1 PURPOSE AND NEED

1.1 PURPOSE OF THE PROJECT

The purpose of the United States Highway Route 2 (US 2) Westbound Trestle Project (Figure 1) is to develop a long-term solution that:

- Improves travel reliability for motorists, transit vehicles, freight, bicyclists, pedestrians, and emergency responders
- Improves safety for all users
- · Provides improved system linkages to support regional and local planned growth
- Provides a structurally sound solution that corrects roadway deficiencies and utilizes a full life-cycle cost approach
- Incorporates WSDOT's core value of sustainability

Because the US 2 eastbound structure better meets the transportation needs for eastbound travel, it is not considered in the context of this Purpose and Need.

15th St 19th St 23rd St 5 83rd Ave SE 204 **Everett** Hewitt Ave 2 20th St SE Cavalero Rd **EBEY** ISLAND 43rd Ave SE **Project Location** 0.5 Miles

Figure 1: US 2 Westbound Trestle Vicinity

1.2 NEED FOR THE PROJECT

1.2.1 THE EXISTING CORRIDOR

US 2 was extended west from Idaho to Everett, Washington, in 1948 as part of the national highway system. US 2 is currently continuous between SR 529 in Everett and St. Ignace, Michigan. US 2 is one of three, year-round routes that cross the Cascades in Washington State, and it provides access to many recreational opportunities in local, state and national parks. The US 2 Westbound Trestle Project "project area" is the portion of US 2 between the Interstate 5 (I-5) and SR 204/20th St SE interchanges, inclusive of the interchange areas with those facilities (Figure 1). US 2 in the project area is a highway of statewide significance, an important T1 (carrying more than 10 million tons of freight per year) and Connector freight route, and is designated as a federal and state urban principal arterial and scenic byway (WSDOT 2016). The western end of US 2 is a multi-modal, east-west corridor connecting I-5 and the city of Everett to the businesses, industries and residential communities east of the Snohomish River. US 2 is one of four routes that cross the Snohomish River, and it is the shortest-distance route between Everett and communities east of the Snohomish River including Snohomish, Lake Stevens and Marysville.

US 2 crosses the Snohomish River, Ebey Island, and Ebey Slough on parallel structures. The eastbound structure was built in the 1990s and carries 2 general-purpose and one peak-period shoulder lane that operates from 2 PM to 7 PM. The westbound trestle was completed in 1968 and carries 2 lanes of general-purpose traffic on a 30-foot curb-to-curb roadway section.

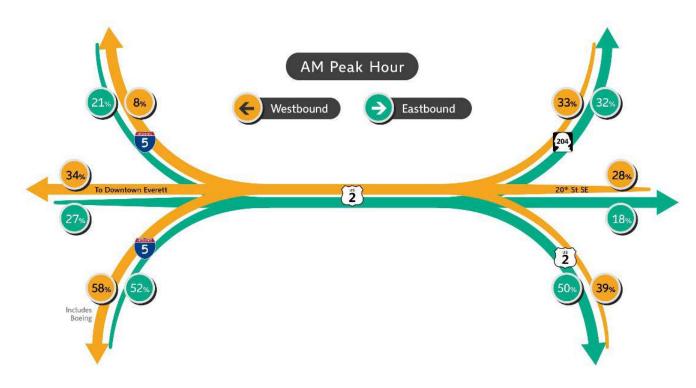
1.2.2 EXISTING CAPACITY AND ABILITY TO ACCOMMODATE CURRENT AND FUTURE TRANSPORTATION DEMAND

TRAFFIC

In 2017, US 2 trestle carried 81,000 vehicles (combined directions) across the Snohomish River on an average day, of which 9 percent were trucks (WSDOT 2018b). Westbound morning traffic volumes begin to build before 5 AM and peak between 7AM and 9 AM with an AM-peak weekday hourly volume of 3,200 vehicles. Currently, about 93 percent of the passenger vehicles that use the westbound trestle during the AM peak hour are single-occupant vehicles (WSDOT 2018c).

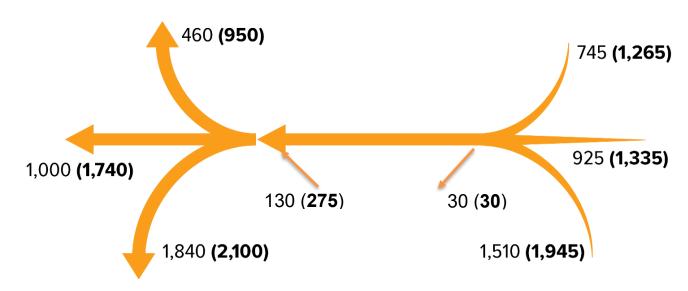
illustrates distribution of traffic that crosses the US 2 trestle in the AM peak hour (WSDOT 2018c). The origins of the westbound traffic demand on the trestle in the AM peak period are split between SR 204 and 20th St SE, and US 2, which is the source of almost 40 percent of the traffic demand. At the west end of the trestle, most of the traffic is heading into downtown Everett or onto southbound I-5 (includes traffic going to Boeing). Existing and 2040 demand volumes across the trestle are shown in Figure 3.

Figure 2. US 2 AM Peak-hour Trip Distribution



Source: WSDOT 2018c

Figure 3. US 2 AM Peak-hour Existing and 2040 Travel Demand Volume



Note: 2016 and (2040) travel demand volumes

Source: WSDOT 2018c

AM-peak corridor travel times for 2016 and projected for 2040 assuming the current corridor configuration are shown in Table 1. Traffic delays for westbound trips across the US 2 trestle are expected to substantially worsen by 2040.

Table 1. AM-peak US 2 Corridor Travel Times

Trip		20)16	2040		
From	То	Direction	Time (min: sec)	Average Speed (mph)	Time (min: sec)	Average Speed (mph)
SR 204 at 81st Ave SE	I-5 at Pacific Ave	Westbound	13:45	19	32:00	8
20th St SE at 83rd Ave SE	I-5 at Pacific Ave	Westbound	9:05	25	28:05	8
US 2 at Bickford Ave	I-5 at Pacific Ave	Westbound	8:05	30	14:20	17
I-5 at Pacific Ave	SR 204 at 81st Ave SE	Eastbound	4:55	51	5:05	50
I-5 at Pacific Ave	20th St SE at 83rd Ave SE	Eastbound	4:55	45	5:35	39
I-5 at Pacific Ave	US 2 at Bickford Ave	Eastbound	4:55	55	5:00	53
Source: WSDOT 2018c	Source: WSDOT 2018c					

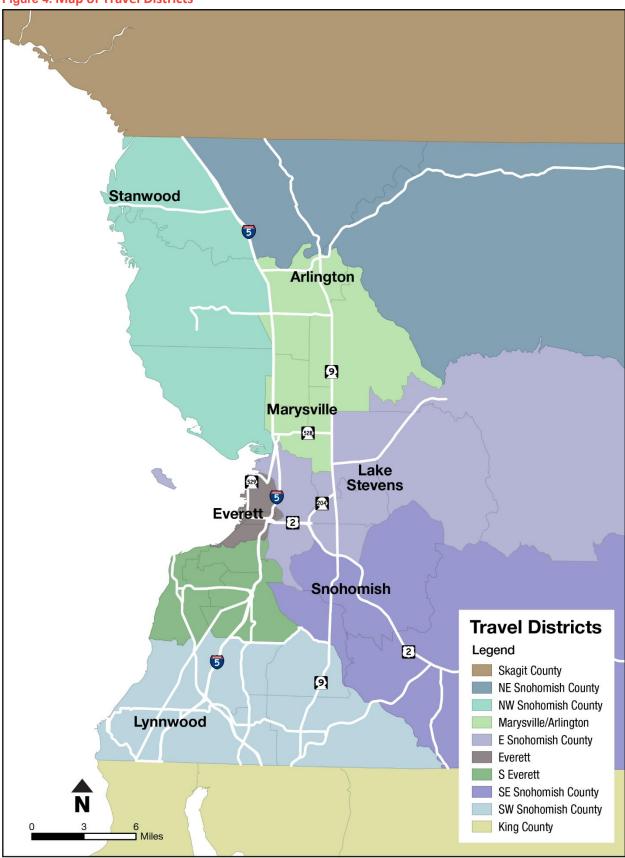
The origin and destination districts (Figure 4) for existing AM peak period (6 AM to 9 AM) trips across the US 2 westbound trestle are tabulated in Table 2. The greatest number of trips originate in the Lake Stevens area, with most of those trips traveling to Everett and South Everett.

Table 2. AM-peak Period Origin and Destination Pairs for Westbound Trestle Trips

							DESTINAT	ION					
		King. Co	SW Snohomish Co.	SE Snohomish Co.	S Everett	Everett	E Snohom ish Co.	Marysville/ Arlington	NW Snohomish Co.	NE Snohomish Co.	Skagit	Others	Total
ORIGIN		1	2	3	4	5	6	7	8	9	10	11	
King Co.	1	-	-	-	7	17	-	8	5	-	11	1	49
SW Snohomish Co.	2	-	-	-	0	72	-	43	19	6	61	18	219
SE Snohomish Co.	3	92	267	-	894	542	-	106	48	17	235	16	2,218
S Everett	4	-	-	-	-	-	-	-	-	-	-	-	0
Everett	5	-	-	-	-	-	-	-	-	-	-	-	0
E Snohomish Co.	6	466	1,559	-	2,201	2,097	-	43	42	11	16	62	6,496
Marysville/ Arlington	7	24	140	-	79	42	-	-	-	-	-	1	285
NW Snohomish Co.	8	-	-	-	-	-	-	-	-	-	-	-	0
NE Snohomish Co.	9	1	8	-	8	4	-	-	-	-	-	-	21
Skagit	10	-	-	-	-	-	-	-	-	-	-	-	0
Others	11	-	-	-	-	-	-	-	-	-	10	-	10
Total		583	1,974	0	3,189	2,774	0	201	114	33	332	98	9,298

Source: WSDOT 2019b

Figure 4. Map of Travel Districts



Source: WSDOT 2019b

WSDOT sets level of service (LOS) standards for state highways. The US 2 trestle has an LOS standard of "C", while the interchanges with I-5 and with SR 204/20th Street SE have an LOS standard of "D" (WSDOT 2019c). LOS C is defined as stable traffic flow with speeds near free flow, while LOS D is approaching unstable flow with speeds declining as volume increases. The average speeds for westbound traffic shown in Table 1 indicate that these standards are not currently met.

FREIGHT

The US 2 westbound trestle is a T1 and Connector freight route with 9 percent of its daily traffic as trucks. Truck traffic shares capacity with the general-purpose traffic and both contributes to and experiences the same congestion as that traffic. Continuing east over Steven's Pass, US 2 becomes a T3 (carries between 300,000 and 4 million tons of freight per year) and alternative freight route (WSDOT 2017b). As the most direct alternative corridor to the I-90 T1 freight corridor crossing the Cascade Mountains to the Puget Sound region, US 2 provides an important alternative if I-90 is closed to freight for any reason. WSDOT recognizes US 2 as an important link in the aerospace supply chain, linking aerospace product and parts manufacturing business locations (WSDOT 2017b). Freight speed and reliability experience the same conditions as general purpose traffic in the corridor.

TRANSIT

The westbound US 2 trestle is currently used by Community Transit Routes 270/271, 280 and 425. These routes connect communities on the US 2 corridor, including Gold Bar, Sultan, Monroe and Snohomish, and the US 92 corridor, including Granite Falls and Lake Stevens, to Everett Station, Boeing facilities at Paine Field, and downtown Seattle. Collectively, they make 14 westbound trips across the trestle during the AM peak. Currently approximately 400 westbound passenger trips are carried by transit across the US 2 trestle in the AM peak. Because there are no HOV or transit-priority facilities, transit riders in the corridor currently experience the same congestion and traffic delays as general-purpose traffic, and would experience the same increase in travel times shown in Table 1.

NON-MOTORIZED

Based on pedestrian and bicycle counts collected once per year between 2009 and 2017, on average 18 bicycles and 7 pedestrians use US 2 to cross the Snohomish River during the morning (7 to 9 AM) and afternoon (4 to 6 PM) commute periods (WSDOT 2019a). Low non-motorized transportation volumes often correspond to a lack of safe or connected bicycle and pedestrian facilities.

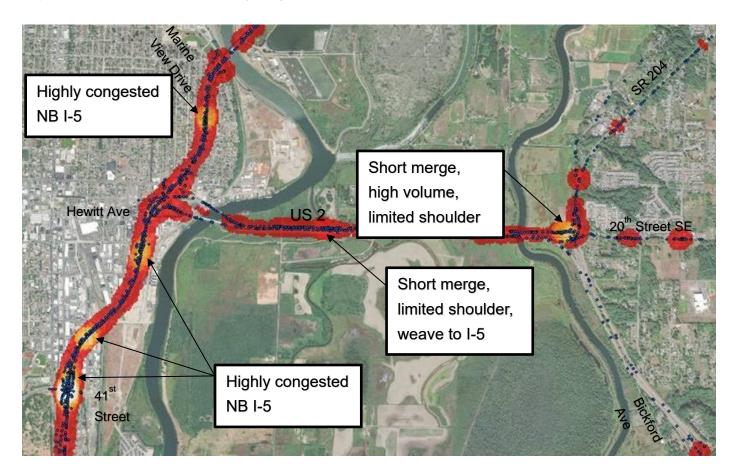
There are no non-motorized facilities on westbound US 2, however the lower roadway (20th Ave SE) under the US 2 trestle is open to pedestrians and cyclists traveling in either direction and it includes bike route signs, but no separation from traffic. Traffic volumes on the lower roadway are low. Cyclists and pedestrians are required to cross the Snohomish River on the eastbound US 2 bridge. The shared path on the eastbound structure is narrow for two way cyclists to maneuver. In the east end of the corridor, the shoulder on the 20th Street SE bridge is signed as a bike lane; however, the intersection with SR 204 is signed as end bike route. There are no designated non-motorized facilities connecting through the 20th Street SE intersection with SR 204 from other directions. Under current conditions, there is not a safe and continuous non-motorized connection into and through the US 2 corridor between the vicinity of I-5 and vicinity of SR 204/ 20th Street SE.

1.2.3 **SAFETY**

Washington State has adopted Target Zero, a goal to reduce traffic fatalities and serious injuries on Washington's roadways to zero by the year 2030. The state's goal is zero deaths and serious injuries, because every life

counts. Westbound US 2 experiences a high frequency of collisions. Mapping collision frequency (Figure 5), indicates concentrations of collisions in three areas along the US 2 westbound trestle project area: the US 2 and I-5 interchange area, the Ebey Island on-ramp, and the SR 204/20th Street SE merge with westbound US 2.

Figure 5. Collision Locations and Frequency



Source: WSDOT 2018c

The US 2: Everett Port/Naval Station to SR 9 Corridor Study (WSDOT 2016) showed that a high percentage of collisions on US 2—81 percent (464 collisions)—occurred between the I-5 interchange area and the SR 204/20th Street SE interchange area (Table 3)¹.

¹ The US 2 Everett Port/Naval Station to SR 9 Corridor Study evaluated US 2 from Everett Port to SR 9. The US 2 Westbound Trestle Project area is shorter and includes US 2 from the I-5 interchange to the SR 204/20th Street SE interchange.

Table 3. US2: Everett Port/Naval Station to SR 9 Corridor Study Collision Data

US 2 Interchange Area	Number of Collisions	Percent of Corridor Collisions
I-5 to SR 204		
I-5	140	25%
Ebey Island	145	25%
SR 204	179	31%
East of SR 204		
Bickford Avenue	38	7%
SR 9	67	12%
Total	569	100%

Source: WSDOT Statewide Travel and Collision Data Office, October 2012; US 2: Everett Port/Naval Station to SR 9

Corridor Planning Study, August 2016.

Congestion on westbound US 2 near the I-5 interchange causes vehicles to frequently change lanes resulting in a high percentage of rear-end and sideswipe collisions in the I-5 interchange area. As westbound travelers approach the US 2/SR 204/20th Street SE interchange, congestion and merging also results in a high percentage of rear-end and sideswipe collisions in this area.

Statewide, the number of pedestrian and bicyclist fatalities have increased every year between 2013 and 2017. There is no designated bicycle facility on westbound US 2 or connections to other facilities east of the US 2/SR 204/20th Street SE interchange. [In 201x, a bicyclist was killed in a crash at the SR 204 and 20th Street SE intersection].

1.2.4 SYSTEM LINKAGE AND REGIONAL PLANNED GROWTH

US 2 provides a critical east-west linkage between Everett, the state's sixth most populated city and a major employment center, and communities where many employees of Everett-based businesses reside, such as Lake Stevens, Marysville, and Snohomish (Figure 4). Major employers in Everett include Port of Everett, Everett Naval Yard, Boeing, Providence Regional Medical Center, Esterline Control Systems, Fluke Electronics, and Verizon Communications. The Boeing plant in Everett has approximately 3,880 employees that reside east of the US 2 trestle and rely on this connection for their daily commute.

The Puget Sound region is expected to grow to 5.0 million people, with 3.0 million jobs by 2050 (PSRC 2017); as this growth occurs, the US 2 connection between Everett and communities to the east will become increasing critical. Consistent with the Washington State Growth Management Act, coordinated regional and local planning efforts will focus growth in regional growth centers to protect rural and natural resource lands, minimize environmental impacts, and make efficient use of new and existing infrastructure. The Puget Sound Regional Council's Vision 2040, Snohomish County Comprehensive Plan, and the cities' comprehensive plans outline objectives and policies to implement the GMA, directing future urban growth into the urban areas of Snohomish County. These documents plan for population and employment growth in the communities that depend on US 2 as a critical transportation connection.

As the largest city in Snohomish County with 20% of the county's population and 40% of the county's jobs, Everett is identified as a regional growth center in the Puget Sound Regional Council's Vision 2040. The Puget Sound Regional Council projects the population of Everett to grow by 76,695 people between 2015 and 2040, an increase of 73% over a 25-year period, as shown in Table 4. Likewise, during this same 25-year period, Everett is planned to add 62,710 jobs, an increase of 62%. Lake Stevens, Marysville, and Snohomish are also anticipated and planned

to experience substantial population and employment growth, resulting in many more people traveling across US 2 on a daily basis. These communities are growing at substantially higher rates than Snohomish County, the Puget Sound Region as a whole and the state of Washington, as illustrated in Figure 6. Improvements to the US 2 Westbound Trestle are critical to implementing the population and employment growth planned under the Growth Management Act, Vision 2040, and county and city comprehensive plans.

Table 4. Population and Employment 2015 and 2040

		Population				Employment			
Area	2015	2040 Projection	Change in Population		2015	2040 Projection	Change Employn		
City of Everett	105,608	182,303	76,695	73%	100,817	163,527	62,710	62%	
City of Lake Stevens	29,803	41,700	11,897	40%	5,246	8,087	2,841	54%	
City of Marysville	63,682	93,003	29,321	46%	15,442	29,030	13,588	88%	
City of Snohomish	9,422	14,009	4,587	49%	6,066	8,986	2,920	48%	
Snohomish County	758,162	1,044,927	286,765	38%	311,069	458,937	147,868	48%	
Puget Sound Region	3,914,972	4,957,920	1,042,948	27%	2,165,116	2,981,498	816,382	38%	
Washington State	7,061,410	9,235,561	2,174,151	31%	3,546,000	4,601,800	1,055,800	30%	

Notes:

The Puget Sound Region consists of four counties: King County, Kitsap County, Pierce County, and Snohomish County. Sources: PSRC 2017; WOFM 2018a; WOFM 2018b.

100% 88% 90% 80% 73% 70% 62% 60% 54% 49% 48% 48% 46% 50% 40% 38% 38% 40% 31% 30% 27% 30% 20% 10% 0% City of Everett City of Lake City of Marysville City of Snohomish **Puget Sound** Washington State Stevens Snohomish County Region ■ Population Growth ■ Employment Growth

Figure 6. Projected Population and Employment Growth 2015-2040

Notes:

1. The Puget Sound Region consists of four counties: King County, Kitsap County, Pierce County, and Snohomish County.

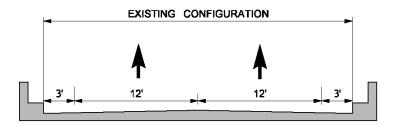
Sources: PSRC 2017; WOFM 2018b.

While current ramp volumes to (30 vehicles in the AM peak) and from (130 vehicles in the AM peak) Ebey Island are low (Figure 3), they are important for eastbound connectivity from the island.

1.2.5 ROADWAY DEFICIENCIES

Westbound US 2 is designated as a principal urban arterial with a 55 mile per hour posted speed. The existing US 2 Westbound Trestle was completed in 1968 and is 30 feet wide, curb to curb, with two 12-foot travel lanes and 3-foot wide shoulders (Figure 7). WSDOT's highway design manual specifies a 4-foot minimum lateral clearance between the edge of the traveled way and curb or barrier for principal urban arterials with high speeds (posted 50 miles per hour and above); however, curb is not recommended (WSDOT 2017a). The current westbound trestle has a capacity of around 3,900 vehicles per hour, which would increase to around 4,100 vehicles per hour if the constraints at the US 2/SR 204/20th Street SE interchange were removed.

Figure 7. Existing Westbound US 2 Configuration



Traffic safety data can be an indicator of roadway deficiencies such as geometric conditions that warrant correction to reduce the number of crashes (WSDOT 2018c). For example, clusters of accidents that occur evenly throughout the day, independent of traffic demand, are a common indicator of a problematic geometric roadway condition (WSDOT 2018c). Traffic data shows that for two segments along US 2, milepost 0 to 1 and milepost 1 to 2, crashes are spread throughout the day (Figure 8).

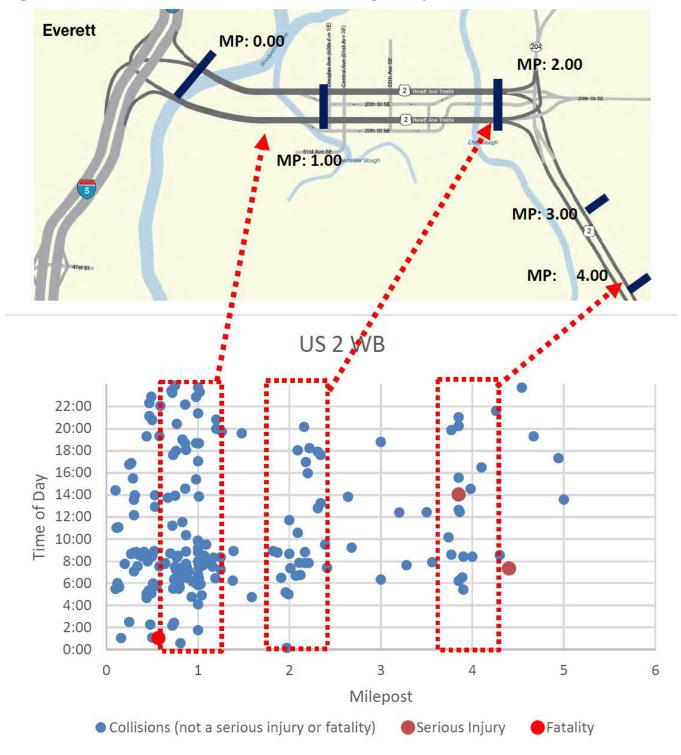


Figure 8. Distribution of US 2 Westbound Trestle Crashes throughout Day

Source: WSDOT 2018c

The SR 204/20th Street SE on-ramps join westbound US 2, followed 1,800 feet later by a left exit to Ebey Island. Although a small portion of maneuvers, vehicles that entered US 2 at the interchange and need to exit at the Ebey Island off-ramp experience a weaving conflict with vehicles already traveling along westbound US 2 (Figure 9). Additionally, the merge of SR 204 and 20th St SE (near milepost 2) has been cited by travelers as a location of

poor visibility due to an existing hill that makes seeing cars difficult (WSDOT 2018c). Difference in speed between vehicles on 20th St SE and those on SR 204 is enough to create a challenging merge (WSDOT 2018c).

Traffic from SR 204
Traffic from 20th St SE
Traffic from US 2

To Ebey 20th St SE

20th St SE

N

Illustration not to scale

Figure 9. US 2/SR 204/20th Street Southeast Interchange and Ebey Island Off-ramp Maneuvers

The WSDOT Bridge Office began a retrofit pilot project in 1999 to remove cracked concrete and corrosion and apply anti-corrosion treatment and carbon fiber to strengthen the girders. Based on the results from the pilot project, additional rehabilitation was completed to the trestle between 2007 and 2011. In 2013, the WSDOT Bridge Office assessed that with regular maintenance the trestle could be structurally maintained until approximately 2045.

1.2.6 SUSTAINABLE TRANSPORTATION

WSDOT's Sustainable Transportation program advances a durable, adaptable and integrated statewide transportation system that supports Washington's economy, preserves the environment and enhances our communities. It includes specific benchmarks and strategies for reducing greenhouse gas emissions from transportation and adapting our system to be better prepared for climate change.

Currently approximately 7 percent of vehicles using the existing US 2 Westbound Trestle in the morning-peak are not single-occupant vehicles. This is lower transit and HOV use than the current target of 32 percent non-single-occupant vehicle use for the Puget Sound Region (WSDOT 2018e).

Additionally, WSDOT must meet current stormwater treatment requirements for all new and reconstructed facilities. Stormwater from the existing trestle flows off the trestle untreated.

REFERENCES

Puget Sound Regional Council (PSRC) 2017. Land Use Vision version 2 Dataset. April 2017

WSDOT 2018a. US 2 Westbound Trestle Funding and Finance Study. January 2018.

WSDOT 2018b. WSDOT Traffic GeoPortal. Data retrieved January 8, 2019

WSDOT 2018c. US 2/SR 204/20th Street SE Interchange Justification Report. April 2018. Prepared by Parsons.

WSDOT 2018d. Gray Notebook. Quarterly performance analysis of WSDOT's Multimodal Systems and Programs. Active Transportation: Annual Safety Report. March 2018.

WSDOT 2018e. 2018 Corridor Capacity Report. November 2018.

WSDOT 2019a. WSDOT Bicycle and Pedestrian Count Portal.

http://wsdot.maps.arcgis.com/apps/webappviewer/index.html?id=12b44775815446159c6a240218c2cf5a. Date retrieved January 29, 2019.

WSDOT 2019b. US 2 Trestle Project Travel Demand Modeling – Base Year Validation Results. February 2019. WSDOT 2019c. WSDOT Level of Service Standard.

https://www.arcgis.com/home/item.html?id=3f840aeeb1ba481c905270ca103cd1db. Date retrieved May 16, 2019.WSDOT 2017a. Highway Design Manual. July 2017.

WSDOT 2017b. 2017 Washington State Freight System Plan

WSDOT 2016. US 2: Everett Port/Naval Station to SR 9 Corridor Planning Study, August 2016.

Washington State Office of Financial Management (WOFM) 2018a. State Population Forecast. November 2018 Washington State Office of Financial Management (WOFM) 2018b. Long-term Economic Forecast. June 2018



MEMO

TO: David Warner (WSP)

FROM: Brian Woodburn (Parametrix)

CC: Michael Horntvedt (Parametrix)

SUBJECT: 05.03.01 Preliminary Transportation Methods and Assumptions

DATE: December 13, 2018

TEAM PARTICIPANTS

EXECUTIVE TEAM MEMBERS, ROLES, AND RESPONSIBILITIES

Work underway as part of this phase of the project will involve an executive advisory group that will be composed of elected officials from the state government and high-level management staff from the affected jurisdictions and agencies. This team will be responsible for participating in the executive advisory group (EAG) meetings as representatives of their constituents. They will identify key issues that the project team should consider as they outline the needs of the project and develop alternatives.

TECHNICAL TEAM MEMBERS, ROLES, AND RESPONSIBILITIES

Similar to the executive advisory group, a technical working group (TWG) will convene to discuss technical issues related to the project team's outline of the needs, development of the alternatives, and description about potential outcomes. This group will consist of staff from the jurisdictions and agencies that will be able to discuss the technical details and provide suggestions that could improve the alternatives' efficiency and cost effectiveness.

PLANNING LINKAGE

It is essential to link the transportation planning processes, outputs, and improvements considered in this study with the planning processes in other agencies, including addressing multimodal connectivity. The improvements considered should be consistent with local land use plans and local, regional, and state transportation plans.

PERTINENT PLANNING DOCUMENTS

The analysis described in this methods and assumptions document will consider the regional plans listed below to account for and ensure consistency with anticipated growth, development, and transportation network improvements described in the regional plans:



- US 2 Corridor Study
- SR 9/SR 204/20th Street Interchange Justification Report (IJR)
- US 2 West Trestle Funding and Finance Study
- US 2 Everett Port/Naval Station to SR 9 Corridor Planning Study
- Comprehensive Plans and Transportation Improvement Programs for the following:
 - > Snohomish County
 - > City of Everett
 - > City of Lake Stevens
 - > City of Marysville
 - City of Snohomish
- Puget Sound Regional Council (PSRC) Transportation 2040
- Washington State Department of Transportation (WSDOT) 2017 2020 Statewide Transportation Improvement Program
- Community Transit 2016 2021 Transit Development Plan
- Sound Transit 2 and 3 funding packages

PRIOR COMMUNITY ENGAGEMENT

The SR 9/SR 204/20th Street IJR included a community engagement work element and gathered input from key stakeholders and the general population through interviews and a public survey. The stakeholders included surrounding municipalities, public transportation officials, and bicycle and trucking interest groups. Several key themes were consistent throughout the interviews:

- The current interchange operations are poor during peak travel times, and stakeholders are supportive of a study to identify near-term improvements to relieve congestion.
- The desired priority of improvements varied, but all agreed that the near-term improvements must not adversely impact local streets and communities or hinder potential for long-term improvements; i.e., the recommended improvements should consider and complement regional and future transportation planning.
- Potential future improvements that reduce travel time and increase speed and reliability are key indicators that the study is successful.

In addition to individual stakeholder interviews, a public survey was conducted to solicit input directly from the general population regarding the issues at the study interchange. More than 2,700 surveys were collected, of which the majority represented daily users of the interchange. The survey results included the following:



- 73 percent of respondents reported that travel time through this interchange has increased by more than 5 minutes in the last 5 years.
- 77 percent of respondents reported traveling through the interchange as a single vehicle occupant.
- 56 percent of respondents reported avoiding using the interchange to access U.S.
 Highway 2 (US 2) at least some of the time, instead using an alternate route to westbound US 2.

CONTINUED COMMUNITY ENGAGEMENT

This project will include ongoing community engagement efforts, and the analysis will be updated as appropriate based on information and input from the community.

ENVIRONMENTAL LINKAGE

The processes used in this study will be aligned with the environmental documentation process to reduce duplication of effort. Environmental staff will be engaged in the process to ensure compliance with the National Environmental Policy Act (NEPA)/State Environmental Policy Act (SEPA) as the project progresses and a preferred alternative is identified.

COMMUNITY ENGAGEMENT

Maintaining a transparent outreach process is important for keeping the public engaged in the project and informed about project findings.

Traffic operations data, evaluation, screening information, and results developed throughout the project will be used to create community engagement materials. All community engagement materials will follow the Quality Control (QC) process and be reviewed internally with the state to ensure accuracy before being shared with the public.

ALTERNATIVES SELECTION

This section describes the process for determining reasonable alternatives (non-access and access), including alternative development and screening.

PROJECT NEED AND PERFORMANCE MEASURES

The first step in the alternatives selection process is to establish the project need, which would then be used toidentify performance measures or metrics for the transportation system. The performance measures will be applied to determine the extent by which existing and future nobuild conditions fall short of meeting the project need (i.e. performance gaps), along with input from project stakeholders. The evaluation of needs will consider the following:



- Trip and travel characteristics of people who use the US 2 Trestle
- General purpose traffic, freight traffic, and transit operations
- Transit and HOV access
- Nonmotorized (bicycle, pedestrian) connectivity and access
- Safety
- Environmental impacts

ALTERNATIVES DEVELOPMENT

Reasonable non-access and access alternatives that address the performance gaps and support the project need will identified and developed through coordination with WSDOT and project stakeholders. This includes confirming assumptions about the benefits and implementation of proposed alternatives.

A workshop will be held to determine the applicability of alternatives identified in previous workshops, develop potential revisions to previously identified alternatives, and develop new alternatives. This project will consider the interdependence of US 2 with other surrounding roadways, and previously developed concepts that either meet the purpose and need, or can be revised to meet the purpose and need, are open for evaluation.

ALTERNATIVES SCREENING

Following the alternatives development, the alternatives screening process will be conducted so that a preliminary preferred alternative can be selected. The screening process will consist of three levels, with the amount of detail evaluated increasing at each level. The alternatives may be revised or redefined as they are being evaluated to better meet the purpose and need.

FIRST-LEVEL SCREENING - QUALITATIVE

The first-level screening will be used to eliminate from further consideration alternatives determined to have physical or operational fatal flaws, or that do not meet the project need. No quantitative analysis will be performed during the first-level screening. General purpose traffic, transit and nonmotorized access, nonmotorized connectivity, and environmental impacts will be qualitatively assessed. Up to 12 alternatives will pass through the first-level screening.

SECOND-LEVEL SCREENING – DYNAMIC TRAFFIC ASSIGNMENT MODEL

In the second-level screening, the alternatives will be evaluated quantitatively using the Dynameq traffic model. The performance metrics used to screen the alternatives in Dynameq will be developed in coordination with WSDOT and are anticipated to include the following:



- Person throughput
- Vehicle throughput and demand
- Travel times
- Speeds
- Lengths of queue
- Duration of congestion

Transit and nonmotorized access, nonmotorized connectivity, and environmental impacts will be qualitatively evaluated. Up to four alternatives will pass through the second-level screening.

THIRD-LEVEL SCREENING – MICROSIMULATION MODEL

The third-level screening process will further define and evaluate, at a more detailed level, the remaining alternatives. All motorized traffic operations (general purpose, high-occupancy vehicle [HOV], transit, and freight) will be quantitatively analyzed using the VISSIM traffic model. The performance metrics used to screen the alternatives in VISSIM will be developed in coordination with WSDOT and are anticipated to include the following:

- Person throughput
- Vehicle throughput
- Travel times
- Speeds
- Queues¹
- Extents and duration of congestion²

TRAFFIC OPERATIONAL ANALYSIS SCOPE AND SCALE

STUDY YEARS

The study years include existing year (2018) and horizon year (2040).

DATA COLLECTION

Data collected in October 2018 will be used to validate, and update as necessary, the travel demand model (EMME), dynamic traffic assignment model (Dynameq), and microsimulation model (VISSIM) developed as part of the US 2/SR 204/20th Street IJR. Data collected in October 2018 includes the following:

¹ Queues refer to the length of fully stopped traffic, e.g. at stop signs, traffic signals, or ramp meters.

² Speeds will inform the extents and duration of congestion on highway corridor segments. Per WSDOT's Handbook for Corridor Capacity Evaluation (2nd edition, 2016) roadways are congested when speeds are less than 75 percent of the posted speed, and severely congested when speeds are less than 60 percent of the posted speed.



