CHAPTER 6

Evaluation of Alternatives

6 EVALUATION OF ALTERNATIVES

This chapter compares the alternatives on their effectiveness in addressing the project's purpose and need, taking into account the proposed facility improvements described in *Chapter 2 Alternatives*, and the transportation and environmental effects identified in *Chapter 3 Transportation* and *Chapter 4 Environmental Effects*. It assesses the alternatives in terms of their effectiveness at meeting the purpose and need and avoiding, or mitigating, environmental impacts.

This approach is similar to the one WSDOT and FTA used in 2010 when they conducted the initial evaluation and screening of concepts to identify the alternatives now being considered in this EIS. That screening effort measured concepts on their environmental performance and their ability to satisfy the project's purpose and need. It focused on three questions:

- Does the concept *improve safety and security* at the terminal facility compared to existing conditions at the Mukilteo terminal?
- Does the concept *improve transportation* (including bike, pedestrian, and transit) compared to existing conditions at the Mukilteo terminal?
- How well does the concept *avoid adverse environmental effects*?

The EIS's evaluation of alternatives continues to focus on these categories. However, with the additional levels of information available from the engineering and environmental analyses conducted for the EIS, this evaluation provides further measures to compare aspects of the purpose and need, as described below:

- Safety and Security
  - Reduce conflicts between local and ferry vehicle traffic
  - Reduce conflicts between vehicles and pedestrians/bicyclists
  - Provide a secure facility as required by the U.S. Department of Homeland Security
  - Address seismic or structural deficiencies
- Transportation
  - Improve ferry schedule reliability (timely and reliable loading and unloading)
  - Improve multimodal connections between modes (ferry, bus and rail)
    - Distance
    - Reliable connections (on time bus, rail and ferry connections)
  - Provide facilities to support growth in travel demand
  - Improve pedestrian and bicycle access
  - Reduce local transportation system impacts
  - Reduce parking impacts

- Environmental Impacts
  - Avoid, minimize, or mitigate adverse effects on all elements of the environment, and provide benefits where possible
- Be Consistent with System Plans
  - Comply with Washington State Department of Transportation Ferries Division Final Long Range Plan: 2009–2030
  - Be consistent with regional and local transportation plans, including PSRC's Transportation 2040 and city, county, and transit agency long-range plans.

6.1 Safety and Security

Several issues affect the ability of the alternatives to respond to the safety and security concerns for the current terminal. The issues are summarized below in Table 6-1, followed by a discussion of the key differences among the alternatives.

Table 6-1. Summary of Safety and Security Measures by Alternative

Safety Issue	No-Build	Existing Site Improvements	Elliot Point 1	Elliot Point 2
Reduces conflicts between local and ferry vehicle traffic	No	Partially, through one-way street configurations	Yes	Yes
Reduces conflicts between vehicles and pedestrians/bicyclists	No	Partially, with street revisions and overhead loading	Yes	Yes
Provides a securable facility as required by the Department of Homeland Security	No	No	Yes	Yes
Addresses seismic or structural deficiencies	Partially over time, as facilities are replaced	Yes	Yes	Yes

The No-Build Alternative would not address most of the current terminal's safety and security issues:

- It would not fully address the potential for near misses and collisions near the SR 525/Front Street intersection and conflicts between local/ferry vehicle traffic, vehicle/pedestrian bicycle movements, and transit/ferry traffic.
- The existing terminal does not meet seismic standards in an area with soils that are highly susceptible to severe shaking or movement in an earthquake. Preservation and maintenance would replace the facilities and meet seismic standards, but this would occur over one or two decades.

- The existing facility cannot be fenced, gated, or readily secured in response to U.S. Coast Guard heightened security orders or U.S. Department of Homeland Security protocols.

The Existing Site Improvements Alternative would partially address the traffic safety concerns by revising Front Street to be a one-way street, and also by providing overhead loading. There would still be conflicts between ferry traffic and local traffic movements, particularly for pedestrians crossing SR 525/Front Street. The complete reconstruction and realignment of the terminal would address the seismic safety concerns. However, the vehicle loading areas could not be secured because public streets would still bisect the facility.

The Elliot Point 1 and 2 alternatives would relocate the terminal and the flow of ferry traffic away from the high conflict area of SR 525/Front Avenue. Under the Elliot Point 1 Alternative, however, pedestrians traveling between the ferry terminal and Mukilteo Station would be required to cross ferry traffic at grade. These alternatives also address the seismic and security needs for the terminal.

