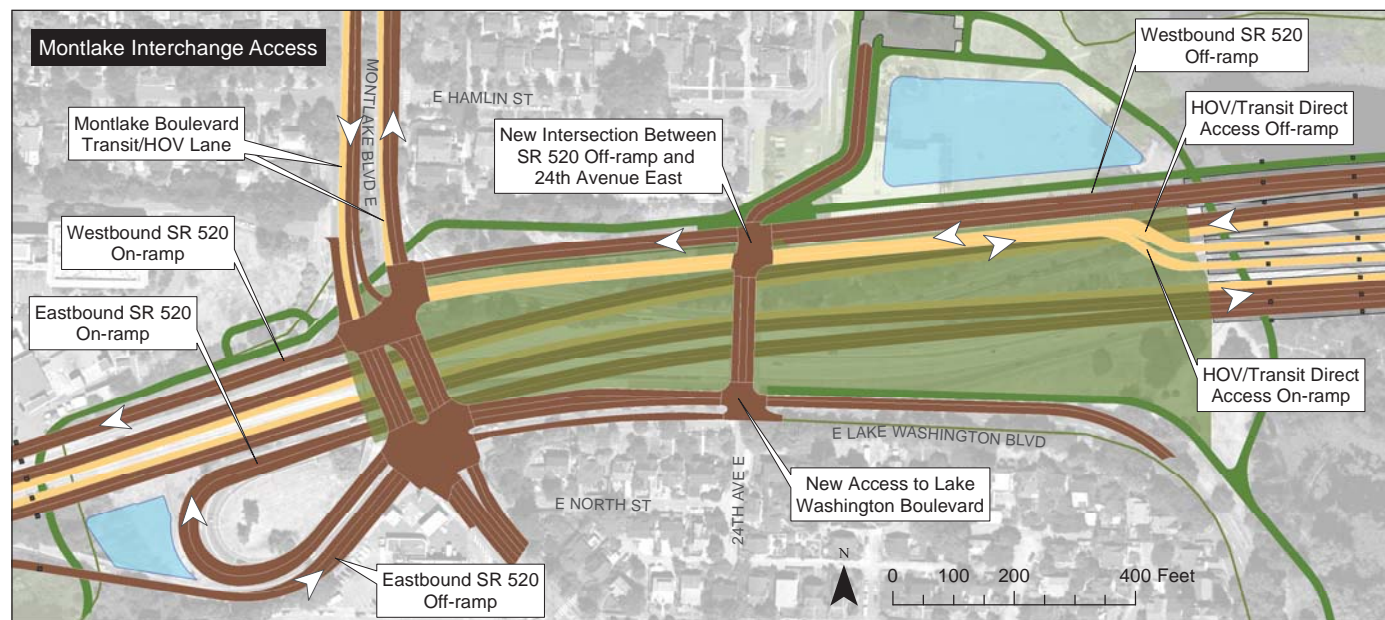
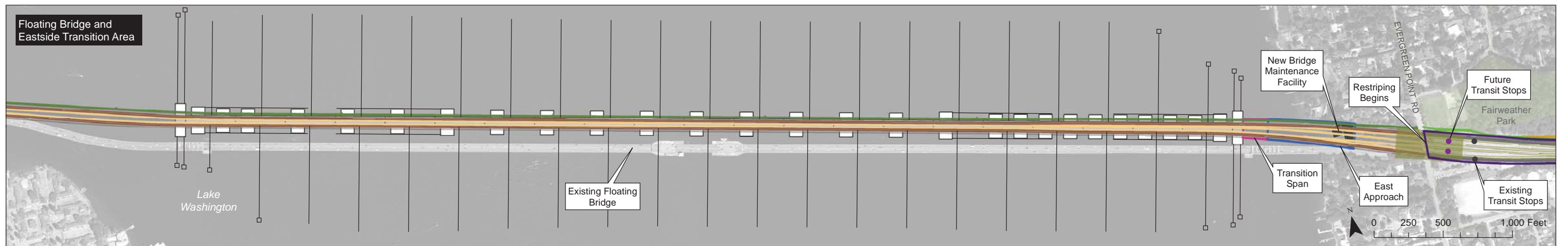
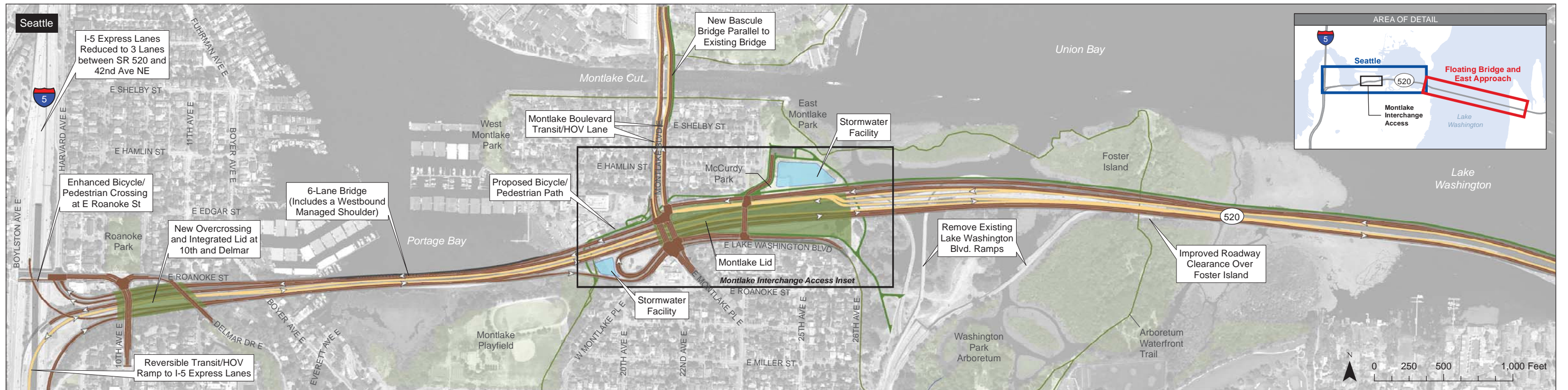
The new SR 520 corridor would be six lanes wide (two 11-foot-wide outer general-purpose lanes and one 12-foot-wide inside HOV lane in each direction), with 4-foot-wide inside shoulders and 10-foot-wide outside shoulders across the floating bridge. The typical roadway cross-section across the floating bridge would be approximately 116 feet wide, compared to the existing width of 60 feet. In response to community interests expressed during public review of the January 2010 SDEIS, the SR 520 corridor between I-5 and the Montlake interchange would operate as a boulevard or parkway with a posted speed limit of 45 miles per hour and median planting across the Portage Bay Bridge. 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. Exhibit 3 highlights the major components of the Preferred Alternative.

The Preferred Alternative would include the following elements:

- An enhanced bicycle/pedestrian crossing adjacent to the East Roanoke Street bridge over I-5
- Reversible transit/HOV ramp to the I-5 express lanes, southbound in the morning and northbound in the evening
- New overcrossings and an integrated lid at 10th Avenue East and Delmar Drive East
- A six-lane Portage Bay Bridge with a 14-foot-wide westbound managed shoulder that would be used as an auxiliary lane during peak commute hours







**Medina to SR 202 Project Elements**

- General-Purpose Lane
- HOV Lane
- Bike Path
- Points Loop Trail
- Medina to SR 202 Project Lid

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.

**Exhibit 3. Preferred Alternative Project Elements**  
I-5 to Medina: Bridge Replacement and HOV Project







- An improved urban interchange at Montlake Boulevard integrated with a 1,400-foot-long lid configured for transit, pedestrian, and community connectivity
- A new bascule bridge across the Montlake Cut that provides additional capacity for transit/HOV, bicycles, and pedestrians
- Improved bridge clearance over Foster Island and the Arboretum Waterfront Trail
- A new west approach bridge configured to be compatible with future high-capacity transit (including light rail)
- A new floating bridge with two general-purpose lanes, and one HOV lane in each direction
- A new 14-foot-wide bicycle/pedestrian path with scenic pull-outs along the north side of the new Evergreen Point Bridge (west approach, floating span, and east approach), connecting regional trails on both sides of Lake Washington
- A new bridge maintenance facility and dock located underneath the east approach of the Evergreen Point Bridge
- Re-striped and reconfigured roadway between the east approach and 92nd Avenue NE, tying in to improvements made by the SR 520, Medina to SR 202: Eastside Transit and HOV Project
- Design features that would also provide noise reduction including reduced speed limit on Portage Bay Bridge, 4-foot concrete traffic barriers, and noise absorptive materials applied to the inside of the 4-foot traffic barriers and lid portals. Quieter concrete pavement would also be used for the new SR 520 main line, and noise walls where recommended by the noise analysis and approved by affected property owners would be included in the design
- Basic and enhanced stormwater treatment facilities

Exhibit 4 summarizes the Preferred Alternative design compared to the existing corridor elements, and compares the Preferred Alternative to design options A, K, and L as described in the SDEIS. For a more detailed description of the Preferred Alternative, see the Description of Alternatives Discipline Report Addendum (WSDOT 2011a).



