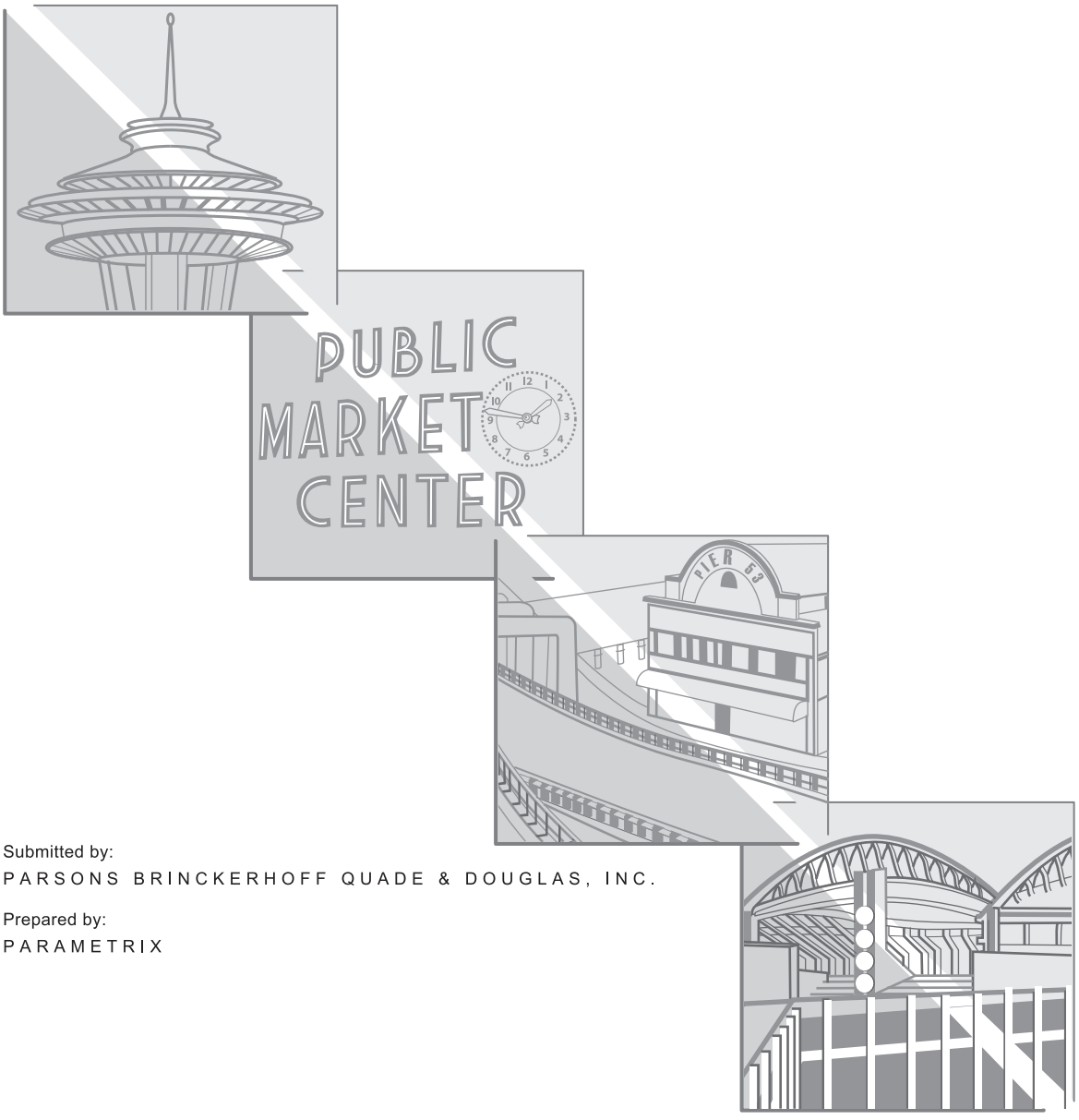
SR 99: ALASKAN WAY VIADUCT & SEAWALL REPLACEMENT PROJECT

Supplemental Draft Environmental Impact Statement

APPENDIX D

Visual Quality Technical Memorandum



Submitted by:
PARSONS BRINCKERHOFF QUADE & DOUGLAS, INC.

Prepared by:
PARAMETRIX

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U.S. Department of Transportation
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City of
Seattle

SR 99: ALASKAN WAY VIADUCT & SEAWALL REPLACEMENT PROJECT

Supplemental Draft EIS
Visual Quality Technical Memorandum

AGREEMENT NO. Y-7888
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Submitted to:

Washington State Department of Transportation
Alaskan Way Viaduct and Seawall Replacement Project Office
999 Third Avenue, Suite 2424
Seattle, WA 98104

The SR 99: Alaskan Way Viaduct & Seawall Replacement Project is a joint effort between the Washington State Department of Transportation (WSDOT), the City of Seattle, and the Federal Highway Administration (FHWA). To conduct this project, WSDOT contracted with:

Parsons Brinckerhoff Quade & Douglas, Inc.
999 Third Avenue, Suite 2200
Seattle, WA 98104

In association with:
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LIST OF EXHIBITS

ACRONYMS

AWV	Alaskan Way Viaduct and Seawall Replacement
BNSF	Burlington Northern Santa Fe Railway Company
EIS	Environmental Impact Statement
SIG	Seattle International Gateway
SODO	south of downtown
SR	State Route
WSDOT	Washington State Department of Transportation

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PREFACE

The technical appendices present the detailed analyses of existing conditions and predicted effects of each alternative. The results of these analyses are summarized and presented in the main text of the Supplemental Draft Environmental Impact Statement (EIS).

The Supplemental Draft EIS appendices are intended to add new information and updated analyses to those provided in the Draft EIS, published in March 2004. Information that has not changed since then is not repeated in these appendices. Therefore, to get a complete understanding of the project area conditions and projected effects, you may wish to refer to the appendices that were published with the Draft EIS. These are included on a CD in the Supplemental Draft EIS. To make it easier to understand where there is new information or analyses, the supplemental appendices present information in the same order as it was presented in the Draft EIS appendices.

The Supplemental Draft EIS and the technical appendices evaluate the effects of three construction plans: the shorter plan, the intermediate plan, and the longer plan. These plans vary in how long SR 99 would be completely closed, in how long the periodic closures may be, and in the total construction duration. For the purposes of the analyses in the technical appendices, two construction plans are evaluated with the Tunnel Alternative and one plan is evaluated with the Elevated Structure Alternative. However, each alternative could be built with any of the three plans. The construction durations and the sequencing would not be the same for a particular construction plan if paired with a different alternative; however, the effects would be within the ranges presented by the analyses.

There are several differences in how the information is presented between the main text of the Supplemental Draft EIS and how it is presented in these appendices. The Supplemental Draft EIS text refers to possible variations within the alternatives as "choices" while these appendices use the term "options." (For example, Reconfigured Whatcom Railyard versus Relocated Whatcom Railyard is referred to as a design choice in the Supplemental Draft EIS and as an option in the appendices.) In either case, the intent is to describe the various configurations that could be selected and the effects for each design.

One design choice in particular is handled very differently between the Supplemental Draft EIS text and the technical appendices. For the Tunnel Alternative in the central waterfront area, there is a choice between a stacked tunnel alignment and a side-by-side tunnel alignment. In the appendices, to simplify the discussion, these two alignments, as well as the Elevated Structure Alternative, are each paired with a different set of options throughout the

corridor and presented as complete sets that are evaluated separately. The Supplemental Draft EIS text communicates this information differently by describing one Tunnel Alternative and one Elevated Structure Alternative and evaluating the effects of the different design choices (or mix-and-match components) separately. While it may appear that there are three alternatives analyzed in the appendices and two in the Supplemental Draft EIS text, there are in fact only two alternatives. Each alternative has many potential components or design choices that can be made throughout the corridor.

The organization of the analysis of the alternatives is also a little different between the main body of the Supplemental Draft EIS and the appendices. In the Supplemental Draft EIS text, we identify two alternatives: a Tunnel Alternative and an Elevated Structure Alternative. The Supplemental Draft EIS text compares these alternatives directly by comparing effects (for example, the effects of both alternatives on water quality are presented together). The appendices present the effects of each alternative separately (for example, all of the effects of the Tunnel Alternative are presented first, followed by all of the effects of the Elevated Structure Alternative). The substance of both discussions is the same. The organization of the Supplemental Draft EIS technical appendices mirrors that of the Draft EIS appendices, allowing you to more easily find comparable information in the Draft EIS appendices.

Chapter 1 SUMMARY

This technical memorandum describes the character of the existing landscape and visual resources in the Alaskan Way Viaduct and Seawall Replacement (AWV) Project Corridor, the visual change that would be created by the two project alternatives, and the extent to which the impacts would be experienced by viewer groups within the study area. Potential mitigation measures are described, including ways to avoid or minimize visual quality impacts, as well as ways to restore and enhance visual quality. Visual simulations of the alternatives are provided for viewpoints that are representative of views from a number of locations or of visual impacts of an alternative that are particularly noteworthy.

The AWV Project study area stretches from S. Spokane Street to north of the Battery Street Tunnel near Comstock Street. The central portion of the corridor skirts Elliott Bay to the west and downtown Seattle to the east. For discussion purposes, the project area has been broken into the following sections:

- South – S. Spokane Street to S. Dearborn Street
- Central – S. Dearborn Street to the south portal of the Battery Street Tunnel
- North Waterfront – Alaskan Way surface street from Pine Street to Broad Street
- North – Battery Street Tunnel to Comstock Street
- Seawall – S. Washington Street to Broad Street

The AWV Project Draft Environmental Impact Statement (EIS) (WSDOT et al. 2004) evaluated five Build Alternatives as well as a No Build Alternative. In December 2004, the lead agencies narrowed the five alternatives down to two—Tunnel and Rebuild. They identified the Tunnel Alternative as the Preferred Alternative and carried the Rebuild Alternative forward for analysis as well. Since that time, engineering and design has been updated and refined for the Tunnel and Rebuild Alternatives. Due to the magnitude of the changes in the design of the Rebuild Alternative, it has been renamed the Elevated Structure Alternative. The Elevated Structure Alternative combines elements of the Aerial and Rebuild Alternatives that were evaluated in the Draft EIS. The alternatives are described in more detail in the following sections.

