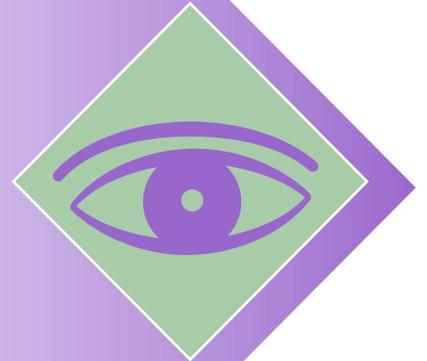


29 March 2005

**SR 520 Bridge Replacement
and HOV Project Draft EIS**

Appendix S

**Visual Quality
and Aesthetics
Discipline Report**



SR 520 Bridge Replacement and HOV Project Draft EIS

Visual Quality and Aesthetics Discipline Report



Prepared for
Washington State Department of Transportation
Federal Highway Administration
Sound Transit

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Acronyms and Abbreviations

EIS	Environmental Impact Statement
FHWA	Federal Highway Administration
HOV	High-Occupancy Vehicle
MOHAI	Museum of History and Industry
mph	miles per hour
NEPA	National Environmental Policy Act
NOAA	National Oceanic and Atmospheric Administration
NRHP	National Register of Historic Places
SEPA	State Environmental Policy Act
WSDOT	Washington State Department of Transportation



Introduction

Why are visual quality and aesthetics considered in an EIS?

The construction or modification of our highways, 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) and is required by law. Numerous federal and state regulations have been enacted to ensure that the effects of highway projects on the visual quality and aesthetics of a landscape are adequately considered during the early stages of project planning and development. A list of these regulations is provided in the sidebar to the right of this paragraph (WSDOT 2004a). In particular, 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 impacts related to aesthetics and visual quality are given due weight in project decision-making.”

NEPA requires federal, state, and local agencies to determine and weigh the environmental effects of the reasonable alternatives associated with their proposed projects. To meet this requirement, federal, state, and local agencies prepare a detailed report known as an EIS whenever the government embarks on a project likely to have a significant effect on the natural or human environment.

To ensure that potential changes to visual quality and aesthetics resulting from a transportation project are adequately and objectively considered, it is critical that an accepted, systematic evaluation process be used. The Federal Highway Administration’s (FHWA) visual quality assessment method (FHWA 1989) is the industry standard that was used for this assessment. FHWA developed this assessment method on behalf of communities adjacent to proposed transportation projects, as a way to adequately and objectively consider the potential visual effects. The method is rigorous and systematic. Using this method ensures that the information gathered is adequate to contribute to the project decision-making process and that the assessment and descriptions are as objective as possible.

Federal Regulations on Visual Quality

- Highway Beautification Act, 23 USC 131, 136, and 319, and 23 CFR 750-752
- Historic Preservation Act, 16 USC 470f
- National Environmental Policy Act (NEPA), 42 USC 4231-4335, Section 101(b)(2)
- FHWA, 23 CFR 771, Environmental Impact and Related Procedures
- Council on Environmental Quality, 40 CFR 1500-1508
- Section 4(f) of the Department of Transportation Act, 49 USC 303(b)-303(c)
- Wild and Scenic Rivers Act, 16 USC 1271-1287

State Regulations on Visual Quality

- State Environmental Policy Act (SEPA), RCW 43.21C
- Highway Beautification Act of 1961, RCW 47.40.010
- Open Space Land Preservation, RCW 84.34
- WSDOT: WAC 468-12



A visual quality and aesthetics assessment is based on a set of broad criteria that consider the following factors:

- The visual and aesthetic experience of pedestrians or motorists looking at or from the project roadway
- The panoramic or scenic views visible from a highway or from the landscape surrounding a highway
- The overall visual and aesthetic quality of the area
- The scale and contrast between existing and proposed elements in the area

FHWA's assessment also uses professionally accepted, descriptive terminology that encompasses the physical attributes of the landscape being assessed and viewer sensitivity. This terminology helps to guarantee consistent and effective communication; it is introduced in the following sections.

A visual quality and aesthetics assessment typically addresses three primary questions:

1. What are the visual qualities and characteristics of the existing landscape in the project area?
2. What are the potential effects of the project's proposed alternatives on the area's visual quality and aesthetics?
3. 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?

This discipline report assesses these questions. Please note that this report uses the word "landscape" to refer to the complete visible natural and human-built environment. Also, the level of concern experienced by different people will be described as a degree of sensitivity to a particular view. Views from the roadway and views of the roadway are both considered.

What are the key findings of this report?

The most noticeable changes to visual quality and character for both the 4-Lane and 6-Lane Alternatives would be:

- Increased width and northward placement of the Portage Bay Bridge and the Evergreen Point Bridge



- Increased height and width, and removal of ramps through the Washington Park Arboretum and over Lake Washington
- Addition of tall sound walls on both sides of the roadway
- Loss of structures at Queen City Yacht Club, National Oceanic and Atmospheric Administration (NOAA) Northwest Fisheries Science Center, and Museum of History and Industry (MOHAI)
- Removal of roadside vegetation in the Eastside project area because of the wider highway footprint

The 6-Lane Alternative would have uniformly more visual effects than the 4-Lane Alternative because of its greater width and the addition of five lidded structures where bridges currently exist. The lids are expected to be a positive visual change because they would be landscaped and would help to reconnect the surrounding neighborhoods.

For both build alternatives, tall sound walls would block lateral views outward from the road, and limit long-distance views, thereby appreciably decreasing the scenic character and visual quality of the corridor. This is inconsistent with the city of Seattle's scenic designation for SR 520. The sound walls would also add to the mass of the structures when seen from outside the roadway.

Visual quality and character changes in the Washington Park Arboretum are expected to be highly noticeable and both positive and negative. Across Foster Island, the roadway would be higher than it is today. The new columns would be considerably farther apart (250 feet) than the old columns (100 feet) and the unused R. H. Thompson Expressway Ramps would be removed, all of which would contribute to greater visibility and openness within the park and surrounding area. However, the increased height would make the roadway visible above the tree canopy, and the increased width would make the roadway more apparent from views within the park and outside the corridor, as well.

The Evergreen Point Bridge over Lake Washington would look similar to the existing structure but the roadway would sit on a column-pontoon structure, making the new roadway about 14 feet higher than the existing roadway, which is about 11 feet above water level. The addition of the bicycle-pedestrian path on the north side would look



like part of the overall bridge structure, but barrier walls between the path and roadway may be noticeable.

Changes to lighting, glare, and shading are expected to be low to moderate because the greater height would allow more daylight under the structure despite the greater width. Shadow effects for both alternatives would be similar to what they are now, with some changes at the west and east approaches of the bridges for residences to the north. There would be an increase in shadow on open water in Lake Washington because of the higher, wider roadway.

Light and glare would remain about the same for most of the roadway. Lighting on the Evergreen Point Bridge would slightly decrease because there would be no lighting on the floating portion of the bridge and drawspan other than navigation lights. The bicycle/pedestrian path would have lighting, but the lamps on the Evergreen Point Bridge would be downcast and mounted in the walls.

What are the project alternatives?

The SR 520 Bridge Replacement and HOV Project area comprises neighborhoods in Seattle from I-5 to the Lake Washington shore, Lake Washington, and Eastside communities and neighborhoods from the Lake Washington shore to 124th Avenue Northeast just east of I-405. Exhibit 1 shows the general location of the project. Neighborhoods and communities in the project area are:

- Seattle neighborhoods – Portage Bay/Roanoke, North Capitol Hill, Montlake, University District, Laurelhurst, and Madison Park
- Eastside communities and neighborhoods – Medina, Hunts Point, Clyde Hill, Yarrow Point, Kirkland (the Lakeview neighborhood), and Bellevue (the North Bellevue, Bridle Trails, and Bel-Red/Northup neighborhoods).

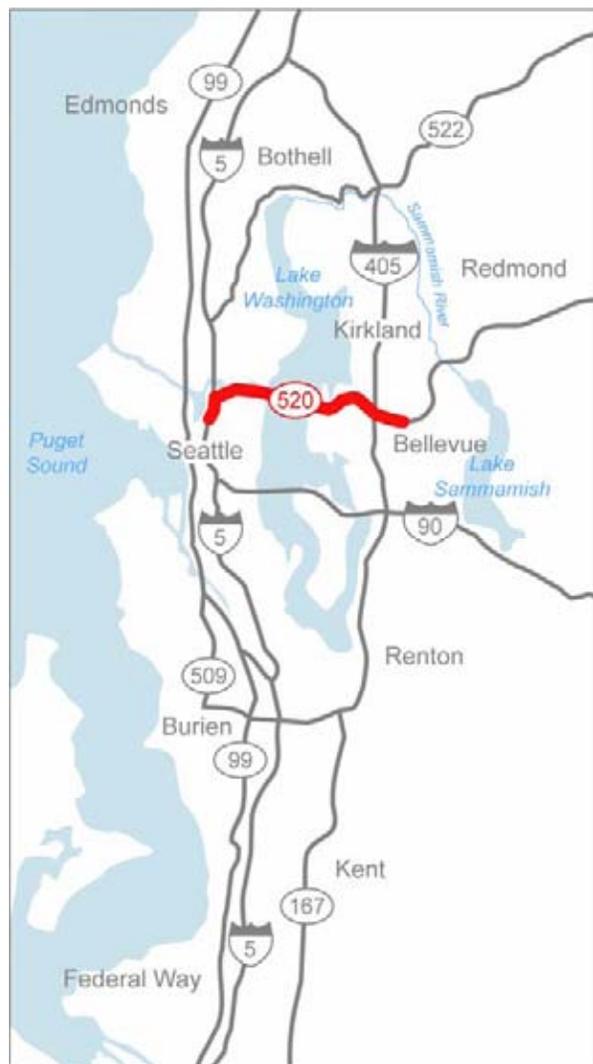


Exhibit 1. Project Vicinity Map



The SR 520 Bridge Replacement and HOV Project Draft EIS evaluates the following three alternatives and one option:

- No Build Alternative
- 4-Lane Alternative
 - Option with pontoons without capacity to carry future high capacity transit
- 6-Lane Alternative

Each of these alternatives is described below. For more information, see the *Description of Alternatives and Construction Techniques Report* contained in Appendix A of this EIS.

