

CHAPTER 4

Environmental Impacts and Mitigation



4 ENVIRONMENTAL IMPACTS AND MITIGATION

4.1 Introduction

This chapter discusses the environmental analysis and impacts associated with the proposed project. It includes 13 sections, covering topics including multiple aspects of the built environment (e.g., land use, noise, and vibration), the natural environment (e.g., ecosystems, water quality), historic and cultural resources, and commitment of resources.

Each section reviews the affected environment, analyzes potential environmental impacts that would result from the No-Build Alternative and the Build alternatives, and proposes mitigation and enhancement strategies to minimize negative environmental impacts. Each section analyzes long-term, short-term (construction), indirect (or secondary), and cumulative impacts.

The analysis of long-term impacts covers the permanent changes caused by the completed project. This includes the ferry terminal facilities and related improvements such as streets, sidewalks, and landscaping, and any mitigation measures developed as part of the project. The ongoing operation of the project is also considered.

The analysis of short-term or construction impacts covers the activities required to build the multimodal project, including all of the heavy construction activities and staging that would occur.

The Draft EIS also considers the project's indirect (or secondary) impacts on the environment. As defined under 40 CFR Section 1508.8(b), indirect effects "are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems."

Finally, the analysis of cumulative impacts considers the overall changes to the environment over time, including past, present, or reasonably foreseeable future actions, and evaluates the added impacts of the proposed project.

4.2 Land Use and Economics

This section reviews the potential for impacts on land use and economic activities in the project area. In addition, it identifies the property requirements for each of the alternatives, including the potential acquisition of properties that are not already being used for transportation purposes, and the displacement or relocation of their uses.

4.2.1 Overview of Analysis and Regulatory Context

The land use analysis discusses whether the proposed alternatives are compatible with local comprehensive plans, shoreline management programs, regional development plans, and the development regulations that implement the plans. It also reviews long-term operations impacts and short-term construction impacts that could affect existing land uses.

The economic analysis focuses on how the development and operation of the multimodal facility would affect local and regional economic activities, either directly or indirectly.

4.2.2 Affected Environment

The Mukilteo Multimodal Project area is located on Elliot Point in the northernmost part of the city of Mukilteo, with a small part within the city of Everett.

Major land uses on Elliot Point include several large publicly owned properties as well as private properties to the north of the BNSF tracks and commercial and residential uses to the south (see Figure 1-2 in *Chapter 1 Purpose and Need*). The Mukilteo Lighthouse Park occupies the west end of the point. This 14-acre City of Mukilteo facility includes a boat launch and 6.6 acres of parking, as well as the historic Mukilteo Lighthouse, a volleyball court, and picnic tables. The Mukilteo ferry terminal covers about 2 acres, largely consisting of a vehicle holding area with a small amount of employee parking. A condominium development, a restaurant, and a hotel are located along the shoreline between the lighthouse and Park Avenue and occupy about 2 acres of land. Along Front Street, Ivar's restaurant is located east of SR 525; a commercial parking lot serving the restaurant is located east of the ferry holding area. A glass blowing studio is located on Park Avenue at First Street. These private uses occupy about 1.5 acres. The U.S. Air Force Mukilteo Tank Farm is a 20-acre parcel extending about 3,200 feet along the shoreline, starting to the east of Park Avenue and bounded on the south by the BNSF Railway corridor. The Mukilteo Tank Farm consists largely of partially demolished storage tanks and a variety of support facilities in various stages of deterioration, as well as a 1,300-foot-long pier. NOAA Fisheries Service currently operates the Mukilteo Research Station east of Park Avenue. The Mount Baker Terminal occupies a 1.5-acre site east of the Mukilteo Tank Farm.

The BNSF Railway owns a right-of-way at the edge of Elliot Point, which generally forms the boundary between flat land to the north and a steep bluff to the south. This rail line serves freight trains, Amtrak train service, and commuter passenger trains operated by Sound Transit. Mukilteo Station is located on the north side of the BNSF tracks east of Park Avenue.

South of the BNSF tracks, land uses are primarily single-family residential west of SR 525 and east of Park Avenue. A commercial area extends between the BNSF tracks and Third Street, bounded by SR 525 on the west and Park Avenue on the east. The

City of Mukilteo Rosehill Community Center is located on a 5-acre site at Third Street and Lincoln Avenue.

Other major land uses in the general area include the 1,300-acre Paine Field Municipal Airport located about 2 miles to the south, and the 1,025-acre Boeing Everett Facility. A commercial area extends along SR 525 between about 100th Street and 130th Street, about 3 miles to the south.

State, Regional, and Local Plans and Policies

The proposed alternatives are located primarily within the City of Mukilteo's land use planning jurisdiction, with a small portion to the east within the Everett city limits. Land use is regulated and influenced by city plans and policies, as well as several state and regional plans and policies.

Growth Management Act. Washington State's Growth Management Act (GMA) (RCW 36.70A) of 1990 requires state and local governments to manage statewide growth by identifying urban growth areas (UGAs) and preparing comprehensive plans, capital improvement programs, and development regulations. The GMA requires infrastructure (transportation, water, sewer, and other urban services) to achieve population and employment targets established by the region and local comprehensive plans. The GMA also specifies that transportation projects be identified and constructed concurrent with future development projects.

"Essential public facilities" (EPFs) are defined in the GMA (RCW 36.70A.200) as including state or regional transportation facilities of statewide significance. Ferry terminals as well as high-capacity transit facilities have statewide significance. Cities and counties are required to include a process for identifying and siting essential public facilities. Local jurisdictions cannot have local comprehensive plan or development regulations that preclude EPFs, but they can impose permitting conditions and require reasonable mitigation of impacts. The City of Mukilteo Comprehensive Plan, as discussed below, reflects the intent of the GMA and includes policies related to EPFs.

City of Mukilteo Comprehensive Plan. Mukilteo's Comprehensive Plan was updated in 2011 and provides goals and policies to guide growth and development in the city. The Comprehensive Plan is a 20-year policy plan and, consistent with GMA requirements, includes land use, transportation, housing, capital facilities, utilities, economic development, and environmental elements.

The City's Comprehensive Plan envisions the waterfront as a visitor- or tourist-oriented activity center with restaurants, a marina, and recreational opportunities with extensive public access. The Plan designates the existing Mukilteo ferry terminal, the Mukilteo Tank Farm, and surrounding area as COM (Commercial). The zoning of the Mukilteo Tank Farm is WMU (Waterfront Mixed Use), permitting a range of public and commercial uses, with multi-family as a secondary use. The area of the existing ferry

terminal, ferry holding area, and nearby commercial and condominium uses is zoned DB (Downtown Business), permitting public and commercial uses, with multi-family as an accessory use. The Mukilteo Lighthouse Park is designated and zoned as OS (Open Space), permitting a variety of recreation and public uses and a limited range of commercial uses. Figures 4.2-1 and 4.2-2 show the Comprehensive Plan and zoning designations for the project area.

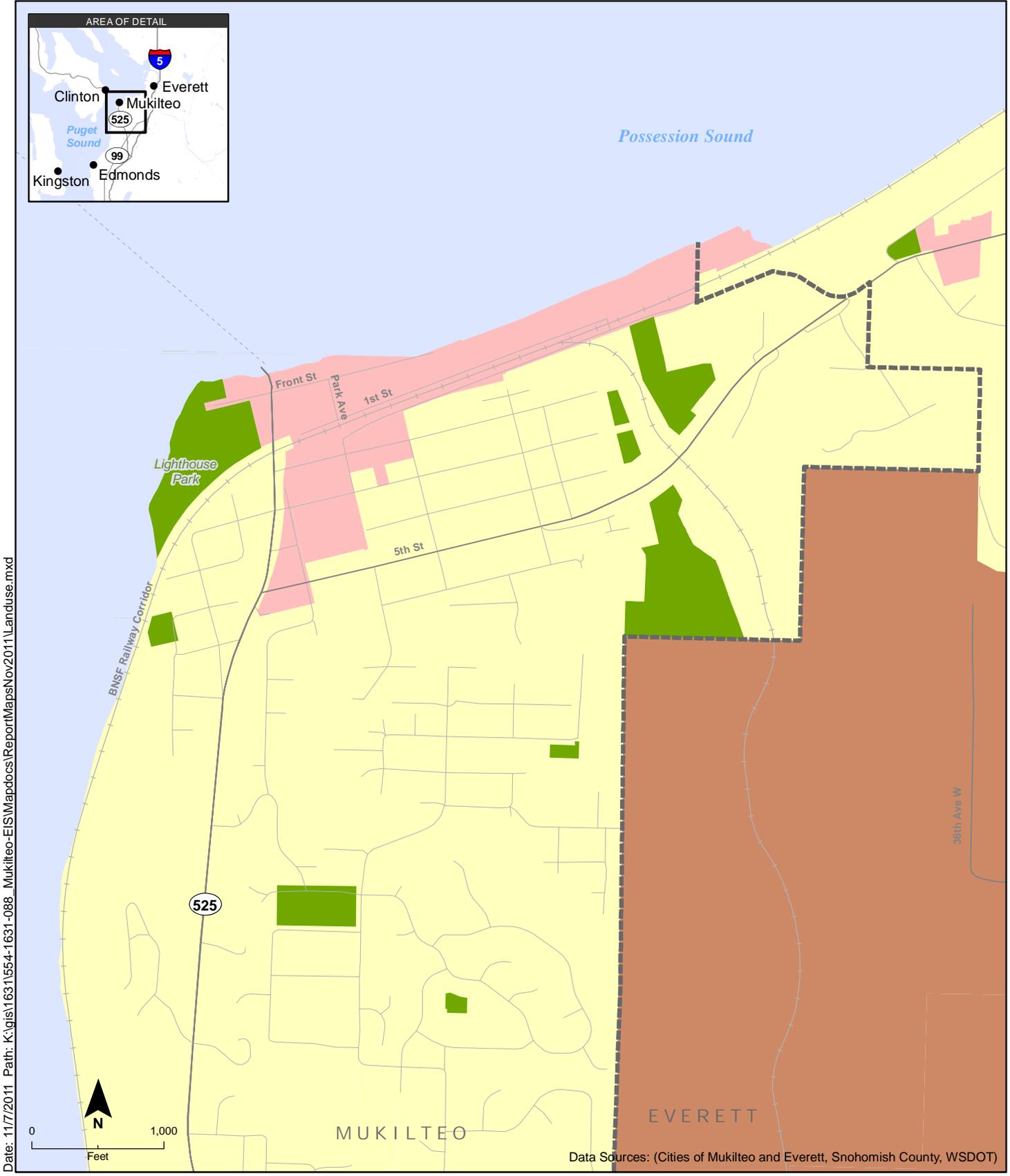
The upland areas of Mukilteo south of the project site and along SR 525 are designated SFR-H (Single-Family Residential: 5.8 Dwelling Units/Acre). Smaller areas along SR 525 near 84th Street SW are designated as PSP (Public Semi Public), DB (Downtown Business), COM (Commercial), and OS (Open Space).

The Comprehensive Plan has several policies addressing the Mukilteo ferry terminal, derived from the March 1995 *Mukilteo Multimodal/Inter-Modal Terminal and Access Study and Programmatic EIS*, including utilizing the Central Waterfront Alternative as the basis for all planning activities related to the proposed Multimodal/Inter-Modal Terminal in downtown Mukilteo (Policy TR2).

The Mukilteo ferry terminal, SR 525, and the Mukilteo Station are identified as existing EPFs in Mukilteo's Comprehensive Plan and Section 17.18.010 of the City's Zoning Code. Both the City of Mukilteo and the City of Everett identify Mount Baker Terminal and the BNSF tracks as EPFs. Siting of an essential public facility requires a special use permit and must meet specific criteria.