1.1 Tunnel Alternative (Preferred Alternative)

The updated Tunnel Alternative has two options for the tunnel alignment:

- A stacked tunnel alignment between S. Dearborn Street and Pine Street (the preferred alignment).
- A side-by-side tunnel alignment.

The comparison of impacts generally is with the Tunnel Alternative in the Draft EIS.

The following sections describe the main features of the Tunnel Alternative within each geographic section of the project area.

1.1.1 South – S. Spokane Street to S. Dearborn Street

In the Draft EIS, the Tunnel Alternative included State Route (SR) 99 on its existing alignment south of S. Atlantic Street. The current Tunnel Alternative includes the following options:

- The Reconfigured Whatcom Railyard Option is part of the preferred alignment. It would retain SR 99 in its current alignment between the Burlington Northern Santa Fe Railway Company (BNSF) Seattle International Gateway (SIG) Railyard on the east and the Whatcom Railyard to the west. It includes a short bridge carrying SR 99 over the new tail track and connection between the railyards.
- The Relocated Whatcom Railyard Option would shift SR 99 to the west into the site of the existing Whatcom Railyard and shift the railyard to the east to occupy the existing highway right-of-way next to the BNSF SIG Railyard, avoiding the need for the bridge over the tail track.

The proposed South of Downtown (SODO) Ramps at S. Atlantic Street and S. Royal Brougham Way are similar to the configuration that was described in the Draft EIS for the Tunnel Alternative—the SR 99 At Grade with Elevated SR 519 Ramps Option. In the current design, SR 99 would be at grade and S. Atlantic Street and S. Royal Brougham Way would pass over SR 99 on elevated structures in an east-west direction. The two street overpasses would be connected by an elevated structure carrying frontage roads on both sides of SR 99. Ramps to and from the south would terminate at S. Atlantic Street. Ramps to and from the north would terminate at S. Royal Brougham Way.

Current plans provide several additional features:

- A new loop connection would provide two-way traffic from S. Atlantic Street, under the east side of the elevated S. Atlantic Street, to Colorado Avenue S. to the south.
- For the Relocated Whatcom Railyard Option, a new on-ramp southbound would be added directly from E. Marginal Way near the entry to the Port of Seattle Terminal 46, under the west side of the elevated S. Atlantic Street, providing for direct southbound access to SR 99.

South of S. Atlantic Street, SR 99 would continue as a six-lane at-grade highway to a tunnel portal just south of S. Dearborn Street.

1.1.2 Central – S. Dearborn Street to Battery Street Tunnel

Alternative configurations considered for the tunnel in the central portion of the corridor include:

- A stacked tunnel alignment (the preferred alignment).
- A side-by-side tunnel alignment.

The tunnel would continue north with three lanes in each direction. To accommodate higher design speeds, the curve between S. King Street and Columbia Street would extend into Elliott Bay beyond the existing seawall. This feature is referred to below as the Colman Curve after the Colman Dock Ferry Terminal.

North of Union Street, the ceiling of the tunnel would extend above existing grade as it started the climb to the Battery Street Tunnel. The tunnel would be covered by a lid that would extend above existing grade. To accommodate the above-grade lid, the northbound and southbound lanes of the Alaskan Way surface street would be at different levels in the area near Pike Street. The southbound lanes would be at waterfront level, and the northbound lanes would be about 12 to 14 feet higher, perched on top of the tunnel lid for both the stacked and side-by-side tunnel alignments. This terracing of lanes, along with the retaining wall between them, would become a prominent part of the view to the east from the waterfront. In the Draft EIS, the surface street was located west of the tunnel lid with all lanes at waterfront elevation.

Two alternative configurations are being considered for structures above the roadway as it emerges from the tunnel at Union Street extending to Steinbrueck Park at about Virginia Street:

- The Steinbrueck Park Walkway (part of the preferred alignment) would consist of a lid over the entire roadway to about 200 feet past

Pine Street, then would become a 20-foot-wide pedestrian walkway east of and elevated above the level of the SR 99 roadway.

- The Steinbrueck Park Lid would provide a structure covering the entire width of the roadway from near Union Street to the north end of Victor Steinbrueck Park, approximately 560 feet in length.

The Draft EIS Tunnel Alternative included a side-by-side aerial structure connecting from Pike Street up to the Battery Street Tunnel. There are now two options for SR 99 from Steinbrueck Park to the Battery Street Tunnel:

- Under Elliott and Western Avenues (part of the preferred alignment)
- Over Elliott and Western Avenues

Both options incorporate an on-ramp southbound from Elliott Avenue and an off-ramp northbound to Western Avenue. The Draft EIS included the Broad Street underpass. The underpass has been replaced by the Elliott and Western Avenue ramps.

- The Under Elliott and Western Option would pass over the BNSF railroad tracks and BNSF Tunnel, then continue to climb as a gentler slope and enter a cut section about 50 feet below the current elevated structure with Elliott and Western Avenues on bridges above SR 99. This option would require modification to the Battery Street Tunnel to meet the existing tunnel portal about 12 feet below the existing tunnel floor.

- The Over Elliott and Western Option would pass over the BNSF railroad tracks with a configuration similar to the existing viaduct, passing over Elliott and Western Avenues prior to entering the Battery Street Tunnel portal.

Ferry Holding Area and Ferry Access

The updated Tunnel Alternative includes ferry holding on the east side of SR 99. The main access to the Colman Dock Ferry Terminal would be at Yesler Way.

Alaskan Way Surface Street

The Alaskan Way surface street in the central waterfront area would be located above the tunnel. The entire 180-foot-wide right-of-way would be available for transportation, pedestrian, and open space facilities. The City of Seattle initiated a Waterfront Planning program by Resolution 30664 in April 2004. A variety of concepts have been developed for future surface street facilities. The following major elements are included in the current proposal:

- Two travel lanes in each direction would be provided on the surface street between Columbia Street and Broad Street. A third southbound travel lane would be added at Columbia Street and continue south to S. Dearborn Street. Three northbound travel lanes would be provided from S. Dearborn Street to S. Main Street. Between S. Main Street and Yesler Way, four northbound lanes would be provided with the center two providing left-turn access to the Colman Dock Ferry Terminal at Yesler Way. A center turn lane would be added from Pike Street to Broad Street with alternating turn pockets and streetcar stops provided for the waterfront streetcar between Pine and Broad Streets.
- The waterfront promenade would be widened from the current 20 feet to approximately 70 feet.
- A 20-foot-wide sidewalk and landscape area would be provided on the east side of the Alaskan Way surface street.
- A 4-foot-wide bike lane would be provided on each side of Alaskan Way.
- On-street parking would be provided on both sides of Alaskan Way.
- A double streetcar track would extend from Main Street north to Clay Street. The streetcar lane would be shared with vehicular traffic. In the Draft EIS, a single track in a separate corridor was proposed along Alaskan Way.

1.1.3 North Waterfront – Pine Street to Broad Street

North of Pine Street, the major difference from the Tunnel Alternative in the Draft EIS is the elimination of the tunnel portals connecting the tunnel to the Alaskan Way surface street. The updated Tunnel Alternative includes ramps at Elliott and Western Avenues. With the elimination of the portals in the previous design, the surface street in that area is essentially unaltered by the project alternatives, although some changes in lane configuration are proposed.

1.1.4 North – Battery Street Tunnel to Comstock Street

Battery Street Tunnel Improvements

For the Tunnel Alternative with the Under Elliott and Western Option, the SR 99 roadway at Western Avenue would be about 50 feet below the elevation of the existing viaduct. The roadway would climb at about a 7-percent grade and would meet the existing tunnel portal about 12 feet below the existing tunnel floor. A vent building would be constructed above the tunnel portal. The top of the vent building would be about 8 feet below the elevation of the sidewalk on First Avenue.

Either alignment would include fire/life safety improvements to the Battery Street Tunnel and would lower the tunnel floor to increase the vertical clearance to 16.5 feet. Two ventilation buildings would be located at the end of the south portal, one building above the northbound and one building above the southbound lanes. A vent building would be constructed above the tunnel and would be about 10 feet above the tunnel and about 4 feet above the adjacent First Avenue sidewalk.

Partially Lowered Aurora

In the Draft EIS, the Lowered Aurora Option was included in the Aerial Alternative. Widened Mercer was an option for all alternatives except the Rebuild Alternative. It included reconnecting Thomas (a two-lane overcrossing), Harrison, and Taylor Streets.

The updated Tunnel Alternative includes lowering SR 99/Aurora Avenue N. below grade with retaining walls on either side from the Battery Street Tunnel north portal to around Republican Street. This would allow Thomas and Harrison Streets to pass over the highway at grade.

In the Partially Lowered Aurora Option, Aurora Avenue N. would climb to existing grade at about the existing Broad Street underpass, which would be closed and filled. Mercer Street would cross under Aurora Avenue N. as it does today. The undercrossing would be reconfigured to provide three lanes in each direction (eastbound and westbound) with a center turn lane and would be widened to provide 12- to 18-foot-wide sidewalks on each side.

Northbound off- and on-ramps would be provided at Roy Street in a right-on/right-off configuration. One southbound off-ramp and one northbound on-ramp would be provided at Denny Way. The northbound on-ramp at Denny Way would be reconfigured to pass over the mainline and merge on the left side of the roadway. A right-hand off-ramp would be provided at Republican Street.

As in the Draft EIS Lowered Aurora Option, Broad Street would be closed from Fifth Avenue N. to Ninth Avenue N. and filled. The street grid would be reconnected over SR 99 at Thomas and Harrison Streets. Cul-de-sacs would be installed at John, Valley, and Aloha Streets to prevent the current right-in/right-out access at those streets.

Option: Battery Street Tunnel Improvements with Widened Curves and Lowered Aurora

The option would include the same fire/life safety improvements to the Battery Street Tunnel and would lower the tunnel floor to increase the vertical clearance to 16.5 feet as described above. In addition, both curves of the Battery Street Tunnel would be widened.

The Lowered Aurora Option would include a below-grade Aurora Avenue N. from the north tunnel portal to about Comstock Street and would be similar to the Lowered Aurora Option discussed in the Draft EIS.

