

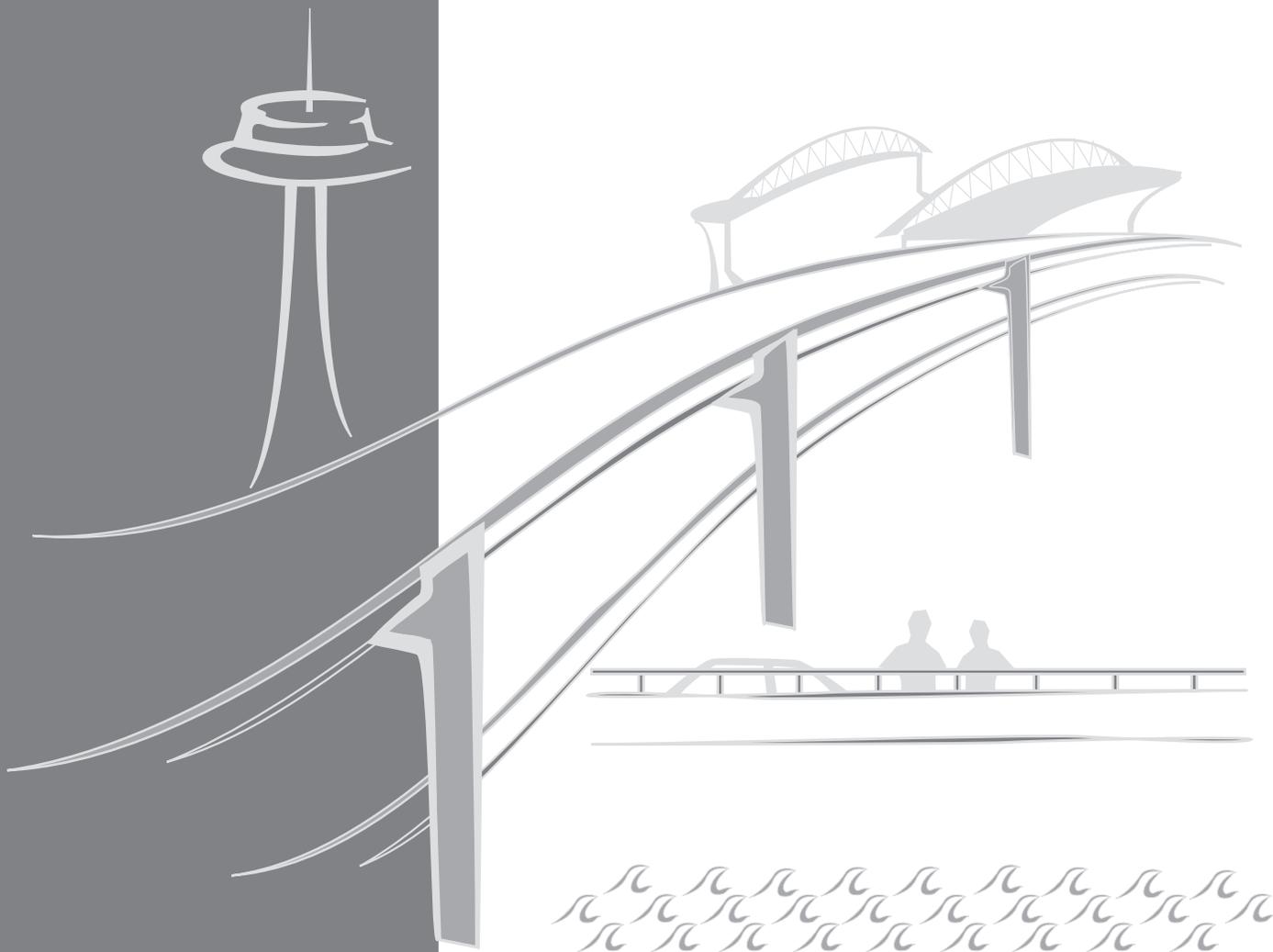
SR 99: ALASKAN WAY VIADUCT &  
SEAWALL REPLACEMENT PROJECT

# Draft Environmental Impact Statement

## Appendix H

### Parks and Recreation

### Technical Memorandum



MARCH 2004

Submitted by:  
PARSONS BRINCKERHOFF QUADE & DOUGLAS, INC.

Prepared by:  
PARAMETRIX



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# SR 99: ALASKAN WAY VIADUCT & SEAWALL REPLACEMENT PROJECT

## Draft EIS Parks and Recreation Technical Memorandum

AGREEMENT NO. Y-7888

FHWA-WA-EIS-04-01-D

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:

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## ACRONYMS

AWV	Alaskan Way Viaduct
BNSF	Burlington Northern Santa Fe Railway Company
BST	Battery Street Tunnel
DCLU	Seattle Department of Design, Construction and Land Use
DNR	Washington State Department of Natural Resources
FHWA	Federal Highway Administration
I-90	Interstate 90
SMC	Seattle Municipal Code
SR	State Route
WSDOT	Washington State Department of Transportation

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## Chapter 1 SUMMARY

This technical memorandum analyzes impacts on park and recreation facilities and public art within the Alaskan Way Viaduct (AWV) and Seawall Replacement Project area. In general, park facilities within three to five blocks of existing or proposed facilities are identified as being within the potential impact area of construction or operational impacts. Recreational facilities include those on private land in which the public has a proprietary interest, such as an access easement or other access rights. An additional analysis of facilities subject to federal regulations for Section 4(f) resources is included in a separate technical memorandum (see Appendix N).

Five Build Alternatives are considered for this portion of the State Route (SR) 99 corridor through downtown Seattle (for more information, see Appendix B, Alternatives Description and Construction Methods Technical Memorandum):

- The Rebuild Alternative includes an at-grade roadway to replace the existing viaduct from S. Holgate Street to S. King Street and reconstruction of the existing viaduct from S. King Street to the Battery Street Tunnel (BST). Construction time, at a 90 percent confidence level, is estimated to be 7.5 years with an additional 18 months for utility reconstruction at the beginning of the process.
- The Aerial Alternative includes a new double-level aerial structure from S. Holgate Street to the BST. Aurora Avenue N. will remain at-grade with widening of the Mercer Street underpass and closing the Broad Street underpass. This alternative has an option of lowering Aurora Avenue N. with local streets crossing over at-grade. Construction time, at a 90 percent confidence level, is estimated to be 11 years with an additional 18 months for utility reconstruction at the beginning of the process.
- The Tunnel Alternative includes an at-grade roadway from S. Holgate Street to south of S. King Street, where it will enter a tunnel with three lanes in each direction. The tunnel will include portals near Pike Street for an aerial structure to connect with the BST and also portals onto the Alaskan Way surface street north of Pine Street. Aurora Avenue N. modification will include widening the Mercer Street underpass and closing the Broad Street underpass. Construction time, at a 90 percent confidence level, is estimated to be 9 years with an additional 18 months for utility reconstruction at the beginning of the process.

- The Bypass Tunnel Alternative includes an at-grade roadway from S. Holgate Street to south of S. King Street, where it will enter a tunnel with two lanes in each direction. The tunnel will include portals near Pike Street for an aerial structure to connect with the BST. There will be no tunnel connection onto the Alaskan Way surface street, which will be widened to carry additional traffic. Aurora Avenue N. will be modified by widening the Mercer Street underpass and closing the Broad Street underpass. Construction time, at a 90 percent confidence level, is estimated to be 8.5 years with an additional 18 months for utility reconstruction at the beginning of the process.
- The Surface Alternative includes an at-grade roadway three lanes in each direction from S. Holgate Street to S. Atlantic Street. From S. Atlantic Street to Yesler Way, the roadway will be four lanes in width. From Yesler Way to Pike Street, the roadway will be three lanes with center left-turn lanes. An aerial structure will connect from Pike Street to the BST. The Alaskan Way surface street from Pike Street to Battery Street will accommodate two lanes in each direction. Aurora Avenue N. will be modified by widening the Mercer Street underpass and closing the Broad Street underpass, with the option of retaining the existing Mercer Street underpass and introducing signals at Roy, Republican, and Harrison Streets. Construction time, at a 90 percent confidence level, is estimated to be 8 years with an additional 18 months for utility reconstruction at the beginning of the process.

The impacts of the permanent facilities proposed by the alternatives are relatively minor.

Three park and recreation facilities are displaced by all Build Alternatives: the Washington Street Boat Landing, portions of the Pier 48 Alaska Square, and the Waterfront Trail.

All alternatives include an access road to the Washington State Ferries Colman Dock Ferry Terminal via a parallel service road west of the Alaskan Way surface street. This service road requires that a permanent over-water structure be constructed to support the roadway between Pier 48 and the ferry terminal.

The access road will require the displacement and relocation of the Washington Street Boat Landing from its existing location at the foot of S. Washington Street to an analogous location about 150 feet to the west. Conceptual construction plans envision this relocation occurring near the end of the construction period, although it could be accelerated under some alternatives.

The access road will also displace all of the Port of Seattle Alaska Plaza that is located south of S. Washington Street and adjacent to the parking area of Pier 48.

The construction impacts of all the alternatives will be similar. Differences in impacts relate to the length of construction and the extent of disruption. In addition to the initial 18 months of preparatory work such as utility relocation, the construction periods of the alternatives vary as follows:

- Rebuild Alternative            7.5 years
- Aerial Alternative            11 years
- Tunnel Alternative            9 years
- Bypass Tunnel Alternative   8.5 years
- Surface Alternative            8 years

General construction impacts to park, open space, and public access facilities along the corridor share these features:

- Construction will disrupt existing and accustomed patterns of movement. Even with provisions for access across construction sites, the perceived inconvenience will lead many people to avoid the waterfront in favor of other elective park and recreation activities not subject to uncertainty and disruption. This is especially the case during reconstruction of the seawall with the lack of linear movement that is central to the waterfront experience.
- The long construction period may impede the recovery of the waterfront as a destination for recreation and passive enjoyment of public access even after completion of the seawall reconstruction. The interrelated private and public activities along that waterfront may be individually and cumulatively affected by the factors listed below.
  - The loss of parking under the existing viaduct to accommodate vehicle lanes will limit the supply to all users along the corridor. The additional demand from construction workers will produce additional competition for the finite parking resources in the area. The reality or perception of less parking, or parking less conveniently located in respect to final destinations, is likely to deter persons who use vehicles as their preferred mode of access from using park, open space, and public access facilities along the corridor.

- Proximity impacts from construction (such as noise, vibration, and dust) will make locations close to construction less desirable for passive recreation activities such as walking, picnicking, and viewing the aesthetic amenities of the area.
- The visual character of the construction site may be viewed by many as unappealing and lead them to seek other locations for park and recreation activities. Some people, however, may be attracted to the construction site and make repeated visits to keep tabs on its progress.

Facilities that depend upon admission fees are likely to be especially affected by construction on the waterfront. Facilities likely to be affected include:

- Tillicum Village at Blake Island State Park. This facility, operated as a concession, is completely fee-supported. Private ferry service to the island is offered from Pier 56 for access to this facility and also provides the primary means of access for use of other facilities on the island. Reduced public use of the waterfront area may affect attendance at the facility and may affect its financial viability.
- The Seattle Aquarium is primarily funded by admissions and funding. If attendance at the facility drops during construction, programs of the aquarium may not continue at the same level. Existing plans to upgrade the facility may be delayed.
- The summer concert series at the Pier 62/63 Park is fully funded by admissions. If noise or perceived difficulties of access or other impacts reduce attendance, the program might be discontinued.

The Seattle Aquarium collection of animals may be affected by construction impacts. Stress from noise can disrupt basic lifecycle functions, such as feeding and breeding, that may affect the viability of the collection.

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## Chapter 2 METHODOLOGY

Impacts on park and recreation facilities and resources were identified by assessing the design alternatives for potential impacts on the displacement or change in use characteristics of park, recreation, public access, and public art facilities and installations.

Existing and planned resources and use patterns were assessed and compared with the likely character of the facility under operation and construction of each of the alternatives.

Existing conditions were assessed based on one or more of the following parameters:

- The characteristics of the facility that relate to current or potential use, including facilities, layout, access, and function (public viewpoint, playgrounds, fishing, recreational walking or running, concerts, etc.).
- The typical use by different population groups using the facility (residents, tourists, commuters, etc.) together with duration and frequency information as available (public viewpoint, playgrounds, fishing, recreational walking or running, concerts, etc.).
- Surrounding environmental conditions that contribute to use and enjoyment of facilities, including amenities such as views and intrusions such as noise impacts or traffic hazards.
- Connections or other interrelations between facilities.
- Current plans for proposed expansion or improvements to the facility, or plans for new facilities on land currently undeveloped but designated for park or recreation use.

Recreation facilities identified in this chapter reflect facility and planning perspectives contained in the Seattle Parks and Recreation Plan 2000. The park and recreation system is described in the plan (Seattle 2000c) as:

“Comprised of open space, parks, boulevards and trails, beaches, lakes and creeks, recreational, cultural, environmental, and educational facilities, a broad variety of programs, and people. The system is diverse and woven into the fabric of Seattle’s neighborhoods. It is an integral part of everyday life within the city. The system contributes significantly to the city’s identity, stability, urban design, and network of public services. It promotes the physical, mental, social, and spiritual well being of our citizens. The condition

of the park and recreation system reflects the city's health and is essential to our quality of life.

"Seattle's parks and recreation system will be a neighborhood based system of open space, parks, facilities, and programs that captures the spirit of Seattle's magnificent setting in the Olmsted tradition. Seattle's parks and recreation system will:

- be connected by boulevards, trails, public transportation, and green streets,
- encompass views and provide opportunities for the enjoyment of the vast water resources in Seattle,
- be linked closely with the City's neighborhoods, schools, and other city services,
- be maintained for public enjoyment, stewardship of resources and a healthy environment, and
- be brought to life through programs, events, employees, and the efforts of volunteers."

This broad definition of park and recreation facilities encompasses land within street rights-of-way developed for passive use and a variety of multiple-use facilities.

City of Seattle neighborhood plans also contain policies relating to parks and recreation facilities and specific work program items to implement recommendations of the plans. Specific designated neighborhoods along the project corridor (from south to north) include:

- Duwamish Manufacturing and Industrial Center
- Pioneer Square
- Downtown Urban Center
- Belltown
- South Lake Union
- Uptown/Queen Anne

Green Streets are one of the open space resources that are within street rights-of-way. Green Streets are defined sections of streets that are designated for pedestrian circulation and open space use and to provide for pedestrian and bicycle trails and connecting open space with activity centers (Seattle 1994a). Boulevards and Green Streets are designated in the Seattle Parks and Recreation Plan as connections within the parks and recreation system. Plan policies provide that the open space functions of boulevards, trails, and Green Streets in meeting open space needs will be recognized (Seattle 2000c).

Shoreline access is also recognized as providing open space functions. "A variety of shoreline access facilities have been required by conditions of

Shoreline Management Substantial Development Permits, and other city permits and approvals, as discussed below. In addition, many of the piers along the shoreline are located within publicly owned aquatic lands between the Inner and Outer Harbor Lines. The Washington Department of Natural Resources, as trustee for those lands, encourages public use and access in management decisions, consistent with RCW 79.90.450 and 455 and has included public access requirements in recent aquatic lands leases [sic]" (Bortz 2002 personal communication).

Impacts of the project alternatives were assessed based on one or more of the following parameters:

- Total or partial acquisition of property for right-of-way or related facilities (such as ventilation equipment for tunnels) that will displace some or all facilities or functions.
- Partial acquisition that will change the relationship between facilities.
- Project features that will permanently alter access.
- Project features that will change parking supply off-site, which will affect access and use of the facility.
- Project features that will interrupt connections between facilities.
- Relocation of trails or provision of alternate facilities that will change amenities and interest.
- Changes in views from park and recreation facilities that will change amenities and interest.
- Introduction of proximity impacts, such as noise or additional traffic, that will degrade the recreational experience.

Construction impacts generally include the same parameters as above for permanent facilities, but are evaluated for the degree and duration of the impact during construction.

Secondary and cumulative impacts include opportunities afforded by the alternatives to provide park or recreation facilities, such as trails or viewpoints, or to provide supporting facilities such as parking. The project could also create changes in the context that encourages or discourages development of public or private recreational facilities. Indirect effects also consider changes in context that change use patterns and therefore change the character of demand for recreational facilities, or change opportunities for interactions between land uses and recreation facilities.

Potential mitigation measures to be considered include concepts that could:

- Avoid impact through changes in alignment or other features of alternative to avoid or reduce displacement.
- Measures to reduce proximity impacts such as noise or visual impacts, including changes to the design or materials, barriers, buffers, refuge areas, and other features.
- Compensation for displaced facilities and functions by new or augmented facilities at a different location.

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## Chapter 3 STUDIES AND COORDINATION

Park and recreation facilities in the project area were identified with the cooperation of the City of Seattle Parks Department, the Port of Seattle, and the Seattle Department of Design, Construction and Land Use (DCLU). DCLU's public access requirements for private development on the shoreline and other areas were also used in identifying facilities.

The following plans and guidelines address park and recreation policies and provide a framework for the evaluation of impacts:

- City of Seattle, Comprehensive Plan, 1994
- City of Seattle, Belltown Neighborhood Plan, May 1999
- City of Seattle, Duwamish Manufacturing and Industrial Center Neighborhood Plan, June 2000
- City of Seattle, Downtown Urban Center Neighborhood Plan, June 1999
- City of Seattle, Pioneer Square Neighborhood Plan, November 1998
- City of Seattle, Queen Anne Neighborhood Plan, March 1999
- City of Seattle, South Lake Union Neighborhood Plan, March 1999
- City of Seattle, Shoreline Master Program and supporting studies
- Seattle Parks and Recreation Plan, 2000
- City of Seattle, Pro-Parks Levy
- City of Seattle, Pedestrian/Bicycle Plans and routes
- City of Seattle Downtown Design Guidelines
- Port of Seattle Public Access Plan
- City of Seattle 1987 Harborfront Public Improvement Plan
- City of Seattle 1992 Central Waterfront Design Guidelines
- City of Seattle Aquarium Plans
- City of Seattle DCLU Directors Rule 11-93, Design Guidelines/Implementation Process for Green Streets, 1993
- City of Seattle, Shoreline Master Program, Shoreline Substantial Development Permit records for private and public projects within the shoreline
- Washington Interagency Committee for Outdoor Recreation Guidelines
- Department of Natural Resources policies for public use of aquatic lands
- Alaskan Way Viaduct and Seawall Project Urban Design Assessment, Roma Design Group, 2002
- FHWA policies, Section 4(f) 23 CFR 771

Information gathered included:

- Base maps from the project's Geographic Information System (GIS) that illustrate park locations, site topography, street pattern, shoreline, and specific land uses.
- Park, trail, and recreation facility location maps from the City of Seattle, Port of Seattle, King County Metro Utilities, and other agencies.
- Park and trail development plans from the City of Seattle, Port of Seattle, King County Metro Utilities, and other agencies.
- Public art installations near the project corridor.
- Permit conditions from City Shoreline Substantial Development Permit records for public access requirements for private and public projects within the shoreline.
- Design features of alternatives, including horizontal and vertical alignments information for each alternative, structure elevations, preliminary design of tunnel portals, ventilation risers, and other facilities.

Collected information was confirmed by site reconnaissance and meetings with local jurisdictions, including:

- City of Seattle, Department of Parks and Recreation
- City of Seattle, Department of Transportation
- Seattle Aquarium
- City of Seattle, DCLU
- Seattle Office of Arts and Cultural Affairs
- Port of Seattle
- Washington State Department of Transportation
- Washington State Ferries

As a result of consultation with the above listed agencies, park and recreation facilities within three to five blocks of the proposed project facilities were identified for further analysis as potentially affected by the alternatives.

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## Chapter 4 AFFECTED ENVIRONMENT

The Alaskan Way Viaduct and Seawall Replacement Project stretches from S. Spokane Street to north of the BST near Ward 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. King Street
- Central – S. King Street to the Battery Street Tunnel
- North Waterfront – Alaskan Way surface street from Pike Street to Broad Street
- North – Battery Street Tunnel to approximately Ward Street
- Seawall – S. Washington Street up to Myrtle Edwards Park (near Broad Street)

Recreation facilities discussed in this chapter reflect facility and planning perspectives contained in the Seattle Parks and Recreation Plan 2000. The park and recreation system is described in the plan as consisting of open space; parks; boulevards and trails; beaches; lakes and creeks; recreational, cultural, environmental, and educational facilities; a broad variety of programs; and people (Seattle 2000c).

Parks and sites with designated public access within the project area are listed in Exhibit 4-1 and their locations are shown in Exhibits 4-2, 4-3, and 4-4. Sites are owned by the Seattle Parks Department, the Port of Seattle, and the National Park Service. In some cases, facilities consist of public access rights over private property. A variety of shoreline access facilities have been required by conditions of Shoreline Management Substantial Development Permits and other city permits and approvals, as well as aquatic lands leases.

The locations of Green Streets in the project area are shown in Exhibit 4-5. The Green Street classification system as defined in the Downtown Neighborhood Plan is indicated in Exhibit 4-6. Plan policies provide that the open space functions of boulevard trails and Green Streets in meeting open space needs will be recognized (Seattle 2000c).

Public art installations in the project vicinity are listed in Exhibit 4-7 and the locations are shown in Exhibit 4-8. Further discussion of individual pieces is included in the analysis of impacts in Chapters 5 and 6.

**Exhibit 4-1. Parks, Recreation, and Public Access Facilities**

Facility Name	Location	Owner	Primary Facilities	Primary Uses
<b>Publicly Owned Park and Recreation Facilities, Including Shoreline Public Access</b>				
<b>South</b>				
1. Jack Perry Memorial Viewpoint	Terminal 30 Massachusetts Street at E. Marginal Way	Port of Seattle	Hard Surfaces Soft Surfaces Seating Picnic Tables/Shelters Restrooms Parking	Waterfront View Enjoyment
2. Safeco Field	First Avenue and S. Atlantic Street	State of Washington Development Authority	Professional Sport Facility	Professional Baseball
3. Seahawks Stadium	Occidental Avenue and S. King Street	State of Washington Development Authority	Professional Sport Facility	Professional Football and Soccer
4. Mountains to Sound Greenway Trail	S. Atlantic Street at Alaskan Way	City of Seattle	Trail	View Enjoyment Walking Jogging Bicycling Skating Waterfront Views Urban Views
5. Waterfront Trail	Alaskan Way from S. Royal Brougham Way to Bay Street	City of Seattle	Trail	View Enjoyment Walking Jogging Bicycling Skating

Exhibit 4-1. Parks, Recreation, and Public Access Facilities (continued)

Facility Name	Location	Owner	Primary Facilities	Primary Uses
<b>Central</b>				
6. Pier 48: Periscope Viewpoint	Pier 48 S. Main Street at Alaskan Way	Port of Seattle	View Periscopes Hard Surfaces Seating	View Enjoyment Relaxation
7. Pier 48: Alaska Square	Pier 48 S. Washington Street at Alaskan Way	Port of Seattle	Totem poles Hard Surfaces Seating	View Enjoyment Relaxation Picnicking People Watching Fishing
8. S. Washington Street Public Dock and Pergola	S. Washington Street at Alaskan Way	City of Seattle	Hard Surfaces Seating	View Enjoyment Relaxation Fishing
9. Klondike Gold Rush National Historic Park – Seattle Unit	117 S. Main Street	National Park Service	Historic Exhibits	Historic Interpretation
10. Occidental Park	Occidental Avenue between S. Washington and S. Main Streets	City of Seattle	Hard Surfaces Seating Picnic Tables/Shelters	Relaxation Picnicking People Watching
11. Pioneer Square	Yesler Way and First Avenue	City of Seattle	Totem pole Hard Surfaces Seating	Relaxation Picnicking People Watching
12. Public Access at Colman Dock Ferry Terminal	Piers 50 and 52 Alaskan Way between Yesler Way and Madison Street	Washington State Department of Transportation	Public Viewing Areas Hard Surfaces Seating Water Feature	View Enjoyment Relaxation
13. Access to Blake Island/Tillicum Village	Pier 55 Alaskan Way and Seneca Street	Private	NA	Provides boat access to Blake Island State Park

Exhibit 4-1. Parks, Recreation, and Public Access Facilities (continued)

Facility Name	Location	Owner	Primary Facilities	Primary Uses
14. Waterfront Park	Alaskan Way between University and Pike Streets	City of Seattle	Hard Surfaces Seating Picnic Tables Restrooms	View Enjoyment Relaxation Picnicking People Watching Fishing
15. Seattle Aquarium	Piers 59 and 60 Alaskan Way at Pike Street	City of Seattle	Interpretive Displays Research Facilities	Interpretive Displays Education Research
<b>North Waterfront</b>				
16. Pier 62/63 Park	Alaskan Way at Pine Street	City of Seattle	Hard Surfaces Performance Facilities	View Enjoyment Relaxation Picnicking Summer Concert Series
17. Victor Steinbrueck Park	Western Avenue at Virginia Street	City of Seattle	Hard Surfaces Soft Surfaces Seating Picnic Tables	View Enjoyment Relaxation Picnicking People Watching
18. Lenora Street Bridge	Lenora Street between the Alaskan Way Viaduct and Alaskan Way	Port of Seattle	Hard Surfaces Seating	View Enjoyment Relaxation
19. Pier 66, the Bell Street Terminal, Public Access	Alaskan Way at Bell Street	Port of Seattle	Hard Surfaces Seating Restrooms	View Enjoyment Relaxation People Watching
20. Pier 69, Public Access	Alaskan Way at Bell Street	Port of Seattle	Hard Surfaces Seating	View Enjoyment Relaxation Picnicking Fishing

Exhibit 4-1. Parks, Recreation, and Public Access Facilities (continued)

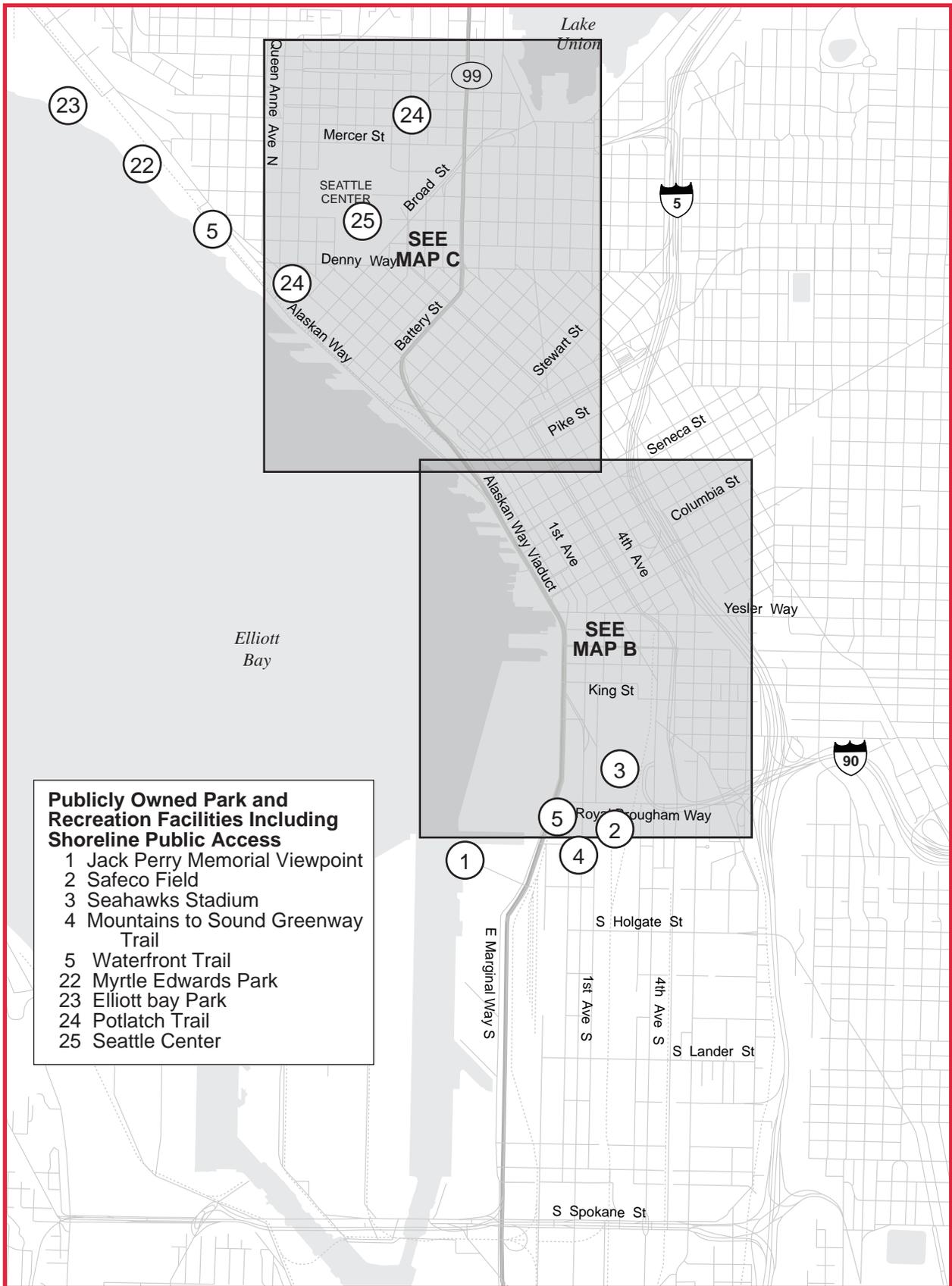
Facility Name	Location	Owner	Primary Facilities	Primary Uses
21. Belltown Cottage Park		City of Seattle	Hard Surfaces Soft Surfaces Seating Picnic Tables	View Enjoyment Relaxation Picnicking People Watching
22. Myrtle Edwards Park	Alaskan Way at Bay Street	City of Seattle	Parking Hard Surfaces Soft Surfaces Active Use Facilities Seating Picnic Tables/Shelters Children's Play Area Restrooms Trail	View Enjoyment Relaxation Picnicking People Watching Walking Jogging Bicycling Skating Fishing Informal Sports
23. Elliott Bay Park	Pier 86 Waterfront Between Harrison Street and 16 <sup>th</sup> Avenue West	Port of Seattle	Parking Hard Surfaces Soft Surfaces Active Use Facilities Seating Picnic Tables/Shelters Children's Play Area Restrooms Trail	View Enjoyment Relaxation Picnicking People Watching Walking Jogging Bicycling Skating Fishing Informal Sports
24. Lake Union to Elliott Bay Trail (formerly Potlatch Trail)	Between Lake Union and the Waterfront at Broad Street	City of Seattle	Trail	View Enjoyment People Watching Walking Jogging Bicycling Skating

Exhibit 4-1. Parks, Recreation, and Public Access Facilities (continued)

Facility Name	Location	Owner	Primary Facilities	Primary Uses
<b>North</b>				
25. Seattle Center	Between Broad Street and Mercer Street and First Avenue N. and Fifth Avenue N.	City of Seattle	Hard Surfaces Soft Surfaces Seating Picnic Tables or Shelters Children's Play Area Art Display Active Use Facilities Passive Use Facilities Performance Facilities Sport Arenas Museums Restaurants Restrooms Parking School	View Enjoyment Relaxation Picnicking People Watching Walking Jogging Bicycling Skating Fishing Informal Sports Professional Sports Cultural Activities
Semi-Public or Private Land with Public Rights of Access or Easements				
<b>Central</b>				
A. Pier 54	Alaskan Way at Madison Street	Private	Hard Surfaces Seating	View Enjoyment Relaxation
B. Piers 55 and 56	Alaskan Way at Seneca Street	Private	Hard Surfaces Seating Picnic Tables	View Enjoyment Relaxation Picnicking People Watching
C. Harbor Steps	University Street between First and Western Avenues	Private	Hard Surfaces Seating Picnic Tables	View Enjoyment Relaxation Picnicking People Watching

Exhibit 4-1. Parks, Recreation, and Public Access Facilities (continued)

Facility Name	Location	Owner	Primary Facilities	Primary Uses
D. Seattle Art Museum University Street Plaza		Non-Profit Corporation Municipal Development Authority	Hard Surfaces Seating Picnic Tables	View Enjoyment Relaxation Picnicking People Watching
E. Benaroya Hall, University Street Plaza		Non-Profit Corporation Municipal Development Authority	Hard Surfaces Seating	View Enjoyment Relaxation Picnicking People Watching
<b>North Waterfront</b>				
F. Edgewater Hotel, Pier 68	Alaskan Way at Wall Street	Private	Hard Surfaces Seating	View Enjoyment Relaxation People Watching
G. Pier 70	Alaskan Way at Broad Street	Private	Hard Surfaces Seating	View Enjoyment Relaxation People Watching
H. Olympic Sculpture Park	Between Western Avenue and Alaskan Way at Broad Street	Non-Profit Corporation Municipal Development Authority	Hard Surfaces Soft Surfaces Seating Picnic Tables Art Display Restrooms Parking	View Enjoyment Relaxation Picnicking People Watching Cultural Activities

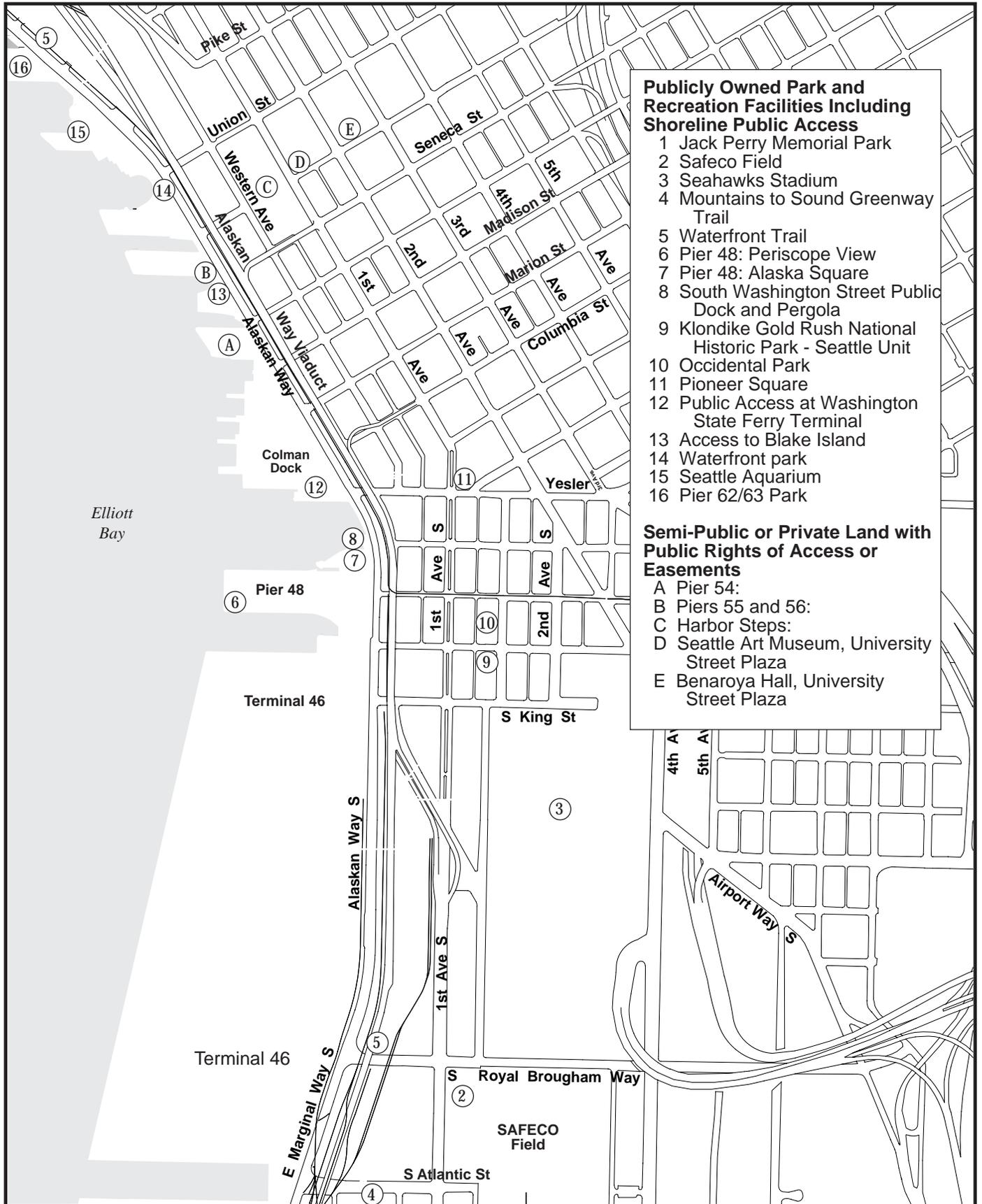


- Publicly Owned Park and Recreation Facilities Including Shoreline Public Access**
- 1 Jack Perry Memorial Viewpoint
  - 2 Safeco Field
  - 3 Seahawks Stadium
  - 4 Mountains to Sound Greenway Trail
  - 5 Waterfront Trail
  - 22 Myrtle Edwards Park
  - 23 Elliott bay Park
  - 24 Potlatch Trail
  - 25 Seattle Center