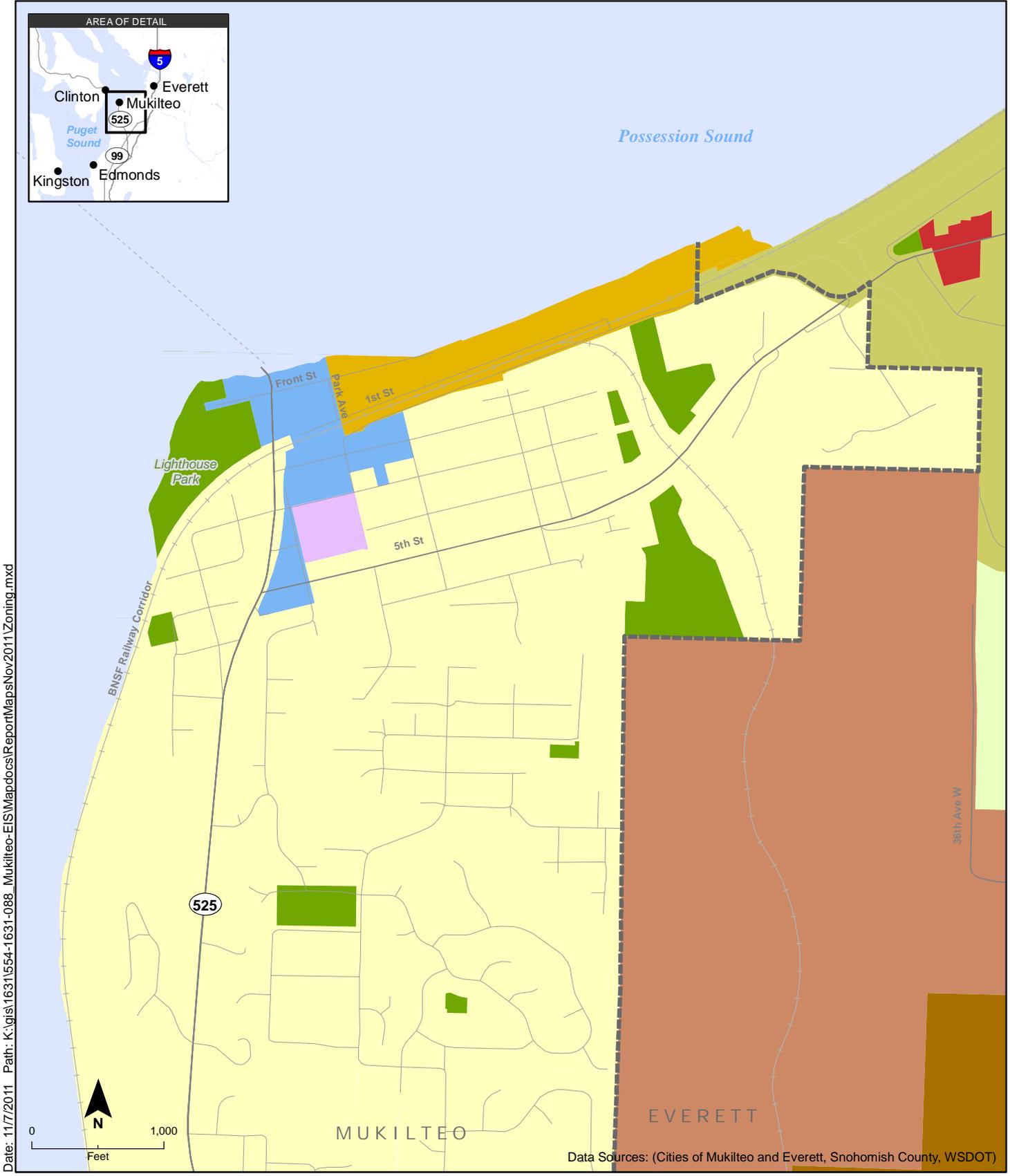
The City's plans for the waterfront, particularly for the area in the vicinity of the existing ferry terminal, presume that the existing ferry terminal will be relocated to the Mukilteo Tank Farm, allowing redevelopment of the current terminal site. Mukilteo's Comprehensive Plan addresses development of transportation infrastructure on the Mukilteo Tank Farm in Policy TR3: "Development of the Multimodal/Intermodal terminal and redevelopment of the Tank Farm site, should employ the following urban design techniques: a network of public paths, a waterfront promenade, a chain of waterfront parks, recreational opportunities such as a visitor dock and boat launch, new mixed use/commercial opportunities, public amenities downtown (e.g., benches, street lights, water fountains) and pedestrian oriented streetscapes." With the adoption of its 2011 update, the City revised this policy to place more emphasis on the public waterfront and recreational elements. The Waterfront Mixed Use District and Downtown Business District both carry design guidelines.

Everett Comprehensive Plan. Everett's Comprehensive Plan was last updated in 2011. The area that could be developed by the Mukilteo project is designated Waterfront Commercial (Figure 4.2-1). Policies for this area are contained in the Shoreline Master Program, which are addressed below.



- Legend
- Single-family Residential
 - Parks/Public Open Space
 - Commercial
 - Industrial
 - City Boundary

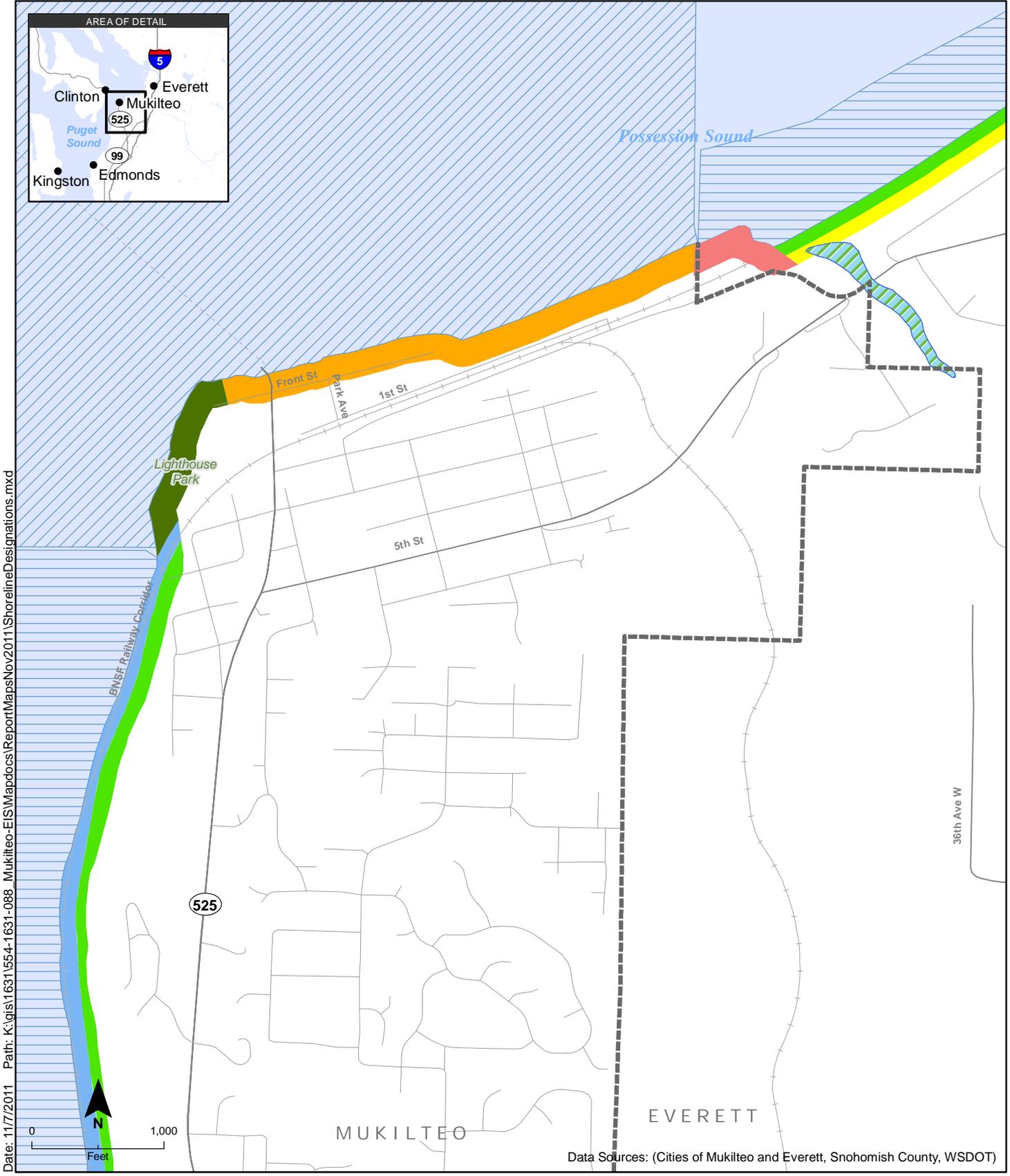
Figure 4.2-1. **Comprehensive Plan Land Use**



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- Legend**
- | | | |
|---|---|--|
| Single-family Residential | Downtown Business | Park and Open Space |
| Other Residential | Business Park | Public - Semi Public |
| Waterfront Mixed Use | Office and Industrial Park | City Boundary |
| Neighborhood Shopping | Heavy Manufacturing | |

Figure 4.2-2. Zoning



Legend

Environment Designations

-  Aquatic Urban
-  Aquatic Urban Conservancy
-  Urban Conservancy
-  Urban Railroad
-  Urban Waterfront
-  Urban Waterfront Park
-  Urban Multi-Use
-  Shoreline Residential
-  Conservancy Wetland
-  City Boundary

Figure 4.2-3. Shoreline Management Program Environmental Designations

The Shoreline Management Act (SMA) is a state-mandated cooperative program of shoreline planning with local government and state responsibilities (RCW 98.58.050).

The SMA provides a framework to maximize public access to shorelines. The SMA regulations also guide other developments that would provide an opportunity for substantial numbers of people to enjoy the shorelines of the state (RCW 90.58.020). Local plans must provide an economic development element for the location and design of industries, transportation facilities, port facilities, tourist facilities, commerce, and other uses that depend on being located on or using shorelines of the state (RCW 90.58.100).

The Mukilteo Shoreline Master Program (SMP) was adopted in 1974. A comprehensive update and revision to the SMP was approved by the City in March 2011 and is undergoing state review. Figure 4.2-3 shows the City's SMP designations within the project area.

The project area is designated Urban Waterfront (UW), which is designed to provide for development and redevelopment of high-intensity, water-oriented commercial and recreational activities, transportation, and essential public facilities, while protecting existing ecological functions and improving ecological functions in areas that have been previously degraded.

The Mukilteo SMP provides that "Priority shall be given to water dependent uses, including ferry terminals and boat launches, in the Urban Waterfront Environment" (Policy UW1). Policies also provide that "With the exception of pedestrian, bicycle, and emergency vehicle access, ferry vehicle staging, shared parking spaces, vehicle circulation and parking systems which are not related to shoreline-dependent uses shall be located as far from the shoreline as possible and should utilize offsite parking options such as park-and-ride facilities" (Policy SH17).

The City's SMP provides for beach and tideland access along the western side of the city adjacent to Possession Sound and calls for a waterfront promenade and beach walk from Mukilteo Lighthouse Park to the east side of Mount Baker Terminal at the Everett city limits (17B.16.210, 17B.25.110, 17B.25.120 Design Guidelines 24, 17B.58.110).

The marine shoreline is classified as Critical Saltwater Habitat and requires buffers to reduce potential impacts to the shoreline in accordance with best available science and as required by state or federal regulations. Buffer enhancement is required where existing buffer area vegetation provides minimal cover and cannot provide effective water quality or habitat functions.

Everett's SMP was last updated in 2009. The area that could be developed by the project is designated Urban Multi Use. See Figure 4.2-3 for a mapping of the City's SMP designations within the project area. The purpose of the designation is "To ensure optimum use of shorelines within urbanized areas by providing for water oriented public and commercial activities, recreational and residential uses, and public access,

and by managing development so that it enhances and maintains shorelines for a multiplicity of urban uses, while protecting and restoring ecological functions.”

The SMP specifically refers to a potential ferry development. “This area is currently planned to be developed cooperatively with lands in the City of Mukilteo for a mixed use development to include some combination of recreational use, pedestrian paths and promenades, and commercial uses. The City of Everett shall redevelop its lands cooperatively and consistently with adjacent jurisdictions so that the entire site is an attractive and active waterfront with integrated commercial, transportation, and recreational components. This site shall be planned and developed cooperatively as part of a water-oriented mixed use development per the memorandum of understanding between the City of Everett, City of Mukilteo, Port of Everett, Department of Transportation Ferry System, and Sound Transit.”

Coastal Zone Management (CZM) Program, the Coastal Zone Management Act of 1972, requires activities of federal agencies that affect coastal zone land uses, water uses, or natural resources to be consistent with the state’s CZM program. Compliance with the local SMP constitutes CZM compliance.

Aquatic Lands Act, formally the Washington State Aquatic Lands Act of 1984 provides for the protection and management of state aquatic lands, which include the tidelands in the project area, as well as shorelands of navigable rivers and lakes, beds of marine and fresh waters, lands in harbor areas and waterways, and some filled aquatic lands. The Aquatic Lands Act is administered through DNR, which carries out the legislative direction to foster water-dependent uses, ensure environmental protection, encourage direct public use and access, and achieve similar goals.

Puget Sound Regional Council (PSRC) *Transportation 2040* identifies regionally important components of the area’s metropolitan transportation system and includes a complete list of projects and transportation system improvements including the Mukilteo ferry terminal relocation.

Mukilteo Lighthouse Park Master Plan, guiding the continued development of the park. Relocation of the existing boat launch to the Mukilteo Tank Farm is a specific component of the City of Mukilteo’s plans for the Lighthouse Park. This relocation would free up much of the parking currently associated with the boat launch from the park site, and allow additional open space.

Other Plans. There are no federal land use plans specifically applicable to the project area.

The *2007-2026 Washington Transportation Plan* incorporates the *Washington State Ferries Long-Range Plan* by reference, and also refers to capital facility planning strategies for facilities including the Mukilteo terminal, but does not provide project-specific guidance. *Chapter 1 Purpose and Need* provides more discussion of the ferry system’s long-range strategic plan.

Washington’s State Comprehensive Outdoor Recreation Planning Document provides general guidelines and policies for state agency lands and facilities. These policies emphasize the importance of public access to state resources, including shorelines, and providing for the sustainable management of the resources.

Economic Base

Mukilteo is primarily a residential community. It has a limited supply of commercial retail land, and residents rely primarily on retail centers in adjacent larger communities. Although Mukilteo residents have relatively high income levels and strong retail spending power, local businesses capture only a quarter of overall local spending. Even in convenience categories such as grocery, miscellaneous retail, and eating/drinking places, the businesses in the city are estimated to capture approximately half of the potential business from the city’s residential market. The primary locations where residents do most of their shopping are Alderwood Mall in Lynnwood and Everett Mall. These competitors limit the retail opportunities in the city of Mukilteo.

In addition, there is a limit to available commercial zoned land in the city. The residential and commercial lands are approaching buildout. The city contains about 4 million square feet of commercial land. Commercial vacant and underdeveloped lands are constrained, with a limited supply existing in the south end of the city. Industrial market opportunities are similarly constrained by the lack of developable land in the city.

The median household income in Mukilteo is considerably higher than both the Snohomish County and Washington State median incomes, as indicated in Table 4.2-1. Travel time information confirms that most of the working population is employed outside of the city limits.