6.2 Transportation Effectiveness

WSDOT's forecasts predict the demand for travel by ferry will nearly double between 2010 and 2040. Much of the growth in demand is because of the projected growth in commuter trips. However, no additional vehicle capacity is available on the ferries for trips during peak commute periods. By 2040, the number of ferries that will be full of vehicles on a daily basis will more than double, causing longer waits for people trying to drive onto the ferries. The ferries can accommodate many additional walk-on passengers, however, and with improved transit connections, more of the demand can be satisfied.

For all of the alternatives, including No-Build, WSDOT predicts the following increases in demand through 2040:

- A 60 percent increase in demand for vehicle trips during the peak period
- An 80 percent increase in demand for passenger trips during the peak period

Table 6-2 shows the 2040 forecast for the percentage of daily ferries that will be sailing at their full vehicle capacity, including for the busier summer periods. This translates to more times when the loading areas will be full, with more potential for queuing for longer portions of the day.

Table 6-2. Percentages of Ferry Sailings that are Full (All Alternatives)

Month	2010	2040
January	8%	32%
May	20%	48%
August	35%	58%

Table 6-3 breaks down transportation performance, including the ability of the alternatives to avoid impacts and provide improved connections and service for ferry and transit connections.

Table 6-3. Summary of Transportation Measures by Alternative

Transportation Element	No-Build	Existing Site Improvements	Elliot Point 1	Elliot Point 2
Ferry schedule reliability (timely and reliable loading and unloading)	No	Yes, due to overhead passenger loading	Yes	Yes
Minutes over/under 15-minute reliability target	2 minutes over	4 minutes under	5 minutes under	5 minutes under
Improved multimodal connections between modes (ferry, bus and rail)				
Walking Distances				
Rail Station/Passenger Bldg	1,730 feet	1,660 feet	1,630 feet	770 feet
Transit Center/Passenger Bldg	190 feet	580 feet	730 feet	410 feet
Transit Center/Rail Station	1,850 feet	1,110 feet	1,060 feet	1,020 feet
Reliable connections (on time bus, rail and ferry connections)	No	Yes	Yes	Yes
Transit facilities to support growth in travel demand	No	Yes	Yes	Yes
Pedestrian and bicycle improvements	No	Yes	Yes	Yes
HOV priority lane	No	Partial	Yes	Yes

Table 6-3 shows that there would be trade-offs in transportation performance for several of the alternatives:

- The No-Build Alternative would continue to provide a short walking distance between the passenger building and the existing bus stops, but it would not address traffic problems or provide for growth in transit service. It also would not allow WSDOT to implement its HOV priority program at the terminal.
- The Existing Site Improvements Alternative would provide for good reliability and more growth in transit, including a nearby transit center that is close to the ferry terminal and the commuter rail station, but it does not address traffic problems related to safety and queuing. It accommodates overhead loading but still creates the potential for pedestrians and bicycles to cross loading and unloading lanes.
- The Elliot Point 1 Alternative would resolve many of the traffic problems that occur with the current terminal location because ferry traffic is redirected to the Mukilteo Tank Farm. The extension of First Street would provide more room for queues to store, avoiding backups onto SR 525. Circulation in the central waterfront area, including for bicycles and pedestrians, would be improved. The alternative would have more reliable sailing schedules,

helping patrons make on-time connections to transit, but it would create longer walks from the ferry building to the commuter rail station. An onsite transit center would provide room for longer-term growth in transit service, but it is more isolated from non-terminal uses.

- The Elliot Point 2 Alternative also would address many of the existing terminal's traffic problems, but queues would still back up onto SR 525. Circulation in the central waterfront area, including for bicycles and pedestrians, would be improved. The distance between the ferry terminal and the commuter rail station is shorter than the No-Build Alternative, but the alternative would relocate existing parking for the commuter rail station, requiring some commuter rail riders to walk a longer distance than they do today. An onsite transit center would provide room for growth in demand, but as with the Elliot Point 1 Alternative, it would be removed from other land uses.

6.3 Environmental Effectiveness

Table 6-4 summarizes the potential environmental impacts that would result from the No-Build, Existing Site Improvements, Elliot Point 1, and Elliot Point 2 alternatives, followed by a discussion of the environmental areas where the alternatives have notably different impacts.

