

# CHAPTER 3

## Transportation





### 3 TRANSPORTATION

This chapter summarizes the existing transportation conditions in the study area for the Mukilteo Multimodal Project. It describes the transportation characteristics in the study area and discusses the multimodal connections occurring at the ferry terminal. It also discusses current and future traffic conditions, including ferry, bus, and rail ridership; vehicle and non-motorized volumes; intersection and ferry levels of service (LOS); and safety.

The analysis considers long-term impacts on ferry operations, the roadway network, non-motorized network, public transportation, parking, and freight. This chapter also describes the long-term construction impacts associated with each alternative, and identifies planned projects in the vicinity of the Mukilteo ferry terminal that, when combined with the impacts of the Mukilteo Multimodal Project, could contribute to cumulative impacts. Potential mitigation activities are also described to reduce the impacts of the effects associated with the Mukilteo ferry terminal alternatives.

#### 3.1 Overview of Analysis and Regulatory Context

This section provides a brief overview of analysis methodology and regulatory context; the *Transportation Discipline Report* contains additional information about the system and design standards assumed in the analysis.

The analysis of local traffic impacts was guided by the policy direction established in the numerous plans or policy documents adopted for the Mukilteo/Everett area. These include, but are not limited to the Puget Sound Regional Council (PSRC) *Transportation 2040 Plan*; *Comprehensive Plans* for the cities of Mukilteo and Everett, and the *6-Year Transportation Improvement Program* for the cities of Mukilteo and Everett.

The transportation analysis uses a variety of technical tools and approaches to evaluate transportation performance across all modes. This evaluation includes forecasts of future travel by mode, as well as travel times and delays, including intersection delays. Travel forecasts are an estimation of how many people will travel in a future year and how those people will choose to travel. To develop travel forecasts for a roadway and ferry network, two demand models were used:

1. WSF's Long-Range Plan 2009-2030 model was used to determine ferry ridership and distribution of ferry passengers.
2. Puget Sound Regional Council (PSRC) 2040 Regional model was used to determine traffic forecasts for the state and regional roadway network.

#### 3.2 Affected Environment

This section summarizes existing transportation characteristics within the study area corridor along SR 525 and at the Mukilteo ferry terminal. It describes the existing road and non-motorized network, traffic volumes, bus and rail operations, parking,

ferry terminal operations and scheduling, ferry ridership, multimodal connections, and freight operations.

### 3.2.1 Mukilteo Ferry Terminal Facility

#### Sailings and Scheduling

Ferry service operates weekdays from 4:40 AM to 1:00 AM and weekends from 5:30 AM to 1:05 AM. Sailing time between Mukilteo and Clinton is approximately 15 minutes. Unloading and loading times vary based on the number of passengers and vehicles.

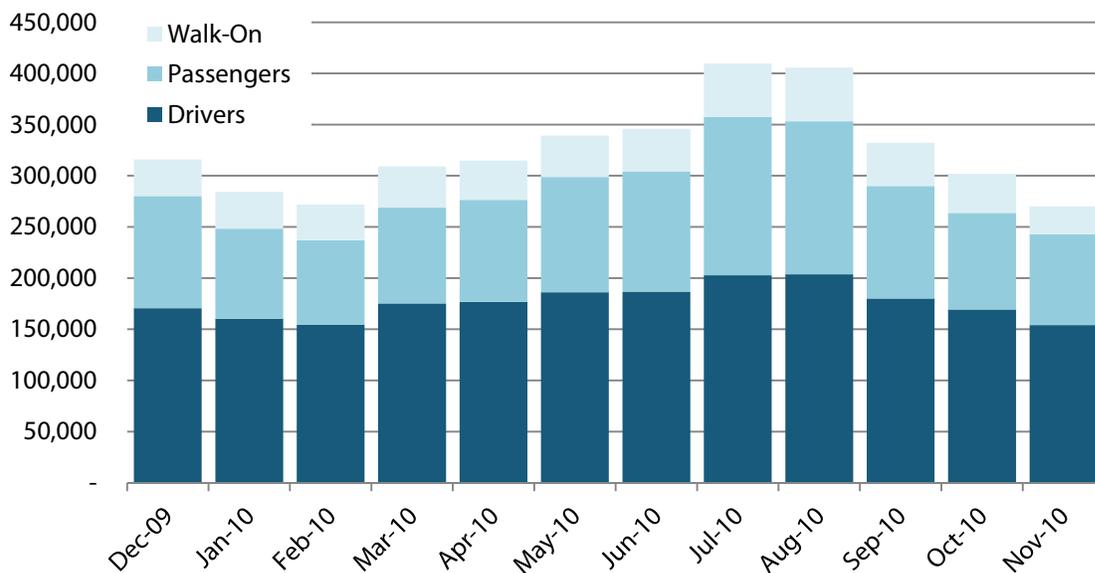
#### Ridership

Two ferry vessels operate at a time on the Mukilteo-Clinton route. Each vessel has the capacity to carry up to 1,200 walk-on passengers and approximately 124 vehicles. The number of vehicles permitted on the ferry depends on the size of the vehicles on the ferry as well as how closely they are parked to one another.

WSDOT reports that by 2011, the Mukilteo-Clinton route had the system’s highest annual vehicle trips, the third-highest walk-on passenger ridership, and the second highest total annual ridership after the Seattle-Bainbridge Island route. More than 4,150,000 riders take the Mukilteo ferry each year.

Ferry ridership on the Mukilteo-Clinton route fluctuates throughout the year, with the highest ridership during July and August and the lowest ridership in November, January, and February (Figure 3-1). The typical or average month for ferry ridership is May.

**Figure 3-1. Monthly Mukilteo-Clinton Ferry Ridership Volumes (December 2009 to November 2010)**



Ridership varies only slightly throughout the week (Tuesday through Thursday) and generally increases during the weekend (Friday through Saturday); Sunday and Monday ridership varies. However, walk-on ridership decreases on weekends while vehicle volumes increase, primarily because there are fewer commute trips and more recreational trips on weekends.

### Ferry Crossing Levels of Service

As a way to identify the point at which demand management or additional capacity investments may be necessary, the WSF Long-Range Plan identifies a LOS performance standard based on the percentage of total sailings operating at full capacity. When capacity exceeds the Level 1 Standard, the plan recommends pricing and operational measures to spread demand; it recommends additional service when capacity exceeds the Level 2 Standard (see Table 3-1).

Northbound travel in the PM peak period is used to calculate the ferry crossing LOS because it has an overall higher travel demand than southbound AM peak period. Table 3-1 summarizes the percentage of sailings that were full in 2010 and shows that August exceeded the Level 1 performance threshold, but not the Level 2 LOS performance threshold.

**Table 3-1. Mukilteo-Clinton Ferry Route Level of Service**

Month	Level 1 Standard	Level 2 Standard	2010 Data
January	25%	65%	8%
May	25%	65%	20%
August	30%	75%	35%

Source: 2009 WSF Long-Range Plan, WSF Fare Box Data, WSF Model Forecast, Values are percent of total northbound sailings that are full.

### Terminal Operations

The Mukilteo ferry terminal accommodates multiple modes of traffic, each of which arrives at the terminal, loads and unloads, and departs in different manners.

#### **Terminal Arrival**

Walk-on passengers include people walking or bicycling from where their trip starts, drivers who park and walk, and transit riders who use bus and commuter rail. All walk-on passengers have an associated walking travel time to the SR 525/Front Street intersection, as well as some level of delay at the SR 525/Front Street intersection prior to entering the passenger loading area. Table 3-2 summarizes the modeled travel times for walking among the Mukilteo Station, bus zone, southern parking lots, and the Mukilteo ferry terminal. The modeled travel times assume a standard distribution of walking speeds, which does not fully account for passengers walking quickly to reach their destinations.

**Table 3-2. Walk Travel Times to the Mukilteo Ferry Terminal (PM Peak Period)**

Location	To Terminal (minutes)
Mukilteo Station	9
Bus Zone/Parking Lot South of Front Street	2
Parking Lot South of Second Street	5

Source: VISSIM Model, 2010

Unlike most other ferry terminals, ferry and non-ferry vehicle traffic are not separated at the Mukilteo ferry terminal area. The Mukilteo ferry terminal transfer span connects directly to the SR 525/Front Street intersection, which is unsignalized. Front Street and SR 525 also serve non-ferry traffic traveling to destinations along the waterfront. These destinations include Mukilteo Lighthouse Park, Mukilteo Station, Mount Baker Terminal, NOAA Mukilteo Research Station, park-and-ride lots, private residences, public access and waterfront facilities, and businesses along Front Street.

### ***Ferry Unloading and Loading***

Walk-on passengers are allowed to walk off the ferry first while the vehicles remain on the ferry. It takes, on average, 19 seconds for all passengers to reach the passenger terminal (see Table 3-3). Walk-on passengers who do not quickly cross the SR 525/Front Street intersection experience additional delay while the motor vehicles unload. Unloading motor vehicles takes just over 4 minutes, on average (see Table 3-3).

**Table 3-3. Ferry Unloading and Loading Average Duration at Mukilteo**

Ferry Arrival	Walk Off	Vehicle Unloading	Walk On	Vehicle Loading
Minutes	0:19	4:10	0:47	8:24

Source: Field Survey, December 2010

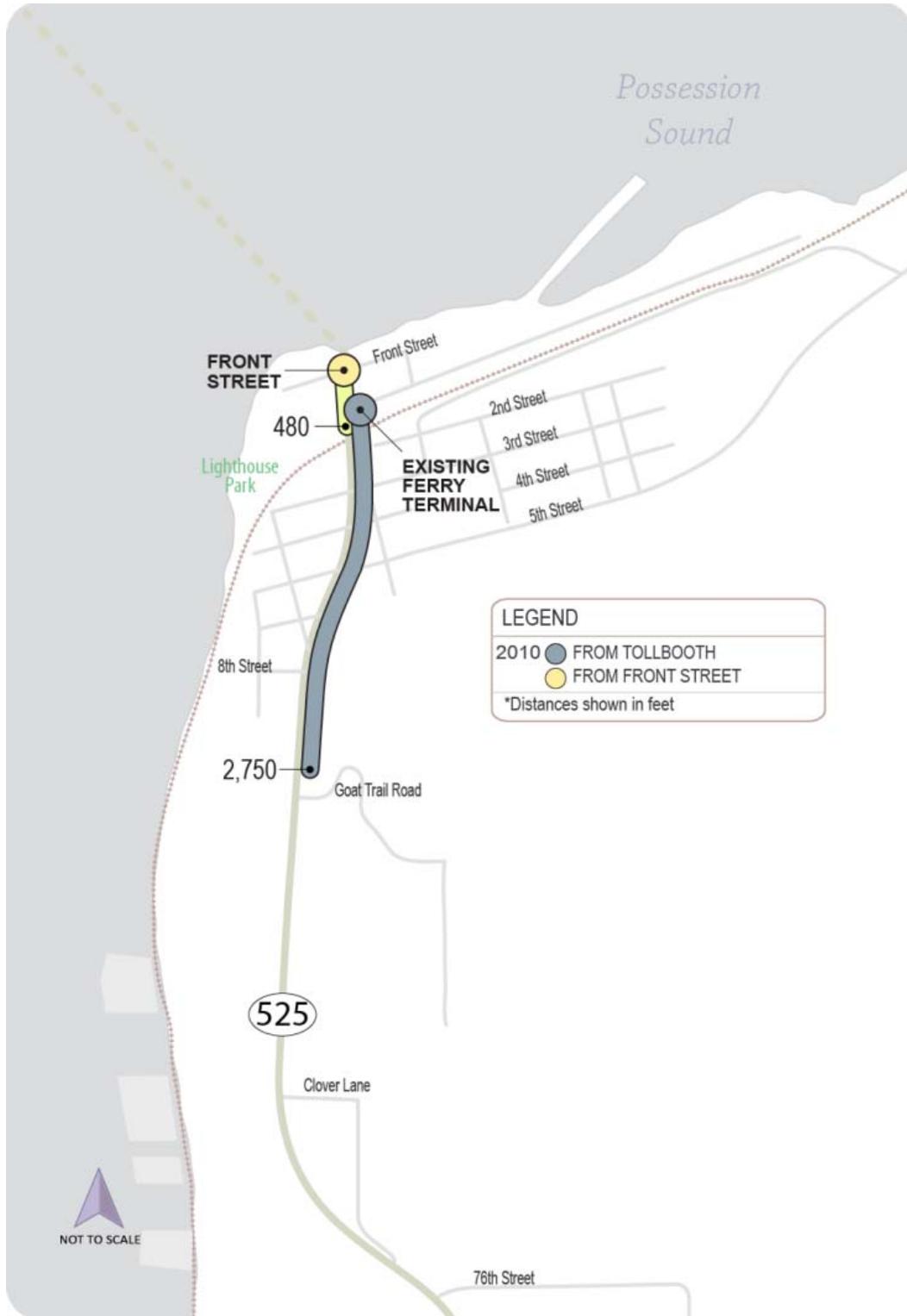
During the ferry unloading and loading processes, which take approximately 14 minutes, queues tend to form in the ferry lane and along SR 525.