Table 4.2-1. Mukilteo Population and Economic Characteristics

	Mukilteo		Snohomish County		Washington State	
		Percent		Percent		Percent
Population 2010	20,388	--	664,675	--	6,323,579	--
Population 16 or older in labor force (2000)	11,812	72.8	368,828	70.4	3,374,721	66.2
Mean travel time to work (minute)	25.5	NA	29.8	NA	25.4	NA
Median household income (in 2009)	\$90,724	NA	\$64,780	NA	\$56,384	NA
Median family income (in 2009)	\$105,211	NA	\$75,955	NA	\$68,457	NA
Per capita income (in 2009)	\$42,768	NA	\$30,483	NA	\$29,320	NA
Families below poverty level (2009)	NA	2.6	NA	5.6	NA	7.9
Individuals below poverty level (2009)	NA	4.1	NA	8.2	NA	11.8

NA = not applicable

Source: U.S. Census (2010), American Community Survey (ACS)

Fairly low levels of growth are projected for Mukilteo as a whole and for the study area. The population within the existing boundaries of the city is expected to grow from 20,400 in 2010 to 22,000 by 2025, and the majority of this growth would occur away from the study area. According to the City of Mukilteo Comprehensive Plan, there are approximately 190 undeveloped single-family residential lots in the city, about 250 underdeveloped lots, 250 lots in recent subdivisions, and capacity for approximately 229 multi-family units. Overall, there is the potential for about 990 additional dwelling units.

Within the study area, except for the Mukilteo Tank Farm, there are no undeveloped multi-family parcels, and very few single-family lots. Additional housing opportunities would likely come from mixed use development, especially in the downtown area and in the waterfront sub-area. The downtown area zoning allows for up to 999 square feet of accessory dwelling unit for each 1,000 square feet of commercial space constructed, with height limits that vary from 25 to 40 feet in the waterfront sub-area and 35 feet in the Downtown Business District.

4.2.3 Long-Term Environmental Impacts

No-Build Alternative

Acquisition/Displacement

WSDOT would acquire or maintain its leasehold interests in the currently leased portion of the holding area.

Land Use

This alternative would not directly alter existing land uses because the configuration of the terminal and the existing land uses in the vicinity would remain the same, including the vehicle holding area.

Accommodation of the over-water facilities for the ferry terminal would be consistent with the goals of the Shoreline Management Act and the Aquatic Lands Act administered by DNR, specifically fostering water-dependent uses. Other goals of both acts, including ensuring environmental protection and encouraging direct public use and access, are dependent on specific design features and are discussed below under the SMA and in the natural environment sections of this EIS.

The holding area is set back approximately 160 feet from the shoreline ordinary high water mark (OHWM). This distance generally meets the criteria of accommodating the ferry terminal as a water-dependent use while locating ferry, vehicle staging, shared parking spaces, vehicle circulation, and parking systems as far from the shoreline as possible.

The continued presence of the terminal in the downtown area would not be consistent with the City's adoption of the Central Waterfront Alternative of the 1995 *Mukilteo*

Multimodal/Inter-Modal Terminal and Access Study, which presumed the terminal would be relocated to the Mukilteo Tank Farm. Moreover, it would not be consistent with the City's desire to redevelop the existing ferry terminal area to provide a pedestrian-oriented waterfront along Front Street with mixed use on the south side of Front Street and a waterfront promenade extending from Mukilteo Lighthouse Park to the Mount Baker Terminal. This scenario is also reflected in Comprehensive Plan Policies TR2 and TR3.

Economic Impact

WSDOT would spend an estimated \$68 million over a period of years for facility maintenance and structure replacements at the ferry terminal as they become necessary. This expenditure would provide short-term economic activity through job creation, purchase of materials, and sales tax revenue to the state. The alternative would generate approximately 230 short-term construction jobs, which is estimated by using a standard multiplier for the type of construction. Indirectly, these jobs would generate about 150 additional jobs in the region because these workers would spend their income on local goods and services. Sales tax revenues are estimated at about \$2.8 million. The City of Mukilteo, however, is likely to receive only a small portion of this tax revenue because suppliers of materials are not likely to be located in Mukilteo.

This alternative would maintain current land uses and economic activities on the site and in the immediate vicinity. The traffic congestion associated with the terminal, particularly on Front Street, would continue existing constraints for access to businesses, which are perceived by some to reduce the economic viability of those uses. It is possible, however, that persons waiting for the ferry could buy convenience items from businesses in the immediate vicinity.

Impacts on the range of economic activities that could develop along the Mukilteo waterfront are discussed under indirect and cumulative impacts.

Existing Site Improvements Alternative

Acquisition/Displacement

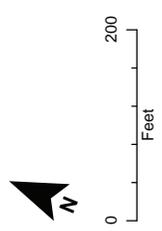
As shown in Figure 4.2-4, this alternative would require the following acquisitions:

- The existing Port of Everett fishing pier and seasonal day moorage would be removed. The pier would be relocated in the general area.
- The existing Ivar's restaurant on the shoreline would be acquired for a new passenger building and the parking lot south of Front Street would be acquired for employee parking and the transit center. There is little potential for relocating the restaurant in the vicinity.
- The property currently leased for the ferry holding area would be acquired for the reconfigured vehicle holding area and the transit center.



Figure 4.2-4. Existing Site Improvements Alternative Acquisitions

- ① Port of Everett Fishing Dock
- ② Ivar's Restaurant
- ③ Lot owned by A&J Enterprises (currently leased by WSF)
- ④ Parking Lot for Ivar's Restaurant
- ⑤ Glass blowing studio



- The existing glass blowing studios at Park Avenue and First Street would be acquired. At this time, a specific site for relocation has not been identified. Relocation assistance would be provided in compliance with applicable regulations.

The Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act (42 USC 4601) is discussed below in *Section 4.2.7*.

Land Use Impacts

This alternative would have few direct impacts on existing land uses because the configuration of existing land uses in the vicinity would change little. The expanded terminal would eliminate a sizable restaurant, which is one of the few businesses on the waterfront that attracts a substantial number of people. The displacement of this business would conflict with the City's goal of providing a pedestrian-oriented waterfront along Front Street.

The vehicle holding areas would be expanded. This area is set back approximately 160 feet from the edge of the water, and generally meets the criteria of accommodating the ferry terminal as a water-dependent use while locating ferry vehicle staging, shared parking spaces, vehicle circulation, and parking systems as far from the shoreline as possible.

Plans for the new passenger terminal facility remain conceptual; it is unknown at this time whether the terminal would allow public enjoyment of the water. This alternative does not advance the SMP provisions that call for continuous access along a waterfront promenade extending from Mukilteo Lighthouse Park to the Mount Baker Terminal. At-grade pedestrian crossings of the ferry loading area would still be provided via sidewalks, similar to today with crossings limited during loading and unloading.

Some public parking spaces on Front Street and Park Avenue that are typically used by local business patrons and persons accessing the shoreline would be eliminated. Demand for parking may not be adequately accommodated by the remaining spaces.

The displacement of the Port of Everett's fishing pier would represent a net loss of shoreline public access facilities, if it were not replaced.

Accommodation of the over-water facilities for the ferry terminal would be consistent with the goals of the Shoreline Management Act and the Aquatic Lands Act.

The continued presence of the terminal in the downtown area would not be consistent with the City's Comprehensive Plan, which envisions creating a transit-oriented destination on the Mukilteo Tank Farm and supporting the redevelopment of the existing terminal site.

Economic Impacts

WSDOT would spend about \$130 million to construct this alternative. This would provide short-term economic activity through job creation, purchase of materials, and sales tax revenue to the state. Based on a standard multiplier for the type of construction, the alternative would generate approximately 490 short-term construction jobs. Indirectly, these jobs would generate about 325 additional jobs in the region because these workers would spend their income on local goods and services. Sales tax revenues are estimated at about \$6.2 million. The City of Mukilteo is likely to receive only a small portion of this tax revenue.

Traffic congestion associated with the terminal would continue, particularly on Front Street. Congestion affects access to businesses and is perceived by some to reduce the economic viability of those uses.

The displacement of two existing businesses could reduce the overall economic base of Mukilteo, but there are 4 million square feet of existing commercial area throughout the city. The City of Mukilteo estimates a potential loss of \$50,000 annually in sales tax revenue from the businesses. An estimated 30 to 40 employees would be affected by the business displacements (the glass blowing studio houses various artist studios, but are considered here as an association of businesses). Removal of the Ivar's restaurant would eliminate the only business along the shoreline that provides opportunities for viewing the water in close proximity. There is little potential for relocating the restaurant in the immediate vicinity because of the lack of privately owned sites. There may be potential for relocation in the future to portions of the Mukilteo Tank Farm, if the proposed transfer to the Port of Everett is completed, but this would depend on several other factors, including the ability of the Port or others to prepare the site for development. There are no detailed plans for developing the site for specific uses at this time.

Impacts due to other potential developments along the Mukilteo waterfront are discussed under indirect and cumulative impacts.

Elliot Point 1 Alternative

Acquisition/Displacement

This alternative would affect the following properties:

- The existing glass blowing studio at Park Avenue and First Street would be acquired for the First Street extension. At this time, a specific site for relocation has not been identified. Relocation assistance would be provided in compliance with applicable regulations.
- Approximately 11 acres of the Mukilteo Tank Farm would be developed.

- Parking spaces and about 0.25 acre of the public shoreline access area at the Mount Baker Terminal would be displaced to accommodate vehicle access to the terminal and the toll booth. See *Chapter 5 Section 4(f)* for further discussion of impacts and mitigation for parks and recreation resources. Replacement parking is proposed west of Japanese Creek along with spaces to support a variety of uses, including the Mukilteo Station and the bus transit center. If parking is not restricted, these transportation uses could reduce the parking supply for the public access area.

Land Use Impacts

This alternative would have a variety of impacts in relation to the applicable land use plans.

City of Mukilteo policies call for 20 percent of the development within the Mukilteo Tank Farm to be provided as open space or public access. The shoreline promenade and the daylighting of Japanese Creek would help meet this requirement.

Accommodation of the over-water facilities for the ferry terminal would be consistent with the goals of the Shoreline Management Act and the Aquatic Lands Act.

This ferry terminal location would be consistent with the Comprehensive Plan.

The vehicle holding area, transit facilities, and parking area would have minimal setback from the water and would not generally meet Shoreline Master Plan criterion for locating non-water-dependent uses as far from the shoreline as possible.

This design responds to the SMP provisions that call for continuous access along the waterfront promenade extending from Mukilteo Lighthouse Park to the Mount Baker Terminal. It only partially achieves the objective by providing walkways along much of the shoreline and bicycle and pedestrian facilities set back from and parallel to the shoreline. Continuous pedestrian movement along the shoreline is interrupted by the ferry loading area. To access the shoreline promenade east of the ferry terminal, a pedestrian would have to walk to First Street and travel about 1,500 feet to get back to the promenade immediately east of the ferry loading area.

The location of the passenger terminal and maintenance facility on an over-water structure might conflict with SMP Policy UW 13, which limits new over-water structures to the minimum necessary to support the structure's intended use and also requires shared pedestrian access.

The alternative would displace parking spaces and a portion of the upland recreation area at the Mount Baker Terminal, which was previously required as permit condition for the Mount Baker Terminal. The Everett Shoreline Substantial Development Permit requires a permanent access road to provide public access, although implementation has been delayed until the Mukilteo Tank Farm is transferred to the Port. The City of Everett requires retention of public access facilities or replacement facilities that are equal in terms of public accessibility and function.

The parking area provided by this alternative would include public parking spaces to replace the displaced Mount Baker Terminal shoreline access area parking. The parking area does not provide direct access to the shoreline access area and is about 1,500 feet to the south. Access along the shoreline is not provided. To access this area, a person would need to walk along the sidewalk adjacent to the four-lane access road about 1,500 feet to the existing public access area. Parking at this location, if available to those wishing to use it for shoreline access, is very inconvenient to the shoreline access area and likely would result in a substantial decrease in the number of persons accessing the beach area.

Economic Impacts

WSDOT would spend about \$126 million to construct this alternative and remove the Tank Farm Pier. This would provide short-term economic activity through job creation, purchase of materials, and sales tax revenue to the state. Based on a standard multiplier for the type of construction, the project would generate approximately 475 short-term construction jobs. Indirectly, these jobs would generate about 315 additional jobs in the region because these workers would spend their income on local goods and services. Sales tax revenues are estimated at about \$6 million. The City of Mukilteo, however, is likely to receive only a small portion of this tax revenue because suppliers of materials are not likely to be located in Mukilteo.

The displacement of one existing business would not have a substantial impact on the overall economic base of Mukilteo given the 4 million square feet of commercial use in the city, but it would affect the business of artists using the studio. It is unlikely to affect the viability of the local commercial area, especially if the existing terminal is made available for redevelopment.

Potential development on the existing ferry terminal site and the Mukilteo Tank Farm site is discussed under indirect and cumulative impacts.

Elliot Point 2 Alternative

Acquisition/Displacement

This alternative would affect the following properties:

- The existing glass blowing studio at Park Avenue and First Street would be acquired for the First Street extension. At this time, a specific site for relocation has not been identified. Relocation assistance would be provided in compliance with applicable regulations.
- Approximately 9 acres of the Mukilteo Tank Farm would be developed.

Land Use Impacts

This alternative would have impacts similar to the Elliot Point 1 Alternative, with the following exceptions. The more compact design of this alternative includes fewer promenade areas and no other major open space. The promenade would contribute to the 20 percent of open space and public access required by City of Mukilteo policies for development on the Mukilteo Tank Farm. While it would not alone satisfy the requirement, it would not preclude the development of open space on other parts of the tank farm.

Like the Elliot Point 1 Alternative, this alternative partially conforms with SMP criteria for continuous public access along the shoreline extending to the Mount Baker Terminal. To access the shoreline promenade east of the ferry terminal, a pedestrian would have to walk to First Street and travel about 800 linear feet to get back to the promenade immediately east of the ferry loading area instead of the approximately 1,500 feet with the Elliot Point 1 Alternative.

