

# MUKILTEO MULTIMODAL PROJECT

## Draft Environmental Impact Statement

### Ecosystems Discipline Report



JANUARY 2012



# MUKILTEO MULTIMODAL PROJECT DRAFT ENVIRONMENTAL IMPACT STATEMENT

## Ecosystems Discipline Report

Prepared for:



U.S. Department of Transportation  
Federal Transit Administration



**Washington State  
Department of Transportation**



January 2012



**Ecosystems  
Discipline Report**

**Mukilteo Multimodal Project  
Draft Environmental Impact Statement**

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**For:**

**Federal Transit Administration and  
Washington State Department of Transportation**

**January 2012**



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## List of Attachments

- A Common and Scientific Names of Plants that May be Found in the Project Vicinity
- B Common and Scientific Names of Wildlife that May be Found in the Project Vicinity
- C Project Photographs

## Acronyms and Abbreviations

BA	biological assessment
BMP	best management practice
DPS	distinct population segment
Ecology	Washington State Department of Ecology
EEZ	exclusive economic zone
EFH	essential fish habitat
ESA	Endangered Species Act
ESU	evolutionarily significant unit
FR	Federal Register
mg/L	milligrams per liter
MHHW	mean higher high water
MLLW	mean lower low water
MMC	Mukilteo Municipal Code
MMPA	Marine Mammal Protection Act
MSA	Magnuson-Stevens Fisheries Conservation and Management Act
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NTU	nephelometric turbidity unit
NWI	National Wetlands Inventory
PAH	polyaromatic hydrocarbon
PAR	photosynthetically active radiation
PB	polychlorinated biphenyl
PFMC	Pacific Fishery Management Council
PHS	Priority Habitats and Species
RCW	Revised Code of Washington
SF	square feet

SR	State Route
TMDL	total maximum daily load
U.S.	United States
USACE	U.S. Army Corps of Engineers
USC	United States Code
USFWS	U.S. Fish and Wildlife Service
WAC	Washington Administrative Code
WDFW	Washington Department of Fish and Wildlife
WSDOT	Washington State Department of Transportation
WSF	Washington State Ferries

# 1 THE MUKILTEO MULTIMODAL PROJECT

The Washington State Department of Transportation (WSDOT), Ferries Division (also known as Washington State Ferries [WSF]) proposes the Mukilteo Multimodal Project to improve the operations and facilities serving the mainland terminus of the Mukilteo-Clinton ferry route in Washington State. The Federal Transit Administration (FTA) may fund part of the proposed project.

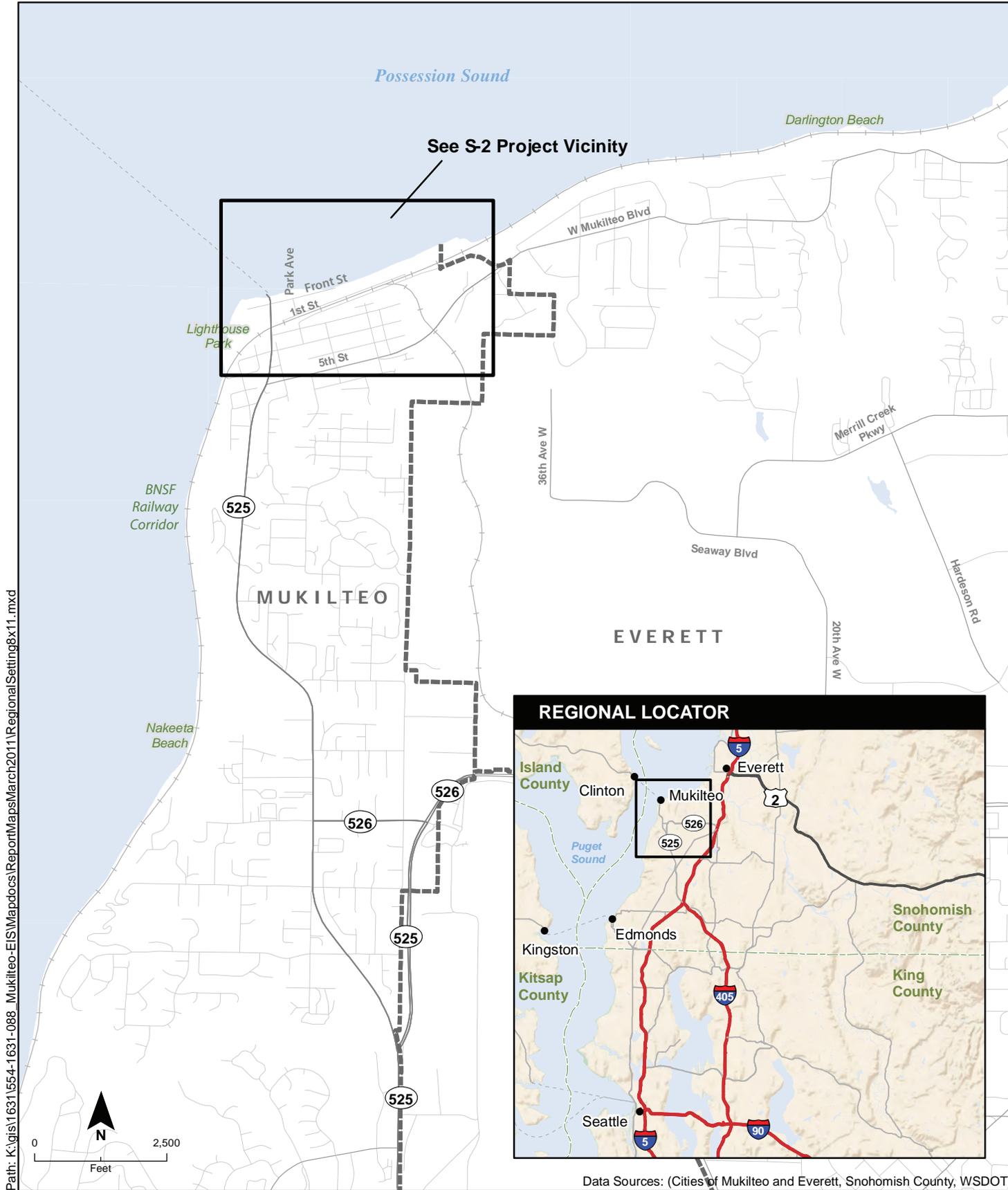
WSDOT and FTA are preparing this Environmental Impact Statement (EIS) for the project in compliance with the National Environmental Policy Act (NEPA) and the State Environmental Policy Act (SEPA). FTA is the federal lead agency for the NEPA environmental review process. WSDOT is the state lead agency for SEPA.