1.1.5 Seawall – S. Washington Street to Broad Street

For the Tunnel Alternative, the existing seawall would be replaced with the outer wall of the tunnel from S. Washington Street up to Union Street. In most of the areas between Union and Broad Streets where a tunnel is not proposed, the seawall would be replaced by strengthening the soil (or improving the soil) and replacing the existing seawall with a new face panel and support structure. Near Pier 66, between Blanchard and Battery Streets, only soil improvements are needed since other improvements have already been made to this section of the seawall. Soil improvements and face paneling would replace the failing bulkhead located between S. Jackson Street and S. Washington Street.

1.2 Elevated Structure Alternative

The Elevated Structure Alternative incorporates elements from both the Rebuild and Aerial Alternatives evaluated in the Draft EIS. It has more similarities to the Draft EIS Aerial Alternative than to the Draft EIS Rebuild Alternative. The following describes the main features of the Elevated Structure Alternative within each project section.

1.2.1 South – S. Spokane Street to S. Dearborn Street

The same options are being considered in the south section for the Elevated Structure Alternative as for the Tunnel Alternative:

- The Reconfigured Whatcom Railyard Option (described above in Section 1.1.1 for the Tunnel Alternative).
- The Relocated Whatcom Railyard Option (described above in Section 1.1.1 for the Tunnel Alternative).

The proposed SODO Ramps at S. Atlantic Street and S. Royal Brougham Way would cross over SR 99 as described above for the Tunnel Alternative.

The SR 99 roadway would continue north at grade to about S. Massachusetts Street, where it would transition to a single-level side-by-side aerial structure accommodating three travel lanes in each direction.

1.2.2 Central – S. Dearborn Street to Battery Street Tunnel

With the Elevated Structure Alternative, effects to views in the project area would be similar to those discussed in the Draft EIS for the Aerial Alternative.

Near S. King Street to south of S. Main Street, the new elevated structure would be 54 to 74 feet wider than the existing viaduct as SR 99 transitions from a side-by-side at-grade roadway in the south to a new double-level elevated structure. The new viaduct structure would be between 11.5 and 35 feet wider than the existing viaduct from south of S. Main Street up to Union Street. The new elevated structure would also be 3 feet higher than the existing viaduct.

From Pine Street to the Battery Street Tunnel, the Elevated Structure Alternative is similar to the Draft EIS Rebuild and Aerial Alternatives. The double-level stacked structure would transition to a side-by-side structure as it climbs the hill. The Elliott and Western Avenue ramps would be replaced in a similar configuration.

Ferry Holding Area and Ferry Access

The ferry holding area on the Port of Seattle Terminal 46 discussed in the Draft EIS is no longer being considered. The Elevated Structure Alternative includes ferry holding on the east side of SR 99. The main access to ferry holding and dock areas would be from Railroad Way S., which passes under the elevated structure with access to the Colman Dock Ferry Terminal at Yesler Way.

Alaskan Way Surface Street

The Alaskan Way surface street in the central waterfront area would be located west of the double-level aerial structure. The surface street with parking on each side of Alaskan Way and 4-foot-wide bike lanes, together with the waterfront streetcar, would be accommodated in a narrower area because of the greater width of the elevated structure. This would result in eliminating the existing multipurpose Waterfront Bicycle/Pedestrian Facility and shifting the roadway and streetcar tracks to the west. This would also narrow the existing waterfront promenade. At the existing Washington Street Boat Landing, these factors, plus the shift of the elevated structure to the west for a greater curve radius, would result in a narrower sidewalk area between the curb and the pergola. North of Yesler Way, the waterfront promenade would be reduced from its existing width of about 20 feet to about 15 feet.

1.2.3 North Waterfront – Pine Street to Broad Street

The Alaskan Way surface street would be rebuilt with two lanes in each direction with two waterfront streetcar tracks down the center. The center lane would have alternating turn pockets and streetcar stops between Pine and Broad Streets.

1.2.4 North – Battery Street Tunnel to Comstock Street

Battery Street Tunnel Improvements

The Elevated Structure Alternative includes fire/life safety improvements in the Battery Street Tunnel. Two ventilation buildings would be located at the end of the north portal, one building above the northbound and one building above the southbound lanes. A vent building would be constructed above the tunnel and would be about 10 feet above the tunnel and about 4 feet above the adjacent First Avenue sidewalk. A new vent building would be added at about the midpoint of the tunnel at Fourth Avenue and would be about 30 feet high.

Partially Lowered Aurora

The Elevated Structure Alternative includes the same Partially Lowered Aurora Option as the Tunnel Alternative.

1.2.5 Seawall – S. Washington Street to Broad Street

Under the Elevated Structure Alternative, replacement of the seawall would end at Broad Street. In the Draft EIS, seawall replacement went all the way to Myrtle Edwards Park (near Bay Street). The seawall would remain in its current location or be placed slightly inland.

1.3 Construction Plans

Two construction plans are evaluated with the Tunnel Alternative:

- The shorter plan would close SR 99 for a minimum of 42 months (3.5 years). The duration of construction with the shorter plan is approximately 7 years.
- The intermediate plan would close SR 99 for approximately 18 to 27 months. The intermediate plan also assumes periods of time where the northbound lanes would be closed and the southbound lanes would be open and vice versa. For the stacked tunnel alignment, the overall construction duration for the intermediate plan would be approximately 8.75 years, and for the side-by-side tunnel alignment, the construction duration would be approximately 8 years.

One construction plan is evaluated with the Elevated Structure Alternative:

- The longer plan would maintain two lanes of traffic in each direction at all times except during a 3-month complete closure of SR 99. The construction would last approximately 10 years.

1.4 Impacts of the Alternatives

1.4.1 Tunnel Alternative (Preferred Alternative)

The Tunnel Alternative visual impacts are similar to those discussed in the Draft EIS. No views would be provided from the roadway within the proposed tunnel. The panoramic views enjoyed by vehicle drivers and passengers from the existing viaduct of Puget Sound and the Olympic Mountains would be lost over the length of the tunnel. This alternative would provide views from both the surface roadway and from the elevated structure approaching the Battery Street Tunnel. The views of downtown Seattle and Puget Sound, the intermediate wooded hills across the water, and the Olympic Mountains would be available on clear days. These views, however, would not be from the elevated panoramic perspective of the existing viaduct.

For views external to the roadway, the removal of the existing aerial structure would remove the visual barrier that separates downtown and the Pioneer Square Historic District to the east from the central waterfront to the west. The visual integrity of local views of pedestrians, vehicles on surface streets, and building occupants within the waterfront, downtown, and Pioneer Square Historic District would be substantially enhanced.

1.4.2 Elevated Structure Alternative

The largest factor in the visual impacts of the Elevated Structure Alternative is the continued presence of an aerial structure in the same location as the existing viaduct.

For northbound drivers and passengers, the Elevated Structure Alternative would provide panoramic views from the elevated roadway of downtown Seattle and Puget Sound, the intermediate wooded hills of Bainbridge Island and the Kitsap Peninsula, and the Olympic Mountains on clear days. However, this alternative would remove the elevated portion of the structure or reduce its height to a single level south of S. Dearborn Street. This would eliminate about half of the length of the existing viaduct from which these views are currently available. Views southbound from the roadway are enclosed by the upper deck, interrupted by columns, and provide views that center on the industrial areas south of downtown.

The Elevated Structure Alternative has the same impacts on views of the roadway from the surrounding area as discussed in the Draft EIS for the Rebuild and Aerial Alternatives. Building a new structure somewhat wider than the existing structure would continue to visually dominate near views and form a visual barrier for views to and from the waterfront, downtown Seattle, and Pioneer Square Historic District. The elevated structure would

continue to contrast with the building character and character of street corridors as discussed under the Rebuild Alternative in Sections 5.2.1 and 5.2.2 in the 2004 Draft EIS Appendix D, Visual Quality Technical Memorandum. It would also present a change in the physical environment for pedestrians moving between the waterfront and downtown through a corridor of shaded area, a lack of landscaping, and the additional contribution of traffic noise.

The additional complexity of the transition from a side-by-side to a double-level structure between S. King Street and S. Main Street would provide additional visual distraction within the Pioneer Square Historic District.

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Chapter 2 METHODOLOGY

The analysis in this technical memorandum evaluates the potential change in visual quality for the updated Tunnel (Preferred) and Elevated Structure Alternatives. The analysis includes three levels of study:

- The visual environment relating to the design of the roadway alternatives—the experience of users of the facility—views from the roadway.
- The relationship of the alternatives to specific elements of the project surroundings—the visual experience of persons looking at the project—views looking towards the roadway.
- The relationship of the alternatives to the overall environmental context—the existing and planned character of the area based on plans and policies for future development.

The methodology used in the assessment of impacts on visual resources is the same as for the 2004 Draft EIS Appendix D, Visual Quality Technical Memorandum.

Additional viewpoints were evaluated for features of the alternatives that differ from the Draft EIS and were coordinated with City of Seattle and Washington State Department of Transportation (WSDOT) staff. New and revised viewpoints or simulations prepared are in the 2006 Supplemental Draft EIS Appendix E, Visual Simulations. The following visual simulation descriptions are listed below by corresponding Supplemental Draft EIS Appendix E exhibit numbers:

1. *Existing Condition: View to the Northwest of the Viaduct from Railroad Way at First Avenue S.*

1a. *Proposed Elevated Structure Alternative: View to the Northwest of the Viaduct from Railroad Way at First Avenue S. (New Viewpoint)*
An additional visual simulation of the Railroad Way view was prepared to illustrate the difference from the single-level structure in the Elevated Structure Alternative as compared to the double-level structure in the Aerial Alternative in the 2004 Draft EIS Appendix E, Visual Simulations, Exhibit A-5.

2. *Existing Condition: View to the South from Alaskan Way at Main Street. (New Viewpoint)*

2a. *Proposed Tunnel Alternative: View to the South from Alaskan Way at Main Street. (New Viewpoint)*
This simulation is of the Alaskan Way surface street with the Tunnel Alternative and illustrates the entire 180-foot-wide right-of-way available for transportation and open space.