The loss of 26 on-street parking spaces along Park Avenue and First Street and at the Mukilteo Station as the result of the widening and realignment of First Street would be partially offset by the reduction of parking demand from one displaced business. However, because that business provided off-street parking, the loss of parking also may affect remaining businesses, commuters, and persons accessing the shoreline.

Economic Impacts

WSDOT would spend about \$100 million to construct the Elliot Point 2 Alternative, including the pier removal. This would provide short-term economic activity through job creation, purchase of materials, and sales tax revenue to the state. Based on a standard multiplier for the type of construction, the project would generate approximately 380 short-term construction jobs. Indirectly, these jobs would generate about 250 additional jobs in the region because these workers would spend their income on local goods and services. The City of Mukilteo, however, is likely to receive only a small portion of this tax revenue because suppliers of materials are not likely to be located in Mukilteo.

The acquisition of one existing business would not have a substantial impact on the overall economic base of Mukilteo given the 4 million square feet of commercial use in the city. This acquisition is unlikely to affect the viability of the local commercial area, especially if the existing terminal is made available for redevelopment. The potential redevelopment is discussed under indirect and cumulative impacts.

4.2.4 Construction Impacts

No-Build Alternative

Construction would take place only as facilities require replacement, and would occur on lands already dedicated to transportation uses. Construction would have temporary

proximity impacts on adjacent uses from noise, and possibly temporary disruption of traffic circulation. Construction would occur only as specific facilities warrant major repair or replacement and would take place on limited facilities at any one time. The ferry terminal would be closed temporarily for work on in-water facilities.

Construction would temporarily disrupt access to local businesses, but is not expected to be severe enough to change land use during construction. Economic impacts during construction could result from avoidance of the area by retail and restaurant customers due to disruption of traffic circulation and noise impacts. Such impacts, however, are expected to be managed by WSDOT to ensure they do not adversely affect the economic viability of any businesses.

Existing Site Improvements Alternative

Construction is likely to have temporary noise impacts on adjacent uses, such as a condominium or the Silver Cloud Inn, and possibly temporary disruption of traffic circulation. The loss of ferry service for an anticipated 3- to 6-month period may have economic impacts on businesses due to retail and restaurant customers avoiding the area because of disruption in traffic circulation and noise impacts. Businesses that depend on ferry traffic for patronage would experience a decrease in business during ferry closures.

Elliot Point 1 Alternative

Construction would take place on a separate site and operation of the existing terminal would continue until construction is complete and new facilities are opened. Noise or traffic from the construction of new facilities and demolition of existing facilities may impact adjacent uses. However, construction impacts are unlikely to result in a change in land use or adversely affect the economic viability of adjacent land uses because noise-sensitive receptors are farther away.

Elliot Point 2 Alternative

Construction impacts would be similar to the Elliot Point 1 Alternative.

4.2.5 Indirect and Secondary Impacts

No-Build Alternative

The indirect impacts from retaining the existing site would include increased traffic-related problems; the City of Mukilteo has stated that these issues would constrain the development of its downtown waterfront area. Ferry operations would continue to operate similarly to present conditions. Traffic congestion on local roadways at peak periods would continue to worsen as current problems remain unsolved. However, traffic congestion would not be likely to have impacts on existing land use or economic impacts different from those described as direct impacts.

Existing Site Improvements Alternative

Potential traffic-related indirect impacts would be similar to the No-Build Alternative discussed above, although perhaps to a lesser extent due to the reconfiguration of facilities and a new intersection at First Street.

The displacement of oversized parking and displacement of Ivar's restaurant and another local business could reduce non-ferry patronage to the area and reduce patronage for other commercial uses. This might slow or constrain the City's ability to develop the area consistent with its plans. Design features or interpretive elements reflecting the area's historic significance could make the area more attractive to visitors and patrons.

Elliot Point 1 Alternative

The relocation of the ferry terminal to the Mukilteo Tank Farm would result in more efficient ferry operations. At peak periods, operational delays would be less frequent. Traffic congestion on local roadways at peak periods would likely be less in the area north of the proposed new arterial providing access to the site.

Plans to revitalize the waterfront would be supported by the expansion of the active waterfront area, coupled with the increased opportunities to develop public open spaces. Design elements and interpretive features that reflect the site's rich cultural history and marine setting could also make the area more attractive to visitors.

Elliot Point 2 Alternative

Potential indirect impacts would be similar to the Elliot Point 1 Alternative discussed above, but this alternative has more potential for ferry queue impacts on SR 525 during peak travel times. As with Elliot Point 1, the opportunity to integrate context-sensitive designs and open spaces reflecting the site's history and marine setting would help support revitalization of the area.

4.2.6 Cumulative Impacts

Land use trends were established within a short period after the Puget Sound region was settled by non-indigenous people in the 19th century. While development began in Mukilteo around the same time, it accelerated in the 1950s and 1960s with the construction of the Mukilteo ferry terminal and I-5. The land uses at the waterfront area have changed over time following development of the railroad and subsequent development of lumber, industrial, and shipping uses. This was followed by the military uses on what is now the Mukilteo Tank Farm. Other changes have included the development of the ferry terminal, the steady development of the surrounding neighborhoods in Mukilteo, and the transition to the existing uses in the area today. For the future, the City of Mukilteo's land use planning for the waterfront reflects an increasing emphasis on the shoreline as a valuable public and environmental resource. The City is working with the U.S. Air Force and Sound Transit to utilize the

southeast portion of the Mukilteo Tank Farm for construction staging for Sound Transit's improvements to the commuter rail station, and to allow interim parking for the station and the waterfront area. The City and Sound Transit are also considering other longer term plans for added parking for the station. Depending on the ultimate site, the addition of parking could help support the City's waterfront vision.

Potential cumulative impacts would be primarily confined to the area north of the BNSF tracks affected by the alternatives.

No-Build Alternative

Land Use Impacts

This alternative would not directly affect the Mukilteo Tank Farm. If the U.S. Air Force transfers the Mukilteo Tank Farm to the Port of Everett, the parcel would be available for redevelopment under Mukilteo and Everett land use regulations. The City of Mukilteo has proposed to relocate the boat launch ramp currently located at the Mukilteo Lighthouse Park; it could be accommodated at the Mukilteo Tank Farm.

If the redevelopment of the Mukilteo Tank Farm relies on the existing road network, traffic congestion at SR 525 and Front Street could constrain access, which could limit redevelopment of the Mukilteo Tank Farm.

NOAA has a variety of plans for the Mukilteo Research Station within the portion of the Mukilteo Tank Farm to be transferred to them by the U.S. Air Force, including:

- Upgraded laboratories for the study of ocean toxicology, restoration of marine species and ecosystems, and ocean acidification
- Increased access of seawater at the station to improve laboratory research
- Support for a fleet of small boats, field gear, and supplies
- Addition of an outreach and education center on the waterfront about NOAA's work

These changes would be subject to the City of Mukilteo's development regulations and are not likely to affect land uses in the vicinity or change redevelopment options for other portions of the Mukilteo Tank Farm.

Economic Impacts

This alternative would not support the City of Mukilteo's land use policies focusing on redeveloping the existing terminal and nearby lands. In the long term, the presence of the terminal and associated traffic congestion, particularly on Front Street, may affect the economic viability of businesses that depend on convenient access for their customers, especially non-ferry customers. It is possible, however, that the continuing presence of the ferry terminal would provide a customer base that

would support existing establishments, and could lead to other businesses oriented to persons waiting to board ferries.

As indicated above, traffic congestion at SR 525 and Front Street could impede redevelopment of the Mukilteo Tank Farm and result in curtailed economic activity.

Existing Site Improvements Alternative

Land Use

Potential cumulative impacts would be similar to the No-Build Alternative. The impacts of NOAA facilities considered for development in the area would be the same as described under the No-Build Alternative.

If the U.S. Air Force transfers the Mukilteo Tank Farm to the Port of Everett, the anticipated relocation of the City of Mukilteo boat launch ramp, currently located at the Mukilteo Lighthouse Park, could be accommodated at the Mukilteo Tank Farm.

Economic Impacts

As discussed for the No-Build Alternative above, the Mukilteo Tank Farm could be available for redevelopment by others to generate economic activity with retention of the existing terminal site. However, traffic congestion at SR 525 and Front Street could impede redevelopment, though to a lesser extent than with the No-Build Alternative due to the extension of First Street to a new signalized intersection at SR 525, which would improve traffic operations in the area.

Elliot Point 1 Alternative

Relocation of the ferry would probably result in WSDOT selling the existing vehicle holding area (about 2 acres), and re-leasing the leased area. This could allow an area of about 3 acres to be consolidated and available for development under the City's mixed use zoning. Under City codes, this area could accommodate about 80,000 to 200,000 square feet of first-floor retail use, depending on whether surface or structured parking were used, and also would allow upper-story residential units.

For development of the Mukilteo Tank Farm, the City's policies require 20 percent be reserved for public use or open space. The Elliot Point 1 Alternative includes a promenade and daylighting of Japanese Creek, but these features may not fully meet this requirement. Coordination with development plans for other parts of the Mukilteo Tank Farm could help satisfy the requirement.

If the existing holding area can be developed along with other remaining developable area on the Mukilteo Tank Farm, assuming a land transfer from the U.S. Air Force, there would be more potential for the entire area to function as a single business district. The configuration of the parcel reserved for NOAA could contribute to a more integrated district, especially if NOAA also provides a promenade as part of its

future plans. Otherwise, the impacts of NOAA facilities considered for development in the area would be the same as described under the No-Build Alternative.

The anticipated relocation of the City of Mukilteo boat launch ramp currently at the Mukilteo Lighthouse Park could be accommodated at the Mukilteo Tank Farm; however, it would need to be located west of the ferry terminal and would require additional access and site development.

Elliot Point 2 Alternative

Potential cumulative impacts would be similar to the Elliot Point 1 Alternative. Slightly more area on the Mukilteo Tank Farm would be available under this alternative for other development.

This alternative includes a waterfront promenade, but may not provide the 20 percent open space and public access required by the City for the Mukilteo Tank Farm site. However, as with the Elliot Point 1 Alternative, other development on the site could satisfy the requirement. The area for future redevelopment on the Mukilteo Tank Farm would not be contiguous to the downtown business area in the vicinity of the existing ferry terminal. This could result in the two areas developing different land use and economic functions rather than functioning as a single business district.

The anticipated relocation of the City of Mukilteo boat launch ramp currently at Mukilteo Lighthouse Park could be accommodated at the Mukilteo Tank Farm; however, it would need to be located east of the ferry terminal and would require additional access and site development. This could potentially be combined with the completion of public access serving the Port of Everett's shoreline access area at Mount Baker Terminal.

The impacts of NOAA facilities considered for development in the area would be the same as described under the No-Build Alternative.

4.2.7 Mitigation Measures

Acquisition of private property would occur under all Build alternatives. WSDOT would provide compensation at fair market value for property and property rights acquired; relocation assistance for displacement would be provided in accordance with applicable federal and state regulations.

If the project uses federal funding, then it must comply with the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act (42 USC 4601). The Act establishes a uniform policy on relocation assistance and on real property acquisition practices for programs or projects undertaken by a federal agency or with federal financial assistance with a primary purpose of minimizing the hardship of displacement on people and ensuring that they do not suffer disproportionate injuries. (A displaced person can include any individual, family, partnership,

corporation, or association who moves or moves their personal property from the real property affected).

The Washington State Real Property Acquisition Policy Act (RCW 8.26) is similar, except it deals with the public works programs and acquisition practices of state and local governments. WSDOT implementing regulations are found in WAC 468-100; all activities related to acquisitions, displacements, and relocations will comply with the requirements of the Act.

Potential mitigation measures to address differences between the proposal and land use plans and policy goals and requirements may include:

For the Existing Site Improvements Alternative:

- Provision of public access facilities called for in the SMP could be accommodated by providing a pedestrian walkway on the water side of the proposed passenger terminal, separated from ticketed ferry passengers. An example of such a facility is at the adjacent Silver Cloud Inn. This would result in additional over-water coverage.
- A pedestrian overpass over the ferry loading area would accommodate public access along the shoreline without pedestrian/vehicle conflicts.

For the Elliot Point 1 Alternative:

- Explore changes in the site plan that would help the alternative meet the SMP criteria of locating vehicle-related elements (e.g., parking) farther from the shoreline. However, feasible options must meet the project's purpose and need while contending with the site's many physical and environmental constraints. For instance, one approach that would move vehicle-related elements away from the shoreline would cause additional impacts to cultural resources, hinder opportunities to daylight Japanese Creek (or require bridging the creek), and likely degrade the efficiency of ferry operations. Similarly, another approach that was examined would require tradeoffs in transportation benefits and safe and secure facility operations, and would increase the risks to cultural resources. It may be that the site plan cannot be adjusted to meet the SMP criteria without unacceptably compromising the project's purpose and need or creating unacceptable impacts to environmental or cultural resources. In that case, a mitigation strategy would be to provide compensatory open space areas along the shoreline in areas west of the terminal.
- Locating the passenger terminal and maintenance facilities on land rather than on an over-water structure would respond to SMP policies limiting over-water facilities to the minimum needed. However, this would require tradeoffs

among public open space, public access, distances traveled by pedestrians to access ferries, operational needs, and other environmental effects.

- The displacement of parking for the shoreline access area at the Mount Baker Terminal could be avoided by reconfiguring the design of this alternative to avoid the loss of parking and reduced access (see *Chapter 5 Section 4(f)* for more detail).
- Policies for a continuous pedestrian promenade along the shoreline would need to be addressed by WSDOT and the City of Mukilteo to determine appropriate provisions that would recognize the security needs of the terminal.