## Exhibit 4. Preferred Alternative and Comparison to SDEIS Options

Geographic Area	Preferred Alternative	Comparison to SDEIS Options A, K, and L
I-5/Roanoke Area	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.	Similar to all options presented in the SDEIS. Instead of a lid over I-5 at Roanoke Street, the Preferred Alternative would include an enhanced bicycle/pedestrian path adjacent to the existing Roanoke Street Bridge.
Portage Bay Area	The Portage Bay Bridge would be replaced with a wider and, in some locations, higher structure with six travel lanes and a 14-foot-wide westbound managed shoulder.	Similar in width to Options K and L, similar in operation to Option A. Shoulders are narrower than described in SDEIS(2-foot-wide inside shoulders, 8-foot-wide outside shoulder on eastbound lanes), posted speed would be reduced to 45 mph, and median plantings would be provided to create a boulevard-like design.
Montlake Area	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. The bridge would include direct-access ramps to and from the Eastside. Access would be provided to Lake Washington Boulevard via a new intersection at 24th Avenue East.	Interchange location similar to Option A. Lid would be approximately 75 feet longer than previously described for Option A, and would be a complete lid over top of the SR 520 main line, which would require ventilation and other fire, life, and safety systems. Transit connections would be provided on the lid to facilitate access between neighborhoods and the Eastside. Montlake Boulevard would be restriped for two general-purpose lanes and one HOV lane in each direction between SR 520 and the Montlake Cut.
West Approach Area	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 through the corridor.	Bridge profile most similar to Option L, and slightly steeper; structure types similar to Options A and L. The gap between the eastbound and westbound structures would be wider than previously described to accommodate light rail in the future.
Floating Bridge Area	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 approximately 20 feet above the water surface at the midspan (about 10 to 12 feet higher than the existing bridge deck).	Similar to design described in the SDEIS. The bridge would be approximately 10 feet lower than described in the SDEIS, and most of the roadway deck support would be constructed of steel trusses instead of concrete columns.
Eastside Transition Area	A new east approach to the floating bridge, and a new SR 520 roadway would be constructed between the floating bridge and Evergreen Point Road.	Same as described in the SDEIS.

## When will the project be built?

Construction for the SR 520, I-5 to Medina project is planned to begin in 2012, after project permits and approvals are received. To maintain traffic flow in the corridor, the project would be built in stages. Major construction in the corridor is expected to be complete in 2018. The most vulnerable structures (the Evergreen Point Bridge including the west and east approaches, and Portage Bay





Bridge) would be built in the first stages of construction, followed by the less vulnerable components (Montlake and I-5 interchanges). Exhibit 5 provides an overview of the anticipated construction stages and durations identified for the SR 520, I-5 to Medina project.

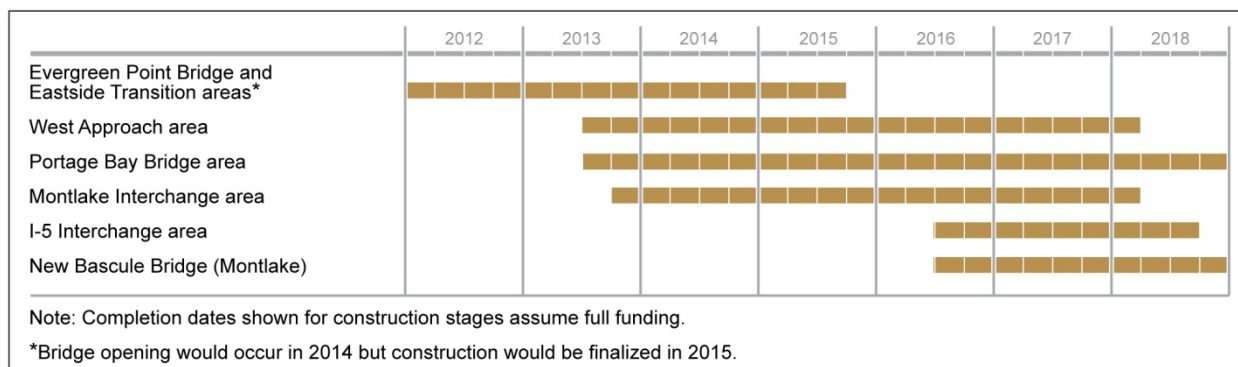


Exhibit 5. Preferred Alternative Construction Stages and Durations

A Phased Implementation scenario was discussed in the SDEIS as a possible delivery strategy to complete the SR 520, I-5 to Medina project in phases over an extended period. FHWA and WSDOT continue to evaluate the possibility of phased construction of the corridor should full project funding not be available by 2012. Current committed funding is sufficient to construct the floating portion of the Evergreen Point Bridge, as well as the new east approach and a connection to the existing west approach. The Final EIS discusses the potential for the floating bridge and these east and west “landings” to be built as the first phase of the SR 520, I-5 to Medina project. This differs from the SDEIS Phased Implementation scenario, which included the west approach and the Portage Bay Bridge in the first construction phase. Chapters 5.15 and 6.16 of the Final EIS summarize the effects for this construction phase. Therefore, this discipline report addendum addresses only the effects anticipated as a result of the updated construction schedule.

## Are pontoons being constructed as part of this project?

WSDOT has completed planning and permitting for a new facility that will 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 6-lane floating bridge planned for the SR 520, I-5 to Medina project. The additional pontoons would be constructed at Concrete Technology Corporation in the Port of Tacoma, and if available, at the new pontoon construction facility located on the shores of Grays Harbor in Aberdeen, Washington. Final construction locations will be identified at the discretion of the contractor. For additional information about project construction schedules and pontoon



construction, launch, and transport, please see the Construction Techniques and Activities Discipline Report Addendum and Errata (WSDOT 2011b).

## Affected Environment

The 2009 Land Use, Relocations, and Economics Discipline Report provides a detailed discussion of the affected environment (see pages 19 through 46; WSDOT 2009a).

## Potential Effects

### How would construction of the Preferred Alternative affect land use and economics?

#### Land Use Effects of Project Construction

Land use effects of project construction would be similar to those described for Option A (see pages 50 through 60 in the Land Use Relocations, and Economics Discipline Report [WSDOT 2009a]). Although construction effects would be most similar to those of Option A, the design refinements included in the Preferred Alternative have resulted in some differences in the location and amount of land that would be used for construction purposes. This is the land between the proposed right-of-way line and the limits of construction, as shown in Exhibits 6 through 10 and described in more detail below by geographic area. This land would be used during construction and would not be permanently converted to WSDOT right-of-way. Land permanently converted to right-of-way is discussed in the section “How would right-of-way acquisition and operation of the project affect land use, relocations, and economics?”

#### I-5 Area

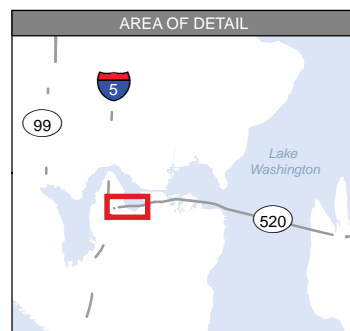
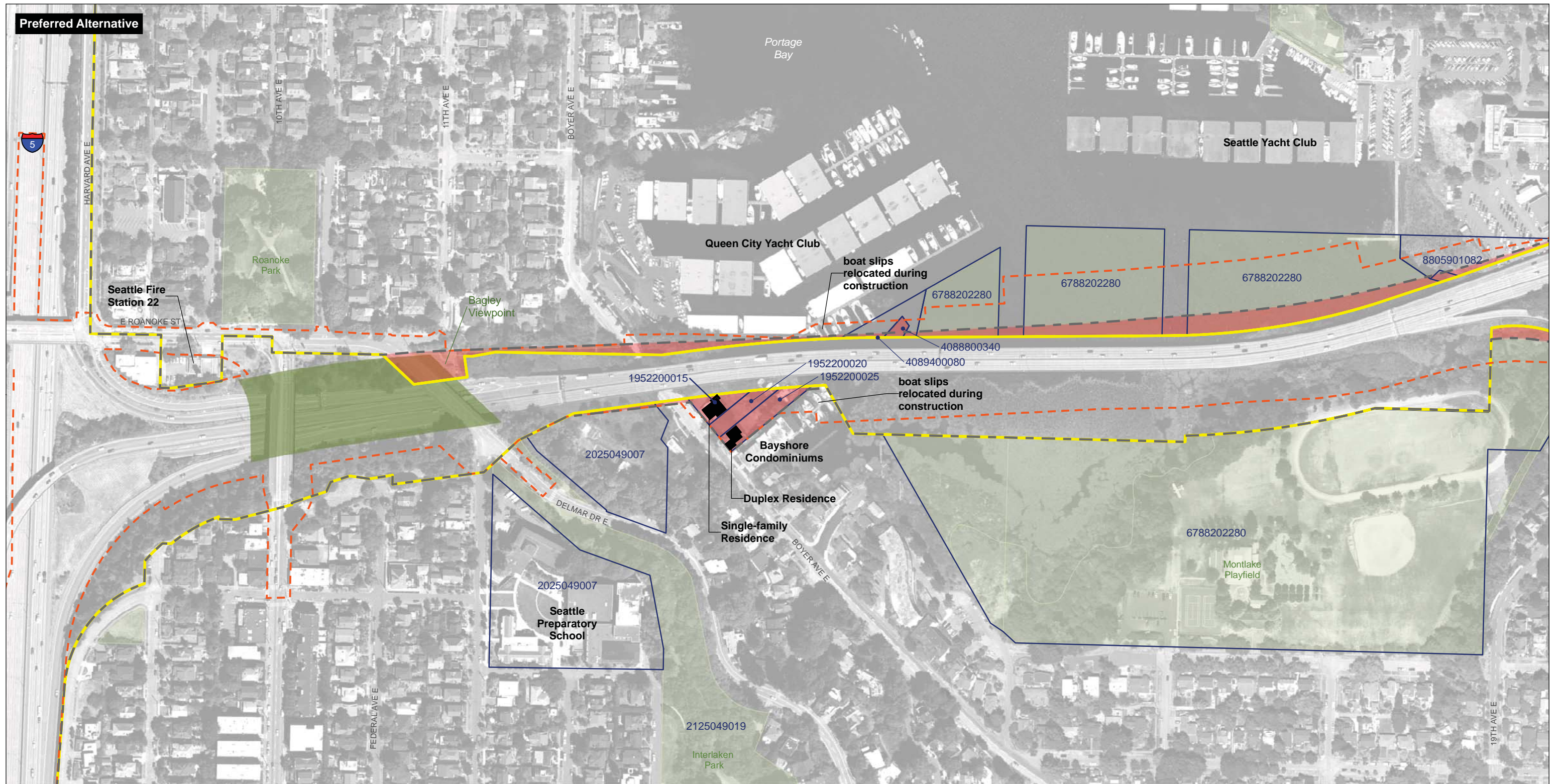
Construction easements in the I-5 area would be the same as described for Option A in the 2009 Discipline Report. As shown in Exhibit 6, construction would occur adjacent to Seattle Fire Station 22 on East Roanoke Street. Construction would be staged in this area so that the station would be fully operational, access would be maintained, and emergency response would not be affected. Construction in the I-5 area is expected to last 26 months.

