

Visual Quality and Aesthetics Discipline Report

SR 520: I-5 to Medina Bridge
Replacement and HOV Project
Supplemental Draft EIS

**Visual Quality and Aesthetics
Discipline Report**



Prepared for

**Washington State Department of Transportation
Federal Highway Administration**

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Acronyms and Abbreviations

ATM	active traffic management
BMP	best management practice
EIS	environmental impact statement
FHWA	Federal Highway Administration
GIS	geographic information system
HCT	high-capacity transit
HOV	high-occupancy vehicle
I-5	Interstate 5
I-5 to Medina project	I-5 to Medina: Bridge Replacement and HOV Project
Medina to SR 202 project	Medina to SR 202: Eastside Transit and HOV Project
MOHAI	Museum of History and Industry
NEPA	National Environmental Policy Act
NOAA	National Oceanic and Atmospheric Administration
NRHP	National Register of Historic Places
SDEIS	Supplemental Draft EIS
SEPA	State Environmental Policy Act
SPUI	single-point urban interchange
SR	State Route
SR 520 Program	SR 520 Bridge Replacement and HOV Program
USGS	U.S. Geological Survey
UW Open Space	University of Washington Open Space
WSDOT	Washington State Department of Transportation



Introduction

Why are visual quality and aesthetics considered in an environmental impact statement?

The construction or modification of our roadways, which are publicly owned, can considerably affect the quality and character of the landscape (FHWA 1989). Understanding the effects of a proposed project and its alternatives on the visual quality of the landscape is an integral part of any environmental impact statement (EIS). The National Environmental Policy Act (NEPA) requires that all actions “sponsored, funded, permitted, or approved by federal agencies undergo planning to ensure that environmental considerations such as effects related to aesthetics and visual quality are given due weight in project decision-making” (WSDOT 2004a).

To ensure that potential changes to visual quality and aesthetics resulting from a transportation project are adequately and objectively considered during the NEPA process, it is critical that an accepted, systematic assessment process be used. The Federal Highway Administration’s (FHWA) visual quality assessment method (FHWA 1989) is the industry standard used for this assessment of the I-5 [Interstate 5] to Medina: Bridge Replacement and High-Occupancy Vehicle (HOV) project. FHWA developed this assessment method on behalf of communities in proximity to proposed transportation projects, as a way to consider the potential visual effects. The method is rigorous and systematic with a specific ranking system for evaluating visual effects. Definitions for the low, moderate, and high-level effect rankings for visual quality assessment are provided in Exhibit 8 in the Affected Environment section.

What are the key points of this report?

The greatest effects on visual quality and character in the State Route (SR) 520 corridor are summarized in the bulleted list below. These effects are discussed in greater detail in the sections that follow. The proposed project options are discussed in the *What are the project alternatives?* section.



- Construction impacts would cause temporary, but in some instances, substantial changes to visual quality and character for periods ranging from months to up to 4 years, depending on the geographic area. Briefly, they would include:
 - Construction effects in the I-5, Portage Bay Bridge, and Lake Washington geographic areas would be the same for Options A, K, and L and for the Phased Implementation scenario. Effects would be due to demolition of existing structures, removal of vegetation, construction of temporary work and detour bridges, presence of heavy construction equipment, temporary erosion and sedimentation control, and temporary closure and re-routing of existing trails and local streets.
 - Construction effects in the Montlake and west approach areas would vary among Options A, K, and L. Option A would result in the lowest number of visual changes. Option K would have substantial (high-level) effects on visual quality due to the presence of boring equipment for the Montlake Cut tunnel, removal and hauling of excavation materials, the presence of barges for construction of the land bridge at Foster Island, and the removal of swaths of vegetation for the tunnel, particularly along the shoreline. Option L would have effects on visual quality comparable to those of Option K. These effects would be due to the presence of construction barges for the proposed new bascule bridge (drawbridge) across the Montlake Cut.
- The addition of lids over I-5 at Roanoke Street, over SR 520 between 10th Avenue East and Delmar Drive East, and at Montlake Boulevard would hide the roadway and provide landscaped connections between the communities.
- Under Option A, a new drawbridge parallel to the existing historic bridge would alter the setting of the historic bridge and change the visual quality of views along the canal when the established vegetation is removed.
- Under Option A, the bridge over Foster Island would be higher than the existing bridge and the bridge proposed for Option L.
- Option K would result in substantial effects on visual character and quality in the Montlake area. The single-point urban interchange (SPUI) under the mainline and the tunnel entrance would replace the existing ramp weaves, tree buffers, and shoreline with terraces



of very tall retaining walls, columns for the mainline, and more road surfaces at the shoreline in Montlake. These structures would dominate views much more than the existing ramps and mainline because the layers of tree buffers would be gone, with limited ability to replace the trees.

- Option K would result in substantial effects on visual character and quality in the southeast campus of the University of Washington. The new Pacific Street/Montlake Boulevard intersection and a partial lid would create a complex, multi-layered visual field.
- Option K would result in the greatest effects on visual quality and character on Foster Island because of the removal of naturalized woodlands on both sides of SR 520 for the creation of the land bridge.
- The Option L bridge on Foster Island would be wider than the existing bridge but similar in height. The Foster Island trail may pass under SR 520 via a tunnel as it does today.
- Option L would result in substantial effects on visual character and quality in the Montlake area due to the addition of an SPUI over the mainline and a new bridge through East Montlake Park. The new structures would replace the existing ramp weaves, tree buffers, and shoreline with terraces of columns for the mainline and overhead road surface. These structures would dominate views much more than the existing ramps and mainline because the layers of tree screens would be gone, with limited ability to replace the trees.
- Option L would result in substantial effects on visual character and quality in the southeast campus of the University of Washington. The bascule drawbridge or its approach bridge would pass near the university's Waterfront Activities Center and Canoe House, as well as by a portion of what is known as the University of Washington Open Space (UW Open Space) farther west. The new Pacific Street/Montlake Boulevard intersection would create a complex, multi-layered visual field, which would be compounded by the addition of a full lid under Option L.
- The addition of sound walls under any of the options, if desired by the neighborhoods, would make the roadway look thicker at the locations approved for sound walls. The apparent extra thickness would make the structure much more visible when seen from the



outside. Sound walls would also eliminate many of the lateral parts of scenic views that are character defining and contribute to the high visual quality of driving on SR 520 through Seattle.

- Operational effects on visual quality due to the Phased Implementation scenario would be comparable to those of Option A.

What is the I-5 to Medina: Bridge Replacement and HOV Project?

The Interstate 5 (I-5) to Medina: Bridge Replacement and High-Occupancy Vehicle (HOV) Project is part of the State Route (SR) 520 Bridge Replacement and HOV Program (SR 520 Program) (detailed in the text box below) and encompasses parts of three main geographic areas—Seattle, Lake Washington, and the Eastside. The project area includes the following:

- Seattle communities: Portage Bay/Roanoke, North Capitol Hill, Montlake, University District, Laurelhurst, and Madison Park
- Eastside communities: Medina, Hunts Point, Clyde Hill, and Yarrow Point
- The Lake Washington ecosystem and associated wetlands
- Usual and accustomed fishing areas of tribal nations that have historically used the area's aquatic resources and have treaty rights

What is the SR 520 Program?

The **SR 520 Bridge Replacement and HOV Program** will enhance safety by replacing the aging floating bridge and keep the region moving with vital transit and roadway improvements throughout the corridor. The 12.8-mile program area begins at I-5 in Seattle and extends to SR 202 in Redmond.

In 2006, WSDOT prepared a Draft EIS—published formally as the **SR 520 Bridge Replacement and HOV Project**—that addressed corridor construction from the I-5 interchange in Seattle to just west of I-405 in Bellevue. Growing transit demand on the Eastside and structure vulnerability in Seattle and Lake Washington, however, led WSDOT to identify new projects, each with a separate purpose and need, that would provide benefit even if the others were not built. These four independent projects were identified after the Draft EIS was published in 2006, and these now fall under the umbrella of the entire **SR 520 Bridge Replacement and HOV Program**:

- **I-5 to Medina: Bridge Replacement and HOV Project** replaces the SR 520 roadway, floating bridge approaches, and floating bridge between I-5 and the eastern shore of Lake Washington. This project spans 5.2 miles of the SR 520 corridor.
- **Medina to SR 202: Eastside Transit and HOV Project** completes and improves the transit and HOV system from Evergreen Point Road to the SR 202 interchange in Redmond. This project spans 8.6 miles of the SR 520 corridor.
- **Pontoon Construction Project** involves constructing the pontoons needed to restore the Evergreen Point Bridge in the event of a catastrophic failure and storing those pontoons until needed.
- **Lake Washington Congestion Management Project**, through a grant from the U.S. Department of Transportation, improves traffic using tolling, technology and traffic management, transit, and telecommuting.



The SR 520 Bridge Replacement and HOV Project Draft Environmental Impact Statement (EIS), published in August 2006, evaluated a 4-Lane Alternative, a 6-Lane Alternative, and a No Build Alternative. Since the Draft EIS was published, circumstances surrounding the SR 520 corridor have changed in several ways. These changes have resulted in decisions to forward advance planning for potential catastrophic failure of the Evergreen Point Bridge, respond to increased demand for transit service on the Eastside, and evaluate a new set of community-based designs for the Montlake area in Seattle.

To respond to these changes, the Washington State Department of Transportation (WSDOT) and the Federal Highway Administration (FHWA) initiated new projects to be evaluated in separate environmental documents. Improvements to the western portion of the SR 520 corridor—known as the I-5 to Medina: Bridge Replacement and HOV Project (the *I-5 to Medina project*)—are being evaluated in a Supplemental Draft EIS (SDEIS); this discipline report is a part of that SDEIS. Project limits for this project extend from I-5 in Seattle to 92nd Avenue NE in Yarrow Point, where it transitions into the Medina to SR 202: Eastside Transit and HOV Project (the *Medina to SR 202 project*). Exhibit 1 shows the project vicinity.

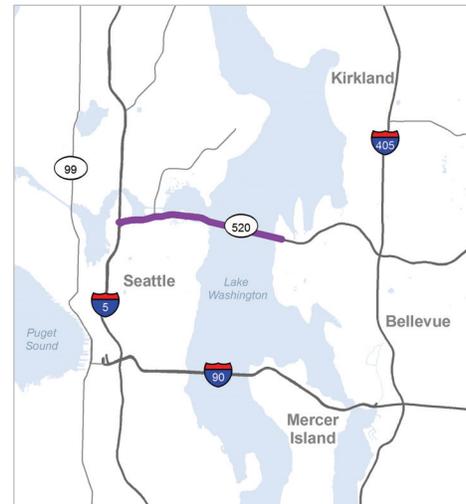


Exhibit 1. Project Vicinity Map

What are the project alternatives?

As noted above, the Draft EIS evaluated a 4-Lane Alternative, a 6-Lane Alternative (including three design options in Seattle), and a No Build Alternative. In 2006, following Draft EIS publication, Governor Gregoire identified the 6-Lane Alternative as the state's preference for the SR 520 corridor, but urged that the affected communities in Seattle develop a common vision for the western portion of the corridor. Accordingly, a mediation group convened at the direction of the state legislature to evaluate the corridor alignment for SR 520 through Seattle. The mediation group identified three 6-lane design options for SR 520 between I-5 and the floating span of the Evergreen Point Bridge; these options were documented in a Project Impact Plan (Parametrix 2008). The SDEIS evaluates the following:

- No Build Alternative
- 6-Lane Alternative
 - Option A



- Option K
- Option L

These alternatives and options are summarized below. The 4-Lane Alternative and the Draft EIS 6-lane design options have been eliminated from further consideration. More information on how the project has evolved since the Draft EIS was published in 2006, as well as more detailed information on the design options, is provided in the Description of Alternatives Discipline Report (WSDOT 2009a).

What is the No Build Alternative?

Under the No Build Alternative, SR 520 would continue to operate between I-5 and Medina as it does today: as a 4-lane highway with nonstandard shoulders and without a bicycle/pedestrian path. (Exhibit 2 depicts a cross section of the No Build Alternative.) No new facilities would be added to SR 520 between I-5 and Medina, and none would be removed, including the unused R.H. Thomson Expressway ramps near the Washington Park Arboretum. WSDOT would continue to manage traffic using its existing transportation demand management and intelligent transportation system strategies.

The No Build Alternative assumes that the Portage Bay and Evergreen Point bridges would remain standing and functional through 2030 and that no catastrophic events, such as earthquakes or extreme storms, would cause major damage to the bridges. The No Build Alternative also assumes completion of the Medina to SR 202 project as well as other regionally planned and programmed transportation projects. The No Build Alternative provides a baseline against which project analysts can measure and compare the effects of each 6-Lane Alternative build option.

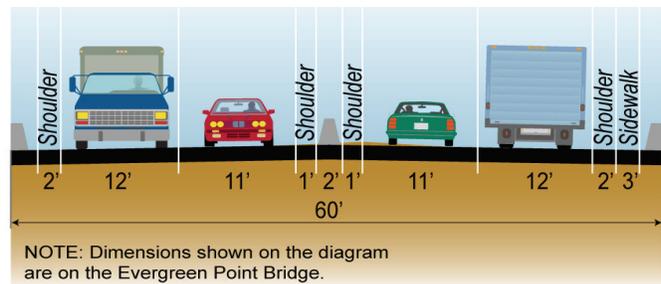


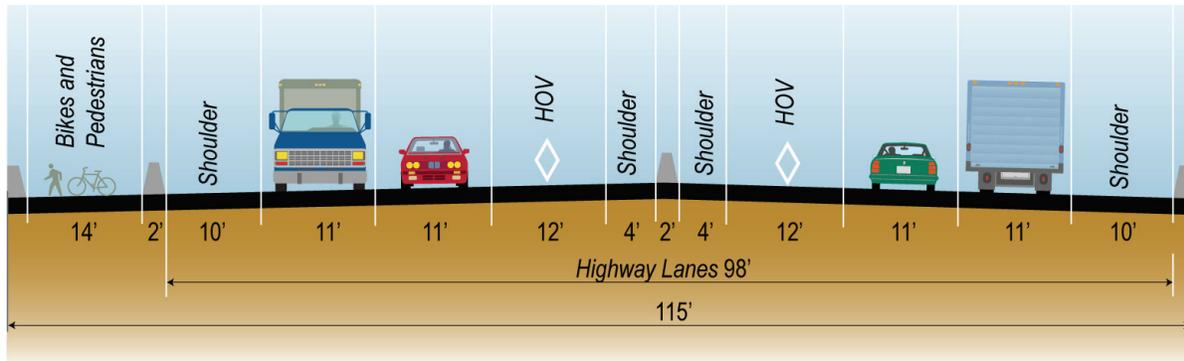
Exhibit 2. No Build Alternative Cross Section

What is the 6-Lane Alternative?

The 6-Lane Alternative would complete the regional HOV connection (3+ HOV occupancy) across SR 520. This alternative would include six lanes (two 11-foot-wide outer general-purpose lanes and one 12-foot-wide inside HOV lane in each direction), with 4-foot-wide inside and 10-foot-wide outside shoulders (Exhibit 3). The proposed width of the



roadway would be approximately 18 feet narrower than the one described in the Draft EIS, reflecting public comment from local communities and the City of Seattle.



NOTE: Dimensions shown on the diagram are on the Evergreen Point Bridge.

Exhibit 3. 6-Lane Alternative Cross Section

SR 520 would be rebuilt from I-5 to Evergreen Point Road in Medina and restriped and reconfigured from Evergreen Point Road to 92nd Avenue NE in Yarrow Point. A 14-foot-wide bicycle/pedestrian path would be built along the north side of SR 520 through the Montlake area and across the Evergreen Point Bridge, connecting to the regional path on the Eastside. A bridge maintenance facility and dock would be built underneath the east approach to the Evergreen Point Bridge.

The sections below describe the 6-Lane Alternative and design options in each of the three geographical areas the project would encompass.

Seattle

Elements Common to the 6-Lane Alternative Options

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. WSDOT would replace the Portage Bay Bridge and the Evergreen Point Bridge (including the west approach and floating span), as well as the existing local street bridges across SR 520. New stormwater facilities would be constructed for the project to provide stormwater retention and treatment. The project would include landscaped lids across SR 520 at I-5, 10th Avenue East and Delmar Drive East, and in the Montlake area to help reconnect the communities on either side of the roadway. The project would also remove the Montlake freeway transit station.



The most substantial differences among the three options are the interchange configurations in the Montlake and University of Washington areas. Exhibit 4 depicts these key differences in interchange configurations, and the following text describes elements unique to each option.

Option A

Option A would replace the Portage Bay Bridge with a new bridge that would include six lanes (four general-purpose lanes, two HOV lanes) plus a westbound auxiliary lane.

WSDOT would replace the existing interchange at Montlake Boulevard East with a new, similarly configured interchange that would include a transit-only off-ramp from westbound SR 520 to northbound Montlake Boulevard. The Lake Washington Boulevard ramps and the median freeway transit stop near Montlake Boulevard East would be removed, and a new bascule bridge (i.e., drawbridge) would be added to Montlake Boulevard NE, parallel to the existing Montlake Bridge. SR 520 would maintain a low profile through the Washington Park Arboretum and flatten out east of Foster Island, before rising to the west transition span of the Evergreen Point Bridge. Citizen recommendations made during the mediation process defined this option to include sound walls and/or quieter pavement, subject to neighborhood approval and WSDOT's reasonability and feasibility determinations.

Suboptions for Option A would include adding an eastbound SR 520 on-ramp and a westbound SR 520 off-ramp to Lake Washington Boulevard, creating an intersection similar to the one that exists today but relocated northwest of its current location. The suboption would also include adding an eastbound direct access on-ramp for transit and

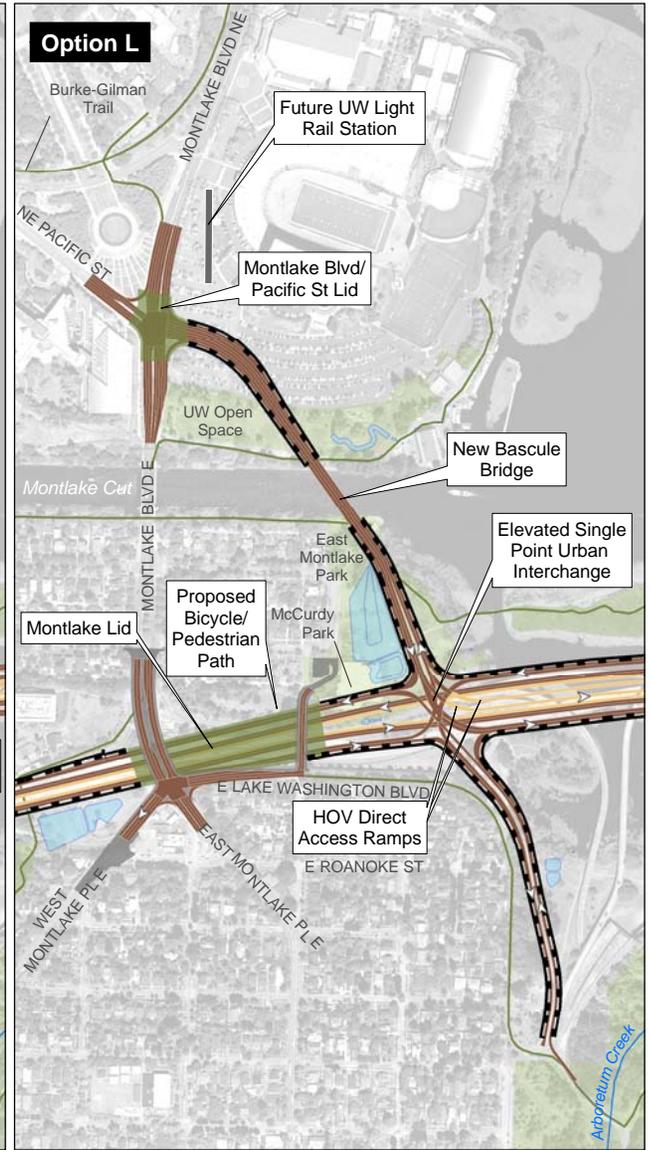
Is it a highrise or a transition span?



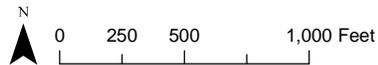
A transition span is a bridge span that connects the fixed approach bridge to the floating portion of the bridge. The Evergreen Point Bridge has two transition spans, one at the west end of the floating bridge transitioning traffic on and off of the west approach, and one on the east end of the floating bridge transitioning traffic on and off of the east approach. These spans are often referred to as the “west highrise” (shown) and the “east highrise” during the daily traffic report, and the west highrise even has a traffic camera mounted on it.