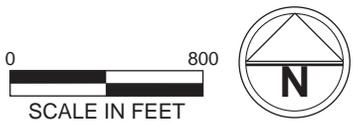
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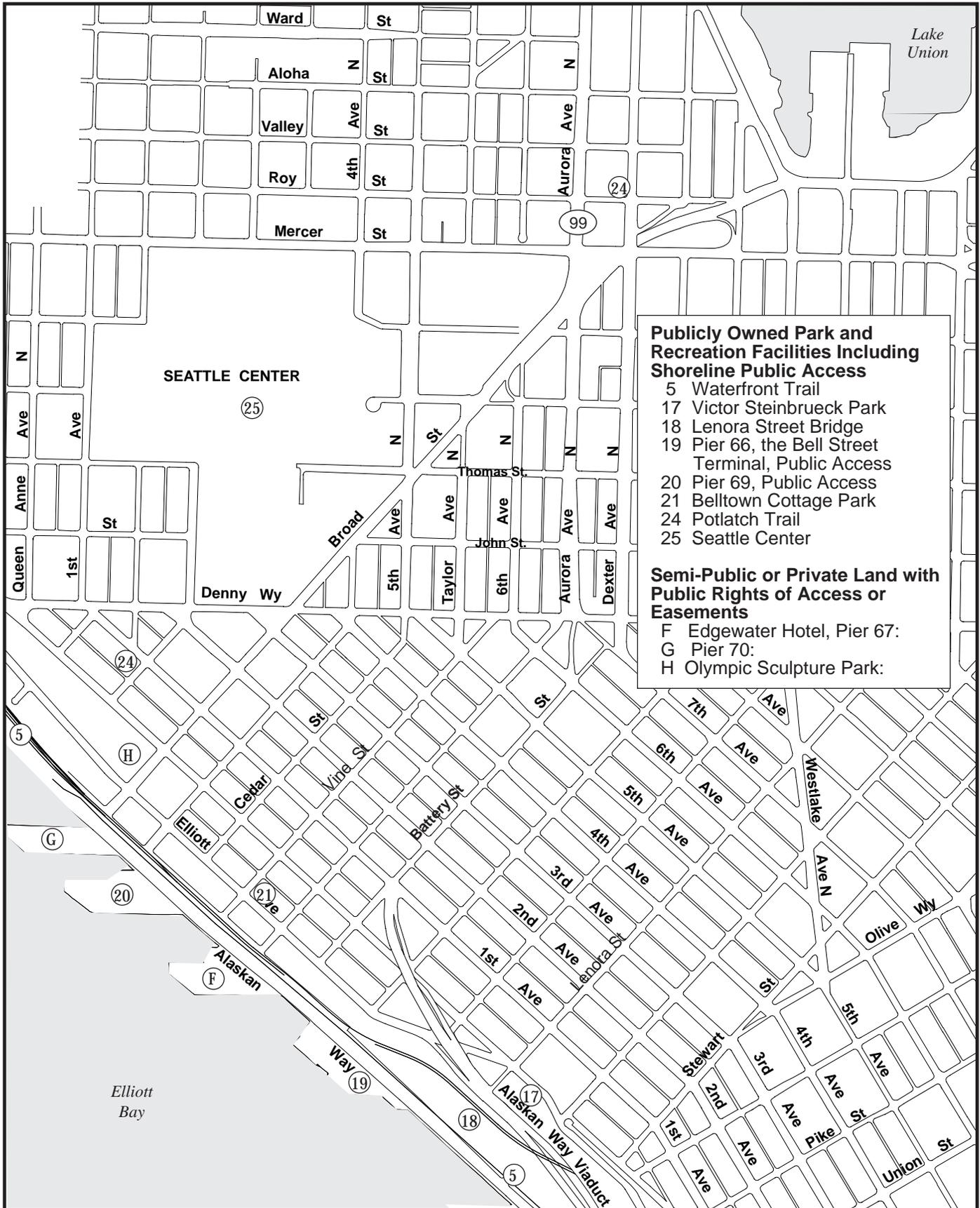
**Exhibit 4.2  
Park, Recreation and Public  
Access Facilities Map**



Alaska Way Viaduct/554-1585-025/06(0614) 11/03 (K)

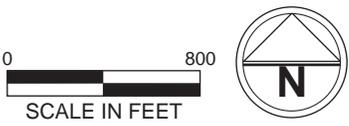


**Exhibit 4.3  
Parks, Recreation and Public  
Access Facilities Map B**

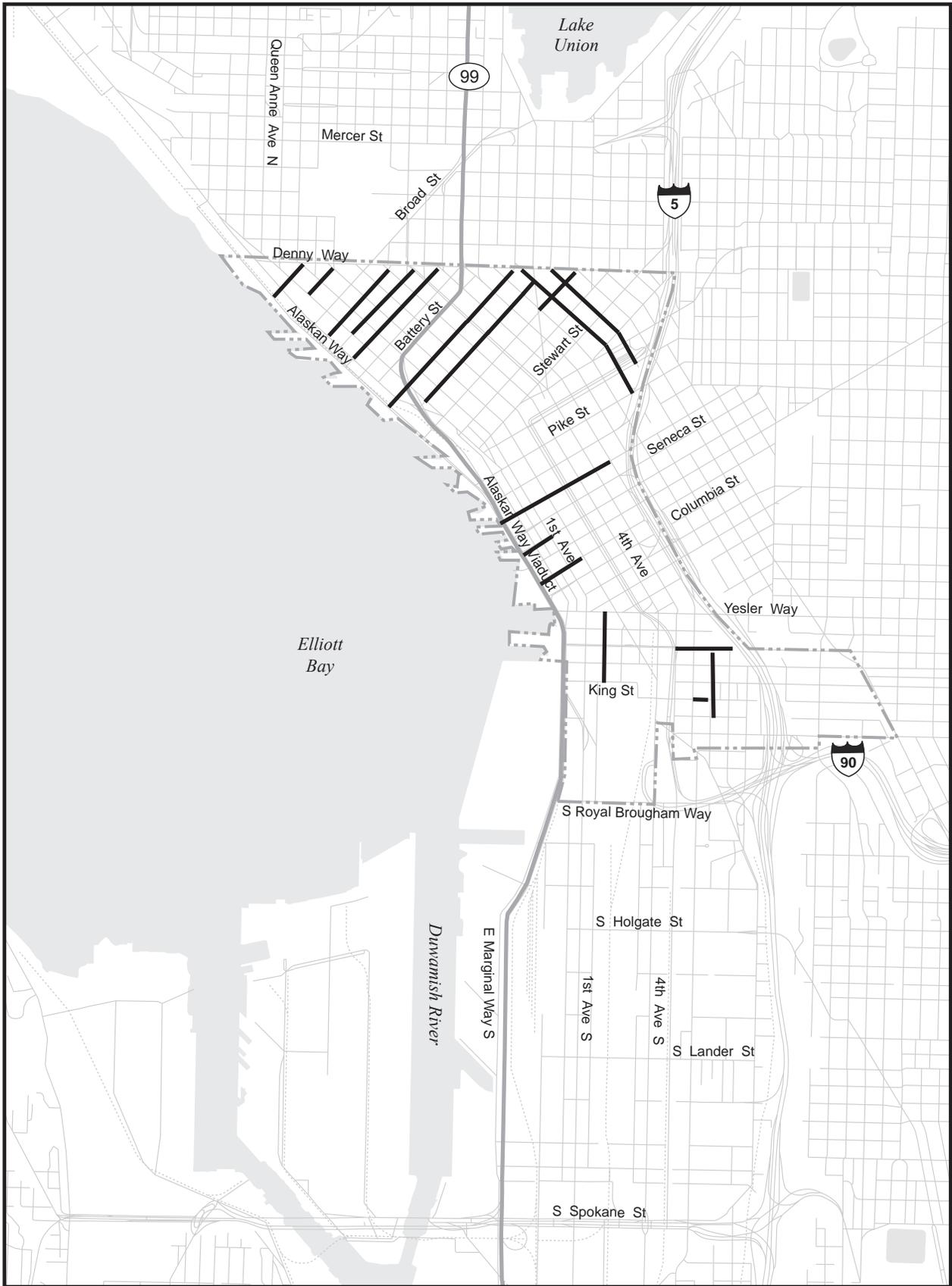


- Publicly Owned Park and Recreation Facilities Including Shoreline Public Access**
- 5 Waterfront Trail
  - 17 Victor Steinbrueck Park
  - 18 Lenora Street Bridge
  - 19 Pier 66, the Bell Street Terminal, Public Access
  - 20 Pier 69, Public Access
  - 21 Belltown Cottage Park
  - 24 Potlatch Trail
  - 25 Seattle Center
- Semi-Public or Private Land with Public Rights of Access or Easements**
- F Edgewater Hotel, Pier 67:
  - G Pier 70:
  - H Olympic Sculpture Park:

Alaska Way Viaduct/554-1585-025/06(0614) 11/03 (K)



**Exhibit 4.4  
Parks, Recreation and Public  
Access Facilities Map C**



PC: Alaskan Way V/duct 554-1585-025/06(0620).3/04 (K)

Downtown Boundary
  Green Streets

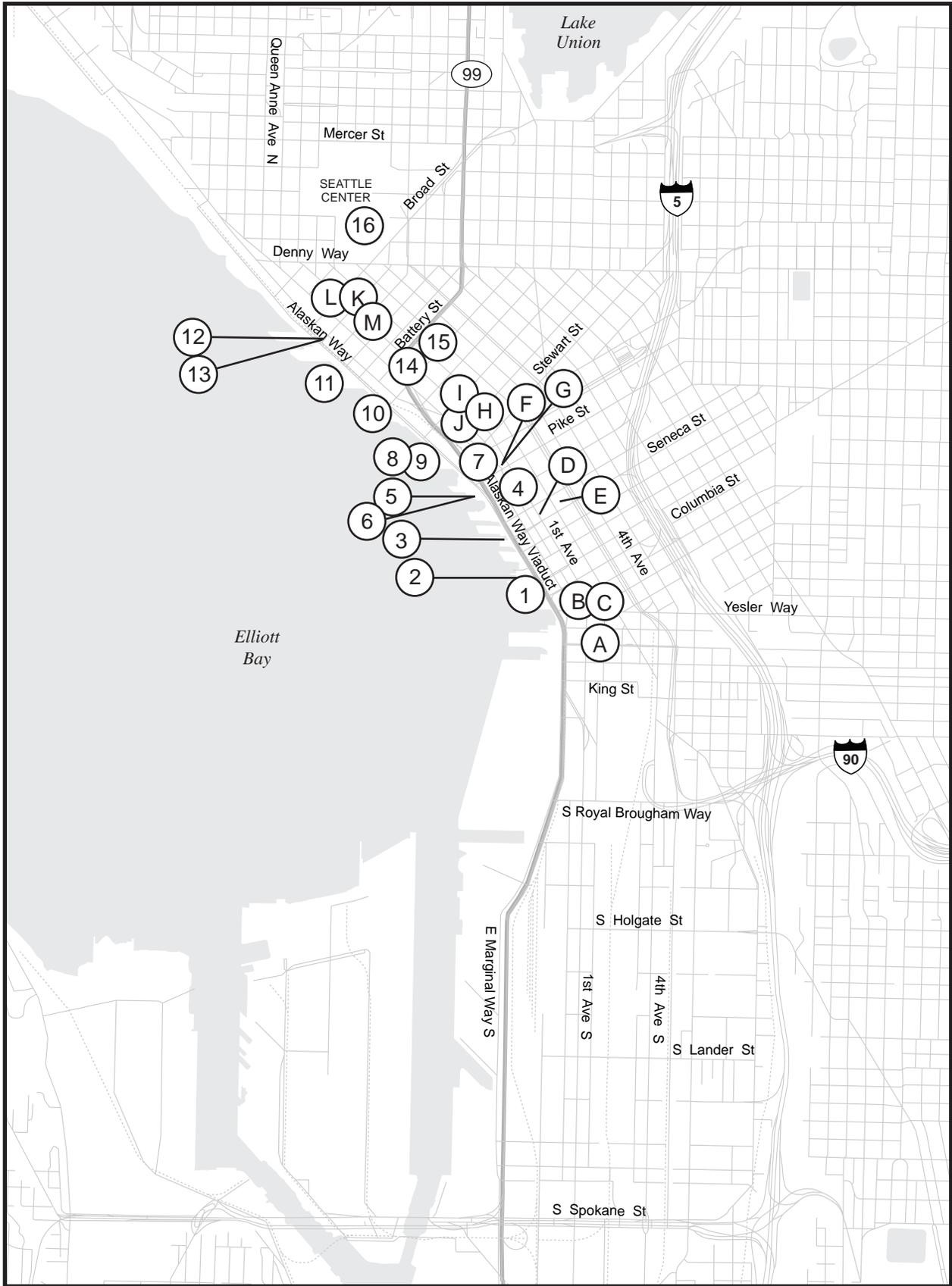


**Exhibit 4-5  
City of Seattle  
Green Streets**

**Exhibit 4-6. City of Seattle Green Streets Classification**

	Class I	Class II	Class III
Type of Green Street	Less auto oriented, more pedestrian oriented		More auto oriented, less pedestrian oriented
Traffic Function	Prohibited	One-block access permitted	Access permitted on more than one block
Truck Loading	Limited by time, use of alleys encouraged	Allowed, use of alleys encouraged	Unrestricted use of alleys encouraged
Emergency Access	One block only	One block only	Unrestricted, may be part of system
On-Street Parking	Prohibited	Allowed	Allowed

Source: City of Seattle, Downtown Urban Center Neighborhood Plan, June 1999



554-1585-025/06(0620) 9/4/03



**Exhibit 4-7  
Public Art Installation Locations**

Exhibit 4-8. Public Art Installations

	Title	Artist	Owner
<b>Works of Art Potentially Affected by Displacement or Change of Context</b>			
1	Joshua Green Fountain	George Tsutakawa	
2	Ivar Feeding the Gulls	Richard Beyer	Seattle Arts Commission
3	Marion Street Overpass Mural	Jose Orante	City of Seattle Engineering Department
4	Dance Column I	Robert Graham	
5	Christopher Columbus	Bennett Douglas	Seattle Arts Commission
6	Waterfront Fountain	James Fitzgerald and Margaret Tomkins	Seattle Arts Commission
7	Breaching Orca	Tony Angell	Seattle Arts Commission
8	Piers 62/63	Barbara Kruger and Others	Seattle Arts Commission
9	Welcoming Spirit	Melvin Schuler	
10	Light Tower	Ron Fisher	Unknown
11	Danza Del Cerchio	Ann Gardner	
12	Growing Vine Street 1	Buster Simpson	Seattle Arts Commission
13	Growing Vine Street 2	Buster Simpson	Seattle Arts Commission
14	Wave Rave Cave	Dan Lorson	
15	First Avenue Project	Jack Mackie, Lewis "Buster" Simpson, and Deborah & Paul Rinehart	
<b>Public Art in the Vicinity but Not Affected</b>			
A	Firemen		Seattle Arts Commission
B	Chief Seattle Fountain	James When	Seattle Arts Commission
C	Day/Night	Edgar Havichi Heap of Birds	Seattle Arts Commission
D	Hammering Man	Jonathan Borofsky	Seattle Arts Commission
E	Untitled Mural	Tom Holder	Seattle Arts Commission
F	Rachel (Market's mascot pig)	Georgia Gerber	Pike Place Market, Gift of Fratelli's Ice Cream Company
G	Song of the Earth	Aki Sogabe	Unknown
H	Farmer's Pole	James Bender and Victor Steinbrueck	Seattle Arts Commission

**Exhibit 4-8. Public Art Installations (continued)**

	Title	Artist	Owner
I	Untitled Fence	Victor Steinbrueck and Ramon Torres	City of Seattle Parks Department
J	Untitled Totem Pole	James Bender and Marvin Oliver	Seattle Arts Commission
K	Solar Fountain	Kay Kirkpatrick	Unknown
L	Untitled Ceramic Tile Mural	Kevin Spitzer and Jonathan Barnett	Unknown
M	Growing Vine Street 3	Buster Simpson	Buster Simpson
N	Black Lightning	Ronald Bladens	Seattle Center
O	Olympic Iliad	Alexander Liberman	Seattle Center
P	Moon Gates	Doris Chase	Seattle Center
Q	Moses	Tony Smith	Seattle Center

As indicated in Exhibit 4-9, the City has evaluated existing facilities in downtown Seattle in reference to adopted park and recreation space standards and concluded that existing facilities are adequate to serve 1994 levels of residential and employment populations for the overall downtown. There are, however, deficiencies in particular neighborhoods, most notably the rapidly developing Belltown area. This deficiency is somewhat reduced by the presence of large recreation areas just outside the boundaries of Belltown, such as Myrtle Edwards Park, Elliott Bay Park, and the Seattle Center. Estimated growth in population and employment will result in a 26-acre deficiency in parks in downtown by 2014.

**Exhibit 4-9. Downtown Seattle Open Space Acreage Required to Meet Park Standards**

Urban Village	Open Space Goal per 1994 Households & Jobs	Existing Village Open Space	Difference Open Space Needed to Meet Goal	Open Space Goal per 2014 Households & Jobs	Difference Open Space Needed to Meet Goal
Belltown	8.1	2.5	5.6	15.3	12.8
Denny Triangle	3.2	0.9	2.3	9.3	8.4
Commercial Core	13.1	14.8	(1.7 surplus)	17.2	2.4
Pioneer Square	1.7	1.3	0.4	4.4	3.1
International District	2.4	3.8	(1.4 surplus)	3.9	0.1
Downtown Total	28.5	23.2	5.2	50.1	26.8

Source: City of Seattle (2001b).

A further evaluation of gaps in Seattle's open space networks (Seattle 2001c) concluded:

- Belltown (Urban Center Village): Approximately half of the Belltown urban center village is outside of the 1/8 mile service area of Myrtle Edwards and Regrade Park.
- Commercial Core (Urban Center Village): Victor Steinbrueck, Piers 62 and 63, and Freeway Park provide Usable Open Space at the 1/8 mile range for approximately one-third of the Commercial Core, leaving around two-thirds of the urban center village underserved.
- Pioneer Square (Urban Center Village): Less than half of the Pioneer Square village is served by the 1/8 mile service areas of Pioneer Square Park, Occidental Square, and City Hall Park.

A description of specific park and recreation facilities is provided below for segments of the project corridor proceeding from south to north. Within each area, facilities west of the existing viaduct along the waterfront are addressed first, followed by facilities to the east.

#### 4.1 South – S. Spokane Street to S. King Street

The southerly portion of the study area is largely industrial south of S. Atlantic Street. Recreational demand and opportunities are limited by the industrial nature of the area as an employment center for manufacturing, distribution, warehousing, and transportation facilities, including rail yards. There are no park or recreation policies in the City of Seattle Neighborhood Plan for the Greater Duwamish Manufacturing and Industrial Center.

**Waterfront Trail:** This multi-purpose asphalt pathway extends from S. Royal Brougham Way on the south to Broad Street on the north, where it connects to the Elliott Bay Trail.

The waterfront trail is designated as part of the Seattle Urban Trails System in the City's Comprehensive Plan. The Urban Trails System is designated to facilitate walking and bicycling as viable transportation choices, provide recreational opportunities, and link major parks and open spaces with Seattle neighborhoods. These trails provide an off-road path or sidewalk (separated from motor vehicles) for pedestrians and bicyclists, as well as off-road trails, special bike lanes, and signed routes in the street right-of-way. Because the trail was built prior to standards for bicycle facilities were developed, it does not meet minimum American Association of State Highway and Transportation Officials (AASHTO) (national) design guidelines. Generally, the multi-purpose trail fills with pedestrians during midday, making it unworkable for heavy bike use (Lagerwey 2002 personal communication).

The Waterfront Trail is planned to connect with the future Mountains to Sound Greenway Trail at S. Atlantic Street. It connects to the south with the multi-use trail along E. Marginal Way, which is accommodated on a bicycle lane painted on the west side of the roadway and on the sidewalk. The trail along E. Marginal Way connects to a more extensive trail system in West Seattle via an east-west trail that crosses Harbor Island along S. Spokane Street and continues to the west along West Seattle's Alki Park (Port of Seattle 1997). The Waterfront Trail connects to the north with the Elliott Bay Trail, which extends through Myrtle Edwards Park, Elliott Bay Park, and around Terminals 89, 90, and 91 to Smith Cove Park and the Elliott Bay Marina in the Magnolia neighborhood (Seattle 2001b).

The asphalt trail allows bicycle use, but it is not specifically designated as a bicycle facility or shown on the city bike map as a bicycle facility since it does not meet minimum American Association of State Highway and Transportation Officials (AASHTO) national design guidelines. Generally, the multi-purpose trail fills with pedestrians during midday, making it unworkable for heavy bike use (Lagerwey 2002 personal communication). The portion of the trail south of S. King Street is framed by a bermed landscape area containing street trees on both sides of the trail. It is lightly used by pedestrians, except during events in the nearby Safeco Field and Seahawks Stadium.

Recreational activities provided on the Waterfront Trail in this area include exercise-related activities such as walking, bicycling, and skating, as well as passive activities such as enjoyment of scenery and people watching (Betz 1998). The location of the trail along the waterfront allows those using the trail primarily as a transportation facility to incidentally enjoy the urban and natural scenery (Cordell 1995). The width, grade, and surface of the existing trail are adequate for persons with mobility impairments, including persons using wheelchairs and pedestrians with limited stamina and limited ability to negotiate grades, such as the elderly (FHWA 1999). The location of the trail in this portion of the corridor where it is bounded by industrial port activities on much of the west side and by the viaduct on the east is likely to limit the elements of passive sightseeing enjoyment.

**Mountains to Sound Greenway Trail:** This trail is part of the Mountains to Sound Greenway, a scenic, historic, and recreation corridor along Interstate 90 (I-90) from near Ellensburg to Seattle (Mountains to Sound Greenway 2003). The proposed trail connection from I-90 to the waterfront is included in \$2.08 million funding in the City of Seattle Pro Parks Levy.<sup>1</sup> It is currently planned

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<sup>1</sup> Seattle City Council Ordinance 120024

to use the sidewalk on the north side of S. Atlantic Street between Fourth Avenue and Alaskan Way, where it is planned to connect to an extension of the asphalt trail on the west side of the existing viaduct that currently terminates at S. Royal Brougham Way (Anderson 2003 personal communication).

**Sports Complexes:** The major facilities in the south portion of the corridor are Safeco Field (the Seattle Mariners baseball park) and Seahawks Stadium. Both of these facilities are owned by public development corporations and leased to professional sport enterprises. They are approximately a block east of the existing AWV Corridor.

**Jack Perry Memorial Viewpoint:** The only shoreline access in the south portion of the corridor is provided at the Jack Perry Memorial Viewpoint on Port of Seattle property south of Pier 36, just south of S. Massachusetts Street. This facility is accessed by a driveway off E. Marginal Way and provides views of the Duwamish East Waterway and Port facilities. The site has views to the east of the SR 99 transition from an at-grade roadway to the viaduct structure. This view is a minor component of views from the site compared to waterfront views.

## 4.2 Central – S. King Street to Battery Street Tunnel

Along the waterfront and adjacent to the Alaskan Way surface street are a number of existing and planned public park and public access facilities. The facilities are tied together by the sidewalk promenade extending along the west side of the Alaskan Way surface street and the asphalt multi-purpose trail on the east side of the surface street adjacent to the waterfront trolley.

Seattle Comprehensive Plan policies for harborfront open space include improving public access and enjoyment of the shoreline, integrating the harborfront promenade with the rest of downtown through east-west pedestrian connections, and developing open space where appropriate opportunities exist along the waterfront (Seattle 1994a).

Green streets are one of the means designated for open space for active and passive enjoyment of workers, residents, and shoppers in downtown (Seattle 1994a). Exhibit 4-5 shows the system of Green Streets in downtown. Exhibit 4-6 indicates the classification system for Green Streets.

The Pioneer Square Neighborhood Plan and the Seattle Parks and Recreation Plan 2000 call for design and construction of a vibrant waterfront park somewhere between S. Washington and S. King Streets (Seattle 1998). The Downtown Urban Center Neighborhood Plan calls for development of a major public open space or open spaces to be developed in portions of the

street and rail right-of-way along the waterfront. This open space is to be designed to improve public access to and enjoyment of the shoreline and be integrated with the proposed promenade from Myrtle Edwards Park to Pier 48 and the proposed east-west pedestrian connections to the rest of downtown (Seattle 1999a).

**Waterfront Promenade:** The promenade is the sidewalk on the west side of Alaskan Way that extends from S. Washington Street to Myrtle Edwards Park. The promenade is the key element that ties the central waterfront into a linear corridor where a variety of uses are accommodated. It is the interaction of private and public activities that makes the waterfront an attractive destination. The interrelated functions of the promenade for pedestrian movement, access to private uses such as retail and restaurants, access to public open space, and enjoyment of activities such as walking and viewing occur simultaneously for each user. Of particular interest are the near and distant views of Puget Sound and water-related uses, including ferries, shipping, and recreational craft. The high density of pedestrians and a variety of activities such as retail and restaurant uses provides opportunities for people watching and general enjoyment of the ambience of the setting.

The physical facility is 20 feet wide in most places. Between S. Washington Street and Yesler Way, open water areas and views of Elliott Bay and distant natural features such as the Olympic Mountains are readily visible, but the uses adjacent to the promenade provide little interest. From Yesler Way to Madison Street, the Washington State Ferries Colman Dock Ferry Terminal blocks near views of the water and distant views are blocked by ferry loading facilities and the Colman Dock building. Between Piers 54 and 59, the waterside is bounded by a variety of historic piers, many of which provide public access areas. Design continuity is provided on the waterside by a concrete railing (where not abutted by piers), which is required to be maintained or reconstructed as part of any development as part of a Historic Character Area.<sup>2</sup> The limited width of the promenade limits opportunities for seating except where provided at the waterfront park or at public access facilities at piers along the waterfront.

**Waterfront Trail:** This multi-purpose asphalt pathway is located between the viaduct and the Alaskan Way surface street. Between S. King and S. Washington Streets, the trail is west of the waterfront trolley tracks with a landscape berm separating the trail from the surface street. Between S. Washington Street and Pike Street, the waterfront trolley is between the trail and the street. In this section, there is a landscaped berm and street trees on

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<sup>2</sup> SMC 23.60.704

the east side adjacent to the viaduct and a wood rail fence on the west side, adjacent to the trolley tracks.

This portion of the trail corridor fills with pedestrians during midday, making it unworkable for heavy bike use. Commuter bicyclists generally use the vehicular lanes in this area. The asphalt trail carries considerably lower volumes than the promenade on the west side of the street. In addition to its transportation function, this section of the multi-use trail probably attracts a greater active recreation use by exercise seekers (such as walkers and joggers) than sightseers given its location further from the high-interest waterfront and the intervening surface street.

**Pier 48 Periscope Viewpoint:** This Port of Seattle facility is located on the south side of Pier 48. It is a required public access area developed as a condition of shoreline permit approval.<sup>3</sup> This facility consists of a walkway along the south side of the pier and “periscope” structures allowing views of the harbor. It is currently closed due to the need to repair and rehabilitate timber pier and bulkhead structures at the sites (Kristin 2003 personal communication).

**Pier 48 Alaska Square:** Located on the north side of Pier 48, this Port of Seattle facility is a small (15,000 square feet) park providing public access to the shoreline and viewing area. This small waterfront park includes seating and a totem pole focal point. However, Alaska Square is currently closed because the bulkhead supporting it is failing. Alaska Square could be replaced with sidewalks and shoreline viewing near its current location.

**S. Washington Street Public Dock and Pergola:** This facility is on right-of-way at the end of S. Washington Street. The pergola is a City-designated historic structure and is on the National Register. The floating dock it serves is currently closed. The facility provides some seating and views of the water and mountains to the west. The Pioneer Square Neighborhood Plan calls for the rehabilitation and reuse of the Washington Street Boat Landing, either as an entry for the “mosquito fleet” passenger ferries or as part of a new public space (Seattle 1998a).

**Marion Street Green Street:** This street is designated as a Green Street, Type III with block-to-block traffic permitted between Second Avenue and Alaskan Way. A specific design has not been prepared for this corridor. No private development has occurred adjacent to the designated Green Street corridor since guidelines were developed in 1993. There is a surface parking lot on the south side of the street between Western Avenue and the alley to the east that

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<sup>3</sup> Seattle DCLU, Permit No. 940085

provides the potential for developing frontage consistent with Green Street design guidelines if the site is developed in the future. There is an elevated walkway providing ferry access along the south side of the street from First Avenue to the Colman Dock.

**Colman Dock Ferry Terminal:** This large pier provides public access and shoreline viewing that are largely shared by pedestrian access to the ferries. Required public access areas have not been completed. Existing designated public access areas include the south side of the Pier 50 passenger ferry terminal walkway, an open space area along the promenade near Yesler Way, and along the upper level deck of the terminal building. The area along the street near Yesler Way provides benches and a fountain; it is bounded by roadway on one side and a large expanse of auto queuing area on the other side and provides little or no views of the water, mountains, or other areas of interest. The south side of Pier 50 provides no seating or other amenities.<sup>4</sup> The area of Colman Dock accessible without paying a fare has limited visual interest and limited views of the waterfront. These areas also provide pedestrian access to ferries and therefore provide limited opportunities for lingering to enjoy views during peak commuting hours. An interior public information area is provided in the ferry waiting room. This terminal provided service to 2.8 million annual vehicle passengers and 4.4 million annual foot passengers in 2003 (WSDOT 2003). The Washington State Ferries are a tourist destination for about 2.8 million visits per year (Seattle-King County Convention and Visitors Bureau 1999).

**Fire Station No. 5:** The fire station and dock for fire boats located at the foot of Madison Street on right-of-way provides a small public access area for harbor viewing area north of the station. The primary elements of visual interest are the fireboats moored at that location and ferries at the terminal to the south.

**Pier 54:** This private pier at Madison Street provides a small public plaza area north of Fire Station No. 5 that features a statue of Ivar Haglund and a public access area along the south side of the pier transit shed within the Madison Street right-of-way. This public access area is required as a condition of a right-of-way use permit.<sup>5</sup>

**Piers 55 and 56:** These privately owned piers at Seneca Street provide 29,259 square feet of public access on a deck area between the two piers and along the south and west sides of the transit shed on Pier 56. These public access areas are required as a condition of shoreline permit approval and the

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<sup>4</sup> Seattle DCLU Shoreline Permit 9603491, 9201537

<sup>5</sup> Seattle Street Use Permit 04.25.83

Washington State Department of Natural Resources (DNR) outer harbor aquatic lease (Bortz 2002 personal communication).<sup>6</sup> Benches for public seating are provided adjacent to the promenade along Alaskan Way and at the end of Pier 56. Pedestrian counts on Alaskan Way at Pier 56 totaled 1,580 for the lunch hour average and 3,741 for the daily average in September 2001 (Seattle 2001d).

**Access to Blake Island:** Blake Island State Park in Puget Sound is accessed by most members of the public by regular boat service from Pier 55 to the Tillicum Village by Argosy Cruise Line. The Tillicum Village is a concessionaire of the state parks providing a Pacific Northwest Native American style dinner and interpretive program based on legends of various Northwest Coast tribes. The recreational and interpretive services provided by the concessionaire are considered by State Parks to constitute public services necessary or appropriate for the public use and enjoyment of the park (McKaughlin 2002). Approximately 100,000 visitors per year use the cruise line for access (Greer 2003 personal communication), a much larger number than access by private boat (Rupert 2002 personal communication). The park is 475 acres in size with 5 miles of saltwater beach shoreline and provides 15 miles of day-use trails, 51 individual campsites, and a group camping area in addition to Tillicum Village.

**Pier 57:** This pier just north of University Street includes (1) a privately owned transit shed that accommodates restaurants, retail, and recreation uses as the Bay Pavilion, and (2) a privately owned deck area on the south side of the transit shed that provides outdoor restaurant seating and public access. A portion of the walkway on the north side of the transit shed is part of the City of Seattle Waterfront Park. A public access area is provided at the end of the pier in accordance with provisions of the DNR outer harbor aquatic lease (Bortz 2002 personal communication).

**Waterfront Park:** The City of Seattle Waterfront Park includes all of the property north of Pier 57, including all of Pier 59, a public deck area between the two piers, and the Seattle Aquarium, which encompasses Piers 59 and 60. The deck area between Piers 57 and 59 provides an over-water plaza area with shoreline viewing and congregating areas, fishing areas, and seating and picnicking areas. A fountain and a commemorative statue of Christopher Columbus are located in the park. Pedestrian volumes on Alaskan Way at Union Street adjacent to the park totaled 1,917 during the noon hour and 5,856 daily in September 2001 (Seattle 2001d).

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<sup>6</sup> Seattle DCLU, Permit 9703373

Pier 59 provides public access along a portion of the south and north sides of the structure. The Seattle Aquarium and an omni-dome theatre are fee-entry facilities. A restaurant space is located along the east end of the building adjacent to the Alaskan Way surface street frontage.

**Seattle Aquarium:** The Aquarium is approximately 68,000 square feet and includes portions of Pier 59 and all of Pier 60 to the north. The purpose of the Seattle Aquarium program is to “inspiring conservation of our marine environment.”

Exhibits focus on the water and shoreline environments of the Pacific Northwest aquatic and shoreline animals. Also included is an exhibit on Pacific tropical coral reef life, as well as temporary exhibit space that accommodates a range of animal and environmental types.

Other activities include education programs (both at the Aquarium and in the field) and research and breeding programs, including alcids (seabirds, including species such as auklets, guillemots, murre, murrelets, and puffins), fur seals, and sea otters. These breeding programs are important to the Aquarium to maintain the exhibits and to further the broad purposes of the Aquarium programs. The maintenance of live displays requires a plentiful supply of clean seawater, which is provided by a water intake at the end of Pier 59 that pumps about 2,400 gallons per minute through the exhibits.

Annual attendance at the Aquarium ranged between 620,989 and 630,021 visits per year in the past 10 years through 2002. Seasonal attendance is greatest in the summer, with August having the highest attendance. Approximately 50 percent of current attendees live within a 50-mile radius of the Aquarium, with almost 40 percent residing in King County. Another 12 percent live elsewhere in Washington State. About 40 percent of attendees are from out of state (ConsultEcon, Inc. 2001). The Aquarium attracted approximately 220,500 visits from out-of-state tourists in 2002.