#### Portage Bay Area

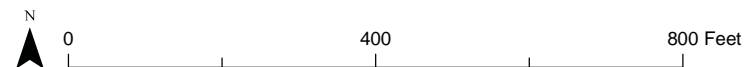
The effects of the construction work bridges adjacent to the Portage Bay Bridge would be similar to those described in the 2009 Discipline Report. Easements for the north work bridge would require relocation of all boat slips along the south side of the south dock of the Queen City Yacht Club for the duration of construction (Exhibit 6). Easements for the south work bridge would also require relocation of approximately ten boat slips at the Bayshore Condominiums for the duration of







- Permanently Removed Structure
- Converted to Right-of-way
- Parcel Affected by Right-of-way Acquisition
- Existing Right-of-way
- Limits of Construction
- Proposed Right-of-way
- Lid or Landscape Feature
- Park



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

**Exhibit 6. Affected Property and Structures in the I-5 and Portage Bay Areas (Update to Exhibits 24 and 25 of the 2009 Discipline Report)**  
I-5 to Medina: Bridge Replacement and HOV Project







construction. WSDOT would provide temporary moorage for all affected slips. Construction in the Portage Bay area is expected to last approximately 64 months.

### **Montlake Area**

Construction effects in the Montlake area would be most similar to those of Option A, with differences near the eastbound off-ramp and westbound on-ramp of the Montlake interchange. As shown on Exhibit 7, the limits of construction for the Preferred Alternative changed such that the construction easements would be less than those of Option A in this area. Unlike Option A, the Preferred Alternative would not remove the Montlake 76 station or any buildings on the NOAA Northwest Fisheries Science Center property. Construction easements at the University of Washington (UW) Open Space (immediately north of the Montlake Cut), at residences east of the new Montlake bascule bridge, and at East Montlake Park would be similar to those needed for Option A. Construction in the Montlake area for the interchange lid and bascule bridge is expected to last approximately 56 months. Construction easements in the East Montlake and McCurdy Parks also support construction of the new west approach, and may be used for a slightly longer duration.

### **West Approach Area**

Construction methods for the SR 520 corridor have been further refined since publication of the SDEIS, resulting in a change to the amount of area needed for the limits of construction for the west approach. While construction easements on Foster Island would be similar to those of Option A (Exhibit 8), the limits of construction from Foster Island east to the west transition span of the floating bridge would be larger than described in the SDEIS. This change accounts for areas needed for barges used during construction. This change would apply to all the Options evaluated in the SDEIS, as well as the Preferred Alternative; however, the change does not result in any land use changes. Construction in the west approach area is expected to last approximately 59 months.

### **Lake Washington**

Construction easements in Lake Washington would be similar to those described for Option A in the 2009 Discipline Report (Exhibit 8). Since publication of the SDEIS, additional information has been developed about private parcel boundaries along the east shore of Lake Washington. Parcel boundaries for this analysis have been modified to include aquatic easements associated with the affected properties. As a result, two single family residences would be affected by aquatic easements necessary for work bridges. Approximately 0.1 acre of easements would be required for work bridge construction activities. One private dock on Lake Washington north of SR 520 in Medina would be unusable during construction. Construction for the floating bridge is expected to last approximately 39 months. Construction for the east approach and bridge maintenance facility is expected to last approximately 41 months. Total construction in this area is expected to last approximately 5 years.



## Eastside Transition Area

Construction easements in the Eastside transition area would be the same as described for Option A. No construction easements would be needed because restriping of SR 520 would occur within the existing right-of-way between Evergreen Point Road and 92nd Avenue NE.

## Economic Effects of Project Construction

Economic effects of the Preferred Alternative would be similar to those described for Option A (see pages 60 through 69 of the 2009 Land Use, Economics, and Relocations Discipline Report [WSDOT 2009a]). During construction, increased employment and spending would occur near the project.

Exhibit 9 summarizes the employment estimates, including direct, indirect, and induced jobs, during the peak year of construction.

Because this project would introduce “new money” (state or federal funds) to the region, it would have a measurable positive economic effect in terms of employment and income gains that otherwise would not occur.

During construction, congestion in and near the SR 520 corridor would be likely to increase, and might result in reduced sales for local businesses that have competitors in other areas of the region not experiencing construction-related congestion. However, as described in the 2009 Discipline Report, most businesses would not likely experience a substantial loss of sales due to congestion. Construction activities for the Preferred Alternative, including the duration and sequencing of construction, are described in detail in the Construction Techniques and Activities Discipline Report Addendum and Errata (WSDOT 2011b). The estimated localized effects on businesses are summarized below by geographic area.

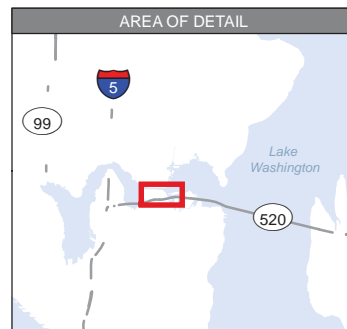
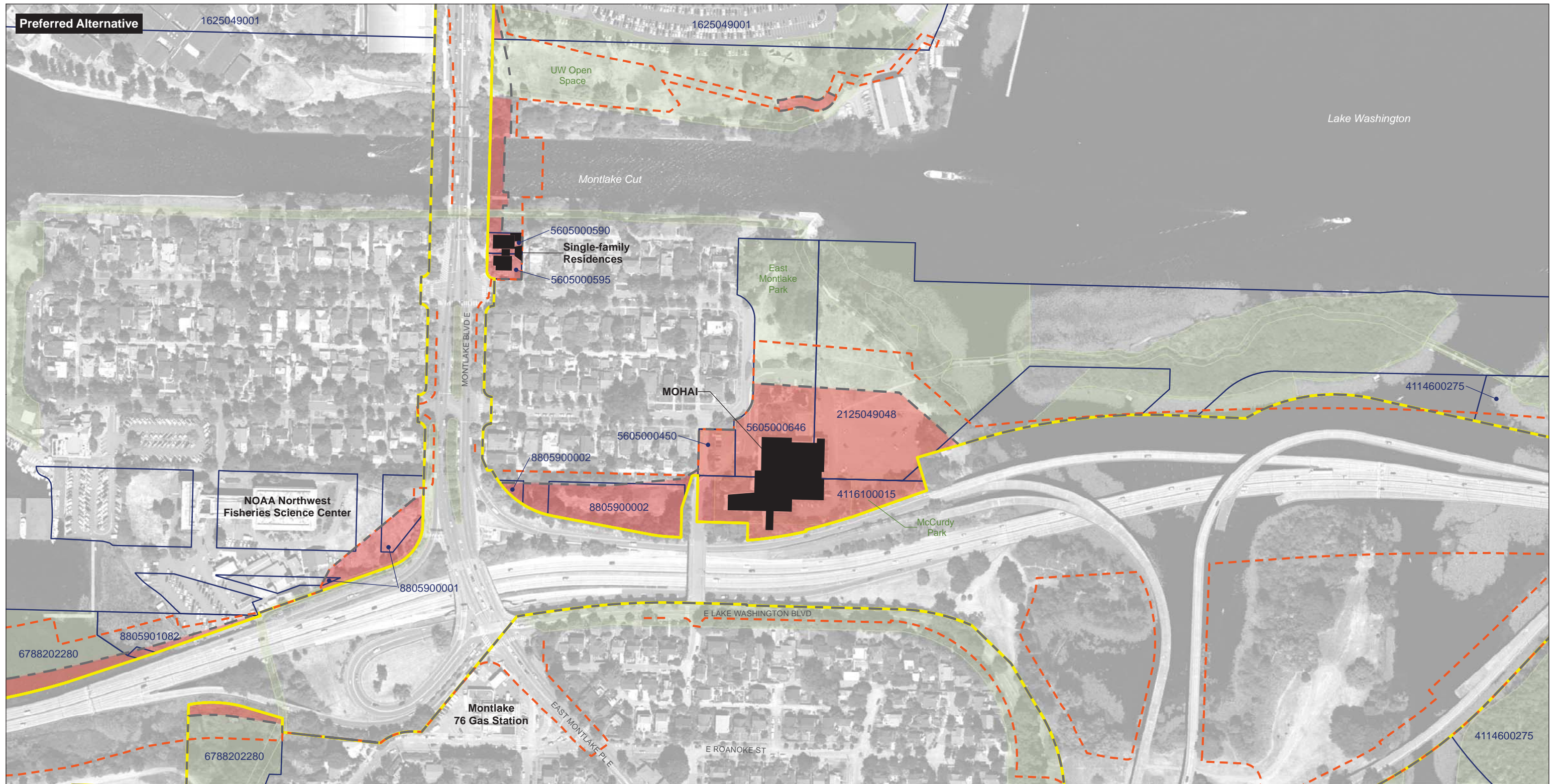
## General Effects in the SR 520 Corridor

Overall, construction effects in the SR 520 corridor would be similar to those described in the 2009 Discipline Report. Portions of SR 520 would be closed at night (between the hours of 9 p.m. and 5 a.m.) and on weekends to accommodate certain portions of construction. An example of a construction activity that would require lane closures is the placement of precast girders for the new lids over SR 520. It is possible that nighttime lane closures could affect businesses near SR 520 that receive much of their revenue in the evening, such as restaurants, movie theaters, gas stations, or specialty retailers. As a result, such businesses could experience some sales losses. Because most businesses near SR 520 depend largely on drivers using surface streets, however, it is unlikely that businesses would experience a substantial sales loss from nighttime lane restrictions on SR 520.