Table 6-4. Summary of Environmental Impacts by Alternative

Area of the Environment	No-Build	Existing Site Improvements	Elliot Point 1	Elliot Point 2
Land use and economics				
Full acquisitions (parcels)	0	5	1	1
Displaced Residences	0	0	0	0
Displaced businesses	0	2	1	1
Land use				
Compatibility with local land use	Low Compatibility	Low Compatibility	High Compatibility	High Compatibility
Compatibility with shoreline management plans	Low Compatibility	Moderate Compatibility	Moderate Compatibility	Moderate Compatibility
Noise and vibration (Human environment)				
Noise impacts above FTA/FHWA thresholds	0	0	0	0
Vibration impacts above thresholds	0	0	0	0
Visual quality impacts	Low	Low	Low	Low
Social environment and environmental justice	Low	Low	Low	Low
Historic and cultural resources				
Identified archaeological sites with potential adverse effects	1	2	3	2

Table 6-4. Summary of Environmental Impacts by Alternative

Area of the Environment	No-Build	Existing Site Improvements	Elliot Point 1	Elliot Point 2
Air quality				
NAAQS criteria exceeded	0	0	0	0
Hazardous materials				
Acres of previously remediated site redeveloped	0	1	11	9
Energy and climate change				
Construction energy required (MBtu)	807,000	1,564,000	1,516,000	1,203,000
Geology and soils				
Ability to address seismic and liquefaction risks	Limited	Improved	Improved	Improved
Water resources (ferry operation disruption from location in as)	Higher	Higher	Lower	Lower
Ecosystems				
Net change in over-water cover (square feet)	+3,000	+12,000	-116,000	-135,000
Benefits from removal of creosote-treated piles	Existing facility only	Existing facility and fishing pier	Existing facility and approx. 3,000 piles at Tank Farm Pier	Existing facility and approx. 3,000 piles at Tank Farm Pier
Transportation				
Local transportation system impacts (daily backups on SR 525)	Worse than today	Worse than today	Improved: SR 525 backups removed	Same as today
Parking impacts	No change	Loss of 19 spaces	Gain of 3 spaces	Loss of 6 spaces
Construction Effects				
Built environment	Higher due to multiple terminal closures; terminal closed 4 to 9 months	Moderate due to terminal closure and area disruptions; terminal closed 1 to 2 months	Low to moderate, with greater levels of construction activity but away from public areas; little to no closure of ferry service	Low to moderate, with greater levels of construction activity but away from public areas; little to no closure of ferry service
Potential to encounter hazardous materials during construction	Low	Low to Moderate	Moderate	Moderate
Natural environment	Moderate due to in-water construction	Moderate due to in-water construction	Higher due to in-water construction, pier removal, dredging	Higher due to in-water construction, pier removal, dredging
Use of Section 4(f) Properties	Up to two potential uses	Up to five potential uses	Up to six potential uses	Up to four potential uses

Some of the major differences in impacts are due to the direct and indirect impacts of building and operating a facility at the existing terminal location or at the Mukilteo Tank Farm. This makes the No-Build and Existing Site Improvements alternatives similar in many aspects compared to the Elliot Point 1 and 2 alternatives.

Land Use and Economic Development. The No-Build and Existing Site Improvements alternatives would not be consistent with the City's adoption of Mukilteo Vision 2020 in its Comprehensive Plan. The plan seeks to reconnect the City to its waterfront areas. Keeping the terminal at the existing site and having ferry-related traffic run through the central waterfront would not support these goals. It also would not allow a more pedestrian-oriented waterfront.

The Elliot Point 1 and Elliot Point 2 alternatives would allow the central waterfront to be redeveloped in a more pedestrian-friendly way because they remove the existing ferry terminal site and its traffic problems. They would retain the fishing pier and seasonal day moorage, and provide opportunities to extend public access along more of the shoreline area to the east. A terminal on the Mukilteo Tank Farm would qualify as a water-dependent use, but some design features may not conform with City of Mukilteo Shoreline Management Program policies for setback of elements such as parking from the shoreline. Similarly, the public shoreline walkways would not be continuous because pedestrians would not be allowed to cross the loading areas, although the city's policies call for a continuous shoreline walkway.

The City's plans to reopen the Mukilteo Tank Farm lands to public use could be facilitated by the Elliot Point 1 and 2 alternatives, which would remove the pier, remove many of the abandoned structures on the property, and provide roads, sidewalks, bike lanes, transit improvements, utility upgrades, and landscaping to the area. The Elliot Point 1 Alternative would also provide the opportunity to create open space and restore a section of Japanese Creek to an open stream and improve fish passage. Japanese Creek currently flows into a culvert beneath the railroad tracks where it enters a vault and then separates into two culverts.

Historic and Cultural Resources. The Mukilteo area has a particularly rich cultural history, and it has a number of historically and culturally important resources:

- Mukilteo Shoreline Site, which is a large archaeological site encompassing a shell midden and other deposits representing the occupation of the area by Native American peoples dating back more than 1,000 years.
- Point Elliott Treaty Site, the site where the 1855 treaty between the U.S. government and Puget Sound Native American tribes was signed.
- Mukilteo Light Station, a NRHP-listed early twentieth century lighthouse complex.
- Japanese Gulch Site, archaeological deposits associated with early twentieth century Japanese mill workers.
- Old Mukilteo Townsite, archaeological remains of the early Mukilteo business district, including a former train station.