Today's highrises have two characteristics—large overhead steel trusses and navigation channels below the spans where boat traffic can pass underneath the Evergreen Point Bridge. The new design for the floating bridge would not include overhead steel trusses on the transition spans, which would change the visual character of the highrise. For the SDEIS, highrise and transition span are often used interchangeably to refer to the area along the bridge where the east and west approach bridges transition to the floating bridge.





- Potential Sound Wall
- Existing Regional Bicycle/Pedestrian Path
- Tunnel
- Lid or Landscape Feature
- Proposed Bicycle/Pedestrian Path
- Stormwater Facility
- General-Purpose Lane
- HOV, Direct Access, and/or Transit-Only Lane
- Future UW Light Rail Station
- Park



Source: King County (2006) Aerial Photo, King County (2005) GIS Data (Streams), City of Seattle (1994) GIS Data (Bike/Ped Trail), Seattle Bicycle Map (2008) GIS Data (Bike/Ped Trail) CH2M HILL (2008) GIS Data (Park). Horizontal datum for all layers is NAD83(91); vertical datum for layers is NAVD88.

Exhibit 4. Options A, K, and L: Montlake and University of Washington Areas

I-5 to Medina: Bridge Replacement and HOV Project

HOV from Montlake Boulevard East, and providing a constant slope profile from 24th Avenue East to the west transition span.

Option K

Option K would also replace the Portage Bay Bridge, but the new bridge would include four general-purpose lanes and two HOV lanes with no westbound auxiliary lane. In the Montlake area, Option K would remove the existing Montlake Boulevard East interchange and the Lake Washington Boulevard ramps and replace their functions with a depressed, single-point urban interchange (SPUI) at the Montlake shoreline. Two HOV direct-access ramps would serve the new interchange, and a tunnel under the Montlake Cut would move traffic from the new interchange north to the intersection of Montlake Boulevard NE and NE Pacific Street. SR 520 would maintain a low profile through Union Bay, make landfall at Foster Island, and remain flat before rising to the west transition span of the Evergreen Point Bridge. A land bridge would be constructed over SR 520 at Foster Island. Citizen recommendations made during the mediation process defined this option to include only quieter pavement for noise abatement, rather than the sound walls that were included in the 2006 Draft EIS. However, because quieter pavement has not been demonstrated to meet all FHWA and WSDOT avoidance and minimization requirements in tests performed in Washington State, it cannot be considered as noise mitigation under WSDOT and FHWA criteria. As a result, sound walls could be included in Option K. The decision to build sound walls depends on neighborhood interest, the findings of the Noise Discipline Report (WSDOT 2009d), and WSDOT's reasonability and feasibility determinations.

A suboption for Option K would include constructing an eastbound off-ramp to Montlake Boulevard East configured for right turns only.

Option L

Under Option L, the Montlake Boulevard East interchange and the Lake Washington Boulevard ramps would be replaced with a new, elevated SPUI at the Montlake shoreline. A bascule bridge (drawbridge) would span the east end of the Montlake Cut, from the new interchange to the intersection of Montlake Boulevard NE and NE Pacific Street. This option would also include a ramp connection to Lake Washington Boulevard and two HOV direct-access ramps providing service to and from the new interchange. SR 520 would maintain a low, constant slope profile from 24th Avenue East to just west of the west transition span of



the floating bridge. Noise mitigation identified for this option would include sound walls as defined in the Draft EIS.

Suboptions for Option L would include adding a left-turn movement from Lake Washington Boulevard for direct access to SR 520 and adding capacity on northbound Montlake Boulevard NE to NE 45th Street.

Lake Washington

Floating Bridge

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 (Exhibit 5). Rows of three 10-foot-tall concrete columns would support the roadway above the pontoons, and the new spans would be approximately 22 feet higher than the existing bridge. A 14-foot-wide bicycle/pedestrian path would be located on the north side of the bridge.

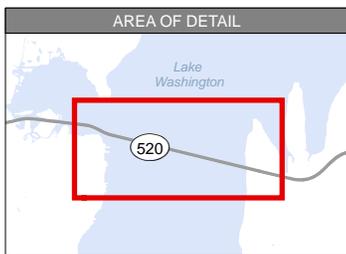
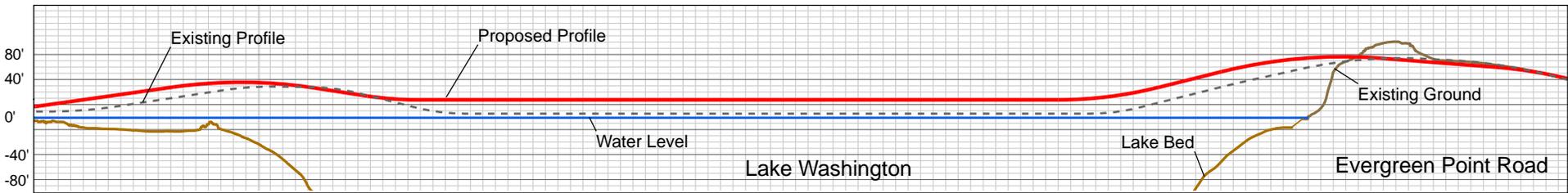
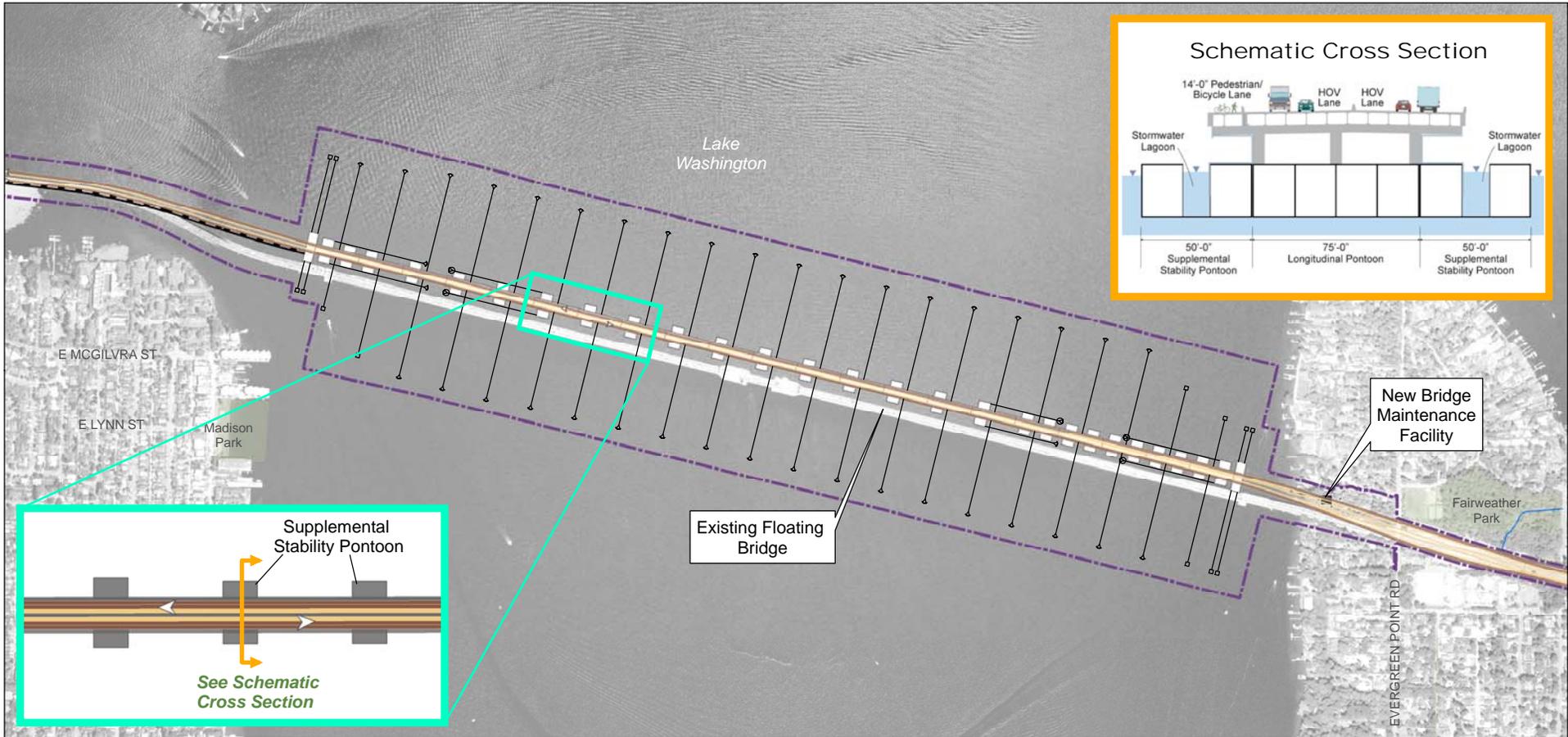
The design for the new 6-lane floating bridge includes 21 longitudinal pontoons, two cross pontoons, and 54 supplemental stability pontoons. A single row of 75-foot-wide by 360-foot-long longitudinal pontoons would support the new floating bridge. One 240-foot-long by 75-foot-wide cross-pontoon at each end of the bridge would be set perpendicularly to the longitudinal pontoons. The longitudinal pontoons would be bolstered by the smaller supplemental stability pontoons on each side for stability and buoyancy. 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. As with the existing floating bridge, the floating pontoons for the new bridge would be anchored to the lake bottom to hold the bridge in place.

Near the east approach bridge, the roadway would be widened to accommodate transit ramps to the Evergreen Point Road transit stop. Exhibit 5 shows the alignment of the floating bridge, the west and east approaches, and the connection to the east shore of Lake Washington.

Bridge Maintenance Facility

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





- Anchor and Cable
- Pontoons
- Limits of Construction
- Proposed Bicycle/Pedestrian Path
- General-Purpose Lanes
- 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 5. 6-Lane Alternative at the Evergreen Point Bridge (Common to All Options)
I-5 to Medina: Bridge Replacement and HOV Project

maintenance facility would include a working dock, an approximately 7,200-square-foot maintenance building, and a parking area.



Exhibit 6. Possible Towing Route and Pontoon Outfitting Locations

Eastside Transition Area

The I-5 to Medina project and the Medina to SR 202 project overlap between Evergreen Point Road and 92nd Avenue NE in Yarrow Point. Work planned as part of the 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 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 I-5 to Medina project improvements into the improvements to be completed as part of the Medina to SR 202 project.

Pontoon Construction and Transport

If the floating portion of the Evergreen Point Bridge does not fail before its planned replacement, WSDOT would use the pontoons constructed and stored as part of the Pontoon Construction Project in the I-5 to Medina project. Up to 11 longitudinal pontoons built and stored in



Grays Harbor as part of the Pontoon Construction Project would be towed from a moorage location in Grays Harbor to Puget Sound for outfitting (see the sidebar to the right for an explanation of pontoon *outfitting*). All outfitted pontoons, as well as the remaining pontoons stored at Grays Harbor 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. Exhibit 6 illustrates the general towing route from Grays Harbor to Lake Washington, and identifies potential outfitting locations.

What is Outfitting?

Pontoon outfitting is a process by which the columns and elevated roadway of the bridge are built directly on the surface of the pontoon.

The I-5 to Medina project would build an additional 44 pontoons needed to complete the new 6-lane floating bridge. The additional pontoons could be constructed at the existing Concrete Technology Corporation facility in Tacoma, and/or at a new facility in Grays Harbor that is also being developed as part of the Pontoon Construction Project. The new supplemental stability pontoons would be towed from the construction location to Lake Washington for incorporation into the floating bridge. For additional information about pontoon construction, please see the Construction Techniques Discipline Report (WSDOT 2009b).

Would the project be built all at once or in phases?

Revenue sources for the I-5 to Medina project would include allocations from various state and federal sources and from future tolling, but there remains a gap between the estimated cost of the project and the revenue available to build it. Because of these funding limitations, there is a strong possibility that WSDOT would construct the project in phases over time.

If the project is phased, WSDOT would first complete one or more of those project components that are vulnerable to earthquakes and windstorms; these components include the following:

- The floating portion of the Evergreen Point Bridge, which is vulnerable to windstorms. This is the highest priority in the corridor because of the frequency of severe storms and the high associated risk of catastrophic failure.
- The Portage Bay Bridge, which is vulnerable to earthquakes. This is a slightly lower priority than the floating bridge because the



frequency of severe earthquakes is significantly less than that of severe storms.

- The west approach of the Evergreen Point Bridge, which is vulnerable to earthquakes (see comments above for the Portage Bay Bridge).

Exhibit 7 shows the vulnerable portions of the project that would be prioritized, as well as the portions that would be constructed later. The vulnerable structures are collectively referred to in the SDEIS as the Phased Implementation scenario. It is important to note that, while the new bridge(s) might be the only part of the project in place for a certain period of time, WSDOT's intent is to build a complete project that meets all aspects of the purpose and need.

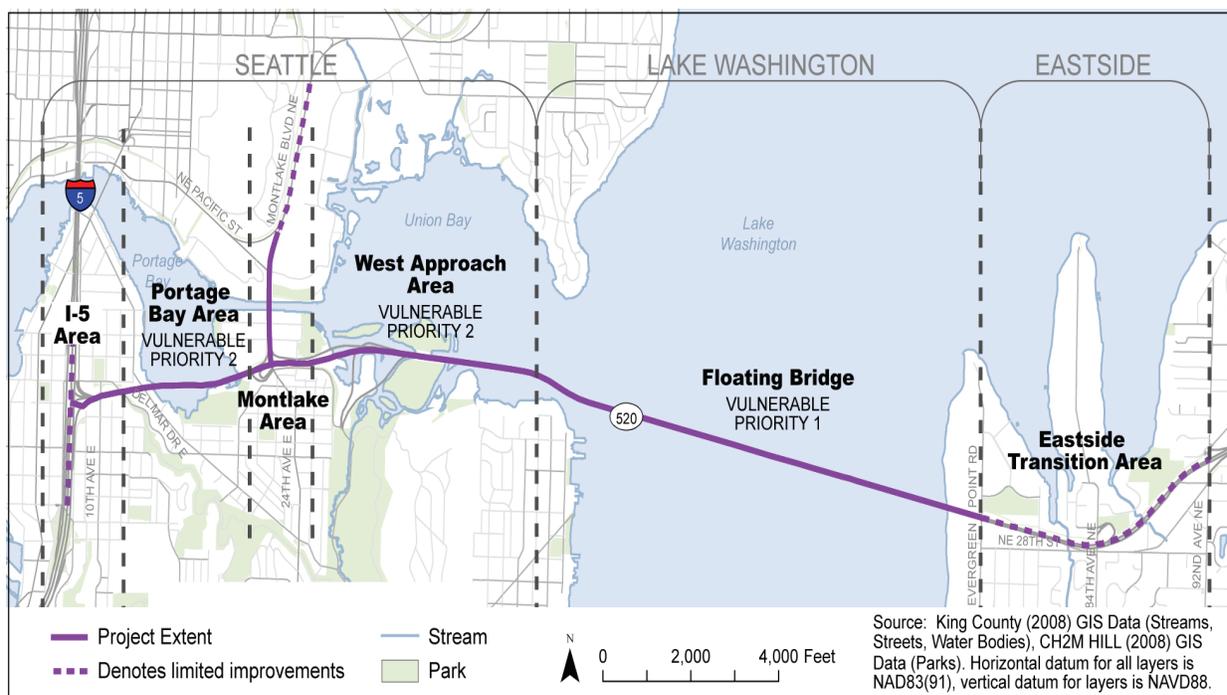


Exhibit 7. Geographic Areas along SR 520 and Project Phasing

The Phased Implementation scenario would provide new structures to replace the vulnerable bridges in the SR 520 corridor, as well as limited transitional sections to connect the new bridges to existing facilities. This scenario would include stormwater facilities, noise mitigation, and the regional bicycle/pedestrian path, but lids would be deferred until a subsequent phase. WSDOT would develop and implement all mitigation needed to satisfy regulatory requirements.



To address the potential for phased project implementation, the SDEIS evaluates the Phased Implementation scenario separately as a subset of the “full build” analysis. The evaluation focuses on how the effects of phased implementation would differ from those of full build and on how constructing the project in phases might have different effects from constructing it all at one time. Impact calculations for the physical effects of phased implementation (for example, acres of wetlands and parks affected) are presented alongside those for full build where applicable.

What is the FHWA visual quality assessment?

The FHWA visual quality and aesthetics assessment is a rigorous process of evaluating the importance of landscapes to viewers by answering three questions:

1. What are the aesthetic qualities and visual (physical) characteristics of the existing landscape in the study area?
2. Who would see the project, and what is their likely level of concern about or reaction to how the project visually fits within the existing landscape?
3. What are the potential effects of the project’s proposed actions on the area’s visual quality and aesthetics?

The following qualities are evaluated to address these three questions:

- The existing visual character and aesthetic quality of the area
- The panoramic or scenic views visible from or including the project roadway
- The visual and aesthetic experience of users and viewers looking at or from the project roadway
- The expected sensitivity of various viewer groups to visual changes
- The contrast in size, location, and massing or bulk between existing and proposed elements in the area

Six-Step Process

The FHWA’s visual quality assessment methodology is a six-step process:



1. Identify the project's study area ("viewshed" and "landscape unit")
2. Determine who has views of and from the project ("viewer")
3. Describe and assess the landscape that exists before the project ("affected environment")
4. Assess the likely sensitivity of viewers to changes in their view of and from the project, before and after the project ("viewer response")
5. Determine key views of and from the project and evaluate their visual quality before and after the project
6. Describe and rate the potential visible changes to the study area and its surroundings that would result from the proposed alternatives

What is a viewshed?

A **viewshed** is the aggregate area that can be seen from the project and that has views of the study area from the surrounding area.

What is a landscape unit?

Landscape units are subareas of a viewshed that make evaluation of the study area more manageable. They are defined by visual traits and visual continuity within the unit.

The first three steps establish the baseline conditions of the existing landscape and determine how much of the project is visible from outside of the study area (see the Affected Environment section in this report). From this baseline, WSDOT assesses potential changes to the visible landscape and likely viewer responses to those changes (see Potential Effects of the Project section), and also evaluates light, shadow, and glare that would result from the alternatives. WSDOT then identifies mitigation measures (see Mitigation section) based on the potential effects evaluation.

Specialized Tools and Vocabulary

The important analytical tools used in the FHWA method are the viewshed, landscape unit, simulations, and site evaluation checklists. To convey the results of the assessment process and to ensure consistent and effective communication, the FHWA assessment uses a professionally accepted, descriptive terminology, which is defined below. Please note that this report uses the word "landscape" to refer to the complete visible natural and human-built environment. Once the tools and terminology become familiar, the FHWA method and its results are straightforward and understandable. The following terminology used throughout this report is defined below.

What are simulations?

Simulations are computer-generated or hand-drawn images that illustrate probable visual changes and relative scales of the existing and proposed features as seen from a pedestrian's or motorist's viewpoint.

Views are what can be seen from the study area and what can be seen of the study area from the surrounding neighborhoods and



communities. Sensitive or special views, some of which are listed in municipal codes, are identified.

Viewers are people who have views of or from the project. Viewers are usually discussed in terms of general categories of activities, such as resident, boater, jogger, or motorist, that are referred to as “viewer groups.”

Viewpoint is the position of a viewer. For example, a motorist (viewer) at the west end of Portage Bay Bridge (viewpoint) has a view of the Cascade Mountains.

Viewer sensitivity is a combination of the following factors for a specific view:

- How many people have that view?
- How long can they see the view? Motorists typically have short duration views, while pedestrians and residents have views of long duration.
- What is the viewer’s likely level of concern about the appearance, aesthetics, and quality of the view? Level of concern is a subjective response that is affected by factors such as the visual character of the surrounding landscape, the activity a viewer is engaged in, and their values, likely expectations, and interests.

Low viewer sensitivity results when viewers are not particularly concerned about the view or are engaged in an activity that demands their attention. High viewer sensitivity results when viewers can see a view frequently and/or for long duration, and are very aware of and concerned about the view. Viewer sensitivity does not imply support for or opposition to a proposed project; it is a neutral term that is an important parameter in assessing visual quality.