### ***Ferry Shoulder Queuing***

Figure 3-2 shows queue lengths from a field survey in December 2010, which provided a baseline for the analysis. Queues can be longer at other times of the year. Queue lengths are a metric for evaluating the roadway operations and they indicate if the operations of one intersection affect an adjacent intersection. The Front Street queue length represents the maximum extent that vehicles spill back onto SR 525 from the Front Street intersection during the peak hour, which includes at least one ferry loading and unloading operation. The queue length on SR 525, south of Front Street, is not long enough to impact downstream intersections. The shoulder queuing from the tollbooths along SR 525 impacts a number of downstream intersections and driveways, as vehicles move slowly through the shoulder lane. During times of higher

ferry use, such as Fridays, holidays, and during the summer, ferry shoulder queues can extend past Goat Trail Road.

**Figure 3-2. 2010 Queue Lengths along SR 525 at the Mukilteo Ferry Terminal**



Note: As observed December 2010 for weekday evenings. Longer queues often reported on weekends, holidays, and during summer months.

### **Terminal Departure**

Walk-off passengers departing the Mukilteo ferry terminal experience extra delay at the SR 525/Front Street intersection due to local (non-ferry) traffic, and unloading and loading vehicle ferry traffic. Table 3-4 summarizes the travel times for the different destinations of walk-off passengers (similar to Table 3-2, these modeled travel times assume a standard distribution of walking speeds).

**Table 3-4. Walk Travel Times from the Mukilteo Ferry Terminal (PM Peak Period)**

<b>Location</b>	<b>From Terminal (minutes)</b>
Mukilteo Station	12
Bus Zone/Parking Lot South of Front Street	2
Parking Lot South of Second Street	7

Source: VISSIM Model, 2010

The walk times from the terminal are longer than the walk times to it because walk-off passengers crossing SR 525 typically have to wait for unloading vehicle traffic to pass.

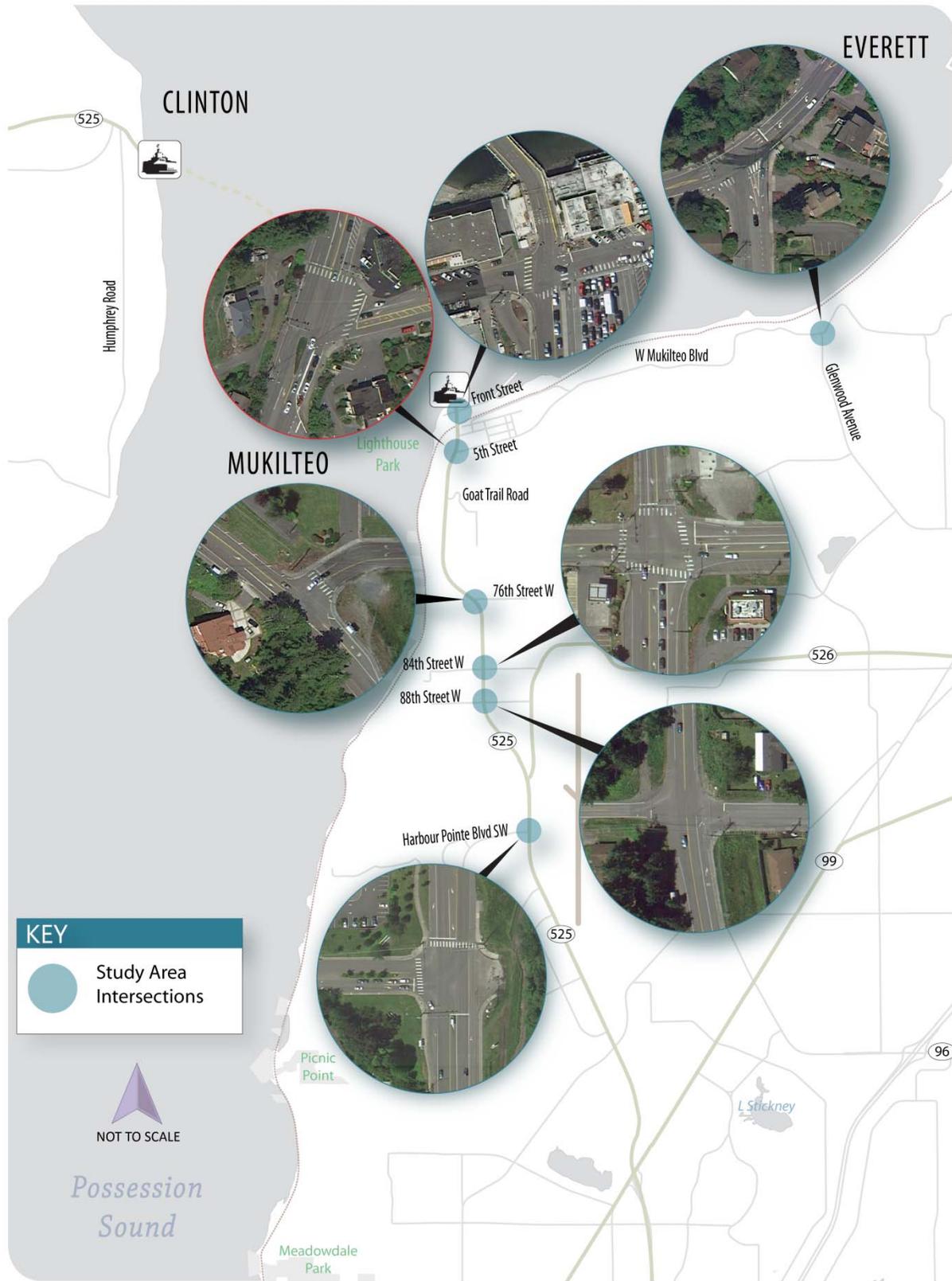
### **Navigable Waterways**

The Rivers and Harbors Act defines navigable waters of the United States. The existing Mukilteo ferry terminal is situated in navigable waters and ferries traveling to and from Clinton across Possession Sound pass through an existing shipping lane. The existing Mukilteo to Clinton ferry route does not impede other vessels operating within or outside the shipping lane that follow general navigation rules.

### **3.2.2 Traffic Operations**

Study area intersections are illustrated in Figure 3-3. As summarized in Table 3-5, during the PM peak period, the SR 525/88th Street SW and SR 525/Front Street intersections operate at an LOS E which indicates a high level of delay. This LOS fails to meet the City of Mukilteo LOS D standard which is the maximum level of delay the City has defined as acceptable. All other study intersections operate at LOS D or better during the AM and PM peak periods.

Figure 3-3. Study Area Intersections



**Table 3-5. 2010 LOS Summary**

Intersection	Control Type	LOS Standard	AM Peak		PM Peak	
			LOS	Delay (sec/veh)	LOS	Delay (sec/veh)
SR 525/Harbour Pointe Boulevard North	Signal	D	C	23	C	21
SR 525/88th Street SW	Stop Sign	D	C	21	E	43
SR 525/84th Street SW and SR 526	Signal	D	A	6	C	28
SR 525/76th Street SW	Stop Sign	D	C	20	C	20
SR 525/Fifth Street	Signal	D	B	11	D	51
SR 525/Front Street	Stop Sign	D	n/a	n/a	E	48
West Mukilteo Boulevard/Glenwood Avenue	Stop Sign	D	B	11	B	14

Source: Existing 2010 Synchro Model and Existing 2010 VISSIM Model for SR 525/Front Street

### 3.2.3 Non-Motorized Conditions

#### Pedestrian Conditions

SR 525 is the only roadway link between the Mukilteo city center and the ferry terminal; the SR 525 pedestrian facilities crossing the BNSF tracks consist of 3-foot-wide sidewalks on both sides of the bridge, which meets some but not all ADA standards, and does not meet current WSDOT design standards for 4-foot sidewalks.

Pedestrians accessing the ferry terminal or areas west of the terminal from the east side of the terminal must either wait for all vehicles to load or find a safe gap in the loading of vehicles.

Pedestrians who walk off the ferry prior to the vehicles have unrestricted access to cross Front Street. Common destinations include the parking lot behind Diamond Knot Brewery, the bus stop at the SR 525/Front Street intersection, the SR 525 bridge to Mukilteo and to other parking lots, and Mukilteo Station. Some passengers are picked up at the terminal.

The highest pedestrian flows between the Mukilteo ferry terminal and the bus stops occur during peak periods. Approximately 53 percent of all walk-off traffic in the morning peak period is from the ferry to the bus (compared to 12 percent that walk on), and 41 percent of walk-on traffic in the evening peak period is from the bus to the ferry (compared to 12 percent that walk off).

#### Bicycle Facility Conditions

There is limited bicycle use of the ferry terminal; most cyclists leave the Mukilteo ferry terminal in the AM peak period and return to board the ferry in the PM peak period. None of the streets to or from the ferry terminal has dedicated bicycle lanes. Cyclists can legally use the same roadway space as motorized vehicles. Cyclists disembarking from the ferry bound for Mukilteo or points to the east must ascend

SR 525 in mixed vehicular traffic, sharing the outside travel lane. Some cyclists wait for all vehicles to finish unloading from the ferry before ascending SR 525.

### 3.2.4 Public Transportation Facilities

Community Transit, Everett Transit, Island Transit, and Sound Transit provide transit service in the study area, but only Island Transit operates service on Whidbey Island, serving the Clinton terminal. The primary transit corridors in the study area are SR 525, Fifth Street/West Mukilteo Boulevard, SR 526, and the BNSF Railway line.

Sound Transit operates Sounder commuter rail service with a station in Mukilteo. Although Amtrak service passes through Mukilteo, it does not stop at the Mukilteo Station. Bus service to and from the Mukilteo ferry terminal is operated by Community Transit and Everett Transit, which use a dedicated pull-out bus zone at the Front Street/SR 525 intersection. Community Transit operates a commuter express bus service and all-day local bus service, and Everett Transit operates local bus service. Vanpool service in Mukilteo is provided by Community Transit—there are currently four vanpools. Paratransit service is offered by Community Transit and Everett Transit, with an average of seven and two trips, respectively, to and from the Mukilteo ferry terminal.

Everett Transit and Community Transit have reported that transit buses regularly encounter bus zone capacity deficiencies. The primary bus zone, on southbound SR 525, just south of Front Street, accommodates only two buses at a time. Because six routes terminate at the Mukilteo ferry terminal and fare payment causes long dwell times, arriving buses must proceed to Mukilteo Lighthouse Park to turn around, which is not a preferred location by the transit agencies or the City of Mukilteo.

Island Transit operates two types of bus service, which serve the Clinton ferry terminal and the park-and-ride lots near the terminal.

### 3.2.5 Parking

Near the Mukilteo ferry terminal, parking for an array of uses is provided at a number of locations, including on-street parking spaces, off-street parking lots that are for public or paid use, ferry employee parking, and dedicated Sound Transit parking for Sounder commuter rail. Figure 3-4 and Table 3-6 show the number and type of parking spaces in the Mukilteo ferry terminal vicinity.

On-street parking near the Mukilteo ferry terminal is regulated by two residential parking zones; parking permits are available to residents of Mukilteo and not available to ferry commuters. The public parking area located in the southwest corner of the Front Street/First Street intersection (Lot C) is reserved for Ivar's Mukilteo Landing patrons. On-street parking on First Street east of Park Avenue (Lot E) is restricted to Mukilteo Station patrons.

Figure 3-4. Designated Parking Areas near the Mukilteo Ferry Terminal



Table 3-6. Parking Areas near the Mukilteo Ferry Terminal

		Existing Parking at Mukilteo	
PARKING LOT	Parking Location	SPACES	Notes
A	Southwest corner of SR 525 and Front Street	98	Off-Street lot / paid (total does not include 5 vendor and 6 unmarked stalls)
B	Second Street between SR 525 and Park Avenue	40	Off-Street lot / paid
C	Former Buzz Inn property (southwest corner of Front Street and Park Avenue)	n/a	This 45-space lot for Ivar's Mukilteo Landing is not included in totals because its use would be displaced
D	Port of Everett Mount Baker Terminal	30	Combined Port of Everett and public lot
E	Mukilteo Station Parking	63	Sound Transit park-and-ride lot
K	New Lot at Terminal	--	Off-Street public lot
		<b>Subtotal</b>	<b>231</b>
<b>ON-STREET</b>			
F	First Street between SR 525 and Park Avenue	25	On-street / time restrictions
G	Park Avenue between Front Street and First Street	18	On-street / time restrictions
H	Front Street between SR 525 and Park Avenue	26	On-street / time restrictions
		<b>Subtotal</b>	<b>69</b>
		<b>Total Parking Lot and On-Street Parking Spaces</b>	<b>300</b>
<b>WSF PARKING</b>			
I	WSF employee parking (west of SR 525)	20	WSF employees only
J	WSF employee parking (at Mukilteo ferry terminal)	23	WSF employees only
		<b>Subtotal</b>	<b>43</b>

### **3.2.6 Freight**

The BNSF Railway mainline runs generally along the eastern edge of Puget Sound and passes through the project area. This railway connects Seattle to British Columbia, Canada. Amtrak passenger rail and Sounder commuter rail share this railway with freight service. Only Sounder service stops at Mukilteo Station. The Port of Everett Mount Baker Terminal is located to the east of the Mukilteo ferry terminal.