The ferry route is part of State Route (SR) 525, the major transportation corridor across Possession Sound, which separates Island County (Whidbey Island) from the central Puget Sound mainland. The Mukilteo-Clinton route is the second-busiest in terms of vehicle traffic in the state ferry system, and it has the third-largest annual ridership. Figure 1 shows the regional setting and Figure 2 shows the general project area.

## 1.1 The Mukilteo Ferry Terminal Area

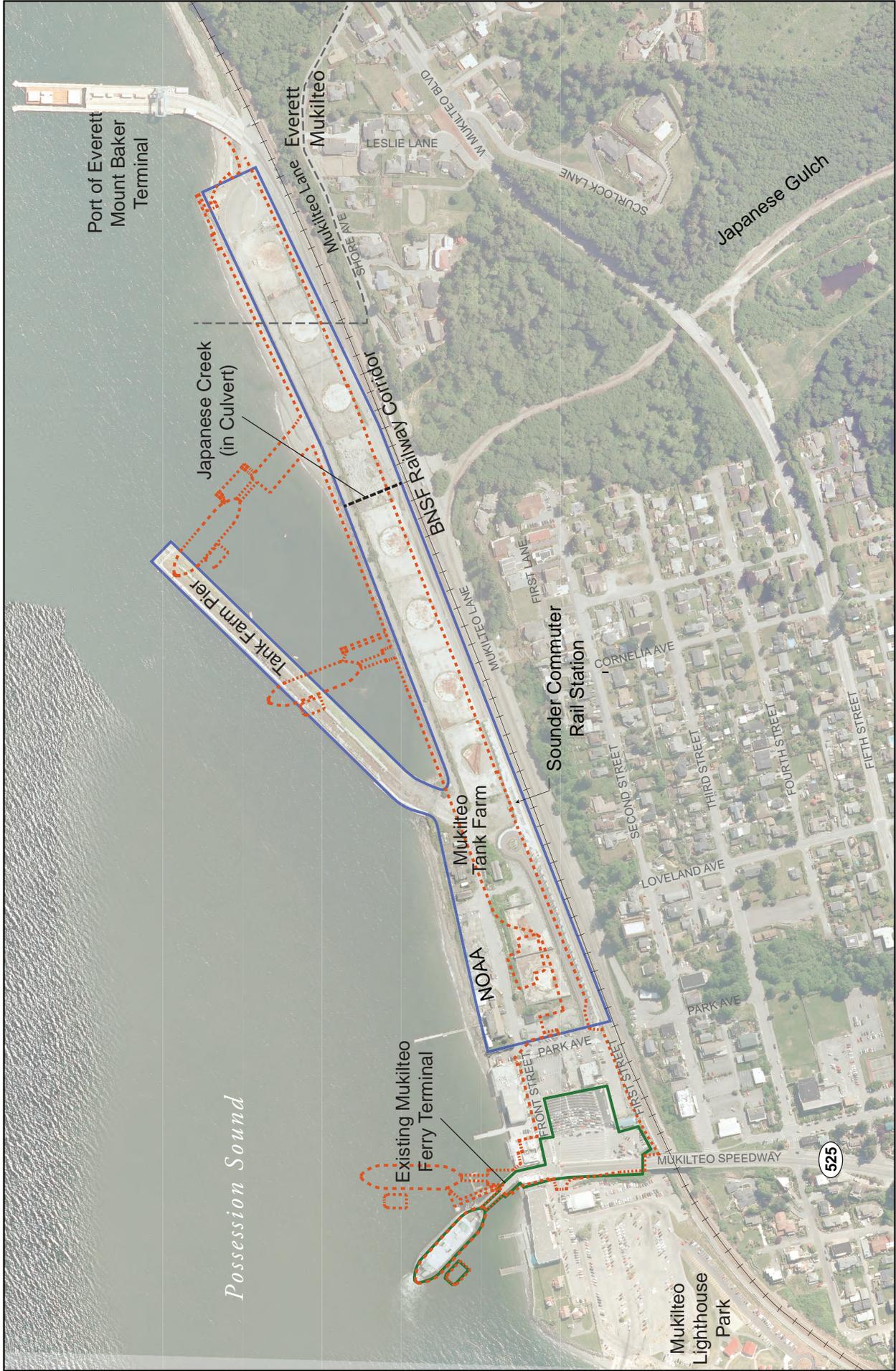
The existing Mukilteo ferry terminal is located in the city of Mukilteo in Snohomish County, Washington, west of the Mukilteo/Everett city line. The shoreline in this area faces north to northwest and runs primarily east-west within the project area. West of the existing terminal are Elliot Point and Mukilteo Lighthouse Park. To the east is a 20-acre property, currently owned by the U.S. Air Force (Mukilteo Tank Farm). The property includes a research facility operated by the National Oceanic and Atmospheric Administration (NOAA) Fisheries Service; the research facility is also known as the NOAA Mukilteo Research Station. The U.S. Air Force property also includes lands and a large pier formerly used for fuel storage and loading. The Mukilteo/Everett city line is at the eastern end of the Mukilteo Tank Farm. The Mount Baker Terminal, a marine-to-rail intermodal facility operated by the Port of Everett, is located just east, in the city of Everett.

The BNSF Railway owns and operates a railroad that runs south of the Mukilteo ferry terminal and adjacent to the southern boundary of the Mukilteo Tank Farm. The BNSF tracks mostly follow the shoreline between Seattle and Everett. East of where the railroad crosses under SR 525, it borders the Mukilteo Tank Farm, and a rail spur connection extends to the Mount Baker Terminal. Sound Transit's Sounder commuter rail also uses the BNSF tracks. Its Mukilteo Station is located southeast of Park Street, between the Mukilteo Tank Farm and the BNSF railroad tracks.



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Figure 1. Regional Setting



- Existing Terminal
- ⋯ Project Area
- Mukilteo Tank Farm
- - - City Boundary

Figure 2. Project Vicinity

## 1.2 Purpose and Need

The following purpose and need statement will guide decisions about the project.