- 24-hour roadway segment volumes
 - > State Route (SR) 531 west of 67th Avenue NE
 - > 88th Street NE west of State Avenue
 - > 4th Street east of State Avenue
 - > SR 204 south of Sunnyside Boulevard
 - > 20th Street west of Cavalero Road
 - > US 2 west of SR 9
 - > SR 9 north of 30th Street
 - ➤ US 2 east of Interstate 5 (I-5)
 - > SR 9 south of Cathcart Way
- 2-hour AM and 2-hour PM peak period turn movement counts
 - > I-5 northbound off-ramp and 4th Street
 - > I-5 southbound on-ramp and Marine View Drive NE
 - > SR 9 and 64th Street (SR 528)
 - > SR 9 and Granite Falls Highway (SR 92)
 - > SR 9 and SR 204
 - > Avenue D and 15th Street
 - > SR 9 and 108th Street SE
- Floating Car Travel Times were collected during the 5-hour morning (4:00–9:00 AM) and evening (1:30–6:30 PM) commute periods between the following origins/destinations (three locations west of the trestle and three locations east of the trestle equates to nine origin/destination pairs and 18 pathways):
 - > I-5 north of Marine View Drive
 - > US 2 ramps to and from Downtown Everett
 - > I-5 at the SR 526 interchange
 - > SR 204 at 81st Avenue
 - > 20th Street at SR 9
 - > US 2 at Bickford Avenue

The floating car travel time runs were recorded with a dash camera and the videos will be reviewed to observe locations and durations of congestion. The trips were also tracked using a Global Positioning System (GPS) application to record the speed along the pathway. The speed data will be reviewed in tandem with the dash camera video to determine the actual speed at each point on the corridor during congested conditions.

• Streetlight data will be collected at a zone-group level to support travel demand model validation by providing a general origin and destination pattern for traffic that uses the



US 2 trestle and connecting facilities. This level of model validation will provide the team with a better understanding of how people are making travel choices.

In addition to the data collection described above, this study will utilize data collected for the US 2/SR 204/20th Street IJR, listed below.

- Peak Hour Queuing was observed in November 2016, and January and February 2017 during the AM and PM peak periods at the following locations:
 - > I-5 and US 2 interchange
 - > US 2 and SR 204 interchange
 - > 20th Street SE corridor
 - > SR 204 corridor
- Travel Time Runs were conducted during the peak periods on the following corridors:

Table 1. Peak Period Travel Time Runs

Corridor	Description	Data Collection Dates
SR 204	I-5 from 41st Street across US 2 trestle to 81st Avenue NE on SR 204	November 16 and 17, 2016
20th Street SE	I-5 from 41st Street across US 2 trestle to 83rd Avenue SE on 20th Street SE	November 16 and 17, 2016
US 2	I-5 from 41st Street across US 2 trestle to US 2/SR 9 interchange	January 31 and February 1, 2017

 Seven-day Tube and Vehicle Classification Counts were collected at the following locations:

Table 2. Seven-day Tube and Vehicle Classification Counts

Location	Tube Count Location	Dates of Collection
1	WB US 2 to SB I-5	11/17/16 – 1/23/16
2	WB US 2 to NB I-5	12/1/16 — 12/7/16
3	WB US 2 to California Street	11/17/16 - 11/23/16
4	WB US 2 to Walnut Street	11/14/16 - 11/19/16
5	NB I-5 to EB US 2	11/30/16 – 12/7/16
6	SB I-5 to EB US 2	11/17/16 – 11/23/16
7	Hewitt Avenue to EB US 2	12/1/16 — 12/7/16
8	NB I-5 to Pacific Avenue	11/13/16 - 11/20/16
9	Pacific Avenue to SB I-5	11/14/16 - 11/19/16
10	Everett Avenue to NB I-5	11/14/16 - 11/19/16
11	SB I-5 to Everett Avenue	11/17/16 – 11/23/16
12	EB US 2 on trestle	WSDOT PTR (Oct. 2016)
13	WB US 2 on trestle	WSDOT PTR (Oct. 2016)



Table 2. Seven-day Tube and Vehicle Classification Counts (continued)

Location	Tube Count Location	Dates of Collection
14	EB US 2 East of Bickford Interchange	11/30/16 - 12/7/16
15	WB US 2 East of Bickford Interchange	11/30/16 - 12/7/16
16	Bickford to WB US 2	11/14/16 - 11/19/16
17	EB US 2 to Bickford	11/17/16 - 11/23/16
18	Bickford to EB US 2	11/14/16 - 11/19/16
19	WB US 2 to SR 204	12/11/16 - 12/17/16
20	SR 204 to EB US 2	12/11/16 – 12/17/16
21	EB US 2 to 20th Street SE (at west end of trestle and at US 2/SR 204 interchange)	12/1/16 – 12/7/16
22	EB US 2 to SR 204	11/27/16 - 12/4/16
23	20th Street SE to WB US 2 (at US 2/SR 204 interchange and on west end of trestle)	11/27/16 – 12/4/16
24	SR 204 to WB US 2	11/27/16 – 12/4/16
25 EB	20th Street east of SR 204	11/30/16 – 12/7/16
25 WB	20th Street east of SR 204	11/30/16 – 12/7/16
26 NB	SR 204 north of 9th Street SE	12/8/16 – 12/14/16
26 SB	SR 204 north of 9th Street SE	11/28/16 - 12/4/16
27 SB	Sunnyside Boulevard SE south of 9th Street SE	11/27/16 – 12/4/16
27 NB	Sunnyside Boulevard SE south of 9th Street SE	11/27/16 – 12/4/16
28 EB	20th Street SE east of Cavalero Road	11/27/16 – 12/4/16
28 WB	20th Street SE east of Cavalero Road	11/27/16 – 12/4/16

NB = northbound; SB = southbound; WB = eastbound; EB = eastbound



- Daily boardings and alightings by stop were provided by Community Transit for routes 280 and 425.
- Vanpool program information provided by Community Transit
- WSDOT collected occupancy data at two locations on I-5
- Peak period turning movement counts were collected at the following locations:

Table 3. Peak Period Turning Movement Counts

Intersection	Intersection Location —	Count	t Date
#	Intersection Location -	AM	PM
1	SR 204 and 20th Street SE	11/29/16	12/6/16
2	SR 204 and Sunnyside Boulevard SE	12/7/16	12/1/16
3	SR 204 and 9th Street SE	11/17/16	12/1/16
4	20th Street SE and Cavalero Road	12/13/16	12/7/16
5	51st Avenue SE and 20th Street WB ramps	11/30/16	12/1/16
6	51st Avenue SE and 20th Street EB ramps	12/1/16	12/1/16
7	20th Street SE and 79th Avenue SE	11/17/16	12/7/16
8	83rd Avenue SE and 20th Street SE	2/2/17	2/2/17
9	91st Avenue SE and 20th Street SE	2/9/17	2/1/17
10	S Lake Stevens Road and 87th Avenue SE	2/9/17	2/1/17
11	S Lake Stevens Road and SR 9	2/1/17	1/31/17
12	Sinclair Avenue and Bickford Avenue	2/9/17	2/1/17
13	SR 9 and 4th Street SE	2/1/17	1/31/17
14	SR 9 and 20th Street SE	2/1/17	1/31/17

WB = westbound; EB = eastbound



TRAFFIC FORECASTING METHODOLOGY

Future year traffic volumes will be forecast using the procedures outlined in the National Cooperative Highway Research Program (NCHRP) reports 255 and 765. The existing year and future year no-build travel demand model and dynamic traffic assignment model will be validated and finalized. The difference between the existing year and future year dynamic traffic assignment model volumes will be applied to the existing count data to develop the forecasted future year no-build traffic volumes.

During the alternatives development and screening processes, additional travel demand model and dynamic traffic assignment model runs will be completed for some alternatives. The volumes from the alternative model runs will be compared to the volumes from the no-build model runs, and the forecasted no-build volumes will be post-processed to develop forecasted volumes for the alternatives.

VALUE OF TIME

It is recommended that value of travel time (VOT) estimates adopted for the Puget Sound Gateway Program be used in the modeling analysis. These values of time would be used in the travel demand model and dynamic traffic assignment model, and are shown in the table below.

Table 4. Value of Travel Time Estimates

Trip Type	VOT (dollars/hour), 2015 dollars		
Home-Based Work (HBW) Single-Occupancy Vehicle (SOV) Income Group 1	\$	8.20	
HBW SOV Income Group 2	\$	15.45	
HBW SOV Income Group 3	\$	20.90	
HBW SOV Income Group 4	\$	31.00	
Non-Work SOV	\$	19.95	
HOV: 2 occupants	\$	25.05	
HOV: 3+occupants	\$	25.05	
Light Truck	\$	22.25	
Medium Truck	\$	57.35	
Large Truck	\$	57.35	

TOOLS

This section describes the modeling tools that will be used to develop forecast volumes and analyze traffic operations.

TRAVEL DEMAND MODEL

The PSRC EMME model will be used to produce travel demand forecasts for the US 2 Westbound Trestle project. This ensures consistency with the most recently adopted regional travel demand (EMME) model developed by the PSRC. The most recent PSRC travel demand model was adopted in June 2018 as part of the Regional Transportation



Plan update. The updated PSRC model has a horizon year of 2040, compared to the Snohomish County EMME model used for the earlier IJR analysis that had a horizon year of 2035. The updated PSRC model for 2040 includes a per-mile vehicle pricing assumption for all facilities. The demand modeling-related undertakings include the following:

- Review the latest PSRC model for existing conditions within the study area and make
 necessary network refinements to produce reasonable results for existing conditions. This
 involves comparison of actual vehicle count data to model estimated vehicle volumes for
 key locations within the study area. The targeted accuracy of the travel demand model
 will be the industry standard of +/- 10 percent of the existing count data across
 screenlines.
- Perform a base year (2017/2018) model validation analysis and prepare necessary summary results. This will likely include using StreetLight origin-destination data to adjust base year trip tables produced by the PSRC model. StreetLight data was obtained conforming to 48 districts as shown in Figure 1 and was compared to the synthetic origin-destination data from the PSRC model to confirm modest differences in some regional travel. In addition to adjusting trip tables with StreeLight data, the base year validation will include a matrix adjustment process using actual vehicle counts data to better match estimated volumes.
- The outcome of the base year validation analysis will determine how to proceed in developing 2040 traffic forecasts. Should the base year model validation require using StreetLight data to adjust trip tables then the process of producing 2040 trip tables should be dependent on base year trip tables. This will include using pertinent origin- and destination-level growth rates from the base year to 2040 from the PSRC full demand model applied to the Streetlight-adjusted base year trip tables to provide 2040 trip tables for each alternative. This data will be used for assignment in the travel demand model to produce 2040 traffic forecasts.
- Coordinate with WSDOT and Snohomish County regarding consistency between demographic forecasts prepared by PSRC and Snohomish County for the City of Everett, which have been used in previous modeling efforts. The PSRC model uses Land Use
 Vision (LUV.2) Forecast for 2040, currently available at the PSRC website.
- Prepare networks for no-build and build alternatives. For the alternatives involving
 tolling, a series of demand model runs will be performed for both intermediate and
 horizon years to achieve appropriate toll rates. Subsequently, final model runs will be
 performed for all alternatives and necessary model results will be prepared.
- Prepare necessary trip matrix inputs for the Dynamic Traffic Assignment (DTA)
 modeling analyses. This will include use of Streetlight origin-destination data to refine
 external/internal trip movements.

Planned screenline locations are shown in Figure 2, and the model study area focus for modeling analysis is also shown in that figure.



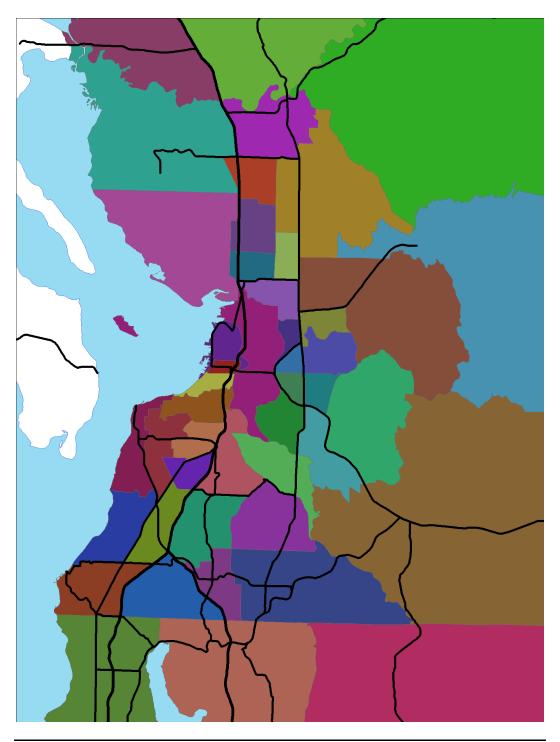


Figure 1. StreetLight Data Districts



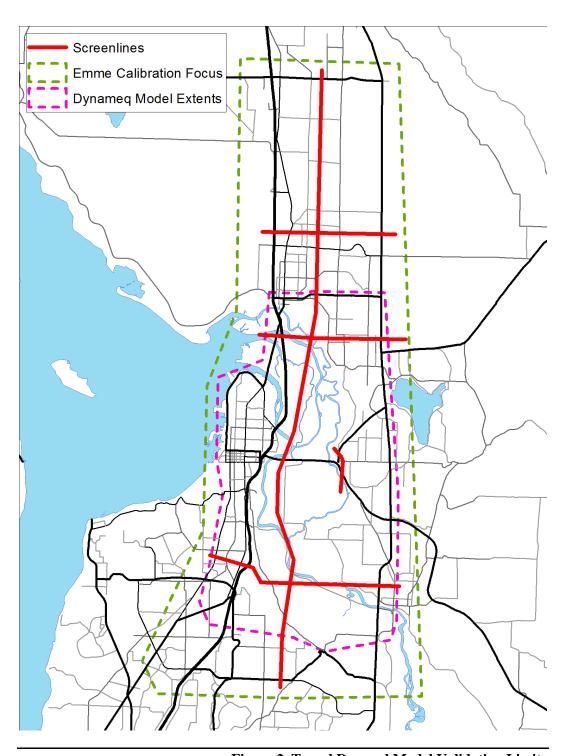


Figure 2. Travel Demand Model Validation Limits

STUDY TIME PERIODS

The travel demand model analysis will include output for the following study periods: AM peak period, PM peak period, and average weekday. The AM and PM peak periods will align with those in the PSRC model: 6:00–9:00 a.m. and 3:00–6:00 p.m., respectively. The existing 5-hour



AM (4:00-9:00 a.m.) and PM (1:30-6:30 p.m.) peak period volume profiles will be used to develop future traffic volume forecasts.

BACKGROUND PROJECTS

Relevant roadway and transit projects will be documented for inclusion in the demand and DTA models, after reviewed and agreed upon by the project team. Project lists will be developed for both the representative year of opening and the horizon year. The projects included on these lists should be in the Regional Transportation Plan, be funded, and expected to be open by the modeled year, though some exceptions could be made to include additional projects as determined by the project team.

DYNAMIC TRAFFIC ASSIGNMENT MODEL

The DTA model will be developed using the Dynameq software program. This will be based on extending the existing DTA model network (previously developed and used in the IJR project) north to Marysville, south to Lowell River Road, and east to cover SR 9 between the north and south ends of the DTA network. The existing 5-hour peak periods will be used to develop traffic volume inputs for the VISSIM modeling. The DTA model development and application includes the following:

- Refine the existing DTA model network, including transportation analysis zone (TAZ) structure conforming to the PSRC 4K zone system, vehicle classes, channelization, intersection control type, and signal timings.
- Prepare trip matrices from the validated base year demand model for input to DTA model (in 15-min intervals *for two 5-hour peak periods and six vehicle classes*)
- Calibrate and validate for the base year (2017/2018) models to the observed conditions.
 Calibration/validation standards are assumed to be targeting +/- 10 percent in vehicle volumes and travel speeds along the freeway segments and interchange ramps. The validation will focus on the following metrics:
 - Vehicle volumes
 - > Travel time and travel speed (speed contour map comparisons on I-5; other data elsewhere)
 - Approximate queue lengths on freeway segments and ramp terminals, including ramp metered on-ramp sections
- Prepare networks and run the DTA model for existing conditions. Simulation runs for each of these scenarios will be presented to and reviewed with/by WSDOT.
- Prepare model summary results and maps of modal volumes and travel times for internal discussions and presentation. These model plots will be used to determine how the DTA



model is shifting traffic related to congestion and tolls. Further metrics will be developed as part of the first- and second-level screening process.

• Prepare demand matrices required for VISSIM modeling analysis.

STUDY TIME PERIODS

The DTA models will be developed for and produce results for 5 hours for each peak period: AM from 4:00–9:00 and PM from 13:30–18:30. The models will have warm-up and cool-down periods of 60 minutes each that will be added before and after each day period with factored demand based on available counts.

VEHICLE CLASSES AND MULTIMODAL PRIORITIES

The classes that will be modeled in the DTA are SOV, HOV 2, HOV 3+, Light Trucks, Medium Trucks, and Heavy Trucks.

Additionally, the DTA model will reflect the existing bus routes operating on US 2, I-5, and arterials in the model area. The model does not reflect occupancy of buses, so any reporting of transit passenger volumes will be determined outside of the model. Where several transit routes use the same stopping pattern, multiple routes may be combined into one for coding simplification.

MEASURES OF EFFECTIVENESS

The key outputs and performance metrics for future year application of the US 2 trestle DTA model will be the following:

- Person throughput volumes based on Average Vehicle Occupancy (AVO) values that will be determined in the agreement from WSDOT
- Vehicle volumes
- Travel speeds
- Travel times
- Duration of congestion on highway corridor segments
- Length of queues for ramps

VISSIM - MICROSIMULATION MODEL

VISSIM version 10 will be used to model the study area outlined below and shown in Figure 3:



- I-5 from 41st Street to Marine View Drive
- US 2 from I-5 to Bickford Avenue
- 20th Street SE from US 2 to SR 9
- SR 204 from US 2 to 81st Avenue
- I-5 and US 2 ramp terminal intersections in Everett



Figure 3. VISSIM Model Extents

The VISSIM network from the US 2/SR 204/20th Street SE IJR was modeled using VISSIM version 8 and only includes I-5 as far south as the Pacific Avenue ramps.

VISSIM simulation models will be developed for the AM and PM peak periods. Model network coding, parameters, and data input will be developed according to the WSDOT VISSIM Protocol (September 2014), which provides in-depth instructions for freeway and urban street simulation networks.



Two separate criteria must be met to justify the validity of a particular model and its usefulness in evaluating the transportation system:

- Confidence Ensuring that the reported model results are representative of the model
- Calibration Matching the model results to real-world conditions

CONFIDENCE

Given the varying results that inherently exist between micro-simulation runs (due to the random seed number), every model is required to evaluate its reported results in a way that conveys they are representative of the model and not skewed toward a statistical outlier. Per the WSDOT VISSIM Protocol, the VISSIM model runs will use a simulation resolution of 10 time steps per second. The analysis results will be based on an average of at least 11 model runs, each using a different random seed value. These seed values will be reported so that the results can be verified. For the existing conditions model, the statistical significance of 11 simulation runs will be confirmed for model throughput volume outputs using a 95 percent confidence level at the US 2/SR 204 interchange.

CALIBRATION

Calibration is the process used to achieve adequate reliability of validity of the model by establishing suitable parameter values so the model replicates local traffic conditions as closely as possible. The existing conditions VISSIM model will be calibrated to traffic counts and speeds/travel times. As a proxy for replication of throughput volumes, the GEH Statistics shall be calculated for all entry/exit locations, freeway ramps, and roadway segments in the calibration area of the model. Peak hour volume outputs will be broken down into four 15-minute intervals. Tables 5 and 6 provide the recommended calibration criteria for GEH Statistics.

Table 5 GEH Statistic Guidelines

GEH Statistic	Calibration Guideline
< 3.0	Acceptable fit
3.0 to 5.0	Acceptable for local roadway facilities
> 5.0	Unacceptable

Table 6 Throughput Traffic Volume (vehicle/hour/lane) Calibration Criteria

Criteria	Acceptable Target
GEH < 3.0	All entry and exit locations within the calibration area
GEH < 3.0	All entry and exit ramps within the calibration area
GEH < 5.0	At least 85% of applicable local roadway segments
Sum of all segment flows within the calibration area	Within 5 percent of traffic counts

The key corridors measured by floating car travel times will be calibrated to the observed travel times. The travel time calibration criteria are separated into two types of facilities: uninterrupted



flow (e.g., freeways and ramps) and interrupted flow (e.g., signalized arterials). As described in Figure 7 below, the amount of allowable travel time variation will be calculated for each time interval as speeds (travel times) fluctuate through the analysis period. For interrupted flow facilities, the allowable travel time variation is established using the free flow speed of the corridor. If the free flow speed is unknown, the posted speed limit will be used.

Criteria Acceptable Target $\Delta = \frac{1}{\frac{1}{t} - \frac{4.4}{L}} - t$ Interrupted Flow $\Delta = \frac{1}{1 - 0.1 * 5280 * S} - t$

Figure 7. Travel Time Calibration Criteria Equations

 Δ = Allowable travel time variation (+/- seconds)

t = Observed travel time (Seconds) - from floating car survey

L = Length (Feet)

S = Free flow speed (mph); Posted speed may be used for FFS if unknown

The visual inspection of freeway queuing will be compared with the VISSIM model to validate that the model is reasonably replicating field queuing conditions.

Calibration according to the criteria described above will require the adjustment of several VISSIM input parameters to reflect study-area driving conditions. These adjustments are described below:

- The vehicle composition will be updated to reflect the North American vehicle model distribution.
- Lane change distances will be adjusted to reflect driver behavior observed in the field
 during the floating car travel time runs. This typically involves increasing the distance
 that drivers will anticipate a downstream lane change. Adjustments to the lane change
 distance will be documented in the confidence and calibration memo.
- Driving behavior will be modified to reflect the appropriate capacity using throughput at known bottleneck locations as a guide.

Intersection timing parameters will be specified using the ring barrier controller method in VISSIM. Signal timing plans will be adjusted as necessary to reflect changes proposed in the alternatives.

Traffic volumes will be entered in 15-minute intervals, and routing decisions will be defined for 15-minute intervals.

Desired speeds in the model will be set based on the GPS data collected during free flow conditions.



Simulation runs for every scenario that VISSIM is used will be presented to and reviewed with/by WSDOT.

STUDY TIME PERIODS

The study time periods for the traffic analysis are anticipated to include up to a 5-hour AM peak period and a 5-hour PM peak period. The anticipated peak periods are 4:00–9:00 AM and 1:30–6:30 PM.

MULTIMODAL PRIORITIES AND ACCOMMODATION

The following modes will be explicitly modeled and analyzed in VISSIM:

- General purpose traffic
- HOV traffic
- Transit (bus) traffic
- Heavy vehicle (freight truck) traffic

MEASURES OF EFFECTIVENESS

The measures of effectiveness will be developed in coordination with WSDOT and are anticipated to include:

- Person throughput by mode (vehicle throughput volumes by mode will be output from VISSIM and occupancy factors will be applied to the various modes to estimate person throughput)
- Vehicle throughput
- Freeway segment density and speed by lane
- Corridor travel times by mode
- 50th and 95th percentile queues at intersections
- Lengths of queue on highway segments

SAFETY PERFORMANCE ANALYSIS SCOPE AND SCALE

The safety analysis will follow the procedure for the basic crash analysis outlined in the Safety Guidance for Corridor Planning Studies. This consists of analyzing the existing safety performance and corridor characteristics, summarizing the findings, and reviewing the findings with WSDOT and the stakeholders. The focus of the analysis is to provide the historic safety performance of the corridor, including reporting on major contributing factors to fatal and serious crashes.

It is anticipated that more detailed safety analysis will be completed at later stages of the project to guide potential design revisions to the preferred alternative, including recommending countermeasures for common fatal and serious injury crashes, and applying crash modification factors to identify the effectiveness of recommended countermeasures.



STUDY AREA

The study area for the safety analysis consists of US 2 between I-5 and Bickford Avenue, including the ramps and ramp terminal intersections, 20th Street between US 2 and SR 9 including intersections, and SR 204 between US 2 and 81st Avenue including intersections.

STUDY YEARS

Safety data will be collected for the most recent 5-year period available.

CHANGE MANAGEMENT

Frequent communication will limit the potential for changes that substantially impact the agreed-upon methods and assumptions, and will allow the project team to anticipate possible changes and outline a strategy to move forward prior to any rework. These strategies will be developed on an ongoing basis to address issues as they are identified. Unanticipated changes will still occur, and will need to be evaluated on a case-by-case basis to determine the extent of the impacts to the methods and assumptions outlined in this document.

US 2 Westbound Trestle Alternatives Development and Traffic Evaluation

Introduction

Travel times for commuters using the US 2 westbound trestle are slow and unreliable during the morning commute period. Today's trip across the westbound trestle includes congestion at the ends of the trestle during peak hours which impacts US 2. In addition, the structure itself is approaching the ends of its useful life. The purpose of the United States Highway Route 2 (US 2) Westbound Trestle Project is to develop a long-term, fundable solution that, among other needs, improves travel reliability, improves safety, and provides improved system linkages to support regional and local planned growth.

In 2016 the Washington State Legislature directed WSDOT to study potential improvements to the US 2/SR 204/20th Street SE interchange east of Everett. WSDOT used findings from the support team and public survey to develop an Interchange Justification Report (IJR), which was completed in April 2018. The IJR outlined a preliminary preferred alternative for the US 2/SR 204/20th Street SE interchange that included some primary assumptions about the US 2 westbound trestle that had not yet undergone full study or environmental analysis. In an effort to confirm the assumptions and provide a more system-level evaluation of the transportation system, this study was requested and funded by the Washington State Legislature.

This phase of the US 2 Westbound Trestle Project begins the work to develop US 2 corridor concepts that meet the project needs. Additionally, the findings from this study are planned to be used for future environmental documentation and selection of a preferred alternative. This phase of work included traffic analysis of the Existing Conditions, Year 2040 No Build, and Year 2040 Build Alternatives with several sensitivity test scenarios.

This document summarizes the following elements of the traffic analysis:

- Existing data collection
- Traffic simulation methods
- Traffic volume forecasts
- Alternatives development and screening
- Traffic operations results

Methods and Assumptions

Data Collection

The following information was collected in order to complete the traffic analysis for the US 2 Westbound Trestle Project. The collected data is summarized below in the Existing Conditions section.

Volumes

The volume data collected for this project included 24-hour roadway segment volumes (also known as tube counts) and 2-hour AM and PM peak intersection turning movement counts. Volume data was provided by the following sources:

- US 2/SR 204/20th Street SE Interchange Justification Report (IJR)
- WSDOT Traffic Data GeoPortal
- Northwest Region
- I-5/Marine View Drive to SR 528 Project
- City of Everett
- Additional counts collected in October 2018

The locations of the tube counts and turning movement counts (TMCs) collected from the IJR, WSDOT, and the additional October 2018 counts are summarized in Attachment 1. Tube counts and TMCs were also provided by the City of Everett at and near six intersections in downtown Everett.

At the locations where 24-hour tube counts were collected in October 2018, vehicle classifications were also collected. These were used to determine the percentage of heavy vehicle traffic.

Travel Times and Speed

Floating Car Travel Times were collected during the 5-hour morning (4:00–9:00 AM) and evening (1:30–6:30 PM) commute periods in October 2018 between the origins/destinations listed below. There were three locations west of the US 2 Trestle and three locations east of the US 2 Trestle, which equates to nine origin/destination pairs and 18 pathways (nine westbound and nine eastbound).

West of the US 2 Trestle:

- 1. SR 204 at 81st Avenue
- 2. 20th Street SE at SR 9
- 3. US 2 at Bickford Avenue

East of the US 2 Trestle:

- 1. I-5 north of Marine View Drive
- 2. US 2 ramps to and from Downtown Everett
- 3. I-5 at the SR 526 interchange

The floating car travel time runs were recorded with a dash camera and the videos were reviewed to observe locations and durations of congestion. The trips were also tracked using a Global Positioning System (GPS) application to record the speed along the pathway. The speed data was reviewed in tandem with the dash camera video to determine the actual speed at each point on the corridor during congested conditions.

The floating car travel time data was compared to travel time runs performed during peak periods in November 2016 and January/February 2017 along SR 204, 20th Street SE, and US 2 as well as peak hour queueing collected in November 2016 and January/February 2017 at the I-5/US 2 and US 2/SR 204/20th Street SE interchanges and along the 20th Street SE and SR 204 corridors. These travel time runs and peak hour queuing were performed for the IJR.

The floating car travel time data collected in October 2018 provided a more robust data set than the travel time data collected in November 2016 and January/February 2017. The 2018 data sample size was larger, as it was collected over a two-day period, and provided a broader understanding of where and when congestion starts, builds, and dissipates over time because it was collected over a 5-hour period.

There are also annual trends in traffic volumes, and volumes during the month of October tend to be higher than volumes during the November, January and February. The higher volume levels in October correlate with higher congestion levels, and this was supported in the travel time data comparison. Peak westbound travel times between SR 9 and US 2 (via 20th Street and via SR 204) were three to four minutes longer in the October 2018 data.

Transit and High Occupancy Vehicle (HOV)

The following transit service and HOV data was collected from the IJR:

- Daily boardings and alighting's by stop for routes 280 and 425, provided by Community Transit
- Vanpool program information, provided by Community Transit
- Occupancy data at two locations on I-5, provided by WSDOT
- Occupancy data at SR 204 and 20th Street SE prior to the US 2/SR 204/20th Street SE interchange

Safety

Existing crash data was collected from the IJR for the five-year period from 2011 to 2015.

VISSIM Model

All alternatives were quantitatively analyzed using a VISSIM microsimulation traffic model. The traffic analysis for the project encompassed the I-5 mainline, US 2, 20th Street SE, and SR 204 corridors, but was focused on the US 2 westbound trestle during the morning commute. The limits of the VISSIM model are displayed below in Figure 1.

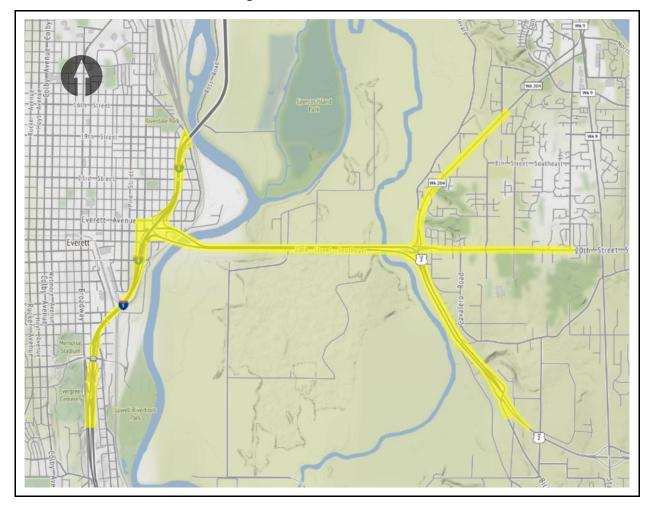


Figure 1. VISSIM Model Limits

The VISSIM model was originally developed as part of the IJR using VISSIM version 8 and only included I-5 as far south as the Pacific Avenue ramps. VISSIM simulation models were developed for the AM and PM peak periods, though only the AM peak period was analyzed for this phase of the project. Updates to the VISSIM model network coding, parameters, and data input were completed according to the WSDOT VISSIM Protocol (September 2014), which provides in-depth instructions for freeway and urban street simulation networks. The original IJR model was only coded for a single peak hour of operation.

The existing year AM VISSIM model was updated and validated based on the new traffic volume counts and updated travel time runs collected in October 2018. Two separate criteria were met to justify the validity of the model and its usefulness in evaluating the transportation system: confidence and calibration.

 Confidence – This criterion ensures that the reported model results for each micro-simulation run are representative of the model and not skewed toward a statistical outlier. For the Existing Conditions model, 20 simulation runs were performed. Calibration – This criterion ensures that the model results match real-world conditions The
Existing Condition model was calibrated to traffic counts and speed/travel times. The key
corridors measured by floating car travel times were calibrated to the observed travel times.
The visual inspection of freeway queuing was compared with the Existing Conditions model to
validate that the model is reasonably replicating field queuing conditions.

For this analysis, the traffic team updated the VISSIM model to include a 5-hour AM peak period (4:00–9:00 AM). The following modes were accounted for in the model and the following metrics were used to analyze the Existing Conditions, Year 2040 No Build, and Year 2040 Build Alternatives.

- Modes:
 - General purpose traffic
 - HOV traffic
 - Transit (bus) traffic
 - Heavy vehicle (freight truck) traffic
- Performance Metrics:
 - Person throughput
 - Vehicle throughput
 - Travel times
 - Speeds
 - Queues
 - Extents and duration of congestion

Traffic Volume Refinement

Traffic Volume Demand and Throughput

When collecting traffic data using tube counts or in person counts, the data collected only includes the number of vehicles that pass a certain point during the counting period. This is referred to as traffic throughput. If traffic is congested behind the counting location and is not counted during the time period, it is referred to as demand. An example of this situation is that during the morning peak hour we might count 1,500 vehicles passing a specific point on a roadway, but there might be another 100 vehicles sitting in congestion that do not get counted. This means that the "demand" for that hour is actually 1,600 vehicles. When modeling existing conditions, it is important to use the traffic demand when setting up the model so that the congestion develops similar to existing conditions. The following text describes how the traffic volume count data was refined to reflect traffic volume demand data.

- 1. Traffic congestion information collected during the travel time runs was used to outline time periods when congestion begins, is maximum, and then dissipates. This was then used to help engineers develop a volume adjustment strategy.
- The strategy involved using the VISSIM model with an initial set of input volumes that were
 estimated to create existing levels of congestion and travel time. The model was then run, and
 the output was reviewed in an iterative process until congestion, traffic throughput, and travel
 time objectives were met.
- The final adjusted traffic volumes represent the existing traffic demand volumes. The Existing Condition demand volumes were the baseline for the traffic volume forecast for Year 2040 No Build.

Traffic Volume Forecast

The forecasted volumes for Year 2040 No Build and Year 2040 Build Alternatives were produced according to the process described below. The travel demand model analysis included the AM peak period, PM peak period, and average weekday. The AM peak period of 6:00-9:00 AM aligned with the PSRC model. The existing 5-hour morning (4:00-9:00 AM) commute period demand volumes were used to develop future traffic volume forecasts for the same 5-hour period. The two-hour period from 4:00-6:00 AM is not represented in the PSRC model. The AM peak period growth rate from the 6:00-9:00 AM period was also applied to the existing demand volumes for the 4:00-6:00 AM period.

Travel Demand Model

The PSRC EMME model was used to produce travel demand forecasts for each of the study alternatives. This ensured consistency with the most recently adopted regional travel demand (EMME) model developed by the PSRC. The most recent PSRC model has a horizon year of 2040.

The EMME model was validated and updated for this study according to the following steps.

- 1. Compared additional 2018 traffic counts to model-estimate vehicle volumes at key locations in the study area. The targeted accuracy of the travel demand model was the industry standard of +/- 10 percent of the existing count data across screenlines.
- Performed a base year (2017/2018) model validation analysis and prepared necessary summary results. This included using StreetLight origin-destination data to adjust base year trip tables produced by the PSRC model.

- 3. Coordinated with WSDOT and Snohomish County regarding consistency between demographic forecasts prepared by PSRC and Snohomish County for the City of Everett, which have been used in previous modeling efforts.
- 4. Accounted for relevant roadway and transit projects listed in the Regional Transportation Plan, both in the Existing Conditions and Year 2040 alternatives.

The regional projects included in the 2040 No Build Travel Demand Modeling are listed in Table 1.