Construction could increase congestion and detour traffic onto local streets at times. The degree of congestion would vary during the construction timeline and would change with the intensity of construction activities. Sales at some businesses, especially those that rely heavily on good access from drive-by traffic, could decrease during construction. However, such decreases would likely be minor because reductions in access would occur mainly at night and during off-peak hours. In







- Permanently Removed Structure
- Converted to Right-of-way
- Parcel Affected by Right-of-way Acquisition
- Existing Right-of-way
- Limits of Construction
- Proposed Right-of-way
- Lid or Landscape Feature
- Park



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

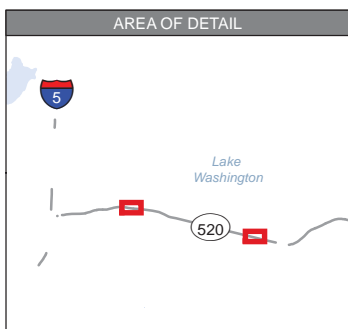
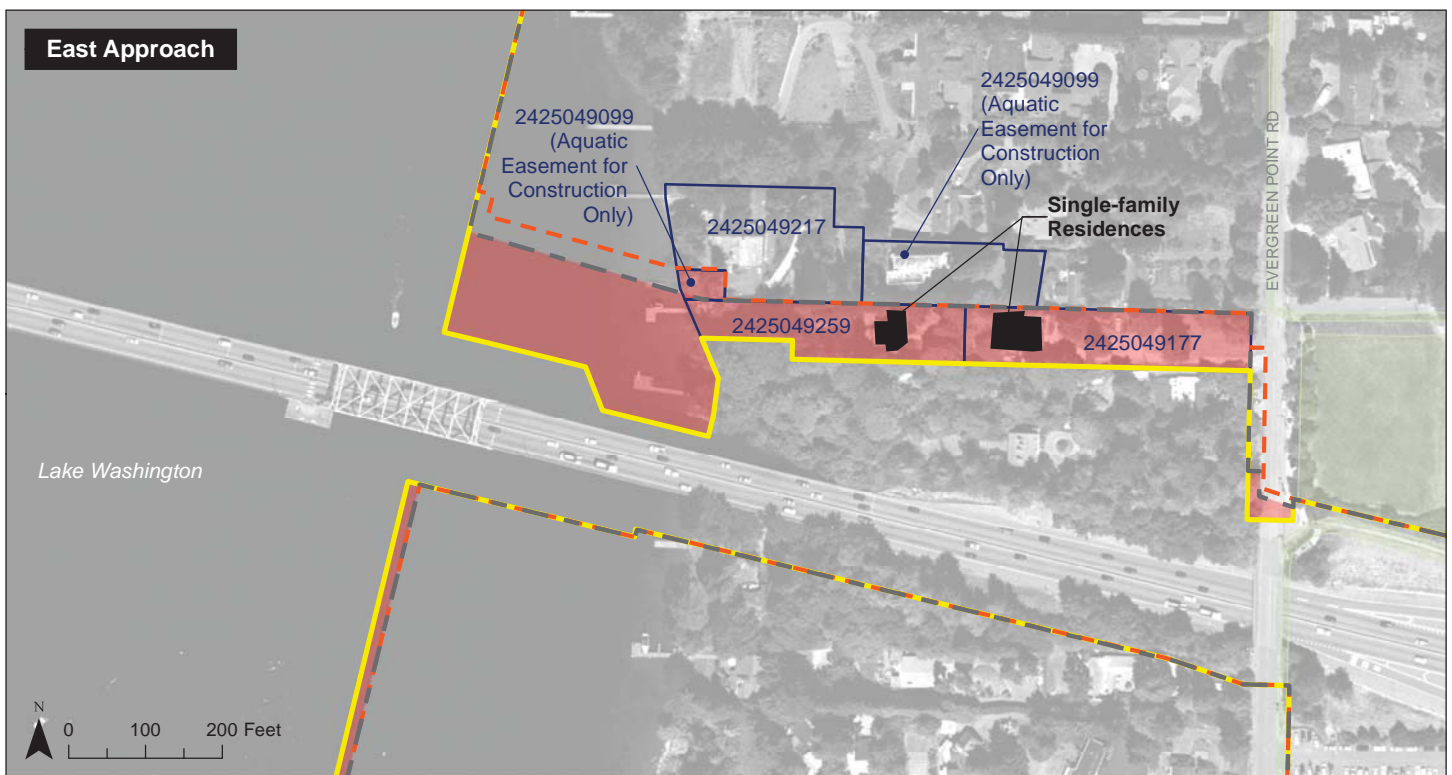
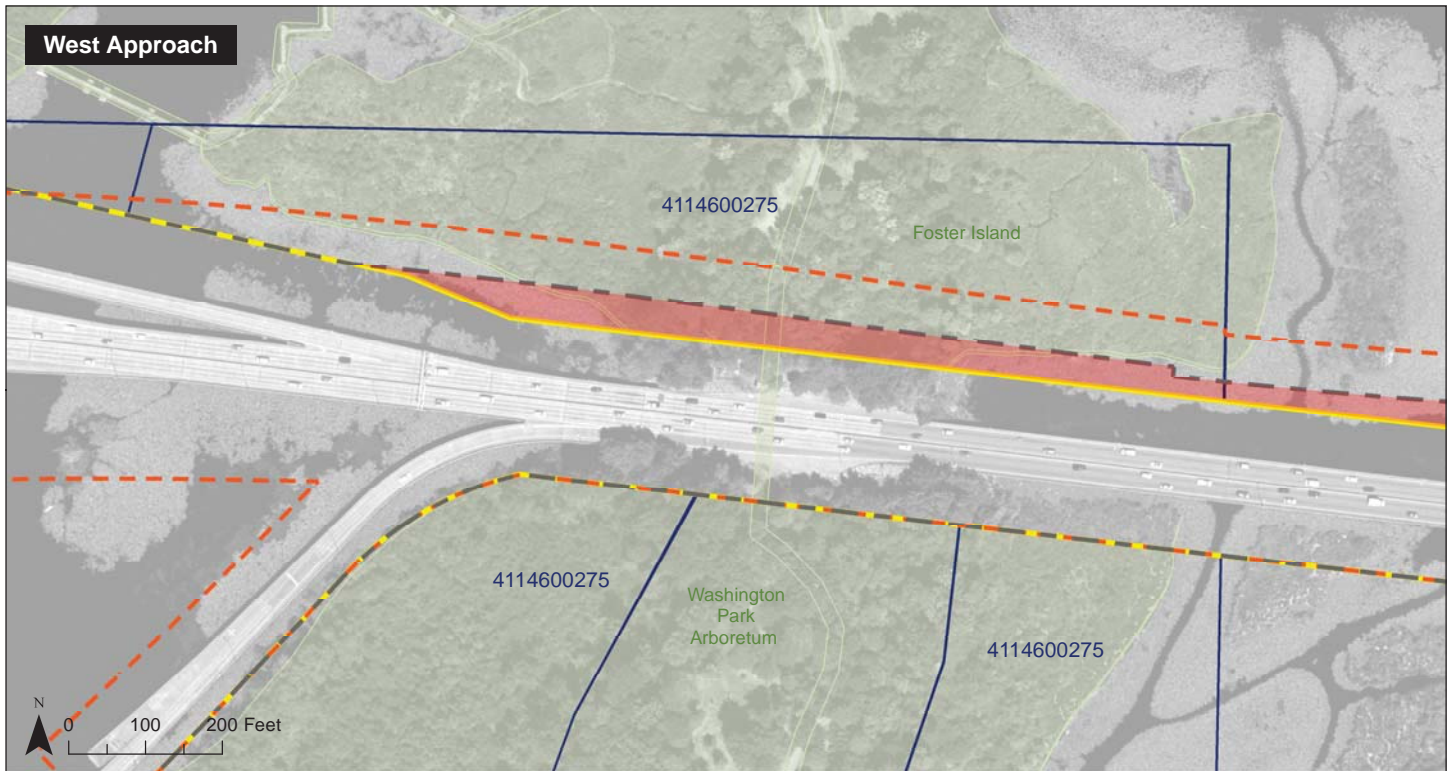
**Exhibit 7. Affected Property and Structures in the Montlake and University of Washington Areas (Update to Exhibit 26 of the 2009 Discipline Report)**

I-5 to Medina: Bridge Replacement and HOV Project









- Permanently Removed Structure
- Converted to Right-of-way
- Parcel Affected by Right-of-way Acquisition
- Existing Right-of-way
- Limits of Construction
- Proposed Right-of-way
- Park

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

**Exhibit 8. Affected Property and Structures in the West and East Approach Areas (Update to Exhibits 27 and 28 of the 2009 Discipline Report)**

I-5 to Medina: Bridge Replacement and HOV Project



Exhibit 9. Employment Estimates during Construction (Update to Exhibit 30 of the 2009 Discipline Report)

Construction Effects	Preferred Alternative	Option A	Option K	Option L
Construction period	7 years	6 years	7 years	6 years
Cost (year 2014 billions of \$) <sup>a</sup>	Similar to Option A	\$2.9	\$5.0	\$3.5
Peak year	2015	2015	2014	2014
Number of jobs in peak year <sup>b</sup>	Similar to Option A	7,683	12,620	9,526

<sup>a</sup> Includes preliminary engineering, right-of-way, and construction costs.

<sup>b</sup> Includes direct, indirect, and induced employment.

addition, alternative access would be provided to business districts and neighborhoods. Revenues for some businesses near construction activities could increase from spending by construction workers. This, in turn, could increase local sales tax revenues.

It is expected that most of the daily construction-generated trips (for example, hauling) would use the major highways, including I-5, SR 520, and I-405. Given the anticipated peak-period congestion levels on SR 520, this would have a moderate adverse effect on traffic flow, adding to the usual rush hour congestion. See Chapter 10 of the Final Transportation Discipline Report (WSDOT 2011c) for a quantitative analysis of construction effects on traffic flow. Contractors would likely avoid travel during peak periods because their productivity would be hampered by traffic congestion.