### 1.2.1 Project Purpose

The purpose of the Mukilteo Multimodal Project is to provide safe, reliable, and efficient service and connections for general-purpose transportation, transit, high-occupancy vehicles (HOVs), pedestrians, and bicyclists traveling between Island County and the Seattle-Everett metropolitan area and beyond. The project is intended to:

- Reduce conflicts, congestion, and safety concerns for pedestrians, bicyclists, and motorists by improving local traffic and safety at the terminal and the surrounding area that serves these transportation needs.
- Provide a terminal and supporting facilities with the infrastructure and operating characteristics needed to improve the safety, security, quality, reliability, and efficiency of multimodal transportation.
- Accommodate future demand projected for transit, HOV, pedestrian, bicycle, and general-purpose traffic.

### 1.2.2 Project Need

The existing facility is deficient in a number of aspects, including safety, multimodal connectivity, capacity, and the ability to support the goals of local and regional long-range transportation and comprehensive plans, including future growth in travel demand. Those factors, which are further described below, demonstrate the need for an improved multimodal facility.

#### Safety and Security

Safety is WSDOT's top priority, and security at transportation facilities is a national concern. Safety and security come into play with this project in several ways: at the pedestrian/vehicle interface, with the general traffic flow in the SR 525/Front Street vicinity, and in maintaining safety and security for the facility itself.

- The Mukilteo ferry terminal has received few improvements since it was built in 1957. The existing timber structures, including the docking facilities, are beyond the end of their useful lives.
- The existing terminal does not meet current seismic standards. The existing facility is underlain by deep, potentially liquefiable soils that are highly susceptible to lateral spreading during an earthquake.

- Changed U.S. Coast Guard and U.S. Department of Homeland Security protocols now require the ability to secure terminal areas when there is a natural disaster, heightened security alert, or other emergency. The existing facility has city streets within the terminal area and does not allow for a physical separation between the terminal and open public areas, which increases safety and security concerns, and could require WSDOT to interrupt service or close the terminal to respond to an emergency or a heightened security alert.
- Collisions near the SR 525/Front Street intersection have included sideswipes, vehicle/pedestrian collisions, and collisions with parked vehicles.
- Because of congestion caused by ferry traffic, pedestrians often make high-risk decisions to cross the SR 525/Front Street intersection during breaks in ferry traffic; near misses between vehicles and pedestrians are common. Pedestrians who access the terminal area, transit facilities, surrounding businesses, and Mukilteo Lighthouse Park compete with vehicles for access to this intersection.
- Other inadequate facilities include a lack of passenger drop-off/pickup areas and poor bus access to the bus bay; both increase congestion and the risk of accidents.
- Passengers who are loading and unloading from the ferry or going between the toll booth and the terminal building must traverse routes that do not meet the requirements of the Americans with Disabilities Act (ADA).

### **Transit Connectivity and Reliability**

The current facility provides poor connections between transit, rail, and ferry modes, which significantly hamper the quality and reliability of the transportation system in this area and add to the overall transportation and safety problems related to the terminal. The major concerns are:

- Transit connections at the Mukilteo ferry terminal cannot adequately serve current or future needs. There are only two bus bays, located 200 feet away, uphill and across a major local street. The limited transit facilities are inadequate to support the current service, including staging and layover needs for transit operations, and they have limited boarding areas and amenities for transit riders. The current configuration would not allow bus service to be expanded. In addition, the Sounder commuter rail stops at the Mukilteo Station, approximately 2,000 feet from the existing terminal, and the streets between the ferry terminal and the station have missing or substandard pedestrian and bicycle facilities.
- Keeping the ferry on schedule is integral to multimodal connectivity and the ability of the system to meet growing demand by allowing passengers to make on-time connections to scheduled bus and train service. Inefficient vehicle staging slows fare collection, which delays departures. Lack of a dedicated HOV

access lane makes it difficult to implement WSDOT's preferential program for carpools, and worsens operating efficiency. Also, pedestrians walking on and off the ferry use the same span that vehicles use. This requires passengers and vehicles to be loaded at separate times, which leads to system inefficiency and can cause delays that last throughout the day.

### **Growth in Travel Demand**

The Mukilteo-Clinton route connects the two segments of SR 525, the major transportation corridor between Island County (Whidbey Island) and the Seattle-Everett metropolitan area. SR 525 is classified as a Highway of Statewide Significance. In addition to serving ongoing travel demand, SR 525 is needed to connect the communities and military facilities on the island for evacuations, disaster relief, and medical emergencies.

WSDOT's travel forecasts highlight the higher future demand for improved multimodal facilities serving the Mukilteo-Clinton route: WSDOT predicts a 73 percent increase in annual passengers (1,840,000 to 3,175,000) on the Mukilteo-Clinton route from 2006 to 2030.

The Mukilteo-Clinton route serves a high number of commuter trips, and growth in employment on both Whidbey Island and on the mainland is a primary reason for the predicted growth in trips by ferry. In response, the WSF Long-Range Plan calls for meeting the growing travel needs at the Mukilteo ferry terminal primarily through increasing the share of walk-on trips. This reinforces the need for improved connections and facilities between ferries and other modes, including transit, bicycle, and walking (WSDOT 2009).

### **Other Related Objectives**

Through its public planning and outreach efforts, including public scoping comments, WSDOT has also identified environmental and project development goals to help guide the project.