2b. *Proposed Elevated Structure Alternative: View to the South from Alaskan Way at Main Street. (New Viewpoint)*
This simulation is of the Alaskan Way surface street and adjacent elevated structure to the east. This new view of the Elevated Structure Alternative would be about a block to the north of the completed transition from side-to-side to stacked configuration and would capture most of the view of the transition. The Pioneer Square Historic District is one of the most visually sensitive areas on the corridor due to its historic status. To accommodate the widened elevated structure, the street would be moved to the west and would encroach on the area of Pier 48 west of the current sidewalk.

3. *Existing Condition: View to the North at Washington Street from the West Side of Alaskan Way.*

3a. *Proposed Tunnel Alternative: View to the North at Washington Street from the West Side of Alaskan Way.*
This simulation shows the Alaskan Way surface street, and open space provided by the stacked and side-by-side tunnel alignments, and a three-story vent building at the northeast corner of Alaskan Way and Yesler Way. A three-story vent building is now proposed for the Tunnel Alternative, as compared to the two-story vent building in the Draft EIS. In addition, for the stacked tunnel alignment, two vent stacks and a stair access to the underground fan building are proposed near the center of the surface street but are not included in a simulation.

4. *Existing Condition: View to the Southeast from Yesler Way. (New Viewpoint)*

4a. *Proposed Tunnel Alternative: View to the Southeast from Yesler Way. (New Viewpoint)*
This simulation shows the Alaskan Way surface street and open spaces provided by the stacked and side-by-side tunnel alignments.

4b. *Proposed Elevated Structure Alternative: View to the Southeast from Yesler Way. (New Viewpoint)*
This simulation is of the Alaskan Way surface street and the adjacent elevated structure to the east.

5. *Existing Condition: View to the West along University Street from Western Avenue.*

5a. *Proposed Tunnel Alternative: View to the West along University Street from Western Avenue.*
This simulation provides a view to the west of the waterfront unobstructed by the existing viaduct.

5b. *Proposed Elevated Structure Alternative: View to the West along University Street from Western Avenue.*
This simulation provides a view of the Elevated Structure Alternative and illustrates the longer spans and greater separation between columns provided by the new elevated structure.

6. *Existing Condition: View to the South from Union Street from the East Side of Alaskan Way. (New Viewpoint)*

6a. *Proposed Tunnel Alternative: View to the South from Union Street from the East Side of Alaskan Way. (New Viewpoint)*
This simulation illustrates the entire 180-foot-wide right-of-way available for transportation and open space with the Tunnel Alternative.

6b. *Proposed Elevated Structure Alternative: View to the South from Union Street from the East Side of Alaskan Way. (New Viewpoint)*
This simulation illustrates the elevated structure with the surface street to the west.

7. *Existing Condition: View to the South from Union Street from the West Side of Alaskan Way. (New Viewpoint)*

7a. *Proposed Tunnel Alternative: View to the South from Union Street from the West Side of Alaskan Way. (New Viewpoint)*
This simulation illustrates the Alaskan Way surface street with the Tunnel Alternative.

7b. *Proposed Elevated Structure Alternative: View to the South from Union Street from the West Side of Alaskan Way. (New Viewpoint)*
This simulation illustrates the Alaskan Way surface street with elevated structure.

8. *Existing Condition: Steinbrueck Park with a View to the South.*

8a. *Proposed Tunnel Alternative: Steinbrueck Park with a View to the South with Steinbrueck Park Lid.*
This simulation provides a view of the Steinbrueck Park Lid, an option which would cover the entire roadway with the Tunnel Alternative.

8b. *Proposed Tunnel Alternative: Steinbrueck Park with a View to the South with Steinbrueck Park Walkway. (New Viewpoint)*
This simulation provides a view featuring a walkway with the Tunnel Alternative.

9. *Existing Condition: Elliott Avenue at Bell Street with a View to the South.*

9a. *Proposed Tunnel Alternative: Elliott Avenue at Bell Street with a View to the South. (New Viewpoint)*
This simulation illustrates the continuity of the Alaskan Way surface street and visual reconnection of the neighborhood with the aerial structure removed.

10. *Existing Condition: Western Avenue at Bell Street*

10a. *Proposed Tunnel Alternative: Western Avenue at Bell Street with Vent Structure. (New Viewpoint)*
This simulation illustrates the tunnel portal and associated vent structure, which would be visible as the result of the Elliott Avenue and Western Avenue undercrossings.

Chapter 3 STUDIES AND COORDINATION

The studies and coordination that established the context for the visual quality analysis are the same as for the 2004 Draft EIS Appendix D, Visual Quality Technical Memorandum. Additional coordination with City of Seattle and WSDOT staff was undertaken to choose new visual simulations to illustrate features of the updated Tunnel (Preferred) and Elevated Structure Alternatives.

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Chapter 4 AFFECTED ENVIRONMENT

The existing conditions that establish the context for the visual quality analysis have changed very slightly from the description in Chapter 4 of the 2004 Draft EIS Appendix D, Visual Quality Technical Memorandum. Where needed to establish the context for visual impacts, information on existing conditions is presented in Chapter 5, Operational Impacts and Benefits.

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Chapter 5 OPERATIONAL IMPACTS AND BENEFITS

This section describes the visual change created by project alternatives and the extent to which the impacts would be experienced as adverse or beneficial by viewer groups using the facility and viewing the facility within the study area. Potential mitigation measures are described in Chapters 8 and 9. Visual simulations of the alternatives are provided for viewpoints that are representative of typical views from a number of locations or of visual impacts of an alternative that are particularly noteworthy.

5.1 Tunnel Alternative (Preferred Alternative)

The Tunnel Alternative currently under consideration has effects almost identical to those discussed for the Tunnel Alternative in the Draft EIS. The stacked or side-by-side tunnel alignments do not change effects on the visual environment above the tunnel. The major changes are beneficial and result from the removal of the existing elevated structure with associated visual impacts, the opportunities provided for a variety of visual amenities on the Alaskan Way surface street, and the visual amenities provided by the proposed pedestrian connections or planted lids connecting to Steinbrueck Park.

5.1.1 South – S. Spokane Street to S. Dearborn Street

Views from the Roadway

Views from the roadway would be similar to existing views from the at-grade roadway south of S. Holgate Street, which is framed by industrial buildings or railyards on both sides.

The Tunnel Alternative includes the same at-grade SR 99 as in the Draft EIS. At about S. Massachusetts Street, the Reconfigured Whatcom Railyard Option would require a bridge to carry SR 99 up and over the connecting tracks between the railyards. This new bridge would be a single-level side-by-side structure and would be about half as high as the existing viaduct.

Farther to the north, at S. Atlantic Street and S. Royal Brougham Way, the SODO Ramps would be constructed with S. Atlantic Street and S. Royal Brougham Way passing over SR 99 on single-level elevated structures with ramps parallel to the highway. This interchange would have similar visual impacts to those discussed in the Draft EIS.

The replacement of the existing double-level elevated structure with an at-grade roadway extending to south of S. Dearborn Street would eliminate panoramic views over the Port of Seattle shipping terminals to the northwest.

Views of the downtown skyline to the north along the road alignment are likely to be similar to those from the existing viaduct, as indicated in the 2004 Draft EIS Appendix E, Visual Simulations, Exhibits A-1 and A-2. The downtown skyline would continue to dominate views along the alignment of the roadway to the north. Views to the northwest and west would be largely blocked by stacked shipping containers in the Port of Seattle terminals along Elliott Bay. Some brief views to the northwest of the peaks of the Olympic Mountains may be available between rows of containers. As discussed in Section 5.4.1 of the Draft EIS, drivers traversing the new SODO Ramps are likely to be required to pay more attention due to entering and exiting traffic and are less likely to divert attention to the side in that area. Views to the west would always be available to passengers.

North of the interchange the tunnel begins the transition to below-grade. The impacts are virtually identical to those discussed for the Draft EIS Tunnel Alternative.

Views toward the Roadway

All views from the Duwamish Industrial Area would remain low in visual quality due to the lack of a vivid visual focus within the area; views would also have low visual unity due to the widely disparate range of building styles and condition and visual clutter. The SR 99 at-grade roadway would generally not be visible from the east. Views from the east would continue to be dominated by the cranes in the Port of Seattle container terminals on the Duwamish Waterway, which would continue to be the most prominent skyline feature.

The single-level elevated structure in the Reconfigured Whatcom Railyard Option and the SODO Ramps are likely to be a minor element of middleground views from the surrounding industrial development. The elevated structure would be about half the height of the existing viaduct at S. Holgate Street. For views from the east, the cranes from the Port of Seattle container terminals on the Duwamish Waterway would continue to dominate the skyline, with the wooded West Seattle ridge as background.

In the vicinity of the SODO Ramps, attendees at sporting events and persons passing through the area on First Avenue S. and S. Royal Brougham Way would no longer see the north–south elevated viaduct. Instead, the shorter east–west elevated structure to carry the local arterials and elevated frontage roads would rise to about the elevation of the existing viaduct's lower level. The single-level elevated structure would not have a substantial effect on the terminus of the view, which would continue to be the low-rise buildings and stacked shipping containers at Terminal 46.

As discussed in the Draft EIS, the visual context for Qwest Field would change primarily because of the elimination of the existing viaduct in views toward First Avenue. In its absence would be several blocks of a surface street bounded by industrial and commercial buildings. The Flatiron Building at First Avenue, which is a City of Seattle designated landmark, would enjoy a context similar to that which existed when it was constructed near the turn of the twentieth century. The terminus of views to the west would continue to be stacked containers and low buildings within Terminal 46 as indicated in the 2004 Appendix E Exhibit A-6.

Views from E. Marginal Way to the east would feature railroad lines with parked rail cars in the foreground. The skyline behind the existing viaduct is dominated by the 200-foot-high Starbucks Center building with Beacon Hill behind it. The removal of several hundred feet of double-level aerial structure with the replacement of a single-level elevated structure would not change the low visual unity and low visual quality of the area.

Light and Glare

The proposed at-grade and elevated portions of SR 99 in this area are expected to be lighted with standard street light fixtures. The light from the highway would be a minor source of light and glare compared to the higher mounted lighting height and higher intensity of lighting for the Port of Seattle terminals to the west and the railyards to the southeast. It is unlikely to be noticed as a separate feature.