Table 1

Approved Highway and Transit Regional Projects for 2040 No Build Travel Demand Modeling US2 Westbound Trestle Pre-NEPA Documentation

(Note: Systewide per-mile pricing assumption used in the PSRC 2040 RTP Model will not be used)

Project	Funded	Opening Year	Include in Demand Model	Notes
Roadway		reai	Model	
US 2/SR 204/20th Street Interchange Improvements	N		N	TBD for possible inclusion in build network
US 2 - Bickford to Monroe, widen to four lanes	N	2040	N	To be considered in the Cumulative Effects modeling
SR 9/SR 204 Interchange improvements	Υ	2021	Υ	analysis
SR 9 - US 2 to Lake Stevens Road Widening	-		Υ	
SR 9 - Snohomish River Bridge Replacement	Υ	2027	Υ	
SR 9 - Marsh Rd to 2nd St Widening	-		Υ	
SR 9 - 176th Street SE to SR 96	-		Υ	Interim improvements included. Full widening has no construction funding
SR 520 West				runung
Montlake Interchange & West Approach Bridge South	Υ	2024	Υ	
Portage Bay Bridge	Υ	2029	Υ	
I-5 Express Lanes Connection	Υ	2023	Υ	
Montlake Bridge	Υ	?	Υ	
SR 520 @ 148th Ave. NE Interchange - Overlake Access Ramp	Υ	2021	Υ	
Alaskan Way Viaduct				
SR 99 Tunnel	Υ	2019	Υ	
Alaskan Way & Elliott Way	Υ	2023	Υ	
2-Way Columbia Transit Corridor	Υ	2019	Υ	
Puget Sound Gateway Program				
SR 509 Stage 1	Υ	2025	Υ	
SR 509 Stage 2	Υ	2031	Υ	
SR 167 Stage 1	Υ	2025	Υ	
SR 167 Stage 2	Υ	2031	Υ	
SR 518: Des Moines Memorial Drive Interchange Improvements	Υ	2019	Υ	
SR 99: S 359th St to S 340th St Widening	Υ	2018	Υ	
SR 524 (196th St SW): 48th Ave W to 37th Ave W Widening	Υ	2020	Υ	
I-405: Bellevue to Renton Express Toll Lanes	Υ	2024	Υ	
I-405: SR 167 Direct HOV Ramps	Y	2019	Y	
I-5: Northbound Seneca to SR 520	Ϋ́	2020	Y	
I-5: Marine View Dr to SR 528 Peak Use Shoulder	Y	2022	Y	
I-5: DuPont-Steilacoom Rd to Thorne Ln - Corridor Improvements	Ϋ́	2021	Y	
I-5: SR 16 to Port of Tacoma Rd HOV	Ϋ́	2021	Y	
88th St NE: State Ave to 67th Ave NE Widening	Y	2025	Ϋ́	
Canyon Rd E, 187th St E to Frederickson Industrial Park Road E	Ϋ́	2019	Ϋ́	
SR 161: 36th to Vicinity 24th St E - Widen to 5 lanes	Y	2013	Y	
SR 202: Sammamish River Bridge and Road Widening	Y	2019	Y	
-	Υ	2019	Ϋ́	
NE 145th Street/SR 522 BRT			Y	
Lander Street Overpass	Y	2020	- V	
NE 65th St Vision Zero Project	Y	2019	Y	
23rd Ave E Vison Zero Project (Channelization Changes)	Y	2018	Y	
15th Ave NE Paving Project (Channelization Changes)	Y	2019	Υ	
Northgate Station Area Roadway Changes	Υ	2021	-	
Transit		2022		
128th St SW/Airport Rd BAT Lanes	N	2033	Υ	
20 th Street BAT Lane (City of Lake Stevens)	-		Υ	
RapidRide G Line (Madison BRT)	Partial	2022	Υ	
Roosevelt RapidRide	Partial	2024	Υ	
Center City Connector Streetcar	Partial	2025	Υ	
CT SWIFT BRT Green Line - Canyon Park to Paine Field/Boeing	Υ	2019	Υ	
CT SWIFT Orange Line - Edmonds to Mill Creek	Partial	2024	Υ	
CT SWIFT Red Line - Everett to Smokey Point	-	2024	Υ	
Tacoma Link Expansion (Theater District to MLK/19th St)	Υ	2023	Υ	
Lynnwood Link Extension	Υ	2024	Υ	
Federal Way Link Extension	Υ	2024	Υ	
Downtown Redmond Link Extension	Υ	2024	Υ	
SR 522 & I-405 BRT	Υ	2024	Υ	
Tacoma Dome Link Extension	Υ	2030	Υ	
West Seattle Link Extension	Y	2030	Y	
Sound Transit Infill Stations	Y	2031	Y	
Ballard Link Extension	Υ	2035	Υ	

Notes: Regional trails, ferry dock relocation/replacement/expansion, and rail grade-crossing projects not included in this list.

Sources

- -PSRC's RTP 2018, Appendix G, Regional Capacity Projects List (Adopted May 2018 Updated January 2019): https://www.psrc.org/sites/default/files/rtp-appendixg-regionalcapacityprojectlist.pdf. PSRC's project list includes both funding "approved" and "candidate" projects. The above list includes all PSRC's projects designated as funding "approved" and a few "candidate" projects relevant to US 2.
- The 2015 Connecting Washington funding package: http://www.wsdot.wa.gov/construction-planning/funding/connecting-washington

Forecasting

Future year traffic volumes were forecast using the procedures outlined in the National Cooperative Highway Research Program (NCHRP) reports 255 and 765. Once the travel demand models were completed, the differences between the Existing Conditions and Year 2040 No Build travel demand model volumes were applied to the existing count data to develop the Year 2040 No Build traffic volumes.

Additional travel demand model runs were completed for the Year 2040 Build Alternatives. Though each alternative includes several design elements, the element that has the most impact on travel demand is the number of lanes across the US 2 westbound trestle. Traffic volumes for two Year 2040 Build Alternatives were forecast. The two alternatives included one alternative with 2 general purpose (GP) lanes and an HOV lane and a second alternative with 3 GP lanes and 1 HOV lane.

Similar to the Year 2040 No Build volumes, the Year 2040 Build Alternative volumes were forecast using the procedures outlined in the NCHRP reports 255 and 765. The volumes from the two Year 2040 Build Alternative travel demand model runs were compared to the volumes from the Year 2040 No Build model runs to produce volumes for the Year 2040 3-Lane Build Alternative and the Year 2040 4-Lane Build Alternative.

Existing Conditions

Corridor

The traffic analysis for the US 2 Westbound Trestle Project included 26 study intersections and the following study corridors:

- I-5 mainline between (and including) the 41st Street interchange ramps and the Marine View Drive interchange
- US 2 between (and including) I-5 and west of the SR 9 interchange
- 20th Street SE between (and including) US 2 and west of the SR 9 intersection
- SR 204 between (and including) US 2 and west of the SR 9 intersection

Attachment 2 illustrates the number and type of lanes and the mileposts of the gore points along the US 2 and I-5 corridors in the project area. The study intersections are also shown as signalized and stop controlled intersections.

The existing channelization for westbound US 2 includes:

- One westbound lane at the SR 204/20th Street SE interchange
- One-lane on-ramp to westbound US 2 at the SR 204/20th Street SE interchange
- Two lanes across the US 2 westbound trestle with 2-foot shoulders on either side
- One-lane off-ramp to northbound I-5
- One-lane off-ramp to southbound I-5
- Two-lane off-ramp to downtown Everett, entering the local system at California Street/Maple Street/Walnut Street
- No HOV-only facilities along westbound US 2

Traffic Volumes

As discussed in the Methods and Assumptions section, the volume data was compiled from several sources. Tube counts and turning movements counts were collected in October 2018 which were validated by volume data collected from the IJR, WSDOT, and the City of Everett. As illustrated in Attachment 3, there appears to be a decline in daily traffic along US 2 westbound trestle as well as a shift from a 7:00 AM peak hour to 5:00 AM peak hour. However, it was determined that the 2018 tube counts on the US 2 westbound trestle east of the I-5 interchange were faulty, as the data was not consistent with annual data collected from WSDOT's permanent data collection station at the same location, as shown in Attachment 4. Because the field count data appeared to have an error, the traffic team used information collected from the WSDOT data station for volume refinements and validation.

Attachment 5 illustrates the AM and PM peak hour mainline and ramp volumes along the US 2 and I-5 corridors in the project area. It also includes the percentages of heavy vehicles, where available, and the daily volumes along the US 2 Trestle. Attachment 6 summarizes the AM and PM peak hour turning movement volumes at the study intersections.

Average weekday traffic volumes crossing the US 2 westbound trestle on an average weekday are as follows:

- Daily US 2 carries 77,000 vehicles in both directions across the Snohomish River
- Daily US 2 carries 41,400 vehicles in the westbound direction across the Snohomish River
- Daily US 2 carries 11 percent heavy vehicles in the westbound direction and 16 percent heavy vehicles in the eastbound direction
- AM Peak Hour US 2 carries 3,200 vehicles vph (vehicles per hour) in the westbound direction
- AM Peak Hour US 2 carries 93 percent single-occupant passenger vehicles in the westbound direction

Volume Throughput

The existing throughput volumes were refined based on the process discussed in Methods and Assumptions. Attachment 7 illustrates the demand volume compared to the throughput volume for westbound US 2 during the AM peak period. The total demand volume during the 5-hour study period is the same as the total throughput volume during the 5-hour study period.

Operations

Travel Times and Speed

As discussed in Methods and Assumptions, floating car travel time runs were used to determine travel times and speeds along the I-5 mainline, US 2, 20th Street SE, and SR 204 corridors. Attachment 8 illustrates the Existing Condition AM and PM peak hour travel times and speeds, both to and from eastbound US 2 and westbound US 2.

Congestion

Attachment 9 illustrates the AM peak hour congestion along westbound US 2, westbound 20th Street SE, westbound SR 204, and southbound I-5.

The congestion maps show the average travel speed at any given point along the corridors as a percentage of the posted speed limit. Segments that are highlighted red are nearing 0% of the posted speed limit, meaning traffic is not moving. Segments that are highlighted in dark green are operating at 100% of the posted speed limit.

Each congestion map shows the travel speeds in each lane¹ for 15-minute intervals during the 5-hour morning commute period. On the east-west corridors (US 2, 20th Street, SR 204) time of day is on the vertical axis and location is on the horizontal axis, on the north-south corridor (I-5) the axes are switched. The figures at the bottom of the congestion maps represent the lane configurations for each corridor, including the approximate locations of the on-ramps and off-ramps along US 2 and I-5 and the intersections along 20th Street SE and SR 204.

As shown in Attachment 9, the demand volume for Existing Conditions exceeds capacity at the US 2/ SR 204/20th Street SE interchange, causing substantial backups on westbound SR 204 and westbound 20th Street SE. On 20th Street congestion (red and yellow) spills back from the on ramp to US 2 westbound to 83rd Avenue. On SR 204 congestion spills back from the on ramp to US 2 westbound to 81st Avenue. Some specific issues contributing to the congestion on 20th Street and on SR 204 are:

• The combined volume from westbound SR 204 and westbound 20th Street SE exceeds 1,900 vph which is the capacity for one lane of traffic under ideal conditions

¹ On the I-5 corridor, the speeds are not shown in each lane. Instead, the average speed across all lanes is shown.

- Traffic from westbound SR 204 travels along a 30 mph curve prior to a short merge with 20th
 Street SE, the reduced speed through the ramp contributes to lower than ideal capacity at the
 ramp.
- There is weaving along westbound US 2 between the US 2/ SR 204/20th Street SE interchange and the off-ramp to the lower roadway. The weaving traffic causes speeds to drop to 70 to 80 percent of the posted speed for approximately one hour, contributing to the already congested conditions through the 20th Street and SR 204 merge and on ramp.

At the on ramp from the lower roadway, speeds drop to approximately 60 percent of posted speed for about 90 minutes, contributing to congestion on US 2 westbound that spills back to the lower roadway off ramp.

The demand volume also exceeds capacity at the off-ramp from westbound US 2 to southbound I-5. The US 2/ SR 204/20th Street SE interchange acts as a meter for westbound US 2 and reduces the traffic demand that can reach the off-ramp to southbound I-5, but enough traffic still reaches the off-ramp to cause backups on the US 2 westbound trestle. As shown in Attachment 9, the slowdown is more pronounced in the left lane with speeds between 60 to 70 percent of the posted speed. Drivers are lining up to access the ramp to southbound I-5, but the single-lane ramp does not have the capacity to serve the demand volume.

Non-Motorized

There is currently a barrier-separated trail along the south side of eastbound US 2. The US 2 trail extends from the eastbound US 2 on-ramp at Hewitt Avenue to 43rd Avenue SE, where the trail turns and provides access to Ebey Island. Pedestrians and bicycles are prohibited on the freeway shoulder.

Safety

Existing crash data was collected from the IJR, which collected and analyzed crash data along US 2 and SR 204 from January 2011 to December 2015. Over the five-year study period, there were 467 collisions in the study area. Attachment 10 illustrates the locations of these collisions.

Along westbound US 2, the majority of collisions occur in the morning and between the 51st Ave SE on-ramp and the I-5 off-ramps. There is congestion approaching the I-5 off-ramps which leads to frequent lane changes and rear-end collisions. Collisions along westbound US 2 are also frequent at the SR 204/20th Street SE on-ramp and at the Bickford Avenue interchange, both of which experience significant merging and diverging.

Of the 467 reported collisions, two resulted in serious injuries and one resulted in a fatality. The serious injury collisions both occurred near the Bickford Avenue interchange, one during the AM peak period and one occurring in the afternoon before the PM peak period. The fatality occurred west of the Snohomish River shortly after midnight. An additional bicycle fatality occurred at the SR 204/20th Street SE intersection after December 2015 and was not included in the IJR.

Collision rates were calculated for the intersections and roadway segments within the study area as part of the IJR. The collision rates were calculated according to FHWA methodology, which considers the total number of collisions and average daily traffic (ADT) entering the intersection or traveling along the roadway segment. For the intersections studied, the collision rates per million entering vehicles (MEV) were below average collision rates for similar intersections. Snohomish County averages 236 collisions

per MVMT for all county roads according to the 2015 WSDOT Statewide Annual Collision Summary. For the roadway segments studied, the collision rates per 100 million vehicle miles traveled (MVMT) were mostly below the Snohomish County average. The following segments experienced collision rates greater than the county average.

- Westbound US 2 between 51st Ave SE on-ramp and the I-5 off-ramps (260 MVMT)
- SR 204 on-ramp to westbound US 2 (2,360 MVMT)
- SR 204/20th Street SE on-ramp to westbound US 2 (1,580 MVMT)
- 51st Ave SE on-ramp to westbound US 2 (890 MVMT)

Some possible factors contributing to higher than average collision rates are:

- The existing channelization along the US 2 westbound trestle includes narrow 2-foot shoulders and narrow 11-foot lanes
- The ramp from US 2 to I-5 southbound is over capacity during the AM peak, causing congestion on the US 2 westbound trestle
- The signed 30 mph ramp from SR 204 to US 2, followed by the short merge at the SR 204 and 20th Street on ramps

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Year 2040 Traffic Volume Forecast

The process for forecasting volumes for the Year 2040 No Build and Year 2040 Build Alternatives was discussed in the Traffic Volume Forecast section included in the Methods and Assumptions.

Daily Volumes

- For Year 2040 No Build, demand volumes across the US 2 westbound trestle would increase by 9,300 vehicles per day (vpd) compared to Existing Conditions. Volumes increase through most of the day, except for volumes between 11:00 PM and 2:00 AM which match the Existing Condition.
- For the Year 2040 3-Lane Build Alternative (2 GP, 1 HOV), demand volumes across the US 2 westbound trestle would increase by 8,300 vpd compared to Year 2040 No Build. Volumes increase through most of the day, with volumes between 11:00 PM and 3:30 AM matching those for the Year 2040 No Build Alternative.
- For the Year 2040 4-Lane Build Alternative (3 GP, 1 HOV), demand volumes across the US 2 westbound trestle would increase by 10,300 vpd compared to Year 2040 No Build. Volumes only increase during the AM peak period, with volumes through the rest of the day matching those for the 3-Lane Build Alternative.

Attachment 11 shows the hourly demand volume for the Existing Condition, Year 2040 No Build, and Year 2040 Build Alternatives (3-Lane and 4-Lane) along the US 2 westbound trestle. The horizontal lines reflect the approximate capacity of the trestle for three configurations, assuming a capacity of 2,000 vphpl for a GP lane and 1,500 vphpl for an HOV lane.

As shown, both the 3-Lane Build and 4-Lane Build configurations provide enough capacity to serve the demand volume for all alternatives. The configuration that included 2 GP lanes and 1 HOV lane provides enough capacity to serve the demand volumes under the 3-Lane Build Alternative and most of the demand for the 4-Lane Build Alternative assuming a full HOV lane during the AM peak period. If the HOV lane is not fully utilized, there would be some congestion in the GP lanes. Congestion in a GP lane would incentivize any HOV bypass lane and higher occupancy mode of travel. If there is no congestion on the corridor, there would be little incentive for people to coordinate carpools or transit schedules.

Peak Volumes

For the Year 2040 Build Alternatives (3-Lane and 4-Lane), the westbound US 2 traffic flow approaching the US 2/I-5 interchange would increase if the US 2/SR 204/20th Street SE interchange were improved because the eastside interchange would no longer act as a meter for traffic to getting onto the US 2 westbound trestle.

Attachment 12 illustrates the forecasted 3-hour volumes for the morning commute period to and from westbound US 2 for the Existing Condition, Year 2040 No Build, and Year 2040 Build Alternatives (3-Lane and 4-Lane).

Attachment 13 summarizes the mode split for the 1-hour AM peak along westbound US 2. The modes included are GP cars, GP freight, HOV, and transit.

Some key takeaways from the forecasted traffic volumes include:

- Given the congestion that exists on the corridor today with 2 GP lanes, if an HOV lane were
 added, all additional demand in the future would need to be in the HOV lane just to maintain
 existing congestion levels. For context, in the Year 2040 No Build Alternative the 3-hour AM
 peak period demand volume increases by over 1,800 vph. Assuming 60 people per bus, this is
 the equivalent of 30 full busloads over the 3-hour peak (10 buses per hour, or a bus every 6
 minutes). This would only maintain today's congested conditions on the corridor.
- Peak hour demand volumes at the off-ramp from westbound US 2 to southbound I-5 would be between 3,000 and 3,300 vph. 2 GP lanes would be required to serve this volume demand.
- Peak hour demand volumes at the off-ramp from westbound US 2 to downtown Everett would be about 1,600 vph. One benefit of today's exit ramps to downtown Everett is that it provides multiple access points. This strategy should be maintained in the future to avoid overloading a single point in the network.
- For the Year 2040 4-Lane Build Alternative, peak hour demand volumes on 20th Street SE are high enough that the signalized intersections along 20th Street SE become a constraint, resulting in backups on 20th Street SE that are unrelated to operations along the US 2/SR 204/20th Street SE interchange or the US 2 westbound trestle.

Year 2040 No Build Analysis

Corridor

The channelization for Year 2040 No Build is identical to the Existing Condition with the exception of westbound 20th Street SE, which includes a BAT lane between 91st Avenue SE and Cavalero Road.

Traffic Volumes

The forecasted volumes, as shown in Attachment 11 through Attachment 13, represent the demand volumes for the intersections and corridors in the study area.

Operations

Travel Times

The anticipated AM peak hour travel times for the Existing Conditions, Year 2040 No Build, and Year 2040 Build Alternatives during the AM peak hour are illustrated in Attachment 14. Travel times are shown for both GP and HOV traffic for the following segments:

- A. SR 204 from SR 9 to westbound US 2
- B. 20th Street SE from SR 9 to westbound US 2
- C. US 2 from SR 9 to the SR 204/20th Street SE interchange
- D. US 2 from the SR 204/20th Street SE interchange to the I-5 interchange

Travel times along westbound SR 204 (Segment A) and westbound 20th Street SE (Segment B) are expected to increase significantly in the No Build Alternative because the existing 20th Street SE and SR 204 merge is already over capacity in the Existing Conditions, so the additional demand volume in the No Build Alternative adds to the back of the existing queue on these two corridors. West of the US 2/SR 204/20th Street SE interchange, travel times across the US 2 westbound trestle (Segment D) increase more modestly because while there is additional congestion spilling back from I-5 onto the US 2 westbound trestle, the eastside interchange still meters traffic accessing the corridor. The BAT lane on 20th Street provides substantial travel time benefits to transit and HOV traffic, compared to general purpose traffic, but only along the 20th Street segment. Once on the westbound trestle, HOV and transit traffic would travel in the congested GP lanes.

The No Build Alternative travel times compared to the Existing Conditions travel times are displayed in Table 2 below.

Table 2. Year 2040 No Build Travel Times

Segment	Description	Existing Conditions Travel Time (mins)	Year 2040 No Build Travel Time (mins)
Α	SR 9 to US 2 Trestle via SR 204	19	69
В	SR 9 to US 2 Trestle via 20 th St	13	95 (BAT Lane: 17)
С	SR 9 to US 2 Trestle via US 2	3	49
D	US 2 Trestle between Eastside Interchange and I-5	4	19

Congestion

Attachment 15 shows the demand and throughput volume for Existing Conditions and Year 2040 No Build. As discussed in the Volume Forecast section above, AM peak period demand volumes on US 2 westbound increase between Existing Conditions (dashed blue line) and the Year 2040 No Build Alternative (dashed yellow line). The existing throughput (solid blue line) was already less than the demand volume early in the peak, meaning there are unserved vehicles on the corridor, i.e. congestion. In the future No Build Alternative, there is no additional capacity on the corridor, so the additional demand volume translates to more unserved vehicles and more congestion. However, the No Build throughput volume (solid yellow line) is lower than the existing throughput volume (solid blue line). This is because in the Year 2040 No Build Alternative, congestion on I-5 spills back onto the US 2 westbound trestle. The combination of increased demand volume (due to population and employment growth in the region) and the ability to serve fewer vehicles to I-5 southbound causes congestion to increase in the future.

As shown in Attachment 12, the No Build traffic volume demand for the downtown Everett ramps grows by 54% in the future. The traffic demand also increases at the ramp from US 2 to I-5 southbound by 7%. As noted in the Existing Conditions section of this white paper, the ramp from US to I-5 southbound is already at capacity. Early during the AM peak, the additional demand from the westbound US 2 off-ramp to southbound I-5 is limited by congestion on southbound I-5, so the new traffic demand spills back onto westbound US 2. This system level congestion results in longer travel times on westbound US 2 than in the Existing Condition. Later during the AM peak, southbound I-5 becomes constrained due to queues from the Everett Avenue off-ramp backing up onto the I-5 mainline. This causes congestion on southbound I-5 north of downtown Everett which meters traffic on southbound I-5 thus allowing more traffic from US 2 to enter the I-5 corridor.

Congestion on I-5 and the inability for traffic from US 2 to enter the I-5 corridor results in congestion on US 2 that extends across the trestle and out onto SR 204, onto 20th Street SE, and further east on US 2. This congestion is more extensive than the Existing Condition.

Attachment 16 illustrates the AM peak hour congestion along westbound US 2, westbound 20th Street SE, westbound SR 204, and southbound I-5 for No Build.

As shown, US 2, SR 204 and 20th Street are congested for most of the 5-hour peak period. As discussed above, the primary factor contributing to the congestion on US 2, SR 204 and 20th Street is congestion on I-5 southbound limiting the receiving capacity of the US 2 westbound to I-5 southbound ramp. Some specific issues include:

- Southbound I-5 congestion south of the Pacific Street on-ramp limits traffic from the US-2 on-ramp from entering I-5. This limited I-5 capacity results in congestion on the US 2 corridor.
- Congestion on I-5 north of the westbound US 2 to southbound on-ramp worsens through the
 peak period and eventually causes a metering affect at the Everett Avenue off-ramp. This
 metering affect allows more traffic from US 2 to merge onto southbound I-5.
- Congestion from I-5 spills back across the US 2 westbound trestle and onto westbound SR 204 and westbound 20th Street SE. This congestion backs up past SR 9 to the east.

Sensitivity Analysis

The VISSIM model was run for the No Build Alternative, but the ramp from US 2 westbound to I-5 southbound was set to operate without any constraints from the I-5 corridor. The purpose for running the simulation model in this manner was to determine how much of the I-5 corridor congestion impacts operations on the US 2 corridor. Attachment 17 illustrates the AM peak hour congestion along westbound US 2, westbound 20th Street SE, and westbound SR 204 for the No Build (Without I-5) sensitivity test. Congestion on the US 2 Trestle without any constraints from the I-5 corridor would be reduced compared to the No Build Alternative, indicating the degree to which conditions on southbound I-5 southbound influence conditions on the US 2 westbound trestle.

The US 2 westbound trestle is still congested, primarily in the left lane approaching the ramp to I-5 southbound, indicating that the one-lane ramp from US 2 westbound to I-5 southbound does not provide sufficient capacity to serve demand volumes. The merge from the lower roadway on ramp exacerbates the congestion in the left lane, reducing speeds to 50 percent of the posted speed or lower for approximately two hours.

SR 204, 20th Street, and US 2 east of the eastside interchange are all still congested, even when the I-5 constraint is removed. This indicates that the existing eastside interchange does not provide sufficient capacity to serve the future demand volumes

Non-Motorized

The channelization for the Year 2040 No Build is identical to the Existing Condition, which includes the US 2 trail along the south side of eastbound US 2.

Safety

The safety of the Year 2040 No Build Alternative was not analyzed qualitatively. The channelization for the Year 2040 No Build Alternative is identical to the Existing Condition, but more congestion is expected in the No Build Alternative, which is expected to have an impact on safety conditions. Crash severity tends to decrease during traffic congestion due to lower travel speeds, but crash frequency tends to increase.

Alternatives Development

Please see the Alternatives Development section of the Planning and Environmental Linkage document for information about the development and preliminary screening of alternatives that meet the project need.

Year 2040 Build Alternative 1

Corridor

The proposed layout for Alternative 1, shown in Attachment 18, consists of the following:

- One westbound US 2 lane at the SR 204/20th Street SE interchange
- Two-lane on-ramp to westbound US 2 at the SR 204/20th Street SE interchange
- Three GP lanes across the US 2 westbound trestle
 - o On-ramp from lower roadway to westbound US 2 relocated to Cherry Avenue
- One-lane ramp from westbound US 2 to northbound I-5 widening to two lanes for ramp meter storage
- Two-lane off-ramp from westbound US 2 to southbound I-5 merging to one lane prior to accessing I-5
- Two-lane off-ramp from westbound US 2 to downtown Everett, entering the local system at the Everett Avenue/I-5 Northbound On-Ramp intersection
- Additional one-lane transit-only off-ramp from westbound US 2 to downtown Everett, entering the local system at California Street/Maple Street
- Local improvements, including:
 - o Two-way local bridge west of the SR 204/20th Street SE interchange
 - Local improvements at 20th Street SE/SR 204 intersection
 - o Local improvements at Cherry Avenue
 - Local improvements along Everett Avenue potential diverging diamond interchange (DDI)

Traffic Volumes

Alternative 1 includes three lanes across the US 2 westbound trestle with 2 GP and 1 HOV lane. The 3-Lane Build Alternative volumes described in in the Year 2040 Traffic Volume Forecast section were used for the analysis of this alternative. Refer to Attachment 11 through Attachment 13.

Operations

Prior to analyzing Alternative 1 in VISSIM, the preliminary alternative configuration and lane assumptions was assessed qualitatively.

Over 1,500 vph would use the off-ramp from westbound US 2 to downtown Everett during the AM peak hour. This level of traffic volume at a controlled intersection would require three left-turn lanes from the off-ramp to westbound Everett Avenue to avoid having queues back onto westbound US 2. Triple left turn lane configuration are constructed in some locations, but it is an uncommon practice. It is uncommon because it requires three receiving lanes, operates with unbalanced lane utilization, and requires several lanes with adequate storage length. As described in the Alternatives Development section of the Planning and Environmental Report, Alternative 1 was screened out for further consideration due to anticipated impact to I-5.

Alternative 1 was not analyzed in VISSIM.

Year 2040 Build Alternative 2

Corridor

The proposed layout for Alternative 2, shown in Attachment 19, consists of the following:

- Two westbound US 2 lanes at the SR 204/20th Street SE interchange
- Two-lane on-ramp to westbound US 2 at the SR 204/20th Street SE interchange
 - 20th Street westbound is two lanes east of Cavalero Road (one GP lane and one BAT lane), but merges to one lane west of Cavalero Road, a direct connection between the BAT lane and the HOV lane on the US 2 trestle is not provided.
 - The on-ramp from 20th Street SE flies over the on-ramp from SR 204 to become the northernmost ramp along westbound US 2
- Four lanes across the US 2 westbound trestle 3 GP lanes + 1 HOV lane on the left
 - On-ramp from lower roadway to westbound US 2 relocated to Cherry Avenue
- One-lane off-ramp from westbound US 2 to northbound I-5 widening to two lanes for ramp meter storage
- Two-lane off-ramp from westbound US 2 to southbound I-5 merging to one lane prior to accessing I-5
- Two-lane off-ramp (1 GP, 1 HOV) from westbound US 2 to downtown Everett, entering the local system at Hewitt Avenue/Walnut Street
- Local improvements, including:
 - o Two-way local bridge west of the SR 204/20th Street SE interchange
 - o Local improvements at 20th Street SE/SR 204 intersection
 - Local improvements at Cherry Avenue
 - Local improvements along Hewitt Avenue

Traffic Volumes

Alternative 2 includes four lanes across the US 2 westbound trestle, so the 4-Lane Build volumes were used for the analysis of this alternative. Refer to Attachment 11 through Attachment 13.

Operations

Travel Times

The anticipated AM peak hour travel times for Alternative 2 are shown in Attachment 14. Travel times on SR 204 between SR 9 and US 2 are worse compared to the No Build Alternative because congestion from the westside interchange area spills back across the trestle and onto SR 204. GP travel times on 20th Street SE between SR 9 and US 2 improve compared to the No Build Alternative because the congestion on the US 2 Trestle is worse in the center two lanes compared to the right lane, and the 20th Street SE on-ramp flies over the SR 204 on-ramp to connect to the northernmost lane. There is additional demand volume on the ramp from westbound US 2 to southbound I-5 compared to the No Build Alternative, but the ramp is already over capacity in the No Build Alternative (in large part due to limited receiving capacity on I-5 southbound), so the additional volume adds to the back of the queue.

The HOV lane provides a travel time benefit compared to GP traffic, even though congestion from the westside interchange spills into the HOV lane. HOV traffic destined for downtown Everett receive the most benefit from the left-side HOV lane, as it provides a direct connection to the downtown Everett off ramp. Despite the missing connection between the BAT lane on 20th Street and the HOV lane on the US 2 westbound trestle, the travel time savings for provide an incentive for would-be single occupant drivers to use transit or organize carpools.

The Alternative 2 travel times compared to the No Build Alternative travel times are displayed in Table 3 below.

Table 3. Year 2040 Build Alternative 2 Travel Times

Segment	Description	Year 2040 No Build Travel Time (mins)	Year 2040 Build Alternative 2 Travel Time (mins)
Α	SR 9 to US 2 Trestle via SR 204	69	92
В	SR 9 to US 2 Trestle via 20 th St	95 (BAT Lane: 17)	69 (BAT Lane: 14)
С	SR 9 to US 2 Trestle via US 2	49	80
D	US 2 Trestle between Eastside Interchange and I-5	19	38 (BAT Lane: 26)

Congestion

Attachment 20 illustrates the AM peak hour congestion along westbound US 2, westbound 20th Street SE, westbound SR 204, and southbound I-5 for Alternative 2.

Alternative 2 improves the eastside interchange compared to the No Build Alternative, allowing demand volumes to reach the I-5/Downtown Everett interchange on the westside. However, I-5 southbound has the same limited receiving capacity as in the No Build Alternative which is the primary factor contributing to the congestion on US 2, SR 204 and 20th Street early during the peak period. Later during the AM peak period, southbound I-5 becomes constrained due to queues from the Everett Avenue off-ramp backing up onto the I-5 mainline. This causes congestion on southbound I-5 north of downtown Everett which meters traffic on southbound I-5, increasing the receiving capacity south of US 2. But the single lane off-ramp from US 2 westbound to I-5 southbound does not provide sufficient capacity to serve the demand so backups on the US 2 westbound trestle that extend well beyond the eastside interchange and past SR 9 do not dissipate during the five-hour AM peak period.

Sensitivity Analysis

The congestion in Alternative 2 spilling back onto the 4-lane US 2 Westbound Trestle makes it difficult to assess how well the alternative would function without the downstream constraint on southbound I-5. The congestion in Alternative 2 also indicates that the increase in demand volumes over the No Build Alternative may be less than the initial travel demand model results indicate. Future iterations of the work should utilize a dynamic traffic assignment model to account for the effects of congestion when developing future year demand volumes.

Additional sensitivity tests were run for Alternative 2 to test how the alternative would operate under different conditions. These tests included:

- Alternative 2 (Ramp Location): this sensitivity test analyzed an alternate configuration for the
 on-ramps from SR 204 and 20th Street SE. Instead of 20th Street SE flying over SR 204 to become
 the northernmost ramp along westbound US 2, the on-ramps from SR 204 and 20th Street SE
 would maintain the same relative positions as in existing conditions with SR 204 as the
 northernmost ramp.
- Alternative 2 (Without I-5): this sensitivity test assumed a 2-lane off ramp from US 2 westbound to I-5 southbound, and removed the downstream constraints on I-5, representing how Alternative 2 would operate with enough ramp capacity to meet demand, and without congestion on I-5 influencing conditions across the US 2 westbound trestle.
- Alternative 2 (No Build Volumes): this test used the demand volumes from the Year 2040 No Build Alternative, representing how Alternative 2 would operate if demand volumes did not increase above No Build levels. The vehicle inputs in the model were reduced to No Build volumes, but the traffic patterns and origin destination percentages were maintained as in Alternative 2.

Attachment 21 illustrates the AM peak hour congestion along westbound US 2, westbound 20th Street SE, and westbound SR 204 for the Alternative 2 (Ramp Location) sensitivity test. The results of this test indicate that while system operations are typically the same, the congestion levels and travel times on 20th Street SE and on SR 204 switch. The northernmost lane is the least congested GP lane on the westbound trestle, and whichever ramp aligns with the northernmost lane will experience slightly less congestion and faster travel times than the other ramp. Attachment 21. Alternative 2 (Ramp Location) Congestion Diagram

Attachment 22 illustrates the AM peak hour congestion along westbound US 2, westbound 20th Street SE, and westbound SR 204 for the Alternative 2 (Without I-5) sensitivity test. The results of this test indicate that if there is sufficient receiving capacity on I-5 southbound, and a two-lane ramp from US 2 westbound to I-5 southbound is provided, the additional demand volume reaching downtown Everett would cause congestion at downtown intersections that impacts the trestle. However, the impact of downtown Everett congestion is less than the impact from I-5 congestion. The additional demand volume reaching Everett Avenue would cause congestion at intersections on Maple Street, especially the Maple Street and Pacific Avenue intersection.

This test also revealed that the intersections on 20th Street SE would be over capacity, resulting in congestion between the Cavalero Road and SR 9 intersections.

Attachment 23 illustrates the AM peak hour congestion along westbound US 2, westbound 20th Street SE, westbound SR 204, and southbound I-5 for the Alternative 2 (No Build Volumes) sensitivity test. The results of this test indicate that Alternative 2 would operate better than the No Build Alternative on SR 204 and across the Trestle. There is still congestion on the Trestle, but the HOV lane does provide a bypass for buses and HOV traffic. Near the west interchange, the HOV lane begins to experience some congestion as HOV vehicles destined for I-5 southbound merge into GP traffic

Non-Motorized

Non-motorized improvements like bike lanes, shared lanes, and pedestrian connectivity were assumed to be an integral part of every alternative. As each of the alternative roadway configurations were being developed, a clear understanding about the need to include non-motorized connectivity was understood to be a final update to the alternatives. The US 2/SR 204/20th Street SE IJR identified the lower roadway (20th Street) as the primary location for the non-motorized crossing of Ebey Island. Including a shared-use path along one side of the new US 2 trestle was not excluded from consideration and both concepts would require further coordination with the local agencies, non-motorized groups, and WSDOT to finalize these concepts. No final analysis was completed for traffic operational impacts caused by potential non-motorized connections, but it was clear that those connections would not be a differentiator between the various alternatives.

