

Overhead View of Project Area



CHAPTER 8 - OTHER THINGS TO CONSIDER

What's in Chapter 8?

This chapter describes potential cumulative and indirect effects from the project. Short- and long-term tradeoffs are also identified.

1 What are cumulative effects, and why do we study them?

Cumulative effects result from the total effect of the proposed Alaskan Way Viaduct and Seawall Replacement (AWV) Project when added to other past, present, and reasonably foreseeable future projects or actions. Cumulative effects may be partly caused by the AWV Project, but they may also be caused by other projects. Cumulative effects are studied so the public, decision-makers, and project proponents take time to consider the “big picture” effects a project would have on the community and environment.

The best way to describe cumulative effects is to give an example of what they are. On its own, the AWV Project would affect the surrounding area in many ways. For example, during construction, traffic would have to be detoured to build either alternative. By itself, this effect may or may not be considered substantial. However, there are other major construction projects planned in Seattle, such as the Mercer Corridor Project and Link light rail. These projects would also require detours or rerouting transit in a similar timeframe as the AWV Project. Collectively, these projects could have a short-term cumulative effect on downtown traffic and transit if adequate upfront planning and coordination does not occur.

2 What are possible cumulative effects?

Most of the possible cumulative effects would occur during construction. Once the AWV Project is built, it would result in very few cumulative effects, and most of these possible effects would be positive rather than negative.

There are many projects in and around Seattle that may be constructed while the AWV Project is being built. These projects are identified in Question 3 of this chapter. If construction schedules overlap, they could have a cumulative effect on downtown Seattle. Together, these projects could:

- Intensify traffic congestion through downtown. This would cause problems for all drivers, including transit and emergency service providers. Excessive congestion in downtown could negatively affect businesses if people chose to avoid downtown.
- Cumulatively increase construction noise and temporary air quality impacts.
- Cause problems for utility providers. Most of the proposed projects require utilities to be relocated. Funding, having enough skilled workers, and ensuring minimal utilities disruptions could be a challenge or cause delays in construction.
- Cumulatively affect aquatic habitat and tribal fishing areas in Elliott Bay.

To avoid and minimize possible cumulative effects during construction, the project partners will continue to work with the agencies leading the proposed projects.

Negative long-term cumulative effects from the AWV Project are limited for a project of this size and mag-

nitude. The only potential negative long-term cumulative effect to the project area would be to aquatic habitat. Both the AWV Project and the Colman Dock Ferry Terminal Expansion Project would affect aquatic habitat between Pier 48 and the existing Colman Dock. Specifically, the AWV Project requires filling up to 0.29 acre of shallow underwater habitat between Pier 48 and Colman Dock. Additionally, the Washington State Department of Transportation (WSDOT) Washington State Ferries (WSF) division is planning to expand Colman Dock, which would most likely increase over-water coverage near this same area. To avoid and minimize potential cumulative effects to aquatic life and habitat, the project partners and WSF are closely coordinating project planning and proposed mitigation efforts. Specifically, WSDOT plans to purchase the existing Pier 48 over-water pier and upland area. WSDOT plans to remove the existing over-water pier and possibly a portion of the Pier 48 uplands to offset future cumulative effects from the AWV Project and expanding Colman Dock.

For either alternative, replacing the existing viaduct and seawall would undo some existing cumulative effects from past development and have long-term benefits on the surrounding area. Both alternatives would help improve water quality by treating runoff that presently flows directly into Elliott Bay. With other improvements to stormwater and management of combined sewer overflow events by Seattle Public Utilities, discharges into Puget Sound would be reduced. If the Tunnel Alternative is built, past actions that have caused negative effects to the waterfront and areas adjacent to the viaduct could be reversed. Specifically, the Tunnel Alternative would remove the existing viaduct from the waterfront,

What are cumulative effects?

Cumulative effects result from the total effect of the project when added to other past, present, and reasonably foreseeable future projects or actions.

opening up views and reducing noise. Together with the Colman Dock expansion, remodeled Seattle Aquarium, and new Olympic Sculpture Park, this would support Seattle’s ongoing waterfront planning effort to reshape the central waterfront.