Visual character is an impartial description of what the landscape consists of and can be described in terms of form, line, color, and texture. It is defined by the relationships between the existing visible natural and built landscape features. These relationships are described in terms of dominance, scale, diversity, and continuity. Visual character-defining resources and features include the following:

- Landforms: types, gradients, and scale
- Vegetation: types, size, maturity, and continuity



- Land uses: size, scale, and character of associated buildings
- Transportation facilities: types, sizes, scale, and directional orientation
- Overhead utility structures and lighting: types, sizes, and scale
- Open space: type (e.g., parks, reserves, greenbelts, and undeveloped land), extent, and continuity
- Water bodies, historic structures, and downtown skylines
- Apparent “grain” or texture, such as the size and distribution of structures and undeveloped properties or open spaces of the landscape

Visual quality is an assessment of the excellence of the components and composition of the character-defining features for single viewpoints or as an overall quality of composite views. This assessment asks: Is this particular view common or dramatic? Is it a pleasing composition (with a mix of elements that seem to belong together) or not (with a mix of elements that either do not belong together or are eyesores and contrast with the other elements in the surroundings)? Visual quality is discussed and rated according to the following terms:

- **Vividness** is the degree of drama, memorability, or distinctiveness of the landscape components. For example, a view across Lake Washington can have high vividness because it is a memorable sight.
- **Intactness** is a measure of the visual integrity of the natural and human-built landscape and its freedom from encroaching elements. This factor can be present in well-kept urban and rural landscapes, as well as in natural settings. High intactness means that the landscape is not broken up by features that are out of place. An unbroken expanse of native vegetation would have high intactness.



Example of high vividness



Example of high intactness



- **Unity** is the degree of visual coherence and compositional harmony of the landscape considered as a whole. High unity frequently attests to the careful design and placement of individual components and their relationship in the landscape.



Example of high unity



Affected Environment

How was the visual quality and aesthetics information collected?

WSDOT visited the project corridor several times to develop qualitative assessments and descriptions of existing landscape conditions. City and community planning documents and regulations as well as U.S. Geological Survey (USGS) and geographic information system (GIS) maps were studied to identify existing or planned future conditions. The site visits and community input helped to identify views or routes meriting special consideration because of their scenic value. Maps and other documentation helped to define the study area and the areas of visual impact for this analysis. The proposed project alternatives as described in project engineering plans and documents were studied and compared to existing conditions and extant planning documents. Other discipline reports were also reviewed for supplemental information including cultural resources, land use, and recreation (WSDOT 2009c, 2009e, 2009f).

The project analysts used visual quality assessment checklists, site visits, and before and after visualizations to analyze and rate “before” and “after” views for vividness, intactness, and unity. Visual quality levels (Exhibit 8) were assigned to selected views based on the results of these tools. Assessment checklists are effective tools for the analyst to observe and evaluate the components of a view.

The **visual quality assessment matrix** is an evaluation tool that assigns a numeric rank to physical aspects of specific views.

What is the study area for the visual quality and aesthetics assessment?

Study areas for this visual quality assessment are the project viewshed, which is defined as the area that can be seen from the roadway (Exhibit 9), and landscape units, which are smaller subareas within the viewshed (Exhibit 10). (Refer to Exhibit 11 for a description of the viewpoint locations that are shown in Exhibit 9.) Typically, if an area or a feature can be seen from the project, a viewer located in that area or near the feature can also see the project. This applies only for views toward the project that are close to the study area. Distant visual



Exhibit 8. Definitions of Visual Quality Descriptors

Descriptor	Vividness	Unity	Intactness
Low	Low vividness indicates a landscape that is mundane or nondescript.	Low unity indicates that the built features of a landscape were placed and built without sensitivity to the natural or existing setting.	Low intactness indicates that the integrity of the landscape is greatly reduced, either by the loss of large portions of a landscape from the view or the prevalence of incompatible structures. The incompatibility can be due to conflicting scales, colors, or purposes, among others.
Moderate	Moderate vividness indicates the presence of some features that have striking and attractive attributes such as textures, colors, shapes, or sizes.	Moderate unity indicates that built features are somewhat responsive to the natural or existing setting.	Moderate intactness indicates the presence of some features that are not compatible with the existing landscape, or a loss of part of the landscape.
High	High vividness indicates the presence of a dominant feature or a collection of features that is distinctive and very memorable.	High unity indicates that the natural and built components of a landscape are in balance and harmony with each other. High unity attests to the careful design of individual components and their relationship in the landscape.	High intactness indicates that the landscape is not broken up by features that are out of place.

resources, such as Mount Rainier, are considered views or scenic resources, and are not part of the viewshed.

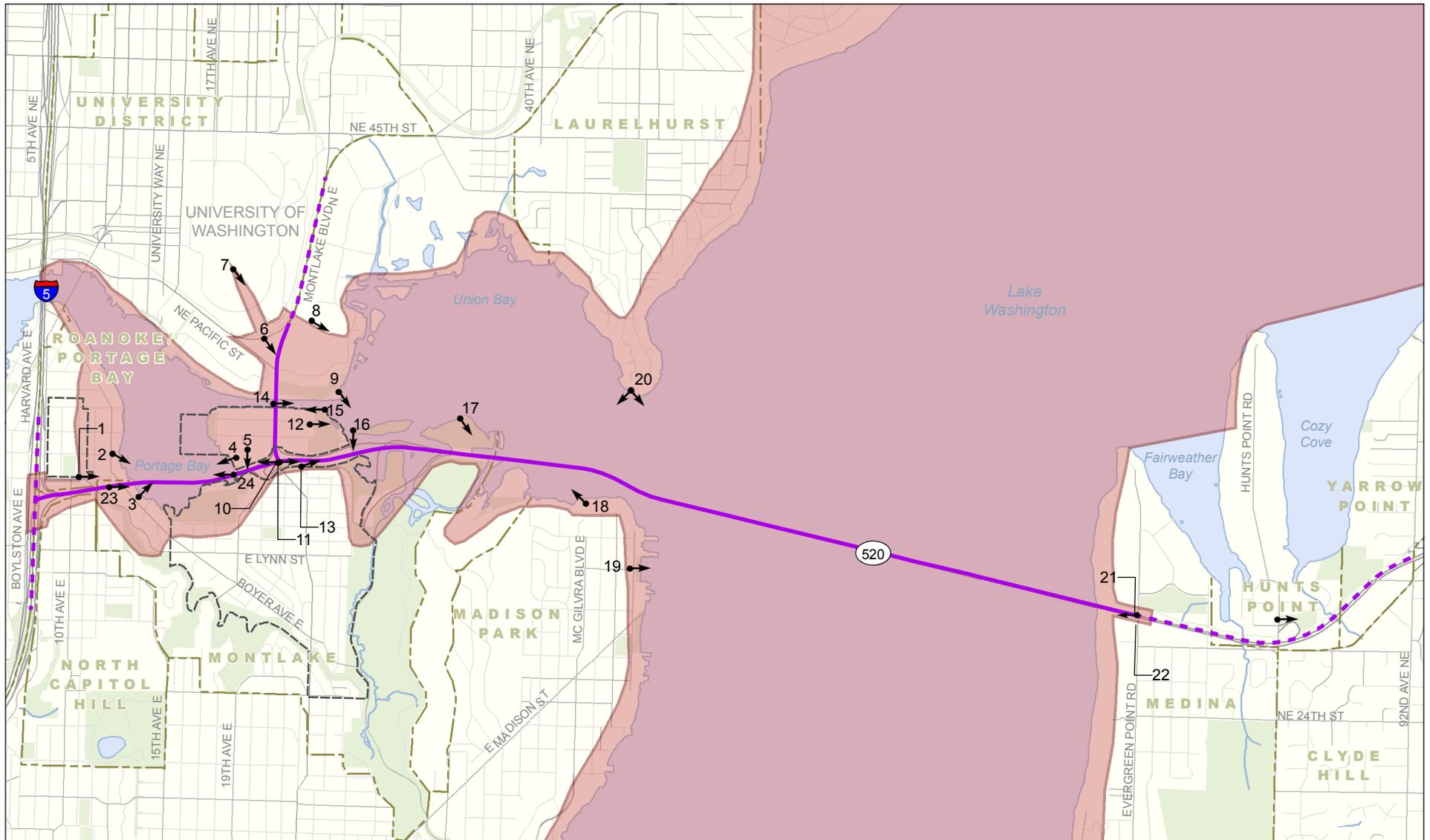
For this project, the study area is part of the larger viewshed because SR 520 is visible from locations beyond the limits of the project vicinity. The analysts first delineated the overall viewshed by mapping the approximate limits based on topography, and then refined them to account for existing vegetation and structures that limit views into or out of the study area. The Seattle and Eastside viewsheds are defined primarily by rolling terrain and secondarily by masses of tall trees and dense shrubs. The Lake Washington viewshed, on the other hand, is extensive, reaching north to Kirkland and south to Mercer Island and includes the hillsides and islands of the lake. The second study area is the landscape unit. The viewshed is divided into subareas called landscape units, which allow a closer look at the details and character of neighborhoods or other small districts. The criteria for determining the limits of a landscape unit are that each unit has a distinctive landscape pattern or use and specific, finite geographic boundaries. Neighborhoods, park areas, and shopping districts are examples of features that denote the scale and character of a landscape unit.

Visual resources that can be seen from the Evergreen Point Bridge:

- Cascade Mountains
- Olympic Mountains
- Mount Rainier
- Lake Washington Ship Canal
- Lake Washington

The City of Seattle has identified these resources as important (SMC 25.05.665 (P)).





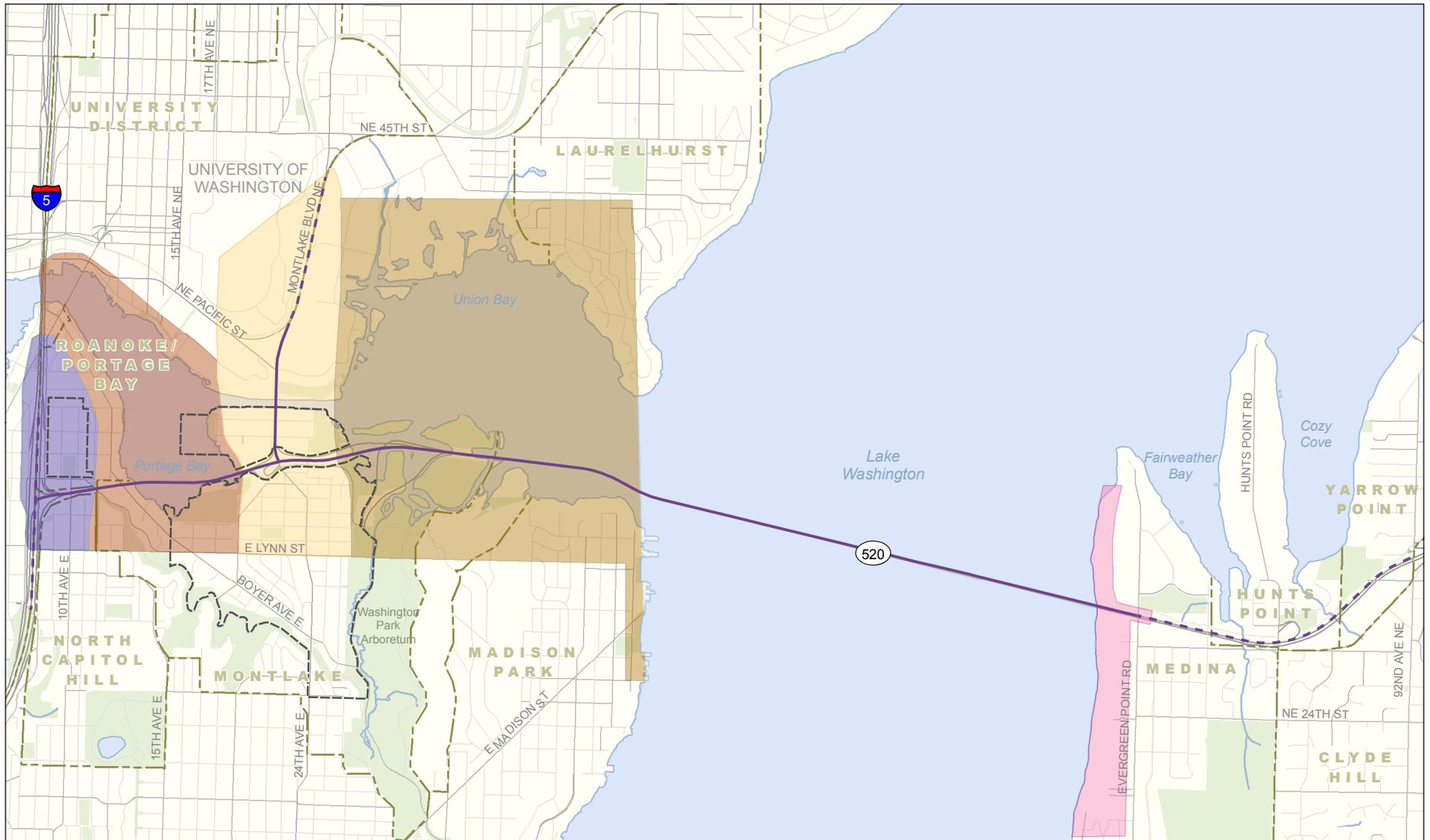
- Visualization Location and Direction
- Project Extent
- Limited Improvement
- Viewshed Boundary
- NHRP- Eligible Historic District
- Park
- Jurisdictional or Neighborhood Boundary



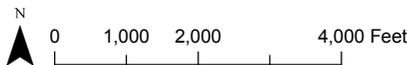
Exhibit 9. Project Viewshed and Viewpoint Locations

I-5 to Medina: Bridge Replacement and HOV Project

Source: King County (2005) GIS Data (Stream and Street), King County (2007) GIS Data (Waterbody), City of Seattle (1997) GIS Data (Neighborhood Boundary), City of Bellevue (1999) GIS Data (City Limits) and CH2M HILL (2008) GIS Data (Park). Horizontal datum for all layers is NAD83(91); vertical datum for layers is NAVD88.



- | | |
|-----------------------|---|
| Landscape Unit | — Project Extent |
| Roanoke | - - - Limited Improvement |
| Portage Bay | - - - NHRP- Eligible Historic District |
| Montlake | Jurisdictional or Neighborhood Boundary |
| West Approach | Park |
| Lake Washington | |
| Eastside | |



Source: King County (2005) GIS Data (Stream and Street), King County (2007) GIS Data (Waterbody), City of Seattle (1997) GIS Data (Neighborhood District), City of Bellevue (1999) GIS Data (City Limits), and CH2M HILL (2008) GIS Data (Park). Horizontal datum for all layers is NAD83(91); vertical datum for layers is NAVD88.

Exhibit 10. Landscape Units

I-5 to Medina: Bridge Replacement and HOV Project

Exhibit 11. Location and Description of the Visualization Viewpoints

Exhibit Number	Viewpoint Number	Location of Viewpoint	View	Visual Resources
2-1	1	View of Portage Bay Bridge deck	Looking east from Delmar Drive East and Bagley Viewpoint Park toward Portage Bay Bridge	Cascade Mountains; Portage Bay; Eastside hills
2-2	23	View from Portage Bay Bridge deck	Looking east on Portage Bay Bridge from SR 520 roadway	Cascade Mountains, Portage Bay
2-3	24	View from Portage Bay Bridge deck	Looking west toward Capitol Hill and Roanoke on Portage Bay Bridge from SR 520 roadway	Portage Bay, shoreline, Seattle hillsides
2-4	2	View of Queen City Yacht Club moorage	Looking east from Boyer Avenue toward Portage Bay Bridge	
2-5	3	View of Portage Bay Bridge columns	Looking northeast toward underside of Portage Bay Bridge	Portage Bay; shoreline
2-6	4	View of Portage Bay Bridge from NOAA	Looking south from NOAA parking lot toward Portage Bay Bridge	Portage Bay; shoreline; Seattle hillside
2-7	5	View of NOAA outbuildings and parking	Looking south from NOAA parking lot toward SR 520 westbound on-ramp from Montlake Boulevard	
2-8	10	View of SR 520 roadway	Looking west toward Portage Bay Bridge from mid-point of Montlake Boulevard overpass	Montlake Playfield trees, bridge, Seattle hillsides
2-9	11	View of SR 520 roadway	Looking east toward 24th Avenue from mid-point of Montlake Boulevard overpass	Cascade Mountains
2-10	6	View of Montlake Triangle	Looking southeast toward Montlake	
2-11	7	View of Rainier Vista	Looking southeast toward Montlake Triangle and Mount Rainier from Drumheller Fountain	Mount Rainier, Cascade Mountains
2-12	8	View from Husky Stadium	Looking southeast toward Union Bay and Lake Washington	Mount Rainier, Cascade Mountains, Lake Washington; Arboretum, Union Bay
2-13	9	View from UW Waterfront Activities Center	Looking south at Marsh Island and SR 520 bridge through Arboretum	Lake Washington; Arboretum
2-14	12	View of East Montlake Park	Looking from east end of Shelby Street across East Montlake Park toward Marsh Island	Lake Washington, Cascade Mountains; Union Bay, Arboretum
2-15	13	View Lake Washington Boulevard at 24th Avenue East	Looking northeast towards MOHAI	Cascade Mountains



Exhibit 11. Location and Description of the Visualization Viewpoints

Exhibit Number	Viewpoint Number	Location of Viewpoint	View	Visual Resources
2-16	17	View from Foster Island north shoreline	Looking south toward SR 520	Arboretum
2-17	18	View from north Madison Park	Looking northwest from Edgewater Apartments toward SR 520 west approach and Husky Stadium	Union Bay, Husky Stadium
2-18	19	View from Madison Park at Lynn Street	Looking northeast toward SR 520 Evergreen Point Bridge and east approach	Lake Washington, Cascade Mountains
2-19	20	View from Webster Point	Looking southeast from Laurelhurst neighborhood toward Madison Park and West highrise	Lake Washington, Mount Rainier
2-20	20	View from Webster Point	Looking southwest from private dock toward Arboretum	Union Bay, Arboretum
2-21	16	View from Marsh Island Trail	Looking south toward SR 520 from pedestrian bridge between MOHAI and Marsh Island	Arboretum waterway
2-22	14	View of Montlake Cut	Looking east from mid-span of Montlake Bridge toward Union Bay	Montlake Cut, Union Bay, Lake Washington, Cascade Mountains
2-23	15	View of Montlake Bridge	Looking west from southeast corner of East Montlake Park toward Montlake Bridge	Montlake Cut and bascule bridge
2-24	21	View of Lake Washington from Evergreen Point Road	Looking west from mid-span of Evergreen Point Road toward East Approach	Lake Washington, Union Bay, Olympic Mountains
2-25	22	View of Evergreen Point lid transit facility	Looking from Evergreen Point Road NE across the park-and-ride to the transit facility	

NOAA = National Oceanic and Atmospheric Administration

MOHAI = Museum of History and Industry

UW = University of Washington

Arboretum = Washington Park Arboretum

How were the visualization viewpoints selected?

The purpose of visualizations is to illustrate what a view would look like to a person walking or driving through a public space and to convey what the experience of being in or looking at the new area might be like. This ground-level viewpoint, which may include views from tall vehicles such as trucks and buses, is the best way to illustrate the changes in scale, massing, or form of the new structures or



landscapes relative to existing conditions. The visual quality *assessment* considers the visual quality within the viewshed by identifying and analyzing significant views and representative viewer groups.

Four primary criteria are used to select the visualization viewpoints:

- The view is typical of other project views and is a public location with sensitive viewers nearby.
- The view represents moderate to high changes to visual quality or character of scenic views, historic buildings, designated viewpoints, or view corridors.
- The view can be seen by a large number of sensitive viewers.
- A substantial portion of the roadway study area is visible from the viewpoint.

Based on these criteria, the project team selected the views and their corresponding viewpoints and took photographs for visualizations from these viewpoints (listed in Exhibit 11 and illustrated in Exhibit 9). While the visualizations are limited in their field of view because the focal length of the camera is set to match the human eye field of view (without peripheral vision), the overall visual analysis considers the entire view. Photographs provide an accurate representation of the scale of a structure in relation to other objects as seen from the viewpoint.

The project team defined a total of six landscape units based on the criteria and field visits: Roanoke, Portage Bay, Montlake, West Approach, Lake Washington, and Eastside. The Roanoke landscape unit consists of a high plateau, with steep hillsides, between Lake Union and Portage Bay. The Portage Bay landscape unit comprises the hillsides and shorelines around the Portage Bay basin including the waters of the basin. The Montlake landscape unit consists of the Montlake Boulevard corridor and neighborhoods along the corridor. The west approach segment consists of Union Bay and all of Union Bay's islands, marshes, hillsides, and shorelines. The Lake Washington landscape unit includes the lake and its shorelines. The Eastside landscape unit comprises the overlap area between Evergreen Point Road and 92nd Avenue NE in Yarrow Point where the Eastside and Westside projects meet.