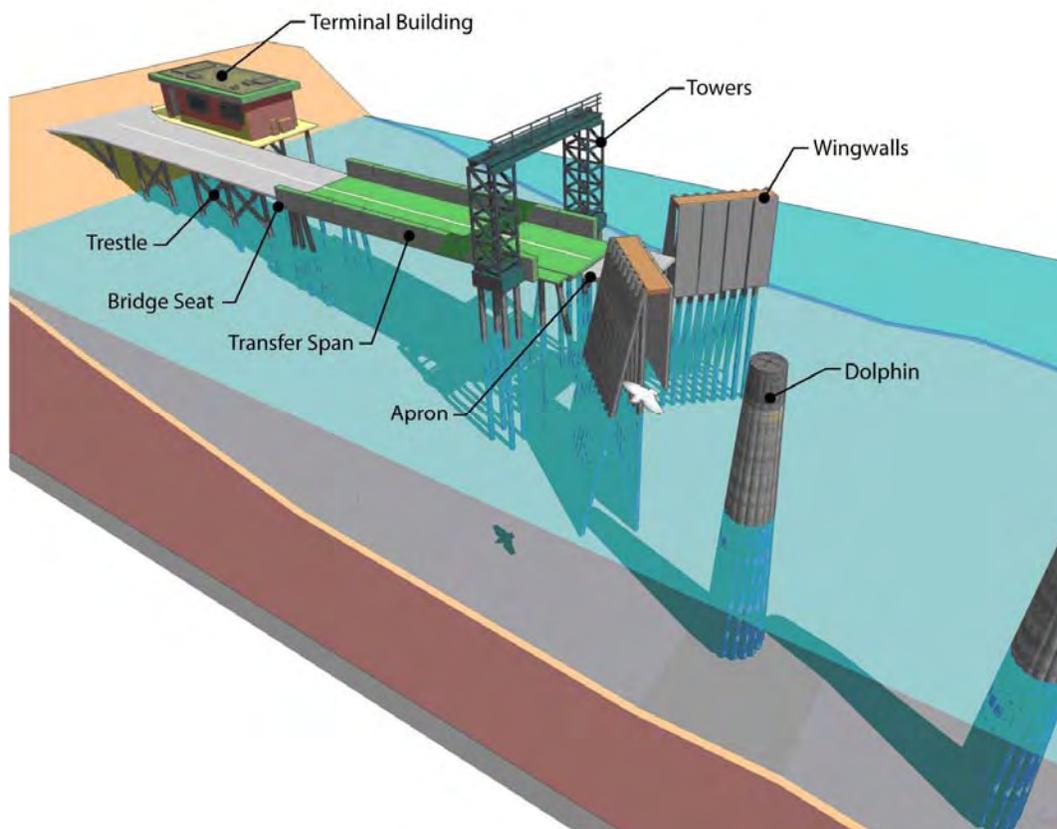
- The project should be fiscally responsible and supportive of state, regional, and local transportation plans including, but not limited to, the *Washington State Department of Transportation Ferries Division Final Long-Range Plan: 2009–2030* (WSDOT 2009), as well as regional and local land use plans.
- The project should be sensitive to the rich cultural and environmental resources of the vicinity in a manner that respects and enhances these resources.

- The project should not preclude development of a second slip at the terminal in the future to provide operational flexibility or additional capacity.

### 1.3 Alternatives

The project is considering four alternatives:

- The No-Build Alternative, which maintains the existing facility but does not improve it; this alternative provides a basis against which to compare the effects of the “Build” alternatives
- The Existing Site Improvements Alternative, which would construct an improved multimodal facility by replacing the existing Mukilteo ferry terminal with an expanded terminal and multimodal center at the current site
- The Elliot Point 1 Alternative, which would relocate the terminal to the eastern portion of the Mukilteo Tank Farm as part of an integrated multimodal center and remove the existing terminal
- The Elliot Point 2 Alternative, which would relocate the terminal to the western portion of the Mukilteo Tank Farm as part of an integrated multimodal center and remove the existing terminal



**Key Parts of a Typical Ferry Terminal**

### 1.3.1 No-Build Alternative

The No-Build Alternative provides a baseline against which to compare the effects of the Build alternatives. It includes what would be needed to maintain the existing ferry terminal at a functional level. Maintenance and structure replacements would occur in accordance with legislative direction to maintain and preserve ferry facilities, but WSDOT would make no major investments for improvements. Figure 3 illustrates the planned maintenance and preservation activities currently assumed.

Nearly all of the ferry docking, loading, and unloading facilities would need to be replaced because they will have reached the end of their lifespan by 2040. The existing vehicle holding area would remain at its current location. The terminal supervisor's building, passenger and maintenance building, and the three existing toll booths would be replaced at their current locations. This alternative would not improve substandard conditions related to congestion, vehicular and pedestrian conflicts, poor sight distance, and security.

#### Key parts of a typical ferry terminal

**fixed dolphin** – *an assembly of steel piles or concrete drilled shafts supporting a concrete cap and a fendering system.*

**floating dolphin** – *concrete or wooden barge structures located offshore clad with a perimeter fendering system and anchored to the seabed; used to help guide the ferry into the slip.*

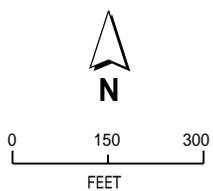
**wingwall** – *an assembly of steel piles or concrete drilled shafts supporting a steel or concrete cap and a fendering system to guide and stop the ferry at its loading and unloading position.*

**tower** – *currently used to house and support the cable and counter weight system that supports, raises, and lowers the outboard end of the transfer span. (the tower system will be replaced by hydraulic lifts regardless of the alternative chosen.)*

**apron** – *adjustable ramp at the end of the transfer span that accommodates varying water heights.*

**transfer span** – *movable bridge that allows the vehicles and pedestrians access on and off the ferry; it is the link between the ferry and the trestle.*

**trestle and bridge seat** – *over-water stationary pile-supported bridge structure that serves as a connection between land and the nearshore end of the transfer span for both vehicle and pedestrian traffic (pedestrians do not use the trestle if overhead pedestrian loading is available).*



- No-Build Alternative
- Elements to be replaced
- Ferry Traffic Control Light

Figure 3. No-Build Alternative

### **1.3.2 Existing Site Improvements Alternative**

The Existing Site Improvements Alternative would construct an improved multimodal facility by replacing the existing Mukilteo ferry terminal with an expanded terminal on and around the current site. Its key features are shown on Figure 4.

All of the existing ferry facility marine and upland features would be replaced. The ferry dock and trestle would be rebuilt facing due north to provide a straighter alignment with SR 525. The Port of Everett's existing fishing pier and seasonal day moorage would be relocated. Options for relocating the pier include placing it to the west or to the east of the new trestle.

The existing vehicle holding area would remain at the same general location and would still store the equivalent of one-and-one-half 144-vehicle vessels (approximately 216 vehicles). Toll booths and a supervisor's building would be constructed nearby. A new passenger and maintenance building would be constructed east of the ferry access driveway expanding into areas currently occupied by other uses. Overhead passenger loading ramps would connect to the second story of the new passenger building.

Front Street and Park Avenue would become one-way streets, and First Street would be extended west to a new signalized intersection with SR 525. A new transit center would be constructed east of the vehicle holding lanes, combined with a parking area for ferry employees.