What is the No Build Alternative?

All EISs provide an alternative to assess what would happen to the environment in the future if nothing were done to solve the project's identified problem. This alternative, called the No Build Alternative, means that the existing highway would remain the same as it is today (Exhibit 2). The No Build Alternative provides the basis for measuring and comparing the effects of all of the project's build alternatives.

This project is unique because the existing SR 520 bridges may not remain intact through 2030, the project's design year. The fixed spans of the Portage Bay and Evergreen Point bridges are aging and are vulnerable to earthquakes; the floating portion of the Evergreen Point Bridge is vulnerable to wind and waves.

In 1999, the Washington State Department of Transportation (WSDOT) estimated the remaining service life of the Evergreen Point Bridge to be 20 to 25 years based on the existing structural integrity and the likelihood of severe windstorms. The floating portion of the Evergreen Point Bridge was originally designed for a sustained wind speed of 57.5 miles per hour (mph), and was rehabilitated in 1999 to withstand sustained winds of up to 77 mph. The current WSDOT design standard for bridges is to withstand a sustained wind speed of 92 mph. In order to bring the Evergreen Point Bridge up to current design standards to withstand at least 92 mph winds, the floating portion must be completely replaced.

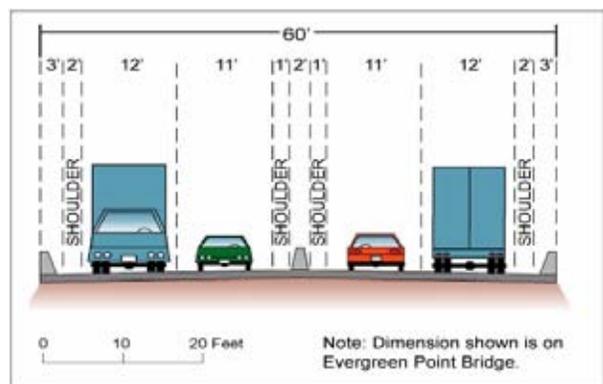


Exhibit 2. No Build Alternative



The fixed structures of the Portage Bay and Evergreen Point bridges do not meet current seismic design standards because the bridge is supported on hollow-core piles. These hollow-core piles were not designed to withstand a large earthquake. They are difficult and cost prohibitive to retrofit to current seismic standards.

If nothing is done to replace the Portage Bay and Evergreen Point bridges, there is a high probability that both structures could fail and become unusable to the public before 2030. WSDOT cannot predict when or how these structures would fail, so it is difficult to determine the actual consequences of doing nothing. To illustrate what could happen, two scenarios representing the extremes of what is possible are evaluated as part of the No Build Alternative. These are the Continued Operation and Catastrophic Failure scenarios.

Under the Continued Operation Scenario, SR 520 would continue to operate as it does today as a 4-lane highway with nonstandard shoulders and without a bicycle/pedestrian path. No new facilities would be added and no existing facilities (including the unused R.H. Thompson Expressway Ramps near the Arboretum) would be removed. WSDOT would continue to maintain SR 520 as it does today. This scenario assumes the Portage Bay and Evergreen Point bridges would remain standing and functional through 2030. No catastrophic events (such as earthquakes or high winds) would be severe enough to cause major damage to the SR 520 bridges. This scenario is the baseline the EIS team used to compare the other alternatives.

In the Catastrophic Failure Scenario, both the Portage Bay and Evergreen Point bridges would be lost due to some type of catastrophic event. Although in a catastrophic event, one bridge might fail while the other stands, this Draft EIS assumes the worst-case scenario – that both bridges would fail. This scenario assumes that both bridges would be seriously damaged and would be unavailable for use by the public for an unspecified length of time.

What is the 4-Lane Alternative?

The 4-Lane Alternative would have four lanes (two general purpose lanes in each direction), the same number of lanes as today (Exhibit 3). SR 520 would be rebuilt from I-5 to Bellevue Way. Both the Portage Bay and Evergreen Point bridges would be replaced. The bridges over SR 520 would also be rebuilt. Roadway shoulders would meet current standards (4-foot inside shoulder and 10-foot outside shoulder). A



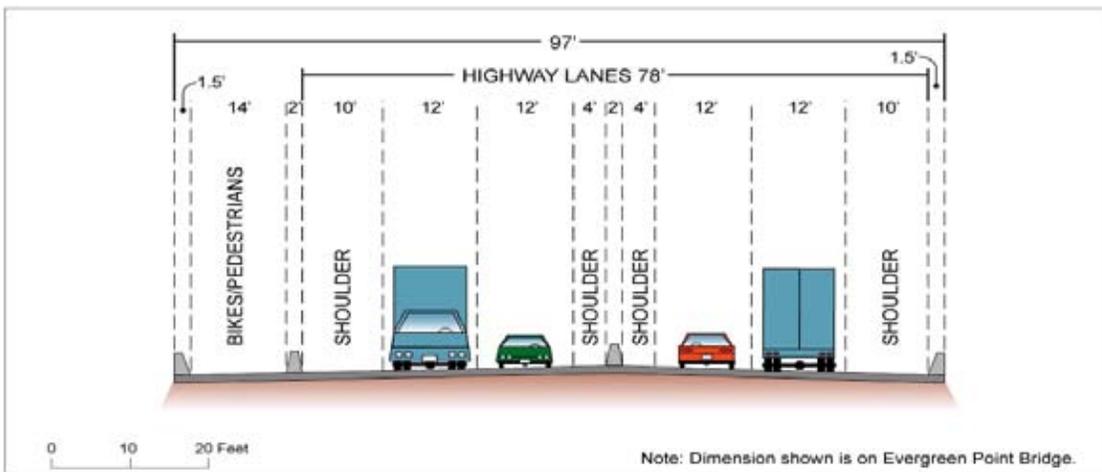


Exhibit 3. 4-Lane Alternative

14-foot-wide bicycle/pedestrian path would be built along the north side of SR 520 through Montlake, across the Evergreen Point Bridge, and along the south side of SR 520 through Medina, Hunts Point, Clyde Hill, and Yarrow Point to 96th Avenue Northeast, connecting to Northeast Points Drive. Sound walls would be built along much of SR 520 in Seattle and the Eastside. This alternative also includes stormwater treatment and electronic toll collection.

The floating bridge pontoons of the Evergreen Point Bridge would be sized to carry future high-capacity transit. An option with smaller pontoons that could not carry future high-capacity transit is also analyzed. The alternative does not include high-capacity transit.

A bridge operations facility would be built underground beneath the east roadway approach to the bridge as part of the new bridge abutment. A dock to moor two boats for maintenance of the Evergreen Point Bridge would be located under the bridge on the east shore of Lake Washington.

A flexible transportation plan would promote alternative modes of travel and increase the efficiency of the system. Programs include intelligent transportation and technology, traffic systems management, vanpools and transit, education and promotion, and land use as demand management.

What is the 6-Lane Alternative?

The 6-Lane Alternative would include six lanes (two outer general purpose lanes and one inside HOV lane in each direction; Exhibit 4).