5.1.2 Central – S. Dearborn Street to Battery Street Tunnel

Views from the Roadway

Visual quality impacts would be the same as those discussed in the Draft EIS for the Tunnel Alternative: views for vehicle occupants traveling in the new tunnel would be the interior of the tunnel. The visual interest of the panoramic views from the existing viaduct would not be available.

Views from the Alaskan Way surface street would continue to be available but would be at a lower elevation and therefore less panoramic.

Views toward the Roadway

Pioneer Square Historic District, Commercial Core, and Central Waterfront

The absence of an aerial structure in the Tunnel Alternative would transform the relationship of the Pioneer Square Historic District, commercial core, and central waterfront and have substantial benefits on the area, as discussed in Section 5.4.2 of the Draft EIS Appendix D. The view to the south from the Alaskan Way surface street at Main Street in Exhibit 2a in the 2006

Supplemental Draft EIS Appendix E, Visual Simulations, shows the relationship between the historic district, the open space and surface street provided in the absence of the viaduct, and the generally greater integration with the area to the west, as well as removal of the intrusive and out-of-character existing viaduct.

An impact of the Tunnel Alternative discussed in the Draft EIS that would be avoided in the current Tunnel Alternative is that the One Yesler Way building at the corner of Alaskan Way and Yesler Way would no longer be displaced.

The Draft EIS identified vent structures as an element of the tunnel that may intrude on the visual context, especially the vent location near Yesler Way, likely to be in sited in an existing surface parking lot. A vent building about three stories high is illustrated in Exhibit 3a in the 2006 Appendix E. The current proposal would provide a vent building about one story higher than analyzed in the Draft EIS. Mitigation through compatible design features would be required in the Pioneer Square Historic District, which requires new construction to be visually compatible with the architectural style, building materials, and historic character of the district. Mitigation proposals will be reviewed by the Pioneer Square Preservation Board per Seattle Municipal Code 23.66. The addition of another story to the vent structure at this location does not present additional challenges in designing a compatible building that will fit into the character of the area.

The stacked tunnel alignment would incorporate mechanical equipment in below-grade vaults. The features that would project above grade include stacks and access elevators and stairs. These would be approximately 15 feet in width and of varying length. They are not substantially different in scale than the stations proposed for the waterfront streetcar line on Alaskan Way and may be located between the sidewalk and the curb or in the street median. They could incorporate art or other features that would allow them to function as landmarks.

The views from the Alaskan Way surface street and Yesler Way to the south in the 2006 Appendix E Exhibit 4a show the extent to which the removal of the existing viaduct would transform the relationship of the Pioneer Square Historic District to the central waterfront in an area where the scale and historic integrity of buildings in the historic district are relatively intact.

Central Waterfront

The visual integration between the commercial core of downtown Seattle and the waterfront in the absence of the existing viaduct is illustrated in the 2006 Appendix E Exhibit 5a viewing the waterfront down University Street at the foot of the Harbor Steps at Western Avenue. The visual integration between

the commercial core, the waterfront, and the area provided in the absence of the viaduct for the surface street and open space is illustrated in the 2006 Appendix E Exhibit 6a, which shows the view south from the easterly side of the existing Alaskan Way surface roadway.

Pike Place Market

The route of the SR 99 Tunnel Alternative would continue on the same alignment up the hill between Pike Street and the Battery Street Tunnel. The proposed lid would rise above existing grade at about Union Street and would be about 15 feet higher than the waterfront promenade at Pike Street and continues to rise to the north. The lid provides the potential for a public space or other public amenities that would step down the hillside to the waterfront. The view of this area from the Pike Street Hillclimb to the east would be of a scenic corridor extending to Elliott Bay compared to the blockage of the existing view by a complex of viaduct supports and vertical levels.

The lid above the tunnel would extend to the west in steps to the waterfront. The lid at Pike Street would be about 15 feet higher than the surface elevation at the edge of the waterfront promenade. The transition in grade is accommodated in part by locating northbound lanes of the surface street at a higher level. The change in grade between the northbound and southbound lanes is proposed to be accommodated by stepping the surface street. This transition may be handled in several ways, depending on final design details. It may be a single retaining wall or there may be opportunities to widen the median between the northbound and southbound lanes and provide additional area for intermediate levels and landscaping. Additional design concepts for the tunnel may reduce or eliminate the need for a split elevation between the surface street lanes. Design options will be further explored in the Final EIS.

The visual context of the entry to the Market from both Pike and Pine Streets would be transformed with the tunnel lid and open space, which would provide enhanced views to the west and eliminate the existing visual barrier, shadows, and noise.

Two options are proposed for a connection between the tunnel lid and Steinbrueck Park to the northeast:

- The Steinbrueck Park Walkway would extend as a full cover over the roadway to about Pike Street. It would then extend as a 20-foot-wide pedestrian walkway west of and above the road surface. The lid between Union and Pine Streets would include a sloping park area that would provide visual relief as well as obscure the lower portion of

the Pike Place Market Garage. The 20-foot-wide walkway would be a minor element of the visual environment and would function as a corridor for pedestrian movement rather than as an element of the landscape. The Steinbrueck Park Walkway Option has not been designed at this stage of the project.

- The Steinbrueck Park Lid would extend over the tunnel from where it begins to protrude above the current ground surface between Union and Pike Streets to the north end of Victor Steinbrueck Park. The approximately 150-foot width of the lid would provide a connection to the waterfront and opportunities for a variety of treatments that may range from predominantly public space opportunities to a more urban character featuring retail buildings, seating areas, and more paved areas. As indicated in Exhibit 8 of the 2006 Appendix E, it would be perceived as a continuous corridor between the waterfront and the Steinbrueck Park to the east. Views to the east from the waterfront would include the triangle park with buildings behind it. The western façade of the Pike Place Market Garage, which is largely obscured by the existing viaduct, would be partially screened by the triangle park but would be a relatively featureless element of the background. The lid would likely be the major visual element in the area and would serve to tie together a diverse mix of urban forms. The Steinbrueck Park Lid Option has not been designed at this stage of the project.

Belltown

North of Steinbrueck Park, SR 99 would continue to climb to meet the elevation of the Battery Street Tunnel. There are now two options under consideration for this portion of the corridor:

- Under Elliott and Western Avenues
- Over Elliott and Western Avenues

Both options incorporate an on-ramp southbound from Elliott Avenue and an off-ramp northbound to Western Avenue, which differs from the design discussed in the Draft EIS.

The Under Elliott and Western Avenues Option would place the roadway in a cut section beneath Elliott and Western Avenues, which would be carried over the highway on bridges. The visual interruption of the street corridor would be eliminated. The street corridor would regain a linear unity, as shown in Exhibit 9a in the 2006 Appendix E.

Views from the Elliott Avenue bridge would be primarily to the southeast along the alignment of Blanchard Street over the roof of the Marriott Hotel.

Views to the west and of the Olympic Mountains are blocked by the upper floors of the Port of Seattle World Trade Center East. The views to the southwest include the waterfront piers with mid-distance views of the sport stadiums, and Port of Seattle container terminals with distant views of Mount Rainier. These views would be similar to those from Steinbrueck Park in Exhibits 8a and 8b in the 2006 Appendix E.

Views from the new bridge carrying Western Avenue over the highway would include the tunnel portal and associated vent structure to the east as a prominent feature at approximately the same level as the bridge, as indicated in Exhibit 10a in the 2006 Appendix E. This would be a new feature, since the current tunnel portal is not visible from the neighborhood because of the existing elevated structure. The portal and vent structure would be framed by urban buildings but would be different and unique in character. It also would be a source of traffic noise with possibly some reverberation from the tunnel. It may be perceived as a visual intrusion, or because of the complexity of the urban fabric in the area, it may be seen as just another element within a complex visual field. Framed views to the southeast would be available down Bell Street, but the elevation and the building at the end of the street would limit views to distant water and mountains.

Views along Elliott and Western Avenues would be of an unobstructed streetscape, as indicated in Exhibit 9a in the 2006 Appendix E. The absence of the aerial structure would result in greater visual continuity between both sides of SR 99. The width of the bridge would be perceived as a distance separation but not a substantial change in visual character when viewed from the north or south.

For pedestrians passing over the bridges at Elliott and Western Avenues, visual continuity of the street and buildings would be visible on both sides of the bridge but would not frame the bridge. The elements of the open sky and the influence of weather and sunlight would be present. The highway below would not be in the normal field of view, but an individual could look down on the cars passing beneath. Roadway noise would be noticeable.

The Over Elliott and Western Avenues Option is essentially the same as the elevated structure considered in the Draft EIS for both the Rebuild and Tunnel Alternatives. The single-level elevated structure and vertical supports at both sides of the street and in the center would substantially block views along both Elliott and Western Avenues, the two major north-south streets in the area. As indicated in the 2004 Appendix E Exhibit A-74 for the view north on Western Avenue and Exhibit A-75 for the view south on Elliott Avenue, the elevated structure would be a major feature cutting across the street corridor. For pedestrians passing through the area, the structure would be a substantial

change in the fabric of the urban street. Passing under the structure, the open sky above the street would be cut off, the influence of weather and sun would be absent, street trees and other vegetation would be absent, and the temperature in the shadows under the viaduct would often be lower. The visual impact of the structure would be reinforced by traffic noise that would not only be at higher decibel levels but would also come from above and reverberate in the space beneath.

5.1.3 North Waterfront – Pine Street to Broad Street

The Tunnel Alternative includes no new facilities on the Alaskan Way surface street north of Pine Street. Neither views from the roadway nor views toward the roadway would change. Arterial lighting in this portion of the corridor is expected to be similar to existing conditions, with no change in glare impacts to the surroundings.

5.1.4 North – Battery Street Tunnel to Comstock Street

The continuation of SR 99 to the north as Aurora Avenue N. is proposed in the Partially Lowered Aurora Option described in Section 1.1.4. This is similar to the Lowered Aurora Option discussed for the Aerial Alternative in the Draft EIS to about Broad Street. The major difference is the retention of Aurora Avenue N. at-grade at Mercer Street with Mercer Street carried below in a widened undercrossing.