For the Elliot Point 2 Alternative:

- Meeting the SMP criteria of locating ferry vehicle staging, shared parking spaces, vehicle circulation, and parking systems as far from the shoreline as possible would require substantial reconfiguration of the alternative into a longer, narrower facility stretching farther to the east. This could involve reconfiguring the ferry holding area by providing fewer longer storage lanes, although this could also affect the location of the ferry dock. Such a configuration would place elements of the parking or transit center east of Japanese Creek and make connections between the commuter rail station and ferry less effective. A narrower configuration would involve tradeoffs with impacts on potential archaeological resources, other environmental impacts, or tradeoffs in transportation benefits and safe and secure facility operations.
- Similarly, locating the passenger terminal and maintenance facilities farther from the water would involve tradeoffs between public open space and public access goals, and increase distances traveled by pedestrians to access ferries. For a passenger terminal with overhead ramps, comfort and loading times would be less of a constraint.
- Policies for a continuous pedestrian promenade along the shoreline would need to be addressed by WSDOT and the City of Mukilteo to determine appropriate provisions that would recognize the security needs of the terminal.

For all alternatives, construction impacts on existing businesses and existing public access facilities could be reduced by:

- Construction timing of key elements that disrupt business access could be planned for seasons or times of day when business peak operations would be less disrupted.
- Detour routes, if needed, could be clearly marked to provide clear routes to access businesses and existing public access areas.

- Temporary parking could be provided on parcels acquired before construction.
- A program of public information and business outreach could assist businesses in planning deliveries and other essential support activities around construction times.
- A public information campaign to inform the general public that businesses are open could encourage patronage of businesses during construction.

4.3 Noise and Vibration

Sound and vibration are around us all the time but may become a nuisance or create an adverse effect when they are too loud, too frequent, or disruptive to normal activity. Sound is any change in air pressure that the human ear can detect, from barely perceptible sounds to sound levels that cause hearing damage; the greater the change in air pressure, the louder the sound. When sounds are unpleasant or disturbingly loud, they are generally considered “noise.” Although human response to noise varies from person to person, identifying and mitigating project-related noise can reduce noise impacts on the population at large.

This section analyzes potential land-based sound and vibration impacts that would result from both the roadway improvements and the multimodal transit facilities. Potential aquatic noise impacts are discussed in *Section 4.12 Ecosystems*. The information in this section is based on the findings of the *Noise and Vibration Discipline Report*.

4.3.1 Overview of Analysis and Regulatory Context

Regulatory Context

State and local laws regulate noise from operational activities of land uses but do not regulate noise from traffic on public roadways. Construction noise is addressed by Washington Administrative Code, Chapter 173-60 (WAC 173-60), and local governments typically apply noise control measures for construction through their land use codes.

The analysis uses FTA’s established transit noise and vibration methods to evaluate noise and vibration levels due to transit- and ferry-related elements of the project alternatives, along with FHWA methods for assessing noise impacts associated with roadways. Further detail is available in the *Noise and Vibration Discipline Report*, which is an appendix to this Draft EIS.

Background Information About Noise Levels

Various descriptors are used for sound and noise levels, including the A-weighted decibel scale (dBA), sound level equivalents (Leq), day-night average sound levels (Ldn), and percentile levels. The most common measurement of sound and environmental noise is the dBA. This is a logarithmic scale that ranges from 0 dBA to about 140 dBA and approximates the range of human hearing. The threshold of human hearing is about 0 dBA; less than 30 dBA is very quiet; 30 to 60 dBA is quiet; 60 to 90 dBA is moderately loud; 90 to 110 dBA is very loud; and 110 to 130 is uncomfortably loud. Figure 4.3-1 shows typical noise levels from various sources.

Human conversation generally ranges between 44 and 65 dBA when people are about 3 to 6 feet apart. The smallest change in noise level that the human ear can perceive is usually a 3 dBA increase in noise. An increase of 5 or 6 dBA is readily noticeable, and sound that increases by 10 dBA appears to be twice as loud to most listeners. A doubling of the number of noise sources, such as the number of cars operating on a roadway, increases noise levels by 3 dBA (WSDOT 2006). A tenfold increase in the number of noise sources will usually add 10 dBA to the background noise levels. As a result, a noise source emitting a noise level of 60 dBA combined with another noise source of 60 dBA yields a combined noise level of 63 dBA, not 120 dBA.

Noise levels decrease with distance from the noise source. For a linear source such as a roadway, noise levels decrease 3 dBA over hard ground (concrete or pavement) or 4.5 dBA over soft ground (grass) for every doubling of distance between the source and the receptor. For a point source such as a construction activity, noise levels decrease between 6 and 7.5 dBA for every doubling of distance from the source.

Noise levels from traffic sources depend on volume, speed, and the type and condition of vehicles. Generally, an increase in volume, speed, or vehicle size increases traffic noise levels. Vehicle noise is a combination of noises from the engine, exhaust, and tires. Malfunctioning vehicle parts (such as mufflers) can increase traffic noise. Noise travels in a straight line-of-sight path between the source and a receiver. Terrain, along with shielding by barriers and buildings, can greatly affect the propagation of noise.

Overview of Analysis

The potential for long-term noise impacts from the operation of the project alternatives was evaluated using models designed to predict transportation-related noise.

Potential construction noise and vibration effects were evaluated qualitatively because of the temporary nature of construction, the construction approach, and the variety of equipment a contractor may employ. This approach provides a conservative (worst-case) estimate of possible noise and vibration effects due to construction.

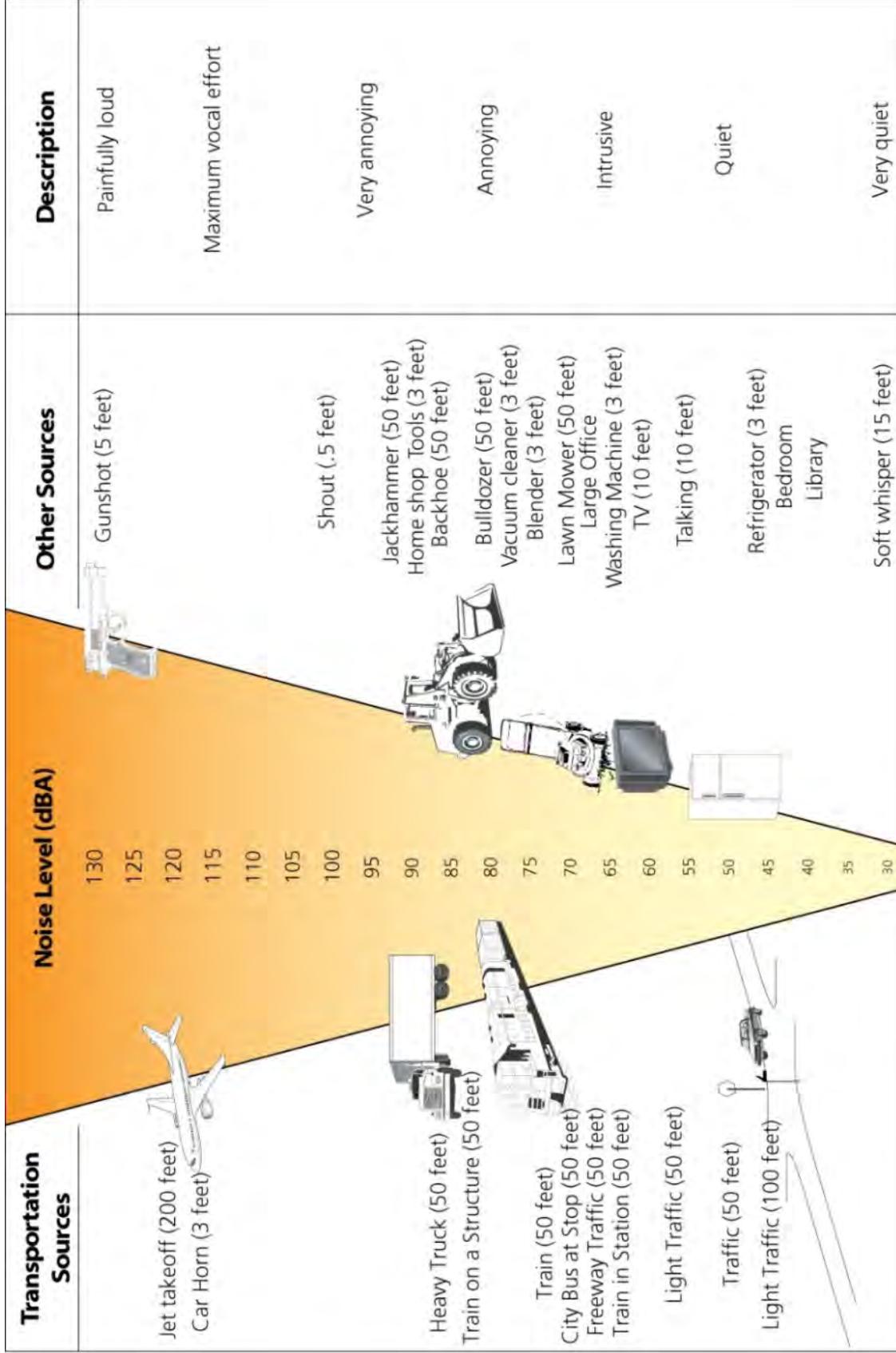


Figure 4.3-1. Expected Decibel Levels from Various Noise Sources

4.3.2 Affected Environment

Noise sources in the project area include air traffic to and from Paine Field airport, freight and passenger trains on the BNSF railroad, barge and rail traffic at Mount Baker Terminal, automotive traffic on SR 525 and local streets, and ferry arrivals and departures at the Mukilteo ferry terminal. South of the railroad tracks, the railroad dominates the noise levels, and residents experience comparatively minor levels of noise from the existing ferry terminal, airport, transfer facility, and roadway traffic. North of the railroad tracks, rail vehicles and ferry traffic along SR 525 add to the ambient sound level for residential land uses nearest the waterfront.

Table 4.3-1 lists noise monitoring locations (shown on Figure 4.3-2) and their measured sound levels. Measurements at seven receivers represent the existing ambient (or background) sound levels in the project vicinity along the waterfront. The variations show how sound levels at some locations can be affected by passing trains or by traffic. The project also includes a site (MMM-1) representing typical sound levels near the ferry terminal as experienced by people at the Losvar Condominiums and Silver Cloud Inn. The dominant sound levels at MMM-2 came from the docking ferry and people on the beach.

Table 4.3-1. Project Noise Monitoring Locations and Findings (dBA)

Project Site No.	Address	Day/Night Measurement Range	Time Period	15 to 30-Minute Noise levels	Calculated 24-hour levels
RBTF-1	1146 Second Street	39.5 to 76	68 hr.	NA	76.7
RBTF-2	1513 Mukilteo Lane	38.1 to 58.7	68 hr.	NA	57.7
TM-1	615 Third Street	49.7 to 64	24 hr.	NA	66.2
TM-2	822 Second Street	42.4 to 71.9	24 hr.	NA	70.4
AA-1	103 Cornelia Avenue	NA	30 min.	71.6	69.6
MMM-1	612 Third Street	NA	15 min.	70.4	68.4
MMM-2	NOAA Mukilteo Research Station	41 to 55.3	13 hr.	NA	52.1

NA = not applicable

4.3.3 Long-Term Environmental Impacts

This section describes how noise and vibration could affect noise- and vibration-sensitive locations. Table 4.3-2 provides an inventory of the affected properties identified (shown in Figure 4.3-2) in the screening process. Only sites identified in this inventory require additional assessment of noise or vibration effects. The *Noise and Vibration Discipline Report* contains additional information about the analysis.



Data Sources: (Cities of Mukiteo and Everett, Snohomish County, WSDOT)

Figure 4.3-2. Area Land Use and Sound Measurement Locations

- Sound Measurement Location
- Noise Sensitive Locations
- Subject to FTA Screening Criteria
- Subject to FTA and FHWA Screening Criteria
- FHWA Screening Distance: Existing Site Improvements
- FTA Screening Distance: Existing Site Improvements
- FTA Screening Distance: Elliot Point 2

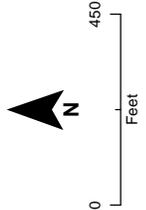


Table 4.3-2. Noise and Vibration Sensitive Locations Inventory

Noise and Vibration Sensitive Locations	Project Elements			
	Ferry Vessel Terminal Dock	Parking Facility	SR 525 and Access Roads	Transit Center and Mukilteo Station
No-Build Alternative				
None	No Noise or Vibration Sensitive Locations Identified			
Existing Site Improvements				
Losvar Condominiums	Noise	Noise	--	--
Silver Cloud Inn	Noise	Noise	Noise	Noise
111 Park Avenue	--	--	--	Noise
724 Second Street	--	--	--	Noise
726 Second Street	--	--	--	Noise
728 Second Street	--	--	--	Noise
Elliot Point 1 Alternative				
None	No Noise or Vibration Sensitive Locations Identified			
Elliot Point 2 Alternative				
Losvar Condominiums	--	Noise	--	--
Silver Cloud Inn	--	Noise	--	--

No-Build Alternative

The No-Build Alternative would not change noise-generating activities and therefore would not have additional impacts compared to existing conditions.

Existing Site Improvements Alternative

The Existing Site Improvements Alternative is near the greatest number of noise-sensitive receivers. These include the Silver Cloud Inn, Losvar Condominiums, and four residential properties along Mukilteo Lane, Second Street, and Park Avenue.