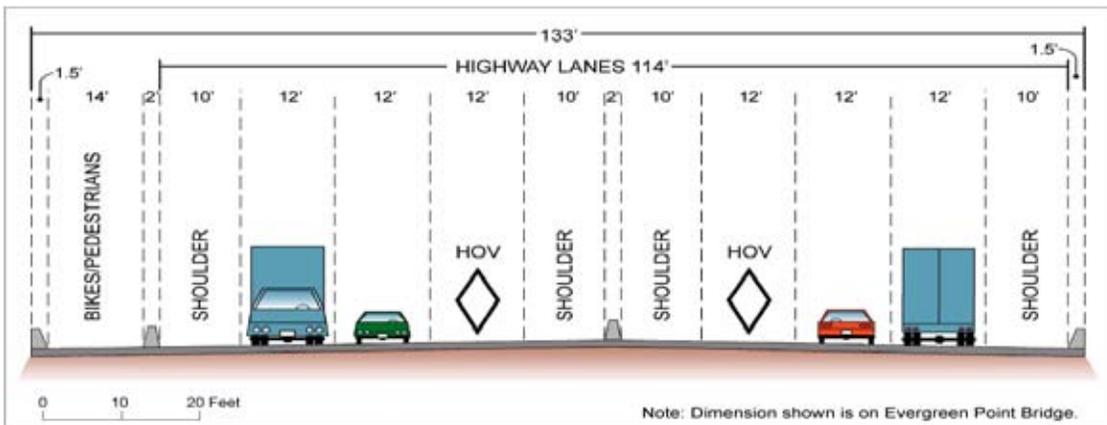


Exhibit 4. 6-Lane Alternative

SR 520 would be rebuilt from I-5 to 108th Avenue Northeast in Bellevue, with an auxiliary lane added on SR 520 eastbound east of I-405 to 124th Avenue Northeast. Both the Portage Bay and Evergreen Point bridges would be replaced. Bridges over SR 520 would also be rebuilt. Roadway shoulders would meet current standards (10-foot-wide inside shoulder and 10-foot-wide outside shoulder). A 14-foot-wide bicycle/pedestrian path would be built along the north side of SR 520 through Montlake, across the Evergreen Point Bridge, and along the south side of SR 520 through the Eastside to 96th Avenue Northeast, connecting to Northeast Points Drive. Sound walls would be built along much of SR 520 in Seattle and the Eastside. This alternative would also include stormwater treatment and electronic toll collection.

This alternative would also add five 500-foot-long landscaped lids to be built across SR 520 to help reconnect communities. These communities are Roanoke, North Capitol Hill, Portage Bay, Montlake, Medina, Hunts Point, Clyde Hill, and Yarrow Point. The lids are located at 10th Avenue East and Delmar Drive East, Montlake Boulevard, Evergreen Point Road, 84th Avenue Northeast, and 92nd Avenue Northeast.

The floating bridge pontoons of the Evergreen Point Bridge would be sized to carry future high-capacity transit. The alternative does not include high-capacity transit.

A bridge operations facility would be built underground beneath the east roadway approach to the bridge as part of the new bridge abutment. A dock to moor two boats and maintain the Evergreen Point Bridge would be located under the bridge on the east shore of Lake Washington.



A flexible transportation plan would promote alternative modes of travel and increase the efficiency of the system. Programs would include intelligent transportation and technology, traffic systems management, vanpools and transit, education and promotion, and land use as demand management.

What is the assessment methodology?

What is the FHWA visual quality assessment method?

We used FHWA's visual quality assessment method as the basis for our analysis. It is a six-step evaluation process that has defined and accepted terminology and tools. The evaluation sequence is:

1. Establish the project's visual limits (views 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 response of viewers looking at and from the project, before and after the project ("viewer sensitivity").
5. Determine and evaluate views of and from the project for before and after project views (simulations).
6. Describe the potential visible changes to the project area and its surroundings that would result from the proposed alternatives.

We evaluated the first three steps to establish the baseline conditions of the existing landscape and to determine how much of the project is visible from outside of the project area (see the *Affected Environment* section later in this report). From this baseline, we assessed potential changes to the visible landscape and likely viewer responses to those changes (see the *Potential Effects of the Project* section). We also evaluated light, shadow, and glare that would result from the alternatives. Based on the potential effects evaluation, we identified mitigation measures (see the *Mitigation* section).

What specialized tools or vocabulary are used for this method?

FHWA uses a generally accepted set of tools and well-defined terminology. Once the tools and terminology become familiar, the FHWA method and its results are straightforward and understandable. The following fundamental terminology is used throughout this report:



Views are what can be seen from the project area and what can be seen of the project area from the surrounding neighborhoods and communities. Sensitive or special views, some of which are listed in municipal codes, are identified for use in simulations.

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, and are referred to as “viewer groups.”

Viewpoint is the position of the 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 their 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, expectations, and interests.

Low viewer sensitivity results when there are few viewers who experience a defined view or they are not particularly concerned about the view. High viewer sensitivity results when there are many viewers who have a view frequently or for long duration, and who 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 is defined by the relationships between the existing visible natural and built landscape features. These relationships are considered in terms of dominance, scale, diversity, and continuity. Visual character-defining resources and features include:

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



- Land uses: size, scale, and character of associated buildings and ancillary site uses
- 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
- Viewpoints and views to visual resources
- Water bodies, historic structures, and downtown skylines
- Apparent “grain” or texture, such as the size and distribution of structures and unbuilt properties or open spaces of the landscape
- Apparent upkeep and maintenance

Visual Quality is an assessment of the composition of the character-defining features for selected 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 evaluated and discussed using these terms:



Example of high vividness

- **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



Example of high intactness



landscape is free of eyesores and is not broken up by features that are out of place. An unbroken expanse of native vegetation would have 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 of individual components and their relationship in the landscape.



Example of high unity

The important analytical tools used in the FHWA method are landscape units, viewsheds, and simulations. **Landscape units** are subunits of a project area that make evaluation of the entire project area easier. They are defined by visual traits and visual continuity within the unit.

Viewsheds are defined by what can be seen from the project and conversely, what parts of the project area can be seen from the surrounding area. **Simulations** are digitally enhanced images based on photographs taken of selected views; they illustrate the probable changes due to the project and relative scales of the existing and proposed features.

Affected Environment

How was the visual assessment information collected?

The visual quality and aesthetics discipline team visited the entire proposed project corridor several times to develop qualitative assessments and descriptions of existing landscape conditions. We reviewed community planning documents and U.S. Geological Survey and Geographic Information System maps to identify existing or possible future conditions. We also identified views or routes that are designated by code or in planning documents as requiring special consideration because of their scenic value.

We evaluated the proposed alternatives described in project engineering plans and documents, and compared the alternatives to existing conditions and planning documents. We also reviewed relevant information from other discipline reports from this EIS.



We used a visual quality assessment matrix (see Attachment 1), a form developed by WSDOT for visual quality assessments. This form lists the numeric rankings assigned to visual quality parameters and components for selected views throughout the project area.

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

What area was studied?

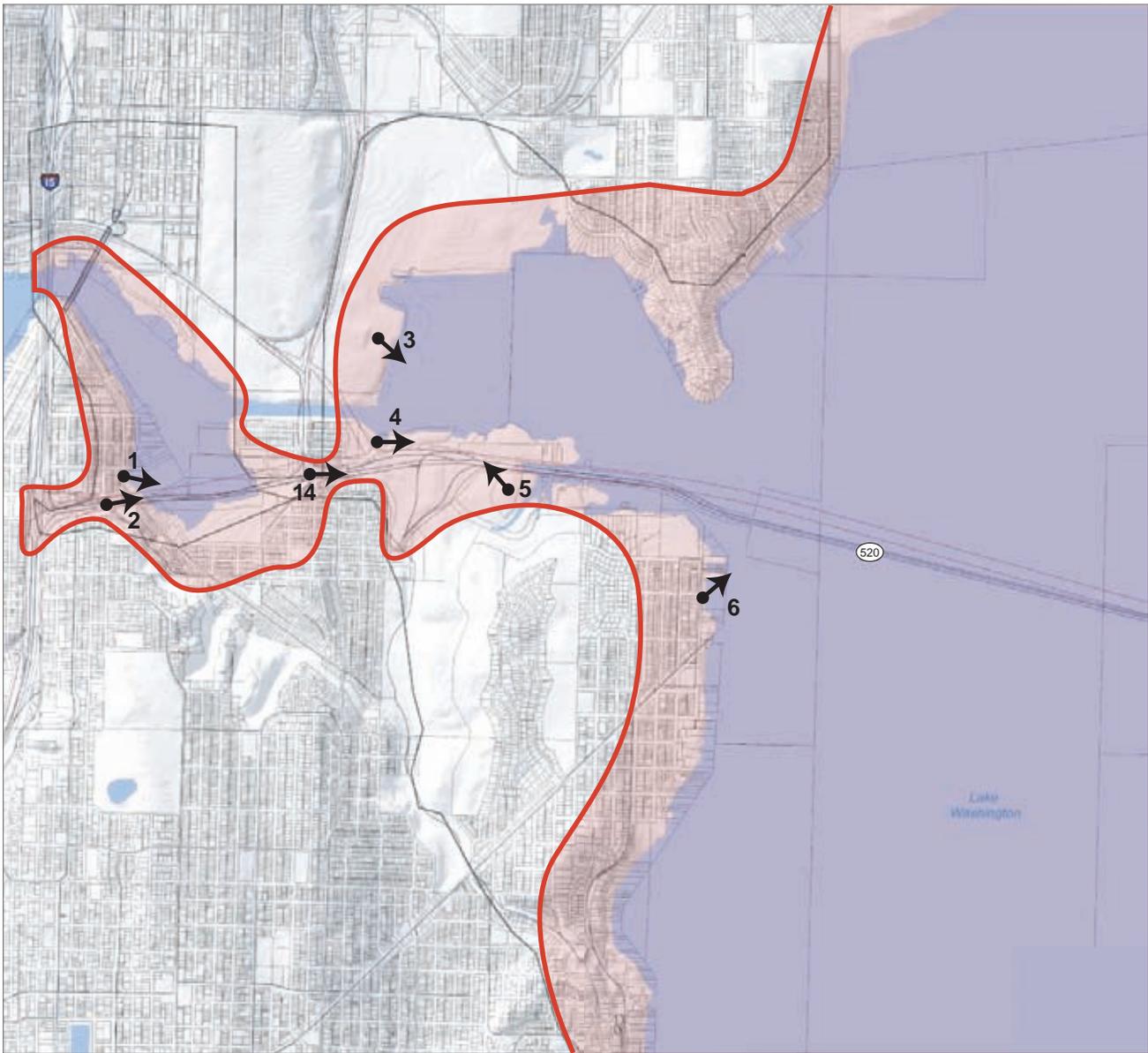
The area that was studied in this visual quality assessment is called the project viewshed. The viewshed for this project is the area that can be seen from the highway in the SR 520 corridor, including the Portage Bay Bridge and Evergreen Point Bridge. Typically, if an area or a feature can be seen from the project, a viewer located in that area or near the feature can also see the project. A viewshed may be larger or smaller than the project area because geography and built and natural features determine what can and cannot be seen.