What governmental regulations apply to the views and visual characteristics within the study area?

The Seattle environmental policies, which govern the review and conditioning of physical development in the city, have identified specific views and viewpoints as important (City of Seattle 1983). In 2001 the Department of Planning and Development conducted a new inventory of the sites identified in the Seattle Environmental Policies and published the results in *Seattle Views: An Inventory of 86 Public View Sites Protected Under SEPA* (City of Seattle 2002). The policy and inventory show the extent to which the City of Seattle has historically considered public views in the review and conditioning of development through the State Environmental Policy Act (SEPA) review processes. Seattle has also identified SR 520 as a scenic route between I-5 and the midspan of the Evergreen Point Bridge (Seattle Ordinance 97025) because the panoramic views of important visual resources can be seen from the roadway.

Designated SEPA viewpoints within the SR 520 viewshed include:

- Bagley Viewpoint Park (Delmar Drive East and East Roanoke Street) – Limited views through vegetation of Portage Bay and the Cascade Mountains
- Madison Park (East Howe Street and 43rd Avenue East) – Panoramic views of Lake Washington, the Cascade Mountains, and Mount Rainier
- East Montlake Park (East Shelby Street and 24th Avenue East) – Panoramic view of Lake Washington Ship Canal and part of Lake Washington
- McCurdy Park (East Hamlin Street and 24th Avenue East) – Views of Marsh and Foster Islands; limited views of Lake Washington
- Montlake Playfield (16th Avenue East at East Calhoun Street) – Partial view of Portage Bay through vegetation from water’s edge
- Washington Park Arboretum – Several viewpoints provide panoramic views of Lake Washington, the Montlake Cut, the Cascade Mountains, and Union Bay

Designated SEPA viewpoints:

- Bagley Viewpoint Park
 - Madison Park
 - East Montlake Park
 - McCurdy Park
 - Montlake Playfield
 - Washington Park Arboretum
- Cited from City of Seattle (2002).

Visual resources that can be seen from the Evergreen Point Bridge:

- Cascade Mountains
- Olympic Mountains
- Mount Rainier
- Lake Washington Ship Canal
- Lake Washington

The City of Seattle has identified these resources as important (SMC 25.05.665 (P)).



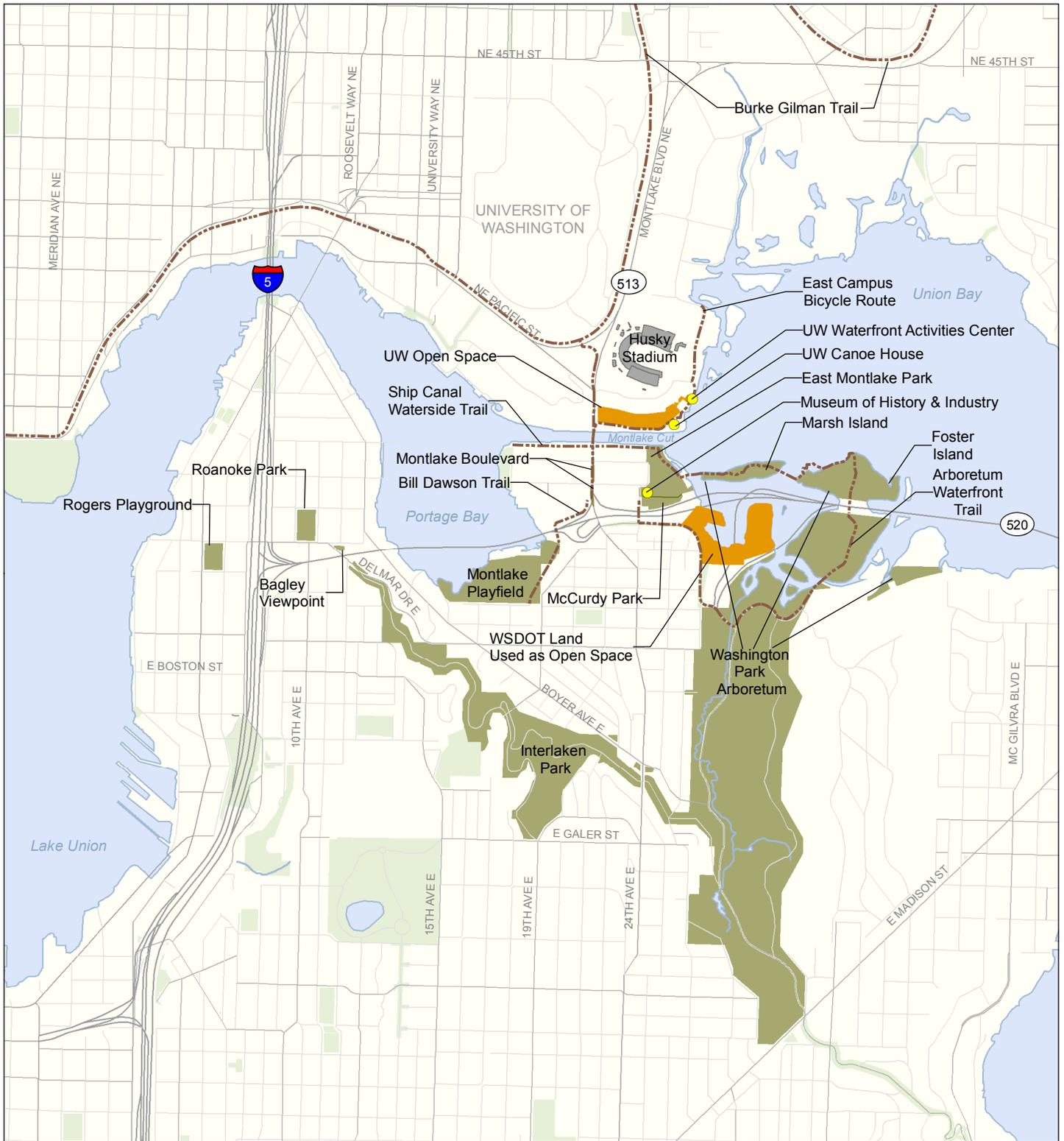
The parks listed above are illustrated in Exhibit 12. Lakeview Park (Lake Washington Boulevard East and McGilvra Boulevard East) and Magnuson Park (Sand Point Way NE and NE 65th Street, street end) are two additional viewpoints in Seattle from which the Evergreen Point Bridge is visible. However, the bridge is seen as a small object in the distance from both viewpoints; therefore, views from these viewpoints would not be affected by the project.

Plans for several Eastside municipalities indicate an interest in preserving views of the lake and the visual importance of large trees or stands of trees. With respect to Evergreen Point Road, Medina plans do not specifically address visual quality in the SR 520 corridor (City of Medina 1999).

In addition to Seattle and community considerations, the WSDOT Roadside Classification Plan designates roadside character classifications for state roadways and provides the policy for managing the roadside. SR 520 is classified as semi-urban between I-5 and I-405, and Montlake Boulevard and I-5 are classified as urban (WSDOT 2004b). The semi-urban classification means that the road lies within a transitional landscape where built elements begin to dominate natural elements. Vegetation includes many more nonnative species and expanses of grass. The urban designation means that the roads (Montlake Boulevard and I-5) are in a highly developed landscape where buildings are predominant and vegetation is mostly nonnative and ornamental.

A final factor to consider is the presence of historic buildings or landscapes, which are protected under Section 106 of the National Historic Preservation Act of 1966. A change in the physical settings of a building, district, or landscape could affect its eligibility for listing on the National Register of Historic Places (NRHP). Two NRHP-eligible historic districts in the Seattle study area, Roanoke Park and Montlake, are discussed in this visual assessment. The Cultural Resources Discipline Report (WSDOT 2009c) contains more information on these historic districts.





- Recreation Site
- Existing Regional Bicycle/Pedestrian Path
- Parks within Study Area
- Open Space
- Seattle Park



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



Exhibit 12. Parks and Recreation Facilities in the SR 520 Viewshed

I-5 to Medina: Bridge Replacement and HOV Project

What is the current visual character of the study area?

Visual character describes the existing visible land and water forms, vegetation, development, and transportation and utility facilities.

The landscape unit is the study area for visual character.

SR 520 Corridor

Seattle

The rolling terrain of Seattle is due to a north-south trending ridge-valley system that slopes toward the basins containing Lake Union, Portage Bay, and Union Bay. This basin-ridge-valley terrain has necessitated that SR 520 alternate among cut, elevated, and bridged profiles, creating a variety of views from and toward the roadway. The differences between the basins and plateaus are the primary factors in determining the three landscape units of the Seattle area viewshed: the Roanoke plateau, the small Portage Bay basin, and the expansive Union Bay basin of the west approach.

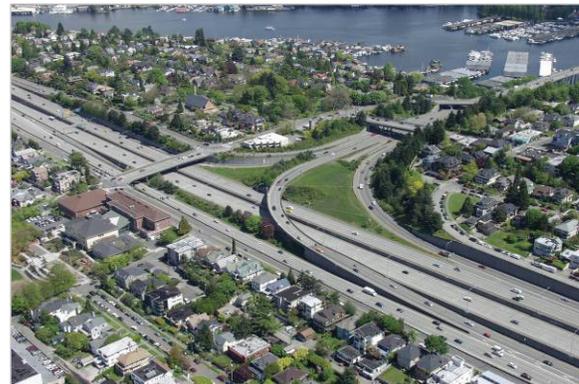
Roanoke Landscape Unit

The Roanoke landscape unit includes residential and commercial communities on the North Capitol Hill plateau from the Delmar Drive Bridge to the Boylston Avenue neighborhood west of I-5, and a portion of the Eastlake community along I-5. This landscape unit also contains the nationally designated Roanoke Park Historic District. Both areas, North Capitol Hill and Roanoke, are somewhat inward looking because of the height of the homes and the mature street and park trees. However, this area has a high level of activity because of the traffic at the 10th Avenue East/Roanoke Street intersection.

The visual character of this landscape unit is defined by the highly diverse development and roadways within it. Development is primarily single-family



I-5 on ramp, looking south



Roanoke landscape unit, looking northeast



10th Avenue at Roanoke, looking southeast



residential, but includes two schools (Seward Elementary School and Seattle Preparatory University), Washington State Patrol and fire station facilities, the commercial district along 10th Avenue East, and Roanoke and Bagley Viewpoint Parks. Residential development is diverse with architectural styles ranging from Victorian to four-square with a predominance of eclectic revival. Most homes were built before World War II and many date to the early 1900s, similar to the North Capitol Hill area.

The highways and interchange ramps are also character-defining elements of this landscape unit. SR 520 is recessed below the neighborhoods so the experience of traveling on the roadway through this area is that of traveling in a concrete channel passing under small bridges or on elevated ramps. Very few homes along SR 520 have views of the roadway because of topography and dense tree screens. I-5 is generally not visible from homes north of East Roanoke Street because of recently installed sound walls. Existing overhead roadway facilities include freeway light standards and truss-style sign structures.

Surface streets are in a grid pattern and densely lined with mature trees that form a near continuous matrix of canopy. Residential landscapes are a diverse mix of deciduous, evergreen, ornamental, and native plants.

Panoramic views can be seen from a few homes along the edges of the plateau and from the Delmar Drive East and 10th Avenue East overpasses. Portage Bay, the Arboretum, the Eastside hills, the Cascade Mountains to the east, and Seattle and the Olympic Mountains to the west contribute to creating scenic views year-round. Bagley Viewpoint Park no longer has its intended view to the east because of the dense tree canopy around it.

Portage Bay Landscape Unit

The Portage Bay landscape unit includes the bay, the shorelines around, and hillsides overlooking Portage Bay. The visual character of this landscape unit is defined by the bay and the density and diversity of development, much of it water oriented, in and around Portage Bay. The curved, narrow shape of the bay and the elevation of the Roanoke plateau create a quality of enclosure, and the hillside houses and shoreline houseboats contribute to an overall picturesque character. The north bay has a high level of watercraft activity.



Portage Bay landscape unit, looking southwest toward Queen Anne



Development consists of single-family homes on the hillsides of the Roanoke plateau and in Montlake, active recreation facilities in Montlake Playfield, University of Washington research facilities and various commercial establishments on the north shore, and the continuous marinas and houseboat communities around Portage Bay north of the Portage Bay Bridge. Architectural styles and ages are highly varied, with many of the homes dating to the 1920s and 1930s in contrast with contemporary multi-storied residential and commercial buildings, eclectic houseboats, and the varied architectural styles of the University of Washington campus.

The Portage Bay Bridge is an important character-defining structure in the landscape unit. Most views of the Portage Bay Bridge from the Montlake Playfield and neighborhoods are screened during summer and fall by trees along the shoreline. SR 520 is only clearly visible during winter and spring. The bridge dominates the views southward from the community areas and interrupts views northward from south Portage Bay.



Montlake Playfield, looking north toward Portage Bay Bridge

The grid street pattern and residential vegetation alternately direct and screen views toward the bridge for viewers in the residential areas. Surface streets are in a broken grid pattern connected by curving roads that follow shorelines and greenbelts. Residential landscapes are a diverse mix of deciduous, evergreen, ornamental, and native plants, and streets are densely lined with mature trees that form a near continuous canopy matrix. Other vegetation includes the marshes, wetlands, and tree and shrub buffer around the Montlake shoreline as well as the untended, overgrown area under the westernmost part of the bridge. This landscape unit also contains Interlaken Park, a wooded city park on the north end of Capitol Hill.

Views eastward from the Portage Bay Bridge and east-facing hillside residences are scenic, with panoramic views of Lake Washington, Portage Bay, Union Bay, and the Cascade and Olympic Mountains. The roofed docks of the Queen City Yacht Club at Boyer Avenue interfere with ground-level views.



Queen City Yacht Club, looking southeast toward Portage Bay Bridge



Montlake Landscape Unit

The Montlake landscape unit is a mixed use area that also includes a historic district overlay. The landscape unit includes Montlake residential neighborhoods on either side of Montlake Boulevard, the National Oceanic and Atmospheric Administration (NOAA), the Shelby-Hamlin neighborhood and the Museum of History and Industry (MOHAI), the Montlake Cut, and the University of Washington lower southeast campus. The campus area includes the physical terminus of Rainier Vista, the university's Surgery Pavilion, the Montlake Boulevard-Pacific Street triangle intersection, and the sports complex east of Montlake Boulevard including Husky Stadium. The rolling terrain, mature trees, and two- to three-story homes of the Montlake neighborhoods create inward-looking, linear views along streets that occasionally terminate on a portion of scenic landscape. The University of Washington area also has linear views but these are longer and more expansive because of the width of Montlake Boulevard, Pacific Avenue, and other streets, as well as the presence of several parking lots and extensive park-like open spaces such as Rainier Vista.

The visual character of this landscape unit is defined by the diversity of development. The Montlake neighborhoods have residential-scale buildings and commercial establishments in a wide variety of architectural styles and ages. These neighborhoods are bordered to the south by large, multi-story buildings at NOAA, medium-scale club facilities at the Seattle Yacht Club, and the medium-scale MOHAI building. North of the Montlake Cut, the University of Washington area has multi-story, large-footprint buildings and structures that house the hospital, sports, and research facilities, also in a variety of styles and ages. Husky Stadium is the dominant and iconic structure and a memorable part of most views inside and outside of the area.



Montlake landscape unit, looking north toward Husky Stadium



Lake Washington Boulevard, looking east along SR 520



Montlake Cut, looking west toward Montlake Bridge



Other permanent elements that contribute to visual character are the large open spaces such as Rainier Vista and the UW Open Space south of the southern Husky Stadium. This park-like setting is created by the collection of noteworthy specimen conifers in a rolling lawn, a popular rock-climbing structure, and the naturalized woods on the slopes of the Montlake Cut. Transitory elements that contribute to visual character include the boating traffic through the Montlake Cut, sports games in Husky Stadium, and seasonal color changes in vegetation.

West Approach Landscape Unit

The West Approach landscape unit comprises Union Bay and its diverse and complex shorelines, islands, marshes, and wetlands. The west approach bridges are located on the southern edge of Union Bay passing over the bay's marshes and wetlands, through the Arboretum tree canopy at Foster Island, and over open water north of the Broadmoor Golf Course and Madison Park. The broad oval shape of the bay connecting to the expanse of Lake Washington creates a scenic and open visual character.

The visual character of this landscape unit is defined primarily by the bay itself and secondarily by the open spaces that ring the bay. While the water is the dominant feature, these open spaces, which include the islands, marshes, and wetlands along the shorelines, the Washington Park Arboretum, and the private Broadmoor Golf Course, provide a soft, yet defined vegetated edge to the bay. Other permanent elements, primarily water-related structures (e.g., docks, boat channel buoys, and a moorage pier) and two identical sculptures called Aurora Borealis, are small in scale, yet visible, and add a subtle, but recognizable, landscape feature. The sculptures that stand in the water on either side of the west approach at the eastern edge of the Arboretum contribute to a sense of a gateway or arrival to this landscape unit. Transitory elements that contribute to visual character include the high level of boating activities and seasonal color changes in vegetation.



Rainier Vista, looking southeast toward Montlake and Pacific Street intersection



Union Bay, looking north over Lake Washington Boulevard ramps



Other than the Evergreen Point Bridge west approach structure through Union Bay, development is limited to land and shoreline areas. This development consists of public docks and water-related activity centers at the University of Washington. Architectural styles and structure ages are highly varied. Housing types range from large single-family homes in Laurelhurst to apartment and condominium complexes in north Madison Park. These structures are relatively small in scale compared to the expanse of Union Bay and while they contrast with the surrounding ornamental and native vegetation, they provide a textural and geometric counterpoint to water, sky, and vegetation.

Because of the natural beauty of the west approach area, it is a destination area for passive and active outdoor recreation such as boating, bird-watching, picnicking, strolling, and sports. Various viewer groups use the activity centers and destination points, which include the university's Water Activities Center, the Washington Park Arboretum, and Broadmoor Golf Course. The wood deck at the mouth of the Montlake Cut is a popular viewpoint for watching boating events, the raising and lowering of the historic bascule bridge, and enjoying the scenic view across the bay and Lake Washington. Some of the disused R.H. Thomson Expressway ramps in this area, visible from a number of viewpoints, are used as ad hoc recreational features including a link for runners between MOHAI and the Arboretum. Because the mature vegetation obscures much of the bridge through the Arboretum, the presence of the structure is less dominant.

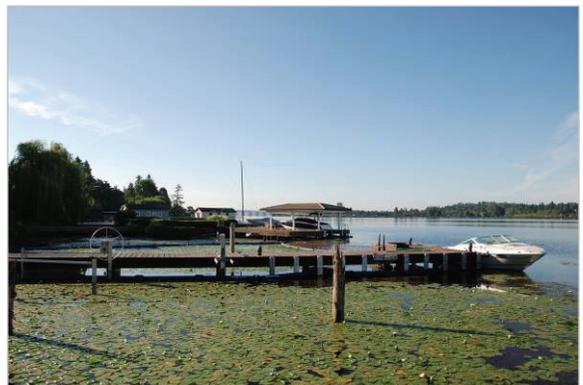
Visibility of the west approach structure and the Lake Washington Boulevard ramps through the Arboretum depends on the location of the viewer and the density of the tree screen (which varies over the seasons) between the viewer and the structures. The west approach structure is somewhat visible from south-facing Laurelhurst homes, but is mostly screened from views within the golf course and the



North Madison Park, looking north toward SR 520 and Laurelhurst



Laurelhurst, looking southeast toward Arboretum



Laurelhurst dock, looking south toward Madison Park and SR 520



Arboretum by mature trees. Overhead roadway facilities include freeway light standards and truss-style sign structures that are highly visible to motorists.

The western highrise east of the Arboretum is visible from most viewpoints because of its height and the fact that it is not screened by vegetation. The highrise is part of the view from south-facing Laurelhurst and north-facing Madison Park residences. The highrise bridge's lines are simple and narrow, but the height of the road deck is such that it obstructs northward views of Union Bay from north Madison Park and views of Madison Park from Laurelhurst. Views of Mount Rainier and the Cascade Mountains from Laurelhurst are unaffected by the bridge.

Panoramic, highly memorable views are available year-round from south-facing residences in Laurelhurst, and the west approach structure through Union Bay. The vista from these viewpoints includes the Cascade Mountains, Union Bay, the Arboretum, Lake Washington, the Eastside hills, and Mount Rainier. West-facing views include the Olympic Mountains and the Seattle hillsides and skyline. Picturesque and scenic views are available from most places on or around the bay.