Truck freight uses multiple roadways in the study area, most notably SR 525. Between 4 million and 10 million metric tons per year are carried on the SR 525 corridor.

## **3.3 Transportation Effects**

This section summarizes the transportation effects within the study area corridor along SR 525 and at the potential ferry terminal locations in Mukilteo. It describes the project's impacts on the existing motorized and non-motorized network, bus and rail operations, parking, ferry terminal operations and scheduling, multimodal connections, and freight operations.

### **3.3.1 Mukilteo Ferry Terminal**

#### **Sailings and Scheduling**

For all alternatives, daily ferry service would continue, and sailing time between Mukilteo and Clinton would remain approximately 15 minutes each way. Relocating the ferry terminal for the Elliot Point 1 and Elliot Point 2 alternatives would not impact ferry scheduling for the Mukilteo-Clinton route.

#### **Ridership**

One set of future travel demand volumes was developed for all 2040 alternatives because none of the alternatives is likely to change the total number of people traveling or how they choose to travel (see *Section 3.5*).

#### **Ferry Crossing Levels of Service**

Table 3-7 summarizes the percentage of sailings that were full in 2010 and are estimated to be full in 2040. Forecasts were based on 2010 data and projected to 2040. By 2040, the travel forecasts indicate that capacity in all 3 analysis months would exceed the Level 1 Standard (including January, a less busy month), but not the Level 2 Standard. The impacts of this are longer travel time for passengers, longer peak periods, and longer queues on adjoining roadways.

This indicates that WSDOT should consider methods to address peak period travel demand and relieve congestion experienced on this route. Because performance in 2040 is not anticipated to exceed the Level 2 Standard, the route does not warrant additional capacity investments above the already planned replacement of the current 124-vehicle ferries with new 144-vehicle ferries. Measures to manage demand to the Level 1 Standard are described in *Section 3.7.3*.

**Table 3-7. Mukilteo-Clinton Ferry Route Level of Service**

Month	Level 1 Standard	Level 2 Standard	2010 Data	2040 Forecast
January	25%	65%	8%	32%
May	25%	65%	20%	48%
August	30%	75%	35%	58%

Source: 2010 WSF Fare Box Data, WSF Model Forecast. Values are percent of total northbound sailings that are full in the PM peak period.

## Terminal Operations

### **Access Lanes and Vehicle Holding Area**

All alternatives include a holding area that can accommodate approximately one and a half of the vehicle holding capacity of the new ferries, which is approximately 216 vehicles. The vehicle holding area does not directly change the length of the SR 525 shoulder queue, because vehicles typically do not clear the tollbooths fast enough to fill the holding area before loading of the next ferry begins.

Because the Elliot Point 1 and Elliot Point 2 alternatives have approximately seven long holding area lanes plus a motorcycle bypass lane, HOVs and trucks may need to be mixed with other ferry traffic to maximize holding space during peak periods. All Build alternatives would permit registered HOVs to bypass some or all the ferry shoulder queuing to access the tollbooths. The current design for the Elliot Point 1 Alternative would merge HOVs into the general queue before they reach the tollbooth.

### **Overhead Passenger Loading**

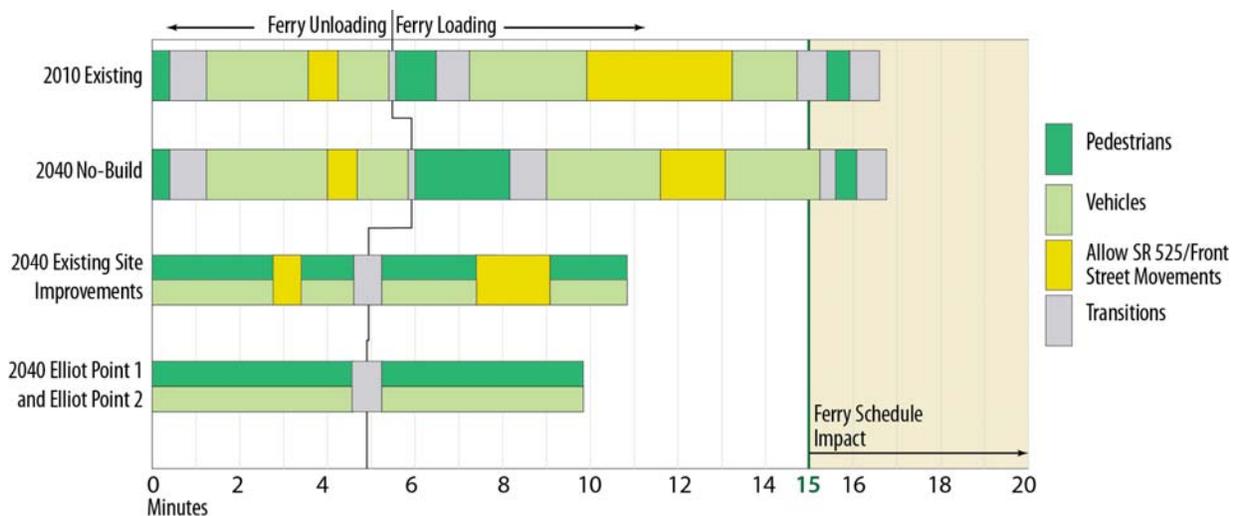
All Build alternatives include overhead passenger loading, which allows pedestrian and vehicle loading to occur simultaneously by separating vehicles and pedestrians. The No-Build Alternative does not include overhead passenger loading. Overhead passenger loading reduces unloading and loading times, which improves ferry schedule reliability. Overhead passenger loading would be provided by a structure connecting the upper ferry deck to an on-land passenger area and would maintain safe ADA grades during low and high tides, unlike the existing condition. It would also improve pedestrian safety by reducing conflicts with pedestrians and vehicles on the transfer span and where the transfer span meets the nearest roadway.

### Ferry Loading and Unloading Times

The location of the ferry terminal in relation to the local street system and the presence of overhead passenger loading affect ferry turnaround time: to maintain 30-minute headways between Mukilteo and Clinton, there is approximately 15 minutes to unload and load passengers at either terminal. When the turnaround time exceeds 15 minutes, ferry vessels fall behind schedule, causing: (1) reduced connection reliability, and (2) reduced cross-sound capacity.

As illustrated in Figure 3-5, field observations found existing ferry terminal unloading and loading times exceeded 15 minutes in the PM peak period. The observations occurred in Winter 2010.

**Figure 3-5. Mukilteo Ferry Terminal Unloading and Loading Times (Observed Winter 2010)**



Under the No-Build scenario, increased ferry ridership means that it takes longer to load and unload passengers. In 2040, it is estimated that the No-Build terminal configuration would take PM peak period ferries almost 17 minutes to unload and load passengers before leaving for Clinton (see Figure 3-5). This would impact the overall ferry schedule during the PM peak period.

As illustrated in Figure 3-5, the addition of overhead passenger loading for the Existing Site Improvements Alternative would reduce the time to load and unload each ferry to 11 minutes, almost 6 minutes faster than the No-Build Alternative, and would enable the ferries to maintain their schedules.

The Elliot Point 1 and Elliot Point 2 alternatives eliminate the time required to stop ferry traffic at the SR 525/Front Street intersection to allow local traffic to clear. Providing a continuous off-loading process helps meet the objectives of reliability and efficiency. The average load and unload time is almost 7 minutes faster than No-Build Alternative and would enable the ferries to maintain their schedules.

### ***Ferry Shoulder Queuing***

The typical weekday PM peak period ferry shoulder queues are projected to increase for 2040 No-Build, Existing Site Improvements, and Elliot Point 2 alternatives compared to 2010 conditions. Elliot Point 1 Alternative is the only alternative where vehicle queues from the tollbooth would not extend to SR 525 during the PM peak period on a daily basis. Under all alternatives, higher weekend and seasonal travel would continue to create longer queues.

The differences in weekday evening peak queue lengths among the alternatives, shown in Figure 3-6, result primarily from the ability of some of the alternatives to store vehicles before the queue extends back to the SR 525/Fifth Street intersection. After the queue extends back onto SR 525, the queue lengthens even more because vehicles must keep clear of driveways and intersections. For example, the Elliot Point 1 Alternative queue on SR 525 is shorter than the other alternatives because the typical peak period queue can be held within the extended First Street. The No-Build and Existing Site Improvements alternatives are generally similar, but the Existing Site Improvements Alternative is slightly longer because of the addition of a traffic signal at the SR 525/First Street intersection just south of the tollbooths.

### **Navigable Waterways**

The effects on navigation for ferries crossing the shipping lane would be similar to existing conditions and would not vary significantly among alternatives. Other effects on navigable waterways would also be similar to existing conditions.

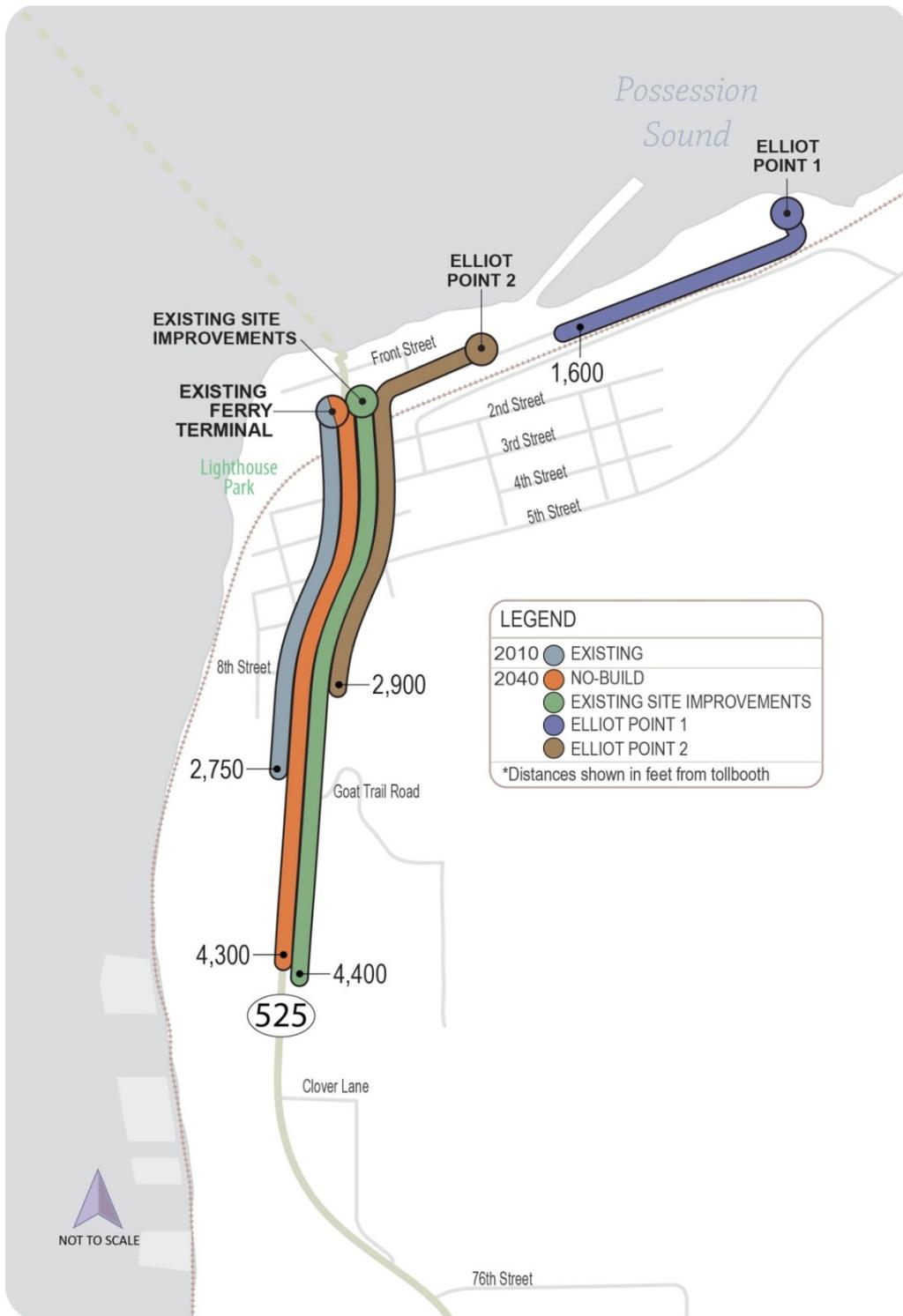
### **Mukilteo Terminal Facility Safety and Security**

Overhead passenger loading, which separates vehicles and pedestrians during ferry passenger loading and unloading, reduces the risk of collisions. For the Elliot Point 1 and Elliot Point 2 alternatives, passengers could travel between the ferry and the transit center without crossing a roadway, which would eliminate any conflict with vehicle traffic.

For the Build alternatives, the proposed transit center would provide space for six separate bus bays and would eliminate buses blocking roadways such as Front Street. Properly sized bus zones would ensure that bus passengers wait for, load, and unload in designated areas.

The Elliot Point 1 and Elliot Point 2 alternatives would include security fences and gates to allow the holding area to be secured during periods of higher security.