Safety

The safety of the Year 2040 Build Alternative 2 was not analyzed quantitatively at this phase. The existing channelization along the US 2 westbound trestle includes two lanes with 2-foot shoulders on either side. The Year 2040 Build Alternative 2 would provide standard shoulder widths of 8 to 10 feet, which are expected to improve safety along the corridor. Without the sensitivity tests, there is more congestion in Alternative 2 than in the No Build Alternative, which is expected to have an impact on safety conditions. Crash severity tends to decrease during traffic congestion due to lower travel speeds, but crash frequency tends to increase.

Year 2040 Build Alternative 3

Corridor

The proposed layout for Alternative 3, shown in Attachment 24, consists of the following:

- Two westbound US 2 lanes at the SR 204/20th Street SE interchange
- One-lane on-ramp to westbound US 2 at the SR 204/20th Street SE interchange
- Three GP lanes across the US 2 Westbound Trestle
 - o On-ramp from lower roadway to westbound US 2 relocated to Cherry Avenue
- One-lane off-ramp from westbound US 2 to northbound I-5 widening to two lanes for ramp meter storage
- One-lane HOV off-ramp and one-lane general purpose off-ramp from westbound US 2 to southbound I-5, both merge to a one-lane ramp to I-5
- One-lane off-ramp from westbound US 2 to downtown Everett, entering the local system at California Street/Maple Street
- Local improvements, including:
 - o Two-way local bridge west of the SR 204/20th Street SE interchange
 - o Local improvements at 20th Street SE/SR 204 intersection
 - o Local improvements at Cherry Avenue

Traffic Volumes

Alternative 2 includes three lanes across the US 2 Westbound Trestle, so the 3-Lane Build volumes were used for the analysis of this alternative. Refer to Attachment 11 through Attachment 13.

Operations

Travel Times

The anticipated AM peak hour travel times for Alternative 3 are shown in Attachment 14. Travel times on SR 204 between SR 9 and US 2 improve compared to the No Build Alternative because the SR 204 and 20th Street SE merge is improved, and although there is congestion on the 3-lane US 2 Westbound Trestle, the congestion is worse in the left two lanes compared to the right lane. Travel times on 20th Street SE between SR 9 and US 2 and on US 2 both east and west of the SR 204/20th Street SE interchange are worse compared to the No Build Alternative. There is additional demand volume on the ramp from westbound US 2 to southbound I-5 compared to the No Build Alternative, but the ramp is already over capacity in the No Build Alternative, so the additional volume adds to the back of the queue.

The BAT lane on 20th provides a benefit for HOV traffic, but no connecting HOV facilities are provided on US 2 and HOV and bus traffic would travel in the congested GP lanes.

The Alternative 3 travel times compared to the No Build Alternative travel times are displayed in Table 4 below.

Table 4. Year 2040 Build Alternative 3 Travel Times

Segment	Description	Year 2040 No Build Travel Time (mins)	Year 2040 Build Alternative 3 Travel Time (mins)
Α	SR 9 to US 2 Trestle via SR 204	69	64
В	SR 9 to US 2 Trestle via 20 th St	95 (BAT Lane: 17)	130 (BAT Lane: 19)
С	SR 9 to US 2 Trestle via US 2	49	75
D	US 2 Trestle between Eastside Interchange and I-5	19	33

Congestion

Attachment 25 illustrates the AM peak hour congestion along westbound US 2, westbound 20th Street SE, westbound SR 204, and southbound I-5 for Alternative 2. Similar to Alternative 2, Alternative 3 improves the eastside interchange compared to the No Build Alternative, allowing demand volumes to reach the I-5/Downtown Everett interchange on the westside. However, I-5 southbound has the same limited receiving capacity which is the primary factor contributing to the congestion on US 2, SR 204 and 20th Street early during the peak period. Later during the AM peak period, southbound I-5 becomes constrained due to queues from the Everett Avenue off-ramp backing up onto the I-5 mainline. This causes congestion on southbound I-5 north of downtown Everett which meters traffic on southbound I-5, increasing the receiving capacity south of US 2. But the single lane off-ramp from US 2 westbound to I-5 southbound does not provide sufficient capacity to serve the demand so backups on the US 2 westbound trestle that extend well beyond the eastside interchange and past SR 9 do not dissipate during the five-hour AM peak period.

Sensitivity Analysis

The congestion in Alternative 3 spilling back onto the 3-lane US 2 Westbound Trestle makes it difficult to assess how well the alternative would function without the downstream constraint on southbound I-5. The congestion in Alternative 3 also indicates that the increase in demand volumes over the No Build Alternative may be less than the initial travel demand model results. Future iterations of the work should utilize a dynamic traffic assignment model to account for the effects of congestion when developing future year demand volumes.

Additional sensitivity tests were run for Alternative 3 to test how the alternative would operate under different conditions. These tests included:

- Alternative 3 (I-5 SB Two Lanes): this test included two GP lanes on the off-ramp from westbound US 2 to southbound I-5 with two lanes entering southbound I-5 and an added peak use shoulder lane on I-5 southbound between US 2 and south of the 41st interchange, representing how Alternative 3 would operate with enough ramp capacity to meet demand.
- Alternative 3 (Without I-5): this sensitivity test assumed a 2-lane GP off ramp from US 2
 westbound to I-5 southbound, and cut the ramp, representing how Alternative 3 would operate
 with enough ramp capacity to meet demand, and without congestion on I-5 influencing
 conditions across the US 2 westbound trestle.
- Alternative 3 (No Build Volumes): this test used the demand volumes from the Year 2040 No Build Alternative, representing how Alternative 3 would operate if demand volumes did not increase above No Build levels. The vehicle inputs in the model were reduced to No Build volumes, but the traffic patterns and origin destination percentages were maintained as in Alternative 2.

Attachment 26 illustrates the AM peak hour congestions along westbound US 2, westbound 20th Street SE, westbound SR 204, and southbound I-5 for the Alternative 3 (I-5 SB Two Lanes) sensitivity test. The two-lane off-ramp allows volume from US 2 to access southbound I-5, but the additional volume from US 2 onto would cause congestion on southbound I-5 between the on-ramps from US 2 and Pacific Street and the off-ramp to 41st Street. The right lanes on I-5 become congested as people positioning to exit at 41st Street mix with traffic entering from US 2 and Pacific Street. The congestion on I-5 would back up on the US 2 Westbound Trestle, beyond the eastside interchange, and past SR 9. The results of this sensitivity test indicate that without improvements to I-5, congestion from I-5 will impact trestle operations in the future, even if sufficient capacity is provided on the off-ramp from westbound US 2 to southbound I-5.

Attachment 27 illustrates the AM peak hour congestion along westbound US 2, westbound 20th Street SE, and westbound SR 204 for the Alternative 3 (Without I-5) sensitivity test. The results of this test indicate that if congestion on I-5 is not influencing conditions on the US 2 Westbound Trestle, the additional demand volume reaching downtown Everett would cause congestion that impacts the trestle. However, the congestion from downtown Everett is less than the impact from congestion on I-5.

Attachment 28 illustrates the AM peak hour congestion along westbound US 2, westbound 20th Street SE, westbound SR 204, and southbound I-5 for the Alternative 3 (No Build Volumes) sensitivity test. The results of this test indicate that Alternative 3 would operate better than the No Build Alternative on SR 204 and across the Trestle.

Non-Motorized

Non-motorized improvements like bike lanes, shared lanes, and pedestrian connectivity were assumed to be an integral part of every alternative. As each of the alternative roadway configurations were being developed, a clear understanding about the need to include non-motorized connectivity was understood to be a final update to the alternatives. The US 2/SR 204/20th Street SE IJR identified the lower roadway (20th Street) as the primary location for the non-motorized crossing of Ebey Island. Including a shared use path along one side of the new US 2 trestle was not excluded from consideration and both concepts would require further coordination with the local agencies, non-motorized groups, and WSDOT to finalize these concepts. No final analysis was completed for traffic operational impacts caused by potential non-motorized connections, but it was clear that those connections would not be a differentiator between the various alternatives.

Safety

The safety of the Year 2040 Build Alternative 3 was not analyzed qualitatively. The existing channelization along the US 2 westbound trestle includes two lanes with 2-foot shoulders on either side. The Year 2040 Build Alternative 3 would provide standard shoulder widths of 8 to 10 feet, which are expected to improve safety along the corridor. Without the sensitivity tests, there is more congestion in Alternative 3 than in the No Build Alternative, which is expected to have an impact on safety conditions. Crash severity tends to decrease during traffic congestion due to lower travel speeds, but crash frequency tends to increase.

Attachments

Attachment 1. Data Collection Summary

Attachment 2. Corridor Lanes and Milepost

Attachment 3. Tube Count Summary

Attachment 4. Tube Count Comparison

Attachment 5. Existing Corridor Segment Volumes

Attachment 6. Existing Intersection Volumes – AM and PM Peak

Attachment 7. Existing Volume Throughput

Attachment 8. Existing Travel Times and Speeds

Attachment 9. Existing Congestion Diagrams

Attachment 10. Existing Collision Locations

Attachment 11. Forecasted Volumes Chart

Attachment 12. Forecasted Volumes - AM 3-Hour Peak

Attachment 13. Forecasted Volumes - Mode Split

Attachment 14. No Build and Build Alternatives Travel Times

Attachment 15. No Build Volume Throughput

Attachment 16. No Build Congestion Diagram

Attachment 17. No Build (Without I-5) Congestion Diagram

Attachment 18. Alternative 1 Layout

Attachment 19. Alternative 2 Layout

Attachment 20. Alternative 2 Congestion Diagram

Attachment 21. Alternative 2 (Ramp Location) Congestion Diagram

Attachment 22. Alternative 2 (Without I-5) Congestion Diagram

Attachment 23. Alternative 2 (No Build Volumes) Congestion Diagram

Attachment 24. Alternative 3 Layout

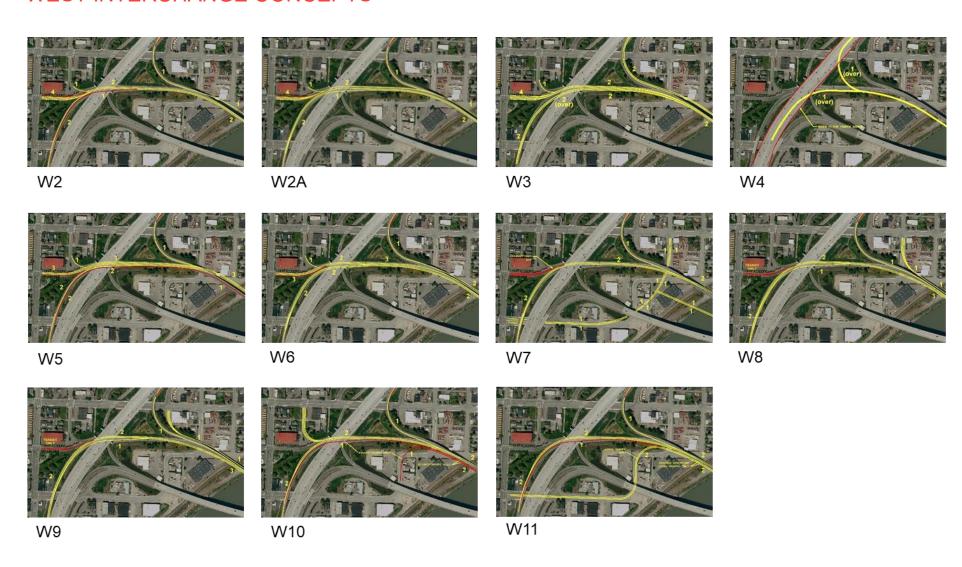
Attachment 25. Alternative 3 Congestion Diagram

Attachment 26. Alternative 3 (I-5 SB Two Lanes) Congestion Diagram

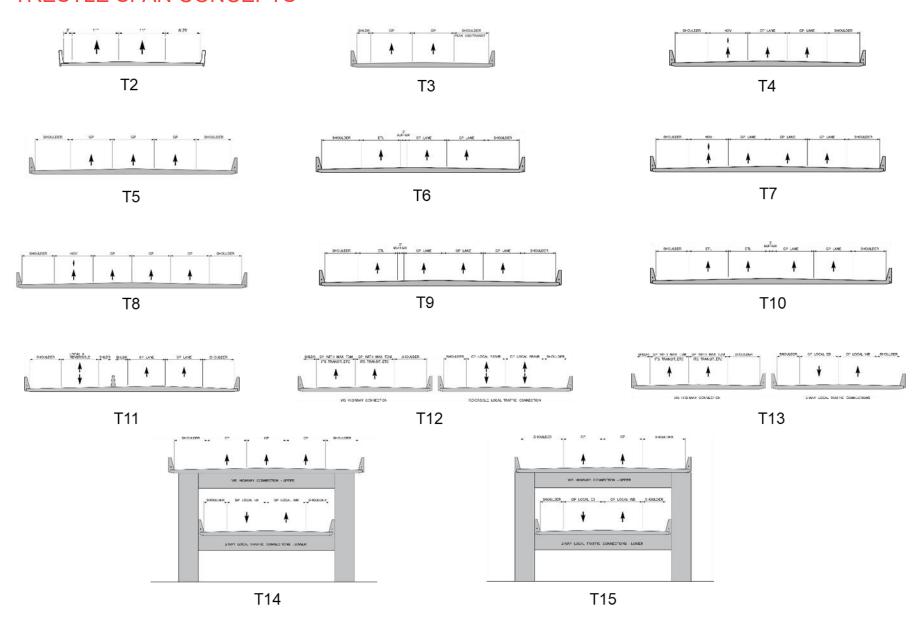
Attachment 27. Alternative 3 (without I-5) Congestion Diagram

Attachment 28. Alternative 3 (No Build Volumes) Congestion Diagram

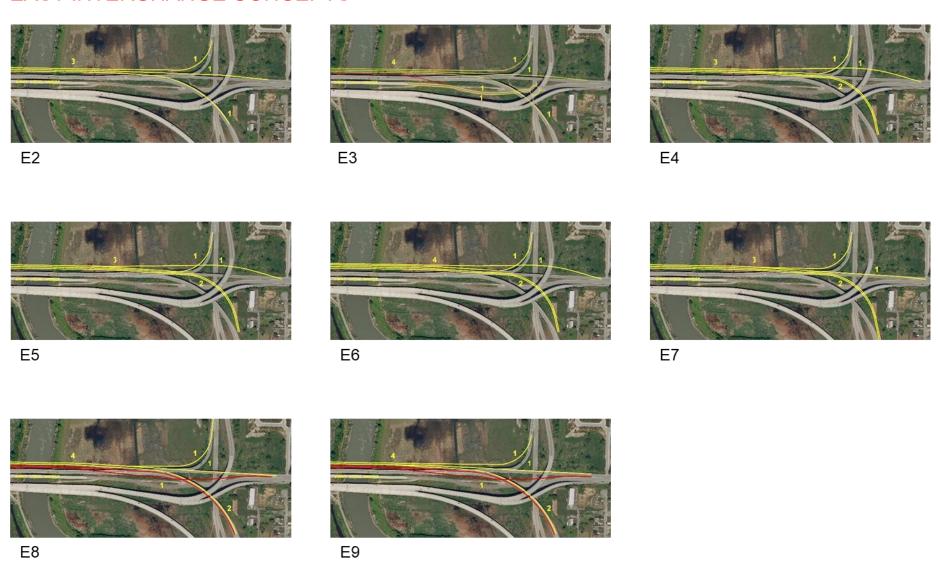
WEST INTERCHANGE CONCEPTS



TRESTLE SPAN CONCEPTS



EAST INTERCHANGE CONCEPTS





MEMO

TO: WSDOT US2 Westbound Trestle Project Office

FROM: Stephanie Sprague, WSP

SUBJECT: US 2 Westbound Trestle: Environmental Justice Baseline Data Summary

DATE: March 19, 2019

This memorandum identifies the project's Environmental Justice Study Area (Figure 1) and summarizes the baseline demographic profile for the EJ study area compiled from the most recently released American Community Survey 2013-2017 5-year estimates¹. Additionally, a list of community based organizations and social service providers that may be able to further inform the community engagement efforts is included.

The ACS data, when mapped, illustrates that there are areas with higher concentrations of minority, Hispanic/Latino, low-income and limited English proficient persons and households with no vehicle than the corresponding Snohomish County average.

Figure 1 illustrates areas where there are concentrations of minority persons. The southwest quadrant of the EJ study area near Lake Stickney, Paine Field and Mill Creek, as well as on the Tulalip Reservation, contains census block groups with substantially higher concentrations of minorities (43 percent or more minority) than the Snohomish County average (23 percent minority).

¹ For the detailed ACS data tables, please see Attachment 1. The 2013-2017 5-year estimates are the most current estimates available at the time this memorandum was prepared.



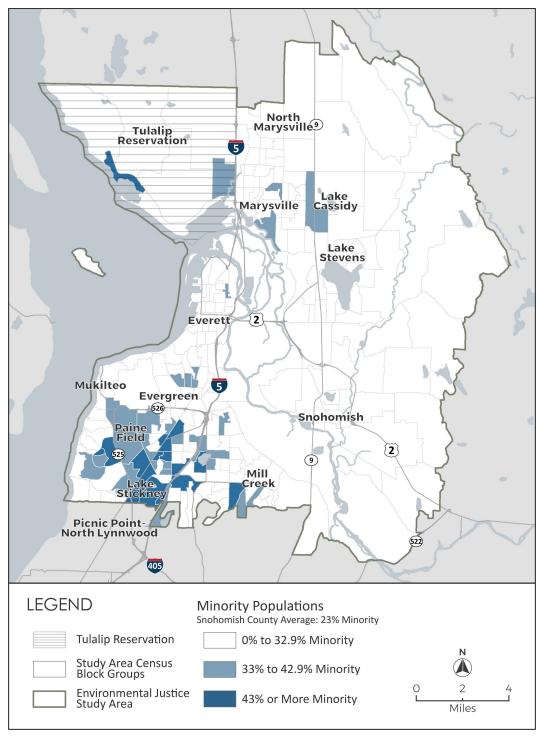


Figure 1. EJ Study Area Census Block Groups with Concentrations of Minority Persons

Figure 2 illustrates areas where there are concentrations of Hispanic/Latino persons. The southwest quadrant of the EJ study area near Lake Stickney, Paine Field and Mill Creek, as well as in Marysville and Lake Stevens, contains census block groups with substantially higher concentrations of Hispanic/Latino persons (30 percent or more Hispanic/Latino) than the Snohomish County average (10 percent Hispanic/Latino).



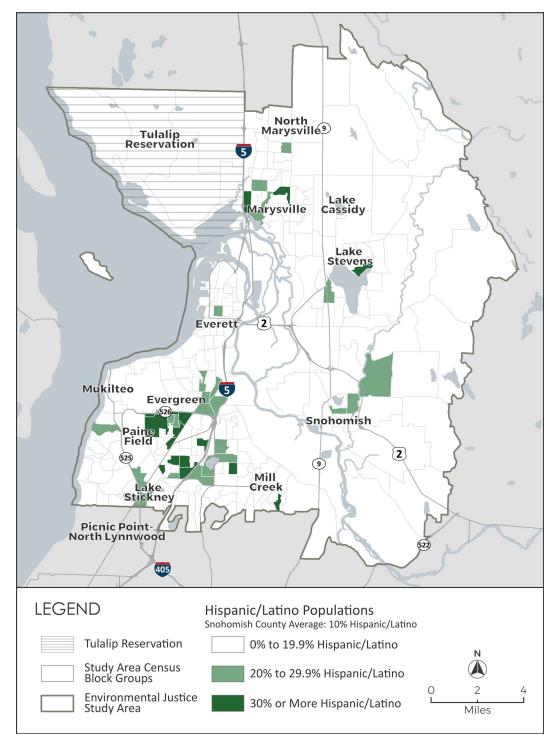


Figure 2. EJ Study Area Census Block Groups with Concentrations of Hispanic/Latino Persons

Figure 3 illustrates areas where there are concentrations of low-income households. There are census block groups near Lake Stickney, Evergreen, Everett and Marysville that contain substantially higher concentrations of low-income households (28 percent or more low-income) than the Snohomish County average (8 percent low-income). Elementary schools with more than 50 percent of students qualifying for free lunch, based on household income, under the National School Lunch Program are also mapped on Figure 3.



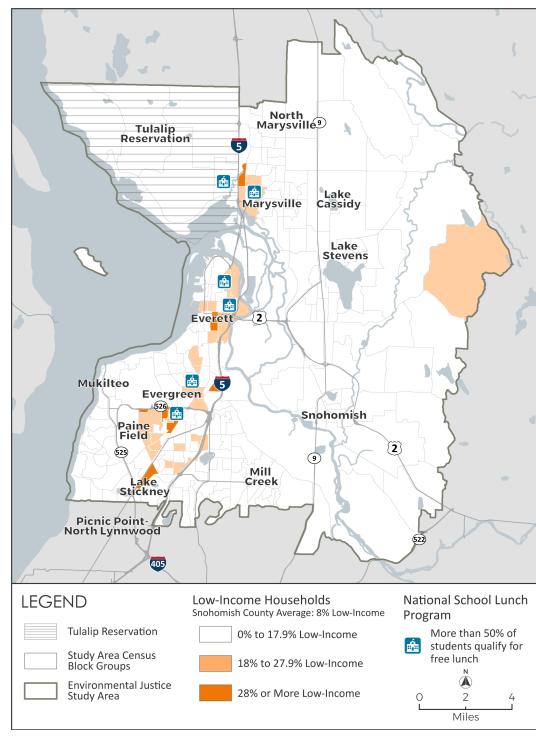


Figure 3. EJ Study Area Census Block Groups with Concentrations of Low-Income Households

Figure 4 illustrates areas where there are concentrations of households with no vehicle available. There are census block groups near Evergreen, Everett and North Marysville with substantially higher concentrations of households with no vehicle available (25 percent or more households with no vehicle available) than the Snohomish County average (5 percent households with no vehicle available).



North Marysville⁹ Tulalip Reservation 5 Lake Cassidy Marysville Lake Stevens Everet Mukilteo Evergreen Snohomish Paine Field (2) Mill Lake Creek Stickney Picnic Point-North Lynnwood 0 2 405 Miles **LEGEND** No Vehicle Households Snohomish County Average: 5% No Vehicle Households **Tulalip Reservation** 0% to 14.9% No Vehicle Households Study Area Census Block Groups 15% to 24.9% No Vehicle Households Environmental Justice Study Area 25% or More No Vehicle Households

Figure 4. EJ Study Area Census Block Groups with Concentrations of Households with No Vehicle Available

Figure 5 shows census block groups where 5 percent or more of the population in that census block has limited English proficiency (LEP). WSDOT policy about translation services is contained in the agency's Limited English Proficiency Plan. WSDOT is committed to providing equal access to project information in their language for LEP persons.



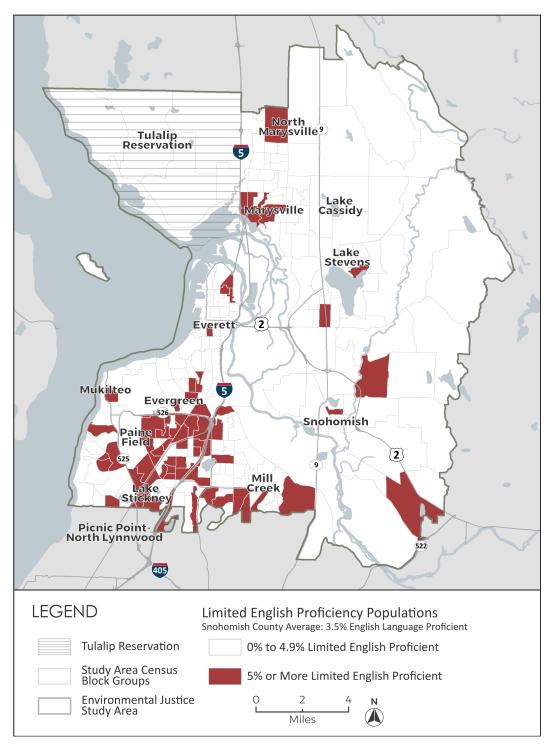


Figure 5. EJ Study Area Census Block Groups with Five Percent or More Limited English Proficient Persons

Table 1 lists community based organizations (CBOs) and social service providers who may be able to inform and support the project's community engagement efforts, including identifying other non-English languages spoken at home.



Table 1. Community Based Organizations (CBOs) and Social Service Providers

Organization
United Way of Snohomish County
BIKES Club of Snohomish County
Community Foundation of Snohomish County
FutureWise
The Nature Conservancy - Washington
Washington Vocational Services
Boys & Girls Clubs of Snohomish County
Familias Unidas
Leadership Snohomish County
Operation Homefront
Sherwood Community Services
Sierra Club Sno-Isle Group
Everett Station District Alliance
Lake Stevens Family Support Center
YMCA of Snohomish County

The complete ACS 5-year estimate data tables that were used to generate the maps in this memorandum are provided in Attachment 1.



Attachment 1: American Community Survey (ACS) 2013-2017 5-Year Estimates



GEOID_2	Geography Description	Total Population	Total Households	Minority (%)	Hispanic/Latino (%)	Low-Income (%)	No Vehicle Available (%)	Limited English Proficiency (%)
_	Snohomish County	771904	284477	23	10	8	5	3.5
530610419034	Block Group 4, Census Tract 419.03, Snohomish County, Washington	2063	675	24	25	35	16	17
530610418061	Block Group 1, Census Tract 418.06, Snohomish County, Washington	1676	568	67	20	4	8	2
530610529033	Block Group 3, Census Tract 529.03, Snohomish County, Washington	1292	577	16	18	18	11	0
530610418113	Block Group 3, Census Tract 418.11, Snohomish County, Washington	2537	1103	27	9	5	11	3
530610527051	Block Group 1, Census Tract 527.05, Snohomish County, Washington	2253	707	14	14	2	0	1
530610408002	Block Group 2, Census Tract 408, Snohomish County, Washington	1656	995	27	8	17	20	4
530610404003	Block Group 3, Census Tract 404, Snohomish County, Washington	1807	744	16	13	22	9	1
530610415001	Block Group 1, Census Tract 415, Snohomish County, Washington	667	248	10	6	17	2	0
530610413031	Block Group 1, Census Tract 413.03, Snohomish County, Washington	2742	1247	23	4	10	5	2
530610412021	Block Group 1, Census Tract 412.02, Snohomish County, Washington	1033	382	28	26	24	13	4
530610412023	Block Group 3, Census Tract 412.02, Snohomish County, Washington	1559	495	27	10	11	0	2
530610413041	Block Group 1, Census Tract 413.04, Snohomish County, Washington	1549	483	12	12	2	2	0
530610409002	Block Group 2, Census Tract 409, Snohomish County, Washington	1783	696	10	6	13	1	0
530610413013	Block Group 3, Census Tract 413.01, Snohomish County, Washington	1390	637	11	15	0	4	0
530610414001	Block Group 1, Census Tract 414, Snohomish County, Washington	1177	381	11	10	10	6	1
530610414002	Block Group 2, Census Tract 414, Snohomish County, Washington	1241	582	22	19	33	38	0
530610414003	Block Group 3, Census Tract 414, Snohomish County, Washington	1041	418	28	27	0	2	0
530610414004	Block Group 4, Census Tract 414, Snohomish County, Washington	2183	694	22	28	4	1	4
530610520031	Block Group 1, Census Tract 520.03, Snohomish County, Washington	1855	617	47	4	3	0	10
530610417043	Block Group 3, Census Tract 417.04, Snohomish County, Washington	1388	433	44	0	0	0	3
530610527071	Block Group 1, Census Tract 527.07, Snohomish County, Washington	3147	911	24	2	1	1	2
530610413033	Block Group 3, Census Tract 413.03, Snohomish County, Washington	1043	335	22	20	0	0	7
530610413014	Block Group 4, Census Tract 413.01, Snohomish County, Washington	518	231	33	0	5	0	0
530619400012	Block Group 2, Census Tract 9400.01, Snohomish County, Washington	1650	511	34	15	6	4	3
530610411002	Block Group 2, Census Tract 411, Snohomish County, Washington	1356	454	37	24	23	13	9
530610416014	Block Group 4, Census Tract 416.01, Snohomish County, Washington	1172	398	30	3	17	11	7
530610412024	Block Group 4, Census Tract 412.02, Snohomish County, Washington	1334	414	7	25	19	0	9
530610529052	Block Group 2, Census Tract 529.05, Snohomish County, Washington	1317	480	29	17	31	21	0
530610521042	Block Group 2, Census Tract 521.04, Snohomish County, Washington	647	260	9	9	17	3	2
530610520042	Block Group 2, Census Tract 520.04, Snohomish County, Washington	1272	464	31	14	0	3	2
530610520043	Block Group 3, Census Tract 520.04, Snohomish County, Washington	1144	499	23	6	0	3	11
530610520044	Block Group 4, Census Tract 520.04, Snohomish County, Washington	2223	661	30	3	11	0	6
530610418102	Block Group 2, Census Tract 418.10, Snohomish County, Washington	2489	1171	32	17	8	0	8
530610418091	Block Group 1, Census Tract 418.09, Snohomish County, Washington	2139	756	65	43	15	12	22
530610419032	Block Group 2, Census Tract 419.03, Snohomish County, Washington	2802	1091	37	44	24	13	15
530610415002	Block Group 2, Census Tract 415, Snohomish County, Washington	631	235	2	1	3	2	2
530610416012	Block Group 2, Census Tract 416.01, Snohomish County, Washington	2204	657	17	12	0	0	5
530610416013	Block Group 3, Census Tract 416.01, Snohomish County, Washington	1360	506	36	5	8	0	4
530610521183	Block Group 3, Census Tract 521.18, Snohomish County, Washington	2988	929	13	4	2	2	3
530610420032	Block Group 2, Census Tract 420.03, Snohomish County, Washington	1715	675	14	8	2	0	2



GEOID_2	Geography Description	Total Population	Total Households	Minority (%)	Hispanic/Latino (%)	Low-Income (%)	No Vehicle Available (%)	Limited English Proficiency (%)
	Snohomish County	771904	284477	23	10	8	5	3.5
530610420062 E	Block Group 2, Census Tract 420.06, Snohomish County, Washington	2048	926	36	9	4	0	7
530610521154 E	Block Group 4, Census Tract 521.15, Snohomish County, Washington	788	277	20	11	0	0	0
530610520041 E	Block Group 1, Census Tract 520.04, Snohomish County, Washington	1871	970	30	4	1	9	1
530610521153 E	Block Group 3, Census Tract 521.15, Snohomish County, Washington	472	199	7	0	0	0	4
530610527082 E	Block Group 2, Census Tract 527.08, Snohomish County, Washington	1292	344	23	10	3	0	2
530610529061 E	Block Group 1, Census Tract 529.06, Snohomish County, Washington	1621	612	1	4	2	3	0
530619400021 E	Block Group 1, Census Tract 9400.02, Snohomish County, Washington	1033	454	57	4	14	5	0
530610526071 E	Block Group 1, Census Tract 526.07, Snohomish County, Washington	2273	732	11	3	3	1	1
530610527053 E	Block Group 3, Census Tract 527.05, Snohomish County, Washington	1357	480	18	5	10	0	0
530619900020 E	Block Group 0, Census Tract 9900.02, Snohomish County, Washington	0	0	0	0	0	0	0
530610523012 E	Block Group 2, Census Tract 523.01, Snohomish County, Washington	1540	566	4	1	1	2	0
530610526052 E	Block Group 2, Census Tract 526.05, Snohomish County, Washington	1817	618	6	7	0	0	0
	Block Group 2, Census Tract 529.03, Snohomish County, Washington	623	244	27	30	22	16	10
530610536041 E	Block Group 1, Census Tract 536.04, Snohomish County, Washington	1711	647	7	5	7	0	1
530610527062 E	Block Group 2, Census Tract 527.06, Snohomish County, Washington	1572	527	13	16	14	5	5
530610525023 E	Block Group 3, Census Tract 525.02, Snohomish County, Washington	1660	597	8	3	4	3	2
	Block Group 4, Census Tract 401, Snohomish County, Washington	1613	305	19	9	5	3	1
530610535051 E	Block Group 1, Census Tract 535.05, Snohomish County, Washington	820	329	14	11	8	3	1
	Block Group 1, Census Tract 416.01, Snohomish County, Washington	1393	568	17	2	0	2	4
	Block Group 2, Census Tract 9400.02, Snohomish County, Washington	1814	608	27	6	13	5	1
	Block Group 2, Census Tract 536.02, Snohomish County, Washington	1029	397	1	2	21	4	0
	Block Group 3, Census Tract 418.06, Snohomish County, Washington	1170	382	30	10	22	0	3
	Block Group 2, Census Tract 420.05, Snohomish County, Washington	2044	686	37	2	6	3	3
	Block Group 3, Census Tract 407, Snohomish County, Washington	945	547	21	6	16	15	6
	Block Group 1, Census Tract 408, Snohomish County, Washington	972	363	6	1	5	5	0
	Block Group 1, Census Tract 409, Snohomish County, Washington	1335	538	17	6	11	14	1
	Block Group 2, Census Tract 404, Snohomish County, Washington	1042	445	17	9	4	7	0
	Block Group 1, Census Tract 527.01, Snohomish County, Washington	1795	588	5	7	4	1	0
	Block Group 1, Census Tract 528.04, Snohomish County, Washington	1820	877	6	3	13	0	0
	Block Group 2, Census Tract 413.04, Snohomish County, Washington	1463	596	24	4	5	3	2
	Block Group 2, Census Tract 520.05, Snohomish County, Washington	1851	608	22	0	9	0	0
	Block Group 2, Census Tract 522.03, Snohomish County, Washington	1345	455	9	6	0	3	0
	Block Group 4, Census Tract 535.05, Snohomish County, Washington	1542	525	7	4	5	1	0
	Block Group 1, Census Tract 522.04, Snohomish County, Washington	1188	372	10	14	0	0	9
	Block Group 2, Census Tract 416.05, Snohomish County, Washington	1932	557	14	2	5	0	1
	Block Group 1, Census Tract 536.03, Snohomish County, Washington	1133	369	13	3	7	4	1
	Block Group 1, Census Tract 521.04, Snohomish County, Washington	1575	432	34	18	 8	2	0
	Block Group 2, Census Tract 416.07, Snohomish County, Washington	1545	500	14	8	3	2	2
	Block Group 3, Census Tract 419.05, Snohomish County, Washington	2074	891	45	31	7	2	12
	Block Group 1, Census Tract 529.03, Snohomish County, Washington	862	297	6	27	29	9	9
	Block Group 1, Census Tract 523.01, Snohomish County, Washington	1024	364	21	22	4	0	9
	Block Group 2, Census Tract 412.02, Snohomish County, Washington	2035	945	19	7	22	19	6