Lake Washington Landscape Unit

The Lake Washington landscape unit includes the lake and its diverse and complex shorelines. Visual character is defined by the expanse of open water framed by rows of low rolling hills. The immense size of the lake dominates most views from hillside and shoreline residences and creates a memorable foreground for views in all directions, whether from the bridge or the lake.

The Evergreen Point Bridge is the dominant man-made structure in the Lake Washington landscape unit. Overhead roadway facilities include the steel-framed truss superstructure of the east and west highrises, signage, and the control house at midspan. For the highway user, the roadway dominates the forward view and the linearity of the structures contrast with the changing textures and colors of the water. However, the road deck of the floating bridge is approximately 8 feet above water level, giving motorists the impression of being at water level. Because of the openness of the lake,



Lake Washington landscape unit, looking southwest toward Arboretum



especially to the north and south, the Evergreen Point Bridge offers expansive, highly memorable views of the Cascade and Olympic Mountains, Mount Rainier, the wooded hillside communities around the lake, and Husky Stadium.

Private docks along the shorelines of Medina, Madison Park, and Laurelhurst are the only other built structures in Lake Washington near the study area. The docks and shorelines are extensions of groomed residential gardens. One of the few unmanaged shoreline landscapes near the project in Lake Washington is the naturalized woods under the SR 520 bridge at landfall in Medina. The mature trees of the woods screen the east approach from views from nearby residences and act as a green gateway for the terminus of the east approach.

The Evergreen Point Bridge and the eastern highrise and approach are visible from many places on or around Lake Washington, but these structures become less visible with distance. The dark gray of the pontoons and road deck helps to soften the visual presence of the structure as seen from distant locations. When viewed from a boat near the floating bridge the pontoons appear as an 8-foot concrete wall. The tall columns and cross-bracing of the east approach and highrise dominate views from the homes in Medina near the east approach and from boats traveling in the boat channel.

Eastside Landscape Unit

It is assumed the Medina to SR 202: Eastside Transit and HOV Project will be completed before the I-5 to Medina project; therefore, this section describes the visual character of the Eastside landscape unit as it would appear after completion of the Medina to SR 202 project. The Eastside landscape unit includes the transition area between Evergreen Point Road in Medina and 92nd Avenue NE in Yarrow Point.

The rolling terrain of the Points communities is the primary character-defining attribute of the Eastside landscape unit. The terrain is characteristic of a glacial north-south trending ridge-and-valley system. The ridges and valleys slope down into the Lake Washington basin, submerging the valleys and creating a distinctive, alternating ridge-and-bay landform. SR 520 mostly follows the rolling landform in sweeping curves, with some highway segments cut into the ridges to level the road grade.



Evergreen Point Road overcrossing, looking east along SR 520



Urban development in the Eastside study area consists primarily of single-family residences on large lots, waterfront residences with private docks in small bays and on Lake Washington, a few small commercial establishments, and the Bellevue Christian School/Three Points Elementary school complex. The Points Loop Trail paralleling the SR 520 Regional Bicycle and Pedestrian Path on the north is an important neighborhood recreation path for strolling and accessing other neighborhoods.

After the Eastside Transit and HOV project is complete, the visual character of SR 520 from Evergreen Point Road to 92nd Avenue NE would be that of a wall-enclosed suburban highway, created by the continuous noise and retaining walls. Highway design would include planters for trees, shrubs, and vines to the greatest extent possible to soften the overall effect of the continuous walls.

Overcrossing bridges at Evergreen Point Road, 84th Avenue NE, and 92nd Avenue NE would be replaced with landscaped lids as part of the Medina to SR 202: Eastside Transit and HOV Project. The landscaped lids provide enhanced north-south connections between the communities and act as subtle landmarks for the Medina, Hunts Point, Clyde Hill, and Yarrow Point communities.

The new transit stops in the center of the highway at Evergreen Point Road and 92nd Avenue NE would contrast in form and scale with the surrounding roadway facility. These transit stops would include 35- to 45-foot-tall elevator shafts, stairs, and protective walls between highway traffic and transit riders. These stops and new architectural features would create a more urban character at these two locations.

Motorists would experience the lids at Evergreen Point Road, 84th Avenue NE, and 92nd Avenue NE as short tunnels. The transit stop elevators would be taller than other structures in the roadway and therefore visible to motorists on the highway. The protective walls and canopies over the passenger platforms would decrease the apparent width of the highway by interrupting the motorist's view, but would also create narrow channels for motorists.



Evergreen Point Road overcrossing in Medina, looking west



What is the current visual quality of the study area?

SR 520 Corridor

This section presents the results of the visual quality evaluation and describes viewer groups that have views from or toward the project and their likely sensitivity to the visual quality of the surrounding landscape. Visual quality is a description of the assessed quality of single-point views and of the overall or composite quality of a landscape unit. Viewers are grouped according to activity (such as resident or commuter). Their perception of and sensitivity to the quality of the surrounding visual environment is shaped by their values, expectations, interests, and by the activities they are engaged in. In this document the terms “commuter” and “motorist” refer to anyone driving or riding in a vehicle of any kind. A commuter is distinguished from a motorist by the regularity of the former’s travel along the same route, which can desensitize viewers to their surroundings.

Visual quality is evaluated and described in terms of vividness, intactness, and unity, as defined in “What is the FHWA visual quality assessment?” Both the viewer sensitivity and the ratings for vividness, intactness, and unity contribute to assessment of overall visual quality (Exhibit 8). The overall visual quality ratings are summarized in the table provided in Attachment 1 for existing conditions and Options A, K, and L.

Seattle

Roanoke Landscape Unit

The Roanoke landscape unit (Exhibit 10) is a very dynamic area with both connecting routes and a number of activity centers frequented by users and viewers. Viewer groups are motorists and commuters traveling through the area on SR 520 and I-5; workers and visitors to a business or activity center in North Capitol Hill; and residents traveling between work and home or their local park. Commuters, drivers in particular, on I-5, SR 520, and at the Harvard-Roanoke-10th Avenue intersection are likely to be less sensitive to visual quality because they are traveling on these



Bagley Viewpoint Park in Roanoke, looking southeast toward Portage Bay Bridge



roadways at high speeds and focused on traffic movements. Their passengers may be somewhat more sensitive to views and visual quality because they can look around. Workers and visitors in North Capitol Hill and Roanoke are likely to be moderately sensitive to visual quality in this area because they are familiar with the place or are engaged in social or recreation activities. Residents are likely to be very sensitive to visual quality because this is their neighborhood and they are attentive and attached to certain familiar qualities and views.

Panoramic views are available to the public from the 10th Avenue East and Delmar Drive East bridges (Exhibit 2-1, Attachment 2). In general, however, this is a vehicle-oriented environment and the aesthetic experience of pedestrians in most of this landscape unit is diminished by traffic. The pleasant landscape at Roanoke Park and streetscapes between 10th Avenue East and Delmar Drive East help to improve the experience. Additionally, transportation signage and signalization, street lighting, and overhead utilities create a moderate degree of visual clutter.

For visual quality ratings, based on the discussion above, overall vividness is moderate because of the collective impact of the architecture of the historic homes and the stately street trees. Intactness and unity are low in the vicinity of I-5 and SR 520 because the roadways are large discontinuities that divide the neighborhoods.

Portage Bay Landscape Unit

The Portage Bay landscape unit (Exhibit 10) is an important connector route for boat and vehicular traffic; however, all of the destination points are around the perimeter of the bay along the shorelines. Many of the viewer groups are using some sort of vehicle, wheeled or boat. Pedestrian movement by residents, recreationists, students, and others is limited to Boyer Avenue and Pacific Way along the north shore.

The largest viewer group is motorists traveling on the SR 520 Portage Bay Bridge. Boaters are the second largest viewer group with water-level views from all locations in Portage Bay (Exhibit 2-5, Attachment 2). Workers and visitors who travel to a business or activity center and residents who travel between work and home on surface streets constitute smaller viewer groups. Although in general commuters tend to become less sensitive



Portage Bay neighborhood, looking northeast to Husky Stadium



over time to views of their surroundings, motorists as a whole (both drivers and passengers) on the Portage Bay Bridge are likely to appreciate the visual quality of the panoramic and memorable views in both the eastbound and westbound directions (Exhibits 2-2, 2-3, and 2-6, Attachment 2). Viewers in taller vehicles such as trucks and buses are able to see over the traffic barriers and have better lateral views of Portage Bay, the marinas to the north, and marshes to the south. Workers and visitors in the University of Washington area are likely to be moderately sensitive to visual quality because they are familiar with the place or are engaged in social or recreation activities. Residents are likely to be very sensitive to visual quality because this is their neighborhood and they are attentive and attached to certain familiar qualities and views.

For visual quality ratings, based on the discussion above, vividness is high because of the picturesque character of the bay; the scenic panoramas to the east of the Cascade Mountains, Lake Washington, and the Washington Park Arboretum from certain vantage points; and the homes on the Roanoke hillside. Intactness is moderate because so much of the surface of Portage Bay is covered with roofed docks and marinas (Exhibit 2-4, Attachment 2). Unity is generally high because the collection of the features that creates high vividness also unites them in a pleasing composition.

Montlake Landscape Unit

The Montlake landscape unit (Exhibit 10) is a dynamic, urban area, with a high concentration of residential, recreational, educational, medical, and cultural and recreational activity centers. Development is nearly continuous and composed of two- to three-story single-family residences south of the Montlake Cut and the diverse, large-footprint buildings of the University of Washington and NOAA (Exhibit 2-7, Attachment 2). Because of the continuous development throughout the landscape unit, open spaces are valued and actively used. There are several trails, parks, and open spaces throughout the landscape unit, including McCurdy, West Montlake, and East Montlake Parks, the UW Open Space, MOHAI, the Montlake Cut, and the Bill Dawson and Ship Canal Waterfront Trails.



East Montlake Park, looking south at MOHAI



The Montlake landscape unit is a destination for University of Washington students, employees, and visitors and is a transition node between neighborhoods and activity centers to the north and south of SR 520. Bus and car commuters, cyclists, and pedestrians generate a great deal of activity, which is focused at the Montlake Boulevard-Pacific Street intersection (Exhibit 2-10, Attachment 2). This activity level would be amplified by transit riders when the Sound Transit University District link light rail station opens (expected in 2016). MOHAI and East Montlake Park (Exhibit 2-14, Attachment 2) just north of MOHAI also attract a steady stream of visitors to the Montlake area.

The Shelby-Hamlin neighborhood is a vital short-cut for pedestrians, joggers, and cyclists between the university and the Washington Park Arboretum. Viewer groups comprise drivers, bus and car passengers, pedestrians, boaters, and cyclists. They are commuters traveling by bus, bicycle, foot, or car through the area on SR 520 and Montlake Boulevard or waiting at the Montlake transit stop; employees of and visitors to the business or activity centers; students attending the university; and residents traveling between work and home.

Motorists on SR 520 are likely to be less sensitive to visual quality because they are traveling in a concrete-lined channel at high speeds and focused on traffic movements (Exhibits 2-8 and 2-9, Attachment 2). Motorists on Montlake Boulevard are also likely to be less sensitive to visual quality because they are traveling in traffic conditions with numerous visual distractions that demand focus on driving. Similarly, transit riders waiting at the Montlake transit stops are likely to be insensitive to visual quality because the conditions are harsh and unattractive.

Because the areas surrounding the University of Washington campus and SR 520 contain historic landscapes and structures, they possess high visual, social, and economic value for visitors and residents. Residents are likely to be very sensitive to visual quality in their neighborhood because they are aware of the history, and are attentive and attached to certain familiar qualities and views. This viewer group is likely to spend time walking, jogging, and cycling in addition to regular commuting activities.

Because of aging and weathering of materials and increased traffic wear and tear, existing SR 520 facilities, including ramps, retaining walls, and overpasses, appear to have deteriorated over time, visually affecting the surrounding area. Several structures and large areas of pavement are



unused and visible from certain vantage points within the Montlake landscape unit, particularly from a pedestrian perspective (Exhibit 2-15, Attachment 2).

Panoramic, highly memorable views are available year-round from the north stands in Husky Stadium (Exhibit 2-12, Attachment 2) and the Montlake Bridge (Exhibits 2-22 and 2-23, Attachment 2). These views contain important visual resources: Union Bay, Lake Washington, Mount Rainier, and the Cascade and Olympic Mountains. The Montlake Bridge is a historic and picturesque structure when seen from other viewpoints, but also offers scenic views along the Montlake Cut, across Union and Portage Bays and Lake Washington, and of the Cascade Mountains.



Husky Stadium, looking southeast toward Arboretum

In general, however, this is a vehicle-oriented environment and the aesthetic experience of pedestrians here is diminished by traffic, in particular at the Montlake Boulevard-Pacific Street intersection, the Montlake Boulevard overcrossing, and the Montlake transit stop under the Montlake overcrossing. The pleasant residential streetscapes in the Shelby-Hamlin and Montlake neighborhoods help to improve the experience of pedestrians along Montlake Boulevard and Lake Washington Boulevard East. However, transportation signage and signalization, roadway lighting, and overhead utilities create visual clutter, especially at the Montlake Boulevard-Pacific Street intersection vicinity for pedestrians, cyclists, and motorists. This mix of overhead wires, signals, and lamps is visually distracting and compositionally disharmonious and results in diminishing both the sense of arrival, or gateway, to the university and the view up Rainier Vista to Drumheller Fountain.

For visual quality ratings, based on the discussion above, vividness is high because of the architecture and landscape of the Shelby-Hamlin neighborhood, the iconic Husky Stadium, the historic and picturesque Montlake Cut and bascule bridge, and the views from Rainier Vista (Exhibit 2-11, Attachment 2). Intactness and unity are low because the integrity of the Shelby-Hamlin and Montlake communities is reduced by the presence of SR 520, and the southeast campus is a conglomeration of architectural styles, expanses of parking, and a cluttered crossroad at the Pacific Street-Montlake Boulevard intersection.



West Approach Landscape Unit

The West Approach landscape unit (Exhibit 10) is a very scenic area important both as a connector route and as a destination point. It comprises a number of recreational activity centers used by various viewer groups and includes the Washington Park Arboretum and Marsh and Foster Islands (Exhibit 2-16, Attachment 2), the University of Washington's Water Activities Center (Exhibit 2-13, Attachment 2), and the shorelines of McCurdy and East Montlake Parks. Development is minimal in this landscape unit and limited to residential areas in Laurelhurst, midrise to highrise condominiums in north Madison Park, and public and private docks. Viewer groups are motorists on SR 520, boaters heading to or from Lake Washington, recreationists traveling to and from area sites, and residents traveling between work and home. Motorists on SR 520 and boaters are likely to appreciate the beauty of the landscapes and open water and will therefore be sensitive to visual quality. The same would be true for visitors here and throughout the corridor who engage in local recreational activities because they have come specifically to enjoy the natural and/or scenic surroundings. Residents are a small viewer group but are also likely to be very sensitive to visual quality because they are attentive and attached to certain familiar qualities and views.

Panoramic or scenic views are available from most locations in this landscape unit. The west highrise at the east end of the west approach is a small, frequently hidden element in most views (Exhibits 2-19 and 2-20, Attachment 2), although the unused and aging R.H. Thomson Expressway ramps are visible from certain vantages. From the peninsula between Montlake and the Arboretum and Marsh Island, the columns and road deck are dominant features in most views (Exhibit 2-21, Attachment 2). In the Arboretum itself, the bridge and west approach are only visible from the Foster Island shoreline and the boardwalk between Foster Island and Marsh Island. The west approach is



Foster Island Boardwalk, looking southwest toward Lake Washington Boulevard ramp



Graham Visitors Center in the Arboretum



Foster Island path, looking north toward Union Bay



dominant in views northward from north Madison Park (Exhibit 2-17, Attachment 2). Overhead transportation signage, street lighting, and utilities are only somewhat noticeable.

With the exception of the portion of the bridge and highrise that parallel north Madison Park, vividness, intactness, and unity are high throughout the West Approach landscape unit because of the scenic, picturesque, and memorable features previously discussed. Because of the age of the west approach structure, vegetation and shorelines have settled into a visual balance with the bridge.

Lake Washington Landscape Unit

The Lake Washington landscape unit (Exhibit 10) is a very scenic recreational area with dramatic views from most viewpoints, including from the Evergreen Point floating bridge. The floating bridge across Lake Washington is an important, heavily traveled route that links Seattle to the Eastside at midspan. Viewer groups in this landscape unit are motorists on the bridge including commuters, local visitors, and tourists; people in water vessels of all types; residents who live along the shoreline, and beach-goers.

Motorists on SR 520, especially those in taller vehicles such as trucks and buses, are likely to appreciate the beauty of the lake and shoreline landscape and will therefore be sensitive to visual quality. The same would be true for those engaging in local recreational activities because they have come specifically to enjoy the natural and/or scenic surroundings. Residents are a smaller viewer group than motorists, but are also likely to be very sensitive to visual quality because they are attentive and attached to certain familiar qualities and views.

For views toward the bridge, people engaged in water activities on Lake Washington comprise the largest group with the opportunity to have close-up views of the bridge. The bridge appears as an 8-foot-tall concrete wall when seen from the lake near the bridge; however, for most people on the lake, this is a temporary and changing view. Residents who live on Madison Park and Medina shorelines near the floating bridge have scenic views that include the bridge as a dominant feature. Viewpoints for boaters and residents far from the bridge attract large viewer groups. Sensitivity is likely to be high for all viewer groups given the panoramic and memorable views from both the lake and the floating bridge.



Views from most locations in this landscape unit are memorable because of the large number of visual resources that can be seen: Lake Washington, Mount Baker to the north, Mount Rainier to the south, and the Olympic Mountains to the west. The Cascade Mountains to the east are not visible from the bridge because Clyde Hill on the east side of Lake Washington limits views. Distant views toward the Evergreen Point Bridge generally have high vividness, intactness, and unity because of the memorable expanse of Lake Washington with the mountains in the distance (Exhibit 2-18, Attachment 2). The composition of these views is harmonious and intact because development is intermixed with shoreline vegetation and softened by the distance. For boaters and others on the lake near the bridge, the view is dominated by the 8-foot-high portion of the concrete pontoons that is above water, which results in low intactness and unity, and moderate vividness.

For visual quality ratings, based on the discussion above, vividness, intactness, and unity are high to very high because of the natural beauty and panoramic expanse of Lake Washington. Moreover, views of important visual resources are part of the Lake Washington panorama: Mount Baker to the north, Mount Rainier to the south, the Cascade Mountains to the east, and the Olympic Mountains to the west. Traffic barriers block the motorists' foreground view to the side, but the lake, nearby shorelines, and distant mountains are readily visible. The roadway is the prominent feature in views along the alignment from the road, but it is small relative to the overall scale of the panoramas on either side.

Eastside Landscape Unit

It is assumed that the Medina to SR 202: Eastside Transit and HOV Project will be completed before the I-5 to Medina project; therefore, this section describes the visual quality of the Eastside landscape unit as it would appear after completion of the Medina to SR 202 project.

Commuters and other motorists form the largest viewer group with views from the roadway at Evergreen Point Road. Trail users (cyclists and pedestrians), bus riders at the transit stop, people visiting the Bellevue Christian School/Three Points



Looking west along SR 520 from Evergreen Point Road overpass



Elementary, residents and visitors to the Fairweather Nature Preserve, and some residents constitute smaller groups with views of the roadway.

Motorists' sensitivity is likely to be low to moderate due to the high speeds of travel, but it is likely that some corridor users are aware and/or appreciative of the vegetation that lines the corridor. Trail and park users are likely to have moderate to high sensitivity to the surroundings because they move slowly enough through an area to see its details. Residents with views across Lake Washington are also likely to be very sensitive to views. All of these views include the Evergreen Point Bridge and are affected by the bridge to varying degrees, depending on how close the viewpoint is to the bridge.



Mature vegetation lining north side of roadway at Evergreen point Road

With the exception of the view westward from the Evergreen Point Road/76th Avenue NE overcrossing, vividness of views from SR 520 is very low to low because there are no distinctive or memorable features. Vividness for views westward from SR 520 just west of the Evergreen Point Road overcrossing and from the overcrossing itself is moderately high to high because of the framed view across Lake Washington, of Husky Stadium and the Seattle shoreline in the middle ground, and of the Olympic Mountains in the distance.