## I-5 Area

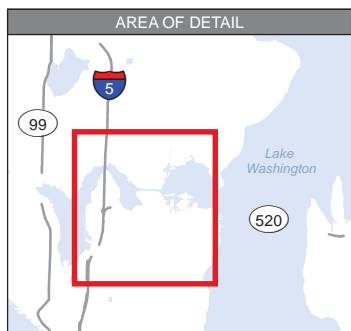
Construction effects in this area would be similar to those of Option A, although somewhat less because the I-5 lid would not be built. Unlike Option A, the 10th Avenue East and Delmar Drive East overcrossings would both remain open during construction. Traffic would be temporarily shifted onto portions of the new lid while the existing bridges were demolished and reconstructed. Because the overcrossings would remain open, the businesses along 10th Avenue East are not expected to experience a substantial loss of sales. This grouping of retail and personal service businesses extends from the overcrossing south for about two blocks (Exhibit 10).

## Portage Bay Area

Construction effects in this area would be similar to those of Option A. The new Portage Bay Bridge would be built in halves to maintain the existing number of lanes for traffic during construction. Traffic would use the existing bridge until the new north half was built, and then would shift to the new north half while the existing bridge was demolished and the new south half built. Work bridges would be constructed along both the south and north sides of the existing bridge and would be approximately 30 feet wide and approximately 5 to 10 feet above the water.

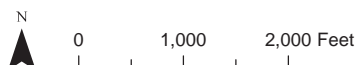
During construction, access into the work site at the west end of the Portage Bay Bridge would be from Boyer Avenue East, and access at the east end would be from either East Roanoke Street or





● Point of Interest

Source: City of Seattle (2008) GIS Data (Business and Institutions), 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 10. Businesses and Institutions Located in Montlake Area (Update to Exhibit 31 of the 2009 Discipline Report)**

I-5 to Medina: Bridge Replacement and HOV Project

from WSDOT right-of-way access just north of the existing westbound on-ramp. See Chapter 10 of the Final Transportation Discipline Report (WSDOT 2011c) for a discussion regarding construction traffic and haul routes. Construction activities in this area would last for approximately 64 months.

### **Montlake Area**

The Montlake interchange is a primary travel route to UW and associated businesses to the north, and to Capitol Hill, Montlake, and associated commercial areas to the south (Exhibit 10). Generally, the economic effects of construction would be similar to those described for Option A in the 2009 Discipline Report. Although a few customers may be deterred from visiting these areas because of construction at the interchange, most of these businesses serve local customers who would travel to them on local streets. Any economic effects on businesses in this area during construction are expected to be small.

As described in more detail below, construction in the Montlake area would be staged such that traffic congestion and delays would be minimized. On- and off-ramps at Montlake Boulevard would remain open to traffic while being reconstructed, with lane shifts using temporary ramp connections as needed. In addition, access to businesses and residences would be maintained during the construction period. If roadways and direct business access were closed, detours would maintain access. To the extent practicable, WSDOT will time short-term closures to occur at night or during low-traffic-volume periods during the day.

In general, construction of the SR 520 main line would begin in areas outside the existing SR 520 travel lanes between Montlake Boulevard and the shoreline. The north half of the main line (the westbound lanes) would be reconstructed first. Once completed, SR 520 traffic would be shifted so that the south half (the eastbound lanes) could be reconstructed. Construction of 24th Avenue East would occur prior to removal of the Lake Washington Boulevard ramps. Construction of the new lid structure would occur in sections across the width of SR 520.

Even though access would be maintained in the Montlake area, congestion is expected to worsen due to slowing that typically occurs in work zones. Drivers may elect other routes or adjust their schedules to avoid the increased congestion and delay. As a result, sales at some businesses, especially those that rely heavily on good access and drive-by traffic, could decrease during construction. This, in turn, could decrease local sales tax revenues. However, these effects would likely be minor because reductions in access would occur mainly at night and during off-peak hours. Conversely, revenues for some businesses near construction activities could increase from spending by construction workers. This, in turn, could increase local sales tax revenues.

As described in the 2009 Discipline Report, it is possible that construction in the Montlake area could deter some patrons from attending sporting events, exhibitions, and other events held at UW because of increased congestion.

The Preferred Alternative would affect 10 parking stalls in the UW lots E-11 and E-12 during construction (Exhibit 11). According to Commuter Services at UW, more than 11,400 parking stalls





were available for campus parking in 2007, and the average parking utilization was 71 percent. Parking fees generated nearly \$4.2 million in revenue for Commuter Services. The number of stalls that would be used for construction staging would represent less than 0.1 percent of the total campus parking spaces available. Therefore, it is expected that overall effects on attendance at athletic and other events at UW would be small.

Exhibit 11. Parking Effects at the University of Washington during Construction (Update to Exhibit 32 of the 2009 Discipline Report)

Parking Effect	Preferred Alternative	Option A	Option K	Option L
Number of UW Parking Stalls Affected	10	55	550	210
Percent of E-11 & E-12 Stalls Affected	1%	4.6%	46.7%	18.0%
Percent of total UW Parking Stalls Affected	0.1%	0.5%	4.8%	1.9%

Note: There are 1,175 parking stalls in the E-11 and E-12 lots with an average parking occupancy of 99%.

Ramp closure hours and dates would be timed to accommodate special events and coordinated with closures on other freeways.

Construction in the Montlake area has the potential to overlap with the construction of the University Link Station at Husky Stadium. Station excavation and tunneling is currently scheduled to occur through early 2013, with construction of the station completed in early 2015. WSDOT is coordinating with the City of Seattle, UW, the UW Medical Center, King County Metro, and Sound Transit to develop mitigation strategies for effects in this area during construction.

Access to businesses and residences throughout the study area would remain open or a detour would be provided during the construction period. WSDOT would minimize traffic delays by phasing and scheduling construction activities outside of high traffic demand periods as much as possible. Construction of the new Montlake Interchange and lid would take approximately 56 months.

### West Approach Area

Construction effects in the west approach area would be similar to those described for Option A in the 2009 Discipline Report. The existing Lake Washington Boulevard eastbound on-ramp and westbound off-ramp, as well as the existing ramps from the R.H. Thomson Expressway, would be removed to make room for the construction work bridges and the west approach structure. All traffic would enter and exit SR 520 via Montlake Boulevard. During the first year of construction, several capacity improvements would be made to the intersections and ramps along Montlake Boulevard before closing the Lake Washington Boulevard ramps. These improvements would help offset the effects of the Lake Washington Boulevard ramp closure. As a result, economic effects related to congestion, access, and parking are not expected in the west approach area.



## Lake Washington

Economic effects of project construction in Lake Washington would be the same as described for Option A in the 2009 Discipline Report (page 67; WSDOT 2009a). The new Evergreen Point Bridge would be constructed on a parallel alignment to the existing bridge to maintain traffic on the existing bridge during construction and allow for a smooth transition to the new bridge once completed. Maintaining this important east-west crossing throughout construction would help minimize the overall economic effects of project construction.

## Eastside Transition Area

Economic effects of project construction in the Eastside transition area would be the same as described for Option A (see page 68 of the 2009 Land Use, Economics, and Relocations Discipline Report [WSDOT 2009a]). Restriping the HOV lanes in the eastbound and westbound directions from Evergreen Point Road to 92nd Avenue NE would occur at night, outside peak traffic periods. The restriping would take at least five nights, with up to one lane of SR 520 closed each night. However, short-term restriping activities would not cause any economic effects.

## Construction Effects on Land Use and Economics Compared to the SDEIS Options

Exhibit 12 summarizes the construction effects of the Preferred Alternative and Options A, K, and L.

Exhibit 12. Summary Comparison of Construction Effects of the Preferred Alternative and the SDEIS Options

Effects During Construction	Preferred Alternative	Option A	Option K	Option L
<b>Relocated Structures</b>	N/A	N/A	UW's WAC	UW's WAC
<b>Relocated Boat Slips</b>	All slips on south side of south dock at Queen City Yacht Club, 10 slips at Bayshore Condominiums	Similar to Preferred Alternative	Similar to Preferred Alternative	Similar to Preferred Alternative
<b>Parking Loss</b>	10	55	550	210
<b>Employment</b>	Similar to Option A	7,683	12,620	9,526

N/A = not applicable (effects do not apply)  
WAC = Waterfront Activities Center

## How would right-of-way acquisition and operation of the Preferred Alternative affect land use, relocations, and economics?

### Land Use Effects of Right-of-way Acquisition and Project Operation

Land use effects of right-of-way acquisition and operation of the Preferred Alternative would be similar to those described for Option A (see pages 69 through 80 of the Land Use, Economics, and



Relocations Discipline Report [WSDOT 2009a]). Exhibit 13 identifies the amount of land that would be converted to transportation right-of-way by existing land use. Exhibits 6 through 8 show the land that would be converted to right-of-way and the structures that would be affected by the Preferred Alternative.

Exhibit 13. Amount of Land Converted to WSDOT Right-of-Way by Type of Existing Land Use (Update to Exhibit 33 of the 2009 Discipline Report)

Existing Land Use	Land Converted to Right-of-Way (acres)			
	Preferred Alternative	Option A	Option K	Option L
Civic/Other	5.0	4.9	10.3	7.5
Park/open space	3.6	4.4	3.5	3.1
Single-family residential <sup>a</sup>	2.0	1.6 <sup>b</sup>	1.3 <sup>b</sup>	1.3 <sup>b</sup>
Commercial	0.0	0.2	0.0	0.0
<b>Total</b>	<b>10.6</b>	<b>11.1</b>	<b>15.1</b>	<b>11.9</b>

<sup>a</sup> Includes 1.2 acres in the city of Medina.

<sup>b</sup> Since the SDEIS was published, refinement of the project's construction staging requirements has identified the need for two additional property acquisitions (0.4 acre) south of the existing Portage Bay Bridge. Although the totals for Options A, K, and L have not been updated, these options would also include this effect.