The Silver Cloud Inn is the only receiver that is within a potential area of impact due to changes to roadways. Front Street would change to a one-way street in front of the property, but the extension of First Street would be beyond the potential area of impact for the hotel or any other noise sensitive property. Model results indicate that during peak traffic periods, noise levels would reach 56 dBA, which is well below the 66 dBA threshold where impacts to noise sensitive properties would occur. Similarly, the sound levels at the hotel, condominiums, and residential properties near the transit center or other new noise sources were anticipated to reach 55, 52, and 51 dBA, respectively, all below the noise impact threshold.

Elliot Point 1 Alternative

Under the Elliot Point 1 Alternative, all project elements are far enough from the noise-sensitive land uses to avoid potential impacts.

Elliot Point 2 Alternative

The parking facility for ferry system employees was the only project element of this alternative with the potential to increase noise levels at the Silver Cloud Inn and Losvar

Condominiums (see Table 4.3-2). A general assessment of the parking facility indicates that there would be no impact at either receptor. The sound levels were anticipated to reach no more than 45 dBA, far below the impact threshold. All other project elements are far enough from noise-sensitive land uses to avoid potential impacts.

4.3.4 Construction Impacts

No-Build Alternative

Even under the No-Build Alternative, the activities to maintain existing operations at the site would include construction of a replacement slip and terminal buildings and ongoing maintenance activities for the existing ferry terminal. Temporary, short-term impacts from construction noise such as pile driving and demolition associated with the replacement of the terminal buildings and slip would result from these activities. Pedestrians passing by and individuals working near the construction activity would be most affected.

No existing nearby structures would be damaged by construction of the No-Build Alternative and construction vibration would not exceed the federal annoyance criteria established by FTA. A general assessment of construction vibration effects on the NOAA Mukilteo Research Station indicates that the facility would experience vibration levels below the lowest FTA damage criteria for structures. FTA guidance suggests that facilities with laboratory equipment, such as optical microscopes and microbalances, can be evaluated using a general assessment for the effects of vibration on these types of facilities. WSDOT conducted a general assessment for the NOAA facility and found the potential for some construction activity vibrations to exceed the Category 1 (65) VdB threshold, which would apply to activities using microscopes or other specialized equipment.

Construction Impacts Common to All Build Alternatives

WSDOT anticipates that all of the Build alternatives would require approximately 2 years to construct. Major construction elements include demolition, earth moving, hauling, grading, paving, pile driving, pier construction, building construction, and road construction. General construction noise and vibration impacts could be expected during all of these construction elements, but would be most pronounced during demolition, pile driving, and road construction.

Existing Site Improvements Alternative

Under the Existing Site Improvements Alternative, the Losvar Condominium and Silver Cloud Inn residents and guests would likely experience greater noise and vibration annoyance than other area residents due to their proximity to the project site. As with the No-Build Alternative, no existing nearby structures would be damaged nor would noise or vibration levels exceed the federal annoyance criteria. More construction activity would occur near the NOAA research facility compared

to the No-Build Alternative; therefore, there would be a greater potential for construction vibration to affect laboratory experiments conducted at the NOAA Mukilteo Research Station.

Elliot Point 1 and Elliot Point 2 Alternatives

Under the Elliot Point 1 and Elliot Point 2 alternatives, the noise and vibration impacts related to construction would be similar to those described for the Existing Site Improvements Alternative; however, noise levels may differ slightly due to the different locations of the terminal, parking, roadway, and transit facility components. Both of the Elliot Point alternatives would be farther away from the noise- and vibration-sensitive receivers than the other alternatives.

Except for the effects on the NOAA Mukilteo Research Station, the construction vibration impacts would be similar to those described for the Existing Site Improvements Alternative. Under the Elliot Point 1 and 2 alternatives, the potential for impacts on the NOAA Mukilteo Research Station would be reduced because the ferry terminal, access road, and holding area would be located farther away.

4.3.5 Indirect and Secondary Impacts

Indirect or secondary impacts are caused by the proposed action that occur later in time or farther removed in distance but are still reasonably foreseeable. Indirect impacts may include growth-inducing impacts and other impacts related to induced changes in the pattern of land use, population density, or population growth rate. Because this project would not substantially increase capacity to any of the current facilities, no indirect impacts are reasonably foreseeable for any of the currently proposed alternatives.

4.3.6 Cumulative Impacts

The Mukilteo downtown and waterfront areas were settled and developed before the advent of the automobile and other noise sources such as the BNSF railway corridor, Paine Field, and the Mukilteo ferry terminal. After World War II, population growth in the central Puget Sound region accelerated, leading to increased commercial development and roadway traffic. In 1952, the Mukilteo Ferry terminal began operation. In the 1960s, I-5 was built, leading to increased traffic on SR 525. This combination of increased population, development, and roadway traffic have contributed to greater sources of noise in the Mukilteo downtown and waterfront areas than existed historically.

The noise modeling and analysis considers the long-term cumulative impacts of noise from existing noise sources, including freight and passenger rail, and all traffic forecasted within the study area. This includes traffic growth from the Mukilteo Station, the Mount Baker Terminal, and potential residential and commercial development on remaining portions of the Mukilteo Tank Farm and in the

downtown core. The baseline also includes growth in rail traffic along the BNSF railway corridor. Transportation is one of the primary noise sources in the project area; therefore, the likely cumulative change to noise levels is already considered. While future development could introduce new noise-sensitive uses as well as other noise sources, no specific projects have been permitted at this time. NOAA's planned expansion would be a source of noise, but would not impact sensitive properties. Given the lack of significant impacts on existing noise-sensitive properties, long-term noise levels at new properties would likely be similar to baseline conditions. Construction of other projects, including NOAA's planned redevelopment, could introduce additional construction noise. If the projects occur concurrently, this additional noise could result in a cumulative noise impact.

4.3.7 Mitigation Measures

Noise abatement and minimization measures have been designed into all alternatives. The abatement and minimization measures for long-term impacts, construction impacts, indirect impacts, and cumulative impacts are described in the following subsections.

Long-Term Impacts

Noise and vibration effects of the four alternatives were analyzed, as discussed in *Section 4.3.3*. None of the project alternatives anticipate noise or vibration effects that would cause impacts that require abatement. No further analysis is necessary.

Construction Impacts

Activities that generate high noise levels, such as demolition activities and pile driving, would follow a pre-approved schedule to limit the noise effects of the construction activity on the nearby residential community on the bluff south of the project site. Construction traffic would primarily occur during normal business hours; however, construction during evening and/or weekends could occur on occasion.

To minimize the duration of high noise levels, construction activities would be staged to occur simultaneously, if possible. The total noise level of the activities together would not be substantially greater, or more noticeable, than the largest of the noise levels generated by each of the single noise events.

Construction noise could be minimized by several means, including the use of effective vehicle mufflers, engine intake silencers, and engine enclosures; shutting off equipment when not in use; locating activities away from noise-sensitive receivers when possible; placing portable noise barriers around stationary equipment, such as a concrete crushing plant; and reducing the use of specific equipment, such as hydraulic rather than pneumatic impact tools such as jack hammers.

The contractor would be required by the Washington Administrative Code and Mukilteo Municipal Code to restrict noise-generating construction activities to daylight hours or obtain a variance from the City of Mukilteo.

The impacts of construction vibration on experiments conducted during the construction timeframe at the NOAA Mukilteo Research Station would be minimized by means of preconstruction coordination and notification. This would include:

- Using static rollers instead of vibratory rollers
- Coordinating and scheduling any vibratory rolling or impact pile-driving activities with the NOAA facility to minimize interruption
- Monitoring the foundation vibration at the NOAA facility during vibratory rolling or impact driving within 500 feet to avoid exceeding the Institute of Environmental Science (IES) criteria for laboratory equipment
- As final design and construction plans are completed, coordinating with NOAA to identify any other potential vibration-sensitive activities or research that could occur during the construction period, and identifying measures to address disruption or interference with research activities

Indirect and Secondary Impacts

Because no indirect or secondary noise and vibration impacts are reasonably foreseeable, no mitigation of indirect noise and vibration impacts would be necessary.

Cumulative Impacts

Coordination of concurrent construction activities and their mitigation would reduce potential cumulative noise impacts.

4.4 Visual Quality, Aesthetics, and Light and Glare

Visual perception and experience is an important component of environmental quality. Because of the public nature and visual importance of the Mukilteo Multimodal Project, changes to the visual environment are being addressed during project development as part of the EIS.

4.4.1 Overview of Analysis and Regulatory Context

This section examines the potential effects of the project alternatives on visual resources in the project area, as required under NEPA and SEPA.

Regulatory Context

The proposed alternatives are located primarily within the City of Mukilteo's land use planning jurisdiction, with a small portion to the east within the Everett city

limits. City policies related to visual and aesthetic quality are included in the Comprehensive Plan, Shoreline Master Program, and permit review criteria.

Methods for the Visual Quality Assessment

The assessment of visual quality is concerned with both the character of the visual experience and the effect upon the viewer (For the purposes of this analysis, visual quality and aesthetics are analogous terms). It is subjective in that the person perceiving the visual environment brings personal and cultural frames of reference to the discernment and evaluation of visual information. Still, regulations and research establish a general public consensus of what constitutes a desirable visual environment.

For this analysis, the visual or aesthetic experience includes three critical parameters:

- Visual character
- Visual quality
- Viewer response

Visual character refers to identifiable visual information. It may be distinguished both at the level of specific elements and at the level of the relationships among elements.

Visual quality refers to the value of the visual experience to the public. Vividness refers to the way landscape components combine in distinctive and memorable visual patterns.

Intactness refers to the integrity of natural and human-built visual patterns, and the extent to which the scene “hangs together.” It also includes the extent to which the landscape is free from encroaching elements.

Viewer response is analyzed in terms of exposure and sensitivity. Viewer exposure refers to the physical location of viewer groups, the number of people exposed to a view, and the duration of their view. Viewer sensitivity refers to the degree in which a viewer perceives elements of the environment and the extent to which those elements are important to the viewer. This perception is affected by factors such as the activities a viewer is engaged in; the visual context; and the values, expectations, and interests of a group of persons or a person involved in a particular activity or context.

Viewpoints for this analysis were selected on the basis of:

- A substantial number of viewers
- Features that are representative of the existing conditions
- Views with high visual quality

Photographs were taken from viewpoints and reproduced at a scale that reproduces the static field of view an observer would see standing at the site. These photographs provide an accurate representation of the scale of elements of the view in relation to other objects. They do not, however, reproduce the entire field of view perceived by a human observer.

4.4.2 Affected Environment

The Mukilteo Multimodal Project area is located in the northernmost part of the city of Mukilteo adjacent to the city of Everett. The area of the alternatives is an east-west-oriented portion of the Possession Sound shoreline. To the east the shoreline runs north-south in Everett, where extensive port facilities and Naval Station Everett are located.

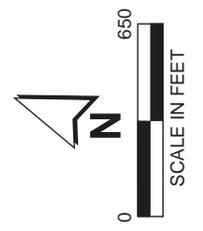
Major land uses along the shoreline include the Mukilteo Lighthouse Park at the west end of the point, which includes a boat launch and 6.6 acres of parking, as well as the lighthouse, a volleyball court, and picnic tables. A condominium development, a restaurant, and a hotel are between the lighthouse and Park Avenue. To the west of SR 525, the ferry holding area covers most of the street frontage to Park Avenue. The Mukilteo Tank Farm extends about 3,200 feet along the shoreline east of Park Avenue. It consists largely of partially demolished storage tanks, a variety of support facilities in various stages of deterioration, and a 1,300-foot-long pier. NOAA Fisheries Service operates the Mukilteo Research Station on 1.1 acres east of Park Avenue. The Mount Baker Terminal occupies a 1.5-acre site east of the Mukilteo Tank Farm.

The BNSF railroad generally forms the boundary between flat land to the north and a steep bluff to the south. Sound Transit's Mukilteo Station, east of Park Avenue, includes platforms and parking.

South of the BNSF railroad, land uses are primarily single-family residential areas west of SR 525 and east of Park Avenue. A commercial area extends between the BNSF tracks and Third Street bounded by SR 525 on the west and Park Avenue on the east.

The areas described below were identified to best represent and analyze the affected environment. Viewpoints were selected from these areas (Figure 4.4-1):

- The Puget Sound/Possession Sound shoreline. This area generally accommodates views parallel to the shoreline. Four viewpoints were chosen from this area.
- The flat upland area between the shoreline and the BNSF right-of-way. Only one viewpoint was selected from this area because the topography and buildings along the shoreline do not offer views of significant features of the alternatives.



- Project Area
- - - Shoreline
- . . Upland
- Bluff

Figure 4.4-1. Viewpoints

- The bluff immediately south of the BNSF tracks. Four viewpoints were chosen from this area.

Selected viewpoints are as follows:

Viewpoint 1, View East from Mukilteo Lighthouse. This shoreline viewpoint is located just north of the lighthouse and outside of the concrete seawall at the end of a pedestrian walkway. As shown in *Section 4.4.8*, Figure 4.4-2, it faces east and includes the existing ferry terminal as a major foreground element. In the distance, the peaks of the Glacier Peak Wilderness Area in the North Cascades are the most vivid feature on clear days. The terminal facilities partly obscure views of the city of Everett and Port Gardner. The activity of ferries landing, loading, and departing, however, provide visual interest in themselves.

The ferry terminal is the major source of light in this area. There is also some exterior lighting on the condominium building and buildings east of the terminal.

The viewing population from this area consists of park users and beach users. This population is larger in the summer, but continues year-round. Viewers can be considered sensitive to the visual context; however, they have a wide range of potential views to choose from. They can look away from the ferry terminal to enjoy natural views or they can look toward the terminal.