Intactness for views from the highway ranges from very low to moderate because of the width of the highway and the enclosing walls. Intactness for views of the highway from residences ranges from low to moderately low until vegetation matures to heights that screen highway walls.

Unity for motorists' views from SR 520 would range from low to moderately low due to the discrepancy between the wooded character of the landscape unit and the suburban character of the 6-lane highway. Unity for residential and other views toward the highway could range from low to high, depending on how much of the highway would be in the view.



Potential Effects of the Project

What methods were used to evaluate the potential effects?

To evaluate potential effects of the build alternatives, the project team evaluated the changes to views that were likely to result from each build alternative. Changes to views were evaluated by studying project engineering plans, conducting site visits to assess specific views and general qualities, and preparing visualizations. The “before” and “after” visual character were compared in order to determine the degree and type of potential effect, as defined by the criteria shown in Exhibit 13, adapted from FHWA guidelines (FHWA 1989). Changes in visual character indicated how visual quality could change. The effects of the proposed alternatives on the visual character and quality of a landscape can then be described according to changes in the following:

- The proposed width, elevation, and alignment of the roadway or bridge
- The proposed addition or removal of structures or vegetation
- The degree to which new structures would contrast or blend with the existing landscape

Exhibit 13. Visual Effect Levels and Ranking Criteria

Low	Moderate	High
<ul style="list-style-type: none"> • No physical changes are expected to result from the proposed project. • Any remodeling of existing structures for the project would include visually blending the remodeled buildings into the surrounding area. • Proposed structures would be located in areas that do not exhibit a defined visual character (areas made up of different uses and scales of structures, and with no landmarks or historic structures). • Proposed project is compatible with visual character of surrounding area. 	<ul style="list-style-type: none"> • Proposed construction includes new structures that would have a different scale, color, location, or orientation from surrounding structures. • The proposed project is located within a historic district, near historic structures or major public buildings designed as focal points (for example, city halls and courthouses). 	<ul style="list-style-type: none"> • The project is of a scale that contrasts with its surroundings (for example, contains structures bulkier than those nearby, or introduces voids such as parking lots into well-defined street spaces). The magnitude of effects would be greater in areas with recognized visual characters that are perceived by the community as assets and encourage use of the area. • The proposed project would disrupt important views (for example, views of mountains, oceans, rivers, or significant built structures).

Source: Adapted from FHWA (1989).



How would construction of the project affect visual quality and aesthetics?

This section discusses the type and duration of effects from construction of the 6-Lane Alternative. Permanent effects are discussed in *“How would operation of the project affect visual quality and aesthetics?”*

The most noticeable changes to the visual character and quality of the SR 520 corridor that are common to all of the options could result from the following:

- Construction of temporary work and detour bridges
- Construction of the new roadway, bridges, tunnels, and walls
- Demolition of the old roadway and bridges
- Excavation or grading outside of the existing roadway
- Removal of vegetation
- Temporary erosion and sedimentation control measures
- Stockpiling and staging areas for materials and equipment
- Addition of chain-link security fences and high-visibility fences
- Presence of construction equipment of all sizes, including haul trucks, cranes, and barges
- Temporary traffic or construction signage
- Temporary retaining or screening walls

Other types of construction impacts on visual quality include:

- The presence of medium- and heavy-duty construction and demolition equipment out of character with the area that detracts from existing visual character and quality.
- Potential increase in light and glare, especially if work were performed at night.
- Presence of dust and airborne particulates and debris from grading and construction activities.
- Increase in traffic congestion. Although traffic slowdowns through the study area are not unusual, the duration and frequency of such



occurrences could noticeably increase. These effects could result from changed or reduced access, detours through neighborhoods, and the addition of construction traffic, parking, and heavy equipment.

Any individual item listed above would be noticeable and contribute to a change in visual character and diminished visual quality. However, the combination of any of the effects listed above could seriously degrade views and landscapes if such locations are not screened or activities and/or equipment are not located in less visible places. These effects would be temporary, but the effects could span weeks, months, or years as in the case of vegetation regrowth.

No Build Alternative

There would be no project-related construction under the No Build Alternative. Under the No Build Alternative, SR 520 would continue to operate as it does today: as a 4-lane roadway with nonstandard shoulders and without a bicycle/pedestrian path. No new facilities would be added and none would be removed, including the unused R.H. Thomson Expressway ramps near the Washington Park Arboretum. No structures or vegetation would be replaced or modified. No changes to views to and from the Seattle study area would occur. This scenario assumes that the Portage Bay and Evergreen Point bridges would remain standing and functional through 2030 and that no catastrophic events (such as earthquakes or extreme storms) would be severe enough to cause major damage to the bridges.

6-Lane Alternative

Seattle

Roanoke Landscape Unit

Options A, K, and L

Construction activities would be visible from a few homes, the upper floors of Seward Elementary School, and roadways and surface streets. The 2 years of construction activity associated with mobilization and construction of the Roanoke lid, eastbound and westbound mainlineramps, and reversible HOV ramp would have a high impact on visual character and quality for all viewers. Viewpoints with long-distance views across Portage Bay or to the west would be minimally affected by construction in Roanoke because most construction activities would occur along the roadway corridor.



The greatest effect on views would result from large-scale activities that involve heavy equipment and collectively span 2 years. These would include demolition of ramps and bridge overcrossings; construction of new ramps; replacement of bridges at Roanoke Street, 10th Avenue East, and Delmar Drive East; and construction of the new I-5 and 10th and Delmar lids. Removal of the Delmar Drive East overcrossing and construction of detour bridges would result in the temporary removal of Bagley Viewpoint Park and the tree buffer below the viewpoint. Temporary detour bridges would be large, complex structures that would clutter views from the roadways and overcrossings. Construction equipment and activities would be visible from homes along I-5 because the newly constructed sound walls along Boylston Avenue and Harvard Avenue in the vicinity of Roanoke Street would be removed to build the I-5 lid.

Temporary and permanent removal of vegetation would open up views to construction areas, but also create long-distance views. Construction of a direct-access HOV interchange ramp and lid over I-5 would remove some trees and shrubs from the I-5 median and in the I-5/SR 520 interchange. Preparation for construction of the lids would result in permanent removal of mature roadside trees and shrubs along both sides of SR 520. Views from homes that are currently screened by these trees and walls would then overlook ongoing construction activities and equipment. In some locations, removal of trees could open up long-distance panoramas.

Heavy earthwork equipment would be required to landscape on and around the lids and recreate Bagley Viewpoint Park, which will therefore be visible.

Portage Bay Landscape Unit

Options A, K, and L

Construction activities would be visible from most locations around Portage Bay. Temporary changes to visual character and quality would be high for views from or near to the Portage Bay Bridge and moderate as seen from the north part of the bay. Changes to distant views, such as from the Lake Washington Ship Canal Bridge, or oblique views, such as from West Montlake Park, would be low or barely noticeable.

The greatest change to visual quality would result from the construction and presence of temporary work bridges on both sides of the Portage Bay Bridge because of their size and complexity. The later construction of the permanent new Portage Bay Bridge would



compound these effects. The combination of the temporary work bridges, falsework finger piers, and the existing and new Portage Bay Bridges, with phased demolition and construction over the course of nearly 7 years, would result in a substantial degradation of visual character and quality of the south part of Portage Bay. The bridges would block water and ground level views near these structures. The viewers most affected by this scenario would be motorists crossing the bridges, residents on houseboats and those near the bridge ends, park users at Montlake Playfield, and boaters at the marinas (Queen City and Seattle Yacht Clubs).

Heavy earthwork equipment, required to excavate the bridge piers near Boyer Avenue East and contour the terrain near Boyer Avenue East and Montlake Playfield for stormwater and landscaping – as well as potential over-water construction equipment – will be visible to motorists and residents of the area.

Vegetation under the west end of the bridge on either side of Boyer Avenue East would be removed, but this currently is an abandoned landscape.

Montlake Landscape Unit

Option A

Construction equipment and activities in the Montlake landscape unit would be visible from homes along Montlake Boulevard and Lake Washington Boulevard, the NOAA campus, portions of the University of Washington campus, and the roadways and surface streets.

Temporary changes to visual character and quality would be high for viewers from these locations. Long-distance views from across Portage or Union Bay would not be affected because of the tall trees that screen the Montlake Boulevard corridor.

The greatest temporary effects on views and visual quality would be from construction activities and equipment used to reconstruct the Montlake interchange adjacent to the NOAA campus and homes along Lake Washington Boulevard. This construction activity would be highly visible from the Seattle Yacht Club, the Montlake Cut, Montlake Boulevard, and the southeast campus of the University of Washington (in particular, from Husky Stadium, the University Link Light Rail station, and the university's Medical Center buildings).

The viewers most affected by these changes would be motorists on SR 520, all travelers on Montlake Boulevard, people at NOAA, light rail commuters at the University of Washington campus station, and



residents facing East Montlake Park and SR 520. Construction activities would clutter all views, especially for boaters in the Montlake Cut and SR 520 motorists, both of whom would be sensitive to visual quality.

Considerable earthwork would be undertaken for Option A in the Montlake landscape unit. Widening of the road and grading for the stormwater ponds in the MOHAI site would bring earthwork equipment within sight of some residences and trail users.

Preparation for construction of the new bascule bridge across the Montlake Cut would require removal of a band of mature, dense woods along the Cut. The bascule drawbridge would also remove two single-family homes and bring traffic and the new bridge close to homes that are now buffered by those homes and vegetation.

Widening Montlake Boulevard north of the Montlake Cut would remove a portion of the UW Open Space, including many specimen conifers that now act as an informal gateway to the University of Washington campus and as the ground-level terminus of Rainier Vista. Removal of these exceptional conifers would be noticeable to both those familiar with (and sensitive to) the view and to casual viewers. The loss of these trees could change the character of the lower part of the panoramic view. It is also possible that some of the construction activities would be visible from Drumheller Fountain, but neither the removal of the trees nor construction activities would interfere with or degrade views of Mount Rainier.

Option K

Construction activities in the Montlake landscape unit for Option K would be similar to Option A west of Montlake Boulevard but much more intensive elsewhere because of the excavation needed to build the depressed Montlake interchange and tunnel, and the depressed Montlake-Pacific intersection. Option K would not affect the Montlake bascule drawbridge area, and visual effects in the NOAA campus area could be less than those of Option A. The east end of the Portage Bay Bridge would be 11 to 12 feet narrower for Option K than for Option A, which might lessen the visual effects of demolition and construction. Temporary changes to visual quality resulting from construction would be very high in the Montlake Boulevard-Pacific Street intersection and in the East Montlake Park/MOHAI area.

Excavation, soil hauling, and construction of formwork and a temporary detour bridge would have a very high level of effect on visual character and quality in the East Montlake Park area. However



trail closures or detours may redirect users, which, while inconvenient, may prevent visual exposure to construction. The greatest change to visual quality would result from excavation for and construction of the Montlake SPUI and the tunnel entrances in East Montlake Park and in the south parking lot of Husky Stadium. Excavation of the tunnels under the Montlake Cut would not be visible but the freezing operation and mining machinery would be visible for several months. The depth of the SPUI would necessitate formwork for tall retaining walls around the interchange and columns to support the overhead mainline.

Excavation, earth-moving equipment, work and detour bridges, and falsework for the tunnels and SPUI would be visible to people in the east Shelby-Hamlin neighborhood, on the Arboretum Waterfront Trail at Marsh Island, along the Montlake Cut, and in the University of Washington's Water Activities Center. A temporary detour bridge south of the existing west approach structure could clutter views from and of SR 520 because of its size and complexity. Whether this activity would be visible from Laurelhurst or Union Bay depends on the condition of the shoreline tree buffer. This high level of degradation of visual quality and character from demolition and construction could last for up to 7 years.

Excavation for the tunnel in Montlake would remove the grassy slope of East Montlake Park and could affect character-defining shoreline vegetation that acts as a visual buffer. The loss of tree buffers, the extreme change in landform, and the construction of ventilation towers for the tunnels and pump houses for stormwater would dramatically change the park-like character of this area.

In the Montlake-Pacific area near Husky Stadium, excavation for the north entrance of the tunnel and the depressed Montlake Boulevard-Pacific Street intersection could remove established landscaping. This would include a portion of the vegetation in the UW Open Space south of the parking lot, including some specimen trees that act as an informal gateway to the University of Washington and as the ground-level terminus of Rainier Vista. The removal of the tall conifers would be noticeable to those familiar with (and sensitive to) the view, as well as to casual viewers, and could subtly alter the overall quality of that view. It is possible that some of the construction activities would be visible from Drumheller Fountain, but none of the construction activities would interfere with views of Mount Rainier.



Option L

Construction activities in the Montlake landscape unit for Option L would be similar to Option K. Whereas Option K would result in removal of vegetation and changes in landform, Option L would have fewer effects on shoreline vegetation but would add large above-ground bridge structures. As with Option K, there would be no effects near the existing Montlake Bridge and the adjacent portion of the Montlake Cut, but very high levels of change to visual character, quality, and views would occur on the east end of the Montlake Cut, the east Shelby-Hamlin neighborhood, the East Montlake Park area, and at the Montlake-Pacific intersection.

Excavation, soil hauling, and construction of formwork and temporary detour bridges would have a very high level of effect on visual character and quality in the east Montlake area. The greatest change to visual quality would result from excavation for and construction of the elevated Montlake SPUI, the depressed mainline under the SPUI, and the new bascule bridge over the east mouth of the Montlake Cut with its approaches in East Montlake Park and the Husky Stadium parking lot. Temporary detour bridges would also clutter views from and of SR 520 because of their size and complexity.

Construction activities and equipment would be visible to people in the east Shelby-Hamlin neighborhood, on the Marsh Island recreational trail, along the Montlake Cut, and in the university's boating activities area. Whether this activity is visible from Laurelhurst or Union Bay depends on the condition of the shoreline tree buffer. This high level of degradation of visual quality and character from mobilization, demolition, and construction activities could last for up to 6 years.

Effects on landscape would be similar to those of Option K. In the Montlake Boulevard-Pacific Street triangle area, excavation for the depressed intersection could cause the removal of part of the landscaped park south of the parking lot, including some specimen trees that act as an informal gateway and the ground-level terminus of Rainier Vista. It is likely that some of the construction activities would be visible from Drumheller Fountain along the Rainier Vista axis because the bridge structure would be above ground. Removal of the tall conifers at the terminus of the Rainier Vista axis would be noticeable to those familiar with the view. Construction equipment would not interfere with views of Mount Rainier.



West Approach Landscape Unit

Option A

Construction activities needed to replace the transition span at the west approach would be partially visible from most locations around the bay. For the most part the effect on distant views is likely to be low to moderate. Vegetation in the Washington Park Arboretum would be removed in 30- to 60-foot-wide swaths for work bridges. The work bridges would be screened in places from full view by remaining trees, but the bridges would be highly visible at breaks in the tree line because of their size and complexity. Barges and tall cranes would stand out because of their size or height, and this would further diminish the visual character and quality of the area because this type of equipment is not in harmony with the natural land and waterscapes.

Demolition and removal of the existing Lake Washington ramps would be fully visible from the WSDOT peninsula and the lake; however, compared to the construction activities this would be a minor and increasingly positive visual change.

The viewers most affected by these construction activities would be motorists on the bridge, residents near the bridge ends, park users in the Washington Park Arboretum, and boaters.

Option K

Construction activities would be visible from most locations around Union Bay. Temporary changes to visual character and quality would be high for views from or near the west approach bridges and from Husky Stadium, where Foster Island and the Washington Park Arboretum ramps are visible from seats in the north-east corner of the stadium. This is a signature view from the stadium and televised aerial views. Construction activities would have substantial visual effects on those views. From north Union Bay, visual changes would be moderate or low. There would be low or barely noticeable effects on distant views, such as from Laurelhurst, or oblique views, such as from Lake Washington.

The greatest permanent change to visual character and quality would result from the demolition of the existing Lake Washington ramps to and from the Washington Park Arboretum. Although the construction and presence of temporary work and detour bridges would be temporary, high-level effects would occur because of their size and complexity. The later construction of the permanent new west approach bridges would compound the effects. The combination of the temporary



work bridges, detour bridges, finger piers, and the existing and new bridges would result in a substantial degradation of visual character and quality of the south part of Union Bay. This combination structure would block water and ground-level views for viewers near the structures. The viewers most affected by this would be motorists crossing the bridges, park users and boaters, and residents in north Madison Park. Views from the Broadmoor Golf Course would be screened most of the year by tall trees along the shoreline.

Construction of the land bridge at Foster Island would probably not be visible from distant viewpoints, such as Laurelhurst, because of shoreline trees to be retained around the perimeter of the site. However, most of the trees and shrubs in the interior of north Foster Island would be cleared for placement of the fill soil that would create the north connection of the land bridge to the tunnel. A swath of trees along the new tunnel would be removed along the south side to allow placement of fill soil to complete the south portion of the land bridge. This concentrated clearing, grubbing, earthwork, and construction would result in a very high level of change to visual character and quality. The area would be closed to park users during construction for safety purposes, so while pedestrians would not have access during construction, motorists and particularly boaters and visitors to Husky Stadium would be aware of and sensitive to construction activities.

Earthwork would also be required near McCurdy Park for the cofferdams needed to build the connection between the depressed SPUI and the west approach bridge and could have negative visual impacts.

Ramps to Lake Washington Boulevard

The removal of mature poplars and other specimen trees to the east of Lake Washington Boulevard East for the new ramps and turnaround would be permanent. These trees now buffer the view of the roadway and its ramps from several Montlake homes and the boulevard. The removal would also change the visual character and quality of the historic, tree-lined boulevard. Construction of the multi-lane terraced roadway, without the benefit of a tree screen, would bring excavation, concrete, and pavement equipment into views from the parkway, the WSDOT peninsula, and the Washington Park Arboretum shorelines.

Option L

Construction activities for Option L would result in visual effects similar to Option K. Similar visual changes would result from the presence of west approach work bridges; removal of vegetation in 30-to



60-foot-wide swaths through the Arboretum; and demolition and removal of the existing Lake Washington ramps. More severe visual changes would result from the construction and presence of cofferdams that would be needed to construct the approaches to the elevated SPUI.

The viewers most affected would be motorists on the bridge, residents near the bridge ends, park users in the Arboretum, and boaters.

Lake Washington Landscape Unit

The greatest temporary change to visual quality would result from the presence of construction equipment and barges and the construction of work bridges because of their size and complexity. These temporary effects would be compounded by construction of the floating bridge, the bridge maintenance facility including its dock, and the east approach bridge that connects the floating bridge to Medina at Evergreen Point Road. The combination of the large temporary structures and the existing and new bridges would result in a substantial degradation of visual quality for viewers on or near the structures. Barges and boats serving as construction platforms would be part of the near-distance views toward the lake for many homes. Cofferdams and other structures would likely be visible only to boaters and residents standing on their docks. Construction activities would have a very high negative effect on the visual character and quality of views from shoreline and hillside homes in Medina that are near the floating bridge and east approach now.

The viewers most affected by this construction activity would be motorists crossing the bridges, residents near the east approach in Medina, and boaters near the bridges. Construction equipment and activities would have a low level of effects on the visual quality of views from Madison Park, Kirkland, or Laurelhurst because of the distance.

Eastside Landscape Unit

Construction activities and equipment needed to tie the I-5 to Medina project to the completed Medina to SR 202 project improvements would generally not be visible from outside of the roadway because of sound walls. Relocating the Evergreen Point Road transit stop to the east portal of the lid would be a temporary and result in minimal change to visual character or quality for views from the roadway. In addition, relocating this transit stop would be only partially visible from residences that are higher than the roadway.



Restriping SR 520 from Evergreen Point Road to 92nd Avenue NE, as well as moving and realigning traffic barriers, would have no notable effects on visual character or quality. The trucks required for striping would be similar to the types of vehicles that routinely travel this segment.

Pontoon Transport

The pontoons for the floating bridge would be transported by water from Grays Harbor or Tacoma to preapproved moorage locations in Puget Sound or Lake Washington, where they will be stored until they are incorporated into the proposed floating bridge. The pontoons would be outfitted with superstructure that will support the road deck, and utilities can be added at a variety of locations. Outfitting of pontoons could take place at Puget Sound industrial sites (refer to the Construction Techniques and Activities Discipline Report for the I-5 to Medina project; WSDOT 2009b).