GEOID_2	Geography Description	Total Population	Total Households	Minority (%)	Hispanic/Latino (%)	Low-Income (%)	No Vehicle Available (%)	Limited English Proficiency (%)
	Snohomish County	771904	284477	23	10	8	5	3.5
530610535052	Block Group 2, Census Tract 535.05, Snohomish County, Washington	1607	507	7	5	2	0	1
530610521051	Block Group 1, Census Tract 521.05, Snohomish County, Washington	835	318	4	0	5	5	0
530610416071	Block Group 1, Census Tract 416.07, Snohomish County, Washington	2598	780	21	3	0	2	4
530610529042	Block Group 2, Census Tract 529.04, Snohomish County, Washington	2572	1039	20	11	12	9	5
530610521081	Block Group 1, Census Tract 521.08, Snohomish County, Washington	1824	738	9	0	8	14	0
530610523013	Block Group 3, Census Tract 523.01, Snohomish County, Washington	1208	402	6	1	2	0	0
530610521052	Block Group 2, Census Tract 521.05, Snohomish County, Washington	811	346	4	4	6	2	0
530610536033	Block Group 3, Census Tract 536.03, Snohomish County, Washington	1683	614	6	4	3	3	0
530610523014	Block Group 4, Census Tract 523.01, Snohomish County, Washington	980	332	13	5	0	0	0
530610527091	Block Group 1, Census Tract 527.09, Snohomish County, Washington	1591	575	3	10	0	0	3
530610526053	Block Group 3, Census Tract 526.05, Snohomish County, Washington	1355	455	5	0	14	22	0
530610523022	Block Group 2, Census Tract 523.02, Snohomish County, Washington	1183	382	4	0	8	6	0
530610525021	Block Group 1, Census Tract 525.02, Snohomish County, Washington	1666	656	4	5	10	5	1
530610404001	Block Group 1, Census Tract 404, Snohomish County, Washington	1567	719	22	23	22	20	4
530610407001	Block Group 1, Census Tract 407, Snohomish County, Washington	876	351	27	5	42	56	1
530610407002	Block Group 2, Census Tract 407, Snohomish County, Washington	1222	651	17	7	31	42	0
530610527083	Block Group 3, Census Tract 527.08, Snohomish County, Washington	806	335	4	8	0	2	3
530610527052	Block Group 2, Census Tract 527.05, Snohomish County, Washington	2741	831	34	5	5	2	0
530610527054	Block Group 4, Census Tract 527.05, Snohomish County, Washington	953	278	19	6	0	0	0
530610523021	Block Group 1, Census Tract 523.02, Snohomish County, Washington	1056	378	9	13	11	8	0
530610525022	Block Group 2, Census Tract 525.02, Snohomish County, Washington	1490	477	5	2	5	2	0
530610526031	Block Group 1, Census Tract 526.03, Snohomish County, Washington	1046	385	11	17	5	3	0
530610526041	Block Group 1, Census Tract 526.04, Snohomish County, Washington	1557	547	6	17	5	4	2
530619400014	Block Group 4, Census Tract 9400.01, Snohomish County, Washington	2048	722	18	9	4	1	1
530610401002	Block Group 2, Census Tract 401, Snohomish County, Washington	1339	486	30	4	8	4	2
530610401001	Block Group 1, Census Tract 401, Snohomish County, Washington	880	439	1	0	4	8	0
530610402001	Block Group 1, Census Tract 402, Snohomish County, Washington	2186	718	33	6	27	12	19
530610402002	Block Group 2, Census Tract 402, Snohomish County, Washington	1315	615	32	14	23	30	4
530610402003	Block Group 3, Census Tract 402, Snohomish County, Washington	1629	470	38	4	19	12	10
530610401003	Block Group 3, Census Tract 401, Snohomish County, Washington	941	416	8	5	6	2	1
530610402004	Block Group 4, Census Tract 402, Snohomish County, Washington	994	684	25	0	40	61	14
530610403001	Block Group 1, Census Tract 403, Snohomish County, Washington	1436	588	16	6	11	7	0
530610413012	Block Group 2, Census Tract 413.01, Snohomish County, Washington	2120	745	5	0	0	0	1
530610419011	Block Group 1, Census Tract 419.01, Snohomish County, Washington	665	250	40	9	0	3	2
530610523023	Block Group 3, Census Tract 523.02, Snohomish County, Washington	1812	587	4	1	0	4	0
530610529044	Block Group 4, Census Tract 529.04, Snohomish County, Washington	973	355	19	16	16	0	2
530610528042	Block Group 2, Census Tract 528.04, Snohomish County, Washington	3043	1012	21	7	7	2	9
530610528044	Block Group 4, Census Tract 528.04, Snohomish County, Washington	898	385	7	0	0	11	1
530610528052		1327	539	15	4	11	6	0
530610528053		1490	584	29	4	8	3	0
530610528051	Block Group 1, Census Tract 528.05, Snohomish County, Washington	1286	617	8	4	11	28	1
530610528062	·	1209	399	0	0	7	3	4



GEOID_2	Geography Description	Total Population	Total Households	Minority (%)	Hispanic/Latino (%)	Low-Income (%)	No Vehicle Available (%)	Limited English Proficiency (%)
	Snohomish County	771904	284477	23	10	8	5	3.5
530610528063	Block Group 3, Census Tract 528.06, Snohomish County, Washington	1198	520	20	4	14	7	0
530610528064	Block Group 4, Census Tract 528.06, Snohomish County, Washington	791	345	32	5	0	0	4
530610529063	Block Group 3, Census Tract 529.06, Snohomish County, Washington	2447	739	16	15	12	3	2
530610529034	Block Group 4, Census Tract 529.03, Snohomish County, Washington	1727	649	24	8	10	15	5
530610527081	Block Group 1, Census Tract 527.08, Snohomish County, Washington	2071	691	17	2	0	1	4
530610527092	Block Group 2, Census Tract 527.09, Snohomish County, Washington	2223	598	10	11	2	0	3
530610529041	Block Group 1, Census Tract 529.04, Snohomish County, Washington	533	238	2	2	0	0	0
530610521155	Block Group 5, Census Tract 521.15, Snohomish County, Washington	1309	416	9	34	0	0	1
530610413011	Block Group 1, Census Tract 413.01, Snohomish County, Washington	1642	507	23	4	2	0	5
530610521152	Block Group 2, Census Tract 521.15, Snohomish County, Washington	1799	512	36	2	0	0	7
530610521043	Block Group 3, Census Tract 521.04, Snohomish County, Washington	1740	548	15	10	11	0	2
530610521151	Block Group 1, Census Tract 521.15, Snohomish County, Washington	1469	490	26	2	0	3	0
530610529053	Block Group 3, Census Tract 529.05, Snohomish County, Washington	1842	729	4	22	24	9	4
530610529062	Block Group 2, Census Tract 529.06, Snohomish County, Washington	1294	477	26	4	10	4	0
530610418093	Block Group 3, Census Tract 418.09, Snohomish County, Washington	1424	602	61	16	8	4	4
530610528065	Block Group 5, Census Tract 528.06, Snohomish County, Washington	2244	791	28	16	9	4	1
530610403002	Block Group 2, Census Tract 403, Snohomish County, Washington	1656	775	10	9	15	25	1
530610405002	Block Group 2, Census Tract 405, Snohomish County, Washington	1236	475	18	12	12	4	1
530610413032	Block Group 2, Census Tract 413.03, Snohomish County, Washington	439	202	23	2	9	4	2
530610410003	Block Group 3, Census Tract 410, Snohomish County, Washington	1245	543	28	14	10	5	3
530610412012	Block Group 2, Census Tract 412.01, Snohomish County, Washington	1750	605	34	3	6	4	0
530610418053	Block Group 3, Census Tract 418.05, Snohomish County, Washington	2402	919	31	14	8	2	6
530610416062	Block Group 2, Census Tract 416.06, Snohomish County, Washington	2961	925	31	9	10	5	4
530610521156	Block Group 6, Census Tract 521.15, Snohomish County, Washington	1206	391	11	2	6	0	0
530610529043	Block Group 3, Census Tract 529.04, Snohomish County, Washington	1747	493	35	36	16	0	1
530610526062	Block Group 2, Census Tract 526.06, Snohomish County, Washington	1117	448	5	3	6	0	1
530610524022	Block Group 2, Census Tract 524.02, Snohomish County, Washington	1272	678	19	2	19	9	1
530610529051	Block Group 1, Census Tract 529.05, Snohomish County, Washington	1295	677	32	12	9	11	1
530610410002	Block Group 2, Census Tract 410, Snohomish County, Washington	1237	525	15	2	10	9	1
530610411001	Block Group 1, Census Tract 411, Snohomish County, Washington	1130	508	8	2	15	2	3
530610410001	Block Group 1, Census Tract 410, Snohomish County, Washington	1445	653	11	12	27	16	0
530610410004	Block Group 4, Census Tract 410, Snohomish County, Washington	1664	645	15	3	20	10	4
530610407004	Block Group 4, Census Tract 407, Snohomish County, Washington	950	284	28	12	28	11	0
530610417041	Block Group 1, Census Tract 417.04, Snohomish County, Washington	1888	736	29	14	10	0	1
530610417042	Block Group 2, Census Tract 417.04, Snohomish County, Washington	2493	1080	23	10	9	0	6
530610417031	Block Group 1, Census Tract 417.03, Snohomish County, Washington	1855	611	39	7	3	2	10
530610418101	Block Group 1, Census Tract 418.10, Snohomish County, Washington	628	197	35	36	18	18	4
530610420053	Block Group 3, Census Tract 420.05, Snohomish County, Washington	1154	480	21	6	2	0	1
530610420011	Block Group 1, Census Tract 420.01, Snohomish County, Washington	1508	703	22	4	4	19	1
530610527072	·	1370	447	11	12	1	0	0
530610527061	Block Group 1, Census Tract 527.06, Snohomish County, Washington	4932	1618	21	17	5	1	2
530619400013	Block Group 3, Census Tract 9400.01, Snohomish County, Washington	1498	573	24	3	11	5	0



GEOID_2	Geography Description	Total Population	Total Households	Minority (%)	Hispanic/Latino (%)	Low-Income (%)	No Vehicle Available (%)	Limited English Proficiency (%)
	Snohomish County	771904	284477	23	10	8	5	3.5
530610521182	Block Group 2, Census Tract 521.18, Snohomish County, Washington	2601	833	29	8	2	2	7
530610520032	Block Group 2, Census Tract 520.03, Snohomish County, Washington	2681	709	43	4	0	3	9
530610526072	Block Group 2, Census Tract 526.07, Snohomish County, Washington	3249	1041	8	9	2	2	0
530610526073	Block Group 3, Census Tract 526.07, Snohomish County, Washington	806	282	10	0	6	3	0
530610525042	Block Group 2, Census Tract 525.04, Snohomish County, Washington	1633	588	20	7	10	1	4
530610526032	Block Group 2, Census Tract 526.03, Snohomish County, Washington	1465	488	6	4	4	1	0
530610536032	Block Group 2, Census Tract 536.03, Snohomish County, Washington	1208	425	12	1	4	0	0
530610528061	Block Group 1, Census Tract 528.06, Snohomish County, Washington	1669	473	16	29	0	0	1
530619400023	Block Group 3, Census Tract 9400.02, Snohomish County, Washington	709	311	9	3	7	5	2
530619400011	Block Group 1, Census Tract 9400.01, Snohomish County, Washington	1222	453	29	6	8	8	0
530610411003	Block Group 3, Census Tract 411, Snohomish County, Washington	1206	483	34	8	11	11	11
530610416051	Block Group 1, Census Tract 416.05, Snohomish County, Washington	2363	707	18	23	9	0	2
530610416053	Block Group 3, Census Tract 416.05, Snohomish County, Washington	2738	884	41	24	2	2	9
530610526063	Block Group 3, Census Tract 526.06, Snohomish County, Washington	1498	505	7	4	4	2	1
530610524012	Block Group 2, Census Tract 524.01, Snohomish County, Washington	1256	383	27	20	6	12	8
530610524013	Block Group 3, Census Tract 524.01, Snohomish County, Washington	940	406	12	4	17	9	0
530610524014	Block Group 4, Census Tract 524.01, Snohomish County, Washington	987	431	13	1	7	10	0
530610524021	Block Group 1, Census Tract 524.02, Snohomish County, Washington	1290	543	4	0	11	2	0
530610525033	Block Group 3, Census Tract 525.03, Snohomish County, Washington	2076	684	14	6	5	0	0
530610525034	Block Group 4, Census Tract 525.03, Snohomish County, Washington	1557	615	13	2	0	0	5
530610525041	Block Group 1, Census Tract 525.04, Snohomish County, Washington	1029	369	5	13	6	0	1
530610524011	Block Group 1, Census Tract 524.01, Snohomish County, Washington	1081	321	12	24	10	0	3
530610524023	Block Group 3, Census Tract 524.02, Snohomish County, Washington	1437	562	8	17	11	7	3
530610525031	Block Group 1, Census Tract 525.03, Snohomish County, Washington	2550	866	11	7	8	2	1
530610525032	Block Group 2, Census Tract 525.03, Snohomish County, Washington	820	333	0	0	0	0	0
530610526042	Block Group 2, Census Tract 526.04, Snohomish County, Washington	1305	620	7	28	18	7	3
530610526043	Block Group 3, Census Tract 526.04, Snohomish County, Washington	1704	564	15	11	13	3	0
530610526051	Block Group 1, Census Tract 526.05, Snohomish County, Washington	1673	597	18	1	5	3	1
530610526054	Block Group 4, Census Tract 526.05, Snohomish County, Washington	1529	429	10	37	0	3	6
530610526061	Block Group 1, Census Tract 526.06, Snohomish County, Washington	2780	817	22	17	14	1	0
530610420014	Block Group 4, Census Tract 420.01, Snohomish County, Washington	1033	378	18	0	17	0	0
530610420012		1485	550	23	25	6	2	7
530610420013		1937	651	21	0	0	0	4
530610419033		1823	807	30	8	3	0	8
530610419041	Block Group 1, Census Tract 419.04, Snohomish County, Washington	2505	880	32	73	10	9	22
530610420031	Block Group 1, Census Tract 420.03, Snohomish County, Washington	1396	486	18	12	0	0	2
530610420041	Block Group 1, Census Tract 420.04, Snohomish County, Washington	1711	626	25	4	10	2	6
530610420042	·	974	383	31	0	3	0	4
530610420043		1682	614	39	3	9	4	5
530610419042	, ,	1847	813	29	26	20	24	3
530610419043		1171	549	34	30	35	38	16
530610419051	Block Group 1, Census Tract 419.05, Snohomish County, Washington	2005	722	32	18	21	2	7



GEOID_2	Total Geography Description Population Total Households Minority (%) Hispa					Low-Income (%)	No Vehicle Available (%)	Limited English Proficiency (%)
	Snohomish County	771904	284477	23	10	8	5	3.5
530610419052	Block Group 2, Census Tract 419.05, Snohomish County, Washington	1102	418	36	9	28	10	12
530610419054	Block Group 4, Census Tract 419.05, Snohomish County, Washington	1203	402	11	4	26	0	3
530610420051	Block Group 1, Census Tract 420.05, Snohomish County, Washington	2082	754	27	3	6	0	5
530610420061	Block Group 1, Census Tract 420.06, Snohomish County, Washington	1037	481	45	4	14	0	7
530610420063	Block Group 3, Census Tract 420.06, Snohomish County, Washington	1825	762	50	5	6	0	7
530610405001	Block Group 1, Census Tract 405, Snohomish County, Washington	1082	436	23	11	23	14	1
530610418065	Block Group 5, Census Tract 418.06, Snohomish County, Washington	977	330	28	0	10	0	11
530610411004	Block Group 4, Census Tract 411, Snohomish County, Washington	978	390	9	7	4	9	2
530610412011	Block Group 1, Census Tract 412.01, Snohomish County, Washington	1560	548	8	0	11	6	5
530610527084	Block Group 4, Census Tract 527.08, Snohomish County, Washington	1400	415	15	19	0	0	0
530610527055	Block Group 5, Census Tract 527.05, Snohomish County, Washington	1072	411	16	6	14	3	0
530610418052	Block Group 2, Census Tract 418.05, Snohomish County, Washington	2086	994	20	15	6	3	7
530610418062	Block Group 2, Census Tract 418.06, Snohomish County, Washington	2058	821	42	20	16	2	12
530610418064	Block Group 4, Census Tract 418.06, Snohomish County, Washington	1596	480	33	5	13	4	1
530610418066	Block Group 6, Census Tract 418.06, Snohomish County, Washington	1239	490	33	52	24	9	18
530610418082	Block Group 2, Census Tract 418.08, Snohomish County, Washington	1342	622	19	6	13	3	2
530610418103	Block Group 3, Census Tract 418.10, Snohomish County, Washington	1626	716	38	25	14	19	6
530610418092	Block Group 2, Census Tract 418.09, Snohomish County, Washington	1703	597	43	12	20	2	6
530610418081	Block Group 1, Census Tract 418.08, Snohomish County, Washington	1406	612	45	36	24	4	7
530610418083	Block Group 3, Census Tract 418.08, Snohomish County, Washington	1330	457	22	36	3	10	9
530610419012	Block Group 2, Census Tract 419.01, Snohomish County, Washington	1898	669	54	6	5	9	14
530610419013	Block Group 3, Census Tract 419.01, Snohomish County, Washington	2192	820	38	26	2	2	5
530610419031	Block Group 1, Census Tract 419.03, Snohomish County, Washington	1285	543	27	33	31	13	6
530610416061	Block Group 1, Census Tract 416.06, Snohomish County, Washington	1869	770	34	7	7	14	5
530610416063	Block Group 3, Census Tract 416.06, Snohomish County, Washington	1040	285	3	40	3	5	4
530610416081	Block Group 1, Census Tract 416.08, Snohomish County, Washington	1822	580	16	1	2	0	4
530610416082	Block Group 2, Census Tract 416.08, Snohomish County, Washington	859	308	28	6	0	0	4
530610416083	Block Group 3, Census Tract 416.08, Snohomish County, Washington	783	348	27	4	5	4	0
530610416084	Block Group 4, Census Tract 416.08, Snohomish County, Washington	1183	419	7	9	0	3	0
530610416085	Block Group 5, Census Tract 416.08, Snohomish County, Washington	1991	621	19	8	0	0	1
530610417011	Block Group 1, Census Tract 417.01, Snohomish County, Washington	2607	833	50	22	19	2	1
530610417012	Block Group 2, Census Tract 417.01, Snohomish County, Washington	2486	1025	30	22	3	12	6
530610417013	Block Group 3, Census Tract 417.01, Snohomish County, Washington	907	593	38	1	27	33	21
530610417032	Block Group 2, Census Tract 417.03, Snohomish County, Washington	1296	393	32	2	15	0	0
530610418112	Block Group 2, Census Tract 418.11, Snohomish County, Washington	1792	612	52	2	4	0	6
530610418121	Block Group 1, Census Tract 418.12, Snohomish County, Washington	4320	1496	55	28	9	10	20
530610418111	Block Group 1, Census Tract 418.11, Snohomish County, Washington	2434	762	47	9	5	6	1
530610418122	Block Group 2, Census Tract 418.12, Snohomish County, Washington	2417	987	44	16	31	20	12
530610418051	Block Group 1, Census Tract 418.05, Snohomish County, Washington	1394	649	49	14	13	9	5



Cultural Resource Consultants

CRC MEMO #1808G-1

DATE: November 30, 2018

TO: Lawrence Spurgeon

WSP

FROM: Margaret Berger, Principal Investigator

RE: Cultural Resources Approach Plan, US 2 Westbound Trestle Replacement

Project, Snohomish County, WA

Summary of Available Data

Prior cultural resources studies in the involved corridors and a ~800 foot buffer are described below in Table 1. These were identified by searching the Washington State Department of Archaeology and Historic Preservation's (DAHP) Washington Information System for Architectural and Archaeological Records Data (WISAARD) database (DAHP 2018). Cultural resources investigations directly within the involved corridors are limited to Ferland (2010), who reported archaeological and historic built environment survey that included US2 right-of-way in the vicinity of MP 4; Roedel et al. (2004) who surveyed portions of I-5 south of US2; and Chidley (2008), who surveyed portions of I-5 right-of-way in Marysville.

Very few archaeological sites have been recorded in proximity to the project corridors (Table 2). None are directly within the corridors. Historic cemeteries have all been identified near the project corridors, as listed in Table 3. Thousands of historic inventory properties have been identified in proximity to the project corridors. Table 4 lists the 36 historic inventory properties located on the north side of the existing US 2 Westbound Trestle and east of I-5, as a sample of the types of historic resources that have been recorded in proximity to the project. Historic register listed properties are present in the vicinity of the project. None of them are directly within the corridors. Properties listed on the Washington Heritage Register (WHR) and National Register of Historic Places (NRHP) within approximately one block from the project corridors are listed in Table 5.

WSDOT has identified five bridges in the vicinity of the project as historically significant (WSDOT 2018a). These are all on SR529 in northern Everett (Table 6). Other bridges that are historic in age are present in the project corridors. However, according to WSDOT (2018b),

The Program Comment for Common Post-1945 Concrete and Steel Bridges issued by the Advisory Council of Historic Preservation (ACHP) in 2012 eliminates the historic review requirements under Section 106 of the NHPA for common (mass produced) post-1945 concrete and steel bridges and culverts. The intent of the Program Comment is to streamline the review process for those structures that lack distinction; have not previously been listed or determined eligible for listing on the National Register; and are not located in or adjacent to historic districts.

As stated in the Program Comment (ACHP 2012), the following common bridge types are covered:

- (A) Reinforced concrete slab bridges
 - (i) Reinforced concrete cast-in-place slabs
 - (ii) Reinforced concrete pre-cast slabs
 - (iii) Pre-stressed concrete slabs
- (B) Reinforced concrete beam and girder bridges
 - (i) Reinforced concrete Tee Beams
 - (ii) Reinforced concrete channel beams
 - (iii) Pre-stressed concrete I-Beams and Bulb Tees
 - (iv) Pre-stressed concrete box beams
- (C) Steel Multi-Beam or Multi-Girder bridges
 - (i) Steel-rolled multi-beams
 - (ii) Steel fabricated (built up) girders
- (D) Culverts and reinforced concrete boxes
 - (i) Reinforced concrete boxes
 - (ii) Concrete box culverts
 - (iii) Concrete pipe culverts
 - (iv) Steel pipe culverts

Based upon review of National Bridge Inventory data, the US2 Westbound Trestle and several other bridges in the project vicinity appear to meet the above criteria and it is expected that the Program Comment would apply (Table 7). A list of exceptions to the Program Comment, identified by state, includes common post-1945 concrete and steel bridges and culverts of exceptional quality that remain subject to Section 106 review (FHWA 2018a). One bridge in the vicinity of the project has been identified as an exception to the Program Comment (Table 8). Additionally, the 2005 Section 106 Exemption Regarding Effects to the Interstate Highway System by the ACHP excludes the majority of Interstate Highway Features from consideration as a historic property under Section 106 of the National Historic Preservation Act (NHPA). FHWA maintains a list of Nationally and Exceptionally Significant Features of the Federal Interstate Highway System not subject to the ACHP's Exemption (FHWA 2018b). No such significant features are in the project corridors.

Data Gaps

The area adjacent to the north of the existing US 2 Westbound Trestle, which is expected to be involved in construction of the replacement trestle, has not been surveyed for cultural resources. It is known that 36 historic inventory properties are present in this area. Review of County Assessor records may identify as-yet uninventoried properties approaching the 50-year age threshold for review under Section 106. Archaeological sites have not been recorded in this area, but based upon review of prior investigations on the Snohomish River floodplain, it is considered

to have a high probability for as-yet unknown archaeological sites to be present due to its depositional setting, proximity to waterways and natural resources, and proximity to ethnographically reported place names.

DAHP's predictive model identifies the Snohomish River delta, including the area north of the US 2 Westbound Trestle, the western part of SR 529, and a small area of SR 526 as high risk to very high risk for archaeological sites. The I-5, SR 204, SR 9, majority of SR 526, and east end of SR 529 corridors in the project are classified as low, moderately low, or moderate risk (DAHP 2018).

The existing developed highways in upland environments are generally considered to have low potential for as-yet unrecorded archaeological sites due to the extent of prior disturbance on glacial landforms with minimal soil development. Areas of the project in alluvial and deltaic environments, such as the area north of the existing US 2 Westbound Trestle are generally considered to have a high potential for as-yet unrecorded archaeological sites due to thick alluvial deposits that could preserve archaeological deposits beneath the extent of prior disturbance. Locations in proximity to shorelines or streams are typically considered higher probability due to their proximity to natural resources that would have been attractive to precontact populations. Historic resources are likely to be present throughout the project corridors.

Work Plan

As demonstrated by the above summary of existing cultural resources information, there are many prior cultural resources studies and known cultural resources in the vicinity of the project. Portions of I-5 and US 2 have been included in prior studies, but the majority of the project corridors have not been surveyed for cultural resources. When project alternatives are identified, it will be possible to assess more specifically which of the known cultural resources could potentially be affected and which areas are in need of cultural resources survey. Discussion of the project with cultural resources staff of affected Tribes may also identify specific areas of concern. Review of geological and soils surveys, ethnographic reports, historical maps, and other sources will provide more detailed information to refine low and high probability environments of the project. WSDOT cultural resources staff should be consulted to confirm which bridges involved in the project are subject to the Program Comment and identify any that may not meet the applicable criteria and would require historic review under Section 106.

References Cited

Advisory Council on Historic Preservation (ACHP)

2012 Program Comment Issued for Streamlining Section 106 Review for Actions Affecting Post-1945 Concrete and Steel Bridges. *Federal Register* Vol. 77, No. 222., pp. 68790-68795.

Blukis Onat, A. R., C. Walker Gray, T. L. Cowan

2007 Cultural Resources Inventory for the 20th Street SE Improvement Project from 91st Ave SE to Cavalero Road and From Cavalero Road to SR 2. BOAS Inc. Prepared for Snohomish County Public Works.

Baldwin, G. L.

2014 Letter to Adam Escalona RE: Cultural Resources Review for the AT&T Mobility Project, SN2892 Maryville Grove. Drayton Archaeology. Prepared for Adapt Engineering, Inc.

BridgeReports.com

2018 National Bridge Inventory Data. Electronic resource, https://bridgereports.com/, accessed November 27, 2018.

Bush, K. R., T. S. Smart, and C. Leverett

2007 Archaeological Investigation Report - Blue Heron Slough Conservation Bank, Marysville. Equinox Research and Consulting International, Inc. Prepared for Wildlands of Washington, Inc.

Chidley, M.

2008 Letter to Allyson Brooks RE: Request for Determination of Effects Concurrence I-5 Marysville to Stillaguamish River Vic. Project. WSDOT, Northwest Region.

Cooper, J.

- 2018a Letter Report SR 9 / SR 204 Intersection Improvements Phase I Early Works Project, Snohomish County, Washington. WSDOT, Northwest Region.
- 2018b Cultural Resources Survey for the Steamboat Slough Advanced Mitigation Site, Snohomish County, Washington. WSDOT, Northwest Region.

Cooper, J., and S. Sparks

2007 Everett Rail Yard Improvement Project Cultural Resources Survey and Discipline Report. Jones & Stokes in association with InterMountain Resources. Prepared for Burlington Northern Santa Fe Railway.

Dailide, A. M.

2015 Archaeological and Historical Resources Identification Short Report: PL-84-99 Union Slough Levee Rehabilitation Project. U.S. Army Corps of Engineers Seattle District.

Dunnell, R. C., and J. W. Fuller

1975 An Archaeological Survey of Everett Harbor and the Lower Snohomish Estuary-Delta. University of Washington. Prepared for National Park Service.

Earley, A., and B. Rinck

2010 Cultural Resources Assessment of the Tulalip Water Pipeline, Snohomish County, Washington. Northwest Archaeological Associates, Inc. Prepared for MWH Global.

Engseth, M. F., and A. Sharley

2007 Cultural Resources Survey for the Washington State Department of Transportation SR 9: 20th Street SE Intersection Improvement Project, Snohomish County, Washington. Archaeological and Historical Services, Eastern Washington University, Cheney. Prepared for WSDOT.

- Federal Highway Administration (FHWA)
 - 2018a Bridge Program Comment Excepted Bridges List. Electronic resource, https://www.environment.fhwa.dot.gov/env_topics/historic_pres/bridges_list.aspx, accessed November 27, 2018.
 - 2018b Final List of Nationally and Exceptionally Significant Features of the Federal Interstate Highway System. Electronic resource, https://www.environment.fhwa.dot.gov/env_topics/historic_pres/highways_list.aspx, accessed November 27, 2018.

Ferland, S. C.

- 2010 Cultural Resources Assessment for the Bickford Avenue Safety Improvements Project, Snohomish County, Washington. Northwest Archaeological Associates, Inc. Prepared for WSDOT, Northwest Region.
- Iversen, D. R., S. Stringer-Bowsher, S. Davis, J. Krintz, N. Smith, and A. Sawyer
 2012 Cultural Resources Field Inventory for 15 Action Areas within the Puget Sound
 Nearshore Ecosystem Restoration Projects Area (PSNERP). ASM Affiliates, Inc.
 Prepared for U.S. Fish and Wildlife Service.

Juell, K.

- 2003a Cultural Resources Assessment for the City of Everett's Water Transmission Pipeline Replacement Project Phases 6 and 7. Northwest Archaeological Associates, Inc. Prepared for City of Everett.
- 2003b Heritage Resources Investigations for the Everett Delta Lateral Pipeline Project: Pipeline Realignments, New Work Areas, and Access Road Corridors. Northwest Archaeological Associates, Inc. Prepared for PIC Technologies, Inc. and Northwest Pipeline Corporation.
- Kanaby, K. M., L. N. Goetz, D. Tingwall, and T. C. Rust
 - 2010 Cultural Resources Assessment for the Smith Island Restoration Project, Snohomish County, Washington. Landau Associates. Prepared for Snohomish County Public Works.

Lentz, F., and P. Johnson

2011 Everett Riverfront Redevelopment, Cultural Resources Supplement. Paragon Research Associates. Prepared for Macleod Reckord.

LeTourneau, P., and S. Davis

2005 Results of Archaeological Monitoring of Excavations for Olympic Pipe Line Company's North Ebey Slough Reroutes. BOAS, Inc. Prepared for GeoEngineers, Inc.

Maass, A.

2000 Cultural Resources Technical Report for the Everett Delta Pipeline Project. Historical Research Associates, Inc. Prepared for PIC Technologies, Inc.

Maass, A., and B. Smith-Steiner

2004 Cultural Resources Technical Report for the Williams Everett Delta Pipeline Project. Historical Research Associates, Inc. Prepared for PIC Technologies, Inc.

Rinck, B., and J. Piper

2015 Cultural Resource Assessment for the SR 529/Interstate 5 Expansion Project, Marysville, Snohomish County, Washington. SWCA Environmental Consultants. Prepared for HDR, Inc.

Roedel, K. W., L. A. Forsman, J. Koler, D. E. Lewarch, and L. L. Larson

2004 Everett HOV Cultural Resources Assessment, Interstate 5 HOV, SR 526 to SR 2 Vicinity, Snohomish County, Washington, Technical Report. Larson Anthropological Archaeological Services Limited. Prepared for WSDOT.

Rooke, L.

2008 Cultural Resources Assessment for SR 529 Ebey Slough Bridge Replacement Project, Marysville. AMEC Earth & Environmental, Inc. Prepared for WSDOT, Northwest Region.

Schumacher, J., and G. D. Hartmann

2005 Letter to Graham Anderson Regarding Port of Everett 12th Street Marina Redevelopment: Union Slough Mitigation Area. Western Shore Heritage Services, Inc. Prepared for Port of Everett.

Shantry, K., and C. M. Hodges

2007 Cultural Resources Assessment for the Everett Riverfront Master Plan and Redevelopment Project. Northwest Archaeological Associates, Inc. Prepared for City of Everett Public Works Department.

Shong, M.

2003 Letter to Mark Sadler Regarding Monitoring Results for the Everett Water Pipeline Replacement No. 2 and 3 (Phase 5). Northwest Archaeological Associates, Inc. Prepared for City of Everett.

Shong, M., and K. Juell

2002 Cultural Resources Inventory for the City of Everett's Water Transmission Pipeline Replacement Project - Phase 5, Snohomish County, Washington. Northwest Archaeological Associates, Inc. Prepared for City of Everett.

Shong, M., and C. J. Miss

2009 Results of Archaeological Monitoring for the Ebey Slough Transmission Line Replacement Project. Northwest Archaeological Associates, Inc. Prepared for GeoEngineers, Inc.

Tingwall, D. F., K. M. Kanaby, L. N. Goetz, and T. C. Rust

2009 Cultural Resources Feasibility Study Smith Island Restoration Project, Snohomish County, Washington. Landau Associates. Prepared for Snohomish County Public Works.

Washington State Department of Archaeology and Historic Preservation (DAHP)

2018 Washington Information System for Architectural and Archaeological Records Data (WISAARD) database. Electronic resource, https://secureaccess.wa.gov/dahp/wisaard/, accessed November 27, 2018.

Washington State Department of Transportation (WSDOT)

2018a Washington State Historic Highway Bridges. Electronic resource, https://www.wsdot.wa.gov/environment/protecting-environment/history-archaeology-and-culture/historic-highway-bridges#LIST, accessed November 27, 2018.

2018b Historic Highway Bridges. Electronic resource, https://www.wsdot.wa.gov/environment/protecting-environment/history-archaeology-and-culture/historic-highway-bridges, accessed November 27, 2018.

Weaver, R., and M. Nelson

2002 Letter to Steve Shipe Re: SR 2/SR 9 Interchange, Cultural Resources Survey Hart Crowser and Northwest Archaeological Associates, Inc. Prepared for WSDOT.

Weitzel, C.

2004 Archaeological Monitoring for Construction of Northwest Pipeline Company Everett Delta Natural Gas Pipeline Lateral. Historical Research Associates, Inc. Prepared for Williams.

Tables

Table 1. Prior cultural resources investigations (DAHP 2018).

Author	Date	Title	Summary
Dunnell and Fuller	1975	An Archaeological Survey of Everett Harbor and the Lower Snohomish Estuary-Delta	Archaeological survey for proposed maintenance dredging and dredge spoils deposition in the Snohomish River delta. The survey included areas south of US 2 and identified archaeological site 45SN43.
Maass	2000	Cultural Resources Technical Report for the Everett Delta Pipeline Project	This report describes methods and results of background research and fieldwork to identify potential impacts to cultural resources from proposed gas pipeline construction on the Snohomish Delta, crossing I-5 north of Everett. Results were negative for historic or archaeological resources. Archaeological monitoring was recommended for open-trench excavations in previously undisturbed areas within 75 m of the high water mark where the pipeline would intersect the Snohomish River, Ebey Slough, and Union Slough.
Shong and Juell	2002	Cultural Resources Inventory for the City of Everett's Water Transmission Pipeline Replacement Project - Phase 5, Snohomish County, Washington	This report describes methods and results of background research and fieldwork to identify potential impacts to cultural resources from proposed water pipeline replacement on the south side of US 2 directly east of the Snohomish River and east of Ebey Slough. Results were negative for historic or archaeological resources. Archaeological monitoring was recommended for trench excavation in the area east of Ebey Slough, where it was considered possible for deeply buried archaeological deposits to be encountered.
Weaver and Nelson	2002	Letter to Steve Shipe Re: SR 2/SR 9 Interchange, Cultural Resources Survey	This report describes methods and results of background research and fieldwork to identify potential effects to historic properties from proposed improvements to the intersection of US 2 and SR 9. Results were negative for historic or archaeological resources.
Juell	2003	Cultural Resources Assessment for the City of Everett's Water Transmission Pipeline Replacement Project – Phases 6 and 7	This report describes methods and results of background research and fieldwork to identify potential effects to historic properties from proposed water pipeline construction along the south side of the US 2 Eastbound Trestle. Results were negative for historic or archaeological resources. Archaeological monitoring of construction excavations was recommended for the portion of the project where the pipe would be buried in a trench in the west bank of Ebey Slough.
Juell	2003	Heritage Resources Investigations for the Everett Delta Lateral Pipeline Project: Pipeline Realignments, New Work Areas, and Access Road Corridors	This report describes methods and results of background research and fieldwork to identify potential effects to historic properties from proposed gas pipeline construction on the Snohomish Delta, crossing I-5 north of Everett. No archaeological or historic resources were identified near the current project. Archaeological monitoring was recommended for all pipeline trenching on the Snohomish River floodplain.
Shong	2003	Letter to Mark Sadler Regarding Monitoring Results for the Everett Water Pipeline Replacement No. 2 and 3 (Phase 5)	This report describes methods and results of archaeological monitoring of water pipeline construction on the south side of US 2 on the east banks of the Snohomish River and Ebey Slough. No archaeological sites were found.