Viewpoint 2, View West from Silver Cloud Inn Shoreline Public Access. This viewpoint is located just east of the existing ferry terminal from a public access walkway between Ivar's restaurant and the Silver Cloud Inn. The view is to the west along the orientation of the shoreline, as indicated in *Section 4.4.8* in Figure 4.4-3, and includes the existing ferry terminal as a major foreground element framed by Ivar's restaurant to the south. In the distance, above the terminal, the Olympic Mountains are the most vivid feature on clear days but are substantially obscured by the terminal facilities, particularly when a ferry is docked. The man-made features of the ferry terminal are the dominant elements of the view, and the natural features of mountains and water are minor elements. The terminal is an encroaching element in distant view, but also provides a near view focus of maritime activity. The ferries, with the landing, loading, and departing activities, provide visual interest.

The ferry terminal is a major source of light at night, and there is some exterior lighting on buildings. Viewers are mostly persons enjoying the public access area that parallels the shoreline.

Viewpoint 3, View East from Silver Cloud Inn Shoreline Public Access. This viewpoint (Figure 4.4-4 in *Section 4.4.8*) is from the public access pier between Ivar's restaurant and the Silver Cloud Inn. The view faces east along the shoreline, and is about 100 feet north of Viewpoint 2. The distant views are dominated by the peaks of the Glacier Peak Wilderness Area in the North Cascades, which are visible on clear days. The extensive water areas of Possession Sound and Port Gardner Bay provide

an additional area of visual interest visible in all weather conditions. The dominant features in the near and middle distance are the NOAA pier and Tank Farm Pier at the Mukilteo Tank Farm. The two piers do not obscure distant views of the mountains because those structures are well below the line of sight. They do, however, obscure distant shoreline features of the city of Everett and Port Gardner. The pier and the Mukilteo Tank Farm are encroaching elements that reduce the integrity and unity of near to mid-distance views.

There is relatively little exterior lighting in the immediate vicinity. The Silver Cloud Inn and NOAA Mukilteo Research Station have exterior security lights, but there are no urban street lights visible. There is little lighting on the Mukilteo Tank Farm. Mount Baker Terminal is a more distant source of light at night.

Viewers are mostly persons enjoying the public access area that parallels the shoreline.

Viewpoint 4, View West from Mount Baker Terminal Shoreline Access. This viewpoint is located just west of the Mount Baker Terminal within a shoreline access area that includes a beach to the east and picnic areas. The view is from the beach area, to the west along the shoreline, as indicated in *Section 4.4.8*, Figure 4.4-5. The view is dominated by the Olympic Mountains, visible on clear days. On days when vision is obscured, the most extensive horizon feature is the wooded ridgeline of Whidbey Island. The extensive water areas of Possession Sound provide an area of interest both as a natural feature and also as the context for a variety of human activities on the water ranging from commercial shipping to recreational boating. Distant views of the mountains are not obscured by the Tank Farm Pier in the middle distance because it is well below the line of sight. The pier does, however, substantially obscure views of the existing ferry terminal. The shoreline features of the Mukilteo Tank Farm at a middle distance are a disorganized assemblage of partially demolished facilities that reduce the integrity and unity of this portion of the view.

There is relatively little urban street lighting in the immediate vicinity. Lights of the downtown area west of Park Avenue and from the ferry terminal are visible in the distance. There is little lighting on the Mukilteo Tank Farm.

The viewing population from this area is relatively small because the site does not currently have vehicular access or local public access, but is intended for future public use. The future viewing population will be sensitive to the visual context; but they have a wide range of potential views to choose from.

Viewpoint 5, North View from Ferry Holding Area. This viewpoint is located in the southerly portion of the ferry holding area. The view is oriented to the north. The photo illustrates the slope to the north that provides views of buildings along Front Street above vehicles as indicated in *Section 4.4.8*, Figure 4.4-6. Views of the ferry at the dock are limited by the angle of the dock and the existing towers. There are partial views of the water and the wooded ridge of Whidbey Island between buildings. The dominant features of the view are buildings along Front Street. The

view has no vivid dominating features. It has some unity in the character of building fronts. The cars parked in the ferry holding area may be viewed as an encroaching element that reduces visual unity.

There is currently a wide variety of urban street lighting and building lights in the area, with the lighting at the ferry holding area a major source of nighttime light.

The viewing population from this area is largely occupants of vehicles waiting for the ferry. For most viewers, the vehicles parked in front of them will obscure much of the view. This viewing population is less likely to be sensitive to the view while waiting in their vehicles. Viewers that exit vehicles are likely to have a range of sensitivity to the view depending on their activities.

Viewpoint 6, North View from SR 525. This viewpoint is located on the east side of SR 525 at the mid-point of the overpass crossing the BNSF tracks. The photo illustrates views to the north and includes the entry to the existing holding area; it is typical of views from locations east along Second Street, as indicated in *Section 4.4.8*, Figure 4.4-7. This is also the view experienced by occupants of vehicles accessing the ferry or vehicles queued along the shoulder of the highway. The termination of the view includes the waters of Possession Sound and the wooded ridgeline of Whidbey Island, which can be viewed in corridors between buildings and over shorter buildings along Front Street. The view lacks vivid elements and has a moderate level of visual quality. The existing ferry terminal is largely out of the field of view because of the angle of the dock at the end of the roadway and the blockage by the Losvar Condominium building.

There is a wide variety of urban street lighting in the area, with the lighting at the ferry holding area a major source of nighttime light.

The viewing population from this area is largely occupants of vehicles waiting for the ferry, pedestrians along the highway, and pedestrians along Second Street. This viewing population is likely to have a range of sensitivity to the view depending on activities.

Viewpoint 7, North View from Second Street and Park Avenue. This viewpoint is located on Second Street east of Park Avenue and is south of the BNSF tracks. The existing ferry holding area is in middle of the view but north of the BNSF tracks, and is largely obscured by an existing two-story building at First Street and Park Avenue. As the photo in *Section 4.4.8*, Figure 4.4-8, indicates, there are a number of elements in the view ranging from parked cars to buildings to overhead utility lines. Views of the waters of Possession Sound and the wooded ridgeline of Whidbey Island are largely obscured by intervening buildings. The view lacks vivid elements, and has a number of elements with little compositional unity; therefore, it has a low to moderate level of visual quality.

There is a wide variety of urban street lighting in the area; the lighting at the ferry holding area is a major source of nighttime light. Because this viewpoint is above the elevation of light standards in the holding area, it experiences limited direct glare.

The viewing population from this area is largely occupants of vehicles, pedestrians along city streets, and residences located above the BNSF tracks. This viewing population is likely to have a range of sensitivity to the view depending on activities, with residents likely to be most sensitive.

Viewpoint 8, North View from Second Street and Prospect Avenue. This viewpoint is located on a private lane north of Second Street and is typical of views from residences and some public street corridors on the bluff south of the BNSF tracks. As the photo in *Section 4.4.8*, Figure 4.4-9, indicates, the view has two components: the highly integrated and unified distant view of Possession Sound, and the highly disorganized middle to near view of the partially demolished Mukilteo Tank Farm. The major element in the distant view is the water area of Possession Sound centered on the wooded ridgeline of Hat Island with Camano Island in the background. The overall distant views are an integrated scene of water and islands with native vegetation predominating over man-made structures.

In the middle and near view, the Mukilteo Tank Farm is a prominent element, at variance with the character of the natural water and land views. The partially disassembled structures also contribute to the lack of integration and visual unity. It is likely that most residents are habituated to the dissonant elements of the view and concentrate on the high visual quality of distant views.

There is currently little or no exterior lighting visible from this viewpoint within the Mukilteo Tank Farm or in the distance.

The viewing population from this area is largely residents and includes some pedestrians along city streets who can access views between buildings or down street corridors at Prospect and Cornelia Streets and down Brewery Creek. The predominantly residential viewing population is likely to be very sensitive to visual quality.

Viewpoint 9, West View from Mukilteo Lane East of Japanese Gulch. This viewpoint is located on Mukilteo Lane just before it turns south away from the shoreline.

As the photo in *Section 4.4.8*, Figure 4.4-10, indicates, the view has two components: the highly integrated and unified distant view of Puget Sound, and Possession Sound and the Olympic Mountains, and the highly disorganized middle to near view of the partially demolished Mukilteo Tank Farm. As with Viewpoint 8, it is likely that most residents are habituated to the dissonant elements of the view and concentrate on the high visual quality of distant views. The Mukilteo Tank Farm, however, is much more

visible as a long linear feature in this view. The combination of the two elements results in a high level of visual interest and a moderate level of visual integrity and unity.

There is currently little or no exterior lighting visible from this viewpoint within the Mukilteo Tank Farm. Exterior lighting at the existing ferry terminal is visible in the distance.

The viewing population from this area includes vehicle occupants and pedestrians along Mukilteo Lane and residents of homes on the bluff. The residential viewing population is likely to be very sensitive to visual quality.

4.4.3 Long-Term Environmental Impacts

No-Build Alternative

The No-Build Alternative includes what would be needed to maintain the existing ferry terminal at a functional level. It assumes that maintenance and structure replacements would occur in accordance with legislative direction to maintain and preserve ferry facilities. There would be no investments to improve the operation, safety, security, or capacity at the terminal.

Therefore, no visual impacts or benefits would be expected for the No-Build Alternative.

Existing Site Improvements Alternative

This alternative would reconstruct the terminal and its related facilities at the current site, which would be expanded and realigned as well as increasing the height of structures on the waterfront. To indicate the visual impacts of this alternative, visual simulations were prepared for several views, and impacts are summarized in Table 4.4-1.

Table 4.4-1. Existing Site Improvements Alternative Visual Impacts

Viewpoint	Impact
1. View East from the Mukilteo Lighthouse (see Figure 4.4-2)	Terminal's configuration similar to existing, with the addition of the overhead loading structure increasing the view blockage directly east toward Everett. Waterfront residents would also have increased view blockage.
2. View West from Silver Cloud Inn Shoreline Public Access (see Figure 4.4-3)	Terminal's configuration similar to existing, but with the addition of the overhead loading structure. Hotel patrons would have increased view blockage.
3. View East from the Silver Cloud Inn Shoreline Public Access (see Figure 4.4-4)	No change in visual character or visual quality; viewpoint faces away from the existing ferry terminal or the replacement terminal.
4. View West from the Mount Baker Terminal Shoreline Access Area (see Figure 4.4-5)	Little change in visual character or visual quality.
5. North View from Ferry Holding Area (see Figure 4.4-6)	Replacing Ivar's restaurant with a two-story passenger terminal and the overhead loading ramp would obstruct parts of the view.

Table 4.4-1. Existing Site Improvements Alternative Visual Impacts

Viewpoint	Impact
6. North View from SR 525 (see Figure 4.4-7)	Replacing Ivar's restaurant with a two-story passenger terminal and the overhead loading ramp would obstruct parts of the view, and the ferry terminal, as well as the ferry while at dock, would be more visible because the new facilities would be aligned with SR 525.
7. North View from Second Street and Park Avenue (see Figure 4.4-8)	Ferry holding area and the bus transit center would become somewhat more visible because of the removal of an existing building that currently blocks views. Reduction in visual quality: Lighted holding area and bus transit center would likely become the dominant feature of views at night because other water and landscape elements have lower-intensity lighting. For the viewing population, the expansion of the parking area as the center of attention may be regarded as a negative distraction and a reduction in visual quality. Residents are likely to perceive the additional nighttime lighting as a substantial degradation of the nighttime visual environment.
8. North View from Second Street and Prospect Avenue (see Figure 4.4-9)	No change in visual character or visual quality; viewpoint faces away from the existing ferry terminal.
9. North View from Mukilteo Lane (see Figure 4.4-10)	Little change in visual character or visual quality; most changes occurring within the longer distance view.

Elliot Point 1 Alternative

This alternative would relocate the ferry terminal from its current location to the eastern portion of the Mukilteo Tank Farm removing the current facility's visual elements, and introducing new visual elements to another location on the waterfront. To indicate the visual impacts of this alternative, visual simulations were prepared for several views, and impacts are summarized in Table 4.4-2.

Table 4.4-2. Elliot Point 1 Alternative Visual Impacts

Viewpoint	Impact
1. View East from the Mukilteo Lighthouse (see Figure 4.4-2)	Removing the existing over-water facilities would provide greater integration and unity of the distant peaks of the Glacier Peak Wilderness Area and also would open up the middle distance shoreline views of Port Gardner. The NOAA pier, however, would continue to partially obscure these features. The new over-water terminal facilities would be visible, but at a substantially greater distance and would be partially obscured by the NOAA pier. The viewing population would likely consider the view as being more integrated with the views to the west and north in which the natural features predominate. The elimination of the ferry terminal as the major source of light in this area would change the nighttime visual character somewhat, but substantial urban light would continue to be present from existing shoreline development.
2. View West from Silver Cloud Inn Shoreline Public Access (see Figure 4.4-3)	Removing the ferry terminal would allow an integrated view of natural features, including the waters of Possession Sound and Puget Sound with the peaks of the Olympic Mountains. The view would increase significantly in integrity and unity. Viewers would perceive the view as one in which natural elements predominate.