For this project, the viewshed is larger than the project area because SR 520 is visible from locations far beyond the limits of the project area. The overall viewshed was first estimated by mapping the approximate limits based on topography, and then refined to account for existing vegetation that limits views into or out of the project area. Exhibits 5 and 6 show schematically the results of the viewshed analysis for the project area in Seattle, Lake Washington, and the Eastside. (Refer to Exhibit 7 later in this report for a description of the viewpoint locations that are shown in Exhibits 5 and 6.) The shaded area in these exhibits indicate the viewshed, or what can be seen from and/or toward the roadway. 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 essentially unlimited and extends west to the Olympic Mountains, east and north to the Cascade Mountains, south to Mount Rainier, and includes the hillsides and islands of the lake.

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

There are specific views within this viewshed that must be identified and considered, in accordance with state and federal regulations. In addition to state and federal regulations mentioned previously in this report, some city of Seattle policies apply to this project. Community plans from adjacent cities were also reviewed for visual quality policies or goals.



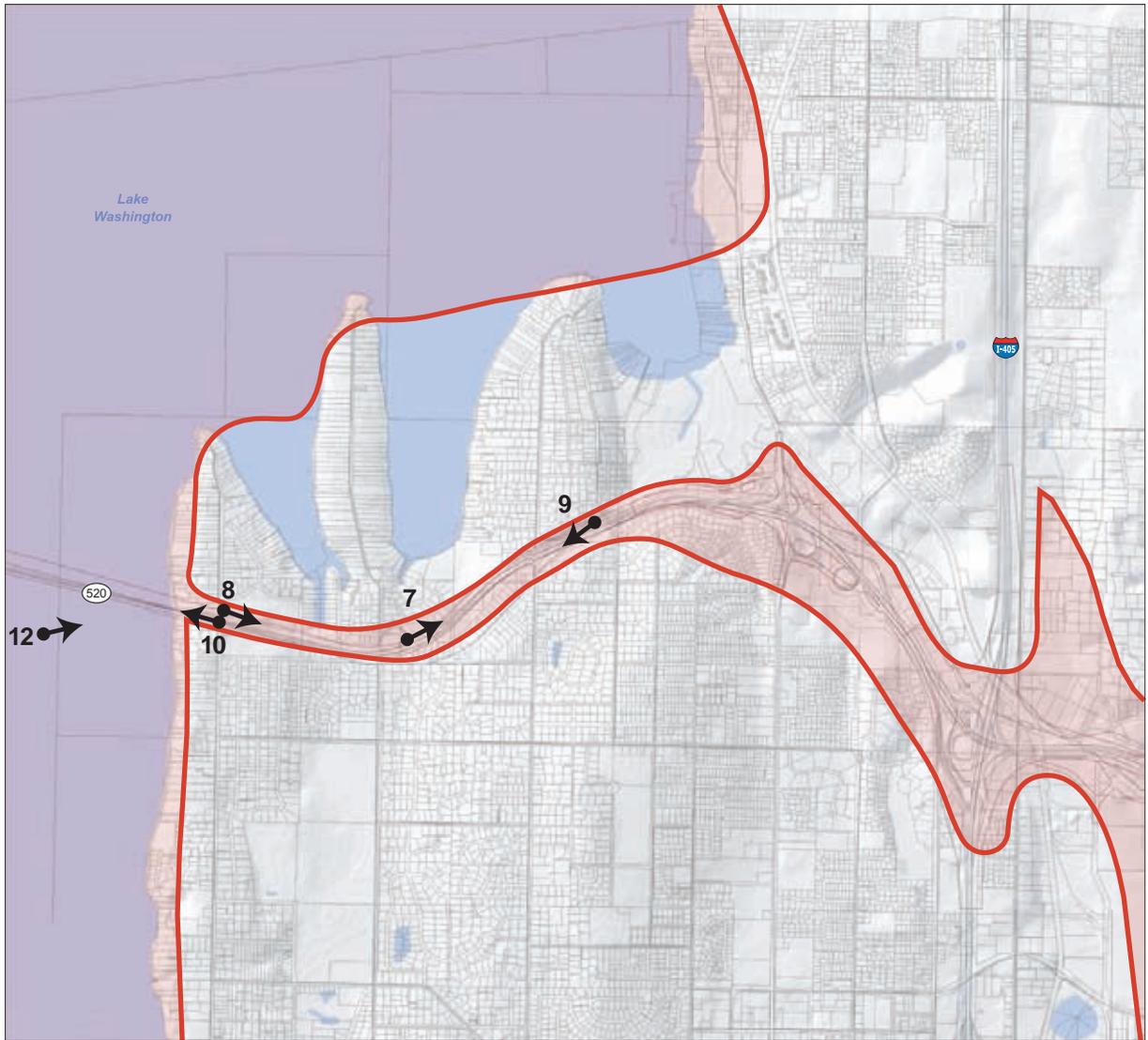


-  Viewshed Boundary
-  Viewpoint Location and Direction



Exhibit 5. Seattle and West Lake Washington Viewshed and Viewpoint Locations

SR 520 Bridge Replacement and HOV Project



-  Viewshed Boundary
-  Viewpoint Location and Direction

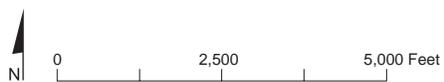


Exhibit 6. East Lake Washington and Eastside Viewsheds and Viewpoint Locations

SR 520 Bridge Replacement and HOV Project

Seattle has identified SR 520 as a scenic route between I-5 and the midspan of the Evergreen Point Bridge (Seattle Ordinance 97025) because of the panoramic views from the highway of the SEPA-designated visual resources listed in the sidebar. This means that views from the Portage Bay Bridge and the Evergreen Point Bridge are considered important.

The city of Seattle has also identified important public viewpoints such as parks and scenic routes that offer views of the SEPA-designated visual resources (City of Seattle 2002). Viewpoints within the SR 520 viewshed include:

- Bagley Viewpoint (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 Lake Washington Ship Canal, the Cascade Mountains, and Union Bay

Lakeview Park (Lake Washington Boulevard East and McGilvra Boulevard East) and Magnuson Park (Sand Point Way Northeast and Northeast 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. Please also refer to Appendix O, *Recreation Discipline Report*, for more discussion on potential project effects on parks.

SEPA 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 also identified these resources as important (SMC 25.05.665 (P)).

SEPA viewpoints specially designated by the city of Seattle as important views:

- Bagley Viewpoint
- Madison Park
- East Montlake Park
- McCurdy Park
- Montlake Playfield
- Washington Park Arboretum

City of Seattle (2002).



We also considered community plans to determine what each community deemed to be of visual or scenic importance. Plans for Medina, Hunts Point, and Yarrow Point indicate that the main issues for these communities are preservation of views of the lake and the visual importance of large trees or stands of trees.

The Hunts Point Five-Year Plan, which is described in the *Town of Hunts Point Vision 2005 Strategic Plan* (Town of Hunts Point 2002), specifically mentions the desire for continued participation in the planning process of the SR 520 corridor. Of specific interest to Hunts Point is the inclusion of lids, sound walls, landscaping, preservation of the Points Loop Trail, and the protection of nature reserves as part of any changes to the SR 520 corridor.

Clyde Hill's Comprehensive Plan (City of Clyde Hill 2002) provides guidelines for land use that address neighborhood character, aesthetics, natural environment, open space, and "significant" trees and vegetation. Clyde Hill is also interested in lids over SR 520, as well as the integration of bicycle and pedestrian pathways into transportation corridors. Clyde Hill supports a bicycle/pedestrian path in the SR 520 right-of-way and envisions a "system of greenbelts adjacent to 520" and an "expressway nature trail" along SR 520 from 92nd Avenue Northeast to 96th Avenue Northeast.

Kirkland's Comprehensive Plan (City of Kirkland 2004) describes the Lakeview neighborhood and Yarrow Bay wetland as portals to the city and stresses the importance of the visual character and environmental sensitivity of this area, in particular the flood hazard zone and steep slopes of the Yarrow Bay wetland.

Medina and Yarrow Point plans do not address visual quality in the SR 520 corridor (City of Medina 2004, Town of Yarrow Point 2004). The *City of Bellevue Comprehensive Plan* (City of Bellevue 1993) does not specifically address SR 520.

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 Rural east of I-405. Montlake Boulevard and I-5 are classified as Urban (WSDOT 2004b).