Figure 3-6. Typical Weekday Peak Period Ferry Shoulder Queue Length in Mukilteo



### 3.3.2 Traffic Operations

#### Conditions Common to All Alternatives

Roadway improvements occurring prior to 2040 that are common to all alternatives include a northbound right-turn lane at the stop-controlled SR 525/Front Street intersection. This is the primary intersection that shows a difference among the alternatives. Because projected 2040 roadway volumes are the same for the No-Build and the Build alternatives intersections along SR 525 between Fifth Street and Harbour Pointe Boulevard and the Mukilteo Boulevard/Glenwood Avenue intersection, the intersection operations for all alternatives are projected to be similar. The LOS for the study area intersections south and east of Fifth Street are summarized in Table 3-8. Also, the No-Build and Build alternatives would maintain a similar break in off-loading traffic to allow side street traffic to turn onto SR 525.

**Table 3-8. 2040 Level of Service Summary (PM Peak Hour)**

Intersection	Control Type	2010 LOS	2010 Existing Delay (sec/veh)	2040 LOS	2040 No-Build and Build Alternatives Delay (sec/veh)
SR 525/Harbour Pointe Boulevard	Signal	C	21	D	51
SR 525/88th Street SW	Stop Sign	E	43	F	> 200
SR 525/84th Street SW/SR 526	Signal	C	28	D	52
SR 525/76th Street SW	Stop Sign	C	20	D	29
SR 525/Fifth Street	Signal	D	51	E	55
West Mukilteo Boulevard/Glenwood Avenue	Stop Sign	B	14	C	24

As shown in Table 3-8, vehicle delay at intersections increases from 2010 to 2040, which is caused more by increases in background traffic volumes than by the small growth in ferry vehicle traffic. In 2040, the SR 525/88th Street and SR 525/Fifth Street intersections have a failing LOS service because they exceed the standard set by the City of Mukilteo of LOS D or better. Traffic turning from 88th Street or crossing SR 525 would experience a large delay because of insufficient gaps in traffic along SR 525.

#### No-Build Alternative

Roadway improvements occurring prior to 2040 include the relocation of the existing signal on the Mukilteo ferry terminal transfer span south towards the SR 525/Front Street intersection.

The No-Build Alternative LOS for the SR 525/Front Street intersection is summarized in Table 3-9 and is projected to remain at LOS E. The vehicle delay would increase slightly during the PM peak hour, which includes the time vehicles at the intersection are stopped during the ferry unloading and loading.

**Table 3-9. No-Build Alternative Level of Service Summary (PM Peak Hour)**

Intersection	Control	Existing 2010		No-Build 2040	
		LOS	Delay (sec/veh)	LOS	Delay (sec/veh)
SR 525/Front Street	Stop Sign	E	48	E	52

Vehicle delay at the Park Avenue/Front Street and Park Avenue/First Street intersections would increase slightly due to increased pedestrian traffic between the Mukilteo ferry terminal and Mukilteo Station.

### Existing Site Improvements

People driving to the Mukilteo ferry terminal would enter the holding area after passing through a new signal at the SR 525/First Street intersection. Authorized HOVs, such as vanpools, would bypass the shoulder queuing lane and proceed to the short queue at the tollbooths.

The LOS for intersections in the immediate vicinity of this alternative are summarized in Table 3-10. Overhead passenger loading would slightly reduce the duration of intersection blockage during ferry loading/unloading compared to the No-Build Alternative because pedestrian trips from the terminal to the bus stop would no longer cross this intersection. The modified intersections resulting from the First Street extension would operate at an acceptable LOS.

**Table 3-10. Existing Site Improvements Alternative Level of Service Summary (2040 PM Peak Hour)**

Intersection	Control	No-Build Alternative		Existing Site Improvements Alternative	
		LOS	Delay (sec/veh)	LOS	Delay (sec/veh)
SR 525/Front Street	Stop Sign	E	52	E	48
SR 525/First Street	Signal	n/a	n/a	B	17
Park Avenue/First Street	Stop Sign	n/a	n/a	A	10

### Elliot Point 1 Alternative

People driving to the Mukilteo ferry terminal would turn at a new SR 525/First Street intersection and travel east to the tollbooth entrance roadway. Vehicles would queue along the curb lane of SR 525, as they do today and along First Street. Authorized HOVs would drive in the inside lane, bypassing the shoulder queuing, and enter into mixed traffic immediately before the tollbooths.

The LOS for intersections in the immediate vicinity of this alternative are summarized in Table 3-11. The delay at the SR 525/Front Street intersection would decrease by almost

38.0 seconds compared to the No-Build Alternative. This is because the ferry terminal would be relocated and the loading and unloading operations no longer impact this intersection directly. The modified intersections resulting from the First Street extension would operate at an acceptable LOS.

**Table 3-11. Elliot Point 1 Alternative Level of Service Summary (2040 PM Peak Hour)**

		No-Build Alternative		Elliot Point 1 Alternative	
		LOS	Delay (sec/veh)	LOS	Delay (sec/veh)
SR 525/Front Street	Stop Sign	E	52	B	14
SR 525/First Street	Signal	n/a	n/a	A	6
Park Avenue/First Street	Stop Sign	n/a	n/a	A	10
West driveway/First Street	Stop Sign	n/a	n/a	A	9
East driveway/First Street	Signal	n/a	n/a	A	1

**Elliot Point 2 Alternative**

People driving to the Mukilteo ferry terminal would turn at a new SR 525/First Street intersection and travel east to the tollbooth entrance/First Street intersection. Vehicles would queue along the curb lane of SR 525, as they do today and along First Street. Authorized HOVs would drive in the inside lane, bypassing the shoulder queuing, and enter into mixed traffic immediately before the tollbooths.

The LOS for intersections in the immediate vicinity of this alternative are summarized in Table 3-12. The LOS at the SR 525/Front Street intersection would decrease almost 38.0 seconds compared to the No-Build Alternative because the ferry terminal would be relocated and the loading and unloading operations no longer impact this intersection directly. The modified intersections resulting from the First Street extension would operate at an acceptable LOS.

**Table 3-12. Elliot Point 2 Alternative Level of Service Summary (2040 PM Peak Hour)**

Intersection	Control	No-Build Alternative		Elliot Point 2 Alternative	
		LOS	Delay (sec/veh)	LOS	Delay (sec/veh)
SR 525/Front Street	Stop Sign	E	52	B	14
SR 525/First Street	Signal	n/a	n/a	A	7
Park Avenue/First Street	Stop Sign	n/a	n/a	A	10
Tollbooth/First Street	Signal	n/a	n/a	B	11

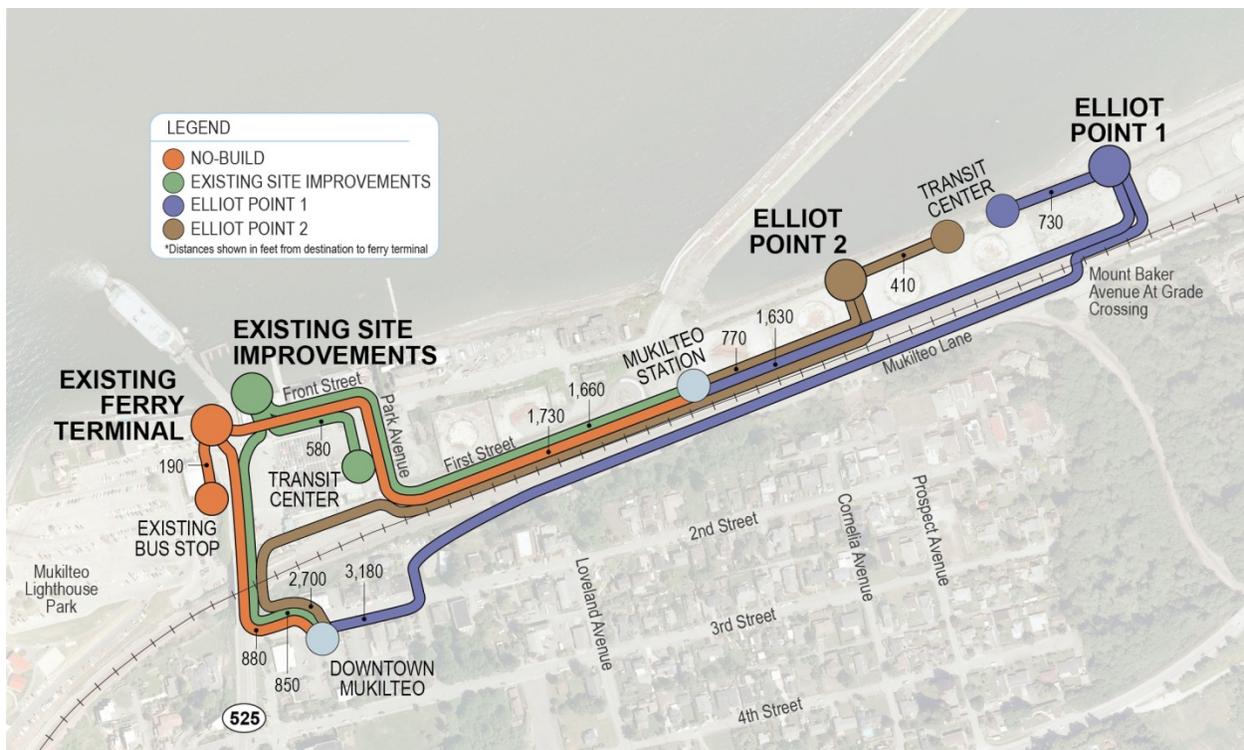
### 3.3.3 Non-Motorized Transportation

Each Build alternative changes travel flows and travel distances for non-motorized users connecting to and from the Mukilteo ferry terminal, compared to the No-Build Alternative. Forecasted distributions for pedestrians and bicyclists are presented in the *Transportation Discipline Report*.

#### Pedestrian Connections

Tables 3-13 through 3-15 and Figure 3-7 show the distance and estimated average time for pedestrians to walk to and from the terminal and common destinations in the project vicinity. The average walk time to the Mukilteo ferry terminal does not include the time to purchase a ticket or the time to travel from the passenger building to the ferry. The average walk time from the Mukilteo ferry terminal includes the time to exit the ferry via the overhead loading ramps to calculate the connection time (walk times) to other modes.

**Figure 3-7. Pedestrian Pathways and Walk Distances to the Mukilteo Ferry Terminal**



**Table 3-13. Estimated Walk Distances**

Alternative	Mukilteo Station to Passenger Building (feet)	Ferry to Mukilteo Station (feet)	Bus Stop/ Transit Center to Passenger Building (feet)	Ferry to Bus Stop/ Transit Center (feet)	Second Street to Passenger Building (feet)	Ferry to Second Street (feet)	Between Bus Stop and Mukilteo Station (feet)
Existing/No-Build	1,730	1,960	190	430	880	1,120	1,850
Existing Site Improvements	1,660	2,050	580	980	850	1,240	1,110
Elliot Point 1	1,630	2,010	730	1,100	3,180	3,550	1,060
Elliot Point 2	770	1,030	410	680	2,700	2,970	1,020

**Table 3-14. Walk Travel Times to the Mukilteo Ferry Terminal (2040 PM Peak Period)**

Alternative	Mukilteo Station to Passenger Building (minutes)	Bus Stop/Transit Center to Passenger Building (minutes)	Second Street to Passenger Building (minutes)	Between Transit Center and Mukilteo Station (minutes)
Existing	9	1	4	10
No-Build	9	1	4	10
Existing Site Improvements	8	3	4	5
Elliot Point 1	9	3	14	9
Elliot Point 2	5	1	12	6

**Table 3-15. Walk Travel Times from the Mukilteo Ferry Terminal (2040 PM Peak Period)**

Alternative	Ferry to Mukilteo Station (minutes)	Ferry to Bus Stop/ Transit Center (minutes)	Ferry to Second Street (minutes)
Existing	10	2	6
No-Build	11	2	7
Existing Site Improvements	9	4	6
Elliot Point 1	11	4	16
Elliot Point 2	6	3	13

### **No-Build Alternative**

Pedestrian walk times under the No-Build Alternative would be similar to existing conditions. While walk times to the ferry would be similar to existing conditions, walk times from the ferry could increase due to higher pedestrian volumes leaving the ferry.

**Existing Site Improvements Alternative**

As shown in Table 3-14, walk times for people traveling to the passenger building from Mukilteo Station would decrease. Because the passenger building would be relocated to the east side of the SR 525/Front Street intersection, people walking from Mukilteo Station would no longer have to wait for the ferry vehicle loading/unloading process. Walk times from the transit center and the passenger building would increase because the distance between the destinations would increase by approximately 350 feet.

**Elliot Point 1 Alternative**

The average walk time between Mukilteo Station and the Mukilteo ferry terminal would increase because of the longer distance, but pedestrians would have improved facilities and fewer potential conflicts with vehicles.

People walking from the proposed transit center, located west of the ferry terminal, to the passenger terminal would travel along a walkway on Possession Sound's shoreline. Bus passengers would not have to cross vehicle traffic to access the passenger terminal because it would be located on the western edge of the ferry dock. Because the transit center would provide a long curb zone for buses, the distance and associated walk time to the passenger building would depend on bus position.