Author	Date	Title	Summary
Maass and Smith- Steiner		Cultural Resources Technical Report for the Williams Everett Delta Pipeline Project	This report describes methods and results of background research and fieldwork to identify potential effects to historic properties from proposed gas pipeline construction including an area on Smith Island on the east side of I-5. No archaeological or historic resources were identified near the current project. Archaeological monitoring was recommended for open-trench excavations in previously undisturbed areas within 75 m of the high water mark where the pipeline would intersect the Snohomish River, Ebey Slough, and Union Slough.
Roedel et al.	2004	Everett HOV Historic, Cultural, and Archaeological Resource Assessment, Interstate 5 HOV, SR 526 to SR 2 Vicinity	This report describes methods and results of background research and fieldwork to identify potential impacts to cultural resources from proposed HOV lanes on I-5 and associated water quality sites and drainage easements. No archaeological sites were found. 40 previously unrecorded historic resources were identified. Of these, 14 were inventoried evaluated for NRHP eligibility; 2 were recommended eligible and the other 12 were recommended not eligible. 23 previously inventoried historic resources were also identified and evaluated for NRHP eligibility; 4 were recommended eligible and the other 19 were recommended not eligible. It was not determined whether any of the identified NRHP-eligible resources would be adversely affected by the project, but potential mitigations were suggested (e.g., more detailed documentation, vibration monitoring). It was recommended that these resources be reviewed for potential adverse effects by a professional architectural historian.
Weitzel	2004	Archaeological Monitoring for Construction of Northwest Pipeline Company Everett Delta Natural Gas Pipeline Lateral	This report describes methods and results of archaeological monitoring of gas pipeline trenching in previously undisturbed locations within 75 m of the high water mark and where the pipeline crosses the Snohomish River, Ebey Slough, and Union Slough including areas on the east side of I-5 on Smith Island. No archaeological sites were found.
LeTourneau and Davis	2005	Results of Archaeological Monitoring of Excavations for Olympic Pipe Line Company's North Ebey Slough Reroutes	This report describes methods and results of archaeological monitoring of gas pipeline construction including an area crossing under US 2 north of Ebey Slough. No archaeological sites were found.
Schumacher and Hartmann	2005	Letter to Graham Anderson Regarding Port of Everett 12th Street Marina Redevelopment: Union Slough Mitigation Area	This report describes methods and results of background research and fieldwork to identify potential effects to historic properties from proposed habitat restoration activities on the west side of I-5 south of Union Slough. Results were negative for historic or archaeological resources. Archaeological monitoring was recommended for excavations exceeding the depth of existing fill sediments.
Blukis Onat et al.	2007	Cultural Resources Inventory for the 20th Street SE Improvement Project from 91st Ave SE to Cavalero Road and From Cavalero Road to SR 2	This report describes methods and results of background research and fieldwork to identify potential effects to historic properties from proposed road improvements just east of US2 and SR204. No archaeological sites were identified. 15 historic resources were inventoried and evaluated between US 2 and Cavalero Rd. None of these were recommended eligible for the NRHP. One resource east of Cavalero Rd was recommended eligible.
Bush et al.	2007	Archaeological Investigation Report - Blue Heron Slough Conservation Bank, Marysville	This report describes methods and results of background research and fieldwork to identify potential effects to historic properties from proposed habitat restoration activities east of I-5 between Union and Steamboat sloughs. Results were negative for historic or archaeological resources.

Author	Date	Title	Summary
Cooper and Sparks	2007	Everett Rail Yard Improvement Project Cultural Resources Survey and Discipline Report	potential effects to historic properties from proposed rail yard expansion and siding track construction on the west bank of the Snohomish River north of I-5. One previously recorded historic bridge was identified but it was determined it would not be affected by the project. 12 historic isolates were identified and recommended not eligible for historic registers. A finding of no historic properties affected was recommended.
Engseth and Sharley	2007	Cultural Resources Survey for the Washington State Department of Transportation SR 9: 20th Street SE Intersection Improvement Project	This report describes methods and results of background research and fieldwork to identify potential effects to historic properties from proposed widening of SR 9 in the vicinity of 20th St SE. No previously recorded archaeological or historic resources were identified. 7 historic resources were inventoried and evaluated for NRHP eligibility. All were recommended not eligible.
Shantry and Hodges	2007	Cultural Resources Assessment for the Everett Riverfront Master Plan and Redevelopment Project	This report describes methods and results of background research and field investigations to identify potential impacts to cultural resources from proposed redevelopment of riverfront property on the west bank of the Snohomish River, south of US2. One previously recorded historic-era archaeological site, 45SN397, was identified. The site form was updated and it was recommended not eligible for the NRHP. Archaeological monitoring of construction ground disturbance exceeding the depth of fill was recommended.
Chidley	2008	Letter to Allyson Brooks RE: Request for Determination of Effects Concurrence I-5 Marysville to Stillaguamish River Vic. Project	This report describes methods and results of background research and field investigations to identify effects to historic properties from proposed cable barrier replacement and associated median modifications and a detention pond in I-5 right-of-way in Marysville. Results were negative for historic or archaeological resources and it was determined that the project would not affect historic properties.
Rooke	2008	Cultural Resources Assessment for SR 529 Ebey Slough Bridge Replacement Project, Marysville	This report describes methods and results of background research and fieldwork to identify potential effects to historic properties from proposed replacement of the SR 529 bridge over Ebey Slough and associated wetland mitigation. One historic resource was inventoried and evaluated for historic register eligibility; it was recommended not eligible for the NRHP. Archaeological monitoring during construction excavations for new bridge abutments was recommended.
Tingwall et al.	2009	Cultural Resources Feasibility Study Smith Island Restoration Project, Snohomish County, Washington	This report describes methods and results of background research and preliminary field investigations to identify potential impacts to cultural resources from proposed habitat restoration activities on the east side of I-5 on Smith Island. Two historic resources were inventoried and evaluated for historic register eligibility; both were recommended not eligible for the NRHP. A historic dike and ditch system was identified but not inventoried. It was recommended that this resource be investigated further and that archaeological survey be conducted to meet compliance with Section 106.
Shong and Miss	2009	Results of Archaeological Monitoring for the Ebey Slough Transmission Line Replacement Project	This report describes methods and results of archaeological monitoring of construction ground disturbance for electrical transmission line replacement, including an area southwest of US 2, east of Ebey Slough. No archaeological sites were found.

Author	Date	Title	Summary
Earley and Rinck	2010	Cultural Resources Assessment of the Tulalip Water Pipeline, Snohomish County, Washington	This report describes methods and results of background research and fieldwork to identify potential effects to historic properties from proposed water pipeline construction crossing under I-5 and US 2 on the west bank of the Snohomish River. One historic resource was inventoried and evaluated for historic register eligibility; it was recommended not eligible for the NRHP. Archaeological monitoring was recommended for construction excavations exceeding depth of fill on the Snohomish River floodplain, Snohomish River delta, and an area on the Quilceda Creek floodplain.
Ferland	2010	Cultural Resources Assessment for the Bickford Avenue Safety Improvements Project Snohomish County, Washington	This report describes methods and results of background research and fieldwork to identify potential effects to historic properties from proposed road improvements near US 2 on Fobes Hill. No previously recorded archaeological or historic resources were identified. Survey included in and adjacent to the highway right-of-way. One archaeological site, 45SN554, was recorded between Bickford Rd and US 2. Three historic resources were inventoried. The identified resources were evaluated for NRHP eligibility. One historic resource was recommended eligible but it was determined that it would not be adversely affected.
Kanaby et al.	2010	Cultural Resources Assessment for the Smith Island Restoration Project, Snohomish County, Washington	This report describes methods and results of background research and fieldwork to identify potential effects to historic properties from proposed habitat restoration activities on the east side of I-5 on Smith Island. One historic resource was inventoried and evaluated for historic register eligibility; it was recommended not eligible for the NRHP. Archaeological survey was recommended for locations of ditch or channel excavation.
Lentz and Johnson	2011	Everett Riverfront Redevelopment, Cultural Resources Supplement	This report is a supplement to the work done by Shantry and Hodges (2007), described above. It includes identification of aboveground archaeological and historic resources, and assessment of effects to historic properties. The site boundary of 45SN397 was expanded to encompass archaeological remains of all industrial and overwater structures. The site was recommended not eligible for the NRHP. One historic resource, the Eclipse Mill Hoist, was inventoried and determined not eligible for the NRHP.
Iversen et al.	2012	Cultural Resources Field Inventory for 15 Action Areas within the Puget Sound Nearshore Ecosystem Restoration Projects Area (PSNERP)	This report describes methods and results of background research and fieldwork to identify potential effects to historic properties from proposed habitat restoration activities, including an area east of I-5 on Smith Island. One historic resource was inventoried and evaluated for historic register eligibility; it was recommended not eligible for the NRHP.
Baldwin	2014	Letter to Adam Escalona RE: Cultural Resources Review for the AT&T Mobility Project, SN2892 Maryville	This report describes methods and results of background research and fieldwork to identify potential effects to historic properties from a proposed telecommunications facility east of I-5 in Marysville. Results were negative for historic or archaeological resources and a finding of no historic properties affected was recommended.
Dailide	2015	Archaeological and Historical Resources Identification Short Report: PL-84-99 Union Slough Levee	This report describes methods and results of background research and fieldwork to identify potential effects to historic properties from proposed levee repairs along Union Slough crossing under I-5 on Smith Island. One historic resource was inventoried and evaluated for historic register eligibility; it was recommended not eligible for the NRHP.

Author	Date	Title	Summary
Rinck and Piper	2015	Cultural Resource Assessment for the	This report describes methods and results of background research and fieldwork to identify
		SR 529/Interstate 5 Expansion Project,	potential effects to historic properties from proposed improvements to the I-5/SR 529 interchange.
		Marysville, Snohomish County,	Results were negative for historic or archaeological resources. Archaeological monitoring was
		Washington	recommended for construction excavations that would exceed depth of existing fill.
Cooper	2018	Letter Report – SR 9 / SR 204	This report describes methods and results of background research and fieldwork to identify
		Intersection Improvements – Phase I	potential effects to historic properties from proposed intersection improvements. Results were
		Early Works Project, Snohomish	negative for historic or archaeological resources. A determination of no historic properties affected
		County, Washington	was made.
Cooper	2018	Cultural Resources Survey for the	This report describes methods and results of background research and fieldwork to identify
		Steamboat Slough Advanced	potential effects to historic properties from proposed environmental mitigation between I-5 and SR
		Mitigation Site, Snohomish County,	529 on the north side of Steamboat Slough. One previously recorded historic resource was
		Washington (WSDOT)	identified and evaluated for historic register eligibility; it was recommended not eligible for the
			NRHP. A determination of no historic properties affected was made.

Table 2. Recorded archaeological sites in the vicinity of the project (DAHP 2018).

Site #	Site Type	Location	Evaluation Status
45SN43	Precontact lithic material,	Deadwater Slough south bank,	Not determined.
	precontact feature, precontact	south of US 2	
	shell midden		
45SN387	Historic residential structure	near Sunnyside Blvd, west of SR	Not determined.
		204	
45SN397	Historic logging property,	Snohomish River west bank, east	Not determined.
	historic water structures	of I-5 and south of US 2	
45SN482	Historic agriculture	East side of I-5 between Union	Not determined.
		and Steamboat sloughs	
45SN554	Historic residential structure	in Bickford Ave ROW near US 2	Determined not eligible for NRHP.
45SN629	Precontact isolate	west of SR 529	Not determined.
45SN85	Precontact isolate	west of I-5 near McDougall Ave	Not determined.

Table 3. Recorded historic cemeteries in the vicinity of the project (DAHP 2018).

Cemetery Record #	Name	Address	Years Active
1717	Mount Carmel Cemetery	Fobes Rd, Everett	1906 - ?
1699	Cypress Lawn Memorial Park	1615 SE Everett Mall Way	1934 – present
1702	Evergreen Cemetery	4230 Broadway	1898 - ?

Table 4. Historic inventory properties recorded in the area likely to be involved in US2 Westbound Trestle replacement construction (DAHP 2018).

Property #	Address	Year Built	Historic Function	Evaluation
				Status
36050	2511 E Grand, Everett	1910	Domestic – Single Family Dwelling	Not determined
159073, 158539,	3816 Railway Ave, Everett	1920	Commerce / Trade – Business	Not determined
184571, 12661				
224896	1605 51st Ave SE, Everett	1966	Domestic – Single Family Dwelling	Not determined
246838	1628 Douglas Ave, Everett	1909	Domestic – Single Family Dwelling	Not determined
248556	1711 Douglas Ave, Everett	1915	Domestic – Single Family Dwelling	Not determined
225343	1712 50th Ave SE, Everett	1956	Domestic – Multi-Family Dwelling	Not determined
226209	1724 Douglas Ave, Everett	1942	Domestic – Single Family Dwelling	Not determined
266105	1804 51st Ave SE, Everett	1968	Domestic – Single Family Dwelling	Not determined
226210	1814 Douglas Ave, Everett	1915	Domestic – Single Family Dwelling	Not determined
225348	1825 Douglas Ave, Everett	1915	Domestic – Single Family Dwelling	Not determined
247247	1907 Douglas Ave, Everett	1965	Domestic – Single Family Dwelling	Not determined
225355	1923 51st Ave SE, Everett	1934	Domestic – Single Family Dwelling	Not determined
270467	2630 Railway Ave, Everett	1958	Commerce / Trade – Warehouse	Not determined
271099	2826 26th Pl, Everett	1968	Industry / Processing / Extraction –	Not determined
			Manufacturing Facility	
271029	3821 Railway Ave, Everett	1969	Commerce / Trade – Business	Not determined
270387	3830 Railway Ave, Everett	1920	Commerce / Trade – Warehouse	Not determined
270191	3840 Railway Ave, Everett	1945	Commerce / Trade – Warehouse	Not determined
159074, 158540,	3850 Railway Ave, Everett	1910	Commerce / Trade – Business	Not determined
184572, 126662				
270332	3918 Everett Ave, Everett	1969	Commerce / Trade – Warehouse	Not determined
184573	Not provided	Not provided	Commerce / Trade – Business	Not determined
126663	Not provided	Not provided	Commerce / Trade – Business	Not determined
159075	XXX Railway Ave, Everett	1915	Commerce / Trade – Business	
154190	Not provided	Not provided	Not provided	Not determined

Property #	Address	Year Built	Historic Function	Evaluation Status
158541	Not provided	Not provided	Commerce / Trade – Business	Not determined
18246	SW corner of Hewitt & Chestnut, Everett	1892	Commerce / Trade – Business	Not determined
270435	2807 Highland Ave, Everett	1968	Commerce / Trade – Professional	Not determined
270424	2828 Highland Ave, Everett	1969	Commerce / Trade – Business	Not determined
270664	2901 State St, Everett	1956	Commerce / Trade – Warehouse	Not determined
126660, 158538, 159072, 184570, 270385	2916 State St, Everett	1900	Commerce / Trade – Warehouse? Business?	Not determined
270373	2925 Chestnut St, Everett	1946	Commerce / Trade – Warehouse	Not determined
270199	2932 Chestnut St, Everett	1968	Commerce / Trade – Warehouse	Not determined
18247	3000-02 Hewitt Ave	1922	Commerce / Trade – Business	
18246, 126657	3120 Hewitt Ave, Everett	1892	Commerce / Trade – Business	Not determined
159070, 159071, 270706, 270807, 158536, 158537, 184569	3210 Hewitt Ave, Everett	1900? 1915	Commerce / Trade – Warehouse	Not determined
18248	3212-20 Hewitt Ave, Everett	1920	Commerce / Trade – Warehouse	Not determined
270354	3217 Hewitt Ave, Everett	1949	Commerce / Trade – Warehouse	Not determined

Table 5. Register listed historic properties in the vicinity of the project (DAHP 2018).

Historic Name	Address	Year Built	Historic Function	Evaluation Status
Pioneer Block	2814-16 Rucker Ave	1892	Commerce / Trade – Business	Listed on WHR.
Monte Cristo Hotel	1507 Wall St	1925	Domestic – Hotel	Listed on WHR and NRHP.
Hewitt Avenue Historic District	1620-1915 Hewitt Ave and portions of Wetmore, Rockefeller, Oakes, and Lombard Aves	1896- 1959	Domestic, Commerce / Trade, Defense, Social, Government, Funerary, Transportation	Listed on WHR and NRHP.
McCabe Building	3120 Hewitt Ave	1892	Commerce / Trade – Business	Listed on NRHP.
Swalwell Block & Adjacent Buildings	2901-2903, 2905, 2907, 2909, and 2915 Hewitt Ave	1892	Commerce / Trade	Listed on NRHP.
Marion Building (Hotel Marion, Tontine Saloon)	1401 Hewitt Ave	1893- 1894	Commerce / Trade – Business	Listed on WHR.
Everett Theater	2911 Colby Ave	1901, 1924	Recreation and Culture – Theater	Listed on WHR.
Everett Fire Station No. 2	2801 Oakes Ave	1925	Government - Fire Station	Listed on WHR and NRHP.
Commerce Building	1801 Hewitt Ave, Everett	1910	Commerce / Trade – Business	Listed on WHR and NRHP.
Steamboat Slough Bridge (529/20e)	SR 529 over Steamboat Slough, Marysville	1916	Transportation – Road-Related (vehicular)	Listed on WHR.
Snohomish River Bridge (529/10w)	SR 529 over the Snohomish River, Everett	1916	Transportation – Road-Related (vehicular)	Listed on WHR.

Historic Name	Address	Year Built	Historic Function	Evaluation Status
Weyerhaeuser Office Building	1710 W Marine View Dr	1924		Listed on WHR and NRHP.
North Coast Casket Company Building	1210 W Marine View Dr	1925	Industry / Processing / Extraction –	Listed on WHR and NRHP.

Table 6. Historically significant bridges in the project vicinity (WSDOT 2018a).

Structure ID.	Bridge No.	Bridge Name	Date Built	Evaluation Status
0000965A	529/10E	Snohomish River	1926	Determined eligible for NRHP.
0004331A	529/10W	Snohomish River	1954	Determined eligible for NRHP.
0000965B	529/15W	Union Slough	1927	Determined eligible for NRHP.
0004373A	529/20E	Steamboat Slough	1954	Determined eligible for NRHP.
0000965C	529/20W	Steamboat Slough	1927	Recommended eligible for NRHP.

Table 7. Historic bridges in the project corridors that are expected to be subject to the Program Comment (BridgeReports.com 2018).

Structure ID	Carries	Crosses	Location	Design	Year Built
0007888B	US 2	W-N RAMP	JCT I-5	Concrete Box beam or girders –	1966
		EVERETT AVE		Multiple	
0007888C	I-5	SR 529 / PACIFIC	4.3 N JCT SR	Prestressed Stringer / Multi-beam or	1966
		AVE	527	girder	
0007888D	I-5	SR 529 - PACIFIC	4.3 N JCT SR	Prestressed Stringer / Multi-beam or	1966
		AVE	527	girder	
0008176B	SR 204	EBEY SLOUGH	JCT US 2	Concrete Slab (5 spans)	1967
0008085E	SR 529	I-5 S-E RAMP	JCT I-5	Concrete Tee beam	1967
	SPUR				
0007923A	US 2	EBEY SLOUGH	1.1 E JCT I-5	Concrete Channel beam (10 spans)	1967
0007923B	US 2	EBEY SLOUGH	1.9 E JCT I-5	Concrete Channel beam (13 spans)	1967
0008085A	US 2	S-E RAMP	JCT I-5	Concrete Slab	1967
0008176A	US 2	SR 204	2.4 E JCT I-5	Concrete Slab (14 spans)	1967
0008085B	US 2 WB	S-E RAMP	JCT I-5	Concrete Slab	1967
0007651B	US 2	EBEY SLOUGH AND	2.1 E JCT I-5	Concrete Box beam or girders -	1968
		SR 204		Multiple (5 spans)	
0008266B	US 2	SNOHOMISH RIVER	0.2 E JCT I-5	Steel Stringer / Multi-beam or girder	1968
				(5 spans)	
0008378E	US 2	EBEY ISLAND	0.8 E JCT I-5	Prestressed Stringer / Multi-beam or	1968
				girder	

Table 8. Historic bridges in the project corridors that are known exceptions to the Program Comment.

Bridge Number	Name	Bridge Type	Year Built	Description of Significance
526/16P	Beverly Lane	Concrete T-beam	1969	Exceptional significance in statewide
	PED over SR 526			inventory 1960s-built bridges; first use of
				post-tensioning of a pedestrian T-beam on
				the state highway system

WASHINGTON STATE DEPARTMENT OF TRANSPORTATION

US 2 WESTBOUND TRESTLE DRAFT SUMMARY OF PROJECT ENVIRONMENTAL BASELINE AND PEL STUDY PLAN







US 2 WESTBOUND TRESTLE DRAFT SUMMARY OF PROJECT **ENVIRONMENTAL BASELINE AND PEL** STUDY PLAN

WASHINGTON STATE DEPARTMENT OF **TRANSPORTATION**

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APPENDICES

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- C ENVIRONMENTAL CONSTRAINTS DRAFT
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- E COMMUNICATIONS PLAN



1 INTRODUCTION

The United States Highway Route 2 (US 2) Westbound Trestle Project is to develop a long-term solution that improves travel reliability, safety, and system linkages to correct roadways and support planned growth. Currently, 93% of the passenger vehicles that use the westbound trestle during the AM peak hour are single-occupant vehicles. The origins of the westbound traffic demand on the trestle in the AM peak period are split between SR 204 and 20th St SE, while US 2 carries almost 40% of the traffic demand. Traffic delays for westbound trips across the US 2 trestle are expected to substantially worsen by 2040. US 2 provides a critical east-west linkage between Everett, the state's sixth most populated city and a major employment center, and "bedroom" communities where many employees of Everett-based businesses reside, such as Lake Stevens and Marysville. The Puget Sound region is expected to grow to 5.8 million people, with 3.4 million jobs by 2050; as this growth occurs, the US 2 connection between Everett and communities to the east will become increasing critical. These documents plan for population and employment growth in the communities that depend on US 2 as a critical transportation connection. Improvements to the US 2 Westbound Trestle are critical to implementing the population and employment growth planned under the Growth Management Act, Vision 2040, and county and city comprehensive plans.

This report summarizes the attached memoranda related to Environmental Justice, Native American Tribe Outreach, Natural Resources, and Cultural Resources. It also includes approach steps for the PEL Study



2 ENVIRONMENTAL JUSTICE BASELINE DATA SUMMARY

The "US 2 Westbound Trestle: Environmental Justice Baseline Data Summary" memorandum (Attachment A) identifies the project's Environmental Justice Study Area and summarizes the baseline demographic profile for the EJ study area compiled from the most recently released American Community Survey 2013-2017 5-year estimates (ACS). The ACS data illustrates that there are areas with higher concentrations of minority, Hispanic/Latino, low-income and limited English proficient persons and households with no vehicle than the corresponding Snohomish County average.

The southwest quadrant of the EJ study area near Lake Stickney, Paine Field and Mill Creek, as well as on the Tulalip Reservation, contains census block groups with substantially higher concentrations of minorities (43% or more) than the county average (23%).

The southwest quadrant of the EJ study area near Lake Stickney, Paine Field and Mill Creek, as well as in Marysville and Lake Stevens, contains census block groups with substantially higher concentrations of Hispanic/Latino persons (30% or more) than the county average (10%).

There are census block groups near Lake Stickney, Evergreen, Everett, and Marysville that contain substantially higher concentrations of low-income households (28% or more) than the county average (8%).

Elementary schools with more than 50 percent of students qualifying for free lunch, based on household income under the National School Lunch Program, are near Marysville, Everett, Evergreen, and Paine Field.

There are census block groups near Evergreen, Everett and North Marysville with substantially higher concentrations of households with no vehicle available (25% or more) than the county average (5%).

WSDOT policy about translation services is contained in the agency's Limited English Proficiency Plan (LEP). WSDOT is committed to providing equal access to project information in their language for LEP persons and this memorandum outlines census block groups where 5% or more of the population in that census block has limited English proficiency (LEP).

Additionally, a list of community based organizations and social service providers that may be able to further inform the community engagement efforts is included.



3 NATIVE AMERICAN TRIBE OUTREACH AND COORDINATION FRAMEWORK

The draft "Tribal Work Plan" (Attachment B) outlines an approach for WSDOT to help identify key tribal issues as it prepares cost and feasibility studies for the project. There are five identified tribes with an interest in the Project: the Tulalip Tribes (Tulalip), Confederated Tribes and Bands of the Yakama Nation (Yakama), Stillaguamish Tribe of Indians (Stillaguamish), Snoqualmie Tribe (Snoqualmie), and the Sauk-Suiattle Indian Tribe (Sauk-Suiattle). These tribes have varying interests in the project. For example, the project lies immediately south of the Tulalip reservation and the Tulalip has treaty fishing rights in this area. Other tribes may have an interest in cultural or natural resource impacts from the project. The key objective is to gather information and create trust and transparency with interested tribes as WSDOT develops planning-level options that if funded will eventually be carried to a full environmental review. Key tribal issues will likely be economic, transportation, and treaty fishing topics expressed by the Tulalip, and any significant cultural or natural resource concerns raised by all interested tribes. At this stage in project development, WSDOT should factor these issues and considerations into cost, feasibility, and schedule plans. The WSDOT project team has been working to meet individually on cultural resources and other issues. These meetings focus on presenting project briefings to the tribes, soliciting their feedback, and identifying any significant issues that would affect project development.



4 NATURAL RESOURCES APPROACH PLAN

Project discipline leads reviewed existing natural environment data for surface water, wetlands, fish, wildlife, and vegetation within a larger geographic area and within 500 feet of the existing trestle (the "study area"). The "Draft Environmental Constraints" memorandum (Attachment C) provides a summary of the natural environment data reviewed, an overall characterization of existing conditions, and emphasizes issues that could influence the design or constructability of a project alternative; for both the broader area and within 500-feet of the study area.

4.1 SURFACE WATER

Potential issues related to surface water could influence the design or constructability of a project alternative. Most of the study area is in the Snohomish River Watershed, which receives drainage from the Snoqualmie and Skykomish Rivers. The western extent of the study area in the Puget Sound Watershed and drains directly to Possession Sound. A small portion of the study area to the northeast is in the Stillaguamish Watershed. Throughout the study area, there are networks of dozens of tributary streams that convey runoff to the larger watercourses in each watershed. Issues related to stormwater management are likely to shape the design of an alternative. Within the project area, roadway improvements would be required to meet the WSDOT NPDES Municipal Stormwater Permit requirements for operation and construction. Alternatives that remove existing vegetation and/or add impervious surfaces may result in impacts to water resources. In many areas, the existing transportation infrastructure system does not include any stormwater management facilities or has facilities that do not meet current detention and water quality treatment standards. Most of the project area is located on Ebey Island, and crosses the Snohomish River, Deadwater Slough, and Ebey Slough, just upstream of the Snohomish River Estuary. Almost the entire project area is zoned for agricultural use, except for urban/residential uses on the west end in Everett the east end in Lake Stevens.

4.2 WETLANDS

This section outlines potential issues related to wetlands, emphasizing issues that could influence the design or constructability of a project alternative. Wetlands and hydric soils are present throughout the study area, particularly in association with stream networks. Information about the locations of wetland mitigation sites in the study area is limited.

Issues related to wetlands are unlikely to substantially differentiate between project alternatives, given the widespread distribution of wetlands in the study area. Actions that may adversely affect wetlands are not strictly prohibited; rather, if an alternative is likely to result in unavoidable adverse effects on wetlands or their regulatory buffers, requirements to mitigate for those effects would be triggered. Compliance with federal, state, and local statutes and regulations could shape the design of an alternative.

Compliance with these mitigation sequencing requirements may necessitate adjustments to an alternative alignment (to avoid or minimize impacts to wetlands or wetland buffers), unless it can be demonstrated that such adjustments would be impracticable. The distribution of wetlands is especially dense in the Snohomish River valley bottom, where the US 2 trestle is. Mapped or modeled wetlands cover almost the entire area within 500 feet of the existing trestle. Several wetland types, including freshwater emergent, riverine, and freshwater forested/shrub wetlands, are present.

As in the broader study area, issues related to wetlands are unlikely to substantially differentiate between of a design alternative in the project area. As discussed above, impacts to wetlands and wetland buffers would need to be mitigated in accordance with federal, state, and local regulations. Compliance with mitigation sequencing requirements could influence the design or alignment of an alternative.



4.3 FISH, WILDLIFE, AND VEGETATION

This section outlines potential issues related to fish, wildlife, and vegetation, emphasizing issues that could influence the design or constructability of a project alternative. The issue most likely to rise to this level would be associated with adverse effects on species listed under the Endangered Species Act (ESA) or designated critical habitat for such species. Streams throughout the study area support a wide variety of fish and aquatic fauna. Marine, estuarine, and intertidal habitats in the western portion of the study area also support numerous species and habitats that receive regulatory protection.

As with wetlands, issues related to fish, wildlife, or vegetation are unlikely to substantially differentiate between project alternatives. Actions that may adversely affect these resources are not strictly prohibited; rather, if an alternative is likely to result in unavoidable adverse effects on a sensitive species or habitat area, requirements to mitigate for those effects would be triggered. Compliance with mitigation sequencing requirements of local critical areas ordinances could influence the design or alignment of an alternative.

The presence of areas that provide habitat for ESA-listed species will necessitate additional consideration during the processes of project design and environmental review. The goal of these efforts will be to ensure that appropriate measures are implemented to avoid or minimize adverse effects on these species and, if necessary, to mitigate unavoidable impacts. ESA-listed Puget Sound Chinook salmon and Puget Sound steelhead have been documented in the segments of the Snohomish River and Ebey Slough in the project area. Bull trout use the Snohomish River in the project area as rearing habitat, and they are presumed to be present in Ebey Slough. The Ebey Island floodplain includes a network of ditches that are accessible to fish. All three of these species are presumed to be present in those ditches.

Based on the lack of state-owned fish passage barriers in the project area, culvert replacements are not expected to be a major consideration in the design of any alternatives.

The presence of a bald eagle nest was noted approximately 0.5 mile from the project area. If project construction entails any activities that generate extremely loud noises (e.g., impact pile driving) within 0.5 mile of an active bald eagle nest, it may be necessary to obtain an incidental take permit from USFWS, to ensure compliance with the Bald and Golden Eagle Management Act. Additional restrictions and permitting requirements apply to general construction activities within 660 feet of active bald eagle nests.

A field review of the area within 0.5 mile of the project alignment should be conducted before construction begins, to establish the location and status of any bald eagle nests. Some species of birds (e.g., peregrine falcon, cliff swallow, barn swallow) may build nests on structures such as the US 2 trestle. A field review should be conducted before construction begins, and any nests should be removed during the non-breeding season, to avoid violation of the take prohibitions in the Migratory Bird Treaty Act.



5 CULTURAL RESOURCES APPROACH PLAN

The "Cultural Resources Approach Plan" (Attachment D) identifies prior cultural resources studies and known cultural resources near the project. Portions of I-5 and US 2 have been included in prior studies, but most the project corridors have not been surveyed for cultural resources. When project alternatives are identified, it will be possible to assess more specifically which of the known cultural resources could potentially be affected and which areas need cultural resources survey. Discussion of the project with cultural resources staff of affected Tribes may also identify specific areas of concern.

Review of geological and soils surveys, ethnographic reports, historical maps, and other sources will provide more detailed information to refine low and high probability environments of the project. WSDOT cultural resources staff should be consulted to confirm which bridges involved in the project are subject to the Program Comment and identify any that may not meet the applicable criteria and would require historic review under Section 106.

Additionally, the 2005 Section 106 Exemption Regarding Effects to the Interstate Highway System by the ACHP excludes most Interstate Highway Features from consideration as a historic property under Section 106 of the National Historic Preservation Act (NHPA). FHWA maintains a list of Nationally and Exceptionally Significant Features of the Federal Interstate Highway System not subject to the ACHP's Exemption (FHWA 2018b). No such significant features are in the project corridors. Attachment D includes the following tables:

- Table 1: Prior cultural resources studies in the involved corridors and a ~800-foot buffer.
- Table 2: Very few archaeological sites have been recorded in proximity to the project corridors.
- Table 3: Historic cemeteries identified near the project corridors.
- Table 4: 36 historic inventory properties located on the north side of the existing US 2 Westbound Trestle and east of I-5, as a sample of the types of historic resources that have been recorded in proximity to the project.
- Table 5: Properties listed on the Washington Heritage Register (WHR) and National Register of Historic Places (NRHP) within approximately one block from the project corridors.
- Table 6: Five bridges near the project identified by WSDOT as historically significant (these are all on SR529 in northern Everett).
- Table 7: National Bridge Inventory data, the US2 Westbound Trestle and several other bridges in the project vicinity appear to meet the criteria and it is expected that the Program Comment would apply.
- Table 8: One bridge near the project has been identified as an exception to the Program Comment.



6 APPROACH STEPS FOR THE PEL STUDY

Consistent with WSDOT's draft Environmental Planning and PEL Handbook, the US 2 Westbound Trestle Pre-NEPA Documentation is anticipated to benefit the eventual delivery of the Project by incorporating environmental and community values into Project decisions and allow these decisions to be carried through project development. The study approach is intended to include the first steps towards:

- Identifying agency environmental priorities and project constraints
- Understanding and documenting community needs
- Identifying and addressing controversy
- Making informed decisions about the likely scope and budget for the future Project, and
- Consider NEPA concepts during planning to speed up delivery of the future Project when funded.

The approach for the US 2 Westbound Trestle Pre-NEPA Documentation is to identify a preliminary Purpose and Need considering the priorities, needs, and constraints identified by WSDOT, local and permitting agencies, and the public. Then to identify and review a range of alternatives to meet the Purpose and Need. Finally, the analysis results will be used to recommend one or more alternatives to be advanced for further consideration in the NEPA process. The attached Communications Plan (Attachment E) summarizes the involvement of a technical working group, resource advisory committee, and elected advisory group; interviews with community groups; coordination with Native American Tribes; and public information and input.

The PEL Study is being completed consistent with the considerations in 23 USC 168(d) as paraphrased below:

- 1. The study was conducted in accordance with federal law.
- 2. The study was developed in consultation with federal and state resource agencies and Native American tribes.
- 3. The study involved multidisciplinary consideration, including systems-level or corridor wide needs and effects.
- 4. During the planning process, notice was provided and public participation took place. After initiation of the environmental review process but prior to determining whether to use planning products, the WSDOT will make documentation available to stakeholders and consider any comments.
- 6. WSDOT does not anticipate significant new information or circumstance that has reasonable likelihood of affecting the continued validity of the planning product.
- 7. The study has a rational basis centered on reliable and reasonably current data and scientific methodologies.
- 8. The study will be documented in sufficient detail to support the decision or results of the analysis and to meet requirements for use in the environmental process.
- 9. The study is appropriate for adoption and use in the environmental review process.
- 10. The study is anticipated to be approved not later than 5 years prior to date on which information is adopted in the NEPA review.