The Semi-urban SR 520 roadside west of I-405 is a transitional landscape where the built elements begin to dominate the natural



elements. Vegetation includes many more nonnative species and expanses of grass.

The Urban roadsides (Montlake Boulevard and I-5) are dominated by buildings, and vegetation is mostly nonnative and ornamental.

The Rural SR 520 roadside east of I-405 is characterized by intermixed built and natural or naturalized elements, with the built elements beginning to encroach on the natural environment. Vegetation is primarily native, but nonnative vegetation, such as meadow or crops, may reflect historical land use.

A final factor to consider is the presence of historic buildings or landscapes, which are protected under NEPA Section 106. 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 project area, Roanoke Park and Montlake, are discussed in this visual assessment. See Appendix D, *Cultural Resources Discipline Report*, for more information on these historic districts.

What is the current visual character of the study area?

Visual character is a description of the existing visible environment: land and water forms, vegetation, development, and transportation and utility facilities. This is not a description from a specific view, but an overview of what exists today.

Seattle

The rolling terrain of the Seattle project area is due to a north-south trending ridge-valley system that slopes toward the basins containing Lake Union, Portage Bay, Lake Washington, and Union Bay. This basin-ridge-valley terrain has necessitated that SR 520 alternate between cut, elevated, and bridged profiles, creating a variety of views from and toward the roadway.

Existing overhead roadway facilities include freeway light standards and truss-style sign structures, ramps between I-5 and SR 520 bridges



Looking west across interchange ramps at I-5 and SR 520 from the 10th Avenue East bridge



at 10th Avenue East and Delmar Drive East in the Roanoke Park area, and the Montlake Boulevard Bridge.

Urban development, which is visually diverse and almost continuous throughout the Seattle project area, ranges from small-scale commercial buildings to dense, mixed single- and multifamily neighborhoods; moderate-scale marinas; and moderate- to large-scale public buildings at the University of Washington, NOAA Northwest Fisheries Science Center, and the MOHAI. Tree cover in the surrounding areas is extensive and consists of street trees, highly diverse residential plantings, and mature tree stands in large parks and recreation areas (Interlaken Park and the Washington Park Arboretum), and the private Broadmoor Golf Club. These trees create a matrix that ties the area together visually, thus giving it an overall sense of unity and intactness.

Two identical sculptures called the Aurora Borealis stand in the waterway on either side of the west approach to the Evergreen Point Bridge at the eastern edge of the Arboretum. These sculptures were donated by a private source and replaced earlier sculptures.

The open space in the corridor is the moderate-sized expanses of water at Portage Bay and Union Bay, the north edges of Montlake Playfield and the Arboretum, and Foster and Marsh Islands. The Arboretum wetlands and Union Bay include extensive waterways and shorelines. For most of its length through Seattle, SR 520 is lined with mature plantings of trees and shrubs that visually merge with greenbelts on the steep slopes of the Roanoke Park/North Capitol Hill and Montlake areas. These trees serve as visual screens between the freeway and the adjoining residential neighborhoods.

The bridges and elevated portions of the roadway are the most visible portions of SR 520 in Seattle. The Portage Bay Bridge is a dominant part of many views from the hills around the bay and from the bay itself. The west approach to the Evergreen Point Bridge through the Arboretum is a dominant part of most views from the waterways and is visible from a few locations around the edges of the Arboretum and Union Bay. The Evergreen Point Bridge on Lake Washington is a distant object for most of the shoreline communities around Union Bay and Lake



Looking east from Delmar Drive bridge toward Portage Bay and Montlake



Washington. For north Madison Park, the roadway is closer to residences and much more noticeable, although the hills of Laurelhurst are still visible beyond the bridge.

Views from Portage Bay Bridge and the Evergreen Point Bridge are scenic, with panoramic views of Lake Washington, Portage Bay, Union Bay, and the Cascade and Olympic Mountains. In particular, views from Portage Bay to the east and from the Evergreen Point Bridge have high vividness. The University of Washington’s Husky Stadium has a sweeping view across Lake Washington that has become iconic, due in part to televised sport events.

Where the highway is recessed below grade, concrete retaining walls and/or dense tree screens limit visibility outward from the freeway. A few homes in the Roanoke Park and Montlake neighborhoods have clear views of the roadway. For the most part, views of SR 520 from the Montlake, North Capitol Hill, and north Roanoke Park neighborhoods depend on the density of the tree canopy. SR 520 is visible from only a few locations in Montlake Playfield.

Lake Washington

The Evergreen Point Bridge is the only man-made structure in the Lake Washington project area (docks and columns are considered to be either in the Seattle or Eastside project areas). Existing overhead roadway facilities include freeway light standards and sign structures. A three-story control house is located midspan, with equipment for the retractable drawspan and two overhead walkways. The east and west highrises



Looking southeast across Lake Washington from Husky Stadium



Looking northeast from Madison Beach Park toward the east highrise and the Eastside



Looking north from Madison Beach Park toward the west highrise



at the navigation channels where boats pass under the bridge have steel-framed superstructures that add to the apparent height.

There are expansive, highly memorable views of the Cascade and Olympic Mountains, Mount Rainier, the wooded hillside communities around the lake, and Husky Stadium from the Evergreen Point Bridge. The road deck of the floating portion of the bridge is approximately 10 feet above water level, giving drivers the experience of being at water level.

The floating portion of the Evergreen Point Bridge and its highrise approaches can be seen from many of the Lake Washington shoreline neighborhoods. For most views, the bridge is a small feature in the distance. The pontoons appear as an 11-foot concrete wall when viewed from boats on the lake near the bridge. Near the highrises and the Medina/ Evergreen Point shoreline, the tall columns and cross-bracing dominate views from the lake and shore.

Eastside

The rolling terrain in the Eastside project area is caused by a north-south trending ridge-valley system, similar to the Seattle project area. The ridges slope into the Lake Washington basin, creating a distinctive, alternating ridge-bay topography where the valleys are submerged. In the Lake Washington Boulevard East/Bellevue Way area the terrain flattens, and between Bellevue Way and 124th Avenue Northeast the terrain is relatively flat.

SR 520 mostly follows the topography from the east end of the Evergreen Point Bridge at Medina to the I-405 interchange, with some roadway cut into the hills. Bridges at Evergreen Point Road, 84th Avenue Northeast, and 92nd Avenue Northeast provide north-south connections for the Medina, Hunts Point, Clyde Hill, and



Looking south along 92nd Avenue Northeast bridge over SR 520

Yarrow Point communities, respectively. The Lake Washington Boulevard Northeast/Bellevue Way Northeast bridge over SR 520 is an important, high-traffic-volume connection to SR 520. A pedestrian overpass near Bellevue Christian School/Three Points Elementary (Bellevue Christian School) connects the school to the Points Loop Trail



and Fairweather Park on the north side of the freeway. Points Loop Trail along SR 520 runs mainly east-west and is screened from the freeway by mature trees and shrubs.

Overhead roadway facilities include freeway light posts and sign structures. There are bus stops at Evergreen Point Road and 92nd Avenue Northeast on both sides of the roadway with transit-only access ramps, which considerably widen the roadway through these sections.



Looking north across SR 520 at pedestrian bridge in Hunts Point

Urban development adjacent to the project area between Medina and Bellevue Way consists primarily of single-family residences on large plots, waterfront residences with private docks in the small bays and on Lake Washington, a few small commercial establishments, and an elementary school complex. Near the Bellevue Way interchange, development on the north side of SR 520 transitions to small- to moderate-sized office and commercial buildings, with multifamily complexes and single-family homes beyond. The commercial-business development continues east under I-405. Most of these buildings are relatively new, lowrise structures (one to five stories) of differing architectural styles, with landscaped grounds and their own parking lots.

Development east of I-405 is diverse and continuous, ranging from moderate- to large-footprint, lowrise commercial buildings; dense mixed single- and multifamily neighborhoods; and small- to moderate-sized retail centers along arterial streets. Most of the commercial and retail establishments have their own parking lots. Residential development is almost exclusively located north of the SR 520 corridor, while south of the corridor is primarily commercial development.

Tree cover in the surrounding areas is extensive and consists of moderate- to large-sized open space and parks, street trees, highly diverse residential plantings, and relatively young street trees in the commercial zones. Open



Typical tree screen along SR 520 in Hunts Point



spaces and parks near the project area are Fairweather Park, Hunts Point Park, Wetherill Park, Yarrow Bay wetland, and Bridle Trails State Park. From Evergreen Point to I-405, the SR 520 corridor is densely lined with mature trees and shrubs that merge with and visually screen the parks and residential neighborhoods from the roadway.

Views from and of SR 520 from Eastside communities and neighborhoods are limited by tree screens along the roadway. Many homes on the south side of SR 520 are on higher ground than the roadway, but views from hillside homes tend to be screened by trees from late spring to late fall. Views in the Bellevue Way Northeast/I-405 interchange areas are more open than in the SR 520 corridor west of these interchanges. The midrise office buildings adjacent to the Bellevue Way interchange have clear views of the roadway and interchange.

East of I-405, views from SR 520 extend south over the commercial district to the horizon. SR 520 is not generally visible from the commercial district south of the corridor because the district is below the grade of the roadway, and buildings and street trees block views. On the northern, residential side of SR 520, trees screen views to and from the SR 520 corridor.

What is the current visual quality of the study area?