Some people who work, live, or park their vehicles in the pay-to-park lots south of Second Street would likely use Mukilteo Lane and cross the railroad tracks at the existing Mount Baker crossing. This existing railroad crossing was assumed to be open to pedestrians and emergency vehicle traffic only. The average walk time from these parking lots to the passenger building would be approximately 14 minutes, and from the ferry to the Second Street park-and-ride lot would be approximately 16 minutes. The increase in walk time for both directions would be about 10 minutes because the distance between these connections would increase by more than 2,300 feet.

**Elliot Point 2 Alternative**

The average walk time from Mukilteo Station to the passenger building would be approximately 5 minutes (see Table 3-14) and the return trip would be approximately 6 minutes (see Table 3-15), both 4 minutes shorter compared to the No-Build Alternative.

People walking from the proposed transit center, located east of the ferry terminal, to the passenger terminal would travel along a walkway on Possession Sound's shoreline. Bus passengers would not have to cross vehicle traffic to access the passenger terminal because it is located east of the ferry dock. Because the transit center would provide a long curb zone for buses to drop off passengers, the distance and associated walk time to the passenger building would depend on bus position. The average walk time from the transit center to the passenger building or from the ferry to the transit center would be slightly longer than the No-Build Alternative.

People walking from Mukilteo would either cross the railroad using the SR 525 bridge or the existing at-grade Mount Baker crossing depending on their destination. This existing Mount Baker railroad crossing was assumed to be open to pedestrians and emergency vehicle traffic only. This alternative would increase the walk time between the Second Street parking lot and the Mukilteo ferry terminal by more than 6 minutes because it increases the walk distance by more than 1,700 feet.

### **Bicycle Facility Conditions**

The addition of bicycle lanes to the roadway network varies by Build alternative. Under all alternatives, bicycles crossing the SR 525 bridge would share the lane with vehicle traffic, similar to existing conditions. Bicyclists would continue to use the vehicle tollbooths to pay their ferry fare.

#### ***No-Build Alternative***

The manner in which bicycles arrive at the Mukilteo ferry terminal, are processed through the tollbooths, are directed to the managed holding area lanes, and are loaded onto the ferry for the No-Build Alternative would remain the same as existing conditions.

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

Bicycle facility conditions for this alternative are similar to the No-Build Alternative.

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

This alternative provides bicycle lanes in both directions along First Street between SR 525 and the Mount Baker crossing.

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

This alternative provides a westbound bicycle lane on First Street between the east transit center driveway and SR 525. No bike lanes are provided in the eastbound direction along First Street.

### **3.3.4 Public Transportation**

Through 2040 and for all alternatives under consideration, Community Transit, Everett Transit, Island Transit, and Sound Transit are anticipated to continue providing bus and rail transit service connecting to the Mukilteo-Clinton ferry route.

#### **No-Build Alternative**

Access to the Mukilteo ferry terminal and the performance of transit facilities would remain essentially unchanged as shown by the transit travel times in Table 3-16.

**Table 3-16. Transit Travel Times Serving Mukilteo Ferry Terminal (2040 PM Peak Period)**

Alternative	From First Street to Bus Stop/Transit Center (minutes)	From Bus Stop/Transit Center to First Street (minutes)
Existing	0.6	0.2
No-Build	0.6	0.2
Existing Site Improvements	0.6	0.9
Elliot Point 1	1.4	1.8
Elliot Point 2	1.7	1.8

### Existing Site Improvements Alternative

A new transit center east of the holding lanes would include a ferry employee parking lot in between the bus stops. The transit center would serve scheduled bus routes as well as paratransit service. The facility could include passenger amenities such as benches, shelters, passenger information, and lighting. Space for six buses would also be provided at the transit center. Because the site is constrained, only some of the buses would be able to depart before the bus in front departed.

Because the transit center would be slightly farther than the existing stop location and because buses pass through a new signal, the route time would increase by 0.7 minute compared to the No-Build Alternative when traveling away from the transit center.

The transit center would be closer to Mukilteo Station than the existing SR 525 bus stops near Front Street (see Table 3-16). The facility would meet Everett Transit and Community Transit bus zone space requirements. Layover space for buses is not included in this alternative, but is included in mitigation (see *Section 3.7.5*). This alternative would have no impact on the Mukilteo Station parking area or passenger pick-up/drop-off area.

### Elliot Point 1 Alternative

A new transit center on the waterfront west of the new terminal would have six bus bays and passenger amenities, including a waterfront promenade, benches, shelters, passenger information, and lighting, and would serve scheduled routes and paratransit service. The facility would meet Everett Transit and Community Transit bus zone requirements, but separate layover space is not included on site.

This alternative would relocate the current bus stops at the SR 525/Front Street intersection to the new transit center. This relocation would increase the walking distance to Mukilteo Lighthouse Park and businesses along Front Street. The potential for providing additional bus zones on First Street near Park Avenue is discussed in *Section 3.7.5*.

Transit signal priority would be provided at intersections along First Street; however, transit signal priority would not interrupt ferry vehicle unloading. Because the transit center is farther than the existing stop location and because buses pass through three new signals, the route time would increase by 0.8 minute to the transit center and by 1.6 minutes away from the transit center, compared to the No-Build Alternative.

The transit center would be located approximately 290 feet closer to Mukilteo Station than the existing SR 525 bus stops near Front Street. This alternative would have no impact on the Mukilteo Station parking area; however, Sounder passenger pick-up/drop-off would likely occur in the ferry terminal parking lot because the roadway would be modified and the existing roundabout would be eliminated.

### **Elliot Point 2 Alternative**

A new transit center on the waterfront east of the new terminal would have six bus bays and passenger amenities including a waterfront promenade, benches, shelters, passenger information, and lighting, and would serve scheduled routes and paratransit service. The facility would meet Everett Transit and Community Transit bus zone space requirements, but separate layover space is not included (see *Section 3.7.5*).

This alternative would relocate the current bus stops at the SR 525/Front Street intersection to the new transit center. This relocation would increase the walking distance to Mukilteo Lighthouse Park and businesses along Front Street. Additional bus zones on First Street near Park Avenue are discussed in *Section 3.7.5*.

Transit signal priority would be provided at intersections along First Street; however, transit signal priority would not interrupt ferry vehicle unloading. Because the transit center is farther than the existing stop location and buses pass through two new signals, the route time would increase by 1.1 minutes to the transit center and by 1.6 minutes away from the transit center compared to the No-Build Alternative.

The transit center would be approximately 830 feet closer to Mukilteo Station than the existing SR 525 bus stops near Front Street. This alternative would relocate the Mukilteo Station parking as discussed in *Section 3.3.5*, and Sounder passenger pick-up/drop-off would likely occur in the terminal facility parking lot south of the transit center.

### **3.3.5 Parking**

No increase in paid parking space is projected for the No-Build and Build alternatives, and on-street parking restrictions in Mukilteo were assumed to remain unchanged. Changes in parking by alternative are shown in Table 3-17. The projected increase in ferry-related park-and-ride demand from 2010 to 2040 was 43 percent or an additional 62 vehicles. Based on a survey of how many spaces are typically occupied, adequate capacity will exist to accommodate this increase in demand.

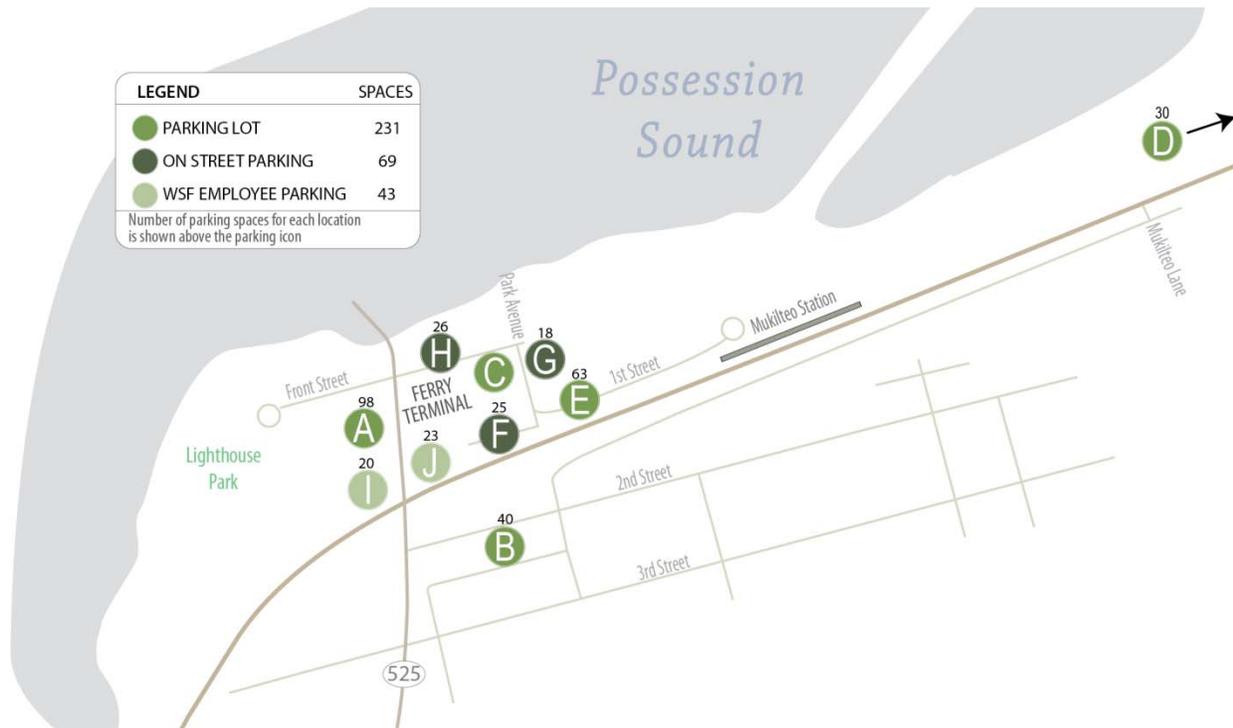
**Table 3-17. Parking Space Change by Alternative**

PARKING LOT	Parking Location	No-Build	Existing Site Improvements	Elliot Point 1	Elliot Point 2	Notes
		Number of Spaces				
<b>A</b>	Southwest corner of SR 525 and Front Street	98	109	109	109	Off-Street lot / paid (total does not include 5 vendor and 6 unmarked stalls)
<b>B</b>	Second Street between SR 525 and Park Avenue	40	40	40	40	Off-Street lot / paid
<b>C</b>	Former Buzz Inn property (southwest corner of Front Street and Park Avenue)	n/a	n/a	n/a	n/a	This 45-space lot for Ivar's Mukilteo Landing is not included in totals because its use would be displaced
<b>D</b>	Port of Everett Mount Baker Terminal	30	30	10	30	Combined Port of Everett and public lot
<b>E</b>	Mukilteo Station Parking	63	63	63	72	Sound Transit park-and-ride lot
<b>K</b>	New Lot at Terminal	--	--	43	--	Off-Street public lot
	<b>Subtotal</b>	<b>231</b>	<b>242</b>	<b>265</b>	<b>251</b>	
	Net change compared to No-Build		11	34	20	
<b>ON-STREET</b>						
<b>F</b>	First Street between SR 525 and Park Avenue	25	0	0	0	On-street / time restrictions
<b>G</b>	Park Avenue between Front Street and First Street	18	13	12	17	On-street / time restrictions
<b>H</b>	Front Street between SR 525 and Park Avenue	26	26	26	26	On-street / time restrictions
	<b>Subtotal</b>	<b>69</b>	<b>39</b>	<b>38</b>	<b>43</b>	
	Net change compared to No-Build		-30	-31	-26	
<b>Total Parking Lot and On-Street Parking Spaces</b>		<b>300</b>	<b>281</b>	<b>303</b>	<b>294</b>	
Net change compared to No-Build			-19	3	-6	
<b>WSF PARKING</b>						
<b>I</b>	WSF employee parking (west of SR 525)	20	40	40	41	WSF employees only
<b>J</b>	WSF employee parking (at Mukilteo ferry terminal)	23	13	0	5	WSF employees only
	<b>Subtotal</b>	<b>43</b>	<b>53</b>	<b>40</b>	<b>46</b>	
	Net change compared to No-Build		10	-3	3	

**No-Build Alternative**

This alternative would have no change to parking capacity near the Mukilteo ferry terminal (see Figure 3-8 and Table 3-17). The No-Build Alternative would provide slightly more than the minimum of 40 spaces needed for WSF employee parking.

**Figure 3-8. No-Build Parking Area Map**



### Existing Site Improvements Alternative

This alternative would reduce the amount of on-street and parking lot parking capacity by 19 spaces.

#### ***On-Street Parking***

This alternative would reduce the amount of on-street parking spaces near the Mukilteo ferry terminal (see Figure 3-9 and Table 3-17).