Views from the Roadway

Views for occupants of vehicles on SR 99 exiting the tunnel northbound would be of a depressed roadway framed by retaining walls on either side. This would be a substantial change from the existing frontage of street trees and buildings but would not be substantially different from expectations of a high-speed corridor through an urban setting. The existing views northbound are indicated in the 2004 Appendix E Exhibit A-78. The street is framed by street trees but little interest is provided by adjacent buildings, which generally turn a blank façade to this high-speed corridor. The roadway would transition to at-grade north of the Harrison Street overcrossing, where the roadway would continue in a configuration similar to the present.

The major existing visual feature for southbound traffic is the view of the downtown skyline. In addition, some side views of the Space Needle are provided along the Broad Street corridor diagonal to the line of travel. The views provided by the partially lowered Aurora Avenue N. would be the same as currently existing until about Republican Street, where Aurora Avenue N. would transition to a cut section bounded by concrete retaining walls. There would be little or no visual interest or relief from the time the highway passes

beneath the first underpass at Harrison Street to the south portal of the Battery Street Tunnel. The weave of the on-ramp at Denny Way which is proposed to pass over the northbound lanes and merge on the left side of the roadway would add some visual clutter, but generally would be above and out of the line of sight of drivers. Transit time through this section would be about 20 seconds and would not likely be a memorable element of a trip.

Views toward the Roadway

As with the Draft EIS discussion of the Lowered Aurora Option, the surface environment above the lowered portion of the SR 99 corridor would generally feature views that look over and across the highway corridor. The major change in the visual environment would be the continuation of Thomas Street and Harrison Street on bridges across the lowered highway. The overpass structures themselves would continue the street corridor, but without framing development. The experience of crossing SR 99 on Thomas and Harrison Streets is likely to be of a sidewalk bounded on one side by traffic on the surface street and on the other by high-speed traffic on the highway below, unless widened sidewalks are provided with landscaping provided on either or both sides to provide a buffer from the local street and/or SR 99.

Streets in the vicinity of the lowered section of Aurora Avenue N. may establish new patterns of pedestrian circulation with neighborhoods to the east and may be encouraged to develop pedestrian-oriented uses and other features (such as street trees and landscaping), as discussed in the 2004 Draft EIS Appendix D, Visual Quality Technical Memorandum, Chapter 7, Secondary and Cumulative Impacts.

With the widening of the Mercer Street underpass, pedestrians would be accommodated on sidewalks three to four times as wide as the sidewalks now. The pedestrian environment of the undercrossing with sidewalks adjacent to the travel lanes would continue to be subject to noise and passing cars in close proximity. It is likely to be perceived as somewhat exposed and potentially hazardous to pedestrians, but much improved over sidewalks on the existing undercrossing. Where convenient, pedestrians are likely to choose routes at Harrison and Thomas Streets, where the crossing environment is more pleasant and protected from adjacent traffic.

Light and Glare

Highway lighting in the lowered portion of the corridor is expected to reduce glare impacts on adjacent buildings.

Option: Lowered Aurora

Starting at the widened north portal of the Battery Street Tunnel, SR 99 would be lowered in a retained cut all the way north to Comstock Street. Five city streets would be reconnected with overpasses at Thomas, Harrison, Republican, Mercer, and Roy Streets. The configuration of ramps has changed from the Lowered Aurora Option evaluated with the Aerial Alternative in the Draft EIS, but the visual impacts are similar.

Views for occupants of vehicles on SR 99 exiting the tunnel northbound would be of a depressed roadway framed by retaining walls on either side. This would be a substantial change from the existing frontage of street trees and buildings but would not be notably different from what one would typically experience in a high-speed corridor through a dense urban setting. The lowered portion of the highway would extend about 1,500 feet farther to the north, which would be about an additional 30 seconds of travel time.

For southbound traffic, the view of the downtown skyline would remain along the line of travel but would be tightly framed by the retaining walls on either side and interrupted by surface street overcrossings. There would be little or no visual interest or relief from the time the highway passes beneath Roy Street to the south portal of the Battery Street Tunnel. The views to the side would be eliminated, the most notable of which is the side view of the Space Needle along the Broad Street corridor diagonal to the line of travel.

As with the Draft EIS discussion of the Lowered Aurora Option, the surface environment above the lowered portion of the SR 99 corridor would generally feature views that look over and across the highway corridor. The surface streets passing over the highway would appear as a continuous street corridor from either side. The visual experience of pedestrians using the Lake Union to Elliott Bay Trail likely would be improved by the route over Roy Street passing over the highway as compared to the route crossing under the highway.

5.2 Elevated Structure Alternative

The Elevated Structure Alternative would construct a larger structure compared to the existing viaduct and continue to be a part of the view in the area. South of about S. Massachusetts Street it would be an at-grade roadway. It would be elevated as a side-by-side roadway from about S. Dearborn Street north to approximately S. King Street. It would transition to a double-level elevated structure between S. King Street and S. Main Street. The route of the Elevated Structure Alternative is similar to the Aerial Alternative discussed in the Draft EIS.

5.2.1 South – S. Spokane Street to S. Dearborn Street

The roadway south of S. Atlantic Street incorporates the same options as discussed above for the Tunnel Alternative with the same visual impacts. The configuration of the SODO Ramps would be the same, with the same impacts.

Views from the Roadway

South of S. Royal Brougham Way the Elevated Structure Alternative becomes a single-level side-by-side elevated structure to about S. King Street. Occupants of vehicles on the single-level aerial structure are likely to have similar views of the downtown skyline to the north along the roadway alignment as from the existing viaduct or the at-grade roadway in the Tunnel Alternative. Views to the northwest and west from the single-level elevated structure would be largely blocked by stacked shipping containers in the Port of Seattle terminals along Elliott Bay. Some brief views to the northwest of the peaks of the Olympic Mountains may be available between rows of containers. As discussed for the Tunnel Alternative, drivers traversing the new SODO Ramps are likely to be required to pay more attention due to entering and exiting traffic and are less likely to notice views.

Views toward the Roadway

The single-level elevated structure south of S. Atlantic Street would not have a substantial effect on views from surrounding areas, which would continue to be the low-rise buildings and stacked shipping containers at Terminal 46. A comparison of the single-level Elevated Structure Alternative and the existing viaduct can be obtained by comparing the new visual simulation in Exhibit 1a in the 2006 Appendix E with the existing condition photograph in Exhibit 1.

As discussed in the Draft EIS, the visual context for Qwest Field would change, primarily because of the elimination of the existing on- and off-ramps from the viaduct to First Avenue. In its absence would be several blocks of a surface street on First Avenue and Railroad Way bounded by industrial and commercial buildings. The Flatiron Building at First Avenue, which is a City of Seattle designated landmark, would enjoy a context similar to that which existed when it was constructed near the turn of the twentieth century, as indicated in Exhibit 1a of the 2006 Appendix E. The single-level elevated structure would not have a substantial effect on the terminus of the views to the east, which would continue to be the low-rise buildings and stacked shipping containers at Terminal 46. A comparison of the single-level Elevated Structure Alternative and the double-level existing viaduct can be obtained by comparing the new visual simulation in the 2006 Appendix E Exhibit 1a with Exhibit A-4 in the 2004 Draft EIS Appendix E.

Light and Glare

Lighting in this portion of the corridor is expected to be similar to existing conditions, with no change in glare impacts to the surroundings.

5.2.2 Central – S. Dearborn Street to Battery Street Tunnel

In the central section, the Elevated Structure Alternative makes the transition from a single-level side-by-side elevated structure to a double-level stacked configuration similar to the existing viaduct, only wider. The new viaduct structure would be between 11.5 and 35 feet wider than the existing viaduct from south of S. Main Street up to Union Street. Near S. King Street to south of S. Main Street, the new elevated structure would be 54 to 74 feet wider than the existing viaduct as SR 99 transitions from a side-by-side at-grade roadway in the south to a new double-level elevated structure. The new elevated structure would also be 3 feet higher than the existing viaduct. Other features of the Elevated Structure Alternative and visual impacts would be similar to those discussed in the Draft EIS for the Aerial Alternative.

Views from the Roadway

Views from the roadway are discussed below separately for the segment where the transition occurs from a side-by-side to a stacked configuration. The visual impacts from S. Main Street to the Battery Street Tunnel would be similar to the discussion of the Aerial Alternative in the Draft EIS.

Views for vehicle occupants traveling northbound on the new aerial structure would be virtually unchanged from existing conditions. Vehicle occupants would experience a gradual increase in elevation as they climb to the upper level of the structure. The downtown skyline would continue to dominate northbound views. Views to the northwest and west, as indicated for the existing viaduct in Exhibit A-16 in the 2004 Draft EIS Appendix E, would continue to include elements of the waterfront in the foreground, with distant views of Puget Sound and the Olympic Mountains in the distance. The additional width of the elevated structure and a solid barrier rather than the existing railing would cut off some of the near view of the waterfront.

Southbound vehicle occupants would emerge from the lower level of the elevated structure in which the vertical and horizontal supports for the upper level obscure views. The views from the single-level elevated structure would include the arched trusses of Qwest Field and Safeco Field. Views of Elliott Bay to the southwest would be blocked to some extent by buildings on Terminal 46 and by stacked shipping containers. The major feature of the southbound views would continue to be the bright orange cranes of the Port of Seattle container terminals. After the roadway drops to at-grade, views to

the side would be bounded by buildings to the east and shipping containers to the west.

Views toward the Roadway

Pioneer Square Historic District

The new aerial structure would be a prominent feature in street-level views from the Alaskan Way surface street to the west, looking east into the Pioneer Square Historic District, as discussed in the Draft EIS for the Aerial and Rebuild Alternatives. The transition from the single-level to the double-level aerial structure would create a substantially more complex structure than the existing viaduct, which is a continuous linear feature with a regular rhythm of parallel horizontal and vertical units.

The side-by-side structure would occupy most of the Alaskan Way right-of-way and would be framed by ramps and frontage roadways on both sides. This wide elevated structure would provide less of a visual barrier to distant views. It would, however, provide a greater distance to traverse for pedestrians and vehicles passing beneath. The environment under the structure would be shadowed and noisy. It would be more than twice as wide as the existing viaduct and would not contain elements of a normal streetscape such as street trees, landscaping, or lively adjacent uses.