3 What other projects are underway or planned in or near Seattle?

Two categories of projects are discussed in this section. The first are major projects, such as Link light rail and the Colman Dock Ferry Terminal expansion. Other projects are planned construction projects that would be constructed in or near Seattle. These project descriptions and their associated cumulative effects have been updated since the Draft EIS was issued. Since the Draft EIS, two projects have been removed because they are no longer being planned. These projects are the Seattle Monorail Project Green Line and redevelopment at Terminal 46. Several projects have also been added, including the Elliott Bay Seawall Project; Seattle development projects in Belltown, Queen Anne, and South Lake Union; and improvements on I-405.

If construction schedules for these projects overlap, they could have a cumulative effect on downtown Seattle. To avoid and minimize possible cumulative effects during construction, the project partners will continue to work with the agencies leading the proposed projects.

What major projects are planned in downtown Seattle?

The major construction projects planned for downtown Seattle are the Colman Dock Ferry Terminal Expansion Project, the United States Army Corps of Engineers Elliott Bay Seawall Project, the Mercer Corridor Project, and Link light rail. Exhibit 8-1 shows the interaction between construction schedules for these projects. The construction schedule for the Elliott Bay Seawall Project is not shown because the schedule is currently unknown.

Link Light Rail

The Central Link light rail line is planned to run from Westlake Station in the Downtown Seattle Transit Tunnel to S. 154TH Street near the Seattle-Tacoma International (Sea-Tac) Airport. Construction began in 2003 and will continue through 2009. Currently, the Downtown Seattle Transit Tunnel is closed so it can be equipped for joint bus and light rail operations. Work in the transit tunnel should be completed by the end of 2007. While the transit tunnel work is underway, buses that typically run in the transit tunnel are operating on downtown surface streets. The transit tunnel will reopen for buses in the fall of 2007, and light rail service will begin in late 2009.

Additional light rail construction is expected to begin in 2006 for the Airport Link segment, which will connect the light rail terminus at S. 154TH Street to the Sea-Tac Airport. Airport Link is expected to open approximately 6 months after the Central Link segment is completed. Sound Transit also plans to build North Link, connecting Central Link to Capitol Hill and the University District. North Link construction could begin as early as 2008, with operations starting in 2014 to 2016.

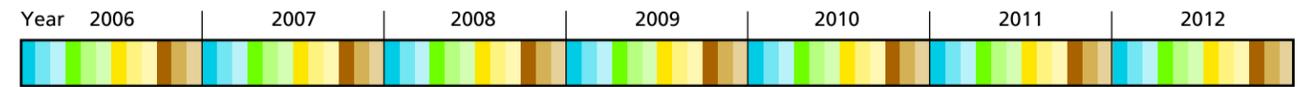
S. Spokane Street Viaduct Widening

The City of Seattle plans to improve the existing S. Spokane Street viaduct and ground-level roadway. Improvements constructed between Sixth Avenue S. and E. Marginal Way would include:

- Widening the existing roadway.
- Relocating the westbound on- and off-ramps to First Avenue S.
- Building a new eastbound Fourth Avenue S. off-ramp.
- Improving the lower-level roadway with curbs and sidewalks.

Construction could occur in one, two, or three phases, depending on the availability and timing of funding. Construction would begin in 2007 at the earliest and be completed in either 2009 or 2010, depending on how the project is funded.

Major Downtown Transportation Construction Projects



Sound Transit Central Link Light Rail



S. Spokane Street Viaduct Widening



Alaskan Way Viaduct and Seawall Replacement Project



Colman Dock Ferry Terminal Expansion



Exhibit 8-1

Mercer Corridor

The City of Seattle is planning improvements in the South Lake Union area. These improvements include reconstructing and reconfiguring Mercer Street and Valley Street between Dexter Avenue N. and I-5. Depending on when the project is built, construction of the Mercer Corridor Project could overlap with construction of the AWV Project’s improvements north of the Battery Street Tunnel. Long-term benefits of the two projects include improved traffic, pedestrian, and bicycle conditions between I-5, SR 99, Seattle Center, and the South Lake Union and Queen Anne neighborhoods.

Colman Dock Ferry Terminal Expansion

WSDOT’s WSF division is planning to expand Colman Dock to accommodate future growth in passenger volumes and to upgrade the facility to current design standards and security requirements. Improvements to the ferry terminal are independent of the AWV Project, but work on both projects is being closely coordinated within WSDOT.