Exhibit 14 identifies the number of acres and parcels, in part or in whole, that would be converted to right-of-way. Mitigation of these conversions is discussed in the 2009 Ecosystems and Recreation Discipline Reports (WSDOT 2009b and 2009c), their Addenda (WSDOT 2011d and 2011e), the Section 4(f) Evaluation (WSDOT 2011f), and Section 6(f) Environmental Evaluation (WSDOT 2011g).

Exhibit 14. Parcel Acquisitions (Update to Exhibit 34 of the 2009 Discipline Report)

Option	Full Acquisitions		Partial Acquisitions		Total	
	Parcels <sup>a</sup>	Acres	Parcels <sup>a</sup>	Acres	Parcels <sup>a</sup>	Acres
Preferred Alternative	9	4.5	13	6.1	22	10.6
Option A	7 <sup>b</sup>	4.0	19	7.1	26	11.1
Option K	6 <sup>b</sup>	4.0	8	11.1	14	15.1
Option L	5 <sup>b</sup>	3.8	8	8.1	13	11.9

<sup>a</sup> Parcel totals are based on King County Assessor data.

<sup>b</sup> Since the SDEIS was published, refinement of the project's construction staging requirements has identified the need for two additional property acquisitions (0.4 acre) south of the existing Portage Bay Bridge. Although the totals for Options A, K, and L have not been updated, these options would also include this effect.

## Seattle (I-5 Area, Portage Bay Area, Montlake Area, West Approach Area)

Design changes between the SDEIS options and the Preferred Alternative include a full lid, approximately 1,400 feet long, from the Montlake Boulevard overcrossing to the shoreline of Lake



Washington. The lid would provide a pedestrian-friendly landscaped open space in the central part of the Montlake neighborhood as well as improved facilities for local and regional transit.

Similar to Option A, the Preferred Alternative's lids would provide space for street right-of-way and passive recreational uses (such as pathways, benches, and landscaping). The lid at 10th and Delmar would be the same as described for Option A; however, instead of a lid at I-5, the Preferred Alternative would construct an enhanced pedestrian/bicycle crossing. Utility lines could cross SR 520 at the lid structures.

Since publication of the SDEIS, the alignment of the Portage Bay Bridge was modified to avoid directly affecting buildings located on the NOAA property. However, the Preferred Alternative includes a new alignment for the Bill Dawson trail, which results in 0.5 acre of the NOAA parcel converted for right-of-way.

As shown in Exhibit 15, the Preferred Alternative would affect no property in the I-5 area, 1.9 acres in the Portage Bay area, 6.6 acres in the Montlake area, and 0.9 acre in the west approach area. Attachment 2 lists all property acquisitions, including partial acquisitions, required for the Preferred Alternative.

Exhibit 15. Permanent Right-of-Way Effects (acres) (Update to Exhibit 35 of the 2009 Discipline Report)

Option	I-5 Area	Portage Bay Area	Montlake Area	West Approach Area	Lake Washington and Eastside Transition Areas	Total Effect
Preferred Alternative	0	1.9	6.6	0.9	1.2	10.6
Option A	<0.1	2.2 <sup>a</sup>	6.7	0.9	1.2	11.1
Option K	<0.1	1.0 <sup>a</sup>	11.4	1.4	1.2	15.1
Option L	<0.1	1.0 <sup>a</sup>	9.1	0.6	1.2	11.9

<sup>a</sup> Since the SDEIS was published, refinement of the project's construction staging requirements has identified the need for two additional property acquisitions south of the existing Portage Bay Bridge. Although the totals for Options A, K, and L have not been updated, these options would also include this effect.

## Lake Washington

Land use effects in the Lake Washington area would be similar to those described in the 2009 Land Use, Economics, and Relocations Discipline Report. New property boundary information discovered after publication of the SDEIS resulted in determining additional property effects in this area. An additional 1,300 square feet of permanent right-of-way and permanent maintenance airspace easements would be required for the project, and would affect another single-family residence not included in the SDEIS. This added effect would apply to the SDEIS options, as well as the Preferred Alternative. The Preferred Alternative would convert 1.2 acres of existing single-family residential land to WSDOT right-of-way. Exhibit 8 identifies the three affected parcels, which are located in Medina west of Evergreen Point Road. WSDOT has already acquired two properties. One of the two acquired parcels has a dock that would be permanently removed.





## Eastside Transition Area

Right-of-way acquisitions and operation effects of the Preferred Alternative in the Eastside transition area would be the same as described in the 2009 Land Use, Economics, and Relocations Discipline Report. The Preferred Alternative would be within the existing right-of-way and would not require the acquisition of any property.

## Relocation of Homes and Businesses

As shown in Exhibit 16, the Preferred Alternative would result in four relocations. Although its relocation effects are most similar to those of Option A, the major difference is that the Preferred Alternative would not relocate the NOAA Northwest Fisheries Science Center buildings or the Montlake 76 station. Relocation would be avoided because of an alignment shift to the south and removal of the auxiliary lane across the Portage Bay Bridge. Exhibit 16 compares the number of relocations under the Preferred Alternative to those for the SDEIS options.

Exhibit 16. Number of Preferred Alternative Relocation Effects (Update to Exhibit 42 of the 2009 Discipline Report)

Option	Seattle Study Area			Total
	Single-Family	Business	Civic/Other	
Preferred Alternative	4	0	1	5
Option A	3 <sup>b</sup>	1	2 <sup>a</sup>	6
Option K	1 <sup>b</sup>	0	2	3
Option L	1 <sup>b</sup>	0	1	2

<sup>a</sup> Refers to the NOAA campus as a whole. Nine of 11 buildings affected on this property would have been removed under Option A.

<sup>b</sup> Since the SDEIS was published, refinement of the project's construction staging requirements has identified the need for an additional residential relocation south of the existing Portage Bay Bridge. Although the totals for Options A, K, and L have not been updated, these options would also include this effect.

- The Preferred Alternative would remove two single-family residences in the Portage Bay/Roanoke neighborhood (locations shown in Exhibits 6 and 7). This effect would occur to accommodate the construction work bridge and staging area on the south side of the Portage Bay Bridge.
- Similar to Option A, two single-family residences would be removed in the Montlake neighborhood. These residences are located on the east side of Montlake Boulevard East immediately south of the Montlake Cut. These effects would occur to accommodate the new bascule bridge on Montlake Boulevard East across the Montlake Cut.
- As with all of the SDEIS options, the MOHAI building (shown in Exhibit 7) would be removed to accommodate the construction of a stormwater treatment wetland. The museum building straddles McCurdy and East Montlake parks. The Historical Society of Seattle and King County, which built the museum in 1952, deeded it at that time to the City of Seattle but retained a lease in perpetuity. On September 28, 2008, the Seattle City Council adopted Resolution 31092 to



authorize the parks director to negotiate relocating the museum, including the MOHAI collection, to a regional museum located at Lake Union Park. The relocation proposal was approved on July 6, 2009, although it may be some time before the relocation is complete. WSDOT is currently working with the City to purchase the MOHAI building.

## Economic Effects of Project Operation

Similar to the SDEIS options, the Preferred Alternative would implement tolling, improve traffic circulation and reduce congestion, and acquire right-of-way from taxable property (see pages 81 through 90 of the Land Use, Economics, and Relocations Discipline Report [WSDOT 2009a]). These effects are discussed in more detail below.

Tolling would provide a source of revenue to help pay for the project. Variable tolling, which charges different toll rates depending on the time of day and whether the trip is during peak or off-peak traffic hours, would be used, making a trip during peak traffic hours more expensive than trips at other times of day.

When tolls are in place, traffic volumes would go down and average speeds would increase when compared to the No Build Alternative (see the Final Transportation Discipline Report [WSDOT 2011c] for additional information on the effects of tolling). Part of the reduction in traffic volumes would be caused by people changing their travel modes from single-passenger vehicles to carpools, vanpools, transit, or other modes. Traffic volumes on SR 520 would also be reduced because people would divert to other parts of the transportation network to avoid paying the toll or change the timing of their trip in order to pay a lower toll.

The Preferred Alternative would improve traffic circulation along SR 520 compared to the No Build Alternative. These effects could attract customers from a broader geographic area and improve the commute time for employees of local businesses. Businesses that rely on the efficient movement of goods and services (such as business supply companies, service providers, and freight operators) would also benefit from improved mobility. The improved mobility would likely result in a small improvement in the economic prospects of businesses in the project corridor.

Businesses along the project corridor might experience a modest increase in retail sales activity because of the improved circulation and access. To the extent that customers would spend money that would not otherwise be spent in the area, sales tax revenues in Seattle could increase. However, the overall effect on any of the cities' tax revenues would probably be small.

Operation effects of the Preferred Alternative in the Lake Washington and Eastside areas would be the same as described for the SDEIS options (see page 88 of the 2009 Land Use, Economics, and Relocations Discipline Report [WSDOT 2009a]). As in Seattle, operation of the Evergreen Point Bridge would generally benefit businesses by improving traffic circulation and access to Seattle and the Eastside communities.



## Property Tax Effects

The total assessed value of the additional right-of-way acquired under the Preferred Alternative would be approximately \$11.8 million. Of this assessed value, approximately \$3.1 million would be taxable. Applying the 2008 tax levy rate for the City's portion of the taxable right-of-way, it is estimated that the loss of property tax revenue for the City of Seattle would be approximately \$8,600 (Exhibit 17). Because the initial property tax decrease would be less than 0.01 percent compared to the 2008 budgeted property tax revenues, the property acquisitions needed to construct the Preferred Alternative would not have a substantial effect on the City of Seattle's overall tax revenues.