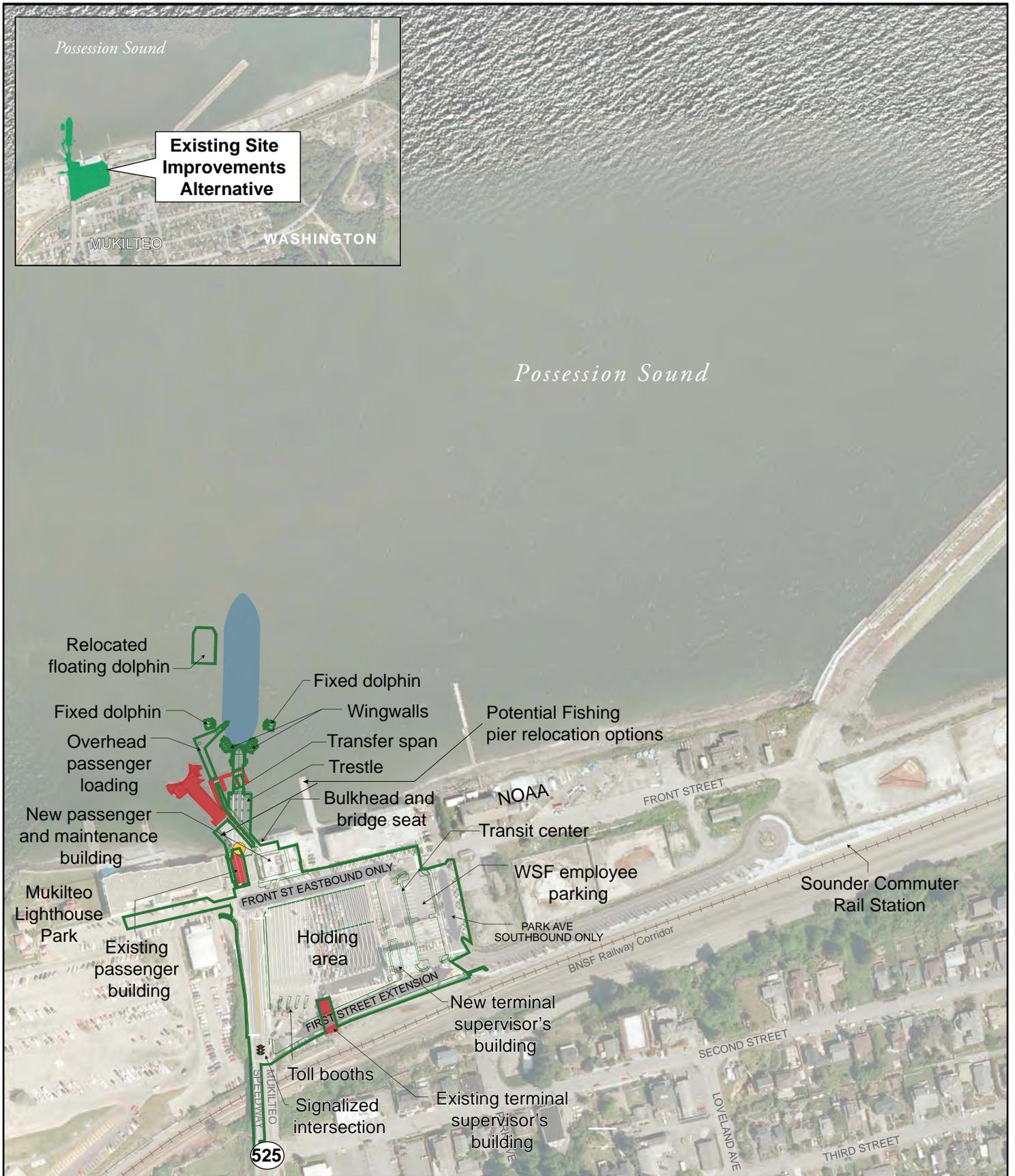


Figure 4. Existing Site Improvements Alternative

### **1.3.3 Elliot Point 1 Alternative**

The Elliot Point 1 Alternative would develop the Mukilteo Multimodal Project on the eastern portion of the Mukilteo Tank Farm. Its key features are shown on Figure 5.

Because the shoreline slopes more gradually in this location, the ferry slip would need to be located about 250 feet offshore, which would require a longer pier and trestle. A new passenger building and a maintenance building would be located over water on the new concrete trestle. An overhead passenger loading ramp would connect to a second story of the new passenger building.

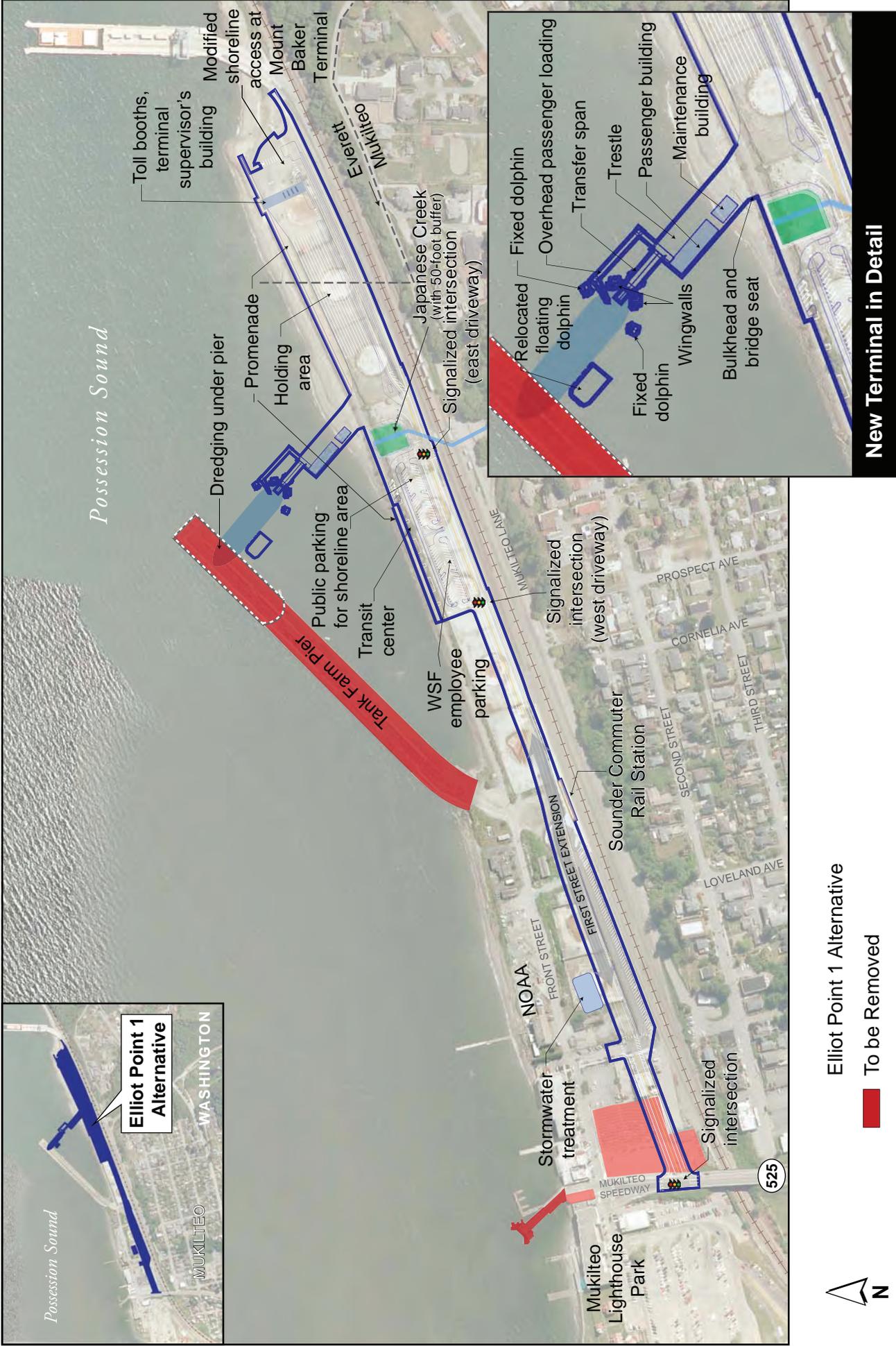
The Tank Farm Pier, including approximately 3,000 piles, would be removed up to its existing bulkhead and a channel 400 feet wide that provides a navigation depth of 26 feet would be dredged through part of the area currently occupied by the pier. Near the pier, current depths range from 14 to 17 feet, and other areas are deeper.