Visual quality is a description of the quality of particular views of the visible environment in terms of vividness, intactness, and unity, as defined earlier in this report in the *What is the assessment methodology?* section. The evaluation matrix provided in Attachment 1 rates specific sample viewpoints. Our overall visual quality assessment includes other views that were not rated in the evaluation matrix.

Seattle

Vividness varies throughout the Seattle project area. Views in the I-5/SR 520 Interchange area have generally low vividness, whereas views from Husky Stadium are very high because of Mount Rainier and Lake Washington. Vividness is low to average for views from the Montlake Boulevard and 24th Avenue East bridge area, Pacific Avenue in the University District southward to Portage Bay, and the Montlake Park/Shelby-Hamlin area near SR 520 because there are no memorable or dramatic features visible. Glimpses of Portage Bay and Union Bay raise the rating of views from these areas. Areas with views of average to high vividness include Laurelhurst, Madison Park, the Portage Bay



Bridge, and the east side of Roanoke Park because of the expansive views toward the Cascade Mountains, Mount Rainier, and Lake Washington.

Intactness is low to moderately low because the SR 520 structures are not visually compatible with the natural appearing landscapes or the smaller scale of the neighborhoods. However, intactness is moderately high for views from Laurelhurst, the eastern shoreline of Madison Park, and parts of the Union Bay shoreline because the bridge is a smaller element in the view and does not distract from the overall scenic view.

Unity ranges from low to moderately high where SR 520 disrupts views across Portage Bay, through the Arboretum waterways, and neighborhoods along the highway. The columns and highway break up the visual composition of natural-appearing areas and neighborhoods, and their presence is a dominant part of most views from the shoreline. Where there are views from Pacific Avenue in the University District, unity is average because shoreline buildings, boats, docks, and other structures dominate the foreground views.

Lake Washington

Vividness, intactness, and unity of views from the Evergreen Point Bridge are high to very high because of the panoramic and memorable views of 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 is small relative to the overall scale of the panoramas on either side.

Views toward the Evergreen Point Bridge, where the bridge is in the distance, generally have high vividness, intactness, and unity because of the memorable expanse of Lake Washington with the mountains in the distance. The composition of these views is harmonious and intact because development is somewhat screened by 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 part of the concrete pontoons that is above water, which results in low intactness and unity, and moderate vividness.



Eastside

Vividness of views to and from the SR 520 corridor is low to moderately low throughout the corridor because of the uniform character of the tree screen along the highway. However, vividness is high for the view westward from the Evergreen Point Road bridge and the Medina shoreline, which have expansive views of the Olympic Mountains in the distance and Husky Stadium and the Seattle shoreline in the middle ground. Other than the Evergreen Point Road bridge, there are no public viewpoints near SR 520 along the Medina shoreline.

Intactness is low to moderately low for views from SR 520 because the roadway is substantially different from the wooded character of the area. Views from the west-facing hillsides along Lake Washington have moderately low to high intactness, depending on how close the viewpoint is to the columns and roadway.

Unity is moderately low to average for views from SR 520 because the roadway dominates the view and is separated from the surrounding landscape by tall trees. Because the roadway is not visible from public places or residences outside of the roadway, a unity ranking is not applicable. Views from Evergreen Point Road have moderately high unity because the overall composition of the views are a balance of development in the background view (University of Washington, Laurelhurst, and Madison Park) and natural features.

Who is affected by changes to the views and visual quality in the study area and how sensitive are they to the changes?

This section discusses viewer groups that have views from or toward the project and their likely sensitivity. Viewers are grouped according to activity (such as resident or commuter). Sensitivity is affected by the activities the viewers are engaged in; the surrounding visual environment; and by their values, expectations, and interests.



Looking east from Roanoke neighborhood above Queen City Yacht Club



Seattle

Residents around Portage Bay and along the western shore of Lake Washington form the largest viewer group, with views of the roadway in Seattle. This includes East Roanoke Park and parts of Montlake, Laurelhurst, and Madison Park. These residents predominantly occupy single-family homes, with a smaller number living in houseboats in Portage Bay or in apartments. Other viewer groups with views of the roadway are boaters, joggers, picnickers, and park-goers in the north part of the Arboretum; students, faculty, staff, and visitors at the University of Washington; and employees and clients of the small businesses in the Montlake area and around Portage Bay. A very small group of trail users on the Bill Dawson Trail have limited views of and from the underside of SR 520.



Looking across Union Bay from East Montlake Park shoreline

Motorists (commuters, tourists, delivery and transport, and visitors passing through the area) are the only group with views from the roadway. SR 520 is one of the main east-west routes between Seattle and the Eastside, so traffic volumes in both directions are high every day, year-round, making this a very large viewer group.

Residents and park and trail users in this area likely have high sensitivity to landscape aesthetics because they either are in their home community or expect a pleasant, natural-appearing landscape for recreation. Motorists may also have high sensitivity to the scenic views



Looking east from SR 520 in Roanoke Park area



Looking east from SR 520 in Roanoke Park, just below Delmar Drive bridge over SR 520



eastward from Roanoke Park on the Portage Bay Bridge and through the Arboretum.

Motorists' sensitivity is likely to be lower in the I-5/Roanoke Park and Montlake Boulevard areas than elsewhere in the Seattle project area because the roadway is recessed in these places. These are high-volume traffic areas, and motorists have views of high retaining walls, bridges over SR 520, adjacent residences, and ramps.

The University of Washington viewer group and employees or patrons of businesses are likely to have low sensitivity because their attention is on their activity. In addition, SR 520 is generally only visible from the shoreline or from tall buildings in these locations. Trail users are likely to have moderate to high sensitivity to the surroundings because they move slowly enough through an area to see its details.

Lake Washington

Boaters, water skiers, and people fishing on Lake Washington form the largest group with views of the bridge. Motorists are the only group with views from the roadway in this project area.

Sensitivity is likely to be high for all viewer groups given the panoramic and memorable views from both the lake and the roadway. From the lake, the bridge appears as an 11-foot-tall concrete wall. For most people boating on the lake this is a transient view and optional because the view facing away from the bridge is unobstructed.

Eastside

Commuters and other motorists form the largest viewer group with views from the SR 520 roadway. Trail users, people visiting the Bellevue Christian School or commercial establishments near Bellevue Way Northeast, and some residents comprise smaller groups with views of the roadway. SR 520 is not visible from most residences, parks, or open spaces in the Eastside project area because of the mature tree screens. The exception is the west-facing shoreline of Medina, with a view across Lake Washington.



Looking west from Evergreen Point Road bridge

Because the trees screen views from SR 520, sensitivity of commuters and motorists is likely to be low to moderate. Trail 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 likely to be very sensitive to the view. 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.



Looking east along Northeast 24th Street in Bridle Trails Park neighborhood

Viewers from the commercial district near the Bellevue Way interchange are likely to have low sensitivity to the view of SR 520 because the view is currently low in vividness and intactness, with the highway and interchange and high-traffic-volume side streets dominating the view. The Bellevue commercial district east of I-405 faces away from the highway, and viewer sensitivity is likely to be low because the highway is not in full view and the existing landscape consists of dense commercial buildings with high-traffic-volume streets. Trees block the view of SR 520 to most residents of the Bridle Trails area.

Potential Effects of the Project

The effects of the proposed alternatives on the visual quality and aesthetics of a landscape would differ according to changes in:

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

Visual quality changes are rated as low, moderate, or high according to the following definitions:

- **Low** contrast between scale or character of proposed facilities and the existing environment; viewers would not likely notice visual change or expect a scenic view. Minor changes in shadow levels or light and glare may occur, but these would not be noticeable.
- **Moderate** contrast between scale or character of proposed facilities and the existing environment is noticeable but not dramatic;



viewers are somewhat aware of and sensitive to visual change. Changes in shadow levels or light and glare may be noticeable.

- **High** contrast between scale or character of proposed facilities and existing environment; viewers are sensitive to visual change and expect attractive views or surroundings. Substantial changes in shadow levels or light and glare would be easily noticeable.

How were the simulation viewpoints selected?

The discipline team selected the viewpoints used to simulate the “after” views because these viewpoints are broadly representative of project change. Four primary criteria used to select these viewpoints were:

1. The view is typical of other similar landscape profiles and is a public location that has a number of sensitive viewers nearby.
2. The view represents moderate to high changes to visual quality or character of scenic views, historic buildings, designated viewpoints, or view corridors and is a location where there are sensitive viewers.
3. The view is what a person walking, driving, or riding would see.
4. A substantial portion of the roadway project area is visible from the viewpoint. This criterion does not include partial views of the transportation structure unless that partial view is visually dominant because of its size or nearness to the viewer.

Based on these criteria, we selected the views and their corresponding viewpoints and took photographs from these viewpoints (listed in Exhibit 7). While the simulations are limited in their field of view because of the camera lens, the overall visual analysis considers the entire field of view. Photographs do, however, provide an accurate representation of the scale of a structure in relation to other objects as seen from the viewpoint. Rather than maintaining a constant distance from the edge of the roadway, a fixed viewpoint was used for the 4-Lane and 6-Lane Alternative simulations.