Exhibit 17. Estimated Property Tax Effect – Seattle Area (Update to Exhibit 45 of the 2009 Discipline Report)

	Estimated Assessed Value of Right-of-Way	Estimated Taxable Value of Right-of-Way	Initial Property Tax Decrease	Budgeted 2008 Property Tax Revenues (percent)
Preferred Alternative	\$11,800,000	\$3,100,000	\$8,600	Less than 0.01
Option A	\$8,500,000 <sup>a</sup>	\$1,800,000	\$4,945	Less than 0.01
Option K	\$8,100,000 <sup>a</sup>	\$174,865	\$485	Less than 0.01
Option L	\$10,000,000 <sup>a</sup>	\$178,795	\$496	Less than 0.01

<sup>a</sup> Since the SDEIS was published, refinement of the project's construction staging requirements has identified the need for two additional property acquisitions (0.4 acre) south of the existing Portage Bay Bridge. Although the totals for Options A, K, and L have not been updated, these options would also include this effect.

The City of Medina would be the only city on the Eastside affected by property acquisitions and resulting initial property tax decreases. The Preferred Alternative, like the SDEIS options, would require acquisition of two properties for right-of-way. WSDOT has already acquired these two properties in Medina. The total assessed value of the additional acquired right-of-way is approximately \$1.1 million, all taxable. Applying the 2008 tax levy rate for the City's portion of the taxable right-of-way, it is estimated that the loss of property tax revenue for the City of Medina would be approximately \$920. Because the initial property tax decrease would be less than 0.01 percent compared to the 2008 budgeted property tax revenues, the property acquisitions would not have a substantial effect on the City of Medina's overall tax revenues.

## Parking and Access Effects

The Preferred Alternative would displace fewer parking stalls than any of the SDEIS options. As shown in Exhibit 18, the Bagley Viewpoint and MOHAI parking lots would be displaced. Loss of this parking is not expected to result in adverse economic effects because the use that creates the parking demand would also be relocated.

Although, the Preferred Alternative would not affect parking at the Hop-In-Market, it would result in permanent changes in access. The existing unconsolidated access into the Hop-In-Market from the



eastbound off-ramp and from Montlake Boulevard would be consolidated into one access point off East Roanoke Street.

Exhibit 18. Permanent Parking Acquisitions (Update to Exhibit 46 of the 2009 Discipline Report)

Location	Existing Parking Supply	Average Number of Spaces in Use	Preferred Alternative	Option A	Option K	Option L
Lot at Bagley Viewpoint	10	1	10	10	10	10
NOAA Northwest Fisheries Science Center	148	116	0	12	0	0
Montlake 76 station	5	4	0	5	0	0
Hop-In Market (west side and east side)	27	13	0	19	0	0
East Roanoke Street (on-street)	6	6	0	0	6	6
24th Avenue East (on-street)	5	1	0	0	1	0
MOHAI	150	59	150	150	150	150
Husky Stadium (E-11 and E-12)	1,175	1,164	0	0	20	171
Arboretum Lot of Lake Washington Boulevard	24	24	0	0	24	0
Total	1550	388	160	196	205	337

## Operation Effects on Land Use, Relocations, and Economics Compared to the SDEIS Options

Exhibit 19 summarizes the operation effects of the Preferred Alternative as compared to Options A, K, and L.

Exhibit 19. Summary Comparison of Operation Effects of the Preferred Alternative and the SDEIS Options

Effect during Operation	Preferred Alternative	Option A	Option K	Option L
Right-of-way Acquisition (acres)	10.6	11.1 <sup>a</sup>	15.1 <sup>a</sup>	11.9 <sup>a</sup>
Full Parcel Acquisition	9	7	6	5
Relocations	5	6	3	2
Initial Property Tax Decrease	\$8,600	\$4,945	\$485	\$496
Parking Loss	160	196	205	337

<sup>a</sup> Since the SDEIS was published, refinement of the project's construction staging requirements has identified the need for two additional property acquisitions (0.4 acre) south of the existing Portage Bay Bridge. Although the totals for Options A, K, and L have not been updated, these options would also include this effect.



## Would the project be consistent with state, regional, and local plans and development regulations?

The Preferred Alternative would be consistent with all applicable state, regional, and local transportation plans, land use plans, and local development regulations. A detailed consistency analysis of the 6-Lane Alternative was provided in the 2009 Land Use, Relocations, and Economics Discipline Report (pages 90 through 100 and Attachment 1; WSDOT 2009a).

## Mitigation

### What has been done to avoid or minimize negative effects?

Throughout the design process, WSDOT has taken care to avoid and minimize any adverse land use, economic, and relocation effects. The Preferred Alternative has minimized potential relocations and land use effects as described below:

- The width of the new Portage Bay Bridge has been reduced and its alignment has been shifted. This change has resulted in the avoidance of the NOAA Northwest Fisheries Science Center buildings that would have been displaced by Option A.
- The Montlake interchange has been reconfigured and the lid made larger. This change has resulted in the avoidance of the Montlake 76 station that would have been displaced by Option A.

### What would be done to mitigate negative effects that could not be avoided or minimized?

#### Mitigation for Effects of Project Construction

- Standard requirements for traffic maintenance would be established for construction activities to ensure that the desired level of mobility is maintained throughout the project duration. In addition to maintaining neighborhood and business access, the project work plan would include restricted closure hours and dates to accommodate special events.
- WSDOT would coordinate with business owners to reconfigure or provide alternative access for customers during construction.
- Signage that clearly marks detour routes and indicates that stores are open would notify customers that businesses are operating during construction.



- WSDOT would provide replacement moorage for affected slips at the Queen City Yacht Club and the Bayshore Condominiums.
- WSDOT would coordinate with the UW to ensure that any effects on parking availability would be minimized.
- The Final Transportation Discipline Report (WSDOT 2011c) identifies other potential mitigation measures to reduce traffic congestion effects during construction and operation of the Preferred Alternative.

## Mitigation for Effects of Project Operation

### Residential Relocations

WSDOT would work with owners and/or residents of identified relocations required by the Preferred Alternative. Mitigation for residents displaced by the Preferred Alternative would consist of relocation assistance in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended.

Relocated residents are eligible to receive relocation advisory services and certain monetary payments for moving and replacement housing costs. WSDOT would work with the affected property owners to identify specific needs and available replacement property in the vicinity. Relocation resources would be made available without discrimination. If WSDOT determined that insufficient housing existed, it would commit to Housing of Last Resort (Washington Administrative Code 468-100-404), which provides necessary housing in a number of ways and in a manner feasible for the individual situations.

### Business, Civic, and Other Relocations

Relocated businesses are eligible for advisory services and monetary payments for moving and reestablishment costs. WSDOT would work with the affected business owners to provide relocation assistance that would enable businesses to obtain comparable facilities. Properties would be acquired and relocated for the Preferred Alternative in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended. Relocation resources would be made available without discrimination.

If MOHAI has not moved to its new permanent location before construction begins in this area, WSDOT would assist MOHAI in moving to suitable interim or replacement facilities. WSDOT would also provide compensation for the loss of the MOHAI facilities in accordance with applicable policies and regulations for right-of-way acquisition.



## What negative effects would remain after mitigation?

The Preferred Alternative would convert 10.7 acres of land from existing uses to a transportation land use as WSDOT right-of-way (see Exhibit 13). Converting land to right-of-way would be an unavoidable, permanent effect because the effects would remain after construction and regardless of mitigation.

## References

The following list of references is in addition to those listed in the 2009 Land Use, Economics, and Relocations Discipline Report, I-5 to Medina: Bridge Replacement and HOV Project.

WSDOT. 2009a. *Land Use, Economics, and Relocations Discipline Report*. SR 520: I-5 to Medina Bridge Replacement and HOV Project. Supplemental Draft Environmental Impact Statement and Section 4(f)/6(f) Evaluation. SR 520 Bridge Replacement and HOV Program. WSDOT, Olympia, WA. December 2009.

WSDOT. 2009b. *Ecosystems Discipline Report*. SR 520: I-5 to Medina Bridge Replacement and HOV Project. Supplemental Draft Environmental Impact Statement and Section 4(f)/6(f) Evaluation. SR 520 Bridge Replacement and HOV Program. WSDOT, Olympia, WA.

WSDOT. 2009c. *Recreation Discipline Report*. SR 520: I-5 to Medina Bridge Replacement and HOV Project. Supplemental Draft Environmental Impact Statement and Section 4(f)/6(f) Evaluation. SR 520 Bridge Replacement and HOV Program. WSDOT, Olympia, WA.

WSDOT. 2010. *SR 520, I-5 to Medina: Bridge Replacement and HOV Project Supplemental Draft Environmental Impact Statement and Section 4(f)/6(f) Evaluation*. SR 520 Bridge Replacement and HOV Program. WSDOT, Olympia, WA. January 2010.

WSDOT. 2011a. *Description of Alternatives Discipline Report Addendum*. SR 520, I-5 to Medina: Bridge Replacement and HOV Project. WSDOT, Olympia, WA.

WSDOT. 2011b. *Construction Techniques and Activities Discipline Report Addendum and Errata*. SR 520, I-5 to Medina: Bridge Replacement and HOV Project. WSDOT, Olympia, WA.

WSDOT. 2011c. *Final Transportation Discipline Report*. SR 520, I-5 to Medina: Bridge Replacement and HOV Project. WSDOT, Olympia, WA.

WSDOT. 2011d. *Ecosystems Discipline Report Addendum and Errata*. SR 520, I-5 to Medina: Bridge Replacement and HOV Project. WSDOT, Olympia, WA.

WSDOT. 2011e. *Recreation Discipline Report Addendum and Errata*. SR 520, I-5 to Medina: Bridge Replacement and HOV Project. WSDOT, Olympia, WA.



WSDOT. 2011f. *Section 4(f) Evaluation, SR 520, I-5 to Medina: Bridge Replacement and HOV Project*. Prepared for Washington State Department of Transportation, Olympia, WA, and Federal Highway Administration, Washington, DC.

WSDOT. 2011g. *Section 6(f) Environmental Evaluation, SR 520, I-5 to Medina: Bridge Replacement and HOV Project*. Prepared for Washington State Department of Transportation, Olympia, WA, and Federal Highway Administration, Washington, DC.