WSDOT would remove the existing ferry terminal, including buildings and marine structures, but the Port of Everett's fishing pier at the current terminal site would remain. The current vehicle holding area would be vacated.

The Elliot Point 1 Alternative would also provide parking for commuter rail, the Mount Baker Terminal shoreline access area, and ferry employees. The alternative includes toll booths, ferry vehicle holding areas, and shoreline promenades on each side of the new ferry dock. Japanese Creek, which currently runs in a pipe culvert below the Mukilteo Tank Farm, would be restored to an open stream north of the extended First Street, with a 50-foot buffer on either side. The stream would be crossed by a pedestrian bridge near the shoreline. New lighting would illuminate First Street and the terminal facilities, including the vehicle holding areas.

The vehicle holding areas would have capacity for approximately 216 vehicles. A terminal supervisor's building would be constructed above four new toll booths east of the holding area. This 35-foot-high structure would be oriented north-south.

First Street would be realigned and extended as a four-lane roadway from SR 525 to the Port of Everett's Mount Baker Terminal, also providing sidewalks and bike lanes. A new signalized intersection with SR 525 would be constructed. A rebuilt First Street/Park Avenue intersection would provide access to a reconfigured parking and access area for Mukilteo Station.



**New Terminal in Detail**

Figure 5. Elliot Point 1 Alternative

A new transit center with six bus bays would be west of the new terminal. Access and parking for Mukilteo Station would be configured to connect to the First Street extension.

New security fences and gates would secure the holding and terminal area during periods of heightened security, as required by the U.S. Coast Guard.

#### **1.3.4 Elliot Point 2 Alternative**

The Elliot Point 2 Alternative would develop the project on the western portion of the Mukilteo Tank Farm. It would have a more compact footprint than the Elliot Point 1 Alternative due to the deeper water near the shore where the ferry would berth. Its key features are shown on Figure 6.

Elliot Point 2 would have the same types of marine facilities as Elliot Point 1, but because there is no beach and the water is deeper at this location, the ferry slip would be nearer to the shore than Elliot Point 1, with a shorter trestle. The Tank Farm Pier would be removed and a channel 500 feet wide that provides a navigation depth of 26 feet would be dredged through part of the area currently occupied by the pier.

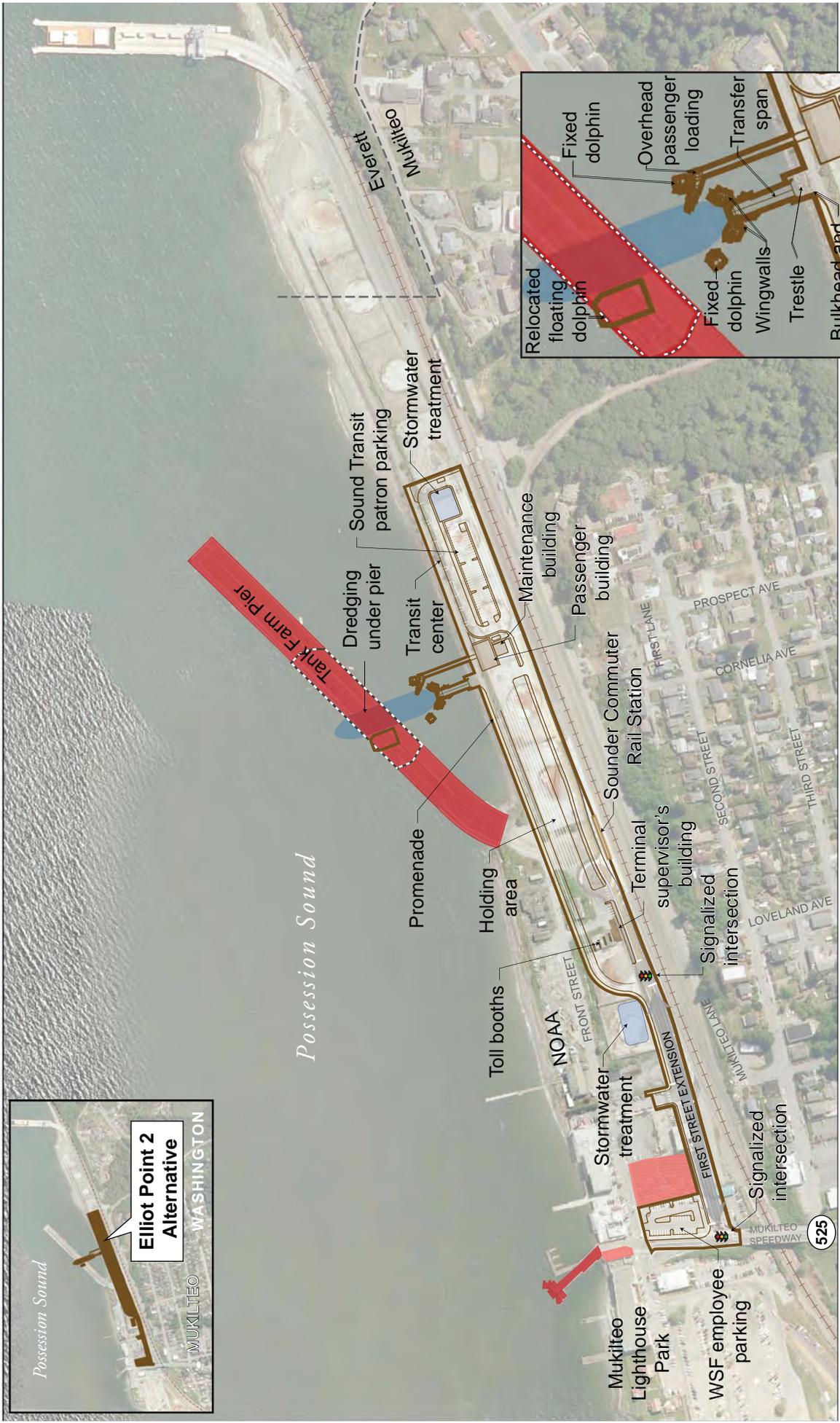
The existing ferry facility, including buildings and marine structures, would be removed, but the Port of Everett's fishing pier would remain. A ferry employee parking area would be located on the east side of SR 525, occupying part of the area currently used for vehicle holding, but the remainder of the existing holding area would be vacated.