Exhibit 7. Location and Description of the Simulation Viewpoints

Viewpoint Number	Location of Viewpoint	View	Exhibit Number
1	Boyer Avenue just south of Edgar Street, from sidewalk above Queen City Yacht Club	Looking northeast-southeast toward moorage at Queen City Yacht Club, Portage Bay Bridge, and Montlake	8
2	Eastbound lanes of SR 520 in Roanoke Park, under east edge of Delmar Drive East bridge over SR 520	Looking east along Portage Bay Bridge toward Montlake	9
3	Husky Stadium stands on north side, center and high level	Looking southeast across Union Bay and Lake Washington toward Mount Rainier and Cascade Mountains	12
4	Union Bay shoreline just east of MOHAI parking lot and south of foot bridge in East Montlake Park	Looking east across Union Bay toward the west approach of the Evergreen Point Bridge and ramps and Marsh Island	11
5	Tunnel under SR 520 on the Arboretum's Foster Island	Looking northwest along pedestrian path toward tunnel that connects to Foster Island Trail	13
6	From sidewalk along Lynn Street Park at 43rd Avenue Northeast and East Lynn Street in Madison Park	Looking northeast across Lake Washington toward Evergreen Point Bridge and Kirkland	14
7	From bend in trail just south of Hunts Point City Hall	Looking east along Points Loop Trail and SR 520 where trail descends from City Hall and curves east along SR 520	17
8	From Points Loop Trail between transit stop and Evergreen Point Road	Looking east along SR 520 from Points Loop Trail just east of Evergreen Point Road	19
9	From beginning of westbound off-ramp to 92nd Avenue Northeast in Yarrow Bay–Clyde Hill area	Looking west along SR 520 toward 92nd Avenue Northeast bridge over SR 520	18
10	From Evergreen Point Road bridge	Looking west along SR 520 toward Lake Washington and Evergreen Point Bridge	16
12	View from Lake Washington	Looking northeast from Lake Washington toward Evergreen Point Bridge and Medina	15
14	View of SR 520 in Montlake area	Looking east along SR 520 from Montlake Boulevard bridge toward Arboretum and Foster Island	10

What are the potential effects on structures, vegetation, and views?

The following sections summarize the major changes to visual character and quality, followed by a brief discussion for each neighborhood and community from west to east through the corridor.

Seattle

No Build Alternative

Under the Continued Operation Scenario, no structures would be replaced or noticeably modified. We assumed that the structures would



be maintained in their current shape. Routine maintenance may require managing vegetation by pruning or removing trees or shrubs near the roadway, based on the classification of the road, in accordance with the *Roadside Classification Plan* (WSDOT 2004b).

Under the Catastrophic Failure Scenario, loss of the Portage Bay Bridge or the Evergreen Point Bridge, or both could be caused by either closure for safety reasons or catastrophic failure. A catastrophic failure could require removal of damaged or dangerous bridges and support structures, which would considerably change most views. The difference in the view of the structures after a catastrophic failure would depend on how much of the structure collapsed or sank. The two locations where this would be most noticeable are the Portage Bay Bridge and the west approach to the Evergreen Point Bridge through the Arboretum.

4-Lane Alternative

The most noticeable changes to visual quality and character in the Seattle project area would result from:

- The overall increase in width and the northward displacement of the highway at Portage Bay
- Increased height of the bridge through the Arboretum and the removal of the R.H. Thompson Expressway Ramps
- The addition of sound walls on both sides of the corridor. The walls would range from 8 feet to 22 feet in height and would run the full length of the Seattle project area, except for a 1,000-foot-long gap on the north side of the Portage Bay Bridge.
- The change in column spacing on the Portage Bay Bridge from 100 feet on-center to 250 feet.
- The addition of the HOV flyover ramp at the I-5/SR 520 Interchange would be a noticeable change because the new ramp would be about 15 feet higher than the existing west-to-southbound flyover ramp. The new ramp would not change the character of the interchange, however, because it is already a high-volume transportation corridor. Views to or from the highway would not be noticeably affected.

The bridges at 10th Avenue East, Delmar Drive East, and Montlake Boulevard would be rebuilt as part of the new roadway. The new structures would be similar in materials and scale to the existing



bridges, so the resulting visual changes would be low for views of the roadway. A portion of Bagley Viewpoint, a Seattle park and scenic viewpoint with a partial view toward the Cascade Mountains, would be removed for reconstruction of the Delmar Drive East bridge. Vegetation loss could make the sound walls more noticeable from a few locations.

Vegetation loss would be limited to a narrow strip on the north side of SR 520 through Roanoke Park. This is likely to cause low to moderately noticeable visual changes to the neighborhood and to the National Historic Register eligible Roanoke Park historic district.

The new Portage Bay Bridge would shift to the north and would be 10 to 20 feet higher and about 50 feet wider than the existing bridge. The new structure would likely be a pre-cast concrete girder bridge, similar to the existing structure. The changes in scale would be very noticeable to motorists and viewers looking at the bridge from anywhere in the Portage Bay basin.

The Portage Bay Bridge alignment would bring the roadway close to the Queen City Yacht Club's southernmost dock (dock #3).

Construction of the new bridge would require removal of the dock (visible as a gray line just under the columns in the Existing View photograph in Exhibit 8). The northward placement of the Portage Bay Bridge would noticeably change the view eastward from Roanoke Park homes north of the bridge by encroaching on their views to the south.

Sound walls in the Portage Bay/Roanoke Park area would result in very high changes to the visual character of SR 520 and to the quality of views from and toward the roadway. At 18 to 22 feet high along North Capitol Hill, the walls would drastically and negatively alter the motorist's experience (Exhibit 9) and could block views from residences adjacent to the wall. A 10-foot-high sound wall could encroach on Bagley Viewpoint and obstruct views to the south. See Appendix O, *Recreation Discipline Report*, for more discussion of the Bagley Viewpoint.

Seen from outside the roadway, the addition of 8- to 10-foot-high sound walls on the south side of the Portage Bay Bridge would create a profile that is very different from the existing bridge. The walls, in combination with the taller girders and the greater bridge width, would make the bridge structure more massive and box-like, and would greatly increase the visual presence of the bridge. Moreover, the sound walls would not be consistent with the Scenic Route classification of SR 520 from the



Existing View

- Column spacing 100 feet apart



4-Lane Alternative

- Column spacing 250 feet apart
- 10-foot-high sound walls with opening on north side
- Roadway about 60 feet wider and further north
- Southernmost dock at Queen City Yacht Club removed for construction of new bridge



6-Lane Alternative

- Roadway about 20 feet wider and to the north compared to 4-Lane Alternative
- Column spacing, sound walls, and removal of dock same as 4-Lane Alternative



Looking east-southeast toward moorage at the Queen City Yacht Club, Portage Bay Bridge, and Montlake from Boyer Avenue



Exhibit 8. **View of Portage Bay—Viewpoint 1**

SR 520 Bridge Replacement and HOV Project

Existing View

- City of Seattle Scenic Route



4-Lane Alternative

- 10-foot-high sound walls except on north side of bridge
- Roadway about 60 feet wider and to the north
- Monotube style signage
- Roadway lighting not shown



6-Lane Alternative

- Roadway wider than 4-Lane Alternative by about 20 feet to north and 10 feet to south
- Sound walls, signs and lights same as 4-Lane Alternative
- Roadway lighting not shown



Looking east along Portage Bay Bridge toward Montlake from under Delmar Drive bridge over SR 520



Exhibit 9. View of Portage Bay Bridge—Viewpoint 2

SR 520 Bridge Replacement and HOV Project

driver's viewpoint because the high sound walls would block lateral views outward from the roadway and would partially obstruct long-distance views of the Cascades.

In the Montlake area, the roadway would be widened on the north side, removing parking, buildings, shoreline vegetation, and landscaping at the NOAA Northwest Fisheries Science Center. This would noticeably change the visual character of the historic NOAA facility and affect its historic setting. The shift northward would also move the roadway about 40 feet away from Montlake Playfield, but the move may not be noticeable because views of the bridge are obscured by trees along the water's edge.

The displacements at the NOAA facility would be compounded by the addition of 6- to 10-foot-high sound walls along the length of the property between the bicycle/pedestrian path and SR 520. The walls could be perceived as either a positive change (because they block ground level views of the highway) or as a negative change (because of the loss of landscape and existing views).

The south retaining wall between SR 520 and Lake Washington Boulevard East, east of Montlake Boulevard, would be replaced by a higher wall to accommodate the deeper SR 520 roadbed. Construction of this wall could stress or damage the street trees in the strip planter, and the addition of 8-foot-high sound walls here could require trimming the trees. The changed vegetation and new sound walls would also cause a high level change to views from houses along Lake Washington Boulevard East, but the change could be perceived as positive because the highway would no longer be visible (Exhibit 10).

In the east Shelby-Hamlin area, the bicycle/pedestrian path, new off-ramps to Montlake Boulevard, and 10- to 16-foot-high sound walls would remove the existing tree screen and a wide strip of grass and shrubs in the open space south of the Shelby Drive alley. Sound walls would screen views of the highway for residents adjacent to SR 520 and a barrier or screen would be placed between the bicycle/pedestrian path and the remaining open space.