Currently, Colman Dock accommodates approximately 600 vehicles. The proposed dock will most likely increase in size to accommodate future growth, as demonstrated in WSF's Long-Range Strategic Plan. A range of dock sizes based on a capacity for 1,000 to 1,300 vehicles appears to reasonably represent future expansion. Construction of the new ferry terminal is expected to begin as early as 2009 and will be phased over a period of 5 to 7 years.

To provide space for construction of both the AWV and Colman Dock projects, WSDOT plans to purchase Pier 48. During construction of the AWV Project, the upland area of Pier 48 would be used for barge access, material and equipment storage, and other construction-related activities. Also, a temporary bridge connecting Colman Dock and Pier 48 would be built and used to provide vehicle access to and from Colman Dock during construction. WSDOT also plans to remove the over-water pier and a portion of the Pier 48 uplands. Benefits to aquatic habitat from removing the over-water portion of Pier 48 and a portion of the Pier 48 uplands are expected to offset future cumulative effects from the AWV Project and expanding Colman Dock.

Both projects require in-water construction work in Elliott Bay and may involve long-term changes to the aquatic environment (such as fill in Elliott Bay). Both projects are also located within the usual and accustomed fishing areas of the Muckleshoot and Suquamish Tribes. For these reasons, WSDOT is closely coordinating efforts on the two projects by participating in regular project coordination meetings, providing information on both projects at public meetings, and consulting with tribes on treaty fishing rights and historical and cultural resources protected under Section 106 of the National Historic Preservation Act.

United States Army Corps of Engineers Elliott Bay Seawall Project

The United States Army Corps of Engineers (Corps) is studying the feasibility of rehabilitating all or part of the existing Alaskan Way Seawall. The purpose of the Corps' seawall rehabilitation effort is to protect public facilities and economic activities along the

Elliott Bay shoreline from storm damages associated with potential failure of the existing seawall. The Corps' feasibility study will determine their federal interest in sharing the cost of addressing the degraded condition of the seawall.

The Corps' feasibility study process is designed to enable decision-makers to make comparisons among financial requests made to Congress from the entire country. To facilitate this comparison, the Corps' regulations require them to prepare a single document that integrates both the feasibility study and an EIS. The Corps' EIS will incorporate the material from the AWV Project that is pertinent to their study and will add to it as necessary. This approach will fulfill the Corps' requirements while minimizing any redundancies between the projects.

The Corps and the project partners are working together to closely coordinate both projects to make sure that financial and technical resources are maximized for all parties involved. The Corps' Draft Feasibility Study and EIS should be published in early 2007.

What other construction projects are planned around Seattle, and what are their possible cumulative effects?

There are many future projects planned to be built in or near Seattle. Other major transportation improvements, such as those planned for SR 520 and SR 509, are being considered in the Seattle area but funding is uncertain. Other projects with potential cumulative effects are discussed below.

SR 519 Intermodal Access and Surface Street Improvements

SR 519 in Seattle is known to most people as S. Royal Brougham Way. This is a WSDOT project that involves reconstructing connections between Seattle and I-90 and elevating S. Atlantic Street above the railroad tracks to avoid rail and vehicle conflicts. The first phase of this project has been built. Partial funding has been provided for construction of the second phase of the project, which has not yet been designed. At this time, there is no construction schedule for

phase 2. As such, it is difficult to predict potential cumulative effects. The SR 519 project is being closely coordinated by WSDOT with the AWV Project to avoid and minimize any potential cumulative effects.

Seattle Aquarium and Waterfront Park

The Seattle Parks and Recreation Department and the Seattle Aquarium Society have proposed to expand the Seattle Aquarium at Pier 59 and develop a new waterfront park on Pier 62/63.

The first phase of the Aquarium project is currently being constructed and will be completed before the AWV Project begins. Timing of future phases is unknown.

Additionally, the Seattle Parks and Recreation Department is working on developing a Draft EIS for the Central Waterfront Master Parks Plan, which will evaluate options to repair, replace, and renovate Pier 62/63.

At this time, no cumulative effects are expected, though the project partners will continue to coordinate with the Seattle Parks and Recreation Department and Seattle Aquarium Society.