Table 4.4-2. Elliot Point 1 Alternative Visual Impacts

Viewpoint	Impact
3. View East from Silver Cloud Inn Shoreline Public Access (see Figure 4.4-4)	Removing the Tank Farm Pier would tie together the distant views dominated by mountains and the near and middle distance views of water areas of Possession Sound and Port Gardner Bay. The overhead walkways and a two-story passenger building would be higher than the existing Tank Farm Pier but also more distant. Lighting for ferry facilities, parking, and transit centers would increase substantially. This source of light, however, is at a moderate distance from the viewpoint and is substantially screened by the existing NOAA Mukilteo Research Station; therefore, it is likely to be perceived as a generalized area of bright lighting rather than a source of glare.
4. View West from Mount Baker Terminal Shoreline Access Area (see Figure 4.4-5)	Compared to the existing Tank Farm Pier, the ferry facilities would encroach to a greater extent on the most vivid feature in the view, which are the peaks of the Olympic Mountains, particularly when a ferry vessel is docked. The ferry holding area would have greater unity than the remains of the Mukilteo Tank Farm. The over-water structure would be a prominent visual focus at night that would be more visually arresting than other features in the vicinity.
5. North View from Ferry Holding Area (see Figure 4.4-6)	Removing the ferry terminal would clear the corridor between the condominium and Ivar's restaurant.
6. North View from SR 525 (see Figure 4.4-7)	The ferry terminal would be removed and an unobstructed view down the highway corridor would be available of Possession Sound and Whidbey Island. The viewing population is likely to perceive the view as more integrated. The lighting would be less intense than the current lighting in the ferry holding area.
7. North View from Second Street and Park Avenue (see Figure 4.4-8)	The integrity and unity of distant views of Possession Sound and Whidbey Island would be increased by removal of a building currently blocking these views. The lighting would be less intense than the current lighting in the ferry holding area.
8. North View from Second Street and Prospect Avenue (see Figure 4.4-9)	The terminal facilities would have no impact on distant views of Possession Sound. In the middle to near distance, they would be prominent, though at a smaller scale than the Tank Farm Pier. They would have greater visual integrity and unity than the assemblage of existing Mukilteo Tank Farm elements including remnants of the large storage tanks. Holding and parking areas for vehicles, however, would lack visual interest. Overall, the lack of impact on high-quality distant views and the increased visual unity of near views, despite low visual interest, would moderately increase the level of visual integrity and unity and overall visual quality. The lighting would be very high in comparison to the current lighting on the Mukilteo Tank Farm; at night, viewers from the bluff above the site would have a brightly lit area in the foreground views, which would also reduce visibility for longer range night views.
9. West View from Mukilteo Lane East of Japanese Gulch (see Figure 4.4-10)	The terminal facilities would have no impact on daytime distant views and would have greater visual integrity and unity than the existing Mukilteo Tank Farm elements, which includes a degraded landscape with remnant tanks, structures, and buildings in various states of repair. The lighting for ferry facilities would increase ambient light levels, as discussed for Viewpoint 8, above.

Elliot Point 2 Alternative

This alternative would relocate the ferry terminal from its current location to the western portion of the Mukilteo Tank Farm, just east of the NOAA Mukilteo Research Station. Visual changes due to this alternative were simulated for several viewpoints. Table 4.4-3 summarizes the effects.

Table 4.4-3. Elliot Point 2 Alternative Visual Impacts

Viewpoint	Impact
1. View East from the Mukilteo Lighthouse (see Figure 4.4-2)	Impacts would be similar to those discussed above for the Elliot Point 1 Alternative.
2. View West from Silver Cloud Inn Shoreline Public Access (see Figure 4.4-3)	Impacts would be similar to those discussed above for the Elliot Point 1 Alternative.
3. View East from Silver Cloud Inn Shoreline Public Access (see Figure 4.4-4)	Impacts would be similar to those discussed above for the Elliot Point 1 Alternative.
4. View West from Mount Baker Terminal Shoreline Access Area (see Figure 4.4-5)	Impacts would be similar to those discussed above for the Elliot Point 1 Alternative, except that the clutter represented by the eastern portion of the Mukilteo Tank Farm would remain in the view.
5. North View from Ferry Holding Area (see Figure 4.4-6)	Impacts would be similar to those discussed above for the Elliot Point 1 Alternative.
6. North View from SR 525 (see Figure 4.4-7)	Impacts would be similar to those discussed above for the Elliot Point 1 Alternative.
7. North View from Second Street and Park Avenue (see Figure 4.4-8)	Impacts would be similar to those discussed above for the Elliot Point 1 Alternative.
8. North View from Second Street and Prospect Avenue (see Figure 4.4-9)	Impacts would be similar to those discussed above for the Elliot Point 1 Alternative, except that the clutter represented by the eastern portion of the Mukilteo Tank Farm would remain in the view.
9. West View from Mukilteo Lane East of Japanese Gulch (see Figure 4.4-10)	Impacts would be similar to those discussed above for the Elliot Point 1 Alternative, except that the clutter represented by the eastern portion of the Mukilteo Tank Farm would remain in the view.

4.4.4 Construction Impacts

The construction impacts on visual quality would be temporary for all alternatives and at all viewpoints. Impacts would result from activities related to staging areas, lighting, fencing, closed roadway sections, detours, heavy equipment, scaffolding, cranes, and temporary storage of materials, including demolition debris. The visual impacts of construction would generally not change the overall views available, but would alter existing localized views. The most prominent elements that would alter views would likely be cranes and other tall equipment. However, distant views of water features and mountains would remain visible if partially obstructed.

4.4.5 Indirect and Secondary Impacts

Once a view is directly affected, there would generally be no additional impact removed in space or time that would occur. Exceptions could occur where land use changes resulting from the project alter views at another location. Also, the Existing Site Improvements Alternative would remove a Port of Everett fishing pier. Replacement of the pier is not currently part of the project. If the pier is replaced elsewhere, it would alter the shoreline and related views, creating an indirect visual quality impact.

4.4.6 Cumulative Impacts

The visual character of the landscape has been dramatically transforming ever since the first Europeans settled in the area. The area was logged and cleared for farming and development; shoreline areas were filled; rivers were channelized; and other activities such as shoreline development and road building all contributed to changes in the landscape. The urban character of the project area has also changed over time as the architecture of the city has evolved and land uses have changed. Even though development has blocked some views of the landscape, Mukilteo benefits from many natural features such as the Olympic and Cascade Mountains, which are so dominant that they can still be seen from many viewpoints.

Foreseeable future actions include redevelopment of the Mukilteo Tank Farm, as discussed in *Section 4.2 Land Use and Economics*.

No-Build Alternative

This alternative would not affect the Mukilteo Tank Farm, so the entire parcel would be available for redevelopment under Mukilteo and Everett land use regulations. Cumulative visual quality changes could occur in the area if redevelopment were to occur as the City of Mukilteo anticipates. The City's goal for redevelopment is to create a prime Snohomish County attraction and provide recreational opportunities for residents and visitors, specifically a walking promenade along the shoreline, access to the waterfront, and linkages to parks and open spaces. In general, the visual effects of such redevelopment would be positive by replacing the partially demolished remains of the Mukilteo Tank Farm with low-rise urban development with a greater integrity and unity of design. Lighting would consist of normal building and street lighting. This lighting would be a change in the nighttime environment from viewpoints where the site can be seen, but would be substantially less than the lighting required for the Mukilteo ferry terminal.

NOAA plans to expand its laboratory on the west end of the Mukilteo Tank Farm. If this expansion occurs, the scale of buildings is likely to be similar to private-sector, mixed use development in terms of height and bulk, as well as lighting.

The anticipated relocation of the City of Mukilteo boat launch ramp currently at Lighthouse Park could be accommodated at a variety of sites on the Mukilteo Tank Farm. This would involve a ramp and pier that would likely be visible only from a close range. The parking for the launch ramp could cover several acres and be similar in character to the ferry holding area and other parking. If the parking area were lighted, the intensity of lighting likely would be less than the ferry holding area because the operational needs are different.

Sound Transit also plans to develop a joint-use multi-level parking structure, but a specific site and layout has not yet been confirmed. This structure would have additional visual quality impacts that would be apparent primarily from Viewpoint 9 and from

single-family residences on the bluff behind the BNSF tracks between Viewpoints 7 and 9. Visual impacts of this project will be assessed separately in the future.

Existing Site Improvements Alternative

Cumulative impacts of mixed use development on the Mukilteo Tank Farm, potentially in combination with relocation of the boat launch at Lighthouse Park, NOAA Mukilteo Research Station expansion, and Mukilteo Station expansion, would be similar to those discussed under the No-Build Alternative.

Elliot Point 1 Alternative

Under this alternative approximately 5.6 acres of the 18.85-acre Mukilteo Tank Farm parcel could be available for redevelopment on the westerly half of the property. As discussed above, the visual impacts of such redevelopment would be positive with a greater integrity and unity of design. Lighting would consist of normal building and street lighting that would be substantially less than the lighting required for the ferry terminal.

Under this alternative, the existing ferry terminal would cease operation and could be available for redevelopment. The scale of development and the associated impacts would be similar to the description above for the portions of the Mukilteo Tank Farm not used for the ferry terminal.

The relocation of the boat launch at Lighthouse Park, expansion of the NOAA Mukilteo Research Station, and expansion of Mukilteo Station would have visual impacts similar to those discussed under the No-Build Alternative.

Elliot Point 2 Alternative

The impacts of mixed use redevelopment and potential relocation of the boat launch ramp on the Mukilteo Tank Farm would be similar to those discussed above under Elliot Point 1 although the area for redevelopment is to the east.

The relocation of the boat launch at Lighthouse Park, expansion of the NOAA Mukilteo Research Station, and expansion of Mukilteo Station would have visual impacts similar to those discussed under the No-Build Alternative.

4.4.7 Mitigation Measures

Long-Term Impacts

Potential mitigation measures to reduce potential visual and light and glare impacts may include:

- Apply a context-sensitive design approach to soften view impacts of large expanses of paved area. To be effective in reducing visual impacts from the south, landscaping could include native vegetation, such as large-scale trees

with substantial canopy size. City of Mukilteo regulations provide for landscaping between ferry loading lanes and screening from pedestrian-oriented areas.

- Providing open space adjacent to the shoreline and greater separation of vehicle holding areas, the transit center, and parking areas from the shoreline would provide higher visual quality for pedestrians on the shoreline. Apply context-sensitive design treatments reflecting the site's cultural and historic significance; this could include historic and natural resource interpretive or design features.
- Using shorter supports for light standards would reduce glare impacts.
- Shielding luminaries on all lights would limit horizontal and vertical diffusion of glare.
- Develop a unifying design theme to unite the site visually and with other public facilities, such as the Sound Transit Mukilteo Station. Elements that could be considered include:
 - A Native American design theme for buildings, including toll booths, the pedestrian terminal, operations facilities, or other built elements.
 - A common specification for terminal lighting that could be coordinated with other public projects and street lighting. The hue of the lighting also could be coordinated as appropriate for the surrounding streets.
 - Surface elements, such as sidewalks and crosswalk treatments, on the site and surrounding areas that provide visual unity. These also could be designed to reinforce way-finding by clearly demarcating pedestrian routes to the transit center, Mukilteo Station, and other destinations.

4.4.8 Visual Simulations

Figures 4.4-2 to 4.4-10 show the current view and the simulated view for each of the project alternatives at the selected viewpoints.

4.5 Social Environment and Environmental Justice

This section evaluates the project's potential to have adverse impacts and benefits to parks, recreation, social services, neighborhoods, community resources, and community cohesion. It also assesses the potential for disproportionately high and adverse impacts on low-income and minority communities.



Viewpoint 1

Figure 4.4-2 (Existing)
View East from the Mukilteo Lighthouse



Viewpoint 1 – Existing Site Improvements Alternative



Viewpoint 1 – Elliot Point 2 Alternative

Figure 4.4-2 (Simulations)
View East from the Mukilteo Lighthouse



Viewpoint 2

Figure 4.4-3 (Existing)
View West from the Silver Cloud Inn
Shoreline Public Access



Viewpoint 2 – Existing Site Improvements Alternative



Viewpoint 2 – Elliot Point 1 and 2 Alternatives

**Figure 4.4-3 (Simulations)
View West from the Silver Cloud Inn
Shoreline Public Access**



Viewpoint 3

**Figure 4.4-4 (Existing)
View East from the Silver Cloud Inn
Shoreline Public Access**



Viewpoint 3 – Elliot Point 1 Alternative



Viewpoint 3 – Elliot Point 2 Alternative

**Figure 4.4-4 (Simulations)
View East from the Silver Cloud Inn
Shoreline Public Access**



Viewpoint 4

Figure 4.4-5 (Existing)
View West from the Mount Baker Terminal
Shoreline Access Area



Viewpoint 4 – Elliot Point 1 Alternative



Viewpoint 4 – Elliot Point 2 Alternative

Figure 4.4-5 (Simulations)
View West from the Mount Baker Terminal
Shoreline Access Area



Viewpoint 5

Figure 4.4-6 (Existing)
North View from the Ferry Terminal
Vehicle Holding Area



Viewpoint 5 – Existing Site Improvements Alternative



Viewpoint 5 – Elliot Point 1 and 2 Alternatives

Figure 4.4-6 (Simulations)
North View from the Ferry Terminal
Vehicle Holding Area



Viewpoint 6

Figure 4.4-7 (Existing)
North View from SR 525



Viewpoint 6 – Existing Site Improvements Alternative



Viewpoint 6 – Elliot Point 1 and 2 Alternatives

**Figure 4.4-7 (Simulations)
North View from SR 525**



Viewpoint 7

Figure 4.4-8 (Existing)
North View from Second Street and Park Avenue



Viewpoint 7 – Existing Site Improvements Alternative

Figure 4.4-8 (Simulation)
North View from Second Street and Park Avenue



Viewpoint 8

Figure 4.4-9 (Existing)
North View from Second Street and Prospect Avenue



Viewpoint 8 – Elliot Point 1 Alternative



Viewpoint 8 – Elliot Point 2 Alternative

Figure 4.4-9 (Simulations)
North View from Second Street and Prospect Avenue



Viewpoint 9 - Existing View



Viewpoint 9 – Existing Site Improvements Alternative

Figure 4.4-10 (Existing and Simulation)
West View from Mukilteo Lane East of Japanese Gulch



Viewpoint 9 – Elliot Point 1 Alternative



Viewpoint 9 – Elliot Point 2 Alternative

Figure 4.4-10 (Simulations)

West View from Mukilteo Lane East of Japanese Gulch