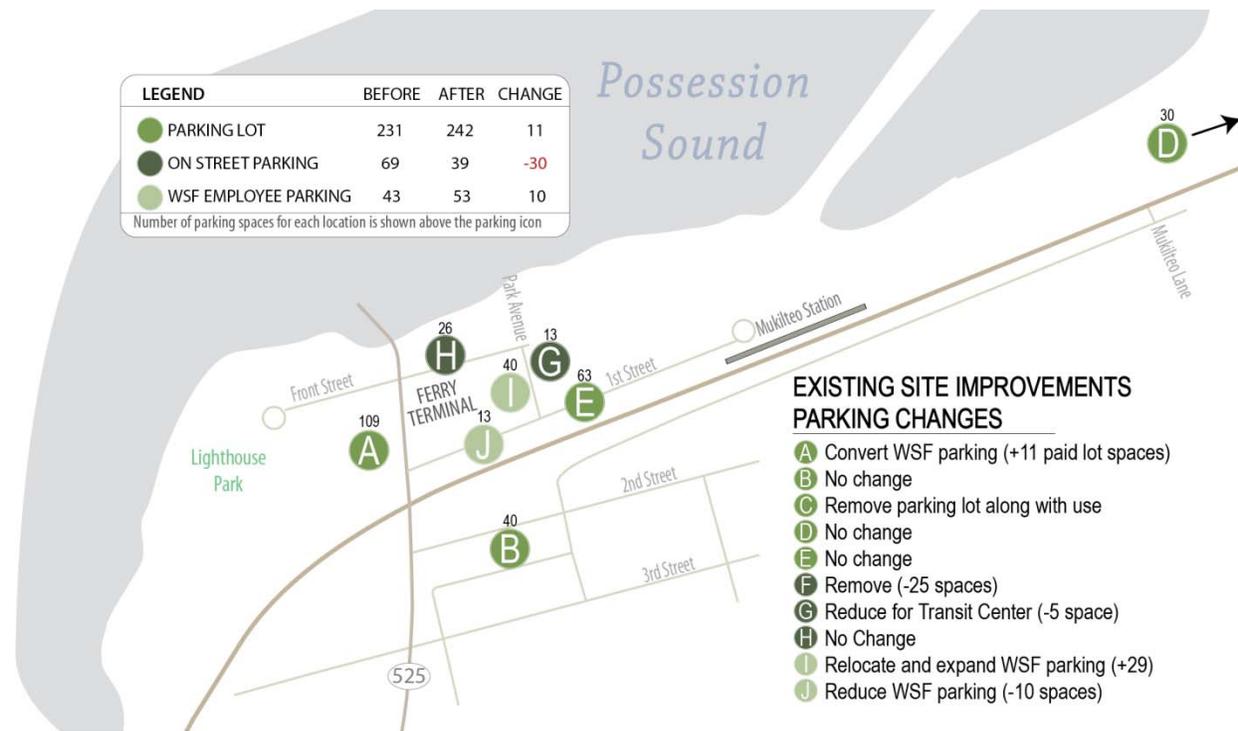
#### ***Parking Lots***

The net spaces in parking lots would be increased by 11 spaces. The removal of Ivar’s restaurant would reduce parking demand in the area.

#### ***WSF Employee Parking***

Parking for ferry terminal employees would increase from 43 spaces to 53 spaces; this amount exceeds the design criteria for 40 spaces. WSF currently uses 20 parking spaces in the existing parking lot (Lot A), but would no longer use them for employee parking; 11 parking spaces adjacent to Lighthouse Park would be converted to regular lot spaces, which would expand the parking lot (Lot A) from 98 spaces to 109 spaces. The other 9 spaces would likely revert to BNSF Railway use.

Figure 3-9. Existing Site Improvements Alternative Parking Area Map



**Elliot Point 1 Alternative**

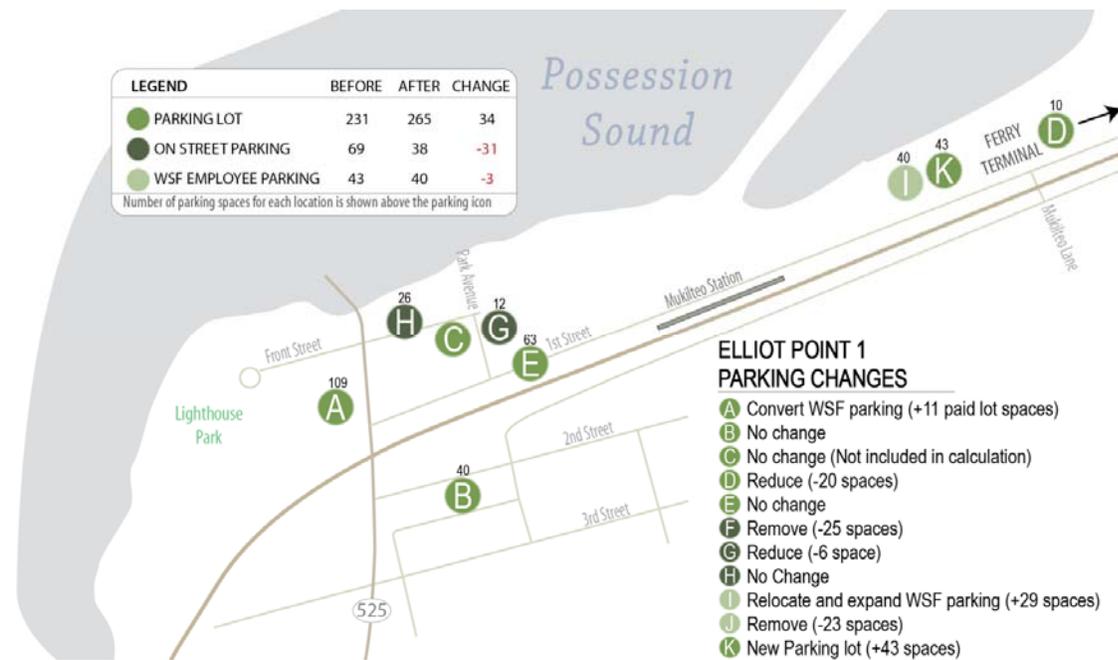
This alternative would increase the amount of on-street and parking lot parking capacity by 3 spaces (see Table 3-17).

**On-Street Parking**

The Elliot Point 1 Alternative would result in a net loss of 31 on-street parking spaces (see Figure 3-10). The widening and realignment of First Street would reduce the number of on-street parking spaces along Park Avenue and eliminate parking on First Street between SR 525 and Park Avenue. The loss of on-street parking could place additional parking demand on parking spaces west of Park Avenue.

Although some of the on-street parking would be replaced with the new parking lot at the Mukilteo ferry terminal, those spaces would be over 2,000 feet east of the Park Avenue/First Street intersection. This could increase the walk time to destinations by approximately 8 to 9 minutes. Because this parking would be used to access local businesses and the shoreline, there is little impact on ferry passengers.

Figure 3-10. Elliot Point 1 Alternative Parking Area Map



**Parking Lots**

The number of parking spaces provided in parking lots would increase by 34 spaces. A new public parking lot at the Mukilteo ferry terminal would be constructed west of the holding area and Japanese Creek. ADA compliant parking spaces would be provided at the adjacent transit center. The terminal parking would replace some of the lost on-street parking. It also would replace parking removed at the Mount Baker Terminal. Not all of the terminal parking would be removed; 10 parking spaces would be retained for Port employees, but all the public parking spaces to the shoreline access area would be removed.

The Elliot Point 1 Alternative would increase the walk time from parking areas in Mukilteo, such as the Second Street parking lot, by approximately 9 to 10 minutes compared to the No-Build Alternative. However, ferry riders affected by this travel time increase represent a small portion of total ferry ridership. Potential business ramifications are discussed in *Section 4.2 Land Use and Economics*.

**WSF Employee Parking**

WSF employee parking would be provided in a new parking lot at the Mukilteo ferry terminal, which would have 40 spaces. The existing 11 parking spaces adjacent to Lighthouse Park would be converted to regular lot spaces, which would expand the existing parking lot. The other 9 spaces would likely revert to BNSF Railway use.

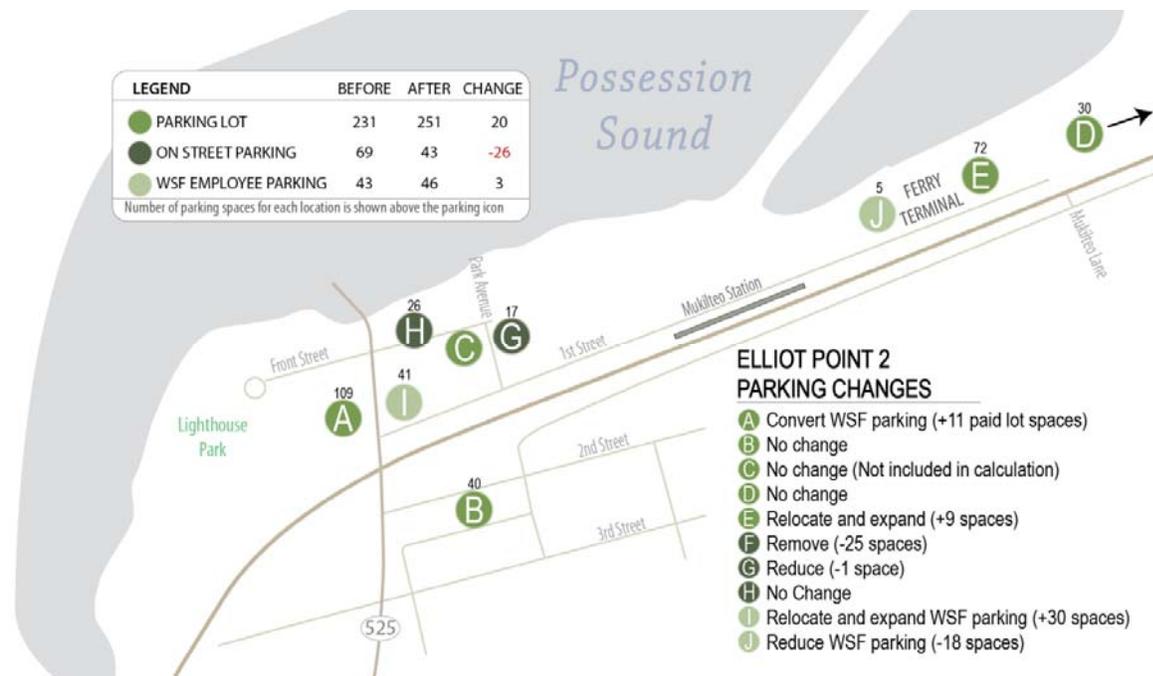
## Elliot Point 2 Alternative

This alternative would reduce the amount of on-street and parking lot parking capacity by 6 spaces (see Table 3-17).

### On-Street Parking

This alternative would result in a net loss of 26 on-street parking spaces (see Figure 3-11). The widening and realignment of First Street would reduce the number of on-street parking spaces along Park Avenue and eliminate parking on First Street between SR 525 and Park Avenue, which could place additional parking demand on parking spaces west of Park Avenue.

Figure 3-11. Elliot Point 2 Alternative Parking Area Map



### Parking Lots

The number of parking spaces provided in parking lots would increase by 20 spaces. The Sound Transit Mukilteo Station parking lot would be relocated and expanded. In addition, the parking spaces at the Mukilteo ferry terminal would be signed and managed for Mukilteo Station parking only, which could limit the use of this parking area for ferry terminal pick-up/drop-off activity. The relocated Mukilteo Station parking lot would be approximately 900 feet from Mukilteo Station, which would maintain the station's parking supply but would increase passenger walk time by approximately 4 minutes. For general travelers this would be an inconvenience, but for persons with disabilities it would reduce their access to Mukilteo Station.

The Elliot Point 2 Alternative would increase the walk time from parking areas to the ferry terminal in Mukilteo, such as the Second Street parking lot, by approximately 6 to 8 minutes compared to the No-Build Alternative. However, ferry riders affected by this travel time increase represent a small portion of total ferry ridership. Potential business ramifications are discussed in *Section 4.2 Land Use and Economics*.

### **WSF Employee Parking**

WSF employee parking would be relocated to the western portion of the existing holding area, and approximately 41 spaces would be provided. An additional 5 spaces would be provided in the new holding area. The remainder of the existing holding area and the existing WSF employee parking area would be vacated. The existing 11 parking spaces adjacent to Lighthouse Park would be converted to regular lot spaces, which would expand that lot's capacity from 98 spaces to 109 spaces.

## **3.3.6 Freight**

### **Rail Operations**

Rail operations would not be impacted by any of the Build alternatives. The rail spur crossing Mukilteo Lane, which connects the Port of Everett and Paine Field, would experience an increased number of pedestrian crossings. However, it is used irregularly, and the indirect increase in foot traffic due to the opened shoreline access area would not impact rail operations.

### **Truck Freight**

At the Mukilteo ferry terminal, truck freight traffic would continue to be directed to the designated holding area freight lane for the No-Build and Existing Site Improvements alternatives. These lanes permit the truck lane to load independently of other ferry vehicle traffic. For the Elliot Point 1 and Elliot Point 2 alternatives, truck freight could be required to mix with other ferry traffic in the holding area during peak periods because there would be fewer lanes to manage traffic.

## **3.4 Construction Impacts**

This section describes the anticipated impacts from construction of the No-Build and Build alternatives. All project alternatives would involve both physical and operational changes to existing ferry terminal facilities and other facilities in the project area. Also, construction activities would sometimes increase congestion on SR 525 during the peak periods of travel.