Proposed Development in Downtown, Belltown, and Queen Anne

Nineteen private projects are in various planning and permitting stages in the downtown, Belltown, and Queen Anne neighborhoods. Most developments propose to construct buildings offering a mix of residential, retail, and office uses. At this time, proposed developments include approximately 1,000 residential units and 4 million square feet of office, retail, and commercial space. By 2010, the area is estimated to contain 5.5 million square feet of new retail/office space and 1,800 new residential dwelling and mixed-use units. A portion of this proposed development would likely still be under construction at the start of proposed construction for the AWV Project. Downtown building construction can often require temporarily blocking sidewalks, removing parking, or closing lanes on streets. The project partners will work together to make sure roadways and parking

What are "usual and accustomed" fishing areas?

Usual and accustomed areas are places located within and outside of a tribe's reservation lands, where federal treaties safeguard tribal rights, such as fishing rights.

How is the Corps' Seawall Project related to the AWV Project?

These two projects are closely related since the AWV Project includes the replacement of the seawall in the same area as the Corps' seawall study. The Corps' seawall study will determine if the Corps can be an additional funding source for seawall construction.

Why is the Corps developing a separate EIS for the seawall project?

The Corps is required to create a single document that integrates both a feasibility study and an EIS. Their combined document can only focus on protecting public facilities and economic activities related to storm damages associated with potential failure of the existing seawall. The Corps' specific focus of study is narrower than the AWV Project, which is focused on "providing a transportation facility with improved earthquake resistance". Because the lead agencies have different authorities (storm damage reduction versus transportation), the Corps must prepare a separate EIS as part of the Corps' feasibility study. The Corps' EIS will include, by reference or incorporation, all applicable seawall work done by the AWV Project.

stay as open as possible to avoid potential cumulative effects with AWV construction.

South Lake Union Streetcar Project

The City of Seattle will be building a new streetcar line in the South Lake Union area. The streetcar will improve local transit service and connections between downtown and the South Lake Union neighborhood. The streetcar line will be approximately 1.3 miles in each direction (2.6 track miles total).

The streetcar will begin in the vicinity of Westlake Avenue and Olive Way and Fifth Avenue in downtown Seattle and it will extend north through and terminate in the vicinity of Fairview Avenue N. and Ward Street near the Fred Hutchinson Cancer Research Center. A maintenance facility will be built at Harrison Street and Fairview Avenue N., and a spur track will be built on Harrison Street to connect the streetcar line to the maintenance facility. The streetcar line will connect the Denny Triangle and South Lake Union neighborhoods with the regional transit hub at Westlake Center.

Construction is planned to begin in 2006 and will take approximately 12 to 18 months. Because the City is a project partner, they will keep the project team informed of any potential construction projects so that negative cumulative effects can be avoided or minimized.

South Lake Union Redevelopment

Many of the light industrial properties located in the South Lake Union neighborhood have been purchased in recent years for redevelopment. Current plans are to develop a high-density, mixed-use neighborhood with a focus on a biotechnology center for private industries centered around the existing Fred Hutchinson Cancer Research Center and the University of Washington Medical Center. Other projects are proposed that would be associated with the University of Washington.

The area's development plans include constructing several mixed retail and residential development projects. Over the next 20 years, these development projects are expected to provide office space for approxi-

mately 16,000 to 20,000 employees and 8,000 to 10,000 residential units. Many of these projects are likely to be built during construction of the AWV Project.

Because the City is a project partner and the local agency responsible for issuing permits for these development projects, it will keep the project team informed of any potential construction projects so that negative cumulative effects can be avoided or minimized. One possible cumulative effect of the AWV Project's proposed improvements north of the Battery Street Tunnel and proposed developments in the South Lake Union area is that the overall character of this area will change over time to be more dense urban development than exists today. This land use change is consistent with current City of Seattle long-term development plans for the South Lake Union area.

I-5 Improvements

WSDOT is developing a plan to reconstruct and rehabilitate the 40-year-old concrete pavement on I-5 from Boeing Access Road to Northgate. As part of this effort, WSDOT is also examining possible operational improvements to I-5 from I-405 in Tukwila to I-405 in Lynnwood. Improvements may include removing and replacing the existing concrete pavement, reinforcing joints, improving lane continuity at bottleneck locations, and shifting left on- and off-ramps to the right side of the roadway. The plan and schedule are expected to be completed by the summer of 2007. WSDOT will coordinate construction schedules for the AWV and I-5 projects to avoid and minimize any potential cumulative effects.