# **Attachment 1**

## **Errata**



# Attachment 1

## Land Use, Economics, and Relocations Discipline Report Errata

The following table corrects errors in and provides clarifications to the Land Use, Economics, and Relocations Discipline Report (WSDOT 2009a). Information contained in this table does not change the results or conclusions of any analyses in the 2009 Discipline Report.

Page	Current Text	Corrected Text/Clarification
2	<ul style="list-style-type: none"> <li>The 6-Lane Alternative of the I-5 to Medina project would convert between approximately 11.1 and 15.7 acres of land from existing uses to a transportation land use as WSDOT right-of-way for the completed project. (The total acres affected depends on the option selected for the Montlake area.) In the Seattle study area (between I-5 and the floating span of the Evergreen Point Bridge), approximately 9.9 to 14.5 acres would be converted to transportation land use as WSDOT right-of-way (Exhibit 1).</li> </ul>	<ul style="list-style-type: none"> <li>The <del>6-Lane</del> <u>Preferred</u> Alternative of the <u>SR 520, I-5 to Medina</u> project would convert between approximately 11.1 and <del>15.7</del> <u>15.1</u> acres of land from existing uses to a transportation land use as WSDOT right-of-way for the completed project. (The total acres affected depends on the option selected for the Montlake area.) In the Seattle study area (between I-5 and the floating span of the Evergreen Point Bridge), approximately 9.9 to <del>14.5</del> <u>13.9</u> acres would be converted to transportation land use as WSDOT right-of-way (Exhibit 1).</li> </ul>
5	<ul style="list-style-type: none"> <li>Usual and accustomed fishing areas of tribal nations that have historically used the area’s aquatic resources and have treaty rights</li> </ul>	<ul style="list-style-type: none"> <li>Usual and accustomed fishing areas <u>of the Muckleshoot Tribe, which has</u> <del>tribal nations that have</del> historically used the area’s aquatic resources and <del>have</del> <u>treaty rights for their protection and use</u></li> </ul>
62	<p>It is possible that evening lane closures could affect businesses that receive much of their revenue in the evening, such as restaurants, theaters, gas stations, or other specialty retailers. As a result, some sales losses could be experienced by those businesses. However, SR 520 would not be the only (or even the main) road that customers of those businesses use. Thus, it is unlikely that many businesses would experience a substantial loss of sales from nighttime lane restrictions.</p>	<p>It is possible that evening lane closures could affect businesses that receive much of their revenue in the evening, such as restaurants, theaters, gas stations, <u>yacht clubs</u>, or other specialty retailers. As a result, some sales losses could be experienced by those businesses. However, SR 520 would not be the only (or even the main) road that customers of those businesses use. Thus, it is unlikely that many businesses would experience a substantial loss of sales from nighttime lane restrictions.</p>



Page	Current Text	Corrected Text/Clarification
71	<p>In total, Option K would affect 14.5 acres from 12 King County assessor parcels and DNR public property in the Seattle study area as follows: less than 0.1 acre in the I-5 area, 1.8 acres in the Portage Bay area, 11.4 acres in the Montlake area, and 1.3 acres in the west approach area (Exhibit 35).</p>	<p>In total, Option K would affect <del>14.5</del> <u>13.9</u> acres from 12 King County assessor parcels and DNR public property in the Seattle study area as follows: less than 0.1 acre in the I-5 area, <del>1.8</del> <u>1.0</u> acres in the Portage Bay area, 11.4 acres in the Montlake area, and 1.3 acres in the west approach area (Exhibit 35).</p>
73	<p>Option K would convert the following existing land uses to transportation land use as WSDOT right-of-way in the Seattle study area (Exhibit 33):</p> <ul style="list-style-type: none"> <li>• Civic/quasipublic – 10.3 acres</li> <li>• Park/open space – 4.1 acres</li> <li>• Single-family residential – 0.1 acre</li> </ul>	<p>Option K would convert the following existing land uses to transportation land use as WSDOT right-of-way in the Seattle study area (Exhibit 33):</p> <ul style="list-style-type: none"> <li>• Civic/quasipublic – 10.3 acres</li> <li>• Park/open space – <del>4.1</del> <u>3.5</u> acres</li> <li>• Single-family residential – 0.1 acre</li> </ul>
78	<p><b>Civic and quasipublic effects.</b> Option A would affect the NOAA Northwest Fisheries Science Center located directly north of SR 520 along the eastern shore of Portage Bay. This research complex contains multiple buildings. The original building is known as the North Campus. The other facilities at the research center consist mainly of smaller buildings, which are primarily referred to as the South Campus.</p>	<p><b>Civic and other effects.</b> Option A would affect the NOAA Northwest Fisheries Science Center located directly north of SR 520 along the eastern shore of Portage Bay. This research complex contains multiple buildings. <u>Scientists with offices and laboratories in the building on the north side of the Montlake property use the buildings on the south side of the property as an integrated part of their research projects. The original building is known as the North Campus. Buildings on the north consist of a Library/Auditorium, a West Building and an East Building.</u> The other facilities at the research center consist mainly of smaller buildings, which are primarily referred to as the South Campus.</p>
101	<ul style="list-style-type: none"> <li>• The 6-Lane Alternative would primarily occur within the existing right-of-way. This would minimize relocations. Only approximately 11.1 to 15.7 acres of land would be converted from their existing uses to a transportation land use as WSDOT right-of-way to construct the 6-Lane Alternative, depending on the option selected.</li> </ul>	<ul style="list-style-type: none"> <li>• The <del>6-Lane</del> <u>Preferred</u> Alternative would primarily occur within the existing right-of-way. This would minimize relocations. Only approximately 11.1 to <del>15.7</del> <u>15.1</u> acres of land would be converted from their existing uses to a transportation land use as WSDOT right-of-way to construct the <u>Preferred</u> <del>6-Lane</del> Alternative, depending on the option selected.</li> </ul>



Page	Current Text	Corrected Text/Clarification
103	<p><b>Queen City Yacht Club.</b> The Queen City Yacht Club might not have room on its current property to relocate or replace the moorages on the south dock that would be removed during construction. Future discussions with staff of the Queen City Yacht Club would be necessary to determine the feasibility of replacement moorage within the existing area of the facility during construction.</p>	<p><b>Queen City Yacht Club.</b> The Queen City Yacht Club might not have room on its current property to relocate or replace the moorages on the south dock that would be removed during construction. <u>Any replacement would need to be done in accordance with Seattle Shoreline Master Program requirements.</u> Future discussions with staff of the Queen City Yacht Club would be necessary to determine the feasibility of replacement moorage within the existing area of the facility during construction.</p>
104	<p><b>NOAA Northwest Fisheries Science Center.</b> Nine of the eleven NOAA South Campus buildings would be removed. The functions of the two buildings that would not be removed are tied to the functions of the nine buildings that would be removed. Therefore, the functions of these two buildings would need to be relocated. WSDOT is coordinating with NOAA on mitigating the effects of relocating these facilities. However, it is important to note that, although the research center is located on Portage Bay, none of the existing research facilities depends on receiving water from the bay.</p>	<p><b>NOAA Northwest Fisheries Science Center.</b> Nine of the eleven NOAA South Campus buildings would be removed. The functions of the two buildings that would not be removed are tied to the functions of the nine buildings that would be removed. Therefore, the functions of these two buildings would need to be relocated. WSDOT is coordinating with NOAA on mitigating the effects of relocating these facilities. <del>However, it is important to note that, although the research center is located on Portage Bay, none of the existing research facilities depends on receiving water from the bay.</del> <u>Relocations, if required, would need careful planning to avoid adverse effects on work at NWFSC laboratories that include a substantial number of sensitive instruments such as electron microscopes and genetic adjustment and fish-rearing facilities.</u></p>
105	<p>Between 11.1 and 15.7 acres of land would be converted from their existing uses to a transportation land use as WSDOT right-of-way, depending on the option selected.</p>	<p>Between 11.1 and <del>15.7</del> <u>15.1</u> acres of land would be converted from their existing uses to a transportation land use as WSDOT right-of-way, depending on the option selected.</p>





## **Attachment 2**

# **Preferred Alternative Required Permanent Property Acquisitions**





# Attachment 2

## Preferred Alternative Required Permanent Property Acquisitions

King County Parcel Number	Existing Land Use	Existing Parcel Size (acres)	Acres Acquired	Full Acquisition	Relocation
2025049007	Seattle Preparatory School	Unknown	<0.01	No	No
1952200015	Single-family residential	0.14	0.14	Yes	Yes
1952200020	Single-family residential	0.16	0.16	Yes	No
1952200025	Single-family residential	0.26	0.26	Yes	No
4089400080	Water	0.24	0.03	No	No
4088800340	Water	0.04	0.04	No	No
6788202280	Park/open space (submerged land - Montlake Playfield)	17.43	1.19	No	No
8805901082	Seattle Parks	0.64	0.09	No	No
8805900001	NOAA	4.15	0.5	No	No
8805900002	Park/open space (vacant land - zoned commercial - not park)	0.98	0.98	Yes	No
5605000450	MOHAI	0.25	0.25	No	No
5605000646	MOHAI (East Montlake Park)	2.6	1.04	No	Yes
4116100015	MOHAI (McCurdy Park)	1.49	1.49	Yes	Yes
5605000595	Single-family residential	0.13	0.13	Yes	Yes
5605000590	Single-family residential	0.11	0.11	Yes	Yes
1625049001	UW	476.05	0.03	No	No
2125049048	MOHAI (East Montlake Park)	2.99	1.55	No	Yes
4114600275	Arboretum (Foster Island)	11.25	0.98	No	No
Department of Natural Resources	Park/open space	N/A	0.49	No	No
2425049177	Single-family residential	0.64	0.64	Yes	No
2425049259	Single-family residential	0.54	0.54	Yes	No
2425049099	Single-family residential	0.49	0.03	No	No