Visual quality effects from the presence of the pontoons would be due to the addition of mooring “dolphins” at the moorage locations, equipment and work barges or boats for adding the superstructure to the pontoons, and the presence of lighting on any of these structures for construction or safety. These moorage and outfitting locations would be near working industrial sites in Puget Sound and are less likely to affect visual quality or views than moorage/outfitting locations in Lake Washington. Here, the effects on views and visual quality could be substantial because there are no industrial activities in this portion of Lake Washington. Viewers that would be sensitive to these changes include boaters, cruise ship and ferry passengers, and residents and recreation area users near the sites.

Phased Implementation Scenario

A Phased Implementation scenario would include the replacement of one or more of the following structures in order of priority as follows:

- Floating span of the Evergreen Point Bridge (vulnerable to windstorms): refer to Lake Washington Landscape Unit section
- West approach to the Evergreen Point Bridge (seismically vulnerable): refer to West Approach Landscape Unit section, subsection Option A
- Portage Bay Bridge (seismically vulnerable): refer to Portage Bay Landscape Unit section, subsection Options A, K, and L



Construction effects on visual quality and character during phased implementation would be the same as those described under Option A.

How would operation of the project affect visual quality and aesthetics?

This section describes the potential effects of changes to structures, vegetation, and views on visual character and quality and rates the overall vividness, intactness, and unity (Exhibit 8) for each landscape unit. The table in Attachment 1 provides a summary of each visual quality factor for each landscape unit and alternative.

6-Lane Alternative

Seattle

Roanoke Landscape Unit

Options A, K, and L

The primary effects on visual quality and character from operation of the facility would result from the following:

- The noticeably wider roadway
- Presence of landscaped lids over I-5 at Roanoke Street and over SR 520 between 10th Avenue East and Delmar Drive East
- Growth of the vegetation over time
- The experience of driving through lid tunnels rather than under short bridges

The overall character of this landscape unit from the perspective of views toward the road could improve as a result of the presence of the two lids. The visual character of the neighborhoods and commercial area would not change, but the area would be less dominated by the roadway. The 10th Avenue East-Delmar Drive East lid would provide a continuous landscape between neighborhoods and could also improve the context for the National Historic Register-eligible Roanoke Park Historic District. The landscaped lid could also recreate a more substantial connection between Interlaken Park and Bagley Viewpoint Park.

A new Bagley Viewpoint Park would be different from the original park, but would be designed to recreate the panoramic vista to Lake Washington and the Cascade Mountains. The areas to the north and



south of the lid surface would be planted to replace the mature tree buffer and street trees that were removed for construction. The landscape would evolve over time and eventually the tree buffer would be tall enough to screen views of homes and thereby potentially improve views from the road.

The new reversible HOV fly-over ramp might be more visible than the existing ramp, but the only places with views of it would be Seward School and the two lids. Visual quality would not change here because the new ramp would be consistent with the visual quality and character of the existing interchange.

Views toward SR 520 from Roanoke Street, Delmar Drive East, or 10th Avenue East would be improved over existing views because of the landscaped lids. Views from these streets eastward over Portage Bay would be similar to existing views, but the width of the new Portage Bay Bridge would make it more dominant in those views (Exhibit 2-1, Attachment 2). Motorist experience could be diminished by being inside the tunnels rather than being in the open with natural light and a landscaped roadside.

As a result of these improved conditions, vividness would remain moderate, but intactness and unity would increase from low to moderate.

Portage Bay Landscape Unit

Option A

The primary effects on visual quality and character from operation of the facility would result from the following:

- The character and quality of the new Portage Bay Bridge
- Wider spaces between columns and a wider road deck
- Landscaping under the Portage Bay Bridge west of Boyer Avenue

The overall character and quality of this landscape unit would change as a result of the Portage Bay Bridge, but views from water or ground level near the new bridge would be more open. The greater column spacing (from 100 feet on-center currently to as much as 250 feet apart) would open up views under the bridge, especially looking northward from the south side of the bridge (Exhibit 2-5, Attachment 2). The east end of the new bridge near NOAA would be farther north, which could have a moderately positive effect for Montlake Playfield views. A wider west end of the bridge would affect views from the homes next to the bridge on the north side, making the bridge more dominant in eastward



views. This would not change visual quality because the bridge is already the dominant structure in the views in this area (Exhibit 2-4, Attachment 2).

The driver's experience would change because of the greater width of the bridge (Exhibits 2-2 and 2-3, Attachment 2). Views would still be panoramic eastward, but the view of open water would decrease. If sound walls were desired by the community, the walls would block lateral views and diminish the sense of panorama.

The areas under the west end of the bridge would be re-landscaped in a way that would open up views toward the water and along Boyer Avenue.

These changes would not change the overall visual quality ratings, but much depends on the design of the new bridge. If the design of the Portage Bay Bridge is noteworthy and architecturally appropriate in terms of style and scale for the setting, vividness and unity would remain high, and intactness could increase. On the other hand, a design that does not consider style or scale may adversely affect visual quality.

Option K

Option K would result in effects identical to those of Option A, except that Option K does not have the Option A auxiliary ramp, making the eastern half of the bridge 35 feet narrower than under Option A (Exhibit 2-1, Attachment 2). The decrease in width would noticeably decrease the effects on the NOAA campus (Exhibit 2-7, Attachment 2), but may not be discernible from most viewpoints (Exhibit 2-6, Attachment 2). The suboption to add an east-bound off ramp to Montlake Boulevard would be similar to the existing eastbound off-ramp. The false arch of the bridge could also have a positive aesthetic effect.

Option L

Option L would result in effects similar to those of Option K, except that the presence of sound walls at approved locations would make the roadway appear more massive when seen from outside of the roadway. In addition, the sound walls would block lateral views for motorists on the bridge (Exhibits 2-5 through 2-4, Attachment 2). This would have a negative effect on those scenic and character-defining views, resulting in an overall reduction in the quality of views of experienced while driving across or looking at the Portage Bay Bridge.



Montlake Landscape Unit

Option A

The primary effects on visual quality and character from operation of the facility would result from the following:

- Presence of a new bascule bridge parallel to the historic Montlake Bridge
- Widened Montlake Boulevard north and south of the two bridges
- Presence of a landscaped lid at 24th Avenue East
- Presence of stormwater ponds where MOHAI currently stands
- Smaller NOAA campus because of the new on-ramp

Under Option A, widening the roadway to the north would permanently remove mature roadside trees and shrubs that now provide a pleasant green edge along the roadway. The removal of these trees would also change the view from several homes and for park users and transit riders in the southeast campus area of the University of Washington. In addition, the south retaining wall below Lake Washington Boulevard would be replaced by a high retaining wall constructed to the same height as the existing to accommodate the deeper SR 520 roadbed (Exhibit 2-15, Attachment 2) and the new Montlake lid structure (Exhibits 2-8 and 2-9, Attachment 2).

Replacement of McCurdy Park, the MOHAI building and parking lot, and a portion of East Montlake Park with roadway and a stormwater treatment wetland would result in high levels of change to the visual character of the landscape from the viewpoint of motorists and adjacent residents (Exhibit 2-14, Attachment 2). This could also change the setting for the eligible Montlake Historic District. However, if the stormwater treatment wetland were designed to blend naturalistically with the surroundings it could be a positive change. Replacing the large asphalt parking lot with a natural-appearing wetland would be more consistent with the appearance of the shoreline and wetlands of Union Bay and the Arboretum. If a less sensitive approach to design of the ponds is taken, this could detract from the visual quality of the area.

In the Montlake area, the character of the NOAA Northwest Fisheries Science Center would be changed by the reduction in size of the landscaped east slope and the change in views from the central buildings. Before the project, the three-story research buildings acted as a physical barrier and visual buffer against the roadway. The



replacement of these service buildings with an auxiliary lane and a new Bill Dawson Trail would substantially alter the visual quality of views at the NOAA campus for people who work there (Exhibit 2-7, Attachment 2).

In the southeast campus area of the University of Washington, Option A would have effects on overall visual quality comparable to Options K and L but on different resources. The removal of specimen trees along Montlake Boulevard in the UW Open Space to accommodate the new bascule bridge would diminish one of the positive features of this gateway area. The removal would not be noticeable from Rainier Vista or affect the Montlake Boulevard intersection (Exhibits 2-10 and 2-11, Attachment 2). The iconic view from Husky Stadium would be similar to the existing view in time, after tall vegetation becomes re-established (Exhibit 2-12, Attachment 2).

Vividness, intactness, and unity would not change from their existing levels for the overall corridor. Vividness would remain high in the Montlake Cut area if the new bascule bridge is an appropriate architectural companion to the existing historic bridge. Even though the SR 520 roadway would be wider, intactness and unity for residential views in the Montlake area could potentially increase because they would be of landscaping and not the highway. In the southeast campus area, the intactness and unity could increase if the widening continues the boulevard character of Montlake Boulevard south of the Montlake Cut.

Suboptions

The eastbound HOV direct access ramp to the SR 520 suboptions could increase the visual effects by virtue of the height or added width of the ramps. Fly-over ramps could be visible from distant viewpoints because of their height. The ramp itself would add to the complexity of the overall structure.

Option K

The primary effects on visual quality and character from operation of the facility would result from the following:

- Depressed SPUI and tunnel portal in the former McCurdy Park and MOHAI sites
- Presence of tall retaining walls, columns for the mainline, and more road surfaces around the interchange



- Depressed intersection at Montlake Boulevard and Pacific Street, and a tunnel portal near the Montlake intersection in the southeast campus of the University of Washington.

Option K would result in very high levels of change to the visual character and quality in the Montlake area. The profile of the mainline in Option K would be at roughly the same height as the existing SR 520 mainline and therefore would be about as visible as the existing roadway from most residences, where not covered by the lid. A full lid between Montlake Boulevard and 24th Avenue East would also hide part of the roadway and, being a landscaped area, would improve visual and spatial connectivity across SR 520 (Exhibits 2-8 and 2-9, Attachment 2). For motorists and transit riders on the mainline, the lid tunnel would limit views to glances of the surrounding area. The addition of the East Montlake Park stormwater ponds could contribute to a park-like character if the shapes and plantings are naturalistic. Conversely, if standard stormwater approaches are applied, which typically includes functional plantings and fencing, this could detract from the visual quality of the area.

At SR 520, the SPUI and tunnel configuration would create a walled canyon for motorists. The tunnel entrance would require tall retaining walls, the mainline would require columns for support, and there would be generally more road surface (Exhibit 2-15, Attachment 2). These structures would dominate near views much more than the existing ramps and mainline do because of the walls in the water for the SPUI ramps, and because the tree buffers would be gone (Exhibit 2-21, Attachment 2). These structures would be visible to motorists and park users, with the highest level of visual effects on views from the Arboretum Waterfront Trail at Marsh Island. Because the portal of the tunnel would face away from the university's Waterfront Activities Center, it is likely that visual effects from those viewpoints would be minimal (Exhibit 2-13, Attachment 2). People in residential areas would not be able to see the interchange area because of the lids and the depth of the canyon.

The tunnel could change the character of the east mouth of the Montlake Cut. Even though the structure itself would not be visible, the tunnel entrance would change the landform at the former MOHAI parking lot and require ventilation towers and stormwater pump stations in East Montlake Park. The taller structures could also be visible from some residences on both sides of the interchange.



Option K would also result in very high levels of change to visual character and quality at the Montlake Boulevard-Pacific Street intersection. The lowered intersection and tunnel portal would be covered by a partial or full lid (Exhibit 2-10, Attachment 2). This new configuration would create a complex, multi-layered channel that would block views to the University of Washington and Rainier Vista from the viewpoints of the motorist and transit rider. However, pedestrians, cyclists, and disembarking or departing bus and light rail commuters could have an improved experience due to being separated from vehicular traffic and having unobstructed views. The lid would not interfere with views of the distance and Mount Rainier (Exhibit 2-11, Attachment 2). The interchange would not be easily visible from Husky Stadium after tall vegetation becomes re-established (Exhibit 2-12, Attachment 2).

Vividness, intactness, and unity would change from their existing levels for Option K. Vividness could remain high if the surface effects of the tunnel do not detract from the character of the canal, East Montlake Park, and the university's Waterfront Activities Center. Intactness and unity would decrease in the Montlake residential area because the massive, depressed SPUI is not in balance or consistent with the residential scale and the natural character of the parks and shorelines around it. The ventilation towers and small stormwater pump building in East Montlake Park would be visible from many locations and noticeable because it would not be consistent in scale or character with the surroundings. In the southeast campus area of the university, intactness and unity could increase if the depressed intersection results in the removal of overhanging wires, lamps, and signage and creates better pedestrian and vehicle orientation and circulation.

Option L

The primary effects on visual quality and character from operation of the facility would result from the following:

- New bascule drawbridge over the east mouth of the Montlake Cut
- North approach to the new bascule drawbridge near the Canoe House and part of the UW Open Space
- South approach to the new bascule drawbridge over East Montlake Park
- Elevated SPUI in Montlake over the mainline



Option L would result in very high levels of change to visual character and quality in the Montlake area. The SPUI over the mainline and the new bridge through East Montlake Park would be a dramatic change in visual character and visual quality in this area (Exhibits 2-14 and 2-15, Attachment 2). The retaining walls and columns would dominate motorist and bus commuter views from the roadway. The walls and elevated interchange would also dramatically change the character and quality of views from the Arboretum Trail at Marsh Island (Exhibit 2-21, Attachment 2), but would not be visible from the university's Waterfront Activities Center (Exhibit 2-13, Attachment 2) as long as mature vegetation remains in place. In the interchange area the structures would dominate views much more than the existing ramps and mainline do, in part because the existing tree buffers would be gone and difficult to replace. However, the interchange might not be visible from residences because of the lid and sound walls.

The new bridge could be noticeable from a number of viewpoints in the Montlake neighborhood, Foster Island, and Laurelhurst.

The proposed additional lid at 24th Avenue East could provide visual and spatial connectivity across the study area for the Montlake neighborhoods including pedestrians, cyclists, and drivers on 24th Avenue (Exhibits 2-8 and 2-9, Attachment 2).

Option L would also result in very high levels of change to visual character and quality in the southeast campus of the University of Washington. The new bascule drawbridge or its approach bridge would pass over the Canoe House and part of the UW Open Space. The depressed Pacific Street-Montlake Boulevard intersection and bridge landfall near the Montlake intersection would create a complex, multi-layered visual field that would block views to the University of Washington and Rainier Vista from the viewpoints of the motorist and transit rider. However, pedestrians, cyclists, and disembarking or departing bus and light rail commuters could have an improved experience due to being separated from vehicular traffic and having clear views in all directions.

In Montlake, the increased width of SR 520, the new tunnel created by the lid, and the presence of tall retaining walls topped by sound walls would noticeably diminish the visual quality of views from the roadway. The walls and tunnel would limit motorist and transit user views and visual connections to surrounding landscapes from the roadway.



Vividness, intactness, and unity would change from their existing levels for Option L. Vividness could remain high if the new bascule bridge is an appropriate architectural companion to the existing historic bridge and for its location at the mouth of the canal. On the other hand, a design that does not consider the historic context and style may diminish visual quality by adding a structure that detracts from the existing Montlake Bridge and its surroundings, in addition to blocking views.

Intactness and unity would decrease in the Montlake area because of the permanent loss of landscape in East Montlake Park and the presence of new sound walls along SR 520. The sound walls would not be compatible with the openness of the landscape and expansive views from MOHAI, East Montlake Park, and NOAA. Sound walls would also block views that now exist across SR 520 toward neighborhoods and parks. The lid will be designed to respond to the existing landscape and this may ameliorate the enclosing effect of the sound walls by creating new connections and viewpoints.

In the southeast campus area of the university, intactness and unity could increase for pedestrians, cyclists and disembarking or departing bus and light rail commuters but decrease for motorists and bus riders. The surface lid could create a less cluttered pedestrian environment that is also compatible with the urban character of the Pacific Street area and complement the University Link Light Rail station. The depressed intersection could also create a less cluttered situation for motorists but longer distance, orienting views and street landscapes would not be available.

West Approach

West Approach Landscape Unit

Common to All Options

The primary effects on visual quality and character from operation of the facility, for all alternatives, would result from the following:

- Removal of unused ramps from R.H. Thomson Expressway
- Widened roadway
- North-shifted west highrise
- Higher west approach
- Eastbound Lake Washington Boulevard on-ramp

Under all three options the R.H. Thomson Expressway ramps would be removed, opening up views, park space, and water. This would result



in more natural-appearing land and waterscapes than now exist, thereby increasing visual unity and intactness in the landscape unit and potentially enhancing vividness by providing unimpeded views to and from the roadway of the surrounding natural areas.

The west approach bridge through Union Bay and east to Lake Washington would be much wider than the existing bridges and this could change boaters' and park users' experience. The western highrise would be shifted westward and could be approximately 190 feet farther north than the existing structures. This would change views from north Madison Park residences, possibly blocking views of the Laurelhurst hills, but revealing more open water in Union Bay.

The permanent removal of the Aurora Borealis sculptures at the entrance to Union Bay near Madison Park would not have an effect on visual quality, but the marking of a threshold or gateway would be lost.

Option A

The primary effect on visual quality and character from operation of the facility would be due to the noticeably greater width and somewhat noticeable greater height of the west approach. The new bridge structure would be higher than the existing west approach between the shoreline and Foster Island, which will make the bridge slightly more visible from distant viewpoints. For motorists and transit riders, the west approach would continue to provide panoramic or scenic views to Lake Washington, the Cascades when traveling east, and to the Arboretum when traveling west. The new path under the bridge could be a more comfortable and pleasant experience than going through the tunnel as it does today because of the complete openness.

The Arboretum and Foster Island in general will not be affected by the presence of the new bridge. In the near term visual quality along the bridge would be diminished until trees and shrubs are taller and filled in. In 10 to 20 years vividness, intactness, and unity would be similar to or higher than their current high ratings. This would also be true for middle and distant views because the structures would be seen from the side, minimizing the visual effect of the greater width (Exhibits 2-20 and 2-21, Attachment 2).

Option K

Of the three options, Option K would result in the highest level of change to the visual quality and character of Foster Island. It would take time for the newly planted landscape on both sides of SR 520 to naturalize as woodlands and reach sufficient height to screen and



soften the presence of the land bridge. The four corners of the land bridge would likely always be somewhat visible from parts of Lake Washington, Union Bay, and Husky Stadium because the marsh and wetland vegetation might not be tall enough to completely screen the walls. From the park user's perspective, the north portion of Foster Island would be a somewhat more formalized recreation area depending on the design of the picnic and swimming area (Exhibit 2-16, Attachment 2). The south portion of Foster Island would retain most of its woodland character and the new path to the lid could be more comfortable and pleasant than going through the tunnel. However, access roads would be installed for vehicle access to the stormwater pump stations near the land bridge and this will give the south island a more developed quality.

In the near term visual quality would be degraded in the Foster Island area until trees and shrubs are taller and filled in. In 10 to 20 years vividness, intactness, and unity would be similar to their current high ratings for people traveling on the bridge. On the whole, vividness, intactness, and unity of this landscape unit would not change from its high level, especially from distant viewpoints (Exhibits 2-20 and 2-21, Attachment 2). Intactness and unity when seen from the viewpoints near or on Foster Island could be diminished to low or moderate because the paved roads and land bridge structure are not consistent or harmonious with the island's existing undeveloped woodlands. For middle and distant views vividness, intactness, and unity of this landscape unit would not change appreciably from their current high levels because the structures would be seen from the side, minimizing the visual effect of the greater width.

Option L

The primary effects on visual quality and character from operation of the Option L west approach bridge would result from the addition of sound walls. Continuous sound walls in Option L would make the roadway appear more massive when seen from outside of the roadway (Exhibits 2-13 and 2-21, Attachment 2). The sound walls would also eliminate the lateral parts of scenic views that are character defining and contribute to the high visual quality of driving or riding across the Portage Bay and west approach bridges. Views of the SEPA-designated visual resource Mount Rainier would be blocked from eastbound lanes on the west highrise.

There would be minimal change to visual quality and character of Foster Island because the west approach bridge would be comparable



in height to the existing bridge. The view of sound walls would replace the existing view of the highway behind the chain-link fence. The Foster Island trail may have to pass under SR 520 in a tunnel as it does today if the bridge height does not provide a minimum of 10 feet clearance for vehicles and pedestrians.

Changes to visual quality under Option L would be similar to or slightly greater than those of Option A for the West Approach landscape unit.