I-405 Improvements

WSDOT is working with local communities and transit agencies to improve regional capacity on I-405. Funds from the 2003 Nickel Package will fund three I-405 projects: the Kirkland, Bellevue, and Renton Nickel Improvement Projects. Together, these three I-405 projects would provide benefits to the AWV Project by improving regional north-south roadway capacity while capacity on SR 99 is either restricted or closed during construction.

The Kirkland Nickel Project will add one new northbound lane from NE 70TH Street to NE 124TH Street and one new southbound lane between SR 522 and SR 520. Additionally, the I-405/NE 116TH Street interchange will be reconstructed, realigned, and reconfigured. Construction activities are scheduled for 2006 through 2011.

The Bellevue Nickel Project will add one northbound lane between I-90 and SE 8TH Street and one southbound lane between SE 8TH Street and I-90. The existing high-occupancy vehicle (HOV) lane at I-90 will be extended north from the on-ramp from SE 8TH Street. In addition, a new structure will be built underneath the railroad, just east of the existing Wilburton Tunnel. The northbound bridge over the railroad and the southbound bridge over SE 8TH Street will be widened. Construction activities are scheduled for 2007 to 2009.

The Renton Nickel Improvement Project includes adding a new northbound lane and southbound lane from I-5 to SR 169. A new southbound lane will also be added on SR 167 between I-405 and the 41ST Street off-ramp. Finally, the existing southbound HOV lane on SR 167 will be extended to begin at I-405. Construction activities are scheduled from 2007 to 2011.

In addition to these projects, the I-405 Corridor received nearly \$1 billion in funds from the 2005 gas tax increase.¹ This money will be used to build 11 projects in the I-405 Corridor. Many of these projects would provide benefits to the AWV Project by improving regional north-south roadway capacity while capacity on SR 99 is either restricted or closed during construction beginning in mid- to late 2010.

4 What are indirect effects, and does the project have any?

An indirect effect is a reasonably foreseeable effect that may be caused by a project but would occur in the future or outside of the project area. Construction of the project will have substantial direct effects on local and regional traffic under any construction plan. As people adjust their travel patterns during construc-

What are indirect effects?

An indirect effect is a reasonably foreseeable effect that may be caused by a project but would occur in the future or outside of the project area.

Where can I learn more about indirect effects?

Information about the project's indirect effects is included in the 2004 and 2006 discipline reports and technical memoranda included on the CDs attached to this document.

¹WSDOT 2006b.

tion, they may also change where they shop, eat out, or what services they use. These changes could affect businesses outside of the project area for however long construction lasts.

Once the project is built, it would result in very few indirect effects, and these possible effects would be positive rather than negative. For example, if the Tunnel Alternative is built, buildings directly adjacent to SR 99 may eventually be renovated due to improved views and reduced noise. Improvements to these buildings could benefit the large number of people who visit the Seattle waterfront each year, the people who live and work in the adjacent buildings, and existing property owners.

Part of the reason why this project's indirect effects are limited is because this project is a replacement project, not a new roadway or highway expansion project. The project will replace failing infrastructure critical to the city and state. Once built, the project will remove a significant risk to the stability of Seattle's waterfront and the state's highway system. The replacement facilities will maintain and not increase existing roadway capacity. As such, the replacement facilities will continue to provide the infrastructure required to connect and support many well-established, densely developed urban areas. In some areas, the built project may encourage renovation and revitalization of these existing urban land uses.

5 What irreversible decisions or irretrievable resources would be committed to building the project?

The possible irreversible decisions or irretrievable resources committed to building this project are similar to those described in the Draft EIS that was issued in March 2004.

There are two irreversible decisions that could affect the surrounding area. If the decision is made to build the elevated structure, views would irreversibly be affected since the new elevated structure would affect views more than the existing viaduct. The second irreversible decision for this project would be converting existing commercial, industrial, or retail properties to

roadway land uses. Both alternatives require purchasing property, and some of the needed properties have buildings on them that may be demolished. The number of properties needed would be similar for both the Tunnel and Elevated Structure Alternatives.

There are a few effects to resources that would also be irretrievable once the project is completed. Both alternatives would require filling a portion of Elliott Bay. This fill material would be irretrievable, though the effects to habitat and aquatic life will be mitigated. If archaeological resources are located in areas where soil improvements are made, they would no longer be retrievable. In these areas, the cement grout material needed to fix the seawall would encapsulate any archaeological resources not found and recovered during construction.