The following is a high-level outline proposed for the PEL study:

I. Introduction

- A. Purpose of this Planning and Environmental Linkages Study
- B. Background

II. Draft Purpose and Need

- A. Introduction
- B. Draft Purpose
- C. Draft Need

III. Affected Environment, Constraints and Considerations

IV. Criteria for Evaluation

- A. Alternative Evaluation Criteria based on the Purpose and Need
- B. Additional Evaluation Criteria based on WSDOT Mobility Performance Framework

V. Identified Range of Alternatives

- A. Process of Alternative Identification
- B. System Alternatives
- C. West End Alternatives
- D. Trestle
- E. East End Alternatives

VI. Initial Review of Alternatives

- A. Process of Alternative Review
- B. System Alternatives
- C. West End Alternatives
- D. Trestle
- E. East End Alternatives

VII. Alternatives Identified for Detailed Analysis

- A. Development of end-to-end Alternatives
- B. Identified Representative Alternatives
- C. Evaluation of Representative Alternatives to Evaluation Criteria

VIII. Alternatives Recommended for Further Consideration

IX. Consultation and Coordination

1.1 INTRODUCTION

Project discipline leads reviewed existing natural environment data for surface water; wetlands; and fish, wildlife, and vegetation within a larger area geographic area as shown on Figure X and within 500 feet of the existing trestle (the "study area"). Field studies were not conducted on behalf of this analysis and most of the information reviewed was specifically provided by WSDOT. Although not covering the entire extent of the trestle, the Draft 2017 Environmental Considerations Report (Appendix J of the US 2/SR 204 Interchange Justification Report) was an important resource for understanding conditions within the 500-feet buffer of the trestle. The following section provides a summary of the natural environment data reviewed, an overall characterization of existing conditions, and emphasizes issues that could influence the design or constructability of a project alternative; for both the broader area (Figure X) and within 500-feet of the existing trestle.

SURFACE WATER

Discussions in this section identify potential issues related to surface water, emphasizing issues that could influence the design or constructability of a project alternative. The following subsections address these issues at the broad (study area) scale and within the project area (i.e., within 500 feet of the existing US 2 trestle).

Broader Geographic Area

Data reviewed

The following data sources were reviewed to support discussions in this section:

- USGS Hydrologic Unit Code (HUC) 4th-level (river basin) boundaries
- Ecology Water Resource Inventory Area (WRIA) information
- Ecology 303(d) list of impaired water bodies
- Snohomish County water resource data
- Snohomish County zoning map
- Snohomish County Smith Island website

Summary of Findings

The majority of study area is located in Snohomish River Watershed, which receives drainage from the Snoqualmie and Skykomish Rivers. The western extent of the study area is located in the Puget Sound Watershed and drains directly to Possession Sound. A small portion of the study area to the northeast is in the Stillaguamish Watershed. Throughout the study area, there are networks of dozens of tributary streams that convey runoff to the larger watercourses in each watershed.

One of the most unique water resources in the study area is the Snohomish River Estuary. In this area, which is approximately 20 square miles in size, the fresh water of the Snohomish River mixes with the saltwater of Possession Sound. The estuary creates nutrient-rich habitat for plants and animals, stores tidal flows and flood waters, and acts as a natural water quality filter for Possession Sound. As of August

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2018, approximately 1,200 acres of Snohomish River tidal marsh estuary have been restored by the Tulalip Tribes, City of Everett, Snohomish County, and Washington Department of Fish and Wildlife in support of salmon recovery benchmarks identified in the Puget Sound Salmon Recovery Plan, the Puget Sound Partnership Action Agenda, and the Snohomish River Basin Salmon Conservation Plan. Restoration of another 420 acres of historic estuary is anticipated in 2019, with completion of Snohomish County's Mid-Spencer Island Restoration project and the Port of Everett's Blue Heron Slough project. (Snohomish County , 2019).

In the study area and throughout all watersheds, land use characteristics affect the quality of streams and other water resources. Land development and other changes from the historical vegetation can cause changes in runoff frequency, intensity, pollutant content, and vegetation cover that can result in bank scour, water quality degradation, and harmful temperature increases. Approximately 70 percent of the study area is zoned as agricultural and rural, mostly inland in the eastern foothills. The remaining 30 percent of the study area on the west side is a mix of light residential development, with more urbanized areas around Everett and Marysville. The development within these zoned areas has likely had historical impact on the stream channels and water quality in the study area. Multiple water bodies in the study area have been identified on the Ecology 303(d) list for water quality impairment. Identified parameters and pollutants of concern include pH, temperature, dissolved oxygen, bacteria, ammonia, phosphorus, mercury, copper, and zinc.

Synthesis

Issues related to stormwater management are likely to shape the design of an alternative. Within the project area, roadway improvements would be required to meet – at a minimum – the WSDOT NPDES Municipal Stormwater Permit requirements for operation and construction. Alternatives that remove existing vegetation and/or add impervious surfaces may result in impacts to water resources as discussed above. In many areas, the existing transportation infrastructure system does not include any stormwater management facilities or has facilities that do not meet current detention and water quality treatment standards. Replacement and expansion of impervious surfaces in these areas would require all runoff to be treated based on current standards. Also, depending on the sensitivity of the water resources that would receive runoff from the alternative, minimization of adverse effects could require stormwater facilities that exceed the requirements specified in the Highway Runoff Manual (e.g.; stormwater treatment measures imposed through ESA Section 7 consultation).

Within 500 Feet of the Eastbound and Westbound US 2 Trestle (including interchanges)

Data reviewed

The following data sources were reviewed to support discussions in this section:

- USGS Hydrologic Unit Code (HUC) 4th-level (river basin) boundaries
- Ecology Water Resource Inventory Area (WRIA) information
- Ecology 303(d) list of impaired water bodies
- Snohomish County water resource data
- Snohomish County zoning map
- Snohomish County Smith Island website
- Ebey Island Habitat Restoration Feasibility Study (AMEC 2011)

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Draft Environmental Constraints – US 2 Westbound Trestle NEPA

Documentation

WSP

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Summary of Findings

Most of the project area is located on Ebey Island, and crosses the Snohomish River, Deadwater Slough, and Ebey Slough, just upstream of the Snohomish River Estuary. The ground surface of Ebey Island is below the average water surface elevation of the surrounding channels; and the island is drained by a system of drainage channels, one-way tide gates, and a pump system. The soils on the island are highly supportive of agricultural activities when drained; however, very little high-intensity agriculture has been recently practiced on the island and the diking district has chosen to limit the use of the pump system for now. Almost the entire project area is zoned for agricultural use, except for urban/residential uses on the west end in Everett the east end in Lake Stevens. Just downstream of the project area, the Snohomish River Estuary has an approved Multiparameter Total Maximum Daily Load (TMDL) for ammonia, carbonaceous oxygen demand (CBOD), and dissolved oxygen.

Synthesis

Issues related to stormwater management are likely to shape the design of an alternative. Within the project area, the design will be required to meet – at a minimum – the WSDOT NPDES Municipal Stormwater Permit requirements for operation and construction. As previously discussed, if the existing transportation infrastructure system in the project areas does not include any stormwater management facilities or has facilities that do not meet current detention and water quality treatment standards, replacement and expansion of impervious surfaces would likely require all runoff treatment to be upgraded to current standards. Also, because of the high groundwater conditions and frequent flooding on Ebey Island and challenges with constructing stormwater facilities on elevated structures and trestles, traditional stormwater facility design may not be suitable for the project. Furthermore, due to the potential sensitivity of the water resources that would receive runoff from the alternative, minimization of adverse effects could require stormwater facilities that exceed the performance requirements specified in the Highway Runoff Manual (e.g.; stormwater treatment measures imposed through ESA Section 7 consultation).

WETLANDS

Discussions in this section identify potential issues related to wetlands, emphasizing issues that could influence the design or constructability of a project alternative. The following subsections address these issues at the broad (study area) scale and within the project area (i.e., within 500 feet of the existing US 2 trestle).

Broader Geographic Area

Data reviewed

The following data sources were reviewed to support discussions in this section:

- U.S. Fish and Wildlife Service National Wetlands Inventory data
- Washington Department of Fish and Wildlife (WDFW) Priority Habitats and Species location data
- Washington Department of Natural Resources (WDNR) Natural Heritage Program rare plant distribution data

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- The Washington State Department of Ecology's Modeled Wetlands Inventory (developed in partnership with the National Oceanic and Atmospheric Administration's Coast Change Analysis Program
- Wetland mapping data from the Snohomish County Department of Planning and Development Services
- Natural Resources Conservation Service soils data
- Locations of wetland mitigation sites delineated by WSDOT

Summary of Findings

Wetlands and hydric soils are present throughout the study area, particularly in association with stream networks. Wetlands—large wetland complexes, in particular—and hydric soils are densely distributed in the Snohomish River valley bottom for miles upstream and downstream of the existing trestle. Wetlands are less common and smaller in the hill and ridges that surround the Snohomish River valley.

Information about the locations of wetland mitigation sites in the study area is limited. The only sites for which location information was available for this analysis are in the immediate vicinity of the US 2 trestle (see Project Area discussion, below).

Synthesis

Issues related to wetlands are unlikely to substantially differentiate between project alternatives, given the widespread distribution of wetlands in the study area. Actions that may adversely affect wetlands are not strictly prohibited; rather, if an alternative is likely to result in unavoidable adverse effects on wetlands or their regulatory buffers, requirements to mitigate for those effects would be triggered.

Compliance with federal, state, and local statutes and regulations could shape the design of an alternative. Applicants with development proposals that may adversely affect wetlands must apply mitigation sequencing before permitting agencies will consider options for compensatory mitigation. Permitting agencies require applicants to demonstrate that they have avoided or minimized impacts to wetlands wherever practicable. Compliance with these mitigation sequencing requirements may necessitate adjustments to an alternative alignment (to avoid or minimize impacts to wetlands or wetland buffers), unless it can be demonstrated that such adjustments would be impracticable.

Statutes and regulations for the protection of wetlands are found at the federal, state, and local levels. Mitigation options include on-site and in-kind mitigation, participation in a local in-lieu fee program (if one exists), and/or mitigation banking. In general, mitigation requirements reflect the area and quality of the affected wetlands: impacts to greater areas of wetlands, and/or to higher-quality wetlands, necessitate greater amounts of mitigation area or credit. Broadly, wetland mitigation must be consistent with the statewide goal of achieving no overall net loss in acreage and function of Washington's remaining wetlands, as well as furthering the long-term goal of increasing the quantity and quality of Washington's wetlands resource base.

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Within 500 Feet of the Eastbound and Westbound US 2 Trestle (including interchanges)

Data reviewed

In addition to the data sources that were reviewed for the broader study area, several previously completed assessments of environmental conditions helped inform the characterization of existing conditions of wetlands in the project area. The following documents were reviewed:

- Environmental Considerations Report: US 2/ SR 204 & 20th St SE Interchange Justification Report (WSDOT 2017)
- US 2: Everett Port/Naval Station to SR 9 Corridor Planning Study (WSDOT 2016)
- Ebey Island Habitat Restoration Feasibility Study (AMEC 2011)

Summary of Findings

As noted above, the distribution of wetlands is especially dense in the Snohomish River valley bottom, where the US 2 trestle is. Mapped or modeled wetlands cover almost the entire area within 500 feet of the existing trestle. Several wetland types, including freshwater emergent, riverine, and freshwater forested/shrub wetlands, are present. Many of the wetlands in the project area are likely to be rated as Category 1 or 2 (i.e., high-quality) (WSDOT 2017). The WDNR Natural Heritage Program has not identified any high-quality wetland ecosystems in the project area.

The most common soils in the project area are Mukilteo muck, Puget silty clay loam, and Snohomish silt loam, all of which are classified as hydric. Non-hydric soils are present at the western and eastern ends of the trestle, on the valley walls.

An approximately 1.5-acre wetland mitigation site (for the Everett Bridges project) is present near western end of the existing trestle, east of the Snohomish River. The mitigation site lies primarily along the eastbound trestle, but some portions extend under the westbound trestle as well. Another wetland mitigation site, approximately 14 acres in size, is present along 51st Avenue SE immediately south of the project area.

Synthesis

As in the broader study area, issues related to wetlands are unlikely to substantially differentiate between of a design alternative in the project area. As discussed above, impacts to wetlands and wetland buffers would need to be mitigated in accordance with federal, state, and local regulations. Compliance with mitigation sequencing requirements could influence the design or alignment of an alternative.

Impacts to established wetland mitigation sites can complicate the permitting process. If an alternative is likely to adversely affect the Everett Bridges mitigation site, advance mitigation—i.e., establishing a new mitigation site or securing credit in an in-lieu fee program or mitigation bank before project construction begins—will likely be necessary.

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FISH, WILDLIFE, AND VEGETATION

Discussions in this section identify potential issues related to fish, wildlife, and vegetation, emphasizing issues that could influence the design or constructability of a project alternative. The issue most likely to rise to this level would be associated with adverse effects on species listed under the Endangered Species Act (ESA) or designated critical habitat for such species. Discussions in this section also address issues relating to (1) adverse effects on species and habitats that are protected under local critical areas ordinances, and (2) project work on state-owned culverts that have been identified as fish passage barriers. The following subsections address these issues at the broad (study area) scale and within the project area (i.e., within 500 feet of the existing US 2 trestle).

Broader Geographic Area

Data reviewed

The following data sources were reviewed to support discussions in this section:

- Lists of ESA-listed species under the jurisdiction of USFWS and NMFS
- Mapped extents of critical habitat designated for ESA-listed species
- WDFW Priority Habitats and Species location data
- WDNR Natural Heritage Program rare plant distribution data
- WDFW SalmonScape database
- WSDOT Fish Passage Inventory

Summary of Findings

ESA-Listed Species and Critical Habitat

Species listed or proposed for listing under the ESA may use habitats in the study area. Some of these species fall under the jurisdiction of USFWS, while others (primarily those that use marine habitats for a substantial portion of their life histories) are under the jurisdiction of NMFS.

The USFWS Information for Planning and Consultation (IPaC) system was queried for ESA-listed species that may be found in the study area. That query generated the following list:

- Gray Wolf (*Canis lupus*) Endangered
- North American Wolverine (*Gulo gulo luscus*) Proposed Threatened
- Marbled Murrelet (Brachyramphus marmoratus) Threatened
- Streaked Horned Lark (*Eremophila alpestris strigata*) Threatened
- Yellow-billed Cuckoo (Coccyzus americanus) Threatened
- Oregon Spotted Frog (Rana pretiosa) Threatened
- Bull Trout (Salvelinus confluentus) Threatened
- Golden Paintbrush (Castilleja levisecta) Threatened

With the exception of bull trout, it is unlikely that any of those species use habitats in the study area. Data from the WDFW Priority Habitats and Species Program and the WDNR Natural Heritage Program indicate

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that the only species that has been documented in the study area is bull trout, which may use freshwater or nearshore habitats. The other species are associated with habitats (e.g., old-growth forest, native prairie, remote areas) that are not found in the study area (although field reviews of wetlands in some parts of the study area may need to be conducted, to evaluate the capacity of those wetlands to support Oregon spotted frogs).

In addition to bull trout, two ESA-listed fish species under the jurisdiction of NMFS use freshwater habitats in the study area:

- Chinook salmon (*Oncorhynchus tshawytscha*), Puget Sound evolutionarily significant unit (ESU) Threatened
- Steelhead (O. mykiss), Puget Sound distinct population segment (DPS) Threatened

The study area also includes marine habitats that support ESA-listed species. Although it is unlikely that any corridor improvement alternatives would directly affect any such habitats, indirect effects may need to be taken into consideration. For example, if a proposed action is found to have a significant risk of adverse impacts on populations of Chinook salmon in freshwater habitats, these may translate into a potential adverse impact on southern resident killer whales, which prey primarily on Chinook salmon in marine habitats. In addition to Chinook salmon and steelhead, the following ESA-listed species may use marine habitats in the study area:

- Killer Whale (*Orcinus orca*), southern resident DPS Endangered
- Humpback Whale (*Megaptera novaeangliae*), Mexico DPS (Threatened) or Central America DPS (Endangered)
- Bocaccio Rockfish (Sebastes paucispinis), Puget Sound/Georgia Basin DPS Endangered
- Yelloweye Rockfish (S. ruberrimus), Puget Sound/Georgia Basin DPS Threatened
- North American Green Sturgeon (Acipenser medirostris), southern DPS Threatened
- Pacific Eulachon (*Thaleichthys pacificus*), southern DPS Threatened
- Leatherback Sea Turtle (*Dermochelys coriacea*) Endangered

Critical habitat for the three ESA-listed salmonid species identified above (bull trout, Puget Sound Chinook salmon, and Puget Sound steelhead) has been designed in freshwater habitats in the study area. Some marine areas in the study area have also been designated as critical habitat for bull trout and Puget Sound Chinook salmon; critical habitat for bocaccio rockfish, yelloweye rockfish, and southern resident killer whales has also been designed in marine portions of the study area.

Other Species and Habitats of Concern

The following WDFW priority habitats and sites associated with priority species have been documented in the study area:

- Bald eagle nests and communal roost
- Peregrine falcon nests
- Merlin nest
- Great blue heron nesting colonies
- Purple martin nesting colonies

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- Arctic tern nesting colonies
- Harlequin duck breeding area
- Trumpeter swan night roost
- Wood duck and hooded merganser nesting areas
- Waterfowl concentration areas
- Little brown bat maternity colony
- Biodiversity areas and corridors
- Harbor seal haulout (marine areas only)
- Shorebird concentration areas (marine areas only)
- Coastal cliffs and bluffs (marine areas only)
- Eelgrass meadows (marine areas only)
- Estuarine habitat (marine areas only)
- Wetlands (see discussion of wetlands, above)

In addition, streams throughout the study area support a wide variety of fish and other aquatic fauna. Marine, estuarine, and intertidal habitats in the western portion of the study area also support numerous species and habitats that receive regulatory protection, such as under local critical areas ordinances.

Fish Passage Barriers

WSDOT Fish Passage Inventory data show that state-owned culverts impede fish passage at more than 40 locations in the study area. Roadways with fish passage barriers include Interstate 5, US 2 (southeast of the project area), and State Routes 9, 92, 96, 99, 204, 525, 526, and 528.

Synthesis

As with wetlands, issues related to fish, wildlife, or vegetation are unlikely to substantially differentiate between of a project alternatives. Actions that may adversely affect these resources are not strictly prohibited; rather, if an alternative is likely to result in unavoidable adverse effects on a sensitive species or habitat area, requirements to mitigate for those effects would be triggered.

Compliance with local critical areas ordinances could shape the design of an alternative, although the requirements are likely to depend on the jurisdiction. In unincorporated Snohomish County, for example, project proponents are required to make "all reasonable efforts to avoid and minimize impacts to wetlands, fish and wildlife habitat conservation areas, and buffers" (Snohomish County Code 30.62A.310(3)). Compliance with such mitigation sequencing requirements may necessitate adjustments to an alternative alignment (to avoid or minimize impacts to streams, stream buffers, or other fish and wildlife habitat conservation areas), unless it can be demonstrated that such adjustments would not be reasonable.

To expedite consultation with USFWS and NMFS under Section 7 of the ESA, it would be advisable to avoid a design that would require construction work or the placement of structures (e.g., roadway support columns, pilings for temporary work trestles) directly in waters that support ESA-listed fish species. Adverse effects resulting from in-water work may be avoided or minimized by (1) performing work during periods when ESA-listed species are unlikely to be present and (2) implementing impact reduction measures, such as bubble curtains to reduce the underwater sound pressure levels of in-water

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pile driving. Construction activities that entail in-water pile driving and/or fish removal are likely to trigger formal consultation under ESA Section 7—a process that can last several months and result in the imposition of conservation measures that are more restrictive those specified in other permitting documents such as the Hydraulic Project Approval issued by WDFW and the Clean Water Act Section 404 permit issued by the Army Corps of Engineers.

The potential impacts of stormwater runoff can be a major issue. Alternatives that remove existing vegetation and/or add impervious surfaces may result in increased peak flows, as well as delivering contaminants to waterbodies that support ESA-listed fish and other sensitive species. In many areas, the existing transportation infrastructure system does not include adequate facilities for the detention and/or treatment of stormwater runoff. If an alternative would add impervious surfaces in the study area, additional analysis would be necessary, to ensure the protection of hydrologic conditions and water quality that support sensitive aquatic species. The design of any such alternatives would need to include facilities that detain and/or treat stormwater runoff. Depending on the sensitivity of the affected resources, minimization of adverse effects on natural resources could lead to stormwater facilities that exceed the requirements specified in the Highway Runoff Manual.

If any alternatives entail work at locations of culverts that are identified as fish passage barriers, those culverts would need to be replaced with structures that are not barriers.

Within 500 Feet of the Eastbound and Westbound US 2 Trestle (including interchanges)

Data reviewed

In addition to the data sources that were reviewed for the broader study area, several previously completed assessments of environmental conditions in the project corridor helped inform the characterization of existing conditions of fish, wildlife, and vegetation in the project area. The following documents were reviewed:

- Environmental Considerations Report: US 2/SR 204 & 20th St SE Interchange Justification Report (WSDOT 2017)
- US 2: Everett Port/Naval Station to SR 9 Corridor Planning Study (WSDOT 2016)
- Ebey Island Habitat Restoration Feasibility Study (AMEC 2011)

Summary of Findings

ESA-Listed Species and Critical Habitat

ESA-listed Puget Sound Chinook salmon and Puget Sound steelhead have been documented in the segments of the Snohomish River and Ebey Slough in the project area. Bull trout use the Snohomish River in the project area as rearing habitat, and they are presumed to be present in Ebey Slough. The Ebey Island floodplain includes a network of ditches that are accessible to fish. All three of these species are presumed to be present in those ditches.

The segments of the Snohomish River and Ebey Slough crossed by the US 2 trestle have been designated as critical habitat for bull trout, Puget Sound Chinook salmon, and Puget Sound steelhead. In addition, Deadwater Slough, which is crossed by the trestle approximately 0.5 mile east of the Snohomish River

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bridge, has been designated as critical habitat for Puget Sound Chinook salmon and Puget Sound steelhead.

Other Species and Habitats of Concern

Of the WDFW priority species and habitats listed above, only peregrine falcon, waterfowl concentration areas, and wetlands have been documented in the project area.

Many fish species reside in or migrate through the lower Snohomish River and Ebey Slough in the project area, including eight salmonid species (Chinook, coho, chum, pink, and sockeye salmon, and cutthroat, steelhead, and bull trout). Outside of those major watercourses, AMEC (2011) reported that drainage ditches, canals, and a remnant reach of Deadwater Slough are the only areas that might contain enough water to support fish during certain times of the year, but fish access to these areas is prevented by a pump station and water quality is very poor. WSDOT (2017) noted that additional, unmapped ditches are present under the trestle. WSDOT (2016) found that the Snohomish River, Ebey Slough, other tributary crossings, and nearby wetlands will complicate transportation system improvements in the corridor.

In 2010 and 2011, WDFW conducted a study to investigate the technical and social feasibility of restoring estuarine functions on state-owned lands immediately south of the US 2 trestle, to support Chinook salmon recovery in the Snohomish River estuary. The study found that restoration is technically feasible but that the practical feasibility of restoring Chinook salmon habitat on WDFW holdings on Ebey Island is low (AMEC 2011). Reasons for the finding of low practical feasibility included high costs and limited support from local land owners and interest groups. If these practical considerations change in the next few years and a habitat restoration project becomes viable, the design and implementation of the trestle widening project will need to be compatible with the goals and objectives of the restoration project.

Fish Passage Barriers

The WSDOT Fish Passage Inventory identifies no state-owned culverts that impede fish passage along US 2 in the project area.

Synthesis

As in the broader study area, issues related to fish, wildlife, or vegetation are unlikely to substantially differentiate between a design alternative in the project area. Compliance with mitigation sequencing requirements of local critical areas ordinances could influence the design or alignment of an alternative. As discussed above, designs that would require construction work or the placement of structures (e.g., roadway support columns, pilings for temporary work trestles) directly in waters that support ESA-listed fish species should be avoided. Similarly, detention and treatment of stormwater runoff will likely need to be addressed during the project design phase.

Based on the lack of state-owned fish passage barriers in the project area, culvert replacements are not expected to be a major consideration in the design of any alternatives.

The US 2: Everett Port/Naval Station to SR 9 Corridor Planning Study found that the presence of areas that provide habitat for ESA-listed species will necessitate additional consideration during the processes of project design and environmental review. The goal of these efforts will be to ensure that appropriate

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measures are implemented to avoid or minimize adverse effects on these species and, if necessary, to mitigate unavoidable impacts.

WSDOT (2017) also noted the presence of a bald eagle nest approximately 0.5 mile from the project area. If project construction entails any activities that generate extremely loud noises (e.g., impact pile driving) within 0.5 mile of an active bald eagle nest, it may be necessary to obtain an incidental take permit from USFWS, to ensure compliance with the Bald and Golden Eagle Management Act. Additional restrictions and permitting requirements apply to general construction activities within 660 feet of active bald eagle nests. A field review of the area within 0.5 mile of the project alignment should be conducted before construction begins, to establish the location and status of any bald eagle nests.

Some species of birds (e.g., peregrine falcon, cliff swallow, barn swallow) may build nests on structures such as the US 2 trestle. A field review should be conducted before construction begins, and any nests should be removed during the non-breeding season, to avoid violation of the take prohibitions in the Migratory Bird Treaty Act.



DRAFT Tribal Work Plan

Introduction

The Washington State Department of Transportation (WSDOT) is evaluating options for replacing the westbound US 2 trestle and making east side interchange improvements. Current efforts include examining and recommending financing and planning options to the legislature. The legislative direction for this study also included requirements to work in close collaboration with local project proponents and stakeholders. To meet this requirement WSDOT formed three groups: an Executive Advisory Group (EAG), a Technical Working Group (TWG), and a Resource Agency Committee (RAC). The EAG includes senior staff and elected or appointed officials. The TWG is comprised of technical experts focused on transportation planning. The RAC includes agencies and tribes with environmental interests and jurisdiction in the area.

There are five identified tribes with an interest in the Project: the Tulalip Tribes (Tulalip), Confederated Tribes and Bands of the Yakama Nation (Yakama), Stillaguamish Tribe of Indians (Stillaguamish), Snoqualmie Tribe (Snoqualmie), and the Sauk-Suiattle Indian Tribe (Sauk-Suiattle). These tribes have varying interests in the project. For example, the project lies immediately south of the Tulalip reservation and the Tulalip has treaty fishing rights in this area. Other tribes may have an interest in cultural or natural resource impacts from the project.

This work plan outlines an approach for WSDOT to help identify key tribal issues as it prepares cost and feasibility studies for the project. The approach is designed to ensure that interested tribes have the opportunity to provide input throughout the process, while acknowledging the Tulalip's reservation and treaty rights in the area.

Planning Study Objectives

At this stage in development, the key objective is to gather information and create trust and transparency with interested tribes as WSDOT develops planning-level options that if funded will eventually be carried a full environmental review.

Approach

Key tribal issues will likely be economic, transportation, and treaty fishing topics expressed by the Tulalip, and any significant cultural or natural resource concerns raised by all interested tribes. At this stage in project development, WSDOT should factor these issues and considerations into cost, feasibility, and schedule plans.

Due to the Tulalip Tribes' interests in transportation to the reservation and treaty fishing rights in the area, WSDOT formally invited the tribe to participate in the EAG, TWG and RAC and has been making efforts to meet with the tribe.

WSDOT sent letters and followed up individually to the Stillaguamish, Snoqualmie, Yakama, and Sauk Suiattle inviting them to participate in the RAC and TWG work groups. The WSDOT project team has been also working to meet individually on cultural resources and other issues.

These meetings focus on presenting project briefings to the tribes, soliciting their feedback, and identifing any significant issues that would affect project development. For example, if a tribe identifies that there are significant cultural resources affected by an alternative, it could influence the alternatives under development.

Project Documentation

As part of this early planning effort, documentation of all tribal outreach is maintained in Tribal Log. This will ensure that as the project moves from planning into environmental review, early efforts and feedback is carried forward without duplicative effort, and will help build trust with the tribes that their early efforts are being considered.

Tribal Contacts

Tribe	Contact Person	Title	Email
Tulalip Tribes			
6406 Marine Dr	Marie Zackuse	Chair	
ulalip, WA 98271	Kurt Nelson	Environmental Department Manager	knelson@tulaliptribes-nsn.gov
360-716-4000	Richard Young	Preservation Officer	ryoung@tulaliptribes-nsn.gov
	Debra (Debbie) Bray	Planner	dbray@tulaliptribes-nsn.gov
	Ray Fryberg	Natural Resources Director	rfryberg@tulaliptribes-nsn.gov
	Tim Brewer	Tribal Counsel	tbrewer@tulaliptribes-nsn.gov
Snoqualmie Tribe			
P.O. Box 969	Robert de los Angeles	Chair	
Snoqualmie, WA 98065	Cindy Spiry	Environmental and Natural Resources Director	cindy@snoqualmietribe.us
125.888.6551	Steven Mullen Moses	Director, Archaeology and Historic Preservation	steve@snoqualmietribe.us
	Jaime Martin	Governmental Affairs	jaime.martin@snoqualmietribe.us
	Adam Osbekoff	Cultural Resource Outreach Specialist	adam@snoqualmietribe.us
Stillaguamish Tribe			
3322 236th St. NE, PO Box 277	Shawn Yanity	Chairman	
Arlington 98223-0277	Pat Stevenson	Environmental Manager	pstevenson@stillaguamish.com
360.652.7362	Kerry Lyste	THPO/Cultural Resources	KLyste@stillaguamish.com
Confederated Tribes and Bands	of the Yakama Nation		
PO Box 151	JoDe Goudy	Chair	JoDe@yakama.com
Toppenish, WA 98948	Philip Rigdon	Deputy Director of Department of Natural Resources	prigdon@yakama.com
509.865.5121	Johnson Meninick	Cultural Resources Program Manager	johnson@yakama.com
	Elizabeth Sanchey	Environmental Management Program Manager	Elizabeth_Sanchey@Yakama.com
	Jessica Lally	Archaeologist	jessica_lally@yakama.com
	Alvin Pinkham	Planning Director	apinkham@yakama.com
Suak-Suiattle			11 2 2/2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
5318 Chief Brown Lane	Benjamin Joseph	Chairman	
Darrington, WA 98241	Kevin Joseph	Cultural Resources	KJoseph@sauk-suiattle.com
360) 436-0131	Stan Walsh	Natural Resources	swalsh@skagitcoop.org
	Joni Soriano	Tribal Planner	jsoriano@sauk-suiattle.com



AGENDA

Technical Working Group (TWG) Meeting #1

December 6, 2018, 9-10:30 a.m. Snohomish County Admin East Building 3000 Rockefeller Ave, Everett, WA 98102

Time	Topic	Lead
9:00 a.m.	 Welcome and introductions Safety briefing Introductions Operating guidelines 	Tim Nau Suanne Pelley
9:20 a.m.	 Project background US 2 / SR 204 / 20th St IJR US 2 Corridor Study US 2 Funding & Finance Study 	Tim Nau Dave Warner Michael Horntvedt
9:40 a.m.	Project schedule	David Warner
9:45 a.m.	 Discussion: Purpose and Need TWG role in the P&N State, regional, and local plans Request for input on any other elements to consider 	Emily Geralds Lawrence Spurgeon
10:15 a.m.	TWG work plan and stakeholder outreach	Suanne Pelley
10:25 a.m.	Next Steps and Adjourn	Suanne Pelley

Attendees

TWG Member Invitees

□ Corey Hert, City of Everett	□ Jeff Horton, FHWA
□ Ryan Sass, City of Everett	□ Kelly McGourty, PSRC
□ Grace Kane, City of Lake Stevens	□ Lisa Lefeber, Port of Everett
□ Jesse Hannahs, City of Marysville	□ Steve Dickson, Snohomish County
□ Jeff Laycock, City of Marysville	□ Dave Lucas, Snohomish County
□ Brad Feilberg, City of Monroe	□ Doug McCormick, Snohomish County
□ Steve Schuller, City of Snohomish	□ Mohammad Uddin, Snohomish County
□ Roland Behee, Community Transit	□ Kamuron Gurol, Sound Transit
□ Scott Ritterbush, Community Transit	□ Scott McCoy, WA State Patrol
□ Tom Hingson, Everett Transit	□ Jason Beloso, WSDOT Freight
□ John Pike, Everett School District	□ Ron Pate, WSDOT Freight



US 2 Westbound Trestle

WSDOT and Consultants:

- □ Cathy George, WSDOT
- □ Emily Geralds, WSDOT
- □ Dean Moon, WSDOT
- □ Tim Nau, WSDOT
- □ Kyengo Ndile, WSDOT
- □ Robert Woeck, WSDOT
- □ Brent Baker, WSP

- □ Ben Rodenbough, WSP
- □ Lawrence Spurgeon, WSP
- □ David Warner, WSP
- □ Michael Horntvedt, Parametrix
- □ Liz Mack, Envirolssues
- □ Suanne Pelley, Envirolssues

US 2 Westbound Trestle Technical Working Group

Operating Guidelines - Draft 12/4/18

This document has been prepared to guide the role and operation of the US 2 Westbound Trestle Technical Working Group (TWG).

Purpose of the group

The purpose of the TWG is to provide input on the US 2 Westbound Trestle alternatives development, screening process and key technical issues.

Term of the group

These operating guidelines will be endorsed at the inaugural meeting of the TWG. The TWG and these operating guidelines are effective from December 2018 and will continue until the expected completion date of the group in late 2019 / early 2020.

Role of the TWG

The following are expectations of TWG members:

- Attend scheduled TWG meetings
- · Review meeting materials in advance
- Ask questions of the technical team
- Communicate interests of the organization you represent
- Identify key technical issues for the team to address

Feedback, discussion and outcomes from the TWG will be used to help inform the preliminary preferred alternative(s).

Membership of the group

The TWG will include be comprised of members invited from the following organizations:

- City of Everett
- City of Lake Stevens
- City of Marysville
- City of Monroe
- City of Snohomish
- Community Transit
- Everett Public Schools
- Everett Transit
- Federal Highway Administration
- Port of Everett
- Puget Sound Regional Council
- Snohomish County
- Sound Transit
- Washington State Patrol
- WSDOT Freight Office

A list of the membership is attached to this document.

Should a member need to resign their membership from the TWG, they should do so by informing WSDOT in writing/email. At that time, WSDOT may request to fill the vacancy with another participant from the departing member's organization.

Group operation

Meeting agenda

The goal is to provide the meeting agenda to group members approximately one week prior to the meeting. From time to time, background materials may be included with the agenda for prereading and meeting preparation.

Meeting summary

The consultant will provide a note taker at each meeting. The meeting summary will be distributed approximately two weeks after each meeting.

Formal spokesperson

The media spokesperson for this process is Kris Olsen, WSDOT communications. Group members are asked not to speak to the media on behalf of the TWG unless consent has been provided in writing from Tim Nau, Assistant Project Engineer, and agreed to by the group.

Meeting frequency and location

The group will meet approximately five times between December 2018 and December 2019. These meetings will be hosted by WSDOT and located at Snohomish County Administration Building unless otherwise noted.

Governance structure

The TWG is advisory in nature and has no formal delegated powers of authority to represent WSDOT or commit to the expenditure of any funds. Instead the group members will share their perspectives and considerations with project staff during TWG meetings.