Approximately 60 percent of attendees are adults and 40 percent are youth and children. About 7 percent of attendees are group visits from schools that occur largely in the winter and spring months, which otherwise are low-attendance months for the Aquarium (Woodland 2003 personal communication).

The Seattle Parks and Recreation Department and the Aquarium Society have proposed an expanded new aquarium incorporating the existing building at Pier 59 and replacing the existing Waterfront Park south of Pier 59 and replacing Pier 60. A new waterfront park would be developed in place of Piers 62/63. A new design and Master Plan Amendment for this site are in

development. The new facility would be owned by the City of Seattle but operated under contract by a non-profit organization, a situation analogous to the current operation of Seattle's Woodland Park Zoo.<sup>7</sup>

Major factors influencing the success of the Seattle Aquarium in attracting visits include:

- Visibility to the public, supportive land uses, and strong connections to the water, which are provided by the location on the waterfront.
- Physical accessibility, especially with respect to the proximity of visitor parking. This is an especially important factor for the Seattle Aquarium since it is separated from the Pike Place Market, Retail Core, and other upland areas by a steep hillside.
- A critical mass of attractions in the area, which is provided by proximity to major pedestrian attractions such as the Pike Place Market and nearby Pioneer Square as well the Colman Dock Ferry Terminal and waterfront commercial attractions.
- A strong thematic focus and the depth of visitor experience offered. The Aquarium is a vital facility that provides an involving visitor experience that has a solid thematic focus. Seattle Aquarium, at 68,000 square feet, is smaller than other major aquariums and this restricts to some degree the extent of the visitor experience. This may be more significant in attracting tourist visitors than local visitors. Other major aquariums typically range in size from the 110,000-square-foot New Orleans Aquarium, the 156,735-square-foot Long Beach Aquarium, and the 210,000-square-foot National Aquarium in Baltimore, to the 322,000-square-foot Monterey Bay Aquarium (ConsultEcon, Inc. 2001).

Implementation of the new Aquarium Master Plan has been delayed pending schedule and funding decisions on the Alaskan Way Viaduct project.<sup>8</sup>

**Pioneer Square:** This park is a small triangular plaza at the intersection of Yesler Way and First Avenue in the Pioneer Square Historic District. It is developed with seating, hardscape (paved areas and sidewalks), a totem pole, a small statue of Chief Seattle, and a historic pergola. The waterfront and Alaskan Way are likely to be a less important element for users of Pioneer Square as compared to the immediate surroundings and the First Avenue corridor containing historic buildings, restaurants, and retail shops.

Pioneer Square is located a block and a half (about 500 feet) east of the existing Alaskan Way Viaduct. The viaduct is visible from the Yesler Way frontage of

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<sup>7</sup> City of Seattle Resolution No. 30315

<sup>8</sup> Seattle Dept of Parks and Recreation, 2004 Budget Proposal

<http://www.pan.ci.seattle.wa.us/budget/04proposedbudget/parks.pdf>

the park, and noise from the viaduct is a component of the urban environment at the square. During the day, noise from First Avenue and Yesler Way is a larger component of the noise environment. During evening and night hours, noise from the viaduct can be heard because traffic volumes and noise on adjacent streets are lower. Pedestrian volumes on First Avenue crossing Yesler Way at this location totaled 2,495 during the noon hour and 6,641 for daily counts in September 2001 (Seattle 2001d).

**Klondike Gold Rush National Historic Park, Seattle Unit:** This interpretive center in a leased historic building on S. Main Street near Occidental Avenue S. provides displays, educational programs, and interpretive tours regarding Seattle's role in the Klondike Gold Rush. Interpretive tours in the Pioneer Square Historic District currently do not include the areas directly adjacent to the Alaskan Way Viaduct (O'Meara 2003 personal communication). The park is planning to move to new facilities at S. Jackson Street and Second Avenue S. in 2005.

**Occidental Plaza:** This plaza occupies a half-block west of Occidental Avenue S. between S. Washington and S. Main Streets. The park contains a number of public art installations, including a totem pole and the Seattle Fallen Firefighters Memorial.

Pedestrian volumes on Occidental Avenue S. adjacent to the park totaled 1,812 during the noon hour and 4,212 for daily counts in September 2001 (Seattle 2001d). The plaza is largely buffered from views or noise from the existing viaduct by a continuous half block of buildings facing First Avenue S.

**Harbor Steps:** This privately owned plaza extends down a series of steps and landings between First Avenue S. and Western Avenue along the vacated right-of-way of University Street. As a condition of street vacation, the City retained public access rights to the area.<sup>9</sup> Facilities include street-wall and table seating on the Post Alley level midway between First and Western Avenues. The area is used extensively as an outdoor brown-bag lunch area during noon hours and attracts significant numbers of pedestrians and persons sitting on walls and steps during warm weather.

The westerly portion of the facility is one block from the existing viaduct, which is a substantial barrier to views of the waterfront. Noise from the viaduct is a component of the urban environment in this location. Average pedestrian counts along First Avenue S. of 2,507 during the noon hour and 7,748 daily were recorded in 2001. Pedestrian volumes moving up and down Harbor Steps were 1,589 during the noon hour and 2,880 daily (Seattle 2001d).

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<sup>9</sup> City of Seattle Ordinance No. 104256

**University Street Green Street:** University Street is designated as a Green Street, Type I with traffic prohibited between First and Western Avenues. It is designated Type III with block-to-block traffic permitted between Western Avenue and Alaskan Way. The Harbor Steps meets Green Street design standards between First and Western Avenues. A specific design has not been prepared for the block between Western Avenue and Alaskan Way. There is a surface parking lot on the north side of the street between Western Avenue and Alaskan Way that provides the potential for developing frontage consistent with Green Street design guidelines if the site is developed in the future.

**Seattle Art Museum University Street Plaza:** This public open space extends along the southerly frontage of the site and provides steps and level areas framed by landscape beds. A large statue titled *Hammering Man* is located at the corner of University Street and First Avenue. It is used extensively as a congregating area. Seating is provided by steps and seating walls. Public access is required as a condition of development permits and public financial participation in museum construction through the Museum Development Authority.<sup>10</sup> The museum receives up to about 3,500 visits per day in peak periods when popular exhibits are hosted.

This area is about three blocks from the existing viaduct. The visual prominence of the viaduct decreases in the easterly uphill portion of the site. Noise from the viaduct is a minor component of the urban environment, which is attenuated at greater distances to the east. During the day, noise from First Avenue and University Street is a larger component of the environment than noise from the existing viaduct. During evening and night hours, noise from the viaduct becomes apparent as a separate source because traffic volumes and noise on adjacent streets are lower.

**Benaroya Hall Plaza:** This area along Second Avenue and University Street provides for passive use and access to the bus tunnel on Third Avenue. Seating walls, a fountain, and a memorial garden are located in the area. Public access is required as a condition of development permits, public financial participation in construction, and easements for access to the bus tunnel.<sup>11</sup> This area is about three blocks from the existing viaduct. Most of the plaza area fronts Second Avenue and does not have direct views of the existing viaduct. Noise levels from the existing viaduct are not a discernable component of daytime urban noise at this location.

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<sup>10</sup> City of Seattle Ordinance No. 117317

<sup>11</sup> City of Seattle Ordinance No. 117520

**Pike Street Hillclimb:** This facility is located on public right-of-way and extends from the Pike Place Market to the Alaskan Way surface street at the Seattle Aquarium. The portion between Western Avenue and the Alaskan Way surface street includes public plaza areas as well as stairs and terraces. The public areas are used for informal seating and gathering and seating for adjacent restaurants. The largest plaza areas are under the existing viaduct. An art installation, Breaching Orca, is located near the Alaskan Way surface street west of the viaduct. The Hillclimb is used mostly as a pedestrian linkage between Pike Street and the Market and waterfront. The stairways are relatively narrow and do not provide opportunities for congregating. Informal seating is provided on the ledges of planters.

Views of the waterfront from the upper levels of the Hillclimb are blocked by the existing viaduct. The noise from the existing viaduct is a substantial intrusion to the area between Western Avenue and Alaskan Way. The noise and shadows directly beneath the viaduct make the open space in that area unattractive as a congregating area and limit use to a passageway between the amenities to the east and the waterfront to the west.

### 4.3 North Waterfront – Pike Street to Broad Street

**Waterfront Promenade:** The promenade has a similar width and design north of the Seattle Aquarium but lacks restaurant and retail uses adjacent to the walkway over most of the corridor. The promenade is 12 to 16 feet wide and bounded on the waterside by a concrete balustrade except at adjacent piers. For about a quarter mile north of the Aquarium until Pier 66, there are no permanent adjacent uses. Piers 62/63 Park provides a large unobstructed deck along about 300 feet of the promenade. The deck is used for a concert program on about 20 evenings in the summer as described below. North of Piers 62/63, the promenade is bounded on the west by the Port of Seattle marina and on the street side by charter bus parking. Topography and development on the east side of Alaskan Way limit east–west access to downtown to the Pike Street Hillclimb, the Lenora Street pedestrian overpass, the Bell Street pedestrian bridge that connects to Pier 66, and surface streets from Wall Street north. This section of the promenade provides visual access to Elliott Bay and the docked vessels in the marina, but lacks the vibrancy of density and mix of uses provided by Piers 54 through 59. Pier 66 provides a center of activity, but little interest is provided adjacent to the promenade at the Edgewater Hotel (Pier 68) or Pier 69. Restaurants provide some interest at Pier 70, together with public access around the pier. Pedestrian volumes are lower in this area than to the south of the Aquarium.

**Waterfront Trail:** The multi-purpose asphalt pathway extends to Bell Street, where it is routed onto an 18- to 24-foot-wide concrete sidewalk west of the trolley tracks and Burlington Northern Santa Fe (BNSF) railway. Between Pike and Blanchard Streets, a separate concrete sidewalk is provided adjacent to the Alaskan Way surface street west of the trolley tracks with an asphalt surface trail on the east side of the right-of-way adjacent to apartment buildings, a hotel, and an office building. The waterfront trolley is located between the sidewalk and the asphalt trail. As a transportation facility, pedestrians use both the sidewalk and asphalt trail and bicycles use both the street and asphalt trail in this location. Recreation activities include walking, jogging, and skating for exercise as well as passive enjoyment of scenery and people watching.

The location of the trail across the street from the waterfront provides less access to views of Puget Sound but provides framing apartments, hotel, and offices that add visual interest. Pedestrian volumes are moderate on both the sidewalk and the trail south of Pier 66. Pedestrian volumes are high adjacent to the Marriott Hotel, which is across from Pier 66. Pedestrian volumes north of Bell Street are very low, reflecting the lack of interest provided by adjacent railroad tracks.

Several public art installations are located along this corridor. *Welcoming Spirit* by Melvin Schuler is located at 1950 Alaskan Way. At either side of Vine Street, works by Buster Simpson are located next to the adjacent rail lines. These works were developed as a part of a public art project, *Vine Street Grows*, under the City's 1% for Art Program. The pieces are intended to evoke the industrial heritage of the waterfront (Simpson 2003 personal communication).

**Pier 62/63 Park:** This facility is owned by the Seattle Parks Department and consists of a large unobstructed deck. Public access is provided with views of the water, Olympic Mountains, and downtown skyline. During the summer months, the pier is developed with temporary facilities for an outdoor concert series and public access is limited to a 12-foot lane along the north edge. During concerts on 18 to 20 evenings, access is by paid admission. Future plans include relocation of functions of the Waterfront Park at Pier 57/59 to this area when the Seattle Aquarium expands to the south of Pier 59.

This facility is 300 to 500 feet from the existing viaduct, which traverses the hill between the Alaskan Way surface street and Western Avenue. North of Pine Street, views of the viaduct are blocked by apartment buildings facing Alaskan Way. Noise from the existing viaduct is a component of noise levels in the area. Noise levels limit the types of acts that can be staged at the concert venue. Sources of noise in addition to the existing viaduct include

trains using the rail lines and tunnel to the east and north, airplanes, ferries, and emergency vehicles (Jennings 2004 personal communication).

**Pier 66, the Bell Street Terminal:** This recently developed Port of Seattle complex includes a small craft marina providing guest moorage for up to 70 vessels, a cruise ship terminal, a conference center, the Odyssey Maritime Museum, and restaurants (Port of Seattle 2003). Public access facilities include a roof deck and street level plaza areas. The roof deck provides panoramic views and seating facilities. A bridge connection across the Alaskan Way surface street to Elliott Avenue is provided at the roof level on the alignment of Bell Street. On the street level, public plaza areas are provided between the conference center and the marina. Facilities include viewing areas, seating, and art features required by shoreline permits.<sup>12</sup> Pedestrian volumes are very high when cruise ships load and unload at the pier and are moderate at other times. A public art installation, the *Light Tower* by Ron Fisher, is located on the tip of the breakwater at the entrance to the marina. A public art installation, a mosaic wall entitled *Danza del Cerchio*, was created in 1996 by Ann Gardner on commission from the Port of Seattle.

**Edgewater Hotel, Pier 68:** This over-water hotel structure provides a waterfront public viewing area along the north side of the parking area as a condition of shoreline permits.<sup>13</sup>

**Vine Street Green Street:** Vine Street is designated as a Green Street, Type II with block-to-block traffic prohibited between Denny Way and Alaskan Way. A specific design has not yet been prepared or implemented. The street is currently open to traffic. At either side of Vine Street, a work by Buster Simpson is located on the sidewalk next to the adjacent rail lines. These works were developed as a part of a public art project, *Vine Street Grows*, under the City's 1% for Art Program. The pieces are intended to evoke the industrial heritage of the waterfront (Simpson 2003 personal communication).

**Pier 69:** This pier is the Port of Seattle Headquarters and provides public access areas along the north and west sides for viewing and public fishing. Public access is a condition of shoreline permits and of use of public aquatic lands (Bortz 2002 personal communication).<sup>14</sup>

**Clay Street Green Street:** Clay Street is proposed to be designated as a Green Street in the 1999 Downtown Urban Center Neighborhood Plan. It does not have a specific designation. Action has not been taken on the

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<sup>12</sup> Seattle DCLU, Application 9203932

<sup>13</sup> Seattle DCLU, Application 8802084

<sup>14</sup> Seattle DCLU, Applications 9007326, 8301578

recommendation to designate a Green Street, and no design has been proposed.

**Pier 70:** This privately owned pier provides public access areas along the south, north, and west sides as a condition of shoreline permits and DNR lease conditions for public aquatic lands (Bortz 2002 personal communication).<sup>15</sup>

**Victor Steinbrueck Park:** This facility located on Western Avenue at Virginia Street is operated by the City of Seattle Parks Department and is located on top of a parking garage developed by the Pike Street Public Market Development Authority. It features views of the waterfront, Puget Sound, and the Olympic Mountains to the west and views of the downtown skyline to the south. It includes both lawn and hardscape areas with benches and picnic tables. Two totem poles provide a visual focus. It is immediately adjacent to the Pike Place Public Market and has high levels of use as a gathering area and a viewpoint. The existing viaduct is directly adjacent to the park and below grade level. It does not block views but is a significant contributor to noise levels.

**Lenora Street Bridge:** This bridge provides a pedestrian connection from the vicinity of the Pike Street Market to east of the Alaskan Way surface street. It is owned by the Port of Seattle and subject to a public pedestrian easement.<sup>16</sup> It provides public access to the waterfront area via stairs and an elevator as well as providing a public seating and waterfront viewing area at the top of the elevator/stairway tower.

**Belltown Cottage Park:** This City of Seattle Parks Department facility is located adjacent to the Belltown Peapatch, which is owned by a private non-profit organization. It includes historic buildings that are in the process of restoration and houses a writers-in-residence program. The park functions as a community gathering place and a place for passive recreation. Two public art installations are located in the park, a tile mural and a solar fountain. The park is bounded on the north by Vine Street, which is designated a Green Street.

**Olympic Sculpture Park:** This planned facility is located between the Alaskan Way surface street and Western Avenue and is bounded by Broad Street on the south and Bay Street on the north. It encompasses approximately four city blocks and a substantial portion of the Alaskan Way

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<sup>15</sup> Seattle DCLU Application 8903349

<sup>16</sup> AFN 9408109264

Property Use and Development Agreement AFN 9408050461

Easement AFN 9408050459

right-of-way. Current plans include elevating portions of the site above Elliott Avenue and the Alaskan Way surface street to accommodate pedestrian overcrossings in a “Z” configuration for the main pathway through the park. A number of different landscape and sculpture theme areas would be connected by internal trails. A pavilion is planned to provide space for all-weather activities. Numerous viewpoints, seating areas, and passive use areas would be provided. The Olympic Sculpture Park is being developed by the Seattle Art Museum in partnership with the City of Seattle and would be open to the public free of charge during normal hours.<sup>17</sup>

**Myrtle Edwards Park:** This 4.8-acre City of Seattle park is located along the waterfront north of Pier 70. It contains about 2,900 linear feet of waterfront, viewpoints, lawn and picnic areas, benches, and other passive use areas; public art and a trail system link area to the north and south.

**Elliott Bay Park:** This 10.5-acre Port of Seattle facility is adjacent to Myrtle Edwards Park. It encompasses 4,100 linear feet of waterfront, contains viewpoints, picnic areas, benches, rose gardens, a public fishing dock, and continuation of the Elliott Bay Trail by agreement with the City of Seattle.<sup>18</sup> The Pier 88 grain terminal is near the midpoint of the park.

**Wave Rave Cave:** This public art installation under the existing viaduct east of Western Avenue consists of sculpted concrete waves covered in gravel. It was created by Dan Corson, funded by Seattle City Light, and is administered by the Seattle Arts Commission. The work was designed to be moved if changes in the viaduct occur (Seattle Post-Intelligencer 2002).

**First Avenue Project:** This public art installation consists of a number of pieces along several blocks of First Avenue. A piece is located on the sidewalk above the existing Battery Street Tunnel portal. This is a linear work of art using found objects. It is designed to provide the experience of discovery to pedestrians along the corridor. It was designed with the expectation that development along the corridor will change with time; individual buildings might be replaced or altered and tenants will change; however, the experience of encounter will remain available. Views at this location down Battery Street include the waters of Elliott Bay and Puget Sound in the distance, although the character of the views could change in the future due to the height of buildings on Elliott Avenue that could block the view corridor in the future.

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<sup>17</sup> City of Seattle Ordinance No.120681

<sup>18</sup> City of Seattle Ordinance No. 104435

#### 4.4 North – Battery Street Tunnel to Ward Street

**Lake Union to Elliott Bay Trail (formerly Potlatch Trail):** This planned facility is designed to link South Lake Union to Elliott Bay. It is being developed with funds from the Pro Parks 2000 levy approved by Seattle voters in November 2000. It is proposed to use both public sidewalks and other corridors. It would connect the South Lake Union Park to Seattle Center, the Olympic Sculpture Park to Myrtle Edwards Park, and link to the Waterfront Trail via the Westlake Trail to the Burke Gilman Trail. The current proposed trail route follows Roy Street from the South Lake Union Park, crossing under Aurora Avenue N. to Fifth Avenue. It then turns south to Broad Street, follows Denny Way, Eagle Street (one block north of Broad Street), Western Avenue, and returns to Broad Street to continue to the waterfront. Alternatively, it may use the pedestrian overcrossing of Elliott Avenue and the BNSF railroad in the Olympic Sculpture Park. A bike route is planned to follow Roy Street (or parallel alternates) west to either Queen Anne Avenue or First Avenue N., where it would connect to Western Avenue. The trail alignments would be developed in conjunction with the Alaskan Way Viaduct and Seawall Replacement Project.

**Seattle Center:** This 74-acre site, owned by the City of Seattle, hosts a variety of cultural and recreational facilities as well as trade shows, job fairs, and public and private meetings. It is roughly bounded by Broad Street, Fifth Avenue, Mercer Street, First Avenue, and Denny Way. It was initially the site of the 1927 Civic Complex and was expanded for the 1962 World's Fair. It contains areas of open space around the centrally located international fountain, smaller lawn and plaza areas throughout the facility, a skateboard park, McCaw Hall, exhibition and meeting halls, the multi-use Center House, and two sports arenas. Key Arena is home to the Seattle SuperSonics professional basketball team and hosts many large events with attendance of up to 15,000 persons. Seattle Center hosts a number of private and non-profit facilities, including the Space Needle, the Experience Music Project, the Seattle Children's Museum, the Northwest Craft Center, Pacific Northwest Ballet, and the Pacific Science Center. The Sculpture Garden in the area generally between the Space Needle and Broad Street contains four large works of public art: *Black Lightning*, a black-painted steel sculpture by Ronald Bladen; *Olympic Iliad*, an orange-red painted steel sculpture by Alexander Liberman; *Moon Gates*, a bronze sculpture of three parts by Doris Chase; and *Moses*, a black-painted steel sculpture by Tony Smith. The non-sport use of the Seattle School District's Memorial Stadium is coordinated with Seattle Center activities. The Space Needle attracts approximately 4.2 million tourist visits per year. The Seattle Center is the site of various cultural activities and festivals, the largest of which (the Northwest Folklife Festival and

Bumbershoot) each attract about 220,000 people over the 3-day Memorial Day and Labor Day weekends.

**Regrade Park:** This small urban park at Third Avenue and Bell Street is largely developed in hardscape with some planter areas. Facilities include benches, a children's play area, and a basketball half-court. It largely serves the passive recreation needs of the surrounding residential area.

**Public Art** in the project vicinity is listed in Exhibit 4-7 and locations are shown in Exhibit 4-8. Further discussion of individual pieces is included in analysis of impacts of specific alternatives.

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## Chapter 5 OPERATIONAL IMPACTS AND BENEFITS

Operational impacts are those that occur over the long term as the facility is in operation. The following sections present discussions of different types of operational impacts for each alternative and option. Short-term impacts from construction of the alternatives are discussed in Chapter 6. Mitigation measures for the identified operational impacts are discussed in Chapter 8.

### 5.1 No Build Alternative

#### 5.1.1 Scenario 1 – Continued Operation of the viaduct and Seawall With Continued Maintenance

Continued operation of the viaduct and seawall will result in no change to park recreation and open space resources.

#### 5.1.2 Scenario 2 – Sudden Unplanned Loss of the Facilities but Without Major Collapse or Injury

Sudden unplanned loss without major collapse or injury will likely result in some portions of the viaduct being out of service for a relatively short period of time and then repaired and put back in service. For a short period of time, the closure of the multi-purpose trail adjacent to the viaduct can be expected for safety reasons. Parking beneath the viaduct is likely to be closed for a short period, creating potential access impacts for park facilities along the waterfront. During the closure period, other park facilities that require access to cross under the viaduct may experience restrictions on access routes.

#### 5.1.3 Scenario 3 – Catastrophic Failure and Collapse

Under this scenario, the existing viaduct is presumed to be out of service for an extended or indefinite period of time. Eventual replacement would likely be one of the alternatives discussed below. Sudden catastrophic collapse would result in displacement of the multi-purpose trail adjacent to the viaduct and displacement of the parking beneath the viaduct. Access across the corridor to park facilities likely would be restricted until demolition and removal were completed. After removal, most park facilities would be unaffected, except for possible difficulties with access relating to transportation capacity within the corridor.

### 5.2 Rebuild Alternative

The Rebuild Alternative includes rebuilding the viaduct in-place with dimensions similar to the existing structure north of King Street. The seawall

along the west side of Alaskan Way will be reconstructed largely with a drilled shaft retaining wall and jet grouting.

The Rebuild Alternative will have little impact beyond the boundaries of the existing viaduct after completion, except for the SR 519 ramp configuration at S. Atlantic Street and S. Royal Brougham Way, discussed below. Park and recreation resources listed will be affected by the rebuilt viaduct in the same way they are currently affected by the existing viaduct.

The SR 99 roadway between S. Holgate Street and S. King Street, which is currently elevated, will become a surface roadway under this alternative. Access ramps will be constructed at S. Atlantic Street and S. Royal Brougham Way to provide a connection to those local streets and to SR 519, which connect to I-90 and I-5. The surface roadway for SR 99 will consist of three 12-foot travel lanes with 10-foot shoulders. The width occupied by the roadway and on- and off-ramps between S. Atlantic Street and S. Royal Brougham Way will be about 250 feet and will extend from about 35 feet east of to about 175 feet west of the existing viaduct.

The ramp configuration will consist of elevated overcrossing structures on S. Atlantic Street and S. Royal Brougham Way that will cross over the SR 99 at-grade roadway. A northbound off-ramp will rise from the east side of the SR 99 at-grade roadway to intersect with the elevated structure at S. Atlantic Street and continue as an elevated structure to S. Royal Brougham Way. Both right and left turn movements onto S. Atlantic Street and S. Royal Brougham Way will be provided from the ramp. A northbound on-ramp will descend to intersect with the at-grade roadway north of S. Royal Brougham Way. A southbound off-ramp will rise from the west side of the surface roadway north of S. Royal Brougham Way and in a similar configuration to the northbound off- and on-ramp, it will continue as an elevated structure between S. Royal Brougham Way and Atlantic Street. The southbound on-ramp back to the surface SR 99 also will provide a southbound and northbound connection to E. Marginal Way south of the ramp configuration. The single northbound lane for E. Marginal Way will terminate at the S. Atlantic Street intersection. Alaskan Way as a separate two-way local street will no longer exist between S. Atlantic Street and S. King Street.

Specific recreation facilities affected are described below.

**Waterfront Trail:** The multi-purpose asphalt pathway between S. Royal Brougham Way and S. King Street will be eliminated as a separate trail. Bicycles will be accommodated within vehicle lanes on E. Marginal Way south of S. Atlantic Street. Pedestrians will be accommodated on a 6-foot-wide sidewalk on E. Marginal Way. Between S. Atlantic and S. King Streets,

bicycles and pedestrians will either be routed to First Avenue S., which is east of and parallel to SR 99, or accommodated on sidewalks adjacent to SR 99 and vehicle lanes. On First Avenue, bicycles will share vehicle lanes and pedestrians will be accommodated on sidewalks. These facilities will connect with the Alaskan Way surface street at S. King Street, where the aerial structure will be in place. The experience for bicyclists and pedestrians between S. Royal Brougham Way and S. King Street is likely to be less pleasant than the existing trail, which has a landscape buffer on both sides north to S. King Street. For bicyclists, conflicts with vehicles are likely to increase due to sharing a vehicular lane. The replacement facilities may function more as a purely transportation purposes because the route has fewer visual amenities for enjoyment of scenery as an adjunct to exercise-related activities such as walking, bicycling, and skating.

**Mountains to Sound Greenway Trail:** The trail currently is planned to use the sidewalk on the north side of S. Atlantic Street between Fourth Avenue and Alaskan Way and will be unaffected except where it connects to the extension of the asphalt trail on the west side of the existing viaduct. There are currently no specific plans to connect with the Waterfront Trail.

**Sports Complexes:** Access to both Safeco Field and the Seahawks Stadium will be enhanced by the ramp configuration at S. Atlantic Street and S. Royal Brougham Way.

This ramp configuration, together with the SR 519 connections to I-90 currently under construction, will enhance access for sports events as compared with the southbound off-ramp and northbound on-ramp provided at First Avenue from the existing viaduct. No adverse impacts to access or function of the sports fields are likely from operation of the Rebuild Alternative after construction is complete.

**Jack Perry Memorial Viewpoint:** This shoreline access facility will continue to have driveway access from E. Marginal Way. The change in the configuration of E. Marginal Way and SR 99 is not likely to change the enjoyment of views of the Duwamish East Waterway and Port facilities from the site. Noise impacts of the surface roadway are likely to be somewhat less than noise from the existing viaduct, which makes the transition to an elevated structure near S. Holgate Street.

The Rebuild Alternative will affect all other park and recreation facilities similar to the existing viaduct after completion of construction.

The two options for reconstructing the seawall along its entire extent from S. King Street to Myrtle Edwards Park will not have an impact after completion of construction because the future seawall will be in virtually the

same place and have the same relationship to park, recreation, and public access facilities as the existing seawall.

### 5.3 Aerial Alternative

This alternative incorporates an aerial structure that is generally about half-again as wide as the existing viaduct with two roadway decks, one above the other, as in the existing viaduct. The route of the Aerial Alternative is similar to the existing viaduct except for the alignment south of S. King Street, where the aerial structure is generally located west of the existing viaduct, or where the width of the aerial structure, including the proposed ramp configuration at S. Atlantic Street and S. Royal Brougham Way encompasses the entire Alaskan Way/E. Marginal Way right-of-way.

The Aerial Alternative is generally similar to the existing viaduct in the manner in which it affects the network of open space, parks, boulevards, trails, and facilities providing recreational, cultural, environmental, and educational resources to the community. The similar design and configuration of the aerial structure to the existing viaduct will have a similar effect on the neighborhoods it traverses.

A description of impacts on specific park and recreation facilities is provided below. The description within each geographical sub-area first addresses facilities west of the Aerial Alternative corridor, then facilities to the east. Facilities are addressed from the south to the north.

Public art in the project vicinity is discussed within each geographical sub-area below.

#### 5.3.1 South – S. Spokane Street to S. King Street

The proposal is a double-level aerial structure that will begin further south than the existing structure within the existing right-of-way south of S. Holgate Street. Between S. Massachusetts Street and S. Royal Brougham Way, the aerial structure will be located west of the existing viaduct in the area of the current E. Marginal Way surface street.

An option being considered with this alternative is to keep SR 99 at-grade and provide SR 519 elevated access ramps at S. Atlantic Street and S. Royal Brougham Way, as discussed under the Rebuild Alternative above.

**Waterfront Trail:** A multi-purpose asphalt pathway will extend from S. Atlantic Street to S. King Street west of the aerial structure. The experience of bicycles and pedestrians on the trail west of the aerial structure is likely to be dependent on the extent to which the trail is buffered from vehicle traffic on the adjacent frontage road by distance and landscaping. The replacement

facilities are likely to function more as a purely transportation facility because the route has fewer visual amenities for enjoyment of scenery as an adjunct to exercise-related activities such as walking, bicycling, and skating.

**Mountains to Sound Greenway Trail:** The trail currently is planned to use the sidewalk on the north side of S. Atlantic Street between Fourth Avenue and Alaskan Way and will be unaffected except where it connects to the extension of the asphalt trail on the west side of the existing viaduct. In the future, it will connect with the relocated Waterfront Trail.

**Sports Complexes:** Access to both Safeco Field and the Seahawks Stadium will be enhanced by the ramp configuration at S. Atlantic Street and S. Royal Brougham Way. This ramp configuration, together with the SR 519 connections to I-90 currently under construction, will enhance access for sports events as compared with the southbound off-ramp and northbound on-ramp provided at First Avenue from the existing viaduct. No adverse impacts to access or function of the sports fields are likely from operation of the Aerial Alternative after construction is complete.

**Jack Perry Memorial Viewpoint:** This shoreline access facility will continue to be accessed off E. Marginal Way. The minor change in the configuration of the Aerial Alternative is not likely to change the enjoyment of views of the Duwamish East Waterway and Port facilities from the site. Noise impacts of the aerial structure extending slightly further to the south are likely to be slightly greater than noise from the existing surface roadway at this location. The location of the viewpoint about 1,000 feet from the aerial structure is likely to attenuate noise impacts.

### 5.3.2 Central – S. King Street to Battery Street Tunnel

The Aerial Alternative alignment and width between S. King and S. Washington Streets is likely to compromise slightly the Pioneer Square Neighborhood Plan and Seattle Parks and Recreation Plan provisions for a vibrant waterfront park somewhere between S. Washington and S. King Streets (Seattle 1998a). At S. King Street, the additional width with the southbound off-ramp to S. Royal Brougham Way will result in the aerial structure using about three-quarters of the right-of-way. Between S. Jackson and S. Washington Streets, the aerial structure will extend about 60 feet further west of the existing viaduct.

The Aerial Alternative also will compromise the Downtown Urban Center Neighborhood Plan provisions for development of a major public open space or open spaces to be developed in portions of the street and rail right-of-way along the waterfront (Seattle 1999a). The greater width of the Aerial

Alternative and its location closer to the waterfront will limit options for use of street rights-of-way and slightly increase proximity impacts such as noise.

**Waterfront Promenade:** The promenade (the sidewalk on the west side of Alaskan Way) will be increased in width from its current 20 feet to about 25 feet from Pier 48 to Pier 59 due to the location of northbound lanes under the aerial structure where parking is currently provided under the existing viaduct. That will add to pedestrian capacity and opportunities to enjoy the waterfront. Additional width will enhance active recreation activities such as walking, provide additional opportunities for stopping and congregating, and provide rest areas that will enhance passive activities such as enjoyment of the scenery. The additional width will enhance the function of the promenade in providing a linear recreation experience along the waterfront.

Proximity impacts such as noise and the visual intrusion of the aerial structure will be greater than with the existing viaduct. This will be especially apparent between S. Jackson and Columbia Streets, where the aerial structure will be much closer to the waterfront than the existing viaduct is. Further to the north, the impacts are likely to be perceived as similar to pedestrians, who will be largely focused on the waterfront amenities to the west. The presence of a large structure dominating the waterfront is likely to be similar. It is the presence of the dominating element rather than its exact size that affects the pedestrian environment.

**Waterfront Trail:** The replacement of the existing multi-purpose asphalt pathway with 5-foot bike lanes on both sides of the surface street and wider pedestrian sidewalks on both sides of the Alaskan Way right-of-way will provide a mixed impact for both bicycles and pedestrians. Bike lanes will improve the mobility of bicycles through a continuous system and will improve safety and reduce conflicts with vehicles and pedestrians. The bicycling experience northbound under the aerial structure is likely to provide better mobility for commuter bicyclists. The shadows, enclosed environment, distance from waterfront views, view interruption by columns, and lack of a buffer from traffic all distinguish the northbound bicycle lanes from the existing trail. It is unlikely that bicyclists interested in recreational amenities such as enjoyment of the scenery will choose this route. For pedestrians, the widened promenade on the west side of the street will be more functional and pleasant. A continuous sidewalk on the east side of the right-of-way will provide continuity similar to the existing trail, but it will be in shade most of the time and not buffered by vegetation to the extent of the existing trail. The location has fewer visual amenities for enjoyment of scenery as an adjunct to exercise-related activities such as walking, bicycling, and skating.

**Pier 48 Periscope Viewpoint:** This Port of Seattle facility will not be directly affected by the Aerial Alternative. It is likely to be displaced by future plans to expand the Colman Dock Ferry Terminal as discussed in Chapter 7, Secondary and Cumulative Impacts. Access by car will be more limited due to the elimination of the parking under the existing viaduct. If the Periscope Viewpoint or a similar facility were retained or replaced, persons using it would likely be predominantly pedestrians in the Pioneer Square area or those attracted to the waterfront by future uses.

**Pier 48 Alaska Square:** This facility will be displaced by the ferry access roadway from Pier 48 to the existing or expanded Colman Dock Ferry Terminal. The Colman Dock Ferry Terminal Expansion Project is discussed in Chapter 7, Secondary and Cumulative Impacts.

**S. Washington Street Pergola and Public Dock:** This structure located at the edge of the Alaskan Way right-of-way at the end of S. Washington Street will be removed during construction and relocated within the right-of-way further west of its current location. The slightly higher proximity impacts such as noise and greater visual domination from the aerial structure located further to the west will be unavoidable. The effect on future use, however, is more likely to be related to the character of rehabilitation of the structure and integration into the waterfront promenade, and whether uses are developed in the vicinity that will attract pedestrians.