Lake Washington

The primary effects on visual quality and character from operation of the facility would result from the following:

- Wider (six lanes) and taller bridge (14 feet above existing structure)
- Realigned west approach transition span approximately 100 feet to the north
- Continuation of the regional bike path along the Evergreen Point Bridge, with viewpoint pullouts
- Absence of truss structures at east and west approaches
- Increase of column spacing from 100 feet on center to 250 feet

These changes in scale and appearance would be noticeable when seen from distant shoreline neighborhoods (Exhibits 2-19, 2-20 and 2-18, Attachment 2). Changes to the quality or character of those views would be slight to moderate because the bridge is an existing element in those views. For houses near the bridge in Medina, the northward shift and wider road deck would move the columns and roadway closer to residences on the north side and farther from residences on the south side of the east highrise. The overall visual character and quality of views from south of the bridge would improve because of the northward shift. The visual character and quality of views from north of the bridge would decrease because of the northward shift and the additional width. The floating bridge and east approach would dominate some views and become a greater part of peripheral views from residences farther north. In time, the east approach would be screened by mature trees along the north and south sides of the bridge.

The addition of the cross-Lake Washington regional bike path would make the sweeping views from the Evergreen Point Bridge available to pedestrians and cyclists. The bicycle/pedestrian path and vantage



points would be new elements visible from the north side, but would be very small relative to the scale of the bridge.

Views for boaters and kayakers on the lake would change moderately because the column-pontoon structure would make the structure more noticeable from viewpoints close to the bridge. However, while the floating bridge and east approach structure will be wider and taller, for these viewers the increased column spacing (from 30 feet apart to 90 feet apart) could open up views of the lake through the structure.

The bridge maintenance building and dock located directly underneath the new east approach would be noticeable to boaters on the lake. However, the building would not be visible from most locations because it would be partially buried in the hillside against the abutment and screened with vegetation. The road on the north side of the bridge leading to the facility would be screened by trees from views from the lake and nearby residences.

Overall vividness, intactness, and unity for the Lake Washington landscape unit would remain high for all options, particularly for distance viewpoints.

Eastside Landscape Unit

There would be no effects on visual quality from operating the facility in the Eastside landscape unit. Relocation of the transit station west to the Evergreen Point Road lid would not introduce new elements because the elevator towers, stairs, and protective walls would already be in place from the Medina to SR 202 project. The difference in location of the transit stops is not expected to produce visual effects because the new location next to the lid is within the same section of highway as the Medina to SR 202 transit stops. The restriped lanes and realigned traffic barriers would have no notable effects on visual character or quality.

Vividness, intactness, and unity would not change from the levels resulting from the Medina to SR 202 project.

Tolling and Active Traffic Management Equipment

The installation of tolling and active traffic management (ATM) equipment will be new features in the corridor. ATM equipment will be highly visible and will be an additional component in the usual overhead facilities, such as lighting and ramp or street signs. Tolling gantries have not been sited yet, but are likely to be as apparent as a



large sign structure and would be contributors to visual clutter in the corridor.

Phased Implementation Scenario

Revenue sources for the I-5 to Medina: Bridge Replacement and HOV Project include allocations from various state and federal sources and from future tolling, but there is still a gap between the estimated cost of the project and the revenue available to build it. Because of these funding limitations, there is a strong possibility that WSDOT will construct the project in phases over time.

If the project is phased, WSDOT would first complete one or more of those project components that are vulnerable to earthquakes and windstorms. These components include the following:

- The floating portion of the Evergreen Point Bridge, which is vulnerable to windstorms. This is the highest priority in the corridor because of the frequency of severe storms and the high risk associated with catastrophic failure.
- The Portage Bay Bridge, which is vulnerable to earthquakes. This is a slightly lower priority than the floating bridge because the frequency of severe earthquakes is significantly less than that of severe storms.
- The west approach of the Evergreen Point Bridge, which is vulnerable to earthquakes (see comments above for the Portage Bay Bridge).

Effects on visual quality due to phased implementation would be the same as those described for construction and operation effects in the Portage Bay, West Approach, and Lake Washington landscape units.

Would the project create new sources of shadow, glare, or light?

No Build Alternative

The SR 520 roadway and bridges have lighting now, and no new sources of light or glare are planned under the continued operation scenario. Changes in vegetation bordering the roadway could change existing shadow and shading patterns, but because the vegetation is



subject to maintenance, this is not expected to produce a noticeable change.

Seattle Landscape Units

Glare, lighting, shade, and shadowing could be different than existing conditions and possibly more noticeable. Increases in the amount of ambient and direct light in the corridor may occur because of additional and/or brighter sources along the highway and access ramps. The increase in the number or brightness of roadway lighting may be needed to meet current code for illumination levels. New light standards would be taller (40 feet) than existing (30 feet), but would use fixtures that shield sideways glare. It is possible that the loss of tall screening trees could create a situation where some residences receive more stray or direct illumination than before project construction.

Over Portage Bay, the presence of sound walls under Option L or widening the bridge under Option A would create new shadow and shade effects for a few residents immediately north of the Portage Bay Bridge in the Roanoke Park area. The Option L bascule bridge over East Montlake Park would cast wide, dense shade in the park compared to the current dappled, softer shade from vegetation. Both Options A and L would increase shadowing over the Montlake Cut.

The use of ATM equipment, which will include variable message signs, may contribute to a noticeable but small increase in roadway light. The ATM equipment is not anticipated to contribute any significant additional glare.

Lake Washington Landscape Unit

Changes in light and shadow would result from the northward displacement of the east approach bridge and the accompanying loss of vegetation. The loss of vegetation would change or increase shadow and shade effects for residents immediately north of the lid.

Based upon current lighting studies, the east approach will be illuminated to meet safety requirements for the transit ramps. The floating bridge will not be illuminated except for navigation safety lights and lighting on the regional bike and pedestrian path. The regional path would have low-wattage, down-cast lamps recessed into walls or barriers next to the travel way for user safety. No new sources of glare would be added because there would be no structures, such as sign gantries or buildings. Shading on Lake Washington would increase



relative to existing conditions because of the wider and higher roadway.

Eastside Landscape Unit

Overhead lighting, shade, and shadowing at the Evergreen Point Road lid would not change from the conditions created under the Medina to SR 202 project; therefore, no new effects would be expected.



Avoidance and Mitigation

What has been done to avoid or minimize negative effects?

Community input during the early stages of the I-5 to Medina project helped identify important visual quality and character features that were of concern. In 2006 the Design Advisory Group, a standing committee of citizens, worked with WSDOT to articulate an aesthetics vision statement and broad goals for maintaining visual quality. Mitigation options focused on the addition of landscaped lids to reconnect neighborhoods and augment open space; the use of sensitively designed architectural elements and details, e.g., sound walls, ATM signage, and maintenance facilities to be integrated with, complement, or otherwise enhance existing and/or new features; the application of “green over gray”¹ wherever possible in the corridor; a sustainable, functional, and aesthetic landscape design; and the increased spacing between bridge columns to open up views under bridge structures.

The design of sound walls must be carefully considered, given that they tend to create a confined, or hard-edged, visual character or reduce visual quality for motorists by cutting off views of visual resources. In addition, for viewers to the roadway these sound walls potentially block views and create an unpleasant concrete barrier. However, with a sensitive design that considers color palette, texture, top-of-wall treatment, and landscape, sound walls may in some cases serve as additional visual mitigation.

ATM signage could be integrated into planned structures, such as lids or gantries, rather than creating separate structures, thereby further cluttering the visual landscape.

Many of the stormwater facilities would be placed underground and out of sight, or if above-ground, would have natural-appearing landscaping, which would be consistent with the parks and open space where they are located. In the Shelby-Hamlin neighborhood, the

¹ An aesthetic and functional approach using vegetative screening to mitigate the visual impact of excessive structures, particularly in traffic corridors.



addition of the stormwater treatment wetland, with appropriate design approaches by stormwater engineers and landscape architects, could be a positive visual change for the neighborhood because the large asphalt parking lot would be replaced by a natural-appearing wetland landscape that is in harmony with the adjacent shoreline and bay.

The new bridge operations facility located under the east approach of the Evergreen Point Bridge would be inside the hillside abutment and screened with vegetation. While the addition of this new structure could have a potential negative visual impact for viewers on the lake, e.g., boaters and nearby neighbors, sensitive design of the maintenance structure will make the building look appropriate in terms of scale, integration, and style to the surroundings.

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

SR 520 Corridor

Under all the build options, the following are some of the possible mitigation measures that would be performed by WSDOT:

- Communicate regularly to the public during construction regarding road closures, detours, and other activities affecting traffic circulation. Use standard best management practices (BMPs) to reduce or eliminate construction impacts on surrounding neighborhoods, such as use of construction screening, standardized work hours, and the use of low-impact construction methods, materials, and tools.
- Establish and follow design guidelines, developed in conjunction with the standards of both state and local jurisdictions that include visual standards for the corridor. The guidelines and standards would present ways to ensure visual unity and consistency throughout the SR 520 corridor. These include defining the appearance and style of built elements, such as lighting, railings, sign bridges, structures, and walls. The guidelines would also discuss the use of public art in the corridor, including the process for selection and location of any art in cooperation with municipal and county jurisdictions and art organizations.



- Revegetate areas where natural habitat, vegetation, or neighborhood tree screens would be removed. These areas are under Portage Bay Bridge in Roanoke Park; through Montlake, in particular at the NOAA Northwest Fisheries Science Center and East Montlake Park and the Arboretum; and along the roadway in the Eastside study area. The *Roadside Classification Plan* (WSDOT 2004b) requires that areas within the right-of-way and construction easements be revegetated to align with the goals for the designated roadside classification. Mature vegetation could generally be used to revegetate parks and re-establish tree screens in these areas in consultation with local jurisdictions and agencies. Revegetation plans should also provide for adequate irrigation and monitoring until trees and plants are well established.
- Follow the guidelines of the *Roadside Classification Plan* to blend the project into the adjacent land uses, while creating a unified experience for the roadway user. Refer also to the Seattle Department of Transportation's Streetscape Design Guidelines in the *Seattle Right-of-Way Improvement Manual* (City of Seattle 2009).
- Establish landscaping that would be compatible with the character of the existing vegetation, especially along Lake Washington Boulevard, Montlake Boulevard, and through the Washington Park Arboretum, East Montlake Park, Ship Canal Waterside Trail, Arboretum Waterfront Trail, Montlake Playfield, and Interlaken Park/Delmar Drive East.
- Construct sound walls that will visually screen the roadway from sensitive viewers, particularly in residential areas. The walls could be designed to ensure a unified visual appearance as viewed from within the roadway corridor. Sound walls that face communities could include a detailed texture to align with a slower viewing speed and ability to observe more detail.
- Establish guidelines to ensure the design of structures are aesthetically compatible with the surrounding land and waterscapes in scale and architectural style, and unified in appearance.
- Design lids to reconnect divided communities and provide a consistent and/or continuous visual connection across the SR 520 roadway. Landscape the lids to ensure a unified visual appearance appropriate to the surrounding landscape, including the use of



appropriate plant materials, hardscape, and site furnishings that contribute to visual coherence and aesthetics. For example, on the north side of the Evergreen Point Road lid, a transitional seating wall and stairs might be included that would share elements and characteristics of the lid with Fairweather Park.

- Replace the Bagley Viewpoint Park either on the new lid or reconstructed bridge. WSDOT would work with the Seattle Parks Department to identify an appropriate site.

Specific mitigation measures are presented below. However, it will not be possible to delineate all mitigation options until engineering design is further advanced.

Seattle Landscape Units

The MOHAI site and the remaining portions of McCurdy and East Montlake Parks would be redesigned in cooperation with the Seattle Parks Department. Grass and trees in the south Shelby-Hamlin area could be replaced with trees and screening vegetation to soften the appearance of the new sound wall. Mature and/or larger size trees, shrubs, vines, and groundcovers for replacement or enhancement would be selected as appropriate in consultation with Seattle Parks and Recreation. Plantings would be irrigated and monitored until established.

Treatment of the area between the new regional bicycle/pedestrian path and adjacent residences in the Shelby-Hamlin neighborhood would be appropriate to the location and consistent with corridor visual standards for unity. The treatment would likely be a fence or vegetation or a combination of both, depending on available space.

Foster Island would require extensive restoration for Option K, including shoreline and buffer restoration and roadside planting. This site is protected under Section 6(f) of the Land and Water Conservation Fund Act. As such, development of revegetation plans would require coordination with City of Seattle (Seattle Parks and Recreation Department), University of Washington, Department of Natural Resources, and the National Park Service. Plans should require mature and/or larger trees, shrubs, plants, and adequate irrigation and monitoring until vegetation is established. Union Bay would also require revegetation for the areas where the R. H. Thomson ramps used to stand.



Lake Washington Landscape Unit

The only location in the Lake Washington landscape unit that would have visual effects from the I-5 to Medina project would be west of the Evergreen Point Road overpass. Screening vegetation that was removed for construction of the east approach connection to the Eastside highway would be replanted to screen views of SR 520.

Design guidelines would be established to ensure that the architectural style of the new structures presents a unified visual appearance.

Eastside Landscape Unit

Construction and operation effects from the I-5 to Medina Project in the Eastside landscape unit are minimal and would not need mitigation. Pontoon Production and Transport Visibility of the pontoons will depend on the size of the rafts of pontoons that are moored in one place for a while. Mitigation for the presence of the pontoons will be a challenge, but may include careful siting, limited and/or carefully scheduled transportation days, and regulation and adherence to environmental and aesthetic standards for production and transport. During construction of pontoons at Grays Harbor, visual obtrusiveness can be minimized by locating temporary and permanent construction equipment and stockpiling materials in less visually sensitive areas and in areas not visible from the road or to residents and businesses. Lighting at the construction site would be shielded and use of lamps on tall poles would be avoided to minimize light and glare effects.



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Attachment 1

Visual Quality Assessment Summary Table

Explanation

Attachment 1 provides a composite rating for the overall visual quality of each landscape unit's viewshed. Vividness, intactness, and unity ratings (low, medium, and high) are defined in Exhibit 9 in the discipline report and in the table below. Each rating represents the integration of visual quality assessment information gathered from site visits, viewpoint evaluations, and study visualizations. These composite ratings reflect a viewer's likely experience in that the ratings consider the entire scene, viewer speed of movement, seasonal variation, and multiple viewpoints.

Exhibit 1-1
Visual Effect Levels and Ranking Criteria
 Summary Table

	VIVIDNESS				INTACTNESS				UNITY				
	Existing	Comparison of Built Alternatives (assumes 10-20 year veg)			Existing	Comparison of Built Alternatives (assumes 10-20 year veg)			Existing	Comparison of Built Alternatives (assumes 10-20 year veg)			
Roanoke	moderate: historic homes and stately trees	OPTION A, K, L moderate: driver/bus commuter experience reduced because of tunnels, but resident experience enhanced due to connecting lid and open space; improved context for National Historic Register-eligible Roanoke Park historic district			low: pre-existing I-5, SR 520 highways, divided neighborhoods, extensive pavement	OPTION A, K, L moderate: lid additions reduce effect of trenced highways and loss of roadway trees			high: inside neighborhood; low: near I-5, SR 520	OPTION A moderate: new ramp consistent w/existing interchange, lids provide continuous landscape for ped/cyclist viewers	OPTION K high: same as Option A	OPTION L moderate to low: addition of 8- to 14-foot high noise walls block views, make roadway appear more massive	
Portage Bay Bridge	high: picturesque bay, houseboats; scenic panoramas of Cascades, Arboretum, Lake Washington; homes of Roanoke hillside	OPTION A high: wider spacing of columns could open water level views; design of bridge could enhance vividness	OPTION K high: same as Option A	OPTION L moderate to high: similar to K but addition of 8- to 14-foot noise walls**; eastern half of bridge narrower	moderate: much of the shoreline built up, Portage Bay covered with roofed docks and marinas	OPTION A moderate to high: depending on bridge design and landscape under bridge west of Boyer, intactness could increase	OPTION K moderate to high similar to A but eastern half of bridge narrower	OPTION L high: similar to A; Δ with addition of 8- to 14-foot noise walls**; eastern half of bridge narrower	generally high: collection of residential, marine features creates pleasing composition	OPTION A high: depending on bridge design; column spacing could increase views through bridge	OPTION K high: same as Option A but narrower by xx feet	OPTION L high: Δ with addition of 8- to 14-foot noise walls; eastern half of bridge narrower	
Montlake	high: architecture, landscape of Shelby-Hamlin neighborhood, iconic Husky Stadium, picturesque and historic Montlake Cut and bascule bridge, Uws Rainier Vista	OPTION A high: if second bascule bridge design complements existing historic bridge	OPTION K moderate to high: if surface effects of tunnel do not detract from character of historic canal, East Montlake Park, UW WAC	OPTION L moderate to high: if second bascule bridge design complements existing historic bridge and doesn't block east view	low: lots of green, but presence of SR 520 impacts Montlake and Shelby-Hamlin neighborhoods, not compatible with residential	OPTION A low to moderate: lid at 24th visually and physically connects Montlake neighborhoods; suboptions increase visual complexity	OPTION K low to moderate: tall tunnel entrance walls, tree buffer loss; lowered intersection at SE campus decreases visual complexity	OPTION L low: elevated SPUI visible; lowered intersection at SE campus enhances circulation; Montlake lid increases visual, continuity	low: visual clutter of Montlake/Pacific intersection; UW SE campus diverse, not coherent architectural styles, large asphalt parking lots; no definable campus	OPTION A low to moderate: removal of unused ramps; augmented onramps reduce NOAA campus; landscaped stormwater pond at MOHAI	OPTION K low: addition of venting towers, stormwater pump station in East Montlake Park; depressed SPUI not in balance with parks, shoreline	OPTION L low: elevated SPUI intrusive, decreases visual harmony; depressed intersection at SE campus could reduce existing visual clutter	
West Approach	high: views across Union Bay of lake, Cascade Mountains, Husky Stadium; RH Thompson ramps south at Marsh Island have a certain monumental scale	OPTION A high: no Δ from existing; wider, taller bridge, re-aligned 70 feet to north	OPTION K high: no Δ from existing	OPTION L high: no Δ from existing	high overall: expanse of water, mature vegetation, scaled residences	OPTION A high: similar to existing	OPTION K moderate: four corners of 600-foot box tunnel and land bridge at Foster Island visible, pump station and access road visible	OPTION L high: 8- to 14-foot high noise walls block lateral scenic views for drivers; West Approach Bridge massive compared to existing	high overall: West Approach bridge in balance with mature vegetation and settled shoreline	OPTION A high: no Δ from existing except a little higher at Foster Island	OPTION K moderate: four corners of 600-foot box tunnel and land bridge at Foster Island visible, pump station and access road visible	OPTION L high: height similar to existing; 8- to 14-foot noise walls make roadway appear more massive from outside; block driver views of nat. landscp	
Lake Washington	high: panoramic views of Lake Washington, Olympic and Cascade Mountains, Mount Baker and Mount Rainier	OPTION A, K, L high: floating bridge more visible because of increased height and width			high: scale of bridge diminished by larger surrounding views and distance	OPTION A, K, L high: no Δ from existing for distant views; Δ in column spacing opens views/visual connectivity at lake level, but bridge near views more intrusive			high: natural elements major components; residences and other built elements small scale by comparison	OPTION A, K, L high: raised roadway and column-pontoon structure more visible from viewpoints close to bridge			
Eastside	high: green corridor with large homes along hilly, vegetated shoreline	OPTION A, K, L moderate to high: widened, walled highway for drivers but increased view corridor to west and north from lid for peds, cyclists			low: character of roadway significantly different than residential neighborhoods and forested surroundings	OPTION A, K, L low: widened roadway, tall retaining/noise walls, transit stations at center of mainline increases visual separation for drivers/bus commuters; lid at Evergreen provides connectivity for local viewers			low or moderate: SR 520 roadway divides neighborhoods and impacts large green tracts of vegetation	OPTION A, K, L low to moderate: vegetation loss to north of lid due to proposed bridge and lid construction; Evergreen Point lid enhances view unity to west and adds green across mainline for local viewers			

** noise walls proposed for Option L may also be used in selected locations for Options A and/or K as well

RATING EXPLANATION	low =	moderate =	high =	low =	moderate =	high =	low =	moderate =	high =
	mundane or non-descript landscape	some features with striking or attractive attributes	presence of dominant feature or collection of features that is distinctive and memorable	built features placed without sensitivity to or in conflict with natural or existing setting	built features somewhat response to natural or existing setting	natural and built components in balance and harmony with each other and their relationship to the landscape.	reduced integrity due loss of landscape from view or the prevalence of incompatible structures due to conflicting scales, colors, or purposes	presence of some features not compatible with the existing landscape, or a loss of part of the landscape from view	landscape is continuous, not broken up by jarring or discontinuous features