Other resources that would not be retrievable would be the physical materials used to build the project. These include resources such as aggregate used to make cement and asphalt, steel needed to make rebar and steel structures, oil to make asphalt, and fill material. These are finite resources; however, they are not currently in short supply. Contaminated soil, spoil material, and excavated soil would be transported to landfills, thus the space used for this project would not be available for other disposal uses. However, there is adequate space available for this type of disposal at landfills.

Finally, the energy used to build the project or keep it operating would not be retrievable. Energy currently used to operate the viaduct includes the electricity needed to keep lights and electrical systems running. These resources will continue to be used as long as the viaduct is operational. During construction, gasoline, oil, and electricity would be used, though construction would hardly affect available energy supplies. Once the project is built, energy consumption levels wouldn't substantially increase, though the Tunnel Alternative would use more energy in the long term to operate the tunnel's lighting and ventilation systems than the Elevated Structure Alternative.

6 What are the tradeoffs between short-term uses of environmental resources and long-term gains (or productivity) from the project?

The tradeoffs discussed in this section are similar to those discussed in the March 2004 Draft EIS.

This question is really asking if the long-term benefits from this project make it worth the short-term effects. Because the project involves replacing failing infrastructure that the region depends on, this question has a fairly simple answer. Both alternatives would require many years of construction. Even with the best planning, construction will be disruptive and difficult for the many people who travel, work, and live along the project corridor. That's the short-term effect. When the project is complete, people in the region would benefit from having a solid, safe transportation facility and seawall for many generations. That's the long-term benefit.

The region has relied on the viaduct and seawall for several generations. Both the seawall and viaduct are important assets to the region's infrastructure. The region depends on the seawall to hold up the soil that is the foundation of Seattle's central waterfront. The project area contains critical utilities such as power, water, sewer, natural gas, and communications systems that serve a substantial portion of downtown Seattle and surrounding neighborhoods. The seawall holds up the viaduct and the Alaskan Way surface street that together carry more than 110,000 vehicles each day. It holds up buildings located on the waterfront and some of Pioneer Square. The seawall is much more than a concrete face along the waterfront—it defines the waterfront as we know it. Without it, we would lose a portion of Seattle that plays an important role in the region's economy and provides an area where people from near and far congregate to work, live, and play. Worse still, failure of the viaduct and seawall in an earthquake such as the 2001 Nisqually earthquake could cause tremendous damage, injury, and even loss of life. Even a relatively small earthquake could cause damage that could disrupt traffic in the region for many months. Unlike

2006 Appendix K

Chapter 5 in the *2006 Appendix K, Relocations Technical Memorandum*, provides additional information on properties affected in the project area. Attachment A of Appendix K contains maps that summarize the full and partial acquisitions for each alternative.

In this document, **Exhibit 5-15 in Chapter 5** presents the number of acquired properties.

2004 and 2006 Appendix V

Appendix V, Energy Technical Memorandum, contains additional information about energy consumption for the project.

with most projects, the No Build Alternative is simply not a feasible option for the AWV Project.

Both the Tunnel and Elevated Structure Alternatives meet the project's purpose by providing a transportation facility with improved earthquake resistance that would maintain or improve mobility, accessibility, and traffic safety for people and goods along the existing Alaskan Way Viaduct Corridor. In terms of short-term effects, the amount of time it would take to build either alternative (and the intensity of effects) depends on the construction plan selected.

Over the long term, the two alternatives would have equal capacity to carry people and goods through and to downtown Seattle, and they would both offer drivers similar connections to the south, central, and north sections of the project area. Both alternatives would replace the deteriorating seawall with a long-term solution that would serve the region for many generations. In short, both alternatives would provide long-term benefits that offer a significant improvement over existing conditions.

However, there are important differences in long-term effects between these alternatives. The Elevated Structure Alternative would cost less than the Tunnel Alternative, but it wouldn't provide many of the long-term benefits that the Tunnel Alternative would provide. The Tunnel Alternative offers additional long-term benefits not provided by the Elevated Structure Alternative. The Tunnel Alternative would:

- Reduce noise along the waterfront.
- Provide unobstructed views of Elliott Bay.
- Provide additional space for public open space and street amenities, such as landscaping.
- Improve the central waterfront area, which is a regional destination for existing and new businesses, residents, users, and visitors.