**Marion Street Green Street:** The Aerial Alternative is likely to have an impact similar to the existing viaduct on the function of this street in providing open space for active and passive enjoyment of workers, residents, and shoppers in downtown and in providing east-west pedestrian connections between the waterfront and downtown (Seattle 1994a,b). The Aerial Alternative, like the existing viaduct, will produce proximity impacts such as noise and shade the area under the viaduct. Shade extends to the east during afternoon hours. Both noise and shade are likely to limit the enjoyment of any open space developed on the blocks to the west of Alaskan Way and possibly reduce the likelihood that public or private resources would be devoted to developing such open space amenities.

**Washington State Ferries Colman Dock Ferry Terminal:** Public visual access to the shoreline is blocked by the width of the dock and parked cars for persons using the open space area along the waterfront promenade. This public access area also lacks visual interest due to the lack of retail or other uses. The presence of the proposed aerial structure closer to the ferry terminal will be similar to existing conditions, or might reinforce somewhat the visual dominance of the elevated structure. The provisions for viewing the waterfront along the south side of Pier 50 and from the upper level deck of the Colman Dock are not likely to be affected by the aerial structure. The ferry terminal does not currently meet Seattle Shoreline Master Program standards for public access. Future redevelopment of the facility will be required to meet these standards, as discussed in Chapter 7, Secondary and Cumulative Impacts.

**Fire Station No. 5:** The fire station and dock for fireboats located at the foot of Madison Street will not be affected by operation of the Aerial Alternative, but likely will be displaced during construction. The elements of public access and harbor viewing provided will be somewhat affected by the closer proximity of the aerial structure under this alternative, as discussed for other sites adjacent to the right-of-way.

**Pier 54:** The small public plaza area that features a statue of Ivar Haglund will not be affected by operation of the Aerial Alternative, but likely will be displaced during construction as discussed in Chapter 6, Construction Impacts. The elements of public access and harbor viewing provided will be somewhat affected by the closer proximity of the aerial structure under this alternative. The public access area along the south side of the pier within the Madison Street right-of-way<sup>19</sup> will be less affected further to the west where the visual interest of the waterfront is greater and proximity impacts such as noise will be attenuated.

**Piers 55 and 56:** The deck area between the two piers and public access along the south and west sides of Pier 56 will experience somewhat greater noise and visual proximity impacts from the aerial structure. Impacts will be similar to those of the existing viaduct and will be attenuated by distance for areas further from the street. The public access area at the end of Pier 56 will be minimally affected by the Aerial Alternative.

**Access to Blake Island:** Access to Blake Island State Park by regular boat service from Pier 55 to the Tillicum Village will not be affected by operation of the Aerial Alternative after completion of the project.

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<sup>19</sup> Seattle Street Use Permit 04.25.83

**Pier 57:** The walkway on the side of the transit shed and the area near the end are public access facilities and will be minimally affected by the visual changes or noise from operation of this alternative, after completion of construction.

**Waterfront Park:** The portions of the City of Seattle Waterfront Park consisting of a deck area between Piers 57 and 59 will be the area most affected by proximity impacts from operation of the Aerial Alternative. Proximity impacts such as noise and the visual intrusion of the aerial structure will be somewhat greater because of the greater width of the structure. Proximity impacts will be greatest for the portions of the park closest to the street and be attenuated somewhat by distance for portions of the park further to the west. The effect of noise and visual intrusion on the generally passive use of the park is likely to be similar in character but greater in magnitude as compared to impacts of the existing viaduct. To people enjoying the waterfront amenities at the westerly portions of the park next to the water, the aerial structure is likely to be recognized as an intrusive element, but not to divert substantially from the enjoyment of waterfront views and passive enjoyment. The elimination of the parking under the existing viaduct will limit the total supply of parking near the waterfront. The opportunities to access the waterfront site by car will be restricted by parking supply, unless mitigated by additions to the parking supply as discussed in mitigating measures in Chapter 9, Construction Mitigation.

The proposed future relocation of the Waterfront Park to the north of the existing Pier 59 will likely result in lower impacts because the SR 99 route leaves the waterfront near Pike Street to climb to the Battery Street Tunnel. The greater distance to the alignment provides additional attenuation of proximity impacts such as noise.

**Seattle Aquarium:** The impacts of operation of the Aerial Alternative on the existing Aquarium facilities are likely to be similar to existing conditions. The portions housed in Pier 59 and to the north will be about the same distance from the existing viaduct, with similar proximity impacts.

Three of the four major factors influencing the success of an aquarium in attracting visits could be negatively affected by the Aerial Alternative:

- Visibility, supportive land uses, and strong connections to the water will be reestablished after completion of the seawall reconstruction. However, the overall health and vibrancy of the waterfront may continue to be affected by proximity of the Aerial Alternative.

- Physical accessibility will be affected by the elimination of the parking under the existing viaduct and the resulting reduction in the supply of parking near the waterfront. The perception of a lack of parking or additional distance to parking or higher cost may result in potential patrons choosing other discretionary recreation opportunities and reduce visits. These factors may lead potential attendees to choose alternative elective activities.
- The thematic focus of the Aquarium will not be directly affected, but the delay in implementing plans to build an enhanced facility, together with a decrease in attendance during an extended construction period, may make it more difficult to rebuild attendance and more difficult to build public acceptance of funding a larger aquarium. This may affect the long-term draw of the Aquarium, especially for tourists that may be aware of larger aquariums with more extensive programs at other destinations.

The loss of parking under the existing viaduct and in the triangular parcel across from the Aquarium may affect the perception of accessibility for the 40 percent of the Aquarium visitors who live in King County and are likely to access primarily by private vehicle. The parking supply in the central waterfront will be reduced by about 50 percent, given current plans. The largest current supply of parking is in the public parking garage north of Pike Street. This parking garage entrance to Alaskan Way for users of the Aquarium, however, will be affected by the above-grade lid over the SR 99 roadway. The demand for parking related to the Pike Place Public Market also may affect the perceptions of local visitors as to whether parking for the Aquarium is readily accessible. Parking supply and potential mitigation measures are discussed under Chapter 6, Construction Impacts; Chapter 9, Construction Mitigation, and in Appendix C, Transportation Discipline Report and Appendix P, Economic Technical Memorandum.

**Pioneer Square:** This park at the intersection of Yesler Way and First Avenue is oriented primarily to activities and attractions within the Pioneer Square Historic District. Impacts are likely to be similar to impacts of the existing viaduct due to the similar relative position of the existing viaduct.

**Klondike Gold Rush National Historic Park, Seattle Unit:** This interpretive center in a leased historic building on S. Main Street near Occidental Avenue S. is not likely to be affected directly. New proposed facilities at S. Jackson Street and Second Avenue S. are likely to be less affected because of the greater distance.

**Occidental Park:** This plaza is adjacent to Occidental Avenue S. between S. Washington and S. Main Streets. It is unlikely to be affected by the Aerial

Alternative differently than under existing conditions because it is largely buffered from views.

**Harbor Steps:** This plaza area extending between First Avenue and Western Avenue along University Street is likely to retain the existing level of noise and visual impacts as under existing conditions. The Aerial Alternative will remain a substantial barrier to views of the waterfront. The aerial structure will be the primary source of noise for persons enjoying the open space. Noise from First Avenue to the east is largely blocked by topography, making the aerial structure the main source of noise to the area. The visual and noise impacts, however, are likely to be perceived by users as only one component of the active urban environment in this location and are not likely to directly affect use.

**University Street Green Street:** The Aerial Alternative is likely to have an impact similar to the existing viaduct on the function of this street in fulfilling the functions of providing open space and east–west pedestrian connections to the waterfront (Seattle 1994a). Impacts of noise and shadow on the block between Alaskan Way and Western Avenue are likely to limit the enjoyment of any open space developed and possibly reduce the likelihood that such open space amenities would be developed.

**Seattle Art Museum University Street Plaza:** Impacts of the Aerial Alternative on this public open space along the southerly frontage of the site on University Street will be similar to existing conditions. Because of the elevation and increased distance from Alaskan Way, both visual and noise impacts from the aerial structure are less than for Harbor Steps to the west. During the day, traffic on First Avenue and University Street will continue to produce noise levels that screen noise from the viaduct. During evening and night hours, noise from the aerial structure will be apparent as a separate noise source due to lower traffic volumes and lower noise levels on adjacent streets. During those hours, however, public use of the exterior open space is likely to be low.

**Benaroya Hall Plaza:** Most of the public access areas will not have direct views of the Aerial Alternative because of the elevation difference. The plaza is not likely to receive discernable daytime noise impacts from the aerial structure due to its distance and noise from adjacent streets. Noise from the Aerial Alternative is likely to be noticeable during late evening and nighttime hours when noise from traffic on adjacent streets is low. During those hours, however, public use of the exterior open space is likely to be limited to persons passing through the open space area going to and from performances. The noise from the Aerial Alternative is not likely to affect use or enjoyment of the public open space.

**Pike Street Hillclimb:** The areas of public plaza, stairs, terraces, and landscaping between Western Avenue and Alaskan Way will be affected by noise and shadows from the Aerial Alternative in a similar manner to existing conditions. Views of the waterfront from the upper levels of the Hillclimb will continue to be blocked by the horizontal decks of the aerial structure. The noise and shadows produced by the structure will continue to make the open space area beneath the structure in the westerly portion of the site unwelcoming for extended stays. The Aerial Alternative, however, will be somewhat less of a visual barrier due to the greater column spacing and slightly greater spacing between vehicle levels. The existing viaduct vertical columns are located 50 to 60 feet apart. The columns for the Aerial Alternative will have a span of closer to 80 feet. In addition, the existing viaduct is supported by three columns in this area, one on either side and one near the middle. The Aerial Alternative is proposed to be supported by columns on either side. The result of the design with fewer columns, greater column separation, and slightly greater separation between the upper and lower levels will provide less visual clutter for views to the west under the viaduct (and between levels for views near Western Avenue at a higher elevation). The existing public art installation, *Breaching Orca*, located near the Alaskan Way surface street west of the viaduct will be removed during construction and may be relocated after completion.

### 5.3.3 North Waterfront – Pike Street to Broad Street

**Waterfront Promenade:** Impacts on the promenade north of Pike Street are limited because the Aerial Alternative leaves the Alaskan Way right-of-way at about Pike Street and continues to the north on a separate right-of-way to connect with the Battery Street Tunnel. No changes to width or configurations are proposed. The aerial structure will be visible to about Pine Street, where existing multi-family structures are higher than the roadway and also serve as a noise barrier. The portion of the promenade between Pike and Pine Streets currently focuses on the entry to the Seattle Aquarium. In the future, the redevelopment of the Aquarium and the relocation of the Waterfront Park to the vicinity of Piers 62/63 will further focus the promenade toward the water. The aerial structure will affect linkages to the east, but will have limited impacts on the waterfront promenade.

**Waterfront Trail:** The multi-purpose asphalt pathway that extends north of Pike Street will not be directly affected by operation of the Aerial Alternative. The trail may be affected by options for interim access during construction, as described below under construction impacts, and may be reestablished in a configuration to be addressed at that time. The trail is likely to retain the

visual amenities of enjoyment of scenery as an adjunct to exercise-related activities such as walking, bicycling, and skating.

**Victor Steinbrueck Park:** This facility located on Western Avenue at Virginia Street adjacent to the Pike Street Public Market will continue to experience high noise levels from the Aerial Alternative, which will have a similar visual appearance as the existing viaduct.

**Lenora Street Bridge:** The existing pedestrian bridge that provides a connection from the vicinity of the Pike Street Market to east of the Alaskan Way surface street is proposed to be demolished during construction of the Aerial Alternative. It is not expected to be reconstructed in its present form, although a pedestrian connection to the waterfront may be provided on the corridor. The public seating and waterfront viewing area at the top of the elevator/stairway tower is less likely to be replaced because of the cost of an elevated structure.

**Pier 62/63 Park, Pier 66, the Bell Street Terminal, Edgewater Hotel, Pier 68, Vine Street Green Street, Pier 69, Clay Street Green Street, Pier 70, Belltown Cottage Park, Olympic Sculpture Park, Myrtle Edwards Park, Elliott Bay Park:** These facilities along Alaskan Way north of Pike Street will not be directly affected by operation of the Aerial Alternative.

**Wave Rave Cave:** This public art installation under the existing viaduct will be displaced during construction. A similar space will be available for re-installation after construction is completed or the installation could be relocated elsewhere consistent with the design intent that recognized that future reconstruction of the viaduct may displace the installation.

**First Avenue Project:** This public art installation is located on the sidewalk above the existing Battery Street Tunnel portal. The construction of the extended tunnel portal is not likely to change the context along the street both because the portal curves to the south and because the installation was designed with the expectation that development along the corridor will change with time, but the experience of encounter with the linear work of art will remain available. The extension of the portal will not affect views at this location down Battery Street because the extended portal will curve to the south.

#### 5.3.4 North – Battery Street Tunnel to Ward Street

**Lake Union to Elliott Bay Trail (formerly Potlatch Trail):** This planned facility to link South Lake Union to Elliott Bay will not be affected by the operation of the Aerial Alternative. Closing the Broad Street Underpass and widening Mercer Street to accommodate two-way traffic will likely involve

shifting the Lake Union to Elliott Bay Trail (formerly Potlatch Trail) from an underpass at Roy Street to the widened Mercer Street. The option of lowering Aurora Avenue N. to allow east–west surface streets to connect at-grade would likely result in the Lake Union to Elliott Bay Trail (formerly Potlatch Trail) using a road crossing at Roy Street. Either crossing would serve as a connection, but the proximity impacts of co-location with the Mercer Street undercrossing will subject bicyclists and pedestrians to greater noise, fumes, and other traffic impacts.

**Seattle Center:** This 74-acre site that hosts a variety of cultural and recreational facilities will be affected to some degree by the change in the circulation system related to SR 99/Aurora Avenue N. and the operation of streets that cross SR 99.

Closing the Broad Street Underpass and widening Mercer Street to accommodate two-way traffic will affect the circulation of traffic accessing Seattle Center to some extent, but will not preclude access or necessarily result in a change in use.

The option of lowering Aurora Avenue N. to allow east–west surface streets to connect at-grade would also affect the circulation of traffic accessing Seattle Center. Local circulation would be improved. Circulation to I-5 and other regional destinations would largely depend on the outcome of planning efforts currently underway for South Lake Union.

#### 5.3.5 Seawall – S. King Street to Myrtle Edwards Park

The proposal for reconstructing the seawall along its entire extent from S. King Street to Myrtle Edwards Park is the same as the Rebuild Alternative above. The Frame option would have a similar lack of impacts. After completion of construction, the future seawall would be in virtually the same place and have the same relationship to park, recreation, and public access facilities as the existing seawall.

### 5.4 Tunnel Alternative

The Tunnel Alternative replaces the existing Alaskan Way Viaduct with a six-lane tunnel with a surface street above. Impacts are similar to the Bypass Tunnel Alternative and the Surface Alternative discussed below. All of these alternatives remove the existing aerial structure.

Many of the impacts of the Tunnel Alternative relate to enhanced relationships between the elements of the Seattle park and recreation system within the corridor. Potential beneficial impacts largely relate to opportunities to use the surface area above the tunnel for a variety of

enhanced open space and recreational opportunities. The change in the context would allow elements of the park and recreation system to be woven more closely into the fabric of Seattle's downtown neighborhoods rather than being separated by the existing aerial structure. This difference in relationships applies to specific park facilities discussed below and also relates to the City's identity, stability, urban design, and network of public services (Seattle 2000c).

In the central waterfront area, current conceptual plans include four lanes for traffic, together with medians/turn lanes, bicycle lanes, and parking. This would occupy a width of about 80 feet, a little more than 40 percent of the 180-foot-wide right-of-way. The 40-foot-wide corridor provided for the waterfront trolley would occupy about 20 percent of the right-of-way. Considerable flexibility is available to arrange these elements in various configurations.

A description of impacts on specific park and recreation facilities is provided below. The description within each geographical sub-area first addresses facilities west of the corridor, then facilities to the east. Facilities are addressed from the south to the north.

#### 5.4.1 South – S. Spokane Street to S. King Street

The southerly industrial area south of S. Atlantic Street has few park or recreation facilities except trail corridors passing through the area.

The Tunnel Alternative includes SR 99 at-grade with full-access elevated ramps, which is the same as described above for the Rebuild Alternative. It consists of SR 99 on a north-south orientation as an at-grade roadway, with S. Atlantic Street and S. Royal Brougham Way crossing in an east-west orientation over the highway on elevated structures. Ramps parallel to SR 99 will connect to the east-west streets and continue parallel to SR 99 as elevated ramps connecting between the streets.

Impacts will be similar to the Rebuild Alternative, except for the area of transition to the tunnel.

**Waterfront Trail:** This multi-purpose asphalt pathway will be relocated to the west side of the corridor between S. Atlantic Street and S. King Street. South of S. Atlantic Street on E. Marginal Way. Between S. Atlantic and S. King Streets, one-way frontage streets on either side of the tunnel portal also could accommodate bicycles on surface vehicle lanes and pedestrians on sidewalks. An alternate parallel route will be available to the east on First Avenue, where bicycles could share the road with vehicles and pedestrians could use the sidewalks.

An alternate route over a portion of the corridor will be provided by a new roadway (the Colman Dock Ferry Terminal Access Road) to be constructed to the west on Terminal 46, Pier 48, and a new over-water structure adjacent to the existing ferry terminal. This route is envisioned to provide vehicle access to the ferry terminal and include wide sidewalks adjacent to vehicle lanes and next to the water. This route to the west will be more circuitous and will extend only about a third of the distance to S. Royal Brougham Way but would provide more direct visual access to the water. It is likely that commuter bicyclists will choose the more direct route on the street and those with a largely scenic or recreational interest will choose the route to the west on the ferry access road.

Bicycles and pedestrians on the trail will be adjacent to a busy local street and will experience a less pleasant setting than the existing trail, which has a sense of enclosure from landscape buffers on both sides. Noise impacts, however, will be less than experienced on the existing trail from the traffic on the existing viaduct above. The visual character of a city street with some skyline views to the north also will be available. Bicycles and pedestrians choosing the ferry access road to the west will experience less adjacent traffic, but a more circuitous route. The aesthetic experience on that route will also depend on the details of landscaping and other amenities. The trail north of the tunnel portal is likely to function more for transportation because the route is directly adjacent to highway traffic, primarily views an industrial area, and is likely to be perceived as less conducive to scenic and exercise-related activities such as walking, bicycling, and skating.

**Sports Complexes:** Access to both Safeco Field and the Seahawks Stadium will be enhanced by the ramp configuration at S. Atlantic Street and S. Royal Brougham Way. This ramp configuration, together with the SR 519 connections to I-90 currently under construction, will enhance access for sports events as compared with the southbound off-ramp and northbound on-ramp provide at First Avenue from the existing viaduct. No adverse impacts to access or function of the sports fields are likely from operation of the Tunnel Alternative after construction is complete.

**Jack Perry Memorial Viewpoint:** This shoreline access facility will continue to be provided driveway access off E. Marginal Way. The change in the configuration of E. Marginal Way and SR 99 is not likely to change the enjoyment of views of the Duwamish East Waterway and Port facilities from the site. Noise impacts of the surface roadway are likely to be somewhat less than noise from the existing viaduct, which makes the transition to an elevated structure near S. Holgate Street.

### Option: Side-by-Side Aerial

This option would retain a side-by-side six-lane configuration on the SR 99 mainline on an elevated structure that would pass over S. Atlantic Street and S. Royal Brougham Way. The aerial structure would return to grade to the north and transition to a tunnel section. A northbound off-ramp would curve to the east to access S. Atlantic Street eastbound and would include a separate northbound crossing over S. Atlantic Street to intersect with S. Royal Brougham Way at-grade. A second northbound ramp would leave the mainline north of S. Atlantic Street, pass over S. Royal Brougham Way, and continue parallel to the SR 99 mainline to connect with the Alaskan Way surface street at S. King Street.

A southbound off-ramp would leave the SR 99 mainline north of S. Royal Brougham Way and continue at-grade to intersect with S. Royal Brougham Way and S. Atlantic Street. South of S. Atlantic Street, it would provide for a southbound on-ramp back to the surface SR 99 and also would provide a southbound connection to E. Marginal Way west of the SR 99 roadway.

Specific recreation facilities affected include:

**Waterfront Trail:** The multi-purpose asphalt pathway between S. Atlantic Street and S. King Street would be accommodated on a separate trail on the west side of the interchange as described for the Rebuild Alternative. An additional route for bicycles and pedestrians is to travel on the surface streets south of S. King Street that provide one-way frontage streets on either side of the tunnel portal. On these frontage streets, bicycles would be accommodated in vehicle lanes and pedestrians would be accommodated on sidewalks.

The trail to the west for pedestrians and bicycles would place pedestrians adjacent to roadways carrying high volumes of traffic and would be less pleasant than the existing trail, which has a landscape buffer on both sides. For bicyclists, direct connections to desired destinations would be better served by continuing on the frontage roads south of S. King Street. This would involve potential bicycle/vehicle conflicts where they share a vehicular lane and particularly where on- and off-ramps converge into the roadway. Visual amenities may be somewhat greater with removal of the existing viaduct, but the overall environment is less likely to be conducive to recreation and exercise-related activities such as walking, bicycling, and skating as compared with the existing asphalt trail.

**Mountains to Sound Greenway Trail:** The trail corridor currently planned on the sidewalk on the north side of Atlantic Street between Fourth Avenue and Alaskan Way would be unaffected except where it connects to the Waterfront Trail on the west side of the existing viaduct. In the future, it

would connect with alternate bicycle and pedestrian facilities for the Waterfront Trail as described above.

**Sports Complexes:** Access to both Safeco Field and the Seahawks Stadium would be enhanced by the ramp configuration at S. Atlantic Street and S. Royal Brougham Way as described above.

**Jack Perry Memorial Viewpoint:** This shoreline access facility would continue to have driveway access off E. Marginal Way. The change in the configuration of SR 99 is not likely to change the enjoyment of views that are oriented in the opposite direction toward the Duwamish East Waterway and Port facilities. Proximity impacts such as noise would likely be slightly less than existing conditions because the aerial structure proposed under this option would start further to the north and be lower than the existing viaduct.

#### 5.4.2 Central – S. King Street to Battery Street Tunnel

From S. King Street north to Pike Street, the through traffic on Alaskan Way will be entirely below grade in the tunnel. This will change somewhat the linkages between existing and planned public park and public access facilities in the area.

The removal of the visual barrier and dead space produced by the existing viaduct will improve the integration of the harborfront promenade with the rest of downtown through enhanced east–west pedestrian connections. It will also increase opportunities for developing open space along the waterfront through use of the area utilized by the existing viaduct and parking for other purposes.

A wide variety of potential uses for the Alaskan Way right-of-way are being studied as part of the City of Seattle Central Waterfront Plan, which is currently underway. Conceptual plans for the waterfront portion of Alaskan Way right-of-way envision the following potential uses for the 180-foot-wide corridor:

- A surface street located in the easterly portion of the right-of-way would include additional elements of:
  - An additional northbound lane from Yesler Way to Columbia Street.
  - A center left-turn lane at street intersections with westbound streets.
  - Bicycle lanes on both sides.
- A sidewalk on the east side that will vary between 17 and 25 feet.
- A waterfront promenade from 20 to 35 feet wide on the west side.
- A local access lane separate from the surface roadway to provide access to piers from Yesler Way to Pike Street.

- A separate corridor for the waterfront trolley.
- Parallel parking on both sides of the street.

This design concept would be consistent with the Pioneer Square and Downtown Urban Center Neighborhood Plans policy direction for open spaces to be developed in portions of the street and rail right-of-way along the waterfront (Seattle 1998a, 1999a).

All recreation facilities along the waterfront may experience some adverse impacts from the removal of parking under the existing viaduct, to the extent that parking is not replaced by on-street parking as part of the project or by parking structures that may be developed by public or private parties.

**Waterfront Promenade:** The waterfront promenade will be substantially expanded from its existing 20-foot width. Expansion will provide multiple opportunities for landscaping, seating, and other amenities that will enhance open space functions. The relocation of the surface street to the east and the provision of a local access lane with low traffic volumes and a corridor for the waterfront trolley will separate the promenade from traffic noise and hazards. All these design features will add to pedestrian capacity and additional opportunities to enjoy the waterfront.

Additional width will enhance active recreation activities such as walking and substantially reinforce passive enjoyment by providing additional opportunities for congregating and enjoying amenities such as views and the activities of people. The additional width will provide opportunities for seating that will provide resting areas and settings for longer-term passive activities. The opportunities for enhancement of the corridor through landscaping and interpretive displays would add to visual interest. Proximity impacts such as noise will be substantially reduced by removal of the viaduct. The removal of the visual intrusion of the aerial structure will add the urban context of downtown Seattle as an additional focus of visual interest.

**Waterfront Trail:** The existing multi-purpose asphalt pathway will be replaced by a trail west of the roadway between S. King Street and Yesler Way. North of Yesler Way, the conceptual plans feature sidewalks much wider than the existing facility and by bicycle lanes. Both pedestrian and bicycle mobility will be increased in this area and bicycle and pedestrian conflicts will be reduced. This will enhance the environment both for commuters and for bicyclists choosing this area for primarily sightseeing or exercise. Opportunities for development of amenities such as landscaping and street furniture will enhance passive activities such as congregating and enjoying the setting, as well as recreational walking. The wider sidewalk in conjunction with the existing privately owned setback between the buildings

and the right-of-way would likely lead to private outdoor uses that would enhance the pedestrian environment.

The waterfront will be further from the easterly sidewalk than the existing asphalt trail, but the greater width of pedestrian facilities on both sides of the street will likely add to pedestrian activity and add to the general activity level and the appeal of the setting. Proximity impacts such as noise will be substantially reduced by removal of the viaduct. Overall, the opportunities for replacement facilities on the east side of the corridor will provide greater amenities for enjoyment of the setting for those who congregate for lunch for relaxation and diversion. It also will tend to encourage exercise-related activities such as walking, bicycling, and skating, as well as bicycling and walking as part of sightseeing activities.

**Pier 48 Periscope Viewpoint:** The Tunnel Alternative will not directly affect this Port of Seattle facility. It is likely to be displaced by WSDOT's planned expansion of the Colman Dock Ferry Terminal as discussed in Chapter 7, Secondary and Cumulative Impacts. Access by car will be more limited with the elimination of the parking under the existing viaduct. If the Periscope Viewpoint or a similar facility were retained or replaced, it would likely be accessed primarily by pedestrians and could experience higher use with improved pedestrian facilities along the waterfront promenade and from enhanced connections to the Pioneer Square area.

**Pier 48 Alaska Square:** The proposed ferry access road from Pier 48 to Colman Dock would displace this park, although this viewpoint is currently closed to the public due to safety concerns related to a failing bulkhead. The requirements for public access to the shoreline under the Seattle Shoreline Master Program require public access facilities to total at least 15 percent of the developed lot area.<sup>20</sup> See the discussion of the Colman Dock Expansion Project in Chapter 7, Secondary and Cumulative Impacts.

**S. Washington Street Pergola and Public Dock:** The Tunnel Alternative will displace this facility. The westerly side of the tunnel will be located 36 feet waterward of the existing seawall with the ferry access road extending about 65 feet from the existing seawall. The pergola is proposed to be relocated after construction is completed at the foot of S. Washington Street at the north edge of Pier 48. The context of the pergola will depend on the configuration of the surface street constructed over the tunnel. With a wider promenade along the waterfront and the absence of the existing viaduct, the area is likely to be more inviting for pedestrian circulation down S. Washington Street from the

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<sup>20</sup> SMC 23.60.702

Pioneer Square Historic District. With the ferry holding and access, the pergola could be isolated by additional distance and roadway, or it could become an element in an extensive waterfront promenade, depending on other waterfront amenities included in the proposal (see Chapter 7, Secondary and Cumulative Impacts). Overall, the additional area provided would allow a setting that could encourage seating areas and passive enjoyment of the waterfront separated from the traffic on the Alaskan Way surface street.

**Marion Street Green Street:** This Green Street will be enhanced by removal of the noise and shadow from the existing viaduct and by additional pedestrian circulation and open space on the Alaskan Way right-of-way. Elements of Green Street design concepts (including landscaping, benches, recreational equipment, and public art) will all be more attractive to pedestrians in the absence of an aerial structure. Such amenities might be developed by the City within the right-of-way or by private development on the parcel on the south side of the street east of Western Avenue. These facilities will provide an enhanced environment for passive enjoyment of the area for relaxation.

**Colman Dock Ferry Terminal:** The pier providing ferry access, vehicle queuing, and public access and shoreline viewing will not be directly affected by operation of the Tunnel Alternative. Pedestrian circulation along the widened promenade will continue to experience an area of low visual interest and little pedestrian-oriented activity if the present configuration of parking on the ferry terminal is retained.

**Fire Station No. 5:** The fire station and dock for fireboats will not be directly affected by operation of the Tunnel Alternative. The fire station and the small public access and harbor viewing area north of the station could be reopened after construction. The potential expansion plans for the Colman Dock Ferry Terminal, however, could displace and relocate the fire station. Public access required by the Seattle Shoreline Master Program might lead to enhanced open space.

**Pier 54:** This private pier, the small public plaza area north of Fire Station No. 5 with a statue of Ivar Haglund, and the public access area along the south side of the pier will not be directly affected by operation of the Tunnel Alternative. The widened promenade will enhance the existing pedestrian areas. The potential expansion plans for the Colman Dock Ferry Terminal (discussed in Chapter 7, Secondary and Cumulative Impacts) could affect the pedestrian interest provided by viewing the fireboats at the existing site, depending on what they are replaced with.

**Piers 55 and 56:** The public access provided on the deck area between the two piers and along the south and west sides of Pier 56 will not be affected by the operation of the Tunnel Alternative. The widened pedestrian promenade will enhance these public access areas and likely lead to a livelier environment and benefits to the tour boat business, retail shops, and restaurants on the piers that will add to pedestrian activity and interest of public access.

**Access to Blake Island:** Access to Blake Island State Park in Puget Sound by regular boat service from Pier 55 to the Tillicum Village will be potentially enhanced by additional pedestrian activity along the waterfront if additional customers are attracted.

**Pier 57:** The private pier and public access areas will not be adversely affected by operation of the Tunnel Alternative and will likely be enhanced by surface improvements that will enhance the pedestrian promenade.

**Waterfront Park:** The City of Seattle Waterfront Park, in its existing configuration between Piers 57 and 59, will not be adversely affected by the operation of the Tunnel Alternative and will likely be enhanced by surface improvements that will enhance the pedestrian promenade. The experience of park users in the easterly portion of the park near Alaskan Way will be enhanced by elimination of the noise and visual impacts of the existing viaduct. Connections between the park and downtown along east–west streets such as University Street and the Pike Street Hillclimb will be enhanced by removal of the existing aerial structure and may increase pedestrian use. Plans for relocation of the park as part of Aquarium expansion are discussed in Chapter 7, Secondary and Cumulative Impacts.

**Seattle Aquarium:** The existing Aquarium occupies Piers 59 and 60. The existing facility may experience benefits and adverse impacts from the design features incorporated in the tunnel. The primary beneficial impact relates to connections between the Aquarium and downtown along east–west streets such as University Street and the Pike Street Hillclimb. The potential for development of a public park or open space in the triangular parcel at the foot of Pike Street also will enhance the area as a gathering place and tend to increase the exposure of the Aquarium. The reduction of the noise and shadow impacts of the existing viaduct will greatly increase the desirability of this area for pedestrians.

Noise and visual impacts on the Aquarium are projected to decrease from the replacement of the aerial roadway structures at this location. The tunnel is designed to transition to an aerial structure that will continue on the existing alignment to climb the hill to the Battery Street Tunnel. The tunnel will transition to a sloped roadway with an above-grade lid in the immediate

vicinity of Pike Street. The lid will terminate and the road will be above-grade just north of Pine Street. The lid will contain noise impacts in the vicinity of the Aquarium and the Pike Street Hillclimb. Noise impacts from the surface roadway to the waterfront will largely be blocked by the apartment structures north of Pine Street. The top of the lid over the roadway is estimated to be about 20 feet above grade at Pine Street, which will result in a stepped configuration of the open space between the lid and Alaskan Way. Portions of the lid may connect with stepped levels of the Pike Street Hillclimb. The lid may be used for a park or other open space.

Enhancement of the corridor along Pike Street as the result of removal of the aerial structures may be especially significant for the Aquarium in strengthening the relationship to the Pike Place Market, which is a major tourist destination. This connection may enhance tourist visits, which currently compose about 40 percent of attendees.

The additional tunnel portal on Alaskan Way north of Pine Street will place a sloping tunnel portal in the middle of the travel lanes of the surface street for about 400 feet. This will consume a substantial portion of the 106-foot-wide right-of-way and reduce surface lanes, parking, and sidewalk width. This may affect the existing charter bus parking or general parking available to Aquarium visitors. It also may affect pedestrian circulation to the north to the Pier 66 cruise terminal, marina restaurants, and other destinations.

The loss of parking under the existing viaduct and in the triangular parcel across from the Aquarium may affect the perception of accessibility for the 40 percent of the Aquarium visitors who live in King County and are likely to access primarily by private vehicle. The parking supply in the central waterfront will be reduced by about 50 percent, given current plans. The largest current supply of parking is in the public parking garage north of Pike Street. This parking garage entrance to Alaskan Way for users of the Aquarium, however, will be affected by the above-grade lid over the SR 99 roadway. The demand for parking related to the Pike Place Public Market also may affect the perceptions of local visitors as to whether parking for the Aquarium is readily accessible. Parking supply and potential mitigation measures are discussed under Chapter 6, Construction Impacts; Chapter 9, Construction Mitigation; and in Appendix C, Transportation Discipline Report and Appendix P, Economic Technical Memorandum.

Disposal of fire treatment chemicals within the tunnel released inadvertently or during a fire may pose a risk to water quality in Elliott Bay that would directly affect the Aquarium. The water supply of the Aquarium is drawn from intakes at the west end of Pier 59. Chemical contamination of the water supply would have serious impacts on the organisms within the Aquarium.

There are many factors that may affect the success of a facility such as the Aquarium. The replacement of the existing viaduct and the reduction in noise and visual impacts are likely to enhance the context, increase the overall appeal of the waterfront as a recreation destination, and add to the pool of potential visitors.

**Pioneer Square:** This triangular plaza at the intersection of Yesler Way and First Avenue in the Pioneer Square Historic District will experience limited direct impact from the removal of the existing viaduct and replacement with a tunnel. The associated lower noise levels are not likely to be perceived during the day due to noise from traffic on First Avenue and Yesler Way. The existing visual intrusion of the viaduct along the Yesler Way corridor to the waterfront will be removed. This will enhance the visual connection to the waterfront and may encourage more pedestrian movement to the waterfront. This may be limited by the lack of visual focus at the end of the corridor and the relatively unappealing pedestrian environment of the ferry terminal. Possible redevelopment of buildings along Alaskan Way to provide more pedestrian-oriented facilities is addressed in Chapter 7, Secondary and Cumulative Impacts.

**Klondike Gold Rush National Historic Park, Seattle Unit:** This interpretive center in a leased historic building on S. Main Street near Occidental Avenue S. is not likely to be affected directly. New proposed facilities at S. Jackson Street and Second Avenue S. are likely to be less affected because of the greater distance. Interpretive walks offered by the facility may expand to include areas of the waterfront with the removal of the viaduct.

**Occidental Plaza:** This plaza on Occidental Avenue S. between S. Washington and S. Main Streets may experience limited indirect impacts from changes in traffic circulation and general enhancement of the Pioneer Square Historic District as discussed in Chapter 7, Secondary and Cumulative Impacts.