As with the Aerial Alternative evaluated in the Draft EIS, the Elevated Structure Alternative would encroach on the visual environment from views to the west, as illustrated by the new visual simulation of the view to the south from Main Street, Exhibit 2b in the 2006 Appendix E. This simulation shows both the scale of the larger-width structure and the design features of the support columns and partially free-standing structures carrying the bridge decks in transition from side-by-side to stacked (over-under) configuration.

Exhibit 4b in the 2006 Appendix E shows the greater visual prominence of the wider elevated structure, which is located farther west in the view simulation from Yesler Way south. The existing Washington Street Boat Landing would be particularly affected by the closer proximity of the new elevated structure together with the displacement of the surface street to the west, which would result in a narrower sidewalk and place the noise and other proximity impacts of traffic closer to the boat landing.

Views of the aerial structure looking west from the perpendicular streets within the historic district would be similar to views of the existing viaduct except where it makes the transition from side-by-side to stacked. In this area, the supports jutting out and the sloping levels would be juxtaposed with the streetscape and building character of the historic district. The east-west

streets have an overall unity of architectural style in largely turn-of-the-century brick buildings. The buildings have regular vertical and horizontal units. The street as a whole has a unity of design framed by buildings with sidewalks and street trees. The sloping roadway, the horizontal supports, the size of the vertical and horizontal supports, and the color of the concrete structure would all contrast in materials, color, and dimensions with the historic streetscape and buildings. The intrusion is further heightened by traffic noise and the rapid appearance and disappearance of vehicles as they cross the street corridor.

The population of viewers in the Pioneer Square Historic District is likely to continue to be high and include persons engaged in shopping or other elective activities that make them sensitive to the visual context. The visual impacts of the aerial structure, reinforced by noise and other impacts, would continue to be greater at the westerly edge of the historic district than in the easterly portions. The response to the low visual quality of environment close to the aerial structure is likely to continue to be avoidance of the areas immediately adjacent to the aerial structure. This is likely to continue the focus of activities oriented to tourists, shoppers, and restaurant patrons on First Avenue and other streets to the east.

As in the 2004 Draft EIS Appendix E Exhibit A-13, buildings adjacent to the viaduct are likely to have ground floor views similar to the street level pedestrian views provided by the existing viaduct. The distance between the new aerial structure and adjacent buildings would be similar between S. Dearborn and S. Washington Streets, where SR 99 would swing farther to the west. North of S. Washington Street, visual impacts would be similar to those discussed in the Draft EIS for the Aerial Alternative.

Commercial Core, Central Waterfront, Pike Place Market

Impacts of the double-level elevated structure would be virtually the same as discussed in the Draft EIS for the Aerial and Rebuild Alternatives in the corridor between Yesler Way and the Battery Street Tunnel.

Views from the commercial core to the east would feature the elevated structure as a visual barrier between the downtown and the waterfront, as illustrated in Exhibit 5b in the 2006 Appendix E. The wider spacing of vertical columns would reduce somewhat the number of elements that block ground level views to the west, but the overall interruption of the visual continuity of the streetscape and view of Elliott Bay would be similar to the existing viaduct.

The elevated structure would continue to block views to the east from the waterfront. The new structure would be wider and closer to the waterfront

and more visually dominating. Wider levels would increase the line-of-sight view blockage of the tops of many buildings to the east. Shadows and columns would continue to obscure lower floors. The elevated structure would truncate the view of the downtown to the east into disassociated bands, rather than views of entire buildings from bottom to top.

The greatest visual impacts of the aerial structure would be on pedestrians on the Alaskan Way surface street. The aerial structure, like the existing viaduct, would frame the eastern boundary of the waterfront, as indicated in Exhibit 6b in the 2006 Appendix E. Exhibit A-54 in the 2004 Draft EIS Appendix E provides a similar view from the west side of the surface street in of the previous Aerial Alternative, which is similar in scale. The new elevated structure would be wider and closer to the waterfront than the existing viaduct. It would screen and block views of the downtown to the east. The continuous structure would continue to screen the basic fabric of the downtown as seen from the west. The uniform horizontal elements and vertical supports of the aerial structure would obscure recognition of the basic street and block structure of the city. Streets are framed by buildings and a variety of other elements such as shop windows, street trees, and in some cases landscaping and congregating areas. With the aerial structure in place, the basic structure of the streets connecting the downtown to the waterfront would be interrupted and replaced by a competing linear structure.

The greater width and complexity of the new aerial structure, as compared to the existing viaduct, would add substantially to its visual dominance. In many cases, the presence of on-and off-ramps would result in different widths of the top and bottom levels, resulting in vertical and horizontal supports that jut out from the horizontal levels, increasing complexity and reducing the unity and cohesion of the design. This is especially apparent in the vicinity of the Pike Street Hillclimb, as indicated in Exhibit A-60 in the 2004 Draft EIS Appendix E, where the greater width and the arrangement of the transition between stacked and side-by-side levels results in the continuation of "outrigger" supports both farther to the north and substantially closer to the waterfront promenade.

The aerial structure, like the existing viaduct, would be much less visually dominant at greater distances. From the middle or ends of the waterfront piers, which is the equivalent distance of one to two city blocks, the height of the aerial structure would no longer dominate views. The downtown highrises would be clearly visible and the most vivid element of the views. The aerial structure would block full views of the base of the first tier of buildings in the downtown and produce an odd visual juxtaposition of a few building upper floors with no relation to the base. At a greater distance, such

as from ferries or other vessels in Elliott Bay, the aerial structure, like the existing viaduct, can be expected to recede relative to other buildings to the appearance of a homogenous, neutral horizontal base for the downtown office towers behind it. It would continue to obscure the basic structure of streets and blocks.

Viewer sensitivity is likely to be highest among tourists attracted by the variety of activities and the scenic environment. The waterfront currently is rated as the second most visited tourist attraction in the city. Downtown workers accessing the waterfront at midday for a change in pace also are quite sensitive when engaging in those elective activities. Viewer sensitivity is likely to be lower for commuters accessing the Colman Dock Ferry Terminal, but those users also can be expected to appreciate the scenic amenities of their daily travel routine.

The Elevated Structure Alternative would provide little support for the Downtown Urban Center Neighborhood Plan policies for public development to make a positive contribution to the downtown physical environment by enhancing the relationship of downtown to its spectacular setting of water, hills, and mountains; preserving important public views; ensuring light and air at street level; and establishing a high-quality, pedestrian-oriented street environment.

Light and Glare

As discussed in the Draft EIS for the Aerial Alternative, highway lighting in this portion of the corridor is expected to be similar to existing conditions, with no change in glare impacts to the surroundings.

5.2.3 North Waterfront – Pine Street to Broad Street

As discussed in the Draft EIS for the Aerial Alternative, no facilities would be constructed on this portion of the waterfront. Neither views from the roadway nor views toward the roadway would change.

Light and Glare

As discussed in the Draft EIS for the Aerial Alternative, arterial lighting in this portion of the corridor is expected to be similar to existing conditions, with no change in glare impacts to the surroundings.

5.2.4 North – Battery Street Tunnel to Comstock Street

The continuation of SR 99 to the north as Aurora Avenue N. is proposed in the Partially Lowered Aurora configuration described above for the Tunnel Alternative. Visual impacts would be the same.

5.3 Visual Impact Matrix

The matrix of visual impact ratings in Exhibit 5-1 provides an overview of differences in visual impacts between the alternatives in terms of a rating of the effects on specific elements of the visual analysis methodology. As such, it should be regarded primarily as a comparison. The Draft EIS (DEIS) photo simulations are in the 2004 Appendix E, while the Supplemental Draft EIS (SDEIS) photo simulations are in the 2006 Appendix E. The visual character units are shown in Exhibit 2-3 of the 2004 Appendix D, Visual Quality Technical Memorandum.

Viewpoint		View from the Roadway			View Toward the Roadway		
Location - Cross Streets		Roadway Northbound/Dearborn St			Alaskan Way/Yesler/Main		
Alternative		**Existing**	**Tunnel**	**Elevated Structure**	**Existing**	**Tunnel**	**Elevated Structure**
Photo Simulation		DEIS A-1	DEIS A-1	DEIS A-1	DEIS A-17	DEIS A-20	SDEIS 4b
Visual Character Unit		Sport Complex	Sport Complex	Sport Complex	Pioneer Square District	Pioneer Square District	Pioneer Square District
View Orientation		North & North-west	North & North-west	North & North-west	South	South	South
View Distance	Foreground	1,000 feet	1,000 feet	1,000 feet	100 feet	100 feet	100 feet
	Middle Ground	3,000 feet	3,000 feet	3,000 feet	1,000 feet	1,000 feet	1,000 feet
	Background	2-60 miles	2-60 miles	2-60 miles	2 miles	2 miles	2 miles
Viewer Position	Inferior				X		X
	Level		X			X	
	Superior	X		X			
Vividness	Landform	9	0	9	3	6	3
	Waterform	7	0	8	0	0	0
	Vegetative	2	0	2	4	5	2
	Human Made	9	0	9	4	8	3
	Average	6.75	0	7	2.75	4.75	2.0
Intactness	Development	8	0	8	3	7	3
	Encroachment	8	0	8	3	8	2
	Average	8	0	8	3	7.5	2
Unity	Overall	8	0	8	3	7	2
Total Visual Quality		7.4	00	7.3	2.9	5.9	2.1

Visual Quality Assessment Rating Scale							
Vividness		Unity		Intactness Human Environment		Intactness Encroachment	
10	Very High	10	Very High	10	Very High	10	None
9	High	9	High	9	High	9	Few
7,8	Moderately High	7,8	Moderately High	7,8	Moderately High	7,8	Some
4,5,6	Average	4,5,6	Average	4,5,6	Average	4,5,6	Average
2,3	Moderately Low	2,3	Moderately Low	2,3	Some	2,3	Several
1	Low	1	Low	1	Little	1	Many
0	Very Low	0	Very Low	0	None	0	Very Many