### **3.4.1 General Considerations for all Alternatives**

#### **Limited Access to the Mukilteo Ferry Terminal**

An unavoidable challenge with construction activities for the Mukilteo ferry terminal is the limited access to the site; it can only be accessed by SR 525. Construction

access through the Mount Baker crossing is impossible because the roadway has load limit restrictions, is subject to landslides, is designated as a quiet zone, and would require trucks to use residential streets.

### **Construction Timing and Activities**

WSF policy limits construction activities to the off-peak season unless the construction activity is an emergency or would not impact ferry riders. Although the impact of construction activities would be less during the off-peak season between September and May, the off-peak season still sees substantial demands during evening commute periods. Similar to current conditions, ferry shoulder queuing on SR 525 could extend past Goat Trail Road and passengers could be waiting for over an hour to load the ferry during construction activities.

### **Duration of Construction**

The No-Build Alternative would still involve construction activities for the replacement of the Mukilteo ferry terminal's aging infrastructure. The No-Build Alternative construction consists of smaller projects lasting approximately 3 to 6 months over the next 20 years. All of the Build alternatives would remove the existing terminal and construct an improved terminal and supporting facilities with either a different layout (Existing Site Improvements Alternative) or at a new site (Elliot Point 1 and Elliot Point 2 alternatives). The Existing Site Improvements Alternative would have construction activities lasting 1 to 2 years; the Elliot Point 1 and Elliot Point 2 alternatives have more construction activities and would last about 3 to 4 years, although major activities would last only about 2 years.

The estimated length of construction could be either longer or shorter depending on design, permit conditions, phasing, and the contractor's construction approach. Construction timing and duration would also depend on the availability of funding and other approvals. Major activities for any of the Build alternatives could begin by 2016, and the terminal would likely begin operation in 2019 or 2020. Site development and site preparation activities, such as property acquisition, demolition, and some utility relocation activities, could occur any time after the environmental process is complete, which is expected by 2014.

### **Duration of Mukilteo Ferry Terminal Closure**

The duration of the Mukilteo ferry terminal closure, which would divert ferry trips from Mukilteo to Edmonds during construction activities, varies by alternative. In summary, WSF would stage the No-Build Alternative work to limit the closure to only 4 to 9 months. The Existing Site Improvements Alternative construction activities that would close the terminal are anticipated to last 3 to 6 months. The Elliot Point 1 and Elliot Point 2 Alternatives construction could occur without closure or with a short closure overnight or on a weekend.

### 3.4.2 No-Build Alternative

For this alternative, the construction activities associated with maintenance and structure replacements that would close the terminal are anticipated to last 4 to 9 months.

During initial construction, activities requiring temporary facility closure could be scheduled for weekends and nights to minimize disruptions to ferry users. During Mukilteo ferry terminal closure, ferry service would be diverted to Edmonds. Passenger-only service could be maintained between Clinton and Mukilteo. Commuters would see an increase in their travel times and, potentially, need to change how they travel during this period.

Because the sailing time between Clinton and Edmonds is approximately 50 minutes compared to the 15-minute sailing time between Clinton and Mukilteo, travel time across Possession Sound would increase by approximately 35 minutes. This increased sailing time also means that fewer ferry trips per day would occur with the current number of ferries serving the routes. Currently, there are 37 ferry trips a day between Mukilteo and Clinton; the number of daily trips would be reduced to approximately 18 trips when sailing between Edmonds and Clinton. With fewer ferry trips, it is likely that more ferries would sail full, increasing the potential wait times for passengers who would need to wait for the next sailing.

In response, people would likely change their travel patterns in the following ways:

- **Driving:** Vehicles would be redirected to Edmonds, which would reduce the amount of traffic on SR 525 in Mukilteo and increase traffic on SR 524 and SR 104 in Edmonds. Cross streets connecting to SR 524 and SR 104 would experience negligible, if any, changes in traffic volumes. However, those streets would nevertheless experience delay because of the increased vehicular traffic on SR 524 and SR 104. Some of the people who previously chose to take their vehicles on the ferry may decide to drive around the north end of Whidbey Island on SR 20 or shift to a walk-on passenger mode because of the increase in ferry wait times.
- **Rail Passengers:** When the Mukilteo-Clinton route is diverted to Edmonds, passengers who continue their trip on the Sounder commuter rail would be able to connect at the Edmonds Station. The Sounder commuter rail would still provide service to Mukilteo.
- **Bus Passengers:** People making a connection between bus transit and the Mukilteo ferry terminal would need to alter their bus route, or Community Transit would need to temporarily reroute some of their service.
- **Park-and-Ride:** People who travel from Mukilteo to Clinton and leave vehicles in parking lots in Mukilteo may not be impacted if passenger-only service is maintained between Mukilteo and Clinton. Community Transit

would likely provide service between Edmonds and Mukilteo for people who want to commute from parking areas in Mukilteo to Edmonds if passenger-only ferry service was not provided. The lack of passenger-only ferry service could also cause some people to seek park-and-ride space near the Edmonds ferry terminal.

- ***Bicycles:*** The distance between the Mukilteo and Edmonds ferry terminals is approximately 14 miles, which is a long commute for bicyclists. Some bicyclists may choose alternative modes.
- ***Walk-on Passengers:*** The majority of walk-on passengers would experience the effects described for rail, bus, and park-and-ride passengers. The remaining portion of walk-ons would need to use another mode of transportation because the distance between the Mukilteo and Edmonds ferry terminals is too far to walk.
- ***Trip Avoidance or Disruption:*** Some people may elect not to take some ferry trips during this time. These trips would tend to be elective and recreational trips, and not work commute trips; however, work trips could also decrease. Closure during the peak summer season would have more impact on ferry users traveling in vehicles than the fall to spring season.

During the full closure periods, construction truck trips along SR 525 to the Mukilteo ferry terminal would peak for fill, asphalt, and concrete deliveries. These trips would likely be subject to travel restrictions during peak ferry times. This increase in truck traffic is not anticipated to greatly impact roadway operations because of the decrease in ferry vehicle traffic during the terminal closure.

Some of the on-street parking along Front Street closest to SR 525 would be temporarily removed during construction activities.

### **3.4.3 Existing Site Improvements Alternative**

This alternative would reconstruct the Mukilteo ferry terminal and its related facilities at the current site, which would be expanded and realigned to accommodate additional vehicle holding required to support the larger ferry vessels. Front Street and Park Avenue would become one-way roadways and First Street would be extended to a new intersection with SR 525.

The Mukilteo ferry terminal would continue to operate during the construction of most terminal replacement elements. Construction activities would still require schedule changes, including limited evening or weekend sailings, or weekend closures, but most of the site and facilities could be developed without affecting ferry operations. Full closure would be required for 1 to 2 months to replace the transfer span and other terminal elements. During this time, ferry service would be re-routed to Edmonds with effects similar to those described in the No-Build Alternative.

Some short-duration lane closures could occur; traffic operations would be maintained by a one-way flagger control. Because SR 525 provides the only access over the BNSF tracks, there are no detour alternatives. Construction-related truck traffic would occur on SR 525, primarily related to material deliveries and removal of demolition debris.

Construction activities for the First Street extension would require temporary short-term closures of one or two lanes on SR 525, which would likely occur during non-peak ferry periods. This activity could be phased towards the end of the project to minimize disruption to the regular ferry operations. The First Street extension construction would last 3 to 4 months.

The transit center could be constructed early. Buses could then temporarily use Front Street and Park Avenue to access the relocated bus zones. Some parking along Front Street would be temporarily removed to accommodate the larger turning radius required for buses.

#### **3.4.4 Elliot Point 1 Alternative**

The Elliot Point 1 Alternative would relocate the ferry terminal to the eastern portion of the Mukilteo Tank Farm, extending to the Port of Everett's Mount Baker Terminal.

The existing terminal would remain fully functional until the new multimodal facility is ready, then it would be removed. The shift to the new terminal could occur overnight or with a short closure at night or on a weekend. Demolition of the existing facility would cause a short-term increase in truck traffic on SR 525.

The extension of First Street would likely occur late in construction to avoid impacts on the existing facilities. During this 3- to 4-month construction period, all ferry traffic would use Front Street and Park Avenue to access First Street, increasing congestion.

Depending on construction phasing, development of the First Street extension could affect access to the Mukilteo Station parking lot.

#### **3.4.5 Elliot Point 2 Alternative**

The Elliot Point 2 Alternative would relocate the ferry terminal to the western portion of the Mukilteo Tank Farm. First Street would be realigned and extended west as a four-lane roadway, with a signalized entrance to the new ferry terminal. Construction impacts would resemble those of the Elliot Point 1 Alternative, except the impact on Mukilteo Station parking would have a longer duration because it is removed and relocated as part of this alternative.

### **3.5 Indirect and Secondary Impacts**

Indirect effects result from one project but, unlike direct effects, typically involve a chain of cause-and-effect relationships that can take time to develop and can occur at

a distance from the project site. Induced growth or growth-inducing effects are terms used to mean indirect effects related to changes in land use, population density, or growth rate.

The base land use assumptions used to develop the future travel demand forecasts for this project (using the WSF Long-Range Plan model) are consistent with the State Growth Management Act (GMA) plans in Island County and Snohomish County. Therefore, the potential for “induced growth” is largely already incorporated into the forecasts as “planned growth” consistent with GMA plans. Also, because future vehicle volume increases are constrained by vessel capacity and there is a large estimated increase in walk-on passengers compared to vehicles in the future, the potential for any induced vehicle travel would be very small for this project.

### **3.6 Cumulative Impacts**

Cumulative effects are the incremental impacts of all effects of the project including past and present actions in the study area, and the effects of reasonably foreseeable, planned projects in the study area. Most of the cumulative impacts to transportation are already assumed in the future year transportation projections used for the direct impact analysis in *Section 3.4*. This includes expectations for increased local and regional population and employment growth, and the resulting increases in travel. Some of the other future development actions in the area could result in other impacts that could create different cumulative effects.

#### **3.6.1 Redeveloped Existing Mukilteo Ferry Terminal Site**

If either of the Elliot Point alternatives is selected, most of the existing Mukilteo ferry terminal site would be vacated. While redevelopment of the site could increase vehicle and passenger trips, the growth is expected to be within the range of growth already predicted in the regional growth forecasts and traffic growth rates used for the traffic analysis. The City is also exploring opportunities to create additional parking spaces on the southeast corner of the Mukilteo Tank Farm site. This could create an opportunity to offset some of the displaced parking spaces due to the build alternatives, but it also could increase traffic or require added traffic control revisions on First Street depending on the Mukilteo alternative.

#### **3.6.2 Sound Transit Mukilteo Station**

Sound Transit’s Mukilteo Station has been developed in phases with a second phase of the project now underway to add a platform on the south side of the tracks, and provide a pedestrian bridge to connect the two platforms.

Sound Transit also plans to develop additional commuter parking, but a specific site and layout has not yet been confirmed. Sound Transit is coordinating its planning and design process for the second phase with the Mukilteo Multimodal Project,

because the Build alternatives could alter the current station's access or layout, as well as potential sites for added commuter parking.

The development of more commuter parking for Mukilteo Station would improve accessibility for park-and-ride transfers to rail service. Rail service growth in the future is anticipated to increase as congestion builds on area roadways.

To evaluate cumulative effects associated with Sound Transit's garage, the Mukilteo ferry terminal project team considered traffic impacts from up to 130-stalls serving the station. Analysts assumed the garage would add 75 vehicle trips traveling to the structure, and 20 vehicle trips leaving the structure during the PM peak hour. The SR 525/Fifth Street intersection is anticipated to have slightly more delay but would operate below the City's LOS D standard with or without the parking garage.

### **3.6.3 NOAA Fisheries Service Mukilteo Research Station Expansion**

NOAA Fisheries Service operates a laboratory immediately east of the Mukilteo ferry terminal and plans to expand this facility, subject to a property transfer from the U.S. Air Force. While the plans are in early stages, they appear unlikely to result in high levels of trips to the facility, beyond future levels already assumed in the traffic analysis in *Section 3.4*.

### **3.6.4 Port of Everett Mount Baker Terminal**

While the Elliot Point 1 Alternative would complete a permanent access road to the Mount Baker Terminal, other alternatives would not. Instead, the Port of Everett would complete the access road once the U.S. Air Force property transfer is complete, assuming the transfer occurs as expected, otherwise, the Port could seek a permanent easement from the U.S. Air Force or the ultimate property owner. Traffic conditions would be similar to those already assumed with the Mukilteo Multimodal Project.

### **3.6.5 Mount Baker Crossing**

Mount Baker Crossing is an improved at-grade crossing of the BNSF tracks connecting Mukilteo Lane in the city of Mukilteo to the Mukilteo Tank Farm, including an area that is within the city of Everett. It is gated to vehicles to restrict access, but would be open to pedestrians to travel to the shoreline access area near the Mount Baker Terminal when the area is officially open. The Elliot Point 1 and Elliot Point 2 alternatives assume that the crossing would be for pedestrians and emergency vehicle access only. General traffic, Port of Everett traffic, or ferry traffic would not be permitted to use the crossing.