**Harbor Steps:** This plaza area that extends down University Street between First Avenue and Western Avenue will be enhanced by the lower noise and the removal of the visual barrier of the existing viaduct. The visual integration of the waterfront with the corridor down University Street will be enhanced. These changes in the environment will likely enhance use as a gathering place for pedestrians and for outdoor restaurant seating and similar uses. Increased use as a pedestrian corridor to the waterfront is likely.

**University Street Green Street:** This Green Street will be enhanced by removal of the noise and shadow from the existing viaduct and by additional pedestrian circulation and open space on the Alaskan Way right-of-way.

Elements of Green Street design concepts that will integrate and continue features of Harbor Steps to the east include landscaping, benches, recreational equipment, and public art. These elements will all be more attractive to pedestrians in the absence of an aerial structure. Such amenities might be developed by the City within the right-of-way or by private development on the parcel on the north side of the street between Western Avenue and Alaskan Way, as further discussed in Chapter 7, Secondary and Cumulative Impacts. The overall effect is likely to be a stronger visual integration of downtown and the waterfront along this corridor and greater use for movement to and from the waterfront and by persons congregating in the corridor.

**Seattle Art Museum University Street Plaza:** This public open space extending along University Street and First Avenue will be affected slightly by the removal of the existing viaduct as a visual barrier to the waterfront due to the distance and elevation of the plaza. The plaza might see greater use as open space due to increased pedestrian movement to the waterfront.

**Benaroya Hall Plaza:** This public open space extending along University Street and Second Avenue will experience very little direct impact from the removal of the existing viaduct as a visual barrier to the waterfront. It is a very minor element of the visual environment due to the distance and elevation of the plaza. The plaza might see greater use due to increased pedestrian movement to the waterfront.

**Pike Street Hillclimb:** This corridor of stairs, terraces, and landscaping between Western Avenue and Alaskan Way will experience a substantial change in character with removal of the existing viaduct.

The noise and view obstruction from the existing aerial structure that currently dominates the upper portion of the corridor will be replaced by relatively expansive views of the waterfront and Elliott Bay.

The open-space area at the bottom of the corridor that is currently dominated by noise and shadows from the existing viaduct will be open to sunlight and relatively buffered from the surface street traffic noise. Additional open space opportunities provided over the tunnel and lid together with the triangular parcel north of Pike Street have the potential to substantially increase the public open space at this area. The lid over the portion of roadway that transitions to an above-grade facility north of Pine Street is projected to be about 20 feet above grade at its northern end. This will likely result in a stepped configuration of the open space between the lid and Alaskan Way. Portions of the lid may connect with midlevel terraces of the Pike Street Hillclimb. The need to maintain access to the ground level of the existing

building north of Pike Street may, however, limit the ability of the northerly portion of the right-of-way to relate directly to the Hillclimb.

The orientation of the corridor between the Pike Place Public Market and the waterfront would probably result in additional use for pedestrian movement and congregation with the removal of the existing aerial structure and expanded open space.

#### 5.4.3 North Waterfront – Pike Street to Broad Street

**Waterfront Promenade:** Impacts on the promenade relate primarily to the tunnel portal north of Pine Street. The width of the promenade will be retained at close to existing dimensions. At the transition from tunnel to surface roadway, proximity impacts such as noise will be similar to existing conditions. North of the portal, proximity impacts might increase due to higher traffic volumes attracted to the Alaskan Way surface street by the tunnel access. Opportunities for enhancing the width of the pedestrian corridor will be available north of the portal, depending upon the extent to which the vehicular roadway was expanded for left-turn lanes and bicycle lanes.

**Waterfront Trail:** The portion of the multi-purpose asphalt pathway that extends between Pike and Lenora Streets will be affected by the tunnel portal that extends from north of Pine Street to about 250 feet south of the Lenora Street alignment. Accommodating the width of the portal is proposed through a change in configuration on the easterly side of the Alaskan Way right-of-way. Currently, a concrete sidewalk is provided next to the Alaskan Way surface street with the waterfront trolley track to the east and a concrete sidewalk and asphalt surface trail on the far east side of the right-of-way adjacent to apartment buildings. The proposed configuration will place the trolley adjacent to vehicle lanes with a single 9-foot-wide pedestrian walkway at the east side of the right-of-way.

The reduced width of the walkway will reduce pedestrian capacity and comfort. The lack of bicycle lanes on the street will potentially increase bicycle/vehicle and bicycle/pedestrian conflicts. North of the tunnel portal, pedestrian facilities on the east side of the roadway may be reduced in width to provide turn lanes at intersections to accommodate higher traffic volumes. In the vicinity of the portal, narrower facilities will discourage users from lingering in the area for relaxation and diversion. For people using the corridor for exercise-related activities such as walking, bicycling, and skating, the restricted width at the portal area will not necessarily lead to avoidance of use of the rest of the corridor where visual amenities remain. In this constricted area, users will likely transit through more rapidly.

**Victor Steinbrueck Park:** This facility located on Western Avenue at Virginia Street adjacent to the Pike Street Public Market will continue to experience high noise levels from the adjacent roadway. The roadway will be 6 to 8 feet lower than the existing viaduct at the southern end of the park due to the grade from the lower elevation of the tunnel at the bottom of the hill.

**Lenora Street Bridge:** The existing pedestrian bridge that provides a connection from the vicinity of the Pike Street Market to east of the Alaskan Way surface street is proposed to be demolished during construction. Replacement facilities are not in current plans; however, some provision for a pedestrian connection to the waterfront is expected to be provided on the corridor. The public seating and waterfront viewing area at the top of the elevator/stairway tower is less likely to be replaced than a pedestrian connection due to the cost of an elevated structure.

**Pier 62/63 Park:** This Seattle Park will be primarily affected by the tunnel portal that extends north from near the midpoint of the pier. Vehicular access will be somewhat impaired for parking, pickup/drop off, and other local maneuvers due to the single lane provided on each side of the portal. Loss of parking also will affect use of the facility. Pedestrian access along the promenade may be impaired by additional pedestrian volumes due to reduced pedestrian facilities on the east side of the street. Noise levels are likely to be similar to existing conditions, although a slight reduction may be experienced due to the barrier effect of the depressed portion of the portal in the vicinity of the pier and lower vehicle volumes and speeds on the surface lanes and the lack of noise from the tunnel and lidded portions of SR 99. The summer outdoor concert series will be affected by parking and drop-off areas needed to set up and operate the performances (Jennings 2004 personal communication).

**Pier 66, the Bell Street Terminal, Edgewater Hotel, Pier 68, Vine Street Green Street, Pier 69, Clay Street Green Street, Pier 70, Belltown Cottage Park, Olympic Sculpture Park, Myrtle Edwards Park, Elliott Bay Park:** Public access facilities at these locations will not be directly affected by operation of the Tunnel Alternative, except to the extent that traffic on this section of road may increase and left-turn lanes may be added for eastbound streets. The art installations at either side of the intersection at Vine Street and Alaskan Way can be relocated to an analogous position adjacent to the BNSF rail lines and will continue to meet the intent of the work in evoking the industrial heritage of the waterfront.

**Wave Rave Cave:** This public art installation under the existing viaduct will be displaced. A similar space may be available for reinstallation after construction is completed, or the installation could be relocated consistent

with the design intent that recognized that future reconstruction of the viaduct may displace the installation.

**First Avenue Project:** This public art installation on the sidewalk above the existing Battery Street Tunnel portal is not likely to be affected by the extended tunnel portal because the context along the street and the views to the west along Battery Street will both remain because the portal curves to the south.

#### 5.4.4 North – Battery Street Tunnel to Ward Street

Impacts in this area under the Tunnel Alternative are similar to impacts discussed above for the Aerial Alternative.

**Lake Union to Elliott Bay Trail (formerly Potlatch Trail):** This planned facility to link South Lake Union to Elliott Bay will not be affected by the operation of the Tunnel Alternative.

**Seattle Center:** This 74-acre site that hosts a variety of cultural and recreational facilities will be affected to some degree by the change in the circulation system related to SR 99/Aurora Avenue N. and the operation of streets that cross SR 99.

Closing the Broad Street Underpass and widening Mercer Street to accommodate two-way traffic will affect the circulation of traffic accessing Seattle Center as discussed for the Aerial Alternative.

#### 5.4.5 Seawall – S. King Street to Myrtle Edwards Park

The seawall reconstruction will be accommodated by the westerly wall of the tunnel from S. Washington Street to Union Street and will involve no operational impacts other than those described above. From Union Street to Myrtle Edwards Park, impacts of seawall reconstruction will be as described for the Aerial Alternative. There will be no impact after completion of construction because the future seawall will be in virtually the same place and have the same relationship to park, recreation, and public access facilities as the existing seawall.

### 5.5 Bypass Tunnel Alternative

The Bypass Tunnel Alternative shares a similar design approach to the Tunnel Alternative. The major difference that affects park and recreation resources is the lack of tunnel connections and associated portals on Alaskan Way north of Pine Street and the addition of a third lane in each direction on the surface street between Yesler Way and Pike Street. This is generally accommodated in a design of the surface street that is similar to the Tunnel Alternative. The

additional lane width can be accommodated by eliminating or reconfiguring medians, changing the width of the trolley corridor or locating the trolley in the street, changing the width of sidewalks on the east or west side of Alaskan Way, or moving the sidewalk on the east side onto land currently outside the right-of-way. The surface street design north of Pike Street generally is the same as the Tunnel Alternative, i.e., two lanes in each direction. Impacts are similar to those described above for the Tunnel Alternative, except as where additional surface lanes affect areas of pedestrian congregation.

### 5.5.1 South – S. Spokane Street to S. King Street

The Bypass Tunnel Alternative includes construction of SR 99 at-grade with a full-access elevated ramp configuration in each direction. The associated impacts are generally the same as described above for the Tunnel Alternative and consist of SR 99 on a north-south orientation as an at-grade roadway, with S. Atlantic Street and S. Royal Brougham Way crossing in an east-west orientation over the highway on elevated structures.

Impacts will be similar to the Tunnel Alternative, except for the area of transition to the tunnel, where the bypass tunnel is two lanes compared to the three-lane capacity of the Tunnel Alternative.

**Waterfront Trail:** This multi-purpose asphalt pathway will be replaced by a new trail between S. Atlantic Street and S. King Street as discussed for the Tunnel Alternative. An alternate parallel route will also be available to the east on First Avenue and on the ferry access road to be constructed to the west on Terminal 46, Pier 48, and the new over-water structure south of the existing ferry terminal.

The user comfort and aesthetic experience of the route will depend on the details of design, such as width, landscaping, and other amenities.

**Mountains to Sound Greenway Trail:** The trail will be unaffected except where it will connect with the relocated Waterfront Trail.

**Sports Complexes:** Access to both Safeco Field and the Seahawks Stadium will be enhanced by the ramp configuration at S. Atlantic Street and S. Royal Brougham Way as compared with the limited access provided by the existing viaduct southbound off-ramp and northbound on-ramp at First Avenue.

**Jack Perry Memorial Viewpoint:** This shoreline access facility will continue to be provided similar access and will experience less proximity impact from noise.

### 5.5.2 Central – S. King Street to Battery Street Tunnel

From S. King Street north to Pike Street, a large component of through traffic will be accommodated in the bypass tunnel. Traffic from the Interbay Area, however, will not access the bypass tunnel at Elliott/Western as with the existing viaduct. That traffic will use the Alaskan Way surface street and will be accommodated by a third vehicular lane in this section.

A variety of options for use of the Alaskan Way right-of-way are being explored as part of the City's Waterfront Plans. Conceptual plans for the waterfront portion of Alaskan Way right-of-way developed to date are similar to the Tunnel Alternative discussed above. The following features may affect parks, open space, and public access resources:

- The surface street located in the easterly portion of the right-of-way will be expanded to include a third lane in both the northbound and southbound directions. The additional lanes could be accommodated a number of ways, including limiting the corridor provided for the waterfront trolley, changing median width, changing sidewalk width on both sides, or shifting the sidewalk on the east further to the east, which could affect development on the setback that currently exists between buildings and the existing right-of-way.
- The waterfront promenade could be narrower in some areas as compared with the Tunnel Alternative, but could be wider than the existing walkway.
- On the west side of the surface street, the local access lane to serve the piers between Yesler Way and Union Streets could be retained.
- Bicycle lanes could be provided on both sides of the street, as in the Tunnel Alternative.
- Parallel parking could be provided on the west side of the street adjacent to the service lane.

As with the Tunnel Alternative, the removal of the visual barrier produced by the existing viaduct will improve the integration of the harborfront promenade with the rest of downtown through enhanced east-west pedestrian connections and will increase opportunities for developing open space along the waterfront. Increased traffic volumes on the Alaskan Way surface street, as compared with the Tunnel Alternative, may retard pedestrian movement somewhat through longer waiting times at the street crossings. Noise levels are not likely to be much different with greater traffic volumes because of the slow speed of surface traffic.

This design concept is consistent with the Pioneer Square and Downtown Urban Center Neighborhood Plans policy direction for open spaces to be developed in portions of the street and rail right-of-way along the waterfront,

but will provide fewer opportunities for park and recreation uses than existing conditions (Seattle 1998a, 1999a). The additional vehicular lanes may displace about a 20-foot-wide corridor on the east side of the right-of-way devoted to private open space under the Tunnel Alternative.

The bypass tunnel will also displace the surface parking under the existing viaduct and will affect access by car, to the extent that parking is not replaced by on-street parking or parking structures.

**Waterfront Promenade:** The waterfront promenade will be substantially expanded from its existing 20-foot width as with the Tunnel Alternative. Expansion will provide similar opportunities for landscaping, seating, and other amenities. As compared with existing conditions, this will enhance pedestrian capacity, active recreation such as walking, and passive pursuits. The expansion of the surface street will not affect the promenade substantially due to the buffer provided by the local access lane and the trolley corridor. Opportunities to relate to east–west streets connecting to downtown will not be substantially changed by the additional crossing time required for an additional lane, even if greater traffic volumes lead to less frequent pedestrian crossing cycles.

The opportunities for enhancement of the promenade as a linear recreation corridor will be similar to the Tunnel Alternative but further constrained by the greater street width. The enhancements to the physical character of the promenade will be reinforced by the removal of the visual barrier between the waterfront and downtown and reduction in noise impacts from removal of the existing viaduct.

**Waterfront Trail:** The existing multi-purpose asphalt pathway will be replaced by a trail west of the surface street between S. King Street and Yesler Way. North of Yesler Way, the conceptual design includes bicycle lanes and a sidewalk on the east side of the right-of-way. The reduction in the width of the sidewalk corridor on the east between buildings and the roadway will reduce somewhat the amenities for pedestrians and the opportunities for private development of restaurants with outdoor activities that will enhance the pedestrian environment. The enjoyment of this part of the corridor for exercise-related activities or the enjoyment of the scene as an adjunct to walking for enjoyment will be somewhat less than the Tunnel Alternative, but substantially greater than with the visual and noise impacts of the existing viaduct or the Aerial Alternative.

**Pier 48 Periscope Viewpoint:** As with the Tunnel Alternative, this public access facility will not be directly affected but may be displaced by future plans to expand the Colman Dock Ferry Terminal as discussed in Chapter 7,

Secondary and Cumulative Impacts. Pedestrian access will be reinforced by improved pedestrian mobility along the waterfront promenade and enhanced connections to the Pioneer Square area.

**Pier 48 Alaska Square:** The westerly portion of the tunnel and the proposed ferry access roadway will displace this park, which is currently closed to the public for safety reasons due to a damaged bulkhead.

**S. Washington Street Pergola and Public Dock:** This facility will be displaced by the Bypass Tunnel Alternative. The pergola is proposed to be relocated after construction is completed at the analogous location at the foot of S. Washington Street. After relocation, the context may be more inviting for pedestrian circulation from the waterfront and the Pioneer Square Historic District, depending on the design of the waterfront promenade and other open space. The wider street may limit pedestrian crossings somewhat due primarily to less frequent pedestrian crossing cycles. Attention to design and other pedestrian attractions will be required to counter the potential isolation of the facility by greater distance and the additional ferry access road. The appeal of the setting is likely to be the primary determinant in whether people cross the street to get there. That will be affected not only by this project but also by other development in the area, as discussed in Chapter 7, Secondary and Cumulative Impacts.

**Marion Street Green Street:** This Green Street will be enhanced as in the Tunnel Alternative by removal of the noise and shadow from the existing viaduct and by additional pedestrian circulation and open space on Alaskan Way. The narrowing of pedestrian-oriented space on the east side of the right-of-way could reduce the open space value somewhat, as compared with the Tunnel Alternative.

**Colman Dock Ferry Terminal:** As with the Tunnel Alternative, the ferry terminal will not be directly affected by operation of the Bypass Tunnel Alternative. Pedestrian interest along the widened promenade will continue to be low if the present configuration of parking on the ferry terminal is retained.

**Fire Station No. 5:** The small public access and harbor viewing area north of the station could be reopened after construction. The potential expansion plans for the Colman Dock Ferry Terminal, however, could displace and relocate the fire station as discussed in Chapter 7, Secondary and Cumulative Impacts.

**Piers 54, 55, 56, and 57:** The public access areas on these private piers will not be directly affected. The widened pedestrian promenade and lower noise levels from removal of the existing viaduct will improve the pedestrian

environment and benefit the tour boat business, retail shops, and restaurants on the piers.

**Access to Blake Island:** Access to Blake Island State Park in Puget Sound by regular boat service from Pier 55 to the Tillicum Village will be potentially enhanced by additional pedestrian activity along the waterfront.

**Waterfront Park:** The City of Seattle Waterfront Park, in its existing configuration between Piers 57 and 59, will not be adversely affected by the operation of the Bypass Tunnel Alternative and will likely be enhanced by surface improvements that will enhance the pedestrian promenade. The removal of the existing viaduct will enhance the experience of park users near Alaskan Way by elimination of the visual impacts of the existing viaduct and reduction in noise. Use and activity within the park may be enhanced by higher use of connections between the park and downtown along east–west streets with the removal of the barrier provided by the existing aerial structure.

**Seattle Aquarium:** The existing Aquarium in Piers 59 and 60 will experience impacts similar to the Tunnel Alternative. Potential enhancement of public open space in the vicinity, including reduction of the noise and shadow impacts of the existing viaduct, park development of the tunnel lid and the triangular parcel at the foot of Pike Street that is currently used as parking, and enhanced east–west connections to downtown may increase patronage at the Aquarium.

The loss of existing surface parking under the existing viaduct and in the triangular parcel across from the Aquarium may affect access by private vehicle, unless other facilities are provided.

Fire suppression chemicals pose a potential threat to the water quality essential to the collection.

**Pioneer Square:** This triangular plaza at the intersection of Yesler Way and First Avenue in the Pioneer Square Historic District would experience limited impact from replacement of the existing viaduct with the bypass tunnel and surface street if traffic on adjacent streets increases. Perceptions of enhanced connections to the waterfront may encourage more pedestrian movement on Yesler Way to and from Pioneer Square.

**Klondike Gold Rush National Historic Park, Seattle Unit:** This interpretive center in a leased historic building on S. Main Street near Occidental Avenue S. is not likely to be affected directly. New proposed facilities at S. Jackson Street and Second Avenue S. are likely to be less affected because of the greater distance. Interpretive walks offered by the facility may expand to include areas of the waterfront with the removal of the viaduct.

**Occidental Plaza:** This plaza on Occidental Avenue S. between S. Washington and S. Main Streets may experience limited indirect impacts from changes in traffic circulation and general enhancement of the Pioneer Square Historic District as discussed in Chapter 7, Secondary and Cumulative Impacts.

**Harbor Steps:** This plaza area that extends down University Street between First Avenue and Western Avenue will be enhanced by the lower noise and the removal of the visual barrier of the existing viaduct as with the Tunnel Alternative.

**University Street Green Street:** This Green Street will be enhanced by removal of the noise and shadow from the existing viaduct as with the Tunnel Alternative and will likely experience additional pedestrian use. The enhanced environment may increase the likelihood of implementation of Green Street design concepts such as landscaping, benches, recreational equipment, and public art by the City or by private development on the parcel on the north side of the street.

**Seattle Art Museum University Street Plaza, Benaroya Hall Plaza:** These public open spaces extending along University Street will experience very little direct impact from the removal of the existing viaduct as a visual barrier to the waterfront due to distance and elevation. The plazas might see greater use due to increased pedestrian movement to the waterfront.

**Pike Street Hillclimb:** This corridor of stairs, terraces, and landscaping between Western Avenue and Alaskan Way will experience a substantial change in character with removal of the existing viaduct as discussed for the Tunnel Alternative (see Section 5.4.2). The orientation to the waterfront and Elliott Bay will be enhanced. Use as a corridor to the waterfront and as a pedestrian congregation area will be enhanced by the removal of noise and shadow impacts and the additional open space opportunities provided over the tunnel and as well as the triangular parcel north of Pike Street. As with the Tunnel Alternative, the lid over the portion of roadway north of Pine Street is projected to be about 20 feet above grade at its northern end. This will likely result in a stepped configuration of the open space between the lid and Alaskan Way. The existing public art installation could be reinstalled after completion of construction.

### 5.5.3 North Waterfront – Pike Street to Broad Street

**Waterfront Promenade:** Impacts of the Bypass Tunnel Alternative on the promenade will differ from impacts of the Tunnel Alternative due to the absence of the tunnel portal north of Pine Street. The width of the promenade and the surface street will be retained at close to existing dimensions.

Proximity impacts from traffic on the road may be somewhat greater because of higher traffic volumes, although low speeds and congestion at peak hours will limit noise levels. Opportunities for enhancing the width of the pedestrian corridor will be available, depending upon the extent to which the vehicular roadway was expanded for left-turn lanes and bicycle lanes.

**Waterfront Trail:** The current configuration is likely to be retained on the east side of the right-of-way with a concrete sidewalk next to the Alaskan Way surface street and an asphalt surface trail on the far east side of the right-of-way adjacent to apartment buildings, with the waterfront trolley tracks between the two. No change in pedestrian or bicycle capacity or comfort will occur. The amenities that are attractive for use of the area for exercise or walking for pleasure will remain similar to existing conditions.

**Victor Steinbrueck Park:** This facility located on Western Avenue at Virginia Street adjacent to the Pike Street Public Market will continue to experience high noise levels from the adjacent roadway. The roadway, however, will be somewhat narrower than the Tunnel Alternative because it carries two rather than three lanes and will carry slightly lower traffic volumes. Like the Tunnel Alternative, it will be 6 to 8 feet lower than the existing viaduct at the southern end of the park due to the grade from the lower elevation of the tunnel at the bottom of the hill.

**Lenora Street Bridge:** The existing pedestrian bridge and overlook will be demolished during construction. It is not expected to be reconstructed in its present form, although a pedestrian connection to the waterfront may be provided on the corridor. The public seating and waterfront viewing area at the top of the elevator/stairway tower is less likely to be replaced.

**Pier 62/63 Park:** This Seattle Park will be little affected by operation of the Bypass Tunnel Alternative. The street adjacent to the pier will be similar to the existing configuration with four lanes and parking, although it may carry somewhat higher traffic volumes. Vehicular and pedestrian access will be similar to existing conditions. Noise levels from additional traffic are not likely to be perceptible to the average person due to the slow speeds of traffic on the Alaskan Way surface street. The summer outdoor concert series is not likely to be affected differently than existing conditions.

**Pier 66, the Bell Street Terminal, Edgewater Hotel, Pier 68, Vine Street Green Street, Pier 69, Clay Street Green Street, Pier 70, Belltown Cottage Park, Olympic Sculpture Park, Myrtle Edwards Park, Elliott Bay Park:** Public access facilities at these locations will not be directly affected by operation of the Bypass Tunnel Alternative, except to the extent that traffic on this section of road may increase and left-turn lanes may be added. The art

installations at either side of the intersection at Vine Street and Alaskan Way can be relocated to an analogous position adjacent to the BNSF rail lines and will continue to meet the intent of the work in evoking the industrial heritage of the waterfront.

**Wave Rave Cave:** This public artwork under the existing viaduct east of Western Avenue will be displaced. A similar space may be available for re-installation after construction is completed, or the installation could be relocated consistent with the design intent that recognized that future reconstruction of the viaduct may displace the work.

**First Avenue Project:** This public art installation is located on the sidewalk above the existing Battery Street Tunnel portal. As mentioned for alternatives above, the construction of the extended tunnel portal is not likely to change the context along the street or the views to the west along Battery Street because the portal curves to the south.

#### 5.5.4 North – Battery Street Tunnel to Ward Street

Impacts in this area under the Bypass Tunnel Alternative are similar to impacts discussed above for the Aerial Alternative and Tunnel Alternative.

**Lake Union to Elliott Bay Trail (formerly Potlatch Trail):** This planned facility to link South Lake Union to Elliott Bay will not be affected by the operation of the Bypass Tunnel Alternative, although the date of implementation of the connection to the waterfront may be affected by construction impacts.

**Seattle Center:** This 74-acre site that hosts a variety of cultural and recreational facilities will be affected to some degree by the change in the circulation system related to SR 99/Aurora Avenue N. and the operation of streets that cross SR 99, as discussed for the Aerial and Tunnel Alternatives.

Closing the Broad Street Underpass and widening Mercer Street to accommodate two-way traffic will affect the circulation of traffic accessing Seattle Center.

#### 5.5.5 Seawall – S. King Street to Myrtle Edwards Park

The seawall reconstruction will be accommodated in the west wall of the tunnel from S. Washington Street to Union Street as with the Tunnel Alternative and will involve no operational impacts other than those described above. From Union Street to Myrtle Edwards Park, impacts of seawall reconstruction will be as described for the Aerial Alternative. There will be no impact after completion of construction because the future seawall

will be in virtually the same place and have the same relationship to park, recreation, and public access facilities as the existing seawall.

## 5.6 Surface Alternative

The Surface Alternative shares a similar configuration of the surface street with the Bypass Tunnel Alternative, with an additional lane in each direction between S. King and S. Washington Streets. The basic design employs four through lanes in each direction between S. Atlantic Street and Yesler Way, three through lanes in each direction between Yesler Way and Pike Street, and two through lanes in each direction between Pike and Broad Streets. This generally is one more lane than the Bypass Tunnel Alternative south of Yesler Way and the same configuration north of Yesler Way. The major difference that affects park and recreation resources is the deletion of the tunnel portals south of S. King Street and north of Pike Street.

Impacts are similar to those described above for the Tunnel and Bypass Tunnel Alternatives, except where additional surface lanes affect areas of pedestrian congregation, and higher traffic volumes may affect pedestrian movement between facilities. The additional lane south of S. Washington Street may limit some opportunities for recreational use of the right-of-way.

### 5.6.1 South – S. Spokane Street to S. King Street

The Surface Alternative includes construction of SR 99 at-grade with a full-access elevated interchange as described for the Tunnel Alternative (see Section 5.4.1). The impacts of this alternative differ slightly from those discussed above only in relation to the roadway section where the tunnel portal is located in the Tunnel and Bypass Tunnel Alternatives.

An option is the construction of signalized at-grade intersections with no elevation separation at S. Atlantic Street and S. Royal Brougham Way.

**Waterfront Trail:** The multi-purpose asphalt pathway will be relocated east of the roadway between S. Atlantic Street and S. King Street. On E. Marginal Way south of S. Atlantic Street, bicycles and pedestrians will be accommodated within vehicle lanes and a sidewalk on the west side of the street. Access to Marginal Way S. will be from the S. Atlantic Street overpass. In the SR 519 at-grade ramp connection option, bicycle and pedestrian access to E. Marginal Way will be from an at-grade intersection south of S. Massachusetts Street.

An alternate parallel route will also be available to the east on First Avenue and on the ferry access road to be constructed to the west on Terminal 46, Pier 48, and the new over-water structure south of the existing ferry terminal.

The comfort and aesthetic experience of users will be affected by the proximity of traffic. User amenities will be less than provided by the existing trail that is buffered by landscape berms on both sides. Pedestrian comfort will be affected by details of design such as width, landscaping, and other amenities. The degree to which future facilities are valued for exercise-related activities such as walking or jogging is likely to depend on the amenities incorporated into the design.

**Mountains to Sound Greenway Trail:** The trail will be unaffected except where it will connect with the relocated Waterfront Trail.

**Sports Complexes:** Access to both Safeco Field and the Seahawks Stadium will be enhanced by either the interchange or at-grade intersection at S. Atlantic Street and S. Royal Brougham Way as compared with the limited access provided by the existing viaduct southbound off-ramp and northbound on-ramp at First Avenue.

**Jack Perry Memorial Viewpoint:** This shoreline access facility will continue to be provided similar access and will experience less proximity impact from noise. Access from SR 99 will be provided by an at-grade intersection south of S. Massachusetts Street.

#### 5.6.2 Central – S. King Street to Battery Street Tunnel

From S. King Street north to Pike Street, the proposed surface street will accommodate local and through traffic.

Conceptual plans for the waterfront portion of Alaskan Way right-of-way are similar to the Bypass Tunnel Alternative discussed in Section 5.5.2. Features that affect parks, open space, and public access resources include:

- The surface street located in the easterly portion of the right-of-way will include four lanes in each direction between S. King Street and Yesler Way. That is one more lane in each direction than the Bypass Tunnel Alternative.
- The portion of the corridor between Yesler Way and Pike Street will accommodate three lanes in each direction as with the Bypass Tunnel Alternative.
- The waterfront promenade will be widened, as compared with the existing walkway.
- On the west side of the surface street, the local access lane between piers from Yesler Way and Union Street and the waterfront trolley corridor will be retained as with the Bypass Tunnel Alternative.
- Bicycle lanes and parallel parking will be provided on both sides of the street as in the Tunnel Alternative.

- Sidewalks on the east side of the right-of-way adjacent to buildings within the Pioneer Square Historic District will be narrowed, as compared with the Bypass Tunnel Alternative.
- Additional improvements outside of Alaskan Way will include:
  - Additional vehicular lanes on First Avenue S. displacing existing on-street parallel parking.
  - Two lanes of one-way traffic on Western Avenue between Yesler Way and Spring Street connecting with northbound lanes on Alaskan Way as with the Tunnel and Bypass Tunnel Alternatives.

Increased traffic volumes on the Alaskan Way surface street, as compared with the Bypass Tunnel Alternative, may retard pedestrian movement across the street somewhat through longer waiting times at the street crossings. Noise levels are not likely to be much different with greater traffic volumes because of the slow speed of surface traffic.

This design concept is consistent with the Pioneer Square and Downtown Urban Center Neighborhood Plans policy direction for open spaces to be developed in portions of the street and rail right-of-way along the waterfront, but will provide fewer opportunities than the Tunnel or Bypass Tunnel Alternatives (Seattle 1998a, 1999a).

Similar to the Tunnel and Bypass Tunnel Alternatives, this design concept will also displace the surface parking under the existing viaduct and will affect access by car, to the extent that parking is not replaced by on-street parking or parking structures.

**Waterfront Promenade:** The waterfront promenade will be substantially expanded from its existing 20-foot width to about 25 feet with an adjacent parking and local access lane and trolley car corridor, similar to the Tunnel and Bypass Tunnel Alternatives. Expansion of the pedestrian corridor will provide similar opportunities for landscaping, seating, and other amenities. The expansion of the surface street south of Yesler Way will not substantially affect the promenade if it were relocated adjacent to the water where a new ferry access dock is provided. North of Yesler Way, the configuration and impacts are similar to the Bypass Tunnel Alternative.

Opportunities to relate to east-west streets connecting to the Pioneer Square Area may be reduced somewhat by width of the eight-lane roadway south of Yesler Way. Pedestrian movement across the corridor may be reduced by additional visual separation and greater delays in crossing intervals that are likely to result from less frequent pedestrian crossing cycles. The promenade will function as a greatly enhanced linear recreation corridor as compared with existing conditions. The substantial reduction in noise impacts from

removal of the viaduct will remain because of the lower noise levels from lower-speed traffic on the surface roadway.

**Waterfront Trail:** The existing multi-purpose asphalt pathway will be replaced by a multi-purpose trail west of the roadway from S. King Street to Yesler Way. North of Yesler Way, the conceptual design includes bicycle lanes and a sidewalk on the east side of the right-of-way as in the Bypass Tunnel Alternative. The sidewalk and bicycle lanes will be a substantial enhancement over existing conditions for pedestrian and bicycle mobility and safety. The frontage within the Pioneer Square Historic District will have a narrower sidewalk compared to the Bypass Tunnel Alternative. This will limit the opportunities for adjacent private outdoor uses that could further enhance the pedestrian environment.

Proximity impacts such as noise will be substantially reduced by removal of the viaduct. The waterfront will be further from the sidewalk and somewhat more isolated visually by greater roadway width and less convenient pedestrian crossing opportunities. North of Yesler Way, the configuration of the sidewalk on the east side of Alaskan Way will be the same as in the Bypass Tunnel Alternative. The enjoyment of this part of the corridor for exercise-related activities, or the enjoyment of the scene as an adjunct to walking for enjoyment will be similar to the Tunnel and Bypass Tunnel Alternatives, and substantially greater than with the visual and noise impacts of the existing viaduct or the Aerial Alternative.

**Pier 48 Periscope Viewpoint:** As with the Tunnel and Bypass Tunnel Alternatives, this public access facility will not be directly affected, but may be displaced by future expansion plans of the Colman Dock Ferry Terminal. Pedestrian access from the Pioneer Square Historic District will be somewhat less convenient as compared with the two tunnel alternatives.

**Pier 48 Alaska Square:** The proposed ferry access roadway on a new over-water pier structure will displace this park.

**S. Washington Street Pergola and Public Dock:** This facility will be displaced by the new lanes. The pergola is proposed to be relocated after construction is completed at the analogous location at the foot of S. Washington Street. After relocation, the context for pedestrian circulation is likely to be enhanced by greater width of the waterfront promenade. Access from the Pioneer Square Historic District is likely to be similar as for other alternatives, although the narrower sidewalk on the east side of Alaskan Way may result in the area being less of a pedestrian attraction, and the additional vehicle lanes may impede pedestrian movement somewhat.

**Marion Street Green Street:** This Green Street will be enhanced for the Surface Alternative by removal of the noise and shadow from the existing viaduct in the same way as for the two tunnel alternatives. The narrowing of pedestrian-oriented space on the east side of Alaskan Way could reduce the open space value somewhat, as compared with the two tunnel alternatives.

**Colman Dock Ferry Terminal:** As with the two tunnel alternatives, the ferry terminal will not be directly affected by operation of the Surface Alternative, except for the access road, which will be relocated to an over-water structure west of Alaskan Way. Pedestrian interest along the widened promenade will continue to be low if the present configuration of parking on the ferry terminal is retained.

**Fire Station No. 5:** The small public access and harbor viewing area north of the station could be reopened after construction. As mentioned above, the potential expansion plans for the Colman Dock Ferry Terminal could displace and relocate the fire station.

**Piers 54, 55, 56, and 57:** The public access areas on these private piers will not be directly affected. The same benefits as for the Bypass Tunnel Alternative will result from the widened pedestrian promenade and lower noise levels. This will improve the pedestrian environment and tend to reinforce the attractiveness of the tour boats, retail shops, and restaurants on the piers as an element of the linear waterfront experience.

**Access to Blake Island:** Access to Blake Island State Park in Puget Sound by regular boat service from Pier 55 to the Tillicum Village will be potentially enhanced by additional pedestrian activity along the waterfront as with the tunnel alternatives.

**Waterfront Park:** The City of Seattle Waterfront Park, in its existing configuration between Piers 57 and 59, will be enhanced by removal of the existing viaduct. As with the tunnel alternatives, use and activity within the park may be enhanced by greater use of connections between the park and downtown along east-west streets. The somewhat less frequent crossing opportunities because of signal timing due to the higher traffic volumes along the surface street may, however, reduce the ease of pedestrian movement as compared with the tunnel alternatives. The reduction in ease of crossing may not affect the total volume of pedestrians if the destination is perceived as attractive and the crossing is perceived as safe.