A new passenger building and a maintenance building would be located immediately upland of the ferry dock. An overhead passenger loading ramp would connect to a second story of the new passenger building.

The vehicle holding area would have the holding capacity for approximately 216 vehicles. The terminal supervisor's building would be west of the vehicle holding area, near four new toll booths.

First Street would be realigned and extended as a four-lane roadway from SR 525 to a signalized entrance to the new ferry terminal. First Street would continue as a two-lane road to a new bus transit and paratransit center and a relocated parking area for Mukilteo Station.

A new transit center with six new bus bays and a transit passenger area would be on the eastern part of the site.



- Elliott Point 2 Alternative
- Ferry
- To be Removed
- Area Vacated by WSF
- Dredging Locations under Pier
- City Boundary

Figure 6. Elliott Point 2 Alternative

The First Street improvements would include a new signalized intersection with SR 525 and a reconstructed intersection with Park Avenue. The extended roadway would generally be along the southern portion of the Mukilteo Tank Farm. The First Street extension would occupy areas currently used by Sound Transit for the Mukilteo Station parking and pick-up/drop-off functions.

First Street would feature sidewalks and bicycle lanes. At the driveway for the ferry terminal, a walkway would be built along the edge of the terminal from First Street to a shoreline promenade located west of the ferry slip. Other sidewalks would link the Mukilteo Station and the transit center, which would also have relocated commuter rail parking and a shoreline promenade.

As with the Elliot Point 1 Alternative, this alternative would include new security fences and gates surrounding the holding area and terminal.

## 2 OVERVIEW OF ANALYSIS AND REGULATORY CONTEXT

Federal, state, and local laws protect upland, wetland, and marine habitat for wildlife. Protecting habitat is necessary for the continued presence of wildlife species in urban environments, such as the city of Mukilteo.

### 2.1 Federal

Work associated with the project may be subject to the following federal regulations relevant to protecting fish, wildlife and their habitat:

- Endangered Species Act. 1973. 16 Unites States Code (USC) 1531-1544, as amended.
- Migratory Bird Treaty Act. 1936. 16 USC 703-712, as amended.
- Bald and Golden Eagle Protection Act. 1940. 16 USC 668a-d, as amended.
- Magnuson-Stevens Fishery Conservation Management Act. 1976. Public Law 94-265, as amended.
- Marine Mammal Protection Act (MMPA). Title I. 1972. 16 USC 1361-1389, 16 USC 1401-1407, 1411-1417, and 1421-1421h, as amended.
- Clean Water Act. 1977. 33 USC 1251-1376, as amended.
- Clean Air Act. 1963. 42 USC 7401, as amended.
- National Environmental Policy Act. 1969. 42 USC 4321.

### 2.2 State

Work associated with the project may be subject to the following Washington state regulations relevant to protecting fish, wildlife, and their habitat:

- State Environmental Policy Act. 1971. Revised Code of Washington (RCW) 43.21C, and Washington Administrative Code (WAC) 197-11 and WAC 468-12. Olympia, Washington.
- Shoreline Management Act of 1971. 1971. RCW 90.58, WAC 173-18-100 and WAC 173-22. Olympia, Washington.
- Shoreline Substantial Development Permit. RCW 90.58.140(3) and WAC 173-27-150.
- Hydraulic Code. 1949. Chapter 77.55 RCW. Olympia, Washington.

- Fishways, flow and screening. 1949. RCW 77.57, as amended. Olympia, Washington.
- Clean Water Act certification.

### **2.3 Local**

Work associated with the project may be subject to the following local regulations relevant to protecting fish, wildlife, and their habitat:

- Critical Areas Regulations. 2010. City of Mukilteo – Mukilteo Municipal Code (MMC) 17.52. Mukilteo, Washington.
- Shoreline Master Program. 1974. Mukilteo, Washington.

## 3 AFFECTED ENVIRONMENT

### 3.1 Methods

The study area boundary was defined as a 1-mile radius from the existing ferry terminal. In addition, biologists reviewed existing information on wildlife habitats present within a 5-mile radius of the existing ferry terminal. Information on upland, wetland, and marine wildlife habitat in the project vicinity was collected from existing maps and documents and during on-site investigations of the project site and vicinity on January 19, February 3, and March 17, 23, and 26, 2011. Habitats were evaluated from public rights-of-way and public land. Dive and beach surveys were conducted in September 9 and 10, 2004 to document eelgrass and macroalgae beds, crabs, geoducks, and other invertebrates. The information provided the basis for the description of the existing conditions, past and present land use, and the potential effects of the proposed project alternatives.