Exhibit 5-1
Visual Analysis Matrix

Viewpoint		View Toward the Roadway			View Toward the Roadway		
Location - Cross Streets		Yesler Way/Western Ave			Madison St/Alaskan Way		
Alternative		**Existing**	**Tunnel**	**Elevated Structure**	**Existing**	**Tunnel**	**Elevated Structure**
Photo Simulation		DEIS A-27	DEIS A-30	DEIS A-28	DEIS A-39	DEIS A-42	DEIS A-40
Visual Character Unit		Pioneer Square District	Pioneer Square District	Pioneer Square District	Waterfront	Waterfront	Waterfront
View Orientation		West	West	West	East	East	East
View Distance	Foreground	300 feet	300 feet	300 feet	50 feet	50 feet	50 feet
	Middle Ground	1,000 feet	1,000 feet	1,000 feet	1,000 feet	1,000 feet	1,000 feet
	Background	2-5 miles	2-5 miles	2-5 miles	2,500 feet	2,500 feet	2,500 feet
Viewer Position	Inferior	X		X	X		X
	Level		X			X	
	Superior						
Vividness	Landform	4	8	4	2	5	2
	Waterform	4	7	4	0	0	0
	Vegetative	4	6	4	2	3	2
	Human Made	7	8	6	3	7	3
	Average	4.75	7.25	4.5	1.75	3.75	1.75
Intactness	Development	3	7	3	3	7	3
	Encroachment	3	8	2	2	7	2
	Average	3	7.5	2.5	2.5	7	2.5
Unity	Overall	4	8	3	3	7	3
Total Visual Quality		4.1	7.4	3.7	2.1	5.1	2.1

Visual Quality Assessment Rating Scale							
Vividness		Unity		Intactness Human Environment		Intactness Encroachment	
10	Very High	10	Very High	10	Very High	10	None
9	High	9	High	9	High	9	Few
7,8	Moderately High	7,8	Moderately High	7,8	Moderately High	7,8	Some
4,5,6	Average	4,5,6	Average	4,5,6	Average	4,5,6	Average
2,3	Moderately Low	2,3	Moderately Low	2,3	Some	2,3	Several
1	Low	1	Low	1	Little	1	Many
0	Very Low	0	Very Low	0	None	0	Very Many

Exhibit 5-1
Visual Analysis Matrix (continued)

Viewpoint		View Toward the Roadway			View Toward the Roadway		
Location - Cross Streets		University St/Western Ave			Union St/Alaskan Way		
Alternative		**Existing**	**Tunnel**	**Elevated Structure**	**Existing**	**Tunnel**	**Elevated Structure**
Photo Simulation		SDEIS 5	SDEIS 5a	SDEIS 5b	SDEIS 7	SDEIS 7a	SDEIS 7b
Visual Character Unit		Downtown	Downtown	Downtown	Waterfront	Waterfront	Waterfront
View Orientation		West	West	West	South	South	South
View Distance	Foreground	500 feet	500 feet	500 feet	500 feet	500 feet	500 feet
	Middle Ground	1,000 feet	1,000 feet	1,000 feet	1,000 feet	1,000 feet	1,000 feet
	Background	2-30 miles	2-30 miles	2-3 miles	2-3 miles	2-3 miles	2-3 miles
Viewer Position	Inferior		X		X		X
	Level					X	
	Superior	X		X			
Vividness	Landform	6	6	6	6	9	6
	Waterform	6	7	6	7	8	7
	Vegetative	4	4	4	4	6	4
	Human Made	6	4	6	4	8	4
	Average	5.5	5.25	5.5	5.25	7.75	5.25
Intactness	Development	4	5	4	5	7	5
	Encroachment	2	2	2	2	8	2
	Average	3	3.5	3	3.5	7.5	3.5
Unity	Overall	4	5	4	5	8	5
Total Visual Quality		4.6	7.6	4.6	4.7	7.7	4.7

Visual Quality Assessment Rating Scale							
Vividness		Unity		Intactness Human Environment		Intactness Encroachment	
10	Very High	10	Very High	10	Very High	10	None
9	High	9	High	9	High	9	Few
7,8	Moderately High	7,8	Moderately High	7,8	Moderately High	7,8	Some
4,5, 6	Average	4,5, 6	Average	4,5, 6	Average	4,5, 6	Average
2,3	Moderately Low	2,3	Moderately Low	2,3	Some	2,3	Several
1	Low	1	Low	1	Little	1	Many
0	Very Low	0	Very Low	0	None	0	Very Many

Exhibit 5-1
Visual Analysis Matrix (continued)

Viewpoint Location – Cross Street		View Toward the Roadway Union Street/Alaskan Way		
Alternative		**Existing**	**Tunnel**	**Elevated Structure**
Photo Simulation		DEIS A-58	No Simulation	DEIS A-59
Visual Character Unit		Waterfront	Waterfront	Waterfront
View Orientation		North	North	North
View Distance	Foreground	500 feet	500 feet	500 feet
	Middle Ground	1,000 feet	1,000 feet	1,000 feet
	Background	2,500 feet	2,500 feet	2,500 feet
Viewer Position	Inferior	X		X
	Level		X	
	Superior			
Vividness	Landform	7	6	6
	Waterform	0	0	0
	Vegetative	3	7	3
	Human Made	3	8	3
	Average	3.25	5.25	3
Intactness	Development	4	7	4
	Encroachment	3	7	3
	Average	3.5	7	3.5
Unity	Overall	4	7	4
Total Visual Quality		3.4	6.0	3.4

Visual Quality Assessment Rating Scale							
Vividness		Unity		Intactness Human Environment		Intactness Encroachment	
10	Very High	10	Very High	10	Very High	10	None
9	High	9	High	9	High	9	Few
7,8	Moderately High	7,8	Moderately High	7,8	Moderately High	7,8	Some
4,5, 6	Average	4,5, 6	Average	4,5, 6	Average	4,5, 6	Average
2,3	Moderately Low	2,3	Moderately Low	2,3	Some	2,3	Several
1	Low	1	Low	1	Little	1	Many
0	Very Low	0	Very Low	0	None	0	Very Many

Exhibit 5-1
Visual Analysis Matrix (continued)

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Chapter 6 CONSTRUCTION IMPACTS

Visual quality impacts related to construction are virtually the same as discussed in the Draft EIS for the Aerial and Tunnel Alternatives.

Visual elements common to construction activities include staging areas, closed roadway sections, detours, heavy equipment, drill rigs, scaffolding, cranes, temporary storage of materials, and in some cases temporary overhead electrical transmission and distribution lines. With construction impacts, there would be a complex system of vehicular and pedestrian detours that would change the normal habits and sensitivities of the viewing public. A temporary over-water pier would connect Pier 48 and the Colman Dock Ferry Terminal to provide vehicular access during construction.

Visual impacts of construction are unlikely to change the overall regional views. Where distant views of water features and mountains are currently visible, they likely would remain so. They may, however, be cluttered by construction activities, construction equipment, stored materials, and a general disruption of normal streetscapes with fencing, equipment, vehicles, and activity.

The impacts of the Tunnel Alternative (Preferred Alternative) and options would be very similar to those described in the Draft EIS.

The Elevated Structure Alternative would vary from both the Draft EIS Rebuild Alternative and the Aerial Alternative. Rather than being rebuilt in sections as in the Draft EIS Rebuild Alternative, the current alternative involves a new structure, similar to the Draft EIS Aerial Alternative. The construction proposal, however, does not include temporary aerial structures to carry traffic during the construction period. The elimination of that temporary aerial structure removes the most intrusive visual element discussed in the Draft EIS.

Proposed as part of the Broad Street Detour for the Elevated Structure Alternative, a temporary aerial structure would be constructed in the Broad Street right-of-way. Starting at Western Avenue, the structure would proceed westbound over Elliott Avenue, the BNSF railroad tracks, and Alaskan Way. This structure would have temporary visual impacts on the Olympic Sculpture Park and other adjacent properties. However, the duration of use would be about 54 months (4.5 years) rather than the 8 years projected for the Battery Street Flyover evaluated in the Draft EIS. This aerial structure would be approximately 30 to 35 feet high. Views to the south of the waterfront and Mount Rainier may be somewhat obscured for pedestrians and others using the Olympic Sculpture Park.

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Chapter 7 SECONDARY AND CUMULATIVE IMPACTS

Secondary and cumulative impacts would be the same as discussed in Chapter 7 of the 2004 Draft EIS Appendix D, Visual Quality Technical Memorandum, except as they relate to the City of Seattle central waterfront planning effort that has been initiated since publication of the Draft EIS. The City's central waterfront concepts are based on the Tunnel Alternative (Preferred Alternative) and reflect many of the structural elements of that alternative, such as the Steinbrueck Park Lid. In general, the Tunnel Alternative is consistent with the concepts in the *Draft Seattle's Central Waterfront Concept Plan* (Seattle DPD 2006). The Elevated Structure Alternative is inconsistent with and would not accommodate most of the concepts.

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Chapter 8 OPERATIONAL MITIGATION

Operational mitigation measures for visual impacts for the updated Tunnel (Preferred) and Elevated Structure Alternatives are the same as those identified in Chapter 8 of the 2004 Draft EIS Appendix D, Visual Quality Technical Memorandum.

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Chapter 9 CONSTRUCTION MITIGATION

Construction mitigation generally is of limited effectiveness in addressing the general disruption of the visual environment during construction. There are a number of features that can be incorporated in project scheduling to help restore visual character and add visual interest during construction, as described in Chapter 9 of the 2004 Draft EIS Appendix D, Visual Quality Technical Memorandum.

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Chapter 10 REFERENCES

New references not included in the 2004 Draft EIS Appendix D, Visual Quality Technical Memorandum are listed below.

City of Seattle. 2005. City of Seattle, Department of Planning and Development, Central Waterfront Plan website: http://www.seattle.gov/dpd/Planning/Central_Waterfront/index.asp. Accessed July 25, 2005.

Seattle DPD (Department of Planning and Development). 2006. Draft Seattle's Central Waterfront Concept Plan. February 2006. Seattle City Planning and City Design, Department of Planning and Development, Seattle, Washington.

WSDOT (Washington State Department of Transportation), City of Seattle, and U.S. Department of Transportation, Federal Highway Administration. 2004. SR 99: Alaskan Way Viaduct & Seawall Replacement Project Draft Environmental Impact Statement. Washington State Department of Transportation, Urban Corridors Office, Seattle, Washington.

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