**Seattle Aquarium:** The existing Aquarium on Pier 59 and to the north will not be directly affected by operation of the Surface Alternative. Opportunities for enhancement of public open space in the vicinity will be present, although the configuration may vary from the tunnel alternatives. Parking and other

impacts will be similar to the Tunnel Alternative. East-west connections along the Pike Street Hillclimb to downtown will be impeded somewhat by the wider street crossing. The reduction in ease of crossing may not affect the total volume of pedestrians because both the Aquarium and the Pike Street Market are likely to continue to be attractive destinations. The grade change along the Hillclimb is likely to be a greater factor in the choice of whether to use the corridor than roadway crossing opportunities.

The loss of existing surface parking under the existing viaduct and in the triangular parcel across from the Aquarium may affect access by private vehicle as with other alternatives.

**Pioneer Square:** This triangular plaza at the intersection of Yesler Way and First Avenue in the Pioneer Square Historic District will experience limited direct impact from replacement of the existing viaduct with the surface street due to additional traffic on First Avenue from adding two lanes. From this distance, the character of Alaskan Way is likely to be similar to the tunnel alternatives.

**Klondike Gold Rush National Historic Park, Seattle Unit:** This interpretive center in a leased historic building on S. Main Street near Occidental Avenue S. is not likely to be affected directly. New proposed facilities at S. Jackson Street and Second Avenue S. are likely to be less affected because of the greater distance. Interpretive walks offered by the facility may expand to include areas of the waterfront with the removal of the viaduct.

**Occidental Plaza:** This plaza on Occidental Avenue S. between S. Washington and S. Main Streets may experience limited indirect impacts from changes in traffic circulation and general enhancement of the Pioneer Square Historic District as discussed in Chapter 7, Secondary and Cumulative Impacts.

**Harbor Steps:** This plaza area that extends down University Street between First Avenue and Western Avenue will be enhanced by the lower noise and the removal of the visual barrier of the existing viaduct as with the Bypass Tunnel Alternative.

**University Street Green Street:** This Green Street will be enhanced by removal of the noise and shadow from the existing viaduct and will likely experience additional pedestrian use. The same opportunities for an enhanced environment are available as for the Bypass Tunnel Alternative. Pedestrian circulation to the waterfront may be somewhat impeded by crossing times for the surface street. The existing public art will be unaffected.

**Seattle Art Museum University Street Plaza, Benaroya Hall Plaza:** These public open spaces extending along University Street will experience very

little direct impact from the removal of the existing viaduct as a visual barrier to the waterfront due to distance and elevation. The plazas might see greater use due to increased pedestrian movement to the waterfront. Existing public art will not be affected.

**Pike Street Hillclimb:** This corridor of stairs, terraces, and landscaping between Western Avenue and Alaskan Way will experience a substantial positive change in character with removal of the existing viaduct as discussed for the tunnel alternatives (see Sections 5.4.2 and 5.4.3). The orientation to the waterfront and Elliott Bay will be enhanced. Use as a corridor to the waterfront and as a pedestrian congregation area will be enhanced by the removal of noise and shadow impacts. The additional open space opportunities provided over the tunnel lid will not be available and the surface roadway will displace existing low-quality open space under the viaduct. The existing public art installation could be reinstalled after completion of construction.

### 5.6.3 North Waterfront – Pike Street to Broad Street

**Waterfront Promenade:** Impacts on the promenade will be similar to the Bypass Tunnel Alternative. The width of the promenade and the surface street will be retained at close to existing dimensions. Proximity impacts from traffic on the road may be somewhat greater because of higher traffic volumes, although low speeds and congestion at peak hours will limit noise levels. Opportunities for enhancing the width of the pedestrian corridor will be available depending upon the extent to which the vehicular roadway is expanded for left-turn lanes and bicycle lanes.

**Waterfront Trail:** As with the Bypass Tunnel Alternative, the current configuration is likely to be retained on the east side of the right-of-way with a concrete sidewalk next to the Alaskan Way surface street and an asphalt surface trail on the far east side of the right-of-way adjacent to apartment buildings, with the waterfront trolley tracks between the two. No change in pedestrian or bicycle capacity or comfort will occur.

**Victor Steinbrueck Park:** This park adjacent to the Pike Street Public Market will continue to experience high noise levels from the adjacent aerial roadway. The speeds on the roadway, however, will be somewhat lower with resulting lower noise levels. The roadway will be slightly lower than the existing viaduct at the southern end of the park due to the grade from the lower elevation of the surface street at the bottom of the hill.

**Lenora Street Bridge:** As with all other alternatives, the existing pedestrian bridge and overlook will be demolished during construction. It is not expected to be reconstructed in its present form, although a pedestrian

connection to the waterfront may be provided on the corridor. The public seating and waterfront viewing area at the top of the elevator/stairway tower is less likely to be replaced.

**Pier 62/63 Park:** This Seattle Park will be little affected by operation of the Surface Alternative. The street adjacent to the pier will be similar to the existing configuration with four lanes and parking, although it may carry somewhat higher traffic volumes. Vehicular and pedestrian access to the site will be similar to existing conditions. On-street parking will be reduced slightly as compared to existing conditions. Noise levels from additional traffic are not likely to be perceptible to the average person due to the slow speeds of traffic on the Alaskan Way surface street. The larger volumes of heavy trucks may result in higher noise levels as trucks pass the site, depending on speeds. The summer outdoor concert series is not likely to be affected differently from existing conditions.

**Pier 66, the Bell Street Terminal, Edgewater Hotel, Pier 68, Vine Street Green Street, Pier 69, Clay Street Green Street, Pier 70, Belltown Cottage Park, Olympic Sculpture Park, Myrtle Edwards Park, Elliott Bay Park:** Public access facilities at these locations will not be directly affected by operation of the Surface Alternative, except to the extent that traffic on this section of road may increase and left-turn lanes may be added.

**Wave Rave Cave:** This public art installation under the existing viaduct will be displaced. A similar space may be available for reinstallation after construction is completed, or the installation could be relocated consistent with the design intent that recognized that future reconstruction of the viaduct may displace the installation.

**First Avenue Project:** This public art installation on the sidewalk above the existing Battery Street Tunnel portal will not be affected by a change in context or views to the west along Battery Street both because the portal curves to the south and because the installation is designed with the expectation of changes to adjacent uses along the corridor.

#### 5.6.4 North – Battery Street Tunnel to Ward Street

Impacts in this area under the Surface Alternative are similar to impacts discussed above for the Aerial Alternative and Tunnel Alternative.

**Lake Union to Elliott Bay Trail (formerly Potlatch Trail):** This planned facility to link South Lake Union to Elliott Bay will not be affected by operation of the Surface Alternative.

**Seattle Center:** This 74-acre site that hosts a variety of cultural and recreational facilities will be affected to some degree by the change in the

circulation system related to SR 99/Aurora Avenue N. and the operation of streets that cross SR 99.

Closing the Broad Street Underpass and widening Mercer Street to accommodate two-way traffic will affect the circulation of traffic accessing Seattle Center.

#### 5.6.5 Seawall – S. King Street to Myrtle Edwards Park

The seawall reconstruction will be a separate installation along the entire corridor, similar to the Rebuild Alternative. There will be no impact after completion of construction because the future seawall will be in virtually the same place and have the same relationship to park, recreation, and public access facilities as the existing seawall.

### 5.7 Project Benefits

The project benefits of the Build Alternatives relate primarily to new opportunities along the Alaskan Way right-of-way to reconfigure open space, parks, and other recreational uses. Seattle's Pioneer Square and Downtown Neighborhood Plans call for development of a major public open space or open spaces to be developed in portions of the street and rail right-of-way along the waterfront. This open space is to be designed to improve public access to and enjoyment of the shoreline and be integrated with the proposed promenade from Myrtle Edwards Park to Pier 48 and the proposed east-west pedestrian connections to the rest of downtown.

Benefits of providing recreation uses include enhancement of the waterfront promenade that extends along the seawall from S. Washington Street to Myrtle Edwards Park and provides a linear connection between destinations on the waterfront as well as providing seating, picnicking, and other passive uses in addition to views of the water and the city. Opportunities to link Green Streets with the waterfront provide benefits through better linkages to neighborhoods to the east and integration of the pedestrian landscape and other open space features of these streets perpendicular to the waterfront corridor. Various opportunities for additional plazas, landscaped areas, and other public gathering spaces are provided along the waterfront.

The alternatives that provide the most potential benefits involve removal of the existing viaduct and replacement with surface improvements that can accommodate park and recreation uses. The alternative that provides the most opportunities, by reducing the area of the right-of-way devoted to transportation facilities, is the Tunnel Alternative. The Bypass Tunnel and Surface Alternatives provide somewhat greater surface transportation facilities, and therefore fewer opportunities for other uses. The Aerial

Alternative provides the least opportunity for parks and other recreational uses along the Alaskan Way corridor. This alternative increases the width of the aerial structure as compared to the existing viaduct and provides the least area for other uses, as well as increasing proximity impacts such as noise.

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## Chapter 6 CONSTRUCTION IMPACTS

The discussion of construction impacts is based on conceptual plans for construction staging and construction duration. Generally, the construction times referenced are at the 90 percent confidence level. The exact construction methods cannot be ensured because contractors have a degree of latitude in construction methods and scheduling within the contract specifications and the conditions of approval of the project.

### 6.1 Rebuild Alternative

The Rebuild Alternative includes rebuilding the viaduct in-place with dimensions almost identical to the existing structure. The seawall along the west side of Alaskan Way will be reconstructed largely with a drilled secant retaining wall and jet grouting.

The construction process includes an initial 18-month period of preliminary site work that will include relocation of utilities, removal of parking to allow installation of vehicle lanes under the existing viaduct, and removal of the existing trolley tracks north of Pike Street to allow widening of the surface street in that area.

The reconstruction of the existing viaduct will require installation of temporary lateral bracing in the sections where work is taking place. This bracing structure will extend about a third of the width of the existing viaduct on the west, or about 20 feet. Bracing also will extend about 10 feet to the east.

The initial preparatory site work will substantially disrupt the existing street and the patterns of movement laterally up and down the waterfront and east to west to downtown. This preliminary work will be followed by reconstruction of the seawall and the existing viaduct over 2 years and 6 years, respectively.

Reconstruction will take place in sections that will alternate rather than being a progression from one end to another. Construction in several areas may take place simultaneously. Corridors for access to waterfront piers across the construction site will be provided. These corridors will be shifted as construction proceeds and will be shared by pedestrians and delivery vehicles.

The character of construction impacts will be similar along most of the corridor, although the location and type of park, open space, and public access facilities will affect the severity of impacts.

- Construction will disrupt existing and accustomed patterns of movement. Even with provisions for access across construction sites, the perceived inconvenience will lead many people to avoid the waterfront in favor of other elective park and recreation activities not subject to uncertainty and disruption. This is especially the case during reconstruction of the seawall with the lack of linear movement that is central to the waterfront experience.
- The most substantial impacts are likely for cars and buses on the Alaskan Way surface street. Circulation along the corridor and parking currently allowed for buses will be removed in construction areas and may be reduced in areas where traffic detours are planned. This will tend to place bus parking areas on other streets at a greater distance. The most likely candidate street is Western Avenue, which is likely to experience conflicting demands to accommodate additional traffic and parking. Car parking will likely be displaced to pay lots.
- The movement of pedestrians can more easily be accommodated through and around construction areas because the corridors required can be relatively narrow and bear less weight. Pedestrian bridges may be an option in areas where vehicle access is not feasible.
- The long construction period may impede the recovery of the waterfront as a destination for recreation and passive enjoyment of public access even after completion of the seawall reconstruction. The interrelated private and public activities along that waterfront may be individually and cumulatively affected by the factors listed below.
- The loss of parking under the existing viaduct to accommodate vehicle lanes will limit the supply to all users along the corridor. The additional demand from construction workers will produce additional competition for the finite parking resources in the area. The reality or perception of less parking, or parking less conveniently located in respect to final destinations, is likely to deter persons who use vehicles as their preferred mode of access. This impact may be mitigated by additions to the parking supply as discussed in mitigating measures in Chapter 9, Construction Mitigation. If replacement parking is supplied as a mitigating measure, it is likely to be in a parking structure and will not be a linear supply at a similar distance to all uses along the corridor. The cost of such parking is likely to be greater. It would not be limited to the current 2-hour maximum.

- Proximity impacts from construction (such as noise, vibration, and dust) will make locations close to construction less desirable for passive recreation activities such as walking, picnicking, and viewing the aesthetic amenities of the area.
- The visual character of the construction site may be viewed by many as unappealing and lead them to seek other locations for park and recreation activities. Some people, however, may be attracted to the construction site and make repeated visits to keep tabs on its progress.

Specific impacts on facilities within each section of the project are outlined in additional detail below.

### 6.1.1 South – S. Spokane Street to S. King Street

Construction impacts on recreation facilities for construction of a new interchange at Atlantic Street and S. Royal Brougham Way will substantially disrupt the area and recreational activities.

**Waterfront Trail:** The existing multi-purpose asphalt pathway will be removed for construction of the interchange at S. Royal Brougham Way and S. Atlantic Street. During initial stages of construction, bicycles will be accommodated in the E. Marginal Way vehicular lanes with pedestrians accommodated within the sidewalks of E. Marginal Way north and south of the interchange. In later stages of construction of the interchange, the overcrossings will displace the sidewalks for about 24 months, until completion of the elevated roadways. Temporary pedestrian facilities might be provided to the west on Terminal 46, but it is more likely that all pedestrians will be rerouted to First Avenue, where sidewalks are provided on both sides of the street adjacent to vehicle lanes.

Where the existing structure is being rebuilt, the lateral bracing will extend to the west and displace the asphalt pathway and the trolley tracks, where present.

The experience of bicycles and pedestrians on the alternative routes is likely to be less scenic and less conducive to recreational walking and bicycling than the existing trail. The extent to which the route is abandoned by persons with exercise or visual interest as their primary goal is likely related to the extent to which other parts of the corridor retain interest and the ability to pass through the construction zone with little delay and without getting lost.

**Mountains to Sound Greenway Trail.** This proposed trail will be unaffected except where it connects to the extension of the asphalt trail. For the duration of construction, the connection to the waterfront will likely be made along First Avenue S. Persons using the trail may not continue to the waterfront if they perceive that the area lacks interest because of construction disruption.

**Sports Complexes:** Access to both Safeco Field and the Seahawks Stadium will be reduced by limiting the number of lanes on the existing viaduct during construction. With the implementation of the Broad Street Detour, the southbound off ramp at First Avenue will no longer function, although the northbound on-ramp will continue. Southbound travel times over the detour route will likely divert most attendees to I-5 or other routes. Congestion may lead some fans to use different routes or different modes of transportation. The overall impact to attendance at the sport fields is likely to be minor because the existing viaduct on- and off-ramps at First Avenue provide access only to and from the north. Access from the east, especially with completion of the SR 519 connection to I-5 and I-90, will be a viable route for most attendees. In addition, people are likely to develop alternative routes and modes of access because they will have sufficient time to plan and because there are not substitute activities readily available to fans of major league sports.

**Jack Perry Memorial Viewpoint:** This shoreline access facility will continue to be from E. Marginal Way. Access to E. Marginal Way from the east will be limited by construction of the overpasses over SR 99, which is likely to restrict the number of available lanes. Construction noise is likely to be at a great enough distance to have little effect on the enjoyment of views of the Duwamish East Waterway and Port facilities from the site.

#### 6.1.2 Central – S. King Street to Battery Street Tunnel

**Waterfront Promenade:** The reconstruction of the viaduct will have no direct construction impact on the waterfront promenade. The existing width and configuration will be retained. Access to the promenade will be restricted by construction zones where reconstruction is taking place. During the period of reconstruction of the seawall, the waterfront as a whole is likely to have reduced appeal as a destination. After reconstruction of the seawall is completed, the continuing reconstruction of the viaduct will likely act as an impediment to reestablishment of patterns of access.

**Waterfront Trail:** This asphalt trail will be displaced by lateral supports needed during reconstruction of the aerial structure. Sections may remain open, but the linear connection it provides will be broken. The lack of a continuous linear corridor will limit usefulness for recreational walking,

exercise, and bicycling. Where interrupted by reconstruction of sections of the viaduct, north–south pedestrian movement will be diverted to the pedestrian corridor after completion of the seawall reconstruction. Prior to seawall reconstruction, pedestrians will be diverted east to Western Avenue, unless temporary pedestrian routes are provided on Alaskan Way east of the viaduct.

**Pier 48 Periscope Viewpoint and Alaska Square:** These facilities will not be subject to direct construction impacts because they are currently closed. As part of the AWW project, construction of the ferry access roadway on an over-water pier structure from Pier 48 to Colman Dock will displace the Alaska Square Park. As discussed above, these facilities may be displaced by the expansion of the Colman Dock Ferry Terminal as a separate project.

**S. Washington Street Pergola and Public Dock:** This facility will not be directly affected by viaduct reconstruction, except possibly construction staging on Pier 48. It will be displaced by seawall construction. After completion of the seawall, it is proposed to be replaced; however, the ongoing reconstruction of the viaduct may limit the number of people that use it and delay the replacement of the public dock because of lack of use.

**Marion Street Green Street:** During construction in the immediate vicinity, this street is not likely to be a desirable location for open space. The function of providing east–west pedestrian connections between the waterfront and downtown will also be reduced by noise and disruption during construction and by the vehicular lane located under the viaduct.

**Colman Dock Ferry Terminal:** Access to the existing open space (assuming replacement after seawall reconstruction) is likely to be curtailed during reconstruction of the adjacent section of viaduct. Even with access provided across construction sites, the proximity impacts such as noise and the limited amenities of the isolated public open space at the site are unlikely to draw much use. The existing mural on the Marion Street Overpass to the ferry terminal will be subject to possible damage during construction. There are a variety of means to protect the work from damage. If the overpass is replaced during reconstruction, the mural could be conserved and incorporated into the new overpass or exhibited in other public open space as photographed and incorporated in a display.

**Fire Station No. 5:** Access to the fire station and adjacent open space area (assuming replacement after seawall reconstruction) is likely to be curtailed during reconstruction of the adjacent section of viaduct. This is a minor open space area and its interest to pedestrians is related to the linear experience of the waterfront as a whole. The extent to which other uses along the

waterfront are attractive destinations during viaduct reconstruction will be the primary determinant of use of this space.

**Piers 54, 55, 56, and 57:** After reopening of the waterfront as a whole upon completion of seawall reconstruction, access to these piers will be curtailed by viaduct reconstruction, even with maintenance of access routes across the construction zones. The appeal of public access facilities on the piers will be reduced by the greater effort required to reach them and from proximity impacts of construction such as noise. The extent to which the waterfront as a whole is perceived to be a destination of interest, despite adjacent construction, will be the main determinant of use of public access areas on these piers, rather than the facilities themselves.

**Access to Blake Island:** Access to Blake Island State Park by regular boat service from Pier 55 to the Tillicum Village may be reduced substantially if the overall interest and appeal of the waterfront is reduced by an extended construction period. If access is not convenient, persons considering this elective activity are likely to simply choose other activities. A loss in customers over the long term may affect the operator of Tillicum Village through reducing its economic viability. This will also reduce State Parks lease income and affect the economics of providing public services such as water supply and sewage treatment on the island. The loss in income to the system as a whole could also reduce services in other units of the State Parks system.

**Waterfront Park:** This park is likely to be affected by all of the general impacts cited in the introduction to this section.

After completion of seawall reconstruction, the amount of public use of this facility is likely to be curtailed by viaduct reconstruction, even with maintenance of access routes across the construction zones. The open deck area of the park makes it susceptible to proximity impacts such as noise with little potential for buffering. The easterly portions closest to construction would be most directly affected. A small degree of attenuation of proximity impacts will occur in the western portions of the site farthest from construction and closest to the primary amenity, the water. The noise from construction on portions of the viaduct near the park is likely to so reduce the quality of the experience for the portions of the park closest to the street as to lead to avoidance except for transit through the area. Existing public art in the park is unlikely to be directly affected during construction. There are a variety of means to protect it, including temporary removal of more portable pieces.

**Seattle Aquarium:** The Seattle Aquarium is likely to be substantially affected by proximity impacts of construction, as well as by loss of revenue through reduced attendance. The animals that form the core of the exhibits and programs at the Seattle Aquarium are likely to be substantially affected by construction impacts.

The location of a construction staging area in the triangular parcel north of Pike Street would reinforce the proximity impacts of construction.

Animals in the collection are sensitive to lifecycle disruption from a variety of construction impacts that may affect the viability of the collection.

The most acute potential impact would be the degradation or interruption of the water supply that is vital to the survival of most of the collection. The water supply of the Aquarium is drawn from intakes at the west end of Pier 59. About 2,400 gallons per minute are pumped through the collections in a single-pass system. Chemical contamination of the water supply through accidental spills, or excessive amounts of sedimentation through construction spills of excavated materials, or unexpected failure of the existing seawall during construction would have serious impacts on the organisms within the Aquarium. The habitat needs of the majority of the animals in the collection would be seriously degraded by chemical contamination. If the water supply were shut down because of contamination, serious degradation would occur within hours due to reduction in oxygen content of the water and accumulation of waste products.

Dust and other airborne contaminants also may degrade surface water and fur and feather conditions of animals, adding to the stress-induced threats to viability of the collection.

Other utility services such as power and fresh water are vital to habitats within the Aquarium and maintenance of the facility. Unplanned or extended interruption of utilities could threaten the viability of the collection.

Noise levels associated with construction are likely to be at a level and pattern that may cause substantial distress to the collection of animals and birds. The higher transmission levels of vibration through water may increase this risk.

Noise from seawall construction will be very close to the Aquarium and is likely to have severe impacts.

Construction on the upper levels of the viaduct would result in direct line-of-sight noise impacts to open-air exhibit areas of Pier 60. These noise levels would be greater than existing noise from traffic and would primarily affect exhibits of marine mammals and birds.

Increases in night-time light levels to accommodate construction may disturb animals and disrupt sleep cycles. The sight of construction machinery, such as cranes and pile drivers, also may add to the distress level for animals in open-air exhibits.

Direct acoustic trauma to marine animals can be expected at the noise and vibration levels associated with jet grouting and other activities such as pile driving. Most researchers agree that noise can affect an animal's physiology and behavior, and if it becomes a chronic stress, noise can be injurious to an animal's energy budget, reproductive success, and long-term survival (Radle 2003). For example, growth and reproduction of shrimp exposed to permanently high sound levels has resulted in a significant reduction in growth and reproduction rates. To a lesser degree, noise also appears to increase aggression (cannibalism) and mortality rate and to decrease food uptake. These symptoms are extremely similar to those induced by stress (Lagardere 1982).

Noise levels considered to be protective of human hearing may be inadequate for marine mammals with much more sensitive hearing. Damage to the ears of mammals and fish has been observed from a variety of sources and may reduce the feeding rate of fish. In addition, the complex communication mechanisms of marine mammals may be disrupted by a variety of noise sources. Noise typically induces avoidance behavior in marine organisms. The long-term effects of noise-induced stress have been correlated with a variety of pathologies in marine mammals, including cardiac response and adrenal pathologies. The response of marine mammals, fish, and invertebrates to noise has not been adequately studied to develop protective levels (NSF 2003).

Marine mammals and birds are likely to be the most sensitive to noise impacts that disrupt lifecycle processes. Noise levels that affect feeding patterns can lead to increased mortality. Among the most sensitive animals in the collection are sea otters. These marine mammals do not have a layer of insulating fat and depend upon a high metabolism to maintain body temperature. They generally must consume about 20 percent of their body weight in food every day. Noise levels that disturb their feeding habits may lead to reduced food intake and mortality through hypothermia.

Maintaining the existing collection during the periods of highest construction noise may be difficult.

Construction along the waterfront may reduce attendance at the Aquarium due to the public perception of construction impacts of viaduct reconstruction, even after completion of the initial stage of seawall construction. This is likely

to reduce revenue from admission and membership fees as well as revenue from the gift shop and restaurants on the easterly portion of Pier 59 that pay rent that supports the Aquarium. A reduction in revenue threatens the financial viability and continued operation of the Aquarium. Approximately \$5 million of the Aquarium's \$6 million budget in 2004 is projected to be provided by admissions.

Three of the four major factors influencing the success of an aquarium in attracting visits will be negatively affected during construction:

- Visibility, supportive land uses, and strong connections to the water will be reestablished after completion of the seawall reconstruction. However, the overall health and vibrancy of the waterfront may continue to be affected for 4 to 5 more years by reconstruction of the nearby portions of the existing viaduct.
- Physical accessibility for both pedestrians and persons driving will be limited by the construction area, the displacement of parking, and the likely perception of the general public that the waterfront construction site makes the area an undesirable destination. These factors may lead a substantial number of potential attendees to choose alternative elective activities.
- The thematic focus of the Aquarium will not be directly affected, but the delay in implementing plans to build an enhanced facility, together with a decrease in attendance during seawall reconstruction, may make it more difficult to rebuild attendance and more difficult to build public acceptance of funding through bonds or other means.

**Klondike Gold Rush National Historic Park, Seattle Unit:** This interpretive center in a leased historic building on S. Main Street near Occidental Avenue S. is not likely to be affected directly since the facility is at a distance and interpretive tours don't include the waterfront. The restrictions on capacity of the Alaskan Way Viaduct and surface street during construction as well as the possible perception that the area is a construction zone to be avoided may limit overall attendance. New proposed facilities at S. Jackson Street and Second Avenue S. are likely to be less affected because of the greater distance.

**Pioneer Square and Occidental Plaza:** The parks within the Pioneer Square Historic District will not be directly affected by construction, but the restrictions on capacity of the Alaskan Way Viaduct and surface street during construction may limit overall attendance in the district. Traffic diverted to local streets during construction also may add to proximity impacts such as noise, and the perception of being hemmed in by heavy traffic.

**Harbor Steps, University Street Green Street:** This east–west connection with gathering places on the steps may see lower levels of use during construction because the waterfront is a less appealing destination. Proximity impacts from viaduct reconstruction will increase noise. These impacts are likely to be felt less further to the east and may result in little impacts on use of seating and congregating areas on the steps.

**Seattle Art Museum University Street Plaza, Benaroya Hall Plaza:** Most of the public access areas on these sites will be little affected by the seawall or viaduct reconstruction. Because of the elevation and increased distance from Alaskan Way, both visual and noise impacts from construction are less than for Harbor Steps to the west.

**Pike Street Hillclimb:** The areas of public plaza, stairs, terraces, and landscaping between Western Avenue and Alaskan Way will be affected by noise and disruption from reconstruction of the viaduct. Maintenance of access through the construction site is likely to consist of narrow corridors and be less appealing, even considering existing noise and shadows from the viaduct. The existing public art installation *Breaching Orca* must be removed during construction. It can be replaced in the same location after completion of construction or may be relocated to allow public viewing if construction in this area occurs over an extended period.

### 6.1.3 North Waterfront – Pike Street to Broad Street

**Waterfront Promenade:** Impacts on the promenade north of Pike Street from reconstruction of the viaduct are limited because the viaduct continues on a separate right-of-way north of Pike Street.

**Waterfront Trail:** The multi-purpose asphalt pathway that extends north of Pike Street will be affected by the widening of the surface street to accommodate additional vehicular lanes during construction. After completion of the seawall, the reduced width and capacity will continue until completion of viaduct reconstruction.

**Victor Steinbrueck Park:** This park overlooking the viaduct is not likely to be adversely affected by construction. It will receive proximity impacts such as noise from construction. While most construction noise is not substantially greater than the existing noise levels from traffic, the character of construction noise is different. Rather than continuous like traffic, it tends to be more intermittent with peaks relating to specific activities. It is less predictable and is less likely to be perceived as background. The location of a construction site adjacent to the park may increase the interest of the park as a viewing site. The Battery Street Flyover Detour, an option of constructing a temporary aerial structure over the Art Institute along the Battery Street alignment to the

existing tunnel, will not be visible from this park due to the higher elevation of the World Trade Center East at Elliott Avenue and Bell Street.

**Lenora Street Bridge:** The existing pedestrian bridge that provides a connection to the east side of the Alaskan Way surface street is proposed to be demolished during construction of the Rebuild Alternative. It is not expected to be reconstructed in its present form, although a pedestrian connection to the waterfront may be provided on the corridor after completion of this section of reconstruction.

**Pier 62/63 Park:** After completion of seawall reconstruction, this park can be restored to its previous configuration and use. Reduced pedestrian volumes due to construction south of Pike Street would affect the number of users. Proximity impacts such as noise will affect the site when the section of the viaduct between Union and Pine Streets is under reconstruction. If construction occurs during evening performance hours, the summer concert program will not be viable because of potential noise disruption. The additional traffic on the surface street because of limits to the number of lanes on the viaduct also may produce higher noise levels that affect viability as a performance venue, although noise level from heavy trucks is likely to be lower during evening performance hours.

The presence of a construction zone, with associated disruptions to existing patterns of movement, as well as the perception by the public that construction renders the area less desirable may result in decreased attendance. The loss of revenue from cessation, relocation, or reduced patronage may affect the economic viability of this cultural resource. Reduced income also may affect other cultural activities such as the Bumbershoot Festival, which is staged by the same non-profit organization. Income derived from the concert series provides for maintenance of the level of staffing and a stability of income that makes staging both events more economically reliable.

**Pier 66, the Bell Street Terminal:** The public access facilities at this site are not likely to be affected by viaduct reconstruction due to the distance from the SR 99 route. Additional traffic along the surface street may have minor proximity impacts such as noise. The presence of an elevated crossing to Bell Street may strengthen the relationship between this portion of the waterfront and the Belltown area to the east.

**Edgewater Hotel, Pier 68, Vine Street Green Street, Pier 69, Clay Street Green Street, Pier 70:** These parks and public access facilities will not be directly affected by viaduct reconstruction due to distance. The construction of the Broad Street overpass for southbound traffic will affect the visual

context near the elevated structure. The public access facilities on Piers 69 and 70 will be largely unaffected because those areas are at the end of the piers. Pedestrian circulation between piers along the waterfront promenade will be affected by the aerial structure, especially since it is on the far west side of the surface street. Additional traffic along the surface street from the southbound detour will create proximity impacts such as noise. The removal of the waterfront trolley to accommodate additional vehicle lanes may affect the number of people accessing this area. The art installations at either side of the intersection at Vine Street and Alaskan Way can be relocated to an analogous position adjacent to the BNSF rail lines and will continue to meet the intent of the work in evoking the industrial heritage of the waterfront.

**Myrtle Edwards Park, Elliott Bay Park:** These parks will not be directly affected by construction of the Rebuild Alternative or the proximity of the Broad Street overpass due to distance. Access to the parks may be affected by traffic volumes on Broad Street and the difficulty of accessing the site westbound from Broad Street. Access to these parks, however, will be completely changed by the Olympic Sculpture Park, as discussed in Chapter 7, Secondary and Cumulative Impacts.

**Wave Rave Cave:** This public art installation under the existing viaduct will be displaced during construction. A similar space may be available for re-installation after construction is completed, or the work may be relocated. It was designed to accommodate relocation.

**First Avenue Project:** This public art installation consists of a number of pieces along several blocks of First Avenue. A piece on the sidewalk above the existing Battery Street Tunnel portal could be damaged during construction. The piece could be removed during construction and replaced afterward.

#### 6.1.4 North – Battery Street Tunnel to Ward Street

**Lake Union to Elliott Bay Trail (formerly Potlatch Trail):** This planned facility to link South Lake Union to Elliott Bay will not be affected by reconstruction of the viaduct due to distance from the corridor.

**Seattle Center:** This 74-acre site that hosts a variety of cultural and recreational facilities will not be directly affected because no modifications to SR 99/Aurora Avenue N. or local streets in the vicinity are proposed. Construction staging or construction parking in existing parking areas is proposed only for non-peak demand periods and therefore is likely to have little effect on operations.

### 6.1.5 Seawall – S. King Street to Myrtle Edwards Park

Reconstruction of the seawall along its entire extent from S. King Street to Myrtle Edwards Park will primarily impact park and recreation facilities on the waterfront. This impact will be further reinforced by the adjacent reconstruction of the existing viaduct structure, which will begin simultaneously but will extend an additional 4.5 years.

The general impacts discussed above for the viaduct reconstruction will also occur for seawall reconstruction. Impacts generally will be of greater severity during the 2 years of seawall reconstruction.

The impacts on the waterfront are compounded by the interaction of uses in the linear corridor. There is no single key park, recreation, or private use; rather, the synergy of the corridor provides mutual support to the various uses.

- Construction will disrupt existing and accustomed patterns of movement along the linear corridor. This is especially the case between Pier 54 and the Aquarium, which has the greatest density of uses. The continuity of the corridor will be disrupted during the 2-year construction period. It will not be possible to walk a substantial distance down the waterfront. The construction areas will break the waterfront into sections that will prevent lateral movement along the waterfront. Even with provisions for access across construction sites to individual piers, the ability to walk along the waterfront promenade and experience a variety of opportunities and interests will be lost.
- The waterfront is likely to be perceived by the general public as an area disrupted by construction and not as a convenient or pleasant environment. This may lead people to avoid waterfront park, recreation, and public access features in favor of other elective park and recreation activities not subject to uncertainty and disruption.
- The loss of parking under the existing viaduct to accommodate vehicle lanes will limit the supply to all users along the corridor. The additional demand from construction workers will produce additional competition for the finite parking resources in the area. The reality or perception of less parking, or parking less conveniently located in respect to final destinations, is likely to deter persons who use vehicles as their preferred mode of access.
- Proximity impacts from construction (such as noise, vibration, and dust) will make locations close to construction less desirable for passive recreation activities such as walking, picnicking, and viewing the aesthetic amenities of the area.

**Waterfront Promenade:** Reconstruction of the seawall will effectively remove the promenade as a north–south pedestrian route for the 2 years of construction. Portions of the existing promenade will remain open in its current configuration while construction takes place on other sections. Sections of rebuilt seawall and promenade will reopen while work is shifted to other sections. Even with some sections relatively intact, the overall north–south route along the waterfront will not be open and will limit its use as an amenity for walking and sightseeing. To the extent that viaduct reconstruction is scheduled along the central waterfront at the same time as seawall reconstruction, the uncertainties of access will be multiplied by having two construction zones to cross.

**Pier 48 Periscope Viewpoint and Alaska Square:** These Port of Seattle facilities will not be directly affected because they are both currently closed. Construction of the seawall will eliminate any incentive to reopen these facilities during the construction period. Alaska Square Park will be displaced by the ferry access roadway, as discussed in Chapter 7, Secondary and Cumulative Impacts. The Periscope Viewpoint area may be displaced by future expansion of the Colman Dock Ferry Terminal.

**S. Washington Street Pergola and Public Dock:** This facility will be completely displaced by seawall reconstruction. As mentioned above, it is proposed to be replaced after completion of the seawall. Use will be lost during the construction period.

**Colman Dock Ferry Terminal:** Access to the existing open space areas are likely to be curtailed during seawall construction. Access across construction sites will be provided for vehicles and pedestrians using the ferries. It is unlikely that individuals will find it attractive to cross the seawall construction area for the limited public access facilities provided. The fountain in the open space area near Yesler Way likely will be removed during construction. It could be relocated at about the same area after completion of the seawall, or may be incorporated into other public open space if the ferry terminal is redeveloped and expanded.

**Fire Station No. 5:** Access to the fire station and adjacent open space area will be eliminated during construction of the adjacent seawall. Access will be restored after construction.