Construction of the No-Build Alternative and the Existing Site Improvements Alternative could impact the Mukilteo Shoreline Site because excavation for replaced

buildings and utilities could encounter intact archaeological deposits that are known to be in the immediate area of construction. The Elliot Point 1 Alternative would largely avoid excavation of the shoreline site, although a portion of the First Street extension could pave over one edge, above where the archaeological deposits are located. Utility work could contact a small portion where the midden may be present but has been previously disturbed. The Elliot Point 2 Alternative would build paved parking areas and a roadway on top of fill over a portion of the site and also would have some potential for contact with a small portion of the midden, but this would be in an area that has been previously disturbed.

The Existing Site Improvements Alternative and the Elliot Point 1 and 2 alternatives construction could affect the Old Mukilteo Townsite. The Existing Site Improvements Alternative would involve the most construction over the site, including the construction of a new transit center, and additional utility work.

The Elliot Point 1 Alternative would affect the Japanese Gulch Site because it would daylight Japanese Creek and build a roadway on top of fill across a portion of the site.

Hazardous Materials. Hazardous materials may exist on property needed for the development of the Existing Site Improvements Alternative. The Mukilteo Tank Farm, which includes a large pier, is a site with past contamination issues, many of which have been addressed by the U.S. Air Force. Some areas with localized contamination could still be encountered by construction activities for the Elliot Point 1 and 2 alternatives; upland site development could encounter contaminated soils and groundwater, metal tanks, piping, and other potentially contaminated materials. In-water work to remove the pier and its estimated 3,000 creosote piles and dredging a sailing channel for the ferry could release contaminated materials. The potential to encounter localized contamination could require additional permitting and environmental protection measures, and it adds complexity to construction activities, but all work would be done to meet regulatory requirements. If hazardous materials are encountered and handled properly, there would be an environmental benefit. There are some localized areas that may have more contamination than others; however, overall the Elliot Point 1 and 2 alternatives would have similar likelihoods of encountering and releasing hazardous materials. Because the No-Build and Existing Site Improvements alternatives would avoid the Mukilteo Tank Farm, they would not help address any remaining contamination or support reclamation of that site.

Ecosystems and Water Resources. All the alternatives would remove creosote-treated piles and decking from the existing terminal, which would have some beneficial effects. All would have impacts due to new in-water construction and over-water structures, but would differ in their size and location on the waterfront. They would all upgrade stormwater systems to meet current standards, with the Elliot Point 1 and 2 alternatives providing the largest extent of upgrades to existing impervious surface areas. The primary differences in the natural resource effects are related to the siting of the ferry dock and the potential removal of the Tank Farm

Pier. The Elliot Point 1 and 2 alternatives would demolish the Tank Farm Pier and remove its estimated 3,000 creosote-treated timber piles and 138,000 square feet of overwater structure, which is expected to have long-term benefits to ecosystems.

Although the removal of the Tank Farm Pier would have long-term beneficial impacts, the in-water construction activity associated with the pier removal for the Elliot Point 1 and 2 alternatives would have more potential impacts to ecosystems, particularly if any contaminated sediments are encountered. The Elliot Point 1 Alternative would require the installation of approximately 5 times more piles than the No-Build Alternative and 3.3 times more piles than the Elliot Point 2 Alternative. Still, both Elliot Point alternatives result in a net reduction in piles with the removal of the Mukilteo Tank Farm pier and the existing terminal.

Use of Section 4(f) Properties. Section 4(f) refers to a USDOT regulation that prohibits or restricts the use of significant parks, recreational resources, wildlife and waterfowl refuges, and significant historic and cultural properties. The Existing Site Improvements Alternative would involve an unavoidable use of the Port of Everett's public fishing pier and seasonal day moorage. All of the alternatives would involve impacts to historic and archaeological sites, but some of the resources may qualify for a Section 4(f) exception. The Elliot Point 1 Alternative would affect a public shoreline area near the Mount Baker Terminal, but the impact could be avoided or reduced with a design modification and other mitigation WSDOT would develop in coordination with the Port of Everett and City of Everett. However, because regulatory requirements and agreements to allow the use of the archaeological sites have not yet been confirmed, FTA is considering a determination that there is no feasible and prudent alternative to the project's use of Section 4(f) resources, and they may identify one or more alternatives as the "least harm" alternative. Chapter 5 provides a summary of Section 4(f) issues, and *Appendix I* to this Draft EIS contains the preliminary Section 4(f) evaluation.