#### 3.1.1 On-Site Wetland Reconnaissance

Project biologists performed reconnaissance-level surveys for the presence of wetlands. Established methodologies were used to identify the presence and approximate size of wetlands, but wetland boundaries were not delineated (identified with flagging) or surveyed on the ground.

To identify wetlands within the study area, project biologists used methods defined in the *Washington State Wetlands Identification and Delineation Manual*, the Routine Determination Method in the *USACE Wetland Delineation Manual* and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys and Coast Region* (Ecology 1997; Environmental Laboratory 1987; USACE 2010). The U.S. Army Corps of Engineers (USACE) requires the use of the federal delineation manual to implement the Clean Water Act. Washington State and all local governments must use the state delineation manual to implement the Shoreline Management Act and/or the local regulations adopted pursuant to the Growth Management Act. The methodology outlined in the manual requires the presence of three essential characteristics before an area is determined to be a wetland: wetland hydrology, hydric soils, and hydrophytic vegetation. Field indicators of these three characteristics must all be present in order to make a positive wetland determination. However, exceptions to this rule are permitted where problem areas or atypical situations are encountered. Project biologists followed the “routine on-site determination method” to identify wetland areas based on the

presence or absence of wetland hydrology, hydric soils and hydrophytic vegetation as required by USACE and Washington State Department of Ecology (Ecology).

### **3.1.2 On-Site Wildlife Habitat Classification**

Project biologists also investigated the site to evaluate terrestrial wildlife habitat. Habitat assessment methods described in *Wildlife-Habitat Relationships in Oregon and Washington* (Johnson and O’Neil 2001) were used to describe and evaluate common habitat types in the project vicinity. The naming conventions found in Johnson and O’Neil (2001) have been renamed for this report. For example, Westside lowland conifer-hardwood forest is referred to as upland forest in this report. Using this methodology, habitats were assessed at three levels of detail: wildlife habitat types, structural conditions, and habitat elements.

The term “wildlife habitat type” generally describes the type of vegetation cover present in an area. The type of vegetation is determined by climate, elevation, soils, hydrology, geology, and topography. Habitat types can also include areas disturbed by human activities, where grasses, forbs, shrubs, or tree saplings are the primary vegetation cover type. Wildlife habitat types directly influence the abundance and distribution of wildlife species.

“Structural conditions” refer to vegetation structure, such as tree or shrub height and tree-canopy closure. In urban areas, structural conditions are shaped by human land uses.

“Habitat elements” include downed wood, tree snags, street trees, ornamental landscaping, and roads. Habitat elements can have either positive or negative effects on wildlife species; for example, tree snags are often used by cavity-nesting birds such as woodpeckers, while roads may create a barrier to the movement of some wildlife species through the landscape.

### **Dive Surveys**

Project biologists conducted dive surveys in 2005 in the project study area to evaluate potential impacts for a previous project design. Biologists surveyed for eelgrass, macroalgae, geoduck, fish and other biological resources. Although these surveys are too old for permitting purposes and the boundaries and densities of the resources surveyed may have changed, they provide a basis for evaluating potential project impacts to those species.

## **Federal and State Listed Species and Habitat Occurrence**

The Endangered Species Act (ESA) of 1973, as amended, protects species listed by the federal government. The U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS) administer the ESA. The USFWS (USFWS 2011) and NMFS (NMFS 2011a) Web sites were used to establish which species protected under the ESA (known as “listed species”) could potentially occur in the project vicinity.

The Washington Department of Fish and Wildlife (WDFW) also maintains a list of state priority habitats and species (PHS), a catalog of habitats and species (including federally listed species) that are a priority for conservation and management (WDFW 2011). To determine the potential occurrence of federally and state listed species within the project area, project biologists reviewed PHS data, conducted habitat evaluations during site visits, and consulted local experts and existing literature.

A separate Biological Assessment (BA) is being prepared to comply with section 7 of the ESA. The BA will include a detailed description of the life history of species listed under the ESA, their occurrence in the project area, and potential impacts associated with the project.

### **3.2 On-Site Existing Wetland Characteristics**

The literature review performed for this project did not identify any wetlands within the area proposed for project construction. On-site investigations confirmed that no wetlands are present on the project site.

Estuarine wetlands are mapped by the National Wetland Inventory (NWI) along all of the shoreline areas adjacent to Possession Sound. These wetlands are either aquatic bed or unconsolidated shore wetlands.

### **3.3 Terrestrial Wildlife Habitat Characteristics**

Prior to European settlement, western lowland mixed conifer and hardwood forest covered most of the project area and the vicinity of the city of Mukilteo. The dominant tree species were western hemlock (*Tsuga heterophylla*) and Douglas fir (*Pseudotsuga menziesii*), with red alder (*Alnus rubra*), big-leaf maple (*Acer macrophyllum*), and shore pine (*Pinus contorta*) as associated species. This was a multi-canopy forest, with structures such as standing snags and downed logs present in abundance.

Today, the area encompassed by the project alternatives contains highly modified landscapes. Animals that use these habitats are adapted to human activity and disturbance. Two types of habitats are found in the proposed construction areas: Urban and Mixed Environs and Marine Nearshore.

### **3.4 Off-Site Habitats**

Wildlife species found in off-site habitats may be affected by construction or operation of the project. These off-site habitats include Upland Forest and Palustrine (Freshwater) Wetland.

#### **3.4.1 Upland Forest**

Upland Forest habitat is present within one mile of the project area, primarily in Japanese Gulch, Brewery Gulch, and Edgewater Creek Gulch (Figure 7). These Upland Forests are typical of post-harvest old-growth, once present throughout much of the project area. WDFW has mapped much of Japanese Gulch habitat south of Fifth Street as a Biodiversity Area and Corridor. The existing forest is second or third growth, and is dominated by red alder with lesser amounts of black cottonwood (*Populus balsamifera*), big-leaf maple, Douglas fir, western red cedar (*Thuja plicata*), and western hemlock. Understory species include salmonberry (*Rubus spectabilis*), red elderberry (*Sambucus racemosa*), Himalayan blackberry (*Rubus armenicus*), English ivy (*Hedera helix*), and piggy back plant (*Tolmiea menziesii*). A full list of plant species that may be found in the project vicinity can be found in Attachment A. A rail spur to the Boeing plant runs up Japanese Gulch next to Japanese Creek.