**Piers 54, 55, 56, and 57:** Public access to these piers will be maintained by access routes across the construction zone. The appeal of public access facilities on the piers will be reduced by the greater effort required to reach them and from proximity impacts of construction such as noise. The lack of ability to move along the shoreline also will limit the overall appeal of the

area and will likely lead to lower levels of use until the entire seawall and promenade is completed. The statuary installation *Ivar Feeding the Gulls* at Pier 54 likely will be removed during construction, but can be replaced at the same location when the seawall and promenade reconstruction is complete.

**Access to Blake Island:** Access to Blake Island State Park by regular boat service from Pier 55 to the Tillicum Village can be expected to be reduced substantially by the decreased appeal of the waterfront due to the curtailment of linear movement along the corridor. During construction of the seawall directly adjacent to the boat dock, access across the construction site can be expected to further curtail visitors. If access is not convenient, persons considering this elective activity are likely to simply choose other activities.

**Waterfront Park:** The park will be directly affected by proximity impacts of construction as described in Section 6.1. All of the general impacts of construction outlined above will apply to this facility. Even with public access to the park maintained by access routes across the construction zone, the overall appeal of the park is likely to be reduced substantially because of its isolation from other attractions on the waterfront. The noise from construction is likely to reduce the quality of the experience for persons using the park. Existing public art in the park is unlikely to be directly affected during construction. There are a variety of means to protect it, including temporary removal of more portable pieces.

**Seattle Aquarium:** As indicated above, construction impacts may include contamination or interruption of the ocean water supply, interruption of utilities, and noise. The animals that form the core of the exhibits and programs at the Seattle Aquarium are likely to be substantially affected by construction noise from the seawall reconstruction due to its close proximity and potential high noise levels. Noise levels and vibration associated with construction are likely to be at a level and pattern that may cause substantial distress to the collection of fish, mammals, and birds. These impacts may range from detaching marine organisms from moorings to direct acoustic trauma to marine mammals to disruption in lifecycle functions such as feeding that can threaten survival of the organism, as discussed in Section 6.1, above.

Seawall construction within 100 feet of the Aquarium is likely to take place over a period of 100 to 150 days. Attendance at the Aquarium is likely to be reduced by seawall construction impacts as discussed above in Section 6.1 for viaduct reconstruction.

Three of the four major factors influencing the success of an aquarium in attracting visits will be negatively affected during construction:

- Visibility, supportive land uses, and strong connections to the water will be interrupted during construction of the seawall adjacent to the Aquarium to a greater extent than during reconstruction of the nearby portions of the existing viaduct.
- Physical accessibility for both pedestrians and persons driving will be limited to a greater extent by the construction of the seawall. This construction, more than rebuilding the viaduct, is likely to be perceived by the general public as making the area an undesirable destination. These factors may lead a substantial number of potential attendees to choose alternate elective activities.
- The critical mass of attractions along the waterfront will be reduced. The lack of a linear connection along the length of the waterfront during seawall construction will limit the other points-of-interest that can be conveniently visited. Most visitors will not detour around construction sites to get to multiple destinations along the waterfront.

**Pike Street Hillclimb:** The Hillclimb itself will be moderately affected by proximity impacts of seawall reconstruction, such as noise. It is likely that there will be less use of this corridor during the seawall reconstruction simply because people will consider the waterfront a less desirable destination.

**Pier 62/63 Park:** This park is likely to experience lower use due to interruption of linear access along the waterfront during construction. The site is especially dependent on access along the waterfront because connections to downtown are blocked by topography and intervening development. Pedestrian access from the south is provided by the Pike Street Hillclimb and a steep, narrow stairway on Pine Street. Pedestrian access to the north is provided by the pedestrian overpass at Lenora Street (to be eliminated during viaduct reconstruction) and the pedestrian bridge at Pier 66. Vehicular access is available from Madison Street about ½ mile to the south and Wall Street about a 0.5 mile north. Even with maintenance of access routes across the construction zone, the site is likely to be perceived as isolated and difficult to access. If construction occurs during evening performance hours, the summer concert program will not be viable because of noise disruption. The narrowing of vehicular lanes during construction together with the lack of pedestrian connections may present substantial challenges for patron access. Existing public art on the piers is unlikely to be affected during construction.

**Pier 66, the Bell Street Terminal:** The public access facilities at this site are likely to receive less use during seawall construction due to limited access across the construction site and the proximity impacts such as noise. The loss of a linear connection along the length of the waterfront is less of an impact

for this site because of the pedestrian bridge connection to Elliott Avenue. In addition, pedestrian movement along the waterfront may be less important to this site due to the distance to Piers 62/63 and the Aquarium to the south. The continued availability of the multi-purpose path on the east side of Alaskan Way also reduces the impacts of interruption of movement along the waterfront promenade. Public art at this location is not likely to be affected during construction, although measures for protection should be implemented.

**Edgewater Hotel, Pier 68, Vine Street Green Street, Pier 69, Clay Street Green Street, Pier 70, Belltown Cottage Park, Olympic Sculpture Park, Myrtle Edwards Park, Elliott Bay Park:** Public access to these facilities will be maintained by access corridors across the construction zone. Use of public access facilities on the piers is likely to be reduced because of the greater effort required to reach them and from construction proximity impacts, such as noise. The lack of linear access along the shoreline also will limit the overall appeal of the area, although this area has many fewer attractions such as retail, restaurants, and open space, as compared to the waterfront south of Pike Street. The art installations at either side of the intersection at Vine Street and Alaskan Way can be relocated to an analogous position adjacent to the BNSF rail lines and will continue to meet the intent of the work in evoking the industrial heritage of the waterfront.

**Lake Union to Elliott Bay Trail (formerly Potlatch Trail):** This planned facility to link South Lake Union to Elliott Bay may be affected by reconstruction of the seawall, depending on whether construction of the westerly leg across the Olympic Sculpture Park can proceed independently. Construction of the final link may be delayed until completion of the seawall.

**Seattle Center:** This 74-acre site that hosts a variety of cultural and recreational facilities will not be directly affected because no modifications to SR 99/Aurora Avenue N. or local streets in the vicinity are proposed.

Construction staging or construction parking is proposed only for non-peak demand periods and therefore is likely to have little effect on operations.

## 6.2 Aerial Alternative

The Aerial Alternative includes construction of a temporary aerial structure west of the existing viaduct to carry two lanes of traffic in each direction to allow demolition of the existing viaduct. The temporary structure will descend to the surface street north of Pike Street; the Broad Street Detour will use an overpass over the BNSF railway tracks at Broad Street. The Battery Street Flyover Detour option would continue the temporary aerial structure to the north and access the existing Battery Street Tunnel with an elevated

structure over the Art Institute Building on Elliott Avenue. The seawall along the west side of Alaskan Way will be a drilled shaft retaining wall with jet grouting as in the Rebuild Alternative, though there is also a Frame option.

The initial preparatory site work will substantially disrupt the existing street and the patterns of movement laterally up and down the waterfront and east to west to downtown. This preliminary work will be followed by reconstruction of the seawall and the temporary overhead structure. Seawall construction will be finished about 4.5 years after initiation of construction, as compared to about 3.5 years with the Rebuild Alternative. The temporary aerial structure will be under construction or in-place from about year 5 to year 12 of the construction period.

Similar impacts to those identified for the Rebuild Alternative will occur along most of the corridor, although the particulars of construction timing and the different facilities will change the severity of impacts.

- Construction will disrupt existing and accustomed patterns of movement. Even with provisions for access across construction sites, the perceived inconvenience will lead many people to avoid the waterfront in favor of other elective park and recreation activities not subject to uncertainty and disruption. This is especially the case during reconstruction of the seawall with the lack of linear movement that is central to the waterfront experience.
- The long construction period and the intrusion of the temporary aerial structure will be a substantial impediment to recovery of the waterfront as a destination for recreation enjoyment even after completion of the seawall reconstruction. The interrelated private and public activities along that waterfront may be individually and cumulatively affected by the factors listed below.
- The loss of parking under the existing viaduct to accommodate vehicle lanes will limit the supply to all users along the corridor. There also will be additional demand from construction workers. The reality or perception of less parking is likely to deter persons who use vehicles as their preferred mode of access.
- Proximity impacts from construction (such as noise, vibration, and dust) will make locations close to construction less desirable for passive recreation activities such as walking, picnicking, and viewing the aesthetic amenities of the area.

- The visual character of the construction site may be viewed by many as unappealing and lead them to seek other locations for park and recreation activities. Some people, however, may be attracted to the construction site and make repeated visits to keep tabs on its progress.
- The continued presence of the temporary aerial structure directly adjacent to the waterfront promenade will increase proximity impacts such as noise and visual impacts for a period of about 7 years.

Specific impacts on facilities within each section of the project are outlined in additional detail below.

### 6.2.1 South – S. Spokane Street to S. King Street

The proposal for the interchange at Atlantic Street and S. Royal Brougham Way is construction of SR 99 at-grade with the east–west streets crossing over on an elevated structure, as discussed for the Rebuild Alternative. The option under consideration is to keep the local streets at-grade with SR 99 crossing over them in a double-level stacked configuration. Construction impacts will be similar for either configuration.

**Waterfront Trail:** The existing multi-purpose asphalt pathway will be removed for construction of this alternative or the associated option. Both bicycles and pedestrians will be routed around the site either through temporary facilities provided to the west on Terminal 46, or more likely by routing to First Avenue. The experience of bicycles and pedestrians on the alternate routes is likely to be less scenic and less conducive to recreational walking and bicycling than the existing trail.

**Mountains to Sound Greenway Trail:** This proposed trail will be unaffected except where it connects to the extension of the asphalt trail. For the duration of construction, the connection to the waterfront will likely be made along First Avenue S.

**Sports Complexes:** Access to both Safeco Field and the Seahawks Stadium will be enhanced by access ramps to the temporary aerial structure. Prior to completion of the temporary aerial structure, the existing viaduct will retain the on- and off-ramps at First Avenue that provide access to and from the north. Construction disruption along the corridor will have little impact on access to the sport fields.

**Jack Perry Memorial Viewpoint:** This shoreline access facility will continue to be provided driveway access off E. Marginal Way, although access to that street from the east will be more circuitous during construction of the overpass. Construction proximity impacts on this site are not likely due to distance.

## 6.2.2 Central – S. King Street to Battery Street Tunnel

**Waterfront Promenade:** The construction of the aerial structure will have no direct construction impact on the waterfront promenade. Access to the promenade will be restricted by construction zones where construction is taking place. During the period of reconstruction of the seawall, the waterfront as a whole is likely to have reduced appeal as a destination. After reconstruction of the seawall is completed, the continuing construction of the aerial structure will likely act as an impediment to reestablishment of patterns of access. The proximity impacts of the temporary aerial structure, such as noise and shadows, as well as the visual domination of the structure will substantially reduce the appeal of the waterfront promenade for viewing the waterfront. It will be more likely to function simply as a pedestrian connection between piers or other locations of interest.

**Waterfront Trail:** This asphalt trail will be displaced by the greater width of the aerial structure and by the temporary structure. It will not be replaced by a sidewalk on the east side of the right-of-way until completion of the project, resulting in no facilities for north–south movement on the east side of Alaskan Way during the entire 11 years of construction. It also may be blocked during some or all of the initial 18 months of utility reconstruction. There is no similar continuous route downtown for recreational walking, exercise, and bicycling.

**Pier 48 Periscope Viewpoint and Alaska Square:** These facilities will not be subject to direct construction impacts since they are currently closed. Construction of the ferry access roadway between Pier 48 and Colman Dock will displace the currently closed Alaska Square Park. As discussed above, these facilities may be displaced by the expansion of the Colman Dock Ferry Terminal as a separate WSDOT project.

**S. Washington Street Pergola and Public Dock:** This facility will be displaced by the ferry access over-water structure. It is proposed to be relocated after completion of construction.

**Marion Street Green Street:** During construction in the immediate vicinity, this street is not likely to be a desirable location for open space. The function of providing east–west pedestrian connections between the waterfront and downtown will also be reduced by noise and disruption during construction.

**Colman Dock Ferry Terminal:** Access to the existing open space (assuming replacement after seawall reconstruction) is likely to be curtailed during construction of the adjacent section of the aerial structure. Even with access provided across construction sites, the proximity impacts from the temporary aerial structure are likely to limit use. The existing mural on the Marion Street

Overpass to the ferry terminal will be removed and replaced during construction. The mural could be conserved and incorporated into the new overpass or exhibited in another public open space.

**Fire Station No. 5:** Access to the fire station and adjacent open space area (assuming replacement after seawall reconstruction) will be provided across the construction site, but this minor open space is likely to be used only if other uses along the waterfront are attractive enough to draw people.

**Piers 54, 55, 56, and 57:** After reopening of the waterfront as a whole upon completion of seawall reconstruction, access to these piers will be limited by the construction corridor for the aerial structure construction, even with maintenance of access routes. The appeal of public access facilities near Alaskan Way will be reduced by proximity impacts of the temporary aerial structure. The public access areas at the end of the piers will be less affected by noise and shadows. As indicated above, the temporary aerial structure is likely to reduce the quality of the experience of walking along the waterfront. The public access facilities on the piers by themselves are not likely to attract users unless those persons are also attracted by the overall ambience and mix of uses provided along the waterfront. It is unlikely that those uses will continue to be as attractive with the visual, noise, and access impacts during the construction period of more than a decade.

**Access to Blake Island:** Access to Blake Island State Park by regular boat service from Pier 55 to the Tillicum Village is likely to be reduced in concert with the reduction in the overall appeal of the waterfront. As indicated above for the Rebuild Alternative, persons considering this elective activity can simply choose other activities.

**Waterfront Park:** The park is likely to be substantially affected by visual and noise impacts of construction activities and the temporary aerial structure. The temporary aerial structure will be an especially prominent visual element and source of noise directly adjacent to the park. The number of overall visitors is likely to decline during construction due to proximity impacts and less convenient access because of loss of parking and reduced convenience of access through the construction zone.

**Seattle Aquarium:** Similar to the impacts of the Rebuild Alternative discussed in Section 6.1 above, the Aquarium would be substantially affected by proximity impacts of construction and reduced attendance. The animals that form the core of the exhibits and programs at the Seattle Aquarium are at substantial risk from contamination or disruption of the seawater supply, which is critical to the lifecycle of many species. They are also likely to be substantially affected by construction noise.

In addition to construction noise, noise from the temporary aerial structure will be at a location and elevation such that noise will be transmitted on a direct line-of-sight over the easterly wall of Pier 60 and into outdoor portions of the Aquarium. This noise is likely to substantially affect the animal collection and degrade the visitor experience and could place additional stress on animals in the collection.

Attendance at the Aquarium is likely to be reduced during construction of the Aerial Alternative due to the same factors described above for the Rebuild Alternative. This will jeopardize the financial viability and continued operation of the facility, and may delay scheduled plans to enhance the facility. The adjacent temporary aerial structure will further intensify these impacts. Generally, the level of impact will be higher for this alternative.

**Pioneer Square, Klondike Gold Rush Historic Park, and Occidental Plaza:**

The parks within the Pioneer Square Historic District will not be directly affected by construction, but the restrictions on vehicular capacity of the Alaskan Way corridor during construction may limit overall attendance in the district. Traffic increases on local streets during the construction period also may be perceived as a negative addition by adding noise and restricting pedestrian circulation.

**Harbor Steps, University Street Green Street:** This east–west connection with gathering places on the steps is likely to see lower levels of use during construction because of less pedestrian movement to the waterfront and proximity impacts such as noise and the visual impacts of the temporary aerial structure. These impacts are likely to be less severe in the easterly portion of the corridor.

**Seattle Art Museum University Street Plaza, Benaroya Hall Plaza:** The public access areas on these sites will be little affected by the seawall or aerial structure construction because of the elevation and increased distance from Alaskan Way. Both visual and noise impacts from construction are less than for the Harbor Steps to the west.

**Pike Street Hillclimb:** The areas of public plaza, stairs, terraces, and landscaping between Western Avenue and Alaskan Way will be affected by noise and disruption of the corridor from construction of the aerial structure and from operation of the temporary aerial structure. Even with maintenance of access through the construction site, the westerly portions of the corridor will be less conducive to enjoyment by pedestrians. The existing public art installation *Breaching Orca* must be removed during construction but can be replaced in the same location after completion. It may be desirable to relocate the piece to allow public enjoyment during the decade of construction.

### 6.2.3 North Waterfront – Pike Street to Broad Street

**Waterfront Promenade:** Direct effects on the promenade north of Pike Street will occur from the temporary aerial structure with either detour. The Broad Street Detour will have less visual and shadow impact and somewhat less noise impact. The impacts of the Battery Street Flyover Detour option would be greatest in the vicinity of Pier 66, where the visual dominance of the overpass and associated noise and shadows would dominate the corridor.

**Waterfront Trail:** The multi-purpose asphalt pathway that extends north of Pike Street will be considerably narrowed with either the aerial structure or the transition to carry the traffic on the surface street. Noise, visual, and shadow impacts will be greater with the Battery Street Flyover Detour option.

**Victor Steinbrueck Park:** This park overlooking the aerial structure is not likely to be adversely affected by construction. It will receive proximity impacts such as noise from construction. Most construction noise is not substantially greater than the existing noise levels from traffic, but it differs in character. The location of a construction site adjacent to the park may increase the interest of the park as a viewing site.

**Lenora Street Bridge:** The existing pedestrian bridge that provides a connection to the east side of the Alaskan Way surface street is proposed to be demolished during construction of the Aerial Alternative. A pedestrian connection to the waterfront may be provided on the corridor after completion of this section of the Aerial Alternative.

**Pier 62/63 Park:** After completion of seawall reconstruction, this park can be restored to its previous configuration and use. Proximity impacts from the temporary aerial structure will reduce the use of the pier. The noise impacts of the temporary aerial structure will preclude continuation of the summer concert program. The loss of revenue from cessation, relocation, or reduced patronage will have the potential impacts discussed in Chapter 7, Secondary and Cumulative Impacts.

**Pier 66, the Bell Street Terminal:** The public access facilities at this site would receive substantial noise and shadow impacts and be visually dominated by the Battery Street Flyover Detour option. The overall appeal of the public access areas for viewing and enjoying the waterfront would be reduced.

**Edgewater Hotel, Pier 68, Vine Street Green Street, Pier 69, Clay Street Green Street, Pier 70:** These parks and public access facilities will not be directly affected by viaduct reconstruction due to distance. The construction of the Broad Street overpass for southbound traffic will affect the visual context near the elevated structure as discussed under the Rebuild Alternative, above. The public access facilities on Piers 69 and 70 will be

largely unaffected because those areas are at the end of the piers. Pedestrian circulation between piers along the waterfront promenade will be affected by noise and shadows from the aerial structure.

With the Battery Street Flyover Detour option, the direct impacts of the Broad Street overcrossing structure would be avoided. Some additional traffic along the surface street may occur from reduced capacity of the SR 99 corridor, but would be substantially less than with the Broad Street Detour. The removal of the waterfront trolley to accommodate additional vehicle lanes and the temporary aerial structure to the south may affect the number of people accessing this area. The art installations at either side of the intersection at Vine Street and Alaskan Way can be relocated to an analogous position adjacent to the BNSF rail lines and would continue to meet the intent of the work in evoking the industrial heritage of the waterfront.

**Olympic Sculpture Park:** The Olympic Sculpture Park will experience proximity impacts from increased traffic on the Broad Street Detour along the southerly boundary of the park. The elevated roadway between Elliott Avenue and Alaskan Way will add substantial visual intrusion, shadows, and noise to that portion of the park. The proposed overpass is adjacent to a portion of the park that is near grade level on Broad Street and slopes up to the west to the pedestrian overpass structure. The entire sloping area will be subject to visual and noise impacts. This area is one of four large landscaped areas on the site.

The central pedestrian circulation corridor through the site is “Z” shaped and is near the elevation of the overpass. This will place vehicles using the overpass within the line of sight of the majority of persons moving from setting to setting within the park, and persons moving through the park to access the shoreline and the Myrtle Edwards/Elliott Bay Park will be affected by the overpass. The overpass and vehicles will substantially intrude on views to the south from the lower portion of the park. These visual and noise impacts will occur during the 8 years the detour is under construction or in use.

**Myrtle Edwards Park, Elliott Bay Park:** These parks will not be directly affected by construction of the Aerial Alternative or the proximity of the Broad Street overpass due to distance. Access to the parks may be affected by traffic volumes on Broad Street and the difficulty of accessing the site westbound from Broad Street. Access to these parks, however, will be completely changed by the Olympic Sculpture Park, as discussed in Chapter 7, Secondary and Cumulative Impacts, below.

**Wave Rave Cave:** This public art installation under the existing viaduct will be displaced during construction. A similar space might be available for re-installation after construction of the Aerial Alternative. The work was designed to accommodate relocation, and the public may be served by enjoyment at another site during the decade of construction.

**First Avenue Project:** This public art installation consists of a number of pieces along several blocks of First Avenue. A piece on the sidewalk above the existing Battery Street Tunnel portal could be damaged during construction. The piece could be removed during construction and replaced afterward.

#### 6.2.4 North – Battery Street Tunnel to Ward Street

**Lake Union to Elliott Bay Trail (formerly Potlatch Trail):** This planned facility to link South Lake Union to Elliott Bay will not be affected by construction of the Aerial Alternative due to distance from the corridor. The alternative chosen for Aurora Avenue N. will affect the route and timing of installation. If the connection to the waterfront occurs through the Olympic Sculpture Park, users will be affected by noise from the Broad Street overcrossing.

**Seattle Center:** The variety of cultural and recreational facilities on this 74-acre site will be affected by changes in access patterns during construction, loss of parking, and proximity impacts of increased traffic.

The Broad Street Detour will increase traffic along the southerly boundary of the site. The greater volumes could be accommodated only by increasing signal cycle times for the traffic on Broad Street. This will reduce signal time available for vehicles and pedestrians crossing Broad Street to access the Center. If a monorail station is built south of Broad Street, the additional pedestrian volumes would contribute to the impacts of restricted crossing time.

Higher traffic volumes on Broad Street also will increase noise impacts on adjacent portions of the site. The area affected, however, is the sculpture park south of the Space Needle and is not generally considered a high activity area.

The proposal for SR 99/Aurora Avenue N. is widening the Mercer Street underpass with closure of the Broad Street underpass. An additional option is to lower SR 99/Aurora Avenue with surface street overcrossings at-grade.

The process of building the alternative or option will affect the number of lanes on both Mercer and Broad Streets and lead to a shifting of traffic patterns as various elements of the road network in the area are changed in different stages of construction. The major impact may be uncertainty about

access routes and delays that may lead attendees at sporting and cultural events to avoid the area during construction. The impacts of these redistributions of traffic during construction are discussed in greater detail in Appendix C. Transportation Discipline Report.

#### 6.2.5 Seawall – S. King Street to Myrtle Edwards Park

Reconstruction of the seawall as part of the Aerial Alternative will have virtually the same impacts as for the Rebuild Alternative. Impacts of reconstruction of the seawall will be combined with impacts of the concurrent and adjacent construction of the new aerial structure, which is discussed above.

### 6.3 Tunnel Alternative

The major feature of construction impacts of the Tunnel Alternative is the duration for construction of the southbound tunnel, which will serve as the seawall. Tunnel construction in the central waterfront area is estimated to take 5 years. During this entire time, sections of the waterfront piers will be separated from the rest of downtown by a construction zone 60 to 80 feet wide. After completion of the southbound tunnel, the waterfront will be restored to a continuous corridor with a pedestrian promenade. The construction of the northbound tunnel, however, will separate the waterfront from downtown by an additional parallel construction corridor for an additional 3 years.

Northbound traffic will be maintained on the existing viaduct until the completion of the first tunnel about 6.5 years after initiation of construction and diverted to that tunnel thereafter. Southbound traffic will be diverted to the Broad Street Detour about halfway through the construction process and continue on that route until completion of the second tunnel.

The general impacts of construction on park, recreation, and public access facilities will be similar to impacts of the Rebuild and Aerial Alternatives, with a large component of the impacts occurring from interruption of the continuity of movement along the waterfront. The interruption will be longer for the Tunnel Alternative than for other alternatives discussed above. The particulars of construction staging and the specific use characteristics of different park and recreation facilities will affect the severity of impacts. Generally speaking, the discussion below distinguishes between the impacts of construction of the southbound tunnel directly adjacent to the seawall and the later phase of construction of the northbound tunnel.

The long duration of construction is likely to reinforce a public perception that the waterfront has been transformed during the construction period from a

recreation resource to an unfriendly environment. The value to potential visitors of waterfront views and activities provided by parks and public access facilities, reinforced by restaurants and other private uses, is likely to be outweighed by the negative aspects of construction. Because other elective recreation activities are available and other waterfront locations are available on Puget Sound, people may simply shift to other activities and other locations. The following factors are likely to reinforce this perception.

- Construction will disrupt existing and accustomed patterns of movement to and from the waterfront. Provisions for access across the construction sites will be more difficult and more limited during the times an open trench is being excavated.
- The loss of parking under the existing viaduct to accommodate vehicle lanes will limit the parking supply for all users along the corridor. There also will be additional competition for parking from construction workers. The reality or perception of less parking availability is likely to reinforce the perception that the destination is not worth the trip.
- Movement along the central waterfront will be impeded for a period of about 5 years. This will greatly limit the perception of the waterfront as a convenient and scenic corridor. The waterfront instead will become a series of isolated destinations. The overall vibrancy of the waterfront and its attractiveness as a destination will be reduced by this fragmentation. The appeal of park and public access destinations on the waterfront will be reduced without the linear experience and multiple public and private activities.
- Proximity impacts from construction (such as noise, vibration, and dust) will make locations close to the construction site less desirable for passive recreation activities such as walking, picnicking, and viewing the aesthetic amenities of the area.
- The visual character of the construction site may be viewed by many as unappealing and lead them to seek other locations for park and recreation activities. Some people, however, may be attracted to the construction site and make repeated visits to keep tabs on its progress.

Specific impacts on facilities within each section of the project are outlined in additional detail below.

### 6.3.1 South – S. Spokane Street to S. King Street

The interchange at S. Atlantic Street and S. Royal Brougham Way is proposed to be SR 99 at-grade with the east–west streets crossing over on an elevated structure, as discussed for the Rebuild Alternative. An option is a side-by-

side aerial structure for SR 99 with the local streets at-grade under the highway. Construction impacts will be similar with either configuration.

**Waterfront Trail:** The existing multi-purpose asphalt pathway will be removed during construction of the Tunnel Alternative or option. Bicycles and pedestrians will be routed around the site either through temporary facilities provided to the west on Terminal 46 or more likely by routing to First Avenue. The experience of bicycles and pedestrians on the alternate routes is likely to be less scenic and less conducive to recreational walking and bicycling than the existing trail.

**Mountains to Sound Greenway Trail.** This proposed trail will be unaffected except where it connects to the extension of the asphalt trail. For the duration of construction, the connection to the waterfront will likely be made along First Avenue S.

**Sports Complexes:** Access to both Safeco Field and the Seahawks Stadium will remain similar to existing conditions for the first 3.5 years because of retention of traffic on the existing viaduct. With the implementation of the Broad Street Detour, the southbound off-ramp at First Avenue will no longer function, although the northbound on-ramp will continue. In the final 3 years of construction, building the interchange west of the sport fields will restrict surface street movement from the west. Access from the east, especially with completion of SR 519, will be a viable route for most attendees. Persons attracted to major league sporting events are likely to develop alternate routes and modes of access because they will have sufficient time to plan and because there are not substitute equivalent activities available elsewhere in the region.

**Jack Perry Memorial Viewpoint:** This shoreline access facility will continue to be provided driveway access off E. Marginal Way, although access to that street from the east will be more circuitous during construction of the overpass. Construction proximity impacts on this site are not likely due to distance.

### 6.3.2 Central – S. King Street to Battery Street Tunnel

**Waterfront Promenade:** Preliminary site work will disrupt the existing access to the promenade from downtown because of a variety of construction activities in the Alaskan Way right-of-way, including utility relocation, removal of the streetcar track, replacement of parking under the viaduct with through vehicular lanes, and other activities. After that initial stage, the continuity of the waterfront promenade will be disrupted for a period of about 5 years during construction of the southbound tunnel, which incorporates a new seawall.

Conceptual construction plans envision that the construction will proceed in two phases. Initially, the section of the promenade from Union to Virginia Streets will be displaced by tunnel construction for about 2 years. At the same time, the promenade will be displaced in sections from Virginia Street to Myrtle Edwards Park for seawall reconstruction. After the completion of the tunnel and seawall north of Union Street, the promenade will provide a continuous corridor to the north. At that time, the Broad Street Detour will be implemented.

Even with completion of the promenade to the north, the waterfront as a whole is likely to have reduced appeal as a destination because uses to the north are more widely separated, provide less activity and interest, and are more difficult to access because of the grade change to downtown and the lack of connecting streets.

After completion of the section north of Union Street, the promenade will be displaced between S. King and Union Streets by tunnel construction. After completion of the first tunnel, the waterfront promenade will reopen as a continuous corridor. The dimensions of the interim promenade will be similar to the existing width because of the accommodation of the surface street over the first tunnel. This will occur approximately 5 years after initiation of construction.

For the following 4 years, demolition of the existing viaduct, construction of the second tunnel, and final restoration of the corridor after completion will create a construction zone which will provide limited vehicle and pedestrian crossings to downtown to the east. The location of these connections will shift periodically as construction proceeds. Traffic from the surface street, especially the Broad Street Detour for southbound traffic, will increase proximity impacts such as noise. The level of use of the promenade and public and private activity centers along the waterfront will likely depend upon the ease of access across the construction corridor for the second tunnel and the degree to which the public is convinced that the waterfront is a viable activity center, despite the additional effort needed to access it.

**Waterfront Trail:** This asphalt trail will be displaced by the construction of the first tunnel. No specific plans for pedestrian circulation on the east side of Alaskan Way during construction have been developed for the construction phase. There will be a need for such a connection, unless it is acceptable to divert all north–south pedestrian movement further to the east to Western Avenue.

**Pier 48 Periscope Viewpoint and Alaska Square:** These facilities are likely to be displaced by the proposed ferry access roadway. The impact will not be immediately experienced as a loss because they are currently closed. As discussed above, these facilities may be displaced by expansion of the Colman Dock Ferry Terminal as a separate project, in which case the Seattle Shoreline Master Program likely will require equivalent or larger areas of public access.

**S. Washington Street Pergola and Public Dock:** This facility will be displaced by the ferry access over-water structure. It is proposed to be relocated at the edge of the structure at the completion of construction.

**Marion Street Green Street:** During construction in the immediate vicinity, this street is not likely to be a desirable location for open space. The function of providing east–west pedestrian connections between the waterfront and downtown will also be reduced by the limited attraction of the waterfront during construction phases, especially when the waterfront promenade is displaced and tunnel construction occurs at the base of this street.

**Colman Dock Ferry Terminal:** Access to the existing open space adjacent to the waterfront promenade is unlikely to be provided during the first tunnel construction. The limited amenities of the area are not likely to be worth the cost and effort of providing access and ensuring the safety of users during construction. The balance of public access facilities provided in the terminal building are likely to remain available because of maintenance of pedestrian access to ferries, but as a separate destination, cut off from the waterfront as a whole, the ferry terminal is not likely to attract persons for the purpose of enjoying the views of the waterfront. The existing mural on the Marion Street Overpass to the ferry terminal will be removed and replaced during construction. The mural could be conserved and incorporated into the new overpass or exhibited in other public open space.

After completion of the first tunnel, the entire waterfront corridor will be accessible for north–south movement. The construction area for the second tunnel will limit east–west connections. The extent of use of public access facilities at this and other sites during the following 4 years of construction of the second tunnel will likely depend upon the extent to which the waterfront can reestablish itself as a vibrant destination. This will likely depend upon a number of factors, including the ease of access across the construction corridor and the mix of uses on the waterfront that demonstrate to the public that the area is a worthwhile destination, despite the additional effort needed for access.

**Fire Station No. 5:** Access to the fire station and adjacent open space will be displaced during construction of the first tunnel. This minor open space will be accessible after completion of the first tunnel and restoration of the promenade, but is likely to be used only in conjunction with other attractions along the waterfront.

**Piers 54, 55, 56, and 57:** These piers and the public areas they provide will remain accessible from downtown until the second stage of construction of the first tunnel, about 3.5 years after initiation of construction. The piers will, however, be subject to disruption in access and proximity impacts from construction during that initial period. In the second phase of construction of the westerly tunnel incorporating a new seawall, the piers will be accessible only as discrete destinations. The public access areas on the piers are likely to have limited appeal for waterfront viewing as separate destinations that require threading through a construction zone. Use likely will primarily be persons attracted to the piers by restaurants or other private uses.

After completion of the first tunnel, the entire waterfront corridor will be accessible, but access from the east will be limited to specific corridors over the construction area. The extent of use of public access facilities at these sites will depend upon the extent to which public and private uses can reestablish the waterfront as a worthwhile destination, despite the continued adjacent construction.

**Access to Blake Island:** Access to Blake Island State Park by regular boat service from Pier 55 to the Tillicum Village is likely to be reduced substantially during construction, especially during the 3-year construction period for the first tunnel. As discussed above, persons considering this activity are able to simply choose other destinations if they perceive that access is inconvenient.

**Waterfront Park:** Attendance at the park is likely to be influenced by proximity impacts such as noise and overall reductions in the levels of activity on the waterfront. Activity levels are likely to be affected the most by construction of the first tunnel south of Union Street where connections to Piers 56, 55, and 54 along the waterfront promenade will be severed. The Waterfront Park may be able to maintain access to the east if the boundary of staging for tunnel construction is Union Street at the midpoint of the park. During construction north of Union Street, access to the park and the Aquarium could occur to the south. During construction to the south, access to the park and Pier 59 could occur from the north. As with other public and private activities after reopening of the promenade with completion of the first tunnel, the degree to which the waterfront as a whole reestablishes a

vibrant mix of uses will be a critical factor, along with convenient access across the second tunnel construction area.

**Seattle Aquarium:** Similar to the impacts of the Rebuild and Aerial Alternatives, the animals that form the core of the exhibits and programs at the Seattle Aquarium are likely to be substantially affected by risks to water supply and proximity impacts such as construction noise. The viability of operation of the facility may be threatened by a reduction in attendance and revenue.

The potential reduction in attendance for the Tunnel Alternative may be greater than the Rebuild or Aerial Alternative due to the longer period of construction.

The current conceptual plans for the initial phase of construction of the first tunnel would include construction from Union Street to Virginia Street. If this occurred, access to the Aquarium could be maintained through Waterfront Park. The waterfront corridor from Union Street to Myrtle Edwards Park would reopen as a continuous corridor about 3.5 years after initial construction, while construction proceeded to the south and on the aerial structure connecting to the Battery Street Tunnel. During this period, even with maintenance of an access corridor, circulation of pedestrians from downtown, vehicular access, and parking all would be constrained. Proximity impacts would occur from the construction staging area across from the Aquarium. In addition, the overall vibrancy of the waterfront will be limited by the greater isolation of Piers 54 through 57 by adjacent tunnel construction as discussed under general impacts above.

As for other uses on the waterfront, a critical opportunity may be present with the completion of the first tunnel and reopening of the waterfront as a continuous corridor.

**Pioneer Square, Klondike Park, and Occidental Plaza:** As with other alternatives, the parks within the Pioneer Square Historic District will not be directly affected by construction of the Tunnel Alternative. The restrictions on vehicular capacity of the AWV corridor, however, may limit access to the Historic District. Traffic increases on local streets during the construction period also may be perceived as a negative addition of noise and adjacent traffic.