The City of Mukilteo has expressed interest in opening the Mount Baker crossing to general-purpose traffic. The Mukilteo Multimodal Project does not propose a general purpose traffic rail crossing at this location. If the City of Mukilteo, City of Everett, Port of Everett, or other agency proposed opening Mount Baker crossing to vehicular traffic, it could conflict with operations for some of the Mukilteo Multimodal Project

alternatives, particularly Elliot Point 1. The concerns would include intersection safety and potential ferry queue jumping.

### **3.6.6 SR 525 Bridge**

The SR 525 bridge over the BNSF railroad has been evaluated by WSDOT bridge engineers. Its current structural capacity and condition do not warrant rehabilitation or replacement at this time, even though it does not fully meet ADA standards. The City of Mukilteo has expressed an interest in accelerating the replacement of the SR 525 bridge, but its replacement is not currently funded.

Eventually, construction of a new bridge with current ADA design standards could improve the safety and the quality of pedestrian travel in the area and would complement the other multimodal investments related to the Mukilteo Multimodal Project. Enhanced pedestrian facilities could increase walk trips by residents traveling from downtown to waterfront destinations, but volumes would likely remain similar to those assumed for the project alternatives. Construction of the bridge would likely require closure of SR 525, affecting access to the waterfront, Mukilteo ferry terminal, and Mukilteo Station.

## **3.7 Mitigation Measures**

This section discusses measures that could mitigate the adverse effects identified above. They are relatively conceptual at this stage. The final EIS will include more detail and indicate which ones would be incorporated into the project.

### **3.7.1 Mukilteo Ferry Terminal**

#### **Access Lanes and Vehicle Holding Area**

The number of vehicle lanes on First Street between the Mount Baker crossing and the tollbooths could be expanded to extend the priority HOV bypass lane for the Elliot Point 1 Alternative. Currently, the proposed design has one inbound lane to access the tollbooths and one outbound lane. The outbound lane is required for safety and for allowing people who accidentally enter the holding area a way to leave without impacting operations. An additional lane could be provided by reducing the landscaping on the north side of the holding area and shifting the holding area to the north.

### **3.7.2 Intersections Projected to Exceed Level of Service Standards**

This section describes potential mitigation actions to improve the operations at intersections that would not meet the City of Mukilteo standards. Most of the delay at study area intersections is due to background growth and not the Mukilteo ferry terminal. Therefore, the proportionate share for mitigating the increase in delay is also small.

## **SR 525/Front Street Intersection**

### ***No-Build and Existing Site Improvements Alternatives***

The 2040 intersection LOS E is for non-ferry traffic, which incurs most of its delay during the ferry loading and unloading process. When ferry traffic is not being loaded or unloaded, this intersection would operate at or better than the LOS D standard. The proportionate share of ferry vehicle traffic growth through this intersection for all 2040 traffic is 12 percent.

To reduce the delay to non-ferry traffic during ferry loading and unloading, the following mitigation actions could be taken:

- ***Allow northbound SR 525 vehicles to turn left during ferry loading.*** Currently, some vehicles are able to make this turn during the loading process; however, to be conservative in the intersection analysis, it was assumed the northbound left turn was prohibited. Evaluation of vehicle turning radii is needed to ensure there is adequate space for turning movements (two westbound right-turn lanes, one northbound left-turn lane, and an eastbound right-turn lane).
- ***Provide additional breaks in the loading and unloading process.*** Although this would benefit non-ferry traffic, adding time to the ferry turnaround process (loading and unloading) could cause some ferries to miss their scheduled sailings and passengers to miss their connections to the bus or train. When ferries miss scheduled sailings, the shoulder queuing length on SR 525 would increase and the amount of time ferry passengers wait for their ferry would increase.

### ***Elliot Point 1 and Elliot Point 2 Alternatives***

The SR 525/Front Street intersection is projected to operate at LOS B for these alternatives; therefore, no mitigation is needed.

## **SR 525/88th Street SW Intersection**

The SR 525/88th Street SW intersection is a two-way stop-controlled intersection; only traffic on 88th Street SW is required to stop. By 2040, the operating conditions at this intersection are projected to degrade to LOS F for all alternatives because of the projected increase in vehicles passing through this intersection. The vehicle traffic from 88th Street SW represents 3 percent (65 vehicles) of this intersection's volume during the 2040 PM peak hour. The estimated proportion of ferry traffic passing through this intersection is approximately 21 percent, but the growth in traffic from 2010 to 2040 attributed to ferry traffic would be approximately 5 percent.

The following mitigation actions would reduce delay for 88th Street movements:

- *Provide left-turn lanes.*
- *Convert lanes to right-turn pockets on 88th Street SW. Disallow left turns and through movements from 88th Street, diverting traffic to 92nd Street traffic light.* This would improve operations for eastbound and westbound right-turning vehicles from LOS F to LOS C.

### **SR 525/Fifth Street Intersection**

The SR 525/Fifth Street intersection would operate at LOS E during the 2040 PM peak period for all alternatives. Delay for all movements at this intersection would be increased because the northbound ferry and non-ferry traffic movements have separate signal controls. Because ferry vehicle traffic would queue in the shoulder lane, a red light would stop ferry traffic so northbound right turns could be completed safely. The estimated proportion of ferry vehicle traffic passing through this intersection is approximately 46 percent in the 2040 PM peak hour, but the growth in traffic from 2010 to 2040 attributed to ferry traffic is approximately 11 percent.

### **No-Build, Existing Site Improvements, and Elliot Point 2 Alternatives**

To improve the LOS at this intersection, the following mitigation action could be taken:

- Convert the Fifth Street westbound right-turn only lane into a shared left-turn/right-turn lane and extend the merge area on SR 525 south of this intersection to provide additional merge space for traffic turning onto southbound SR 525 from Fifth Street southbound. This action would improve the intersection operations to LOS D.

### **Elliot Point 1 Alternative**

During the 2040 PM peak period, the modeled vehicle queue from the tollbooths would not extend to SR 525. If ferry and non-ferry traffic combined into the local lane (a shared through/right-turn lane) at the SR 525/Fifth Street intersection, it would operate at LOS C. However, the improvement described above for the other Build alternatives would likely be needed during the summer months.

## **3.7.3 Ferry Crossing Level of Service**

As summarized in *Section 3.3.1*, by 2040 the Mukilteo-Clinton ferry route is projected to fail to meet the WSF Level 1 Standard; therefore, WSF should consider operational strategies to reduce peak period travel demand. The 2030 Long-Range Plan has identified nine categories of strategies to manage demand:

1. Vehicle Reservation Systems
2. Transit Enhancements
3. Non-motorized Enhancements

4. Optimized Fare Collection Techniques
5. Enhanced User Information
6. Scheduling
7. Traffic and Dock Space Management
8. Promotion and Marking of Non-SOV Modes
9. Parking and Holding

The ability of the project to implement some of these demand management strategies varies by alternative. After identifying a locally preferred alternative, WSDOT would begin work with stakeholders to identify specific strategies to manage demand and improve terminal operations.

### **3.7.4 Non-Motorized Transportation**

#### **Bicycle Facilities**

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

Bicycles leaving the ferry would be required to mix with vehicle traffic, which could increase the time it takes to unload the ferry. A westbound bicycle lane could be provided along First Street from SR 525 to the tollbooth entrance road, and extended to the parking area, complementing the proposed eastbound bicycle lane. Also, a bicycle lane should be provided from the transfer span to First Street along the ferry exit roadway. This would improve bicyclist comfort, reduce conflicts with unloading vehicle traffic, and could decrease ferry unloading time.

### **3.7.5 Transit**

The Elliot Point 1 and Elliot Point 2 alternatives would relocate the current bus stops at the SR 525/Front Street intersection to a transit center east of the new terminal. This relocation would degrade connections made to Mukilteo Lighthouse Park and businesses along Front Street by increasing the walking distance. Mitigation could include additional bus stops on First Street near Park Avenue.

Community Transit and Everett Transit buses would be able to use curb lane stops during most times of the day, except during peak afternoon/evening periods when vehicle queues from the tollbooths could block the eastbound bus stop location. This blockage would occur more frequently for the Elliot Point 2 Alternative.

Alternatively, for the Elliot Point 2 Alternative, bus stops could be placed east of the new tollbooth entrance. They could be used by all bus trips, including those during the afternoon peak periods, and could maintain pedestrian connectivity to the waterfront and Mukilteo Lighthouse Park, as well as enhance connectivity to Mukilteo Station.

## **Bus Layover**

To address concerns about the lack of layover space, and the preference of the City of Mukilteo and the transit providers to not layover in Mukilteo Lighthouse Park, WSDOT could consider providing layover space at the new transit centers.

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

This alternative could provide bus layover space for approximately three buses along the western edge of the transit center with some modifications to the transit center layout. Buses would circulate through the transit center after dropping off passengers, and lay over against the eastern edge of the holding lanes, separated from the Mukilteo ferry terminal by a fence.

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

This alternative could provide layover space for five or six buses along the south side of the bus zone. This mitigation would reduce the width of the parking area travel lane and landscaping area.

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

This alternative could designate one of the three travel lanes on First Street as bus layover space. Layover space for approximately four buses could be provided. Buses would circulate through the transit center after dropping off passengers, and lay over against the southern curb of the First Street extension, south of the transit center.

## **3.7.6 Parking**

This section describes how mitigation measures could reduce the loss of parking capacity near the Mukilteo ferry terminal.

### **No-Build Alternative**

No mitigation is required for this alternative because there is no change in the parking supply.

### **Existing Site Improvements Alternative**

The preliminary design for this alternative would result in a loss of 30 on-street parking spaces near the Mukilteo ferry terminal. Mitigation to offset the loss could be difficult due to the lack of available land, but some spaces could be created on First Avenue or as off-street spaces in coordination with the City of Mukilteo.

### **Elliot Point 1 Alternative**

Although preliminary designs for this alternative would mitigate the displaced spaces from Mukilteo Station, safety at Mukilteo Station is a concern because access to the parking lot would be changed with the addition of the First Street extension. To improve safety, the Mukilteo Station parking lot could be refined to switch the

orientation of the parking stalls and improve the vehicle approach angle to the driveway exit onto First Street. Combining the separate parking entrances at the new terminal could add about 10 spaces. For the loss of on-street spaces, WSDOT could work with the City to define potential on-street or off-street replacements.

### **Elliot Point 2 Alternative**

To offset on-street parking loss, the WSF employee parking lot that is proposed on the existing terminal site could be expanded. Converting this parking lot to shared public and WSF employee parking use would require the lot to be managed. Other on-street or off-street spaces could also be developed in coordination with the City of Mukilteo.

Reconfiguring the layout of the Elliot Point 2 Alternative might allow some or all of Mukilteo Station's replacement parking to be located closer to the platform. WSDOT could also explore opportunities to place disabled parking at Mukilteo Station.

### **3.7.7 Construction Mitigation**

#### **General Construction Mitigation**

For all alternatives, a construction traffic control plan would mitigate construction impacts. Like the plan developed for the Port of Everett Rail/Barge Transfer Facility, the plan could:

- Restrict some daytime construction activities to minimize traffic and noise impacts.
- Schedule major activities such as larger concrete pours or large volume deliveries to be outside of peak seasonal or peak commute periods. Double-length trucks would also be limited to off-peak periods.
- Manage truck traffic to avoid multiple trucks on local streets such as Front Street and Park Avenue at the same time.
- Construct one- or two-way First Street intersection first and route all construction traffic on First Street.

Mukilteo ferry terminal construction could last up to 2 years, depending on the alternative. During that time, all ferry-related traffic would be routed to the Edmonds ferry terminal.

For the longer closures of the Mukilteo ferry terminal, WSDOT could do the following:

- **Communication and education campaign.** This strategy would alert and educate ferry passengers on how to complete their trip. The campaign would focus on ways to complete a trip without taking a vehicle on the ferry.
- **Signage.** Signage elements throughout the region (such as I-5) would redirect traffic to Edmonds. Additional signage around the Edmonds ferry terminal

would be needed to provide direction for local circulation and to instruct ferry traffic not to block driveways and intersections.

- *Passenger-only service from Clinton to Mukilteo.* During construction it may be feasible to run a passenger-only ferry service from Clinton to Mukilteo to maintain connections to park-and-ride, bus, and rail transit.
- *Bus service from Edmonds to Mukilteo.* Bus service from the Edmonds ferry terminal to existing bus routes at the Mukilteo ferry terminal or key destinations would maintain multimodal connectivity during construction.
- *Extended Edmonds ferry terminal shoulder queuing area.* Based on WSDOT experience in March 2011 with the temporary routing of Mukilteo-Clinton ferries to the Edmonds ferry terminal, additional space for queuing and separating vehicle traffic would be necessary. Two lanes on SR 104 from Dayton Street south to Paradise Lane could be used to separate vehicle traffic destined to Clinton or Kingston.

For short-term closures, WSDOT would provide a broad-based communication program to inform travelers and others, and to minimize disruptions.

### **Additional Mitigation for Mukilteo Station Parking Impacts**

To mitigate the construction impacts of the Elliot Point 1 and Elliot Point 2 alternatives on access and parking for the Mukilteo Station, temporary parking may be needed. WSDOT would coordinate with Sound Transit and the City of Mukilteo to identify additional temporary parking supply and to develop construction staging plans that would minimize impacts on access and parking.