The MOHAI building and parking lot (in McCurdy and East Montlake Parks) and the narrow tree screen along the building (McCurdy Park) would be removed and replaced by the roadway and a stormwater treatment wetland. These modifications would result in moderate to high changes to the visual character of the landscape from motorists'



Existing View

- Transit stops on outside of roadway
- 20-foot-high retaining wall along Lake Washington Boulevard
- Existing roadway about 140 feet wide



4-Lane Alternative

- Transit stops at approximately the same locations as existing stops
- SR 520 between Montlake Boulevard and 24th Avenue East bridge about 60 feet wider to north than existing roadway
- New elevated two-lane off-ramp and bicycle/pedestrian ramp on north side of roadway
- 24th Avenue East bridge about 13 feet higher at north end than existing bridge
- 8-foot-high sound wall on top of Lake Washington Boulevard retaining wall
- 10- to 16-foot-high sound walls (varies) on north side of westbound off-ramps



6-Lane Alternative

- Transit stops in center of roadway
- SR 520 between Montlake Boulevard and 24th Avenue East bridge about 90 feet wider to north than existing roadway
- Off-ramps, bicycle/pedestrian ramp, and 24th Avenue East bridge same as 4-Lane Alternative
- Lid landscape would be Olmsted-style for consistency with Arboretum and Lake Washington Boulevard landscapes
- Landscape on lid is only to indicate scale; lid design would be coordinated with Montlake community
- Stairs and elevators from lid to transit stop below, not shown



Looking east along SR 520 from Montlake Boulevard bridge toward Arboretum



Exhibit 10. **View of SR 520 from Montlake Boulevard Bridge—Viewpoint 14**

SR 520 Bridge Replacement and HOV Project

and adjacent residents' viewpoints. The setting for the eligible Montlake historic district would change moderately. The stormwater treatment wetland could be a positive visual quality change because the large asphalt parking lot would be replaced by a natural-appearing landscape that would be more appropriate to the adjacent shoreline and park.

The roadway structures over the Arboretum wetlands and waterways would be much more noticeable than the existing SR 520 due to the increased height and width of the roadway, greater thickness of the roadbed, and the addition of 8-foot-high sound walls on both sides of the roadway (Exhibit 11). The existing highway is typically about 15 feet above the water; the new highway would climb steadily from Montlake to a high point (65 to 70 feet above the water) just east of Foster Island. The greater height would make the highway more visible from distant locations such as Husky Stadium (Exhibit 12). The motorist's experience of the highway would be very different because sound walls would block all views outward.

Noticeable but potentially positive changes to visual quality would occur in the Washington Park Arboretum with the permanent removal of the existing unused R.H. Thompson Expressway Ramps. Because these ramps are over water in places, the removal of the ramps would open views for park users and physical passage for boaters. The waterways south of Marsh and Foster Islands would benefit greatly from improved visibility across the water, as would trails in the Arboretum (Exhibit 13). The wider spacing of the new columns (250 feet on center compared to 100 feet existing) through the Arboretum would contribute to the positive change. The new ramps to and from the Arboretum would be a little higher than the existing ramps, with the west-to-south off-ramp passing over the highway at about 77 feet above water. The new structures would not change views from the Graham Visitors Center or its environs.

Construction activities and the new roadway would cause the temporary loss of vegetation in the Arboretum. Vegetation would be replanted wherever possible.



Existing View

- Column spacing 100 feet apart
- Main roadway about 15 feet above water
- Arboretum off-ramp visible center left; Montlake Boulevard off-ramp closest to viewpoint; main roadway visible in background



4-Lane Alternative

- Main roadway is long structure in middle of image; 45 to 55 feet above water at distant ramp
- Arboretum flyover off-ramp is partially visible in distance; about 70 feet above water
- Column spacing 250 feet apart
- Unused ramps removed
- Main roadway has 8-foot-high sound walls



6-Lane Alternative

- Bicycle/pedestrian ramp visible in center of image; 30 to 40 feet above water
- HOV flyover off-ramp visible at top of image; about 60 feet above water
- Main roadway not visible
- Column spacing, removal of unused ramps, and 8-foot-high sound walls on main roadway same as 4-Lane Alternative



Looking east across Union Bay toward west approach and ramps and Marsh Island from just south of pedestrian bridge in East Montlake Park



Exhibit 11. View of Arboretum Wetlands—Viewpoint 4

SR 520 Bridge Replacement and HOV Project

Existing View

- Main roadway about 10 feet above water
- S-curve at west approach
- Floating bridge deck rests directly on pontoons



4-Lane Alternative

- Main roadway about 25 feet above water
- S-curve removed and alignment straightened
- Floating bridge alignment shifted to north
- Floating bridge deck rests on column-pontoon combination



6-Lane Alternative

- Same as 4-Lane Alternative, but wider



Looking southeast from Husky Stadium across Union Bay and Lake Washington toward Cascade Mountains



Exhibit 12. View from Husky Stadium—Viewpoint 3

SR 520 Bridge Replacement and HOV Project

Existing View

- Main roadway 15 to 20 feet above ground level
- Column spacing 100 feet apart
- Existing trail 10 feet wide



4-Lane Alternative

- Roadway shifted about 80 feet to north
- Main roadway 50 to 55 feet above ground level
- Column spacing 250 feet apart
- Off-ramp not visible behind main roadway



6-Lane Alternative

- South edge of roadway about 15 feet closer to viewpoint
- Roadway and column spacing same as 4-Lane Alternative
- Main roadway about 50 feet above ground
- Arboretum off-ramp about 45 feet above ground
- Bicycle/pedestrian ramp about 30 feet above ground



Looking northwest along pedestrian path toward tunnel under SR 520 that connects to Foster Island trail



Exhibit 13. View of Arboretum Trail—Viewpoint 5

SR 520 Bridge Replacement and HOV Project

Views from shoreline communities would be noticeably different because of the wider and higher roadway, the straighter alignment, taller girders, and 8-foot-high sound walls. Parts of the roadway would likely be visible above the tree canopy in the Arboretum (Exhibit 12). The Evergreen Point Bridge would be about 70 feet further north than the existing bridge, which would result in greater separation between north Madison Park and the bridge. This is expected to improve views north across Union Bay from this area.

The Aurora Borealis sculptures at the entrance to Union Bay would be removed to accommodate the new alignment. The sculptures would not be reinstated because they would not be visible from the highway.

6-Lane Alternative

Under the 6-Lane Alternative, changes to visual quality and character would be similar but generally greater than those of the 4-Lane Alternative, as follows:

- Sound wall locations would be the same, but the heights would differ slightly.
- The roadway would be wider and placed further to the north at Portage Bay.
- The bridges over SR 520 at 10th Avenue East, Delmar Drive East, and Montlake Boulevard would be replaced with 500-foot-wide lids. The lids are expected to have positive effects on visual quality because they would be landscaped, thereby replacing existing human-built elements with open space and vegetation.
- A two-lane HOV flyover ramp would be added in the Arboretum/Montlake area.

The addition of the reversible HOV flyover ramp at the I-5/SR 520 Interchange would be a noticeable change because the new ramp would be about 15 feet higher than the existing west-to-southbound flyover ramp. This ramp would be wider than the 4-Lane Alternative ramp to accommodate the extra north-to-eastbound lane. However, the new ramp would not cause a change in the character of the interchange because it is already a high-volume transportation corridor. Views to or from the highway would not be noticeably affected.

Bagley Viewpoint would be removed as part of the 10th Avenue and Delmar lid construction, but a new viewpoint could be designed into



the new lid. The placement of 10-foot-high sound walls near the viewpoint could affect the view.

Sound walls in Roanoke Park would be 12 to 14 feet high on the south side of the highway, compared to 18 to 22 feet for the 4-Lane Alternative (Exhibit 9). The roadway could seem more open and less tunnel-like than the 4-Lane Alternative because of the extra width of the roadway and the lower sound walls.

Vegetation below Bagley Viewpoint and in 50-foot-wide swaths on the north and south sides of the roadway would be removed for construction and/or the roadway.

The Portage Bay Bridge would be more than twice the width of the existing bridge but similar in style. The northward alignment and added width would have a moderate to high visual quality effect on views toward and from the roadway (see Exhibits 8 and 9). As with the 4-Lane Alternative, the bridge would require removal of the southernmost dock in the Queen City Yacht Club. In addition, the roadway would be within 70 to 100 feet of a few homes just below the Bagley Viewpoint. The view eastward from Roanoke Park homes would noticeably change because of the proximity of the Portage Bay Bridge.

Sound walls on the south side of the Portage Bay Bridge would compound the visual effects of the taller girders and make the highway structure appear more massive when seen from viewpoints outside of the roadway. The walls would also block views outward for motorists. As noted earlier, walls that would block views along SR 520 are not consistent with the SEPA scenic route designation of SR 520.

The NOAA Northwest Fisheries Science Center would lose over half of its parking and grass areas, including all the small buildings near the current westbound on-ramp, to accommodate the increased width and northward placement of the roadway. The bicycle/pedestrian path would pass directly adjacent to the NOAA facility, with 8- to 12-foot-high sound walls between the path and the roadway. These changes would cause a highly noticeable change in the NOAA facility's setting, visual character and quality, and views.

Through Montlake, the increased width and addition of a landscaped lid and 8- to 18-foot-high sound walls would be a high, potentially positive change in overall visual character. The gas station and some of the market parking in the southwest corner of the SR 520 and Montlake