**Harbor Steps, University Street Green Street:** This east-west connection with gathering places on the steps is likely to see lower levels of use during construction because of less pedestrian movement to the waterfront and proximity impacts such as noise and the visual impacts of the temporary

aerial structure. These impacts are likely to be less severe in the easterly portion of the corridor near the top of the steps.

**Seattle Art Museum University Street Plaza, Benaroya Hall Plaza:** The public access areas on these sites will be little affected by the construction along the waterfront because of the elevation and distance.

**Pike Street Hillclimb:** The areas of public plaza, stairs, terraces, and landscaping between Western Avenue and Alaskan Way will be affected by noise and disruption of the construction corridor for both tunnels. Construction of the tunnels and the lid for the transition to the aerial structure will sever access to the shoreline or limit pedestrian access to a narrow corridor across the construction site. After the initial construction of the section north of Union Street, the corridor will be relatively free of construction impacts for a period of about 3 years until construction of the second tunnel begins.

Even with maintenance of pedestrian access through the construction site, the westerly portions of the corridor will be less conducive to enjoyment by pedestrians than the area under and adjacent to the existing viaduct. The public art installation *Breaching Orca* must be removed during construction but can be replaced in the same location after completion. It also may be relocated to allow public enjoyment during the extended construction period.

### 6.3.3 North Waterfront – Pike Street to Broad Street

**Waterfront Promenade:** This section of the promenade will be subject to proximity impacts from construction during the preliminary stage of utility relocation, removal of the streetcar track, and other activities. Following that, much of the promenade will be displaced for 2 years for tunnel construction of the portal north of Pine Street and seawall replacement to the north. This portion of the promenade will reopen about 3.5 years after initiation of construction. It will be united with the remainder of the promenade to the south after another 3 years. After that point, major construction will not occur along this portion of the corridor for about 3 more years until final construction of surface improvements.

During the 6 years after initial restoration, the promenade will be subject to proximity impacts from greater traffic noise due to the Broad Street Detour. This portion of the waterfront by itself is likely to have limited appeal as a destination given its current use and configuration. For about ¼ mile north of the Aquarium, until Pier 66, there is only the bare deck area of Piers 62/63 and the marina west of the promenade. The Edgewater Hotel, Pier 69, and Pier 70 provide limited uses adjacent to the promenade and little attraction for pedestrians. Although this area provides some interest in viewing Elliott Bay,

it currently lacks the vibrancy of the number and mix of uses of Piers 54 through 59.

**Waterfront Trail:** The multi-purpose asphalt pathway that extends north of Pike Street may be narrowed to accommodate additional vehicle lanes and carry the detour traffic on the surface street.

**Victor Steinbrueck Park:** This park overlooking the aerial structure is not likely to be adversely affected by construction. Construction of the aerial structure between the tunnel and the Battery Street Tunnel will create noise, but at levels not much greater than the existing noise levels from traffic. The location of construction adjacent to the park may provide an additional interest for some viewers.

**Lenora Street Bridge:** The existing pedestrian bridge that provides a connection to the east side of the Alaskan Way surface street will be demolished during construction of the aerial connection to the Battery Street Tunnel. This corridor connecting Belltown to the waterfront is not expected to be available during construction because of steep grades.

**Pier 62/63 Park:** After completion of the initial stage of tunnel construction, the park will be restored to its previous configuration and use. Noise levels from the additional traffic on the surface street are not likely to be substantially higher than existing levels because of limited speeds. Noise impacts from Battery Street Flyover Detour will preclude concert activities from traffic noise. The loss of revenue from cessation, relocation, or reduced patronage will have the potential impacts on other programs discussed in Chapter 7, Secondary and Cumulative Impacts.

**Pier 66, the Bell Street Terminal:** The public access facilities at this site will be affected very slightly, if at all, from additional noise from surface street traffic volumes utilizing the Broad Street Detour during construction. The pedestrian bridge to Belltown will be preserved and pedestrian movement along the waterfront will be restored after reconstruction of the seawall to the north and south about 3.5 years after initiation of construction. There will be little change in the passive enjoyment of the waterfront provided by public access areas at the pier level and the public viewing area on the roof. With the Battery Street Flyover Detour, all public access facilities on the site would be affected by noise, shadow, and visual dominance of the flyover structure.

**Edgewater Hotel, Pier 68, Vine Street Green Street, Pier 69, Clay Street Green Street, Pier 70:** These parks, public access facilities, and public art installations will not be directly affected by viaduct reconstruction due to distance. Construction of the Broad Street overpass for southbound traffic will affect the visual context near the elevated structure as discussed under

the Rebuild Alternative, above. The public access facilities on Piers 69 and 70 will be largely unaffected because those areas are at the end of the piers. The art installations at either side of the intersection at Vine Street and Alaskan Way can be relocated to an analogous position adjacent to the BNSF rail lines and will continue to meet the intent of the work in evoking the industrial heritage of the waterfront.

**Olympic Sculpture Park:** The Broad Street Detour will produce the same visual intrusion and noise impacts discussed for the Rebuild and Aerial Alternatives. The elevated structure will primarily impact the portion of the park along Broad Street between Elliott Avenue and Alaskan Way. Increased noise and visual dominance will affect enjoyment of the landscaped area at that location. In addition, the vehicle overpass will be about even with the main pedestrian route through the site and will be a substantial visual intrusion on views to the south. These visual and noise impacts will occur over a period of about 8 years when the detour is under construction or in use.

**Myrtle Edwards Park, Elliott Bay Park:** These parks will not be directly affected by construction of the Aerial Alternative or the proximity of the Broad Street overpass due to distance. Access to the parks, however, may be affected by traffic volumes on Broad Street and the difficulty of accessing the site westbound from Broad Street. Access to these parks, however, will be substantially altered by the Olympic Sculpture Park, as discussed in Chapter 7, Secondary and Cumulative Impacts, below.

**Wave Rave Cave:** This public art installation under the existing viaduct will be displaced during construction. A similar space might be available for re-installation after construction of the aerial structure connecting to the Battery Street Tunnel. The work was designed to accommodate relocation, and the public may be better served by enjoyment of the piece at another site during the construction period.

**First Avenue Project:** This public art work consists of a number of installations along several blocks of First Avenue. A piece on the sidewalk above the existing Battery Street Tunnel portal could be damaged during construction. The piece could be removed during construction and replaced afterward.

#### 6.3.4 North – Battery Street Tunnel to Ward Street

**Lake Union to Elliott Bay Trail (formerly Potlatch Trail):** This planned facility to link South Lake Union to Elliott Bay will not be affected by construction of the Aerial Alternative due to distance from the corridor. If the connection to the waterfront occurs through the Olympic Sculpture Park,

users will be affected by noise from the Broad Street overcrossing. The option chosen for Aurora Avenue N. will affect the route and the timing of installation.

**Seattle Center:** The variety of cultural and recreational facilities on this 74-acre site will be affected by changes in access patterns during construction, loss of parking, and proximity impacts of increased traffic.

The Broad Street Detour will increase traffic along the south boundary of the site. The greater volumes could be accommodated by increasing signal cycle times for the traffic on Broad Street. This would reduce signal time available for vehicles and pedestrians crossing Broad Street to access the Center. If a monorail station is built south of Broad Street, higher pedestrian demand and greater impacts would result.

Higher traffic volumes on Broad Street also will increase noise impacts on adjacent portions of the site. The area affected, however, is the sculpture park south of the Space Needle and is not generally considered a high-activity area.

Widening the Mercer Street underpass with closure of the Broad Street underpass is proposed as part of this alternative. Impacts are the same as discussed for the Aerial Alternative, above.

The process of widening Mercer Street will affect the number of lanes on Mercer Street and lead to a shifting of traffic patterns as various elements of the road network in the area are changed in different stages of construction. The major impact may be uncertainty about access routes and delays that may lead attendees at sporting and cultural events to avoid the area during construction.

The impacts of these redistributions of traffic during construction are discussed in greater detail in Appendix C. Transportation Discipline Report.

## 6.4 Bypass Tunnel Alternative

The construction sequence for the Bypass Tunnel Alternative differs from the Tunnel Alternative in the construction of a single tunnel carrying two lanes in each direction as opposed to tunnels with three lanes in each direction constructed in two separate phases, one after another. The Bypass Tunnel Alternative will require 8.5 years to build, as compared to 9 years for the Tunnel Alternative, with an additional year to 18 months at the beginning and end of construction for utility relocation and restoration of surface streets. The existing viaduct will be open to carry traffic during a substantial portion of the entire construction period.

The impacts on the park and recreation facilities along the central waterfront are similar to those for the Tunnel Alternative, except that the entire waterfront will reopen as a continuous corridor 6 years after inception of construction, 6 months earlier than with the Tunnel Alternative. After reopening of the waterfront corridor, the diversion of traffic to the bypass tunnel and demolition of the existing viaduct will require about 16 months, as opposed to the 3 years required for construction of the second tunnel. Work will continue on other portions of the corridor, but park, recreation, and public access facilities on the central waterfront will not be isolated by a continuous construction corridor between the waterfront and downtown.

The discussion of impacts below focuses on differences between the Bypass Tunnel and Tunnel Alternatives.

#### 6.4.1 South – S. Spokane Street to S. King Street

The Bypass Tunnel Alternative proposal includes SR 99 at-grade with the east–west streets crossing over on an elevated structure, as discussed for the Rebuild and Tunnel Alternatives above. Impacts will be approximately the same as the Tunnel Alternative.

**Sports Complexes:** Access to both Safeco Field and the Seahawks Stadium will remain similar to existing conditions until completion of the tunnel because of retention of traffic on the existing viaduct. In the final 3 years of construction, completion of the interchange west of the sport fields will restrict surface street movement from the west. As for other alternatives, attendees at sporting events are likely to develop alternate routes and modes of access. Overall attendance probably will not decline because there are not substitute activities for major league sports events.

#### 6.4.2 Central – S. King Street to Battery Street Tunnel

Impacts on the central waterfront will be essentially the same as for the Tunnel Alternative. The continuity of the waterfront promenade will be disrupted for a period of about 6 years. The portion of the waterfront north of Pike Street will reopen after completion of the seawall reconstruction about 3.5 years after initiation of construction. North of Union Street, the promenade will provide a continuous corridor to the north.

After completion of the tunnel, 6 years after initiation of construction, the waterfront promenade will reopen as a continuous corridor. The demolition of the existing viaduct will separate the waterfront from downtown for a period of a little more than a year. After demolition of the existing viaduct, the completion of surface improvements will require about an additional 18 months. Access provided through the demolition and surface road

reconstruction site is likely to provide more and wider corridors than access across tunnel excavation, which involves bridging. With the Bypass Tunnel Alternative, the central waterfront will be reconstructed except for staging areas about 5 years after initiation of construction as compared to about 8 years with the Tunnel Alternative. Southbound traffic from the Broad Street Detour will continue to use the surface street until completion of the final aerial link between the waterfront tunnel and the Battery Street Tunnel near the end of the construction period.

Specific impacts on the following sites will differ due to differences between the Tunnel and Bypass Tunnel Alternatives.

**Waterfront Park and Seattle Aquarium:** Similar to the impacts of the Tunnel Alternative, the animals that form the core of the exhibits and programs at the Seattle Aquarium are likely to be at risk from interruption to water supply and substantially affected by construction proximity impacts such as noise.

With the Bypass Tunnel Alternative, the initial phase of construction of the single tunnel will not necessarily occur in this area. Conceptual plans currently envision that this portion of the corridor will be constructed in the later stages of tunnel construction to allow construction access to the aerial corridor between Pike Street and the Battery Street Tunnel. In the early stages of construction, a temporary aerial ramp will be constructed between Virginia and Pike Streets to bring the southbound traffic from the Broad Street Detour to the existing viaduct. This ramp will remain until demolition of the existing viaduct. This ramp will increase traffic noise impacts on outdoor exhibit areas and is likely to degrade the experience of attendees and stress animals exhibited.

Pedestrian access to the Aquarium and Waterfront Park via the Pike Street Hillclimb is likely to be retained until the last 18 months to 2 years of tunnel construction. When construction of this portion of the tunnel is underway, access from University Street may be open, if construction staging is managed to complete one section before the other is opened.

Impacts of the Bypass Tunnel Alternative on attendance at the Aquarium and Waterfront Park is likely to be similar to the Tunnel Alternative described above. The duration of impacts on attendance may be somewhat less than the Tunnel Alternative because the waterfront will reopen as a continuous corridor slightly earlier and will be more attractive as a destination without the continued isolation of an additional tunnel construction corridor.

**Pike Street Hillclimb:** This corridor of public plazas, stairs, terraces, and landscaping between Western Avenue and Alaskan Way will be affected by noise and disruption from construction of the tunnel. Initially it also will be subject to construction and vehicle noise impacts from the temporary ramp to the north. Prior to tunnel construction, traffic noise and shadows from the viaduct and temporary ramp will be similar to the existing viaduct.

#### 6.4.3 North Waterfront – Pike Street to Broad Street

**Pier 62/63 Park:** This park will be subject to construction impacts and traffic noise impacts similar to the Rebuild and Aerial Alternatives from construction of the ramp connecting the surface street to the existing viaduct to serve the Broad Street Detour. Noise levels from the traffic on the ramp are likely to preclude the evening summer concert program in the park. Visitation is likely to be reduced due to construction to the south.

#### 6.4.4 North – Battery Street Tunnel to Ward Street

The Bypass Tunnel Alternative includes the same widened Mercer Underpass discussed for the Tunnel Alternative above with the same impacts of construction and from the Broad Street Detour as discussed above.

### 6.5 Surface Alternative

The construction sequence for the Surface Alternative focuses on reconstruction of the seawall, the reconstruction of the aerial structure between Pike Street and the Battery Street Tunnel, and construction of a new interchange at S. Atlantic Street and S. Royal Brougham Way. The total duration is about 8 years, with an additional 18 months at the beginning of the process for utility relocation.

Traffic is maintained on the existing viaduct through most of the construction period with the same detour for southbound traffic via Broad Street with a ramp to the existing viaduct between Pike and Virginia Streets.

#### 6.5.1 South – S. Spokane Street to S. King Street

The Surface Alternative includes SR 99 at-grade with a full-access elevated interchange, which is the same as described above for the Rebuild, Aerial, and Tunnel Alternatives and consists of SR 99 on a north–south orientation as an at-grade roadway, with S. Atlantic Street and S. Royal Brougham Way crossing in an east–west orientation over the highway on elevated structures.

The option of an at-grade intersection with both SR 99 and the east–west arterial streets (S. Atlantic Street and S. Royal Brougham Way) at one level would retain the existing viaduct until the last phase of construction. After its

demolition, construction of the at-grade intersection would be part of the 12-month construction period for the surface improvements to SR 99. The Waterfront Trail would be displaced during construction and replaced by the facilities outlined under Operational Impacts in Section 5.6.2. Access to the Jack Perry Memorial Viewpoint would be maintained from E. Marginal Way with temporary access routes through the construction site. Access to Safeco Field and the Seahawks Stadium would be maintained over the existing viaduct until the last 2 years of construction.

### 6.5.2 Central – S. King Street to Battery Street Tunnel

Impacts on park recreation and public access facilities will occur during seawall construction and during the 12 months of construction of the surface roadway after demolition of the existing viaduct in the last 3 years of the project. Direct impacts are similar to the impacts of seawall reconstruction described for the Rebuild and Aerial Alternatives. The continuing impacts of construction of other elements of the proposal will be of a much lower scale for the Surface Alternative, leading to substantially lower construction activities than the other alternatives.

Seawall reconstruction is projected to require between 12 and 24 months, depending upon the length of the section being rebuilt. The impacts upon the central waterfront where most park, recreation, and public access facilities exist is limited to a much shorter duration than all other alternatives, resulting in substantially less impact.

Impacts of seawall reconstruction will be similar to impacts discussed above for the Rebuild and Aerial Alternatives, but will not be followed by isolation of the reconstructed waterfront corridor by reconstruction of the existing viaduct or the temporary aerial structure and construction of a new aerial structure associated with the Aerial Alternative, or by the longer construction periods for the tunnel alternatives.

As with other alternatives, the impacts on park, recreation, and public access facilities are compounded by the interaction of uses in the linear corridor.

- Construction will disrupt existing and accustomed patterns of movement along the linear corridor. The continuity of the entire corridor will be disrupted over a period of about 2.5 years, although specific sections will be under construction for shorter periods. This compares with a construction period for tunnels of approximately 5 years.

- During construction, the waterfront is likely to be perceived by the general public as an area disrupted by construction and not as a convenient or pleasant environment. As compared to the other alternatives, however, continuing construction in the central waterfront after completion of the seawall reconstruction will be limited to relatively minor construction related to utility relocation and other construction to allow demolition of the existing viaduct. The amount of construction disruption and the perceived barrier between the waterfront and downtown will be substantially less than perceived for viaduct reconstruction, aerial structure reconstruction, or tunnel construction.
- The loss of parking under the existing viaduct to accommodate vehicle lanes will limit the supply to all users along the corridor as with other alternatives. Replacement parking may be supplied as a mitigating measure.
- Proximity impacts from construction (such as noise, vibration, and dust) will make locations close to construction less desirable for passive recreation activities such as walking, picnicking, and viewing the aesthetic amenities of the area. The extent of adjacent construction is much less for the Surface Alternative than any of the others.

### 6.5.3 North Waterfront – Pike Street to Broad Street

Impacts in this area are virtually the same as the seawall construction impacts on the central waterfront and will be similar to the Rebuild and Aerial Alternatives.

The Broad Street Detour with the overcrossing of the BNSF railroad will have the same visual and noise impacts as other alternatives on the proposed Olympic Sculpture Park and other uses in the vicinity. The Broad Street Detour impacts from increased traffic on the surface street will also be similar to other alternatives.

Summer evening concerts at the Pier 62/63 Park likely will not be viable with the ramp for traffic from the Broad Street Detour to access the existing viaduct, with the same impacts of loss of revenue as described for other alternatives.

The Wave Rave Cave under the existing viaduct will be displaced during construction. A similar space will be available for reinstallation after construction is completed.

Similar potential impacts on public art installed as part of the First Avenue Project will occur, with likely removal during construction and subsequent replacement after construction is completed.

#### **6.5.4 North – Battery Street Tunnel to Ward Street**

Similar impacts on the Lake Union to Elliott Bay Trail (formerly Potlatch Trail) and Seattle Center from construction staging, displacement of parking, construction of the widened Mercer Underpass and the Broad Street Detour will occur as under the Aerial, Tunnel, and Bypass Tunnel Alternatives.

The option of maintaining the existing Mercer Street Underpass and adding at-grade intersections with signals on SR 99 at Roy, Republican, and Harrison Streets would affect east–west circulation as discussed in Appendix C. Transportation Discipline Report.

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## Chapter 7 SECONDARY AND CUMULATIVE IMPACTS

Secondary and cumulative impacts relate to actions by other parties that may be encouraged or discouraged by construction or operational impacts of the alternatives. This includes indirect impacts that may occur as a result of direct impacts of the proposal, as well as impacts of known projects of public agencies; public projects that are not determined in final form, but are in some stage of development; and private actions on private and public property. Indirect impacts also consider changes in context, such as changes in use patterns that may change the character of demand for parks, recreational facilities, or public access facilities.

**Access to Blake Island:** Access to Blake Island State Park by regular boat service from Pier 55 to the Tillicum Village may be reduced substantially if the overall interest and appeal of the waterfront is reduced by an extended construction period. A loss in customers over the long term may affect the operator of Tillicum Village through reducing its economic viability. This will also reduce State Parks lease income and affect the economics of providing public services such as water supply and sewage treatment on the island. The loss in income to the system as a whole could also reduce services in other units of the State Parks system.

**Seattle Aquarium and Waterfront Park:** The Seattle Parks and Recreation Department and Aquarium Society have proposed an expanded new aquarium incorporating the existing building at Piers 59 and 60 and the existing Waterfront Park south of Pier 59. A new waterfront park would be developed on Piers 62 and 63. A new design and Master Plan Amendment for this site are in development. The new facility would be owned by the City of Seattle but operated under contract by a non-profit organization, a situation analogous to the current operation of Seattle's Woodland Park Zoo.<sup>21</sup>

The alternatives proposed for the Alaskan Way Viaduct replacement may affect these plans in several ways:

- Uncertainty about the impacts of construction, especially extended construction periods for the tunnel alternatives, may delay implementation of the redevelopment plans until completion of viaduct planning.

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<sup>21</sup> City of Seattle Resolution No. 30315

- Uncertainty about attendance during an extended construction period may make private donors and the City of Seattle unwilling to invest in the redevelopment.
- If the redevelopment plans are implemented and attendance does not meet projections necessary to cover capital and operating costs, the Aquarium may become financially insolvent, requiring City of Seattle subsidies or resulting in closure of the facility.
- The character of the waterfront with the removal of the existing viaduct after construction of the Tunnel, Bypass Tunnel, or Surface Alternatives may so improve the attractiveness of the waterfront as a recreational destination as to improve the viability of the Aquarium and encourage redevelopment.
- If there is a belief that the impacts on the Aquarium are likely to be great enough to cause a substantial decrease in patronage and insolvency, the facility might be closed to allow construction of a new facility to occur in coordination with completion of major construction on whatever alternative is selected. This could subject the area to impacts of two construction projects, which might cause construction management issues for both, but also might allow coordination. If this occurred, the recreational resource would not be available during the closure period.

**Pier 62/63 Park:** The loss of revenue from cessation, relocation, or reduced patronage at the concert series may affect the economic viability of this cultural resource. Part of the appeal of the venue for concerts is the waterfront location and the setting, which includes summer sunsets over Puget Sound and the Olympic Mountains. There is not a Seattle Park facility that duplicates the amenities of this site. It is not clear whether the same mix of concert artists would have a similar appeal at a different location. Reduced income also may affect other cultural activities such as the Bumbershoot Festival, which is staged by the same non-profit organization. Income derived from the concert series provides for maintenance of the level of staffing and a stability of income that makes staging both events more economically reliable.

Impacts that could occur from known public projects include the following:

**Broad Street Railway Underpass:** This project in the City of Seattle Waterfront Connections Planning Project identifies a vehicle underpass as the preferred grade separation option to address delays from trains on the BNSF railway line to traffic on Broad Street, which is a transportation link for traffic to and from Seattle Center, the Mercer corridor, and the Ballard/Interbay corridor. From a regional perspective, the improvement is regarded as a component of the FAST Corridor concept for improving freight mobility in

the central Puget Sound region, which includes grade separation and port access projects from Everett to Tacoma.<sup>22</sup>

This underpass would cross under the proposed Olympic Sculpture Park. It is conceptually consistent with the sculpture park design, which features an elevated crossing over Elliott Avenue and the BNSF railroad. Except at the portals, the underpass would be lower than the sculpture park. The primary impact of the portal at Alaskan Way and Broad Street is placement of pedestrian connections from Broad Street to Myrtle Edwards Park closer to the waterfront due to the width of the portal. At the portal to the north on Elliott Avenue, the underpass would require a landscaped section of the site to be maintained at the level of the pedestrian overpass rather than slope down to the west. This project would have impacts on the design of the Olympic Sculpture Park and the waterfront promenade, but would not displace park area or substantially change the patterns of use.

**Colman Dock Ferry Terminal:** The existing terminal, which extends between Yesler Way and Mercer Street, has a current capacity for approximately 650 parked vehicles. Various alternatives are being considered for expansion to a capacity ranging between 1,000 and 1,200 vehicles. These alternatives include expansion on upland sites, including the Washington-Oregon Shippers Cooperative Association (WOSCA) site east of Alaskan Way between S. King Street and S. Royal Brougham Way and expansion of the over-water pier on the waterfront. Preliminary planning concepts for Colman Dock Ferry Terminal expansion involve demolition of the over-water portion of Pier 48 and transferring the over-water coverage to expand the existing Colman Dock. This would displace the Pier 48 Periscope Viewpoint (currently closed). Any expansion of the Colman Dock Ferry Terminal will require compliance with the Seattle Shoreline Master Program, requiring 15 percent of the over-water coverage to be dedicated to public access.<sup>23</sup> This will require a substantial increase over the amount of public access space currently provided on Pier 48 and at the Colman Dock Ferry Terminal.

Expansion of the ferry terminal frontage along Alaskan Way also would affect the experience of persons using the waterfront promenade. Extension of Colman Dock to the south may cut off direct views of Elliott Bay from persons on the promenade south of Yesler Way. The presence of parked cars along this section of the promenade also would be a degradation of the visual appeal of this section of waterfront. Facilities on the dock, such as toll booths

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<sup>22</sup> City of Seattle, DCLU Waterfront Connections Planning Program  
<http://www.ci.seattle.wa.us/dclu/planning/commdev/Waterfront/AccessProject.htm>

<sup>23</sup> Seattle Municipal Code Section 23.60.702

and ferry ramp headwalls, also may block or restrict views from Alaskan Way. This may be compensated for by public access areas on the dock, depending upon design.

**Green Streets Implementation:** The City of Seattle has designated Marion, Spring, University, and Vine Streets as Green Streets and had proposed Clay Street as a Green Street in the City's Downtown Urban Center Neighborhood Plan. These streets between Alaskan Way and First Avenue, with the exception of Harbor Steps, have not been developed consistent with the objectives of the plan. General concepts for Green Streets include providing landscaped recreation space, widened and landscaped sidewalk space, pedestrian amenities, limits on traffic or removing traffic to provide more space for pedestrians, and commercial activities to bring life to the space with outdoor cafes, stalls, and displays to enliven the street and lend a special identity to the surrounding area.

During construction, especially extended construction periods for the Tunnel Alternatives, either the City or adjacent private land owners are not likely to develop the amenities outlined for Green Streets because the areas near Alaskan Way will be subject to a variety of noise, dust, and other construction impacts.

After completion of construction, the character of the waterfront with the removal of the existing viaduct with Tunnel, Bypass Tunnel, or Surface Alternatives may improve the attractiveness of the waterfront as a destination and encourage the implementation of Green Street amenities on these streets.

**Private Development:** Private land may provide or contribute to recreational opportunities in a number of ways. Private facilities such as health clubs may provide facilities. Private facilities may encourage people to engage in recreational activities such as jogging by providing showers and other facilities. Private facilities may provide one element of the attractions that draw people to the area. The presence of a lively waterfront has been identified as one of the factors potentially contributing to the success of the Seattle Aquarium. Private land, such as Harbor Steps, or building plazas may provide congregating and seating areas where people enjoy sitting and enjoying the setting, the view, and the activities of others.

Privately owned buildings and undeveloped parcels adjacent to Alaskan Way generally have building frontages currently devoted to service entrances and loading docks reflecting the past industrial character of the area and the visual, noise, and shadow impacts of the existing viaduct. The single example of recent development on the east side of Alaskan Way, the Waterfront Place Building between Madison and Spring Streets, has restaurant and other uses

fronting on a 20-foot-wide pedestrian area, but use is low because of proximity impacts of the existing viaduct.

During construction, especially extended construction periods for the tunnel alternatives, the ground level portions of existing buildings are not likely to attract occupants oriented to passive recreation or enjoyment of open space, including outdoor cafes or other uses that enliven the street and lend a special identity to the surrounding area.

After completion of construction, the character of the waterfront with the removal of the existing viaduct with Tunnel, Bypass Tunnel, or Surface Alternatives is likely to substantially improve attractiveness of the westerly facing buildings on Alaskan Way. This change in character could lead to the redevelopment of current loading and parking areas into pedestrian-oriented spaces providing landscaping, seating, and commercial activities such as outdoor cafes; extension of building retail spaces to include outdoor stalls; and other uses that enliven the street and encourage passive activities related to the enjoyment of the setting. This is likely to be most pronounced where visual access to the waterfront is provided or interesting uses are present, such as the vicinity of Piers 54 through 59.

The waterfront from Madison Street to the south, including the Pioneer Square Historic District, may be discouraged from waterfront-oriented redevelopment by the lack of visual interest of the expanded ferry terminal and the additional distance to the waterfront produced by the over-water ferry access in some alternatives. From S. Jackson Street south, the adjacent container terminal is a relatively uninteresting use that discourages redevelopment of western-facing buildings unless amenities are incorporated in surface street design.

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## Chapter 8 OPERATIONAL MITIGATION

### 8.1 Mitigation Common to All Build Alternatives

As an overall strategy to capitalize on opportunities provided by the various alternatives, recreational facilities should be integrated with the waterfront vision that emerges from Seattle's Waterfront Plan, which is currently underway.

Additional public access may be incorporated into the proposed over-water structure between Pier 48 and the Colman Dock Ferry Terminal to compensate for displacement of the Alaska Square Park.

To mitigate loss of the Lenora Street overpass and viewing area, a public viewing area could be provided in conjunction with the aerial highway structure and a connection to the waterfront along the Lenora Street alignment.

Mitigation for loss of parking is discussed in Chapter 9, Construction Mitigation, because loss of parking occurs initially during construction.

### 8.2 Rebuild Alternative

The displacement of the existing multi-purpose trail in the corridor between S. Atlantic Street and S. King Street could be mitigated by a combination of bike lanes and expanded sidewalks, or by provision of a new trail on a separate alignment either east or west of the proposed travel lanes.

### 8.3 Aerial Alternative

To mitigate impacts of noise and shade that result from placing the northbound bicycle lane under the aerial structure, a separate multi-purpose trail could be provided on either the east or west side of the aerial structure. A location on the west side would be less shaded and have more visual access to the waterfront.

### 8.4 Tunnel, Bypass Tunnel, and Surface Alternatives

The additional surface area within the Alaskan Way right-of-way available with removal of the viaduct provides multiple opportunities for integration of public parks and open space with surface improvements for the Alaskan Way surface street.

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## Chapter 9 CONSTRUCTION MITIGATION

Many of the mitigation measures described below apply to other uses than recreation and public access facilities. Conceptual mitigation strategies are outlined below for impacts common to all Build Alternatives, with additional discussion of mitigation needs that will arise from different alternatives. The discussion of mitigation at this phase of review of conceptual alternatives is designed to assist decision makers in choosing between alternatives. More detailed mitigation for the preferred alternative will be incorporated in the technical memoranda to support the Final Environmental Impact Statement.

Future elaboration of conceptual mitigation described below will be integrated into a coordinated construction mitigation plan prior to initiation of construction.

To mitigate for proximity impacts of noise during construction, the specific impacts on specific uses must be evaluated further in cooperation with the particular facility operator. Options may include the following measures:

- Active recreational or cultural programs, such as concerts, may be rescheduled to times when construction activities produce less noise, or construction hours can be adjusted to avoid the most sensitive time periods.
- The effects of noise and vibration on passive recreation activities such as walking, picnicking, and viewing the aesthetic amenities of the area may be addressed by a variety of scheduling and noise attenuation measures, to providing replacement facilities during the period of most intensive activity.
- The plants and animals in the Seattle Aquarium may be directly affected by noise, vibration, and dust. A detailed strategy for mitigation could be developed cooperatively with biologists, acoustic engineers, and design engineers. Possibilities range from design of specific processes and equipment used in the proximity of the Aquarium to reduce noise and vibration, to noise barriers and other remediation, scheduling during time periods or seasons when animals are especially sensitive, to relocation of portions of the collection during the periods of highest noise and vibration. Such a program would involve monitoring and adaptive management and would require considerable expenditure of staff and other resources.

The potential impacts on animals in the Seattle Aquarium from contamination or interruption of water supply due to accidental discharge during construction or unexpected failure of the existing seawall during construction may be addressed by a detailed contingency plan. Such a plan should be developed in consultation with Aquarium staff and may involve such elements as prompt notification to allow implementation prior to contamination of the exhibits, rapid containment of contaminants, specific measures to reduce water consumption for an interim period, possible provision of filtering or treatment, rapid deployment of an alternative temporary intake structure further from the shoreline, or provision of a permanent alternative intake further removed from potential contaminants. Such a program would require considerable staff and other resources to develop and implement.

To mitigate impacts on park and recreation uses that are dependent on admission fees, a broad-based strategy could be developed to address each of the potential sources of reduced attendance and may include the following.

- The likely public perception that the waterfront is not as convenient or pleasant an environment to visit during construction can be addressed through a coordinated strategy to include public information, as well as the other elements listed below. Public information will target a variety of markets, including the general public, tourists, and specific users such as schools, business, and cultural and other groups. Additional research may identify new markets that would compensate for reduction in attendance by some groups of current users.
- The loss of parking under the existing viaduct and the perceived lack of opportunities for vehicular access would be addressed by a number of strategies, including the following possibilities:
  - Provide alternate parking supplies, especially for buses providing service from schools to the Seattle Aquarium.
  - Identify opportunities that exist in nearby existing private garages that are currently underutilized and provide public information.
  - Provide shuttle service to more distant underutilized parking.
  - Provide specific locations for bus parking with clear and convenient access to the waterfront to preserve and enhance group attendance.
  - Provide additional parking supply to replace lost parking, if underutilized supplies are insufficient.

- Provide a fee structure through validation that will compensate for higher cost of parking or less convenient parking.
- Provide and publicize alternative modes of access to the waterfront by public transit, or by dedicated transit service on peak demand days from park-and-ride or other facilities.
- The disruption of the connections between the central waterfront and other downtown centers, such as the Pike Place Market or Pioneer Square could be addressed by providing clear pedestrian and vehicular routes around or across construction sites. These would need to be designed to be safe, pleasant, and to integrate with opportunities to view the construction site as an additional area of interest. These physical facilities would be combined with public information, including sidewalk way-finding information that would clearly indicate present and future phase opportunities for access.
- Disruption of existing and accustomed patterns of movement along the waterfront corridor has the potential of reducing the overall attractiveness of the waterfront as a destination. Several strategies may be appropriate to address this, including the following possibilities:
  - Preserve continuity along the waterfront core area between Piers 54 and 59 by scheduling construction activities to quickly complete waterfront work and restore a continuous, if temporary, corridor as soon as possible, while work continues on related activities that don't directly disrupt movement along the corridor.
  - Provide a continuous pedestrian corridor east of the construction area for continuous north-south movement when the waterfront promenade is displaced with east-west corridors to individual piers or other attractions.
  - Construct a temporary access corridor on the waterside of the existing seawall between Piers 54 and 55 and between Piers 56 and 57 to allow north-south movement between piers while the seawall and waterfront promenade are being reconstructed. Such connections would likely consist of bridges or piling-supported deck areas. Continuity of movement around the ends of existing piers would require enhancement on some piers. Existing moorage opportunities would be affected and would require relocation to the outer portion of piers.

If park and recreation uses that are dependent on admission fees suffer reduced attendance and reduced financial support from that source, despite the mitigation strategy outlined above, curtailment of activities to reduce cost or funding from other sources could be considered. Other strategies that may be available to the specific uses include the following:

- Blake Island access could be relocated to portions of the waterfront less affected by seawall reconstruction or tunnel construction, or the facility could be relocated after completion of construction on a portion of the waterfront. Potential locations may include portions of Pier 48, Terminal 46, Piers 62/63, Pier 66, or Pier 70. Such relocation would need to be coordinated with public information to ensure that potential users would be aware of the transition in access.
- If construction impacts do not allow continuation of the summer concerts on Piers 62/63, the series could be relocated to another location. Part of the appeal of the venue, however, is the waterfront location and the setting, which includes summer sunsets over Puget Sound and the Olympic Mountains. There is not a Seattle Park facility that duplicates the amenities of this site. It is not clear whether the same mix of artists would have a similar appeal at a different location.
- The Aquarium could be closed and reconstructed during the period of most intensive highway construction. This might allow construction of a new facility to occur in coordination with completion of major construction on the highway alternative selected. This could subject the area to impacts of two construction projects, which might cause construction management issues for both, but also might allow coordination. If this occurred, the recreational resource would not be available during the closure period.

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