Photography, recording and social media

A note taker may choose to record the meeting to ensure accuracy of the meeting summary. Other use of recording, video recording or social media during meeting times is not permitted to respect the iterative dialogue underway. From time to time photography may be required to capture meeting outcomes and process, however any members may choose to abstain from any photographs. Outcomes of the group process may be recorded and utilized in various media and social media channels for public information and reporting purposes.

Roles and responsibilities

Group conduct

Members of the TWG are accountable to:

- Listen and appreciate a diversity of views and opinions
- Actively participate in the group
- Focus on the agreed scope of the group operation
- Attend all meetings in a timely manner
- Support and respect each other

Disagreement and differences of opinion should be acknowledged, explored, understood and appreciated. Should conflict arise, it should be addressed with the guidance of the facilitator. Any inappropriate conduct may result in permanent removal from the group.

Meeting attendance

Meeting attendance is a mandatory requirement unless previously negotiated with the chairperson/facilitator. Non-attendance for 3 or more meetings may result in removal from the TWG.

Proxy representation is permitted provided that the proxy member has been briefed prior to their participation in meetings.

From time to time, subject matter experts or guest speakers may be asked to present to the group.

Conflict of interest

Any apparent, potential or perceived conflict of interest in matters that may be considered by the group should be declared to Suanne Pelley so that these may be appropriately managed and ensure the group's future accountability, transparency and success.

TWG Members

Organization	Members
City of Everett	Corey Hert
City of Everett	Ryan Sass
City of Lake Stevens	Grace Kane
City of Lake Stevens	John Spencer
City of Marysville	Jeff Laycock
City of Marysville	Jesse Hannahs
City of Monroe	Brad Feilberg
City of Snohomish	Steve Schuller
Community Transit	Roland Behee
Community Transit	Scott Ritterbush
Everett Public Schools	John Pike
Everett Transit	Tom Hingson
FHWA	Jeff Horton
Port of Everett	Lisa Lefeber
PSRC	Kelly McGourty
Snohomish County	Dave Lucas
Snohomish County	Doug McCormick
Snohomish County	Mohammad Uddin
Snohomish County	Steve Dickson
Sound Transit	Kamuron Gurol
Washington State Patrol	Capt. Scott McCoy
WSDOT Freight Office	Jason Beloso
WSDOT Freight Office	Ron Pate



Draft: 12/3/2018

PURPOSE AND NEED

State, regional and local plans to consider

- US 2: Everett Port/Naval Station to SR 9 Corridor Planning Study, August 2016
- Puget Sound Regional Council Vision 2040 and Regional Transportation Plan, December 2009, as amended 2018
- WSDOT US 2/SR 203 & 20th St SE Interchange Justification Report, March 2017
- US 2 Westbound Trestle Funding and Finance Study, January 2018
- WSDOT Strategic Plan, 2018
- WSDOT Practical Solutions
- Snohomish County Comprehensive Plan
- City of Lake Stevens Comprehensive Plan
- City of Everett Comprehensive Plan
- City of Snohomish Comprehensive Plan
- City of Marysville Comprehensive Plan
- City of Monroe Comprehensive Plan



US 2 Westbound Trestle Technical Working Group

Meeting #1 December 6, 2018 9:00 - 10:30 a.m.

Agenda

- Safety briefing 5 min
- Introductions 10 min
- TWG operating guidelines 5 min
- Project background and prior studies 20 min
- Project schedule 5 min
- Discussion: Purpose and Need 35 min
- TWG work plan and stakeholder coordination 10 min
- Next steps and adjourn 5 min

TWG Operating Guidelines

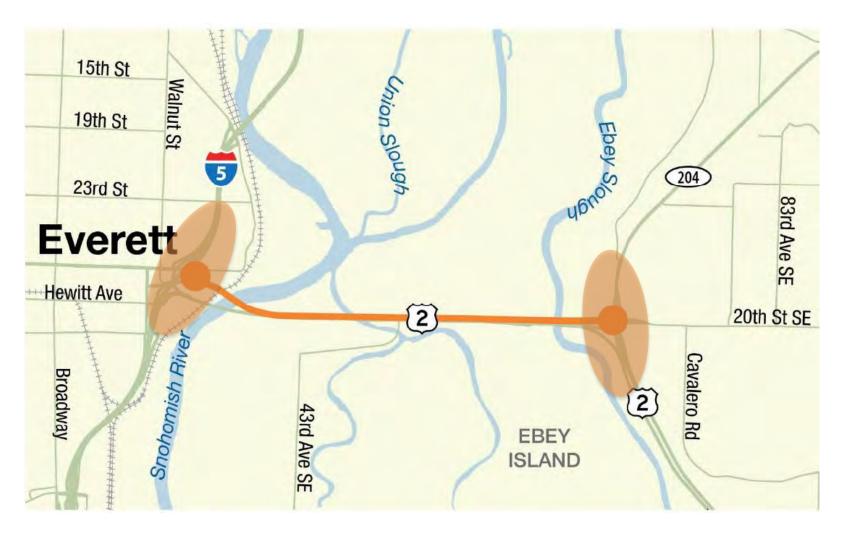
Purpose of the group

To provide input on the US 2 Westbound Trestle alternatives development, screening and key technical issues.

Legislative Direction

- In 2018, the legislature authorized new funding "for getting to a preliminary preferred option in the environmental process."
 - Funding helps launch early environmental work
 - Funding is insufficient to complete the full NEPA process

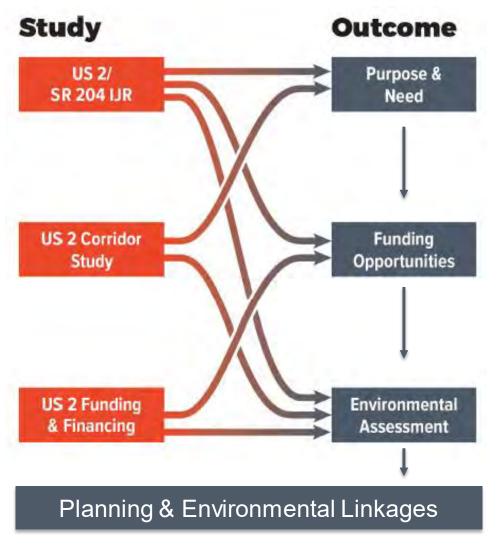
Project Background



US 2 Westbound Trestle Project Considerations



Leveraging Previous Studies: Planning & Environmental Linkages



Benefit

- Early understanding of stakeholders' positions expedites P&N process
- Early draft P&N
- Leverage F&F study to support EA funding options (federal, state, local)
- Consistent approach to cost estimating (menu of options) – helps legislative support
- Align US 2/SR 204 Preliminary Preferred Alternative with environmental effects early to define phasing
- Initiate resource agency plans early to develop and maintain momentum toward approval

US 2 Corridor Study

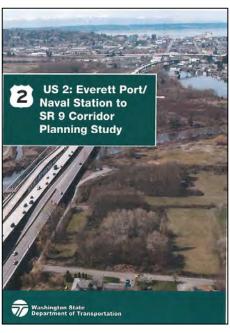
Purpose

- Analyzed the existing and future congestion levels in the corridor
- Addressed the future operational and structural adequacy needs of the US 2 westbound trestle
- Considered near-term/lower-cost treatments and longer-term unfunded improvements for the corridor
 - Including replacement of the westbound trestle with a new three-lane facility

Timing

2009	Legislature provided funding along with Everett and Snohomish County
2016	Finalized







US 2 Corridor Study Key Findings

- Heavy congestion levels
- Operational deficiencies
- Retrofits completed in 2011 to extend useful life of Westbound Trestle

Study informs:

- ☑ Purpose and Need
- ☐ Funding opportunities
- ☑ Environmental assessment

US 2 Westbound Trestle Funding and Financing Study

Purpose:

- Updated cost estimates for replacing the westbound trestle
- Examined funding and financing options



Timing:

2017	Legislature authorized study	
Sept – Dec 2017	 WSDOT formed two partnership groups: Technical Working Group (TWG) Executive Advisory Group (EAG) 	
Jan 2018	Finalized	

US 2 Westbound Trestle Funding and Financing Study Key Findings

The project will likely require a combination of federal, state and local funding sources:

- Federal/state grant programs with local funding
- State gas tax
- Tolling
- Public-Private Partnership

Study informs:

- ☐ Purpose and Need
- ☑ Funding opportunities
- ☑ Environmental assessment

US 2 / SR 204 / 20th Street SE Interchange Justification

Report

Purpose:

 To study potential improvements to the US 2, SR 204, and 20th Street Southeast interchange



Timing:

2016	Legislature authorized study
Sept 2018	Finalized

US 2 / SR 204 / 20th Street SE IJR Key Findings

Preliminary Preferred Alternative

- Ramps connect with new trestle segment north of existing
- Align 20th St on-ramp with HOV Lane
- Realign 20th St off-ramp to lower roadway
- Provide trestle width that could accommodate up to 4 lanes
- Non-motorized connection(s) included in all alternatives



Study informs:

- ☑ Purpose and Need
- ☑ Funding opportunities
- ☑ Environmental assessment

Ebey Slough

20th St SE

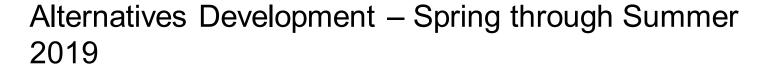
Project Schedule

Part 1 Funded 2018 – June 2020



Launch TWG and EAG - December 2018







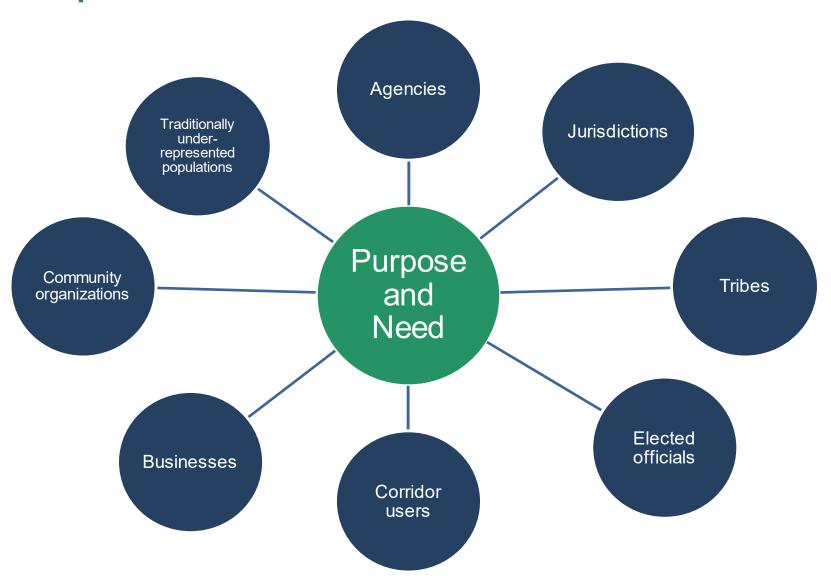
Short List Alternatives – Early 2020

Goal: Identify Preliminary Preferred Alternative

Draft Planning and Environmental Linkages Study – Spring 2020



Purpose and Need



Purpose and Need Outline

Need for the Project Considers

- Existing corridor
- Operational conditions / demand
- Safety
- Supporting planning goals
- Other factors

Core Purpose of the Project

To move people and freight safely and reliably across the US 2 Westbound Trestle

Purpose and Need

Discussion:

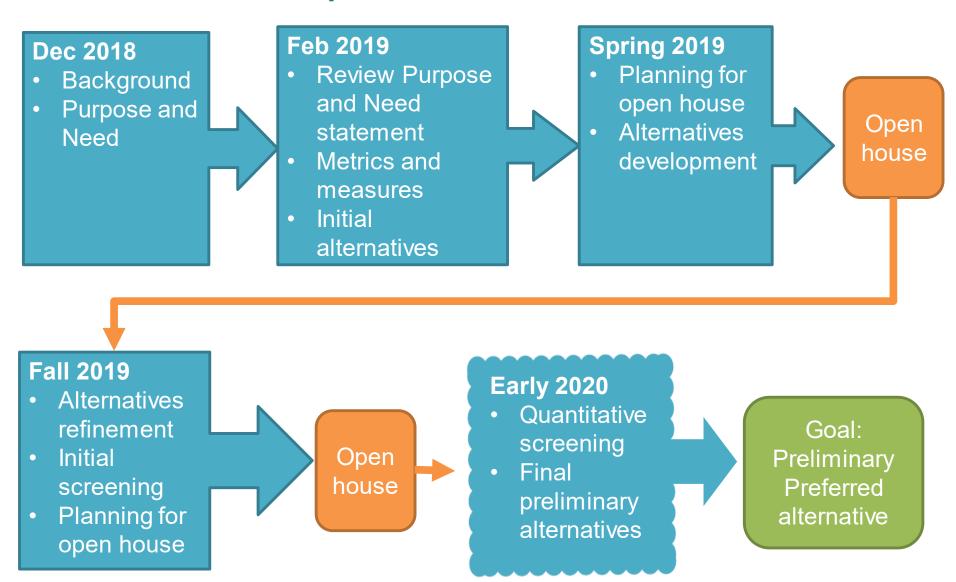
What additional state, regional, or local plans should we consider?

What else should be considered?

Additional feedback can be sent to: US2Trestle@wsdot.wa.gov



TWG Workplan



Key stakeholder groups

Corridor users

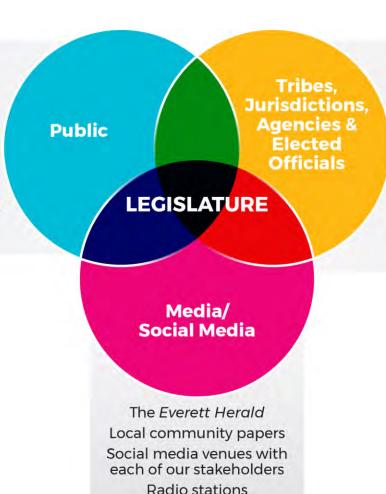
Regional businesses and business organizations

Adjacent businesses, property owners and residents

Community organizations and interest groups

Low income earners, seniors, those speaking diverse languages

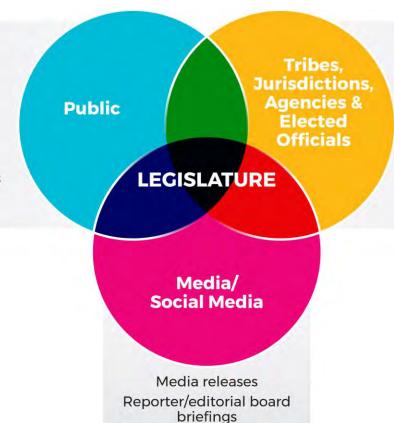
Transit riders



Tulalip Tribes, Sauk-Suiattle Tribe
Snohomish County, Cities of
Everett, Lake Stevens, Monroe,
Marysville, and Snohomish
Federal, state and local
regulatory agencies
Legislators from the 38th,
39th and 44th Districts
Transportation Committee
leadership
Universities, colleges and schools
Transit agencies

Communication tools

Stakeholder interviews
Statistically valid survey
Open houses/
on-line open houses
Briefings
Drop-in sessions/
informational tables
Comment tracking, responses
and analysis (EnviroLytical)



Website/email/social media Printed material Technical working group
Resource agency committee
Executive advisory group
Briefings
Project tours

Final Discussion and Next Steps

- December 2018: Executive Advisory Group
- January-February 2019: Stakeholder interviews to help determine need
- February 2019: Resource Agency Committee and Tribal coordination
- February 2019: Next TWG Meeting

Action items



US 2 Westbound Trestle Contacts

Tim Nau, P.E.

Assistant Project Engineer for Connecting Washington

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Suanne Pelley

Communications Lead

pelleys@consultant.wsdot.wa.gov

<u>US2Trestle@wsdot.wa.gov</u>



Technical Working Group (TWG) Meeting #1 Summary

December 6, 2018

Attendees

TWG members/alternates

Name	Organization
Ryan Sass	City of Everett
Eric Durpos	City of Lake Stevens
Grace Kane	City of Lake Stevens
Jeff Laycock	City of Marysville
Roland Behee	Community Transit
Jeff Horton	FHWA
Doug McCormick	Snohomish County
Kirt Hanson	Snohomish County
Mohammad Uddin	Snohomish County
Gwen McCullough	Sound Transit

Project team

- Amir Rasaie, WSDOT
- Cathy George, WSDOT
- Emily Geralds, WSDOT
- Kyengo Ndile, WSDOT
- Tim Nau, WSDOT
- Ben Rodenbough, WSP
- Dave Warner, WSP
- Jared Nakamoto, WSP
- Lawrence Spurgeon, WSP
- Michael Horntvedt, Parametrix
- Liz Mack, Envirolssues
- Suanne Pelley, Envirolssues

Welcome and introductions

Tim Nau, assistant project engineer, welcomed the group. Doug McCormick, Snohomish County, provided a safety briefing for the building. Tim then led a round of introductions.

Suanne Pelley, communications lead for the consultant team, reviewed operating guidelines including purpose of group, term of group, role of the TWG, membership, group operation, and roles and responsibilities. The members all agreed to these guidelines.

Questions:

Jeff Laylock asked if members could attend via phone. The team prefers that TWG
members attend in person since it is difficult to hear the discussion via phone.
 However, WSDOT is willing to work with members if a situation prevents them from
attending.

Suanne reviewed the meeting agenda.

Project background

Tim Nau explained that the Legislature authorized new funding for this project "for getting to a preliminary preferred option in the environmental process." Funding helps launch early environmental work but is insufficient to complete the full NEPA process.

Tim provided additional background, noting:

- The US 2 trestle is part of a key corridor connecting Everett with SR 9 and eastern Snohomish County.
- The westbound trestle was completed in 1968. The original eastbound timber bridge was replaced with a concrete structure in the early 1990s.
- Snohomish County's population has grown by over 130 percent since 1980.
 - The US 2 corridor near the trestle faces operational deficiencies and capacity needs, leading the State Legislature to commit funds to begin early environmental analysis.
- Project scope/limits.
- Critical corridor components.

Tim presented a map showing project considerations and explained:

- WSDOT has identified three key areas on this map--each with various considerations:
 - The dense urban area in Everett, which includes current and future transit facilities.
 - The environmentally-sensitive area underneath the US 2 trestle--including farmlands, flood plains, and wetlands.
 - The communities of Lake Stevens just east of the trestle.
- The yellow bar represents the potential area of influence from construction on the north side of the bridge--though is much larger than actual right of way.

Tim introduced Dave Warner, project manager from WSP consulting, who explained how this project will use a Planning and Environmental Linkages (PEL) Study to leverage previous corridor studies, noting:

- The alternatives development process builds on previous studies, including the US 2/SR 204/20th Street SE Interchange Justification Report (IJR), US 2 Corridor Study, and US 2 Funding and Financing Study.
- The IJR feeds into all future environmental work, the other two studies also contribute.
- The PEL Study will tie together these studies.

US 2 Corridor Study

Dave noted that the US 2 Corridor Study was funded in 2009 and finalized in 2016. The purpose was to:

- Analyze the existing and future congestion levels in the corridor.
- Address the future operational and structural adequacy needs of the US 2 westbound trestle.
- Consider near-term/lower-cost treatments and longer-term unfunded improvements for the corridor.
 - Including replacement of the westbound trestle with a new three-lane facility.

Dave reviewed key findings from this study which included:

- Heavy congestion both existing and forecasted on the westbound US 2 trestleespecially in the AM peak period.
- Congestion is especially heavy at the eastern end of the facility where US 2, SR 204, and 20th Street Southeast merge.
- Operational deficiencies at the SR 204/20th Street Southeast and US 2 interchange.
- The rehabilitation projects completed in 2011 and continued maintenance extend the useful life of the westbound trestle to approximately 2045.
- The trestle will eventually need to be replaced and will require significant lead time given the complexity of environmental, funding and constructability issues involved.

US 2 Westbound Trestle Funding and Financing Study

Dave noted that the US 2 Westbound Trestle Funding and Financing Study was authorized in 2017, finalized in 2018, and included input from a TWG and Executive Advisory Group (EAG). The purpose was to:

- Update cost estimates for replacing the westbound trestle.
- Examine funding and financing options.

Dave described the key findings:

- The project will likely require a combination of federal, state and local funding sources:
 - Federal/state grant programs with local funding.
 - o State gas tax.
 - o Tolling.
 - o Public-Private Partnership.

Dave introduced Michael Horntvedt, the transportation planning lead for the consultant team.

US 2 / SR 204 / 20th Street SE Interchange Justification Report

Michael introduced the US 2 / SR 204 / 20th Street SE Interchange Justification Report. Its purpose was to study potential improvements to the US 2, SR 204, and 20th Street Southeast interchange. The Legislature authorized the study in 2016 and it was finalized in 2018.

Michael reviewed the key findings which include:

- Traffic congestion in the year 2040 was shown to be in excess of a mile long for people trying to access the westbound trestle.
- Travel times more than double for most people.
- Safety was also shown to be an issue today and in the future.
- The problem is both the westbound trestle and the interchange.
- The forecast traffic volumes in the area show more demand than a two-lane trestle could accommodate.
- The Preliminary Preferred Alternative would move traffic through the interchange and across the wider trestle, but the roadway geometries and capacity on the west end could not accommodate the full increase in traffic.
- There were issues with high traffic volumes destined for the expanding downtown of Everett and to southbound I-5.
- Further study and design of a future west end is needed as part of the US 2 Westbound
 Trestle NEPA project.
- When considering a different sequence of construction, the earliest benefit would be realized by constructing the SR 204 and 20th Street Southeast ramps first.
- If there wasn't a new trestle in place, WSDOT would need to build the east end of the trestle out beyond the Ebey Slough so that it could minimize re-work when the rest of the interchange is constructed.

Michael reviewed the Preliminary Preferred Alternative which includes:

- A new US 2 trestle is assumed to be built north of the existing US 2 corridor.
- Aligning 20th Street on-ramp with HOV lane.
- Realigning 20th Street off-ramp to lower roadway.
- Providing a trestle width that could accommodate up to four lanes.
- Non-motorized connection(s) are included in all alternatives.

Questions/comments:

- Ryan Sass clarified that the study assumed some sort of managed lane, it did not specify an HOV lane.
- Eric Durpos noted that the City of Lake Stevens received a \$1.8 million grant to add a Business Access & Transit (BAT) lane on 20th Street Southeast and will be moving forward with that project next year.

The project team agreed to send out links to these reports to the TWG members.

Project schedule

Dave Warner reviewed the project schedule, noting:

- These are key activities currently funded.
- The team knows the traffic and design analysis to reach a Preliminary Preferred Alternative will be extensive.
- The goal is to reach a Preliminary Preferred Alternative at the end of this process, but the team may need additional funding to complete the analysis.
- Project milestones include:

- o Launch TWG and EAG December 2018.
- Purpose and Need Spring 2019.
- o Alternatives Development Spring through summer 2019.
- Alternatives Refinement Fall 2019.
- Short List Alternatives Early 2020.
- Draft Planning and Environmental Linkages Study Spring 2020.
- During this process the team will engage with the public and the TWG, RAC, EAG and Tribes at key milestones.

Questions/comments:

 Gwen McCullough asked how dependent the schedule is on additional funding. The team responded that questions may arise that require more analysis than the current funding allows.

Discussion: Purpose and Need

Emily Geralds, WSDOT environmental lead, introduced the Purpose and Need, explaining:

- The "Purpose" is a clear statement of objectives that the proposed action is intended to achieve, and the "Need" is the documentation of issues to be addressed by the intended action.
 - The Purpose and Need establishes a basis for the development of reasonable alternatives and selection of a preferred alternative.
- WSDOT will provide opportunity for participating agencies and public involvement in defining the purpose and need for the project.
 - o Provide this opportunity as "early as practicable".
- TWG members will provide input and comment on areas within "special expertise or agency jurisdiction".
- TWG members will continue to participate in the development of the Purpose and Need.

Emily introduced Lawrence Spurgeon, environmental lead for the consultant team, who described considerations for the project need including:

- Existing corridor.
- Operational conditions / demand.
- Safety.
- Supporting planning goals.
- Other factors.
- The TWG noted that freight needs to be addressed in the Purpose and Need.

Lawrence noted that the core purpose of the project is to move people and freight safely and reliably across the US 2 westbound trestle.

Lawrence presented a list of state, regional, and local plans that will be considered including:

- US 2: Everett Port/Naval Station to SR 9 Corridor Planning Study, August 2016.
- Puget Sound Regional Council Vision 2040 and Regional Transportation Plan, December 2009, as amended 2018.
- WSDOT US 2/SR 204 & 20th Street SE Interchange Justification Report, March 2017.

- US 2 Westbound Trestle Funding and Finance Study, January 2018.
- WSDOT Strategic Plan, 2018.
- WSDOT Practical Solutions.

Lawrence asked the group if there were any plans missing from the list.

- Roland Behee noted that work is underway for the PSRC Vision 2050 plan which identifies a lot of growth in eastern Snohomish County which will be adopted in early 2020. Roland also suggested adding the Sound Transit 3 plan.
- Doug McCormick suggested adding Community Transit's long-range plan.
- Dave Lucas noted that Snohomish County has documentation on sea-level rise and its impacts to this area, especially Ebey Island.

Lawrence asked TWG members to send additional plans to **US2TrestleInfo@wsdot.wa.gov.** (Please note that this is an updated email address that should be used.)

TWG work plan and stakeholder outreach

Suanne reviewed the TWG work plan noting:

- The team has developed a plan for five TWG meetings that should allow the group to accomplish the necessary work.
- We also want to time our public engagement so that people can weigh in at key milestones.
- Future TWG meetings topics include:
 - February 2019 review purpose and need statement, metrics and measures, and initial alternatives.
 - o Spring 2019 plan for open house and alternatives development.
 - o Fall 2019 alternatives refinement, initial screening, and planning for open house
 - Early 2020 (tentative) quantitative screening and final preliminary alternatives.

Suanne reviewed the many audiences that have been identified as potential stakeholders, including public, agency/jurisdictional/Tribal, and media/social media audiences. Reaching out to numerous stakeholders will ensure that a broad set of constituents are represented in the US 2 trestle discussions.

Comments:

- Doug McCormick suggested adding the Stillaguamish Tribe. The team explained that they have reached out to several tribes including the Stillaguamish.
- Roland Behee suggested adding the Snohomish County Economic Alliance. The team noted that they are discussing the best way to engage with them.
- Several TWG members also suggested adding the Snohomish County for Improved Transportation (SCIT) group.
- Grace Kane suggested including the BIKES Club of Snohomish County.

Suanne presented the communication tools that the team will use to reach these audiences noting:

- With regard to stakeholder interviews, we will be utilizing the feedback from agency interviews that were done for the US 2 / SR 204 / 20th Street SE IJR.
- Our goal is to engage community organizations and under-represented populations in the new stakeholder interviews.
- A mix of outreach will provide multiple opportunities for the public to engage: open houses, online open houses, community briefings or drop-in events, and community events
- All of the outreach work is aimed at informing the environmental work and providing information to the legislature.

Comments:

 Amir Rasaie noted that the local paper in Lake Stevens has closed so the team will need to find alternate ways to reach those residents.

Action items:

- The project team will send out links to the three previous US 2 corridor / trestle studies that were summarized.
- TWG members will send any additional feedback on the Purpose and Need to the new email address at: US2TrestleInfo@wsdot.wa.gov
- The project team will make updates to the list of plans that inform the Purpose and Need and the stakeholder lists.
- Dave Lucas agreed to provide climate change / flood plain research to the project team.
 (Completed.)

The project team thanked the TWG for attending the first meeting and adjourned.



AGENDA

Technical Working Group (TWG) Meeting #2

Thursday, February 28, 2019, 1 - 3 p.m.
Snohomish County Administration Building, Skykomish Room
3000 Rockefeller Ave, Everett, WA 98102

Time	Topic	Lead
1 – 1:15 p.m.	 Welcome and introductions Safety briefing Introductions around the room 	Tim Nau
1:15 – 1:20 p.m.	TWG meeting #1 recap	Tim Nau
1:20 – 1:50 p.m.	Context	Dave Warner Michael Horntvedt Lawrence Spurgeon Liz Mack
1:50 – 2:00	Break	
2:00 – 2:45 p.m.	Workshop: alternatives brainstorming	Dave Warner Ben Rodenbough All
2:45 – 2:55 p.m.	Workshop report out	All
2:55 – 3:00 p.m.	Next steps and adjourn	Suanne Pelley Liz Mack

Attendees listed on reverse side





Attendees

TWG Members	
□ Corey Hert, City of Everett □ Ryan Sass, City of Everett □ Grace Kane, City of Lake Stevens □ Jesse Hannahs, City of Marysville □ Jeff Laycock, City of Marysville □ Brad Feilberg, City of Monroe □ Yosh Monzaki, City of Snohomish □ Roland Behee, Community Transit □ Scott Ritterbush, Community Transit □ Tom Hingson, Everett Transit □ John Pike, Everett School District □ Jeff Horton, FHWA	 □ Kelly McGourty, PSRC □ Lisa Lefeber, Port of Everett □ Steve Dickson, Snohomish County □ Dave Lucas, Snohomish County □ Doug McCormick, Snohomish County □ Mohammad Uddin, Snohomish County □ Lauryn Douglas, Sound Transit □ Jason Knott, WA State Patrol □ Jason Beloso, WSDOT Freight □ Ron Pate, WSDOT Freight □ Hannah Plummer, WSDOT Mobility
WSDOT and Consultants:	
□ Cathy George, WSDOT □ Emily Geralds, WSDOT □ Kyengo Ndile, WSDOT □ Tim Nau, WSDOT	 □ David Warner, WSP □ Lawrence Spurgeon, WSP □ Michael Horntvedt, Parametrix □ Liz Mack, Envirolssues

□ Suanne Pelley, Envirolssues

 $\hfill \square$ Ben Rodenbough, WSP

□ Brent Baker, WSP



Technical Working Group (TWG) Meeting #2

Alternatives brainstorming workshop

Instructions

- 1. Break into working groups.
- 2. Brainstorm ideas to address draft Purpose and Need.
- 3. Consider environmental and design constraints.
- 4. Report out and discussion of ideas in 45 minutes.

Considerations

As you brainstorm alternatives, consider the following:

- Transit
- Non-motorized access
- HOV lanes
- Tolling
- Number of lanes
- Location/constructability

Documentation

Please document your ideas using the following:

- Onion skin
- Post-it notes
- Flip charts



US 2 Westbound Trestle Technical Working Group

Meeting #2 February 28, 2019 1:00 - 3:00 p.m.

Agenda

- Safety briefing and introductions 15 min
- TWG meeting #1 recap 5 min
- Context 30 min
- Workshop: alternatives brainstorming 45 min
- Workshop report out 10 min
- Next steps and adjourn 5 min

TWG meeting #1 recap

Key discussion topics

- Project background
- Previous studies
- Purpose and Need

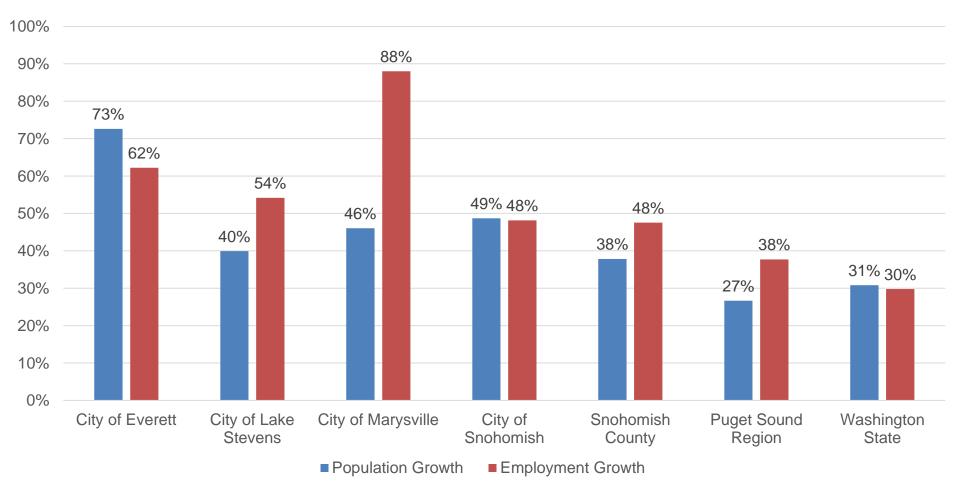
Action items

- ✓ The project team to send out links to previous studies.
- ✓ TWG members to send any additional feedback on the Purpose and Need.
- ✓ The project team to update the list of plans that inform the Purpose and Need.
- ✓ Dave Lucas to provide climate change / flood plain research to the project team.

Context

- Regional planned growth
- Transportation system
- Safety
- Traffic demand
- Travel times and speeds
- Environmental considerations
- Stakeholder feedback

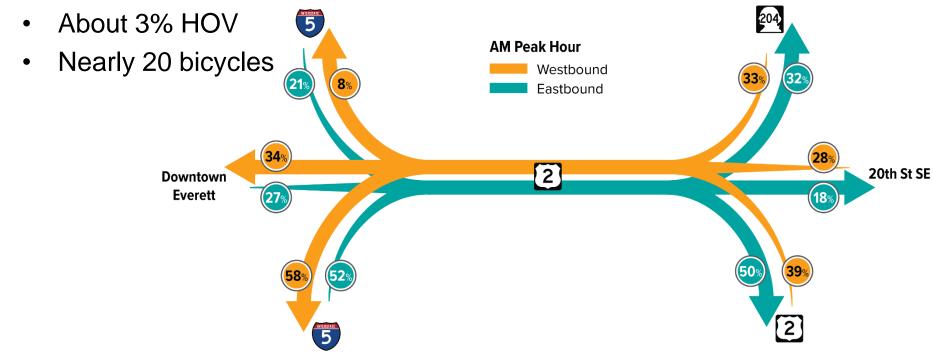
Regional planned growth 2015 – 2040



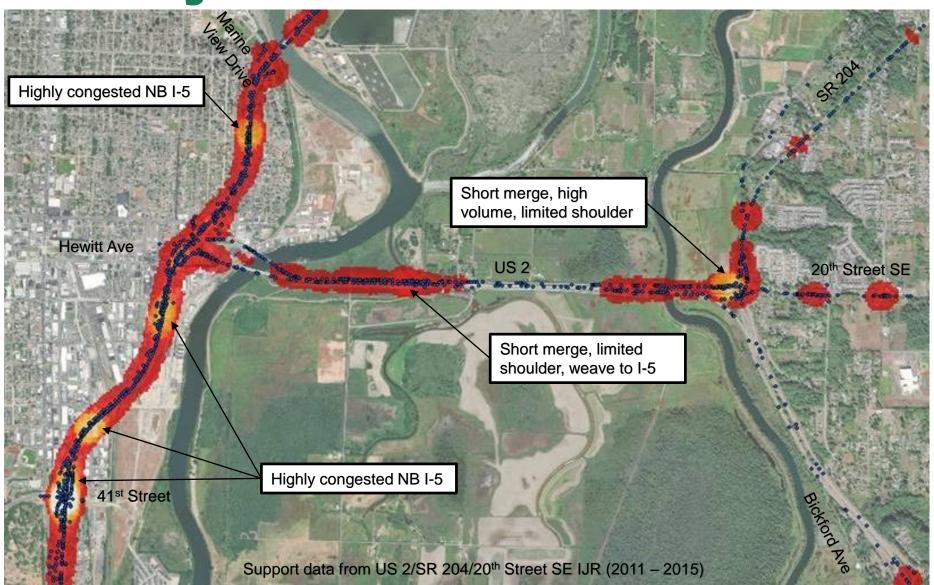
Sources: PSRC 2017; WOFM 2018b.

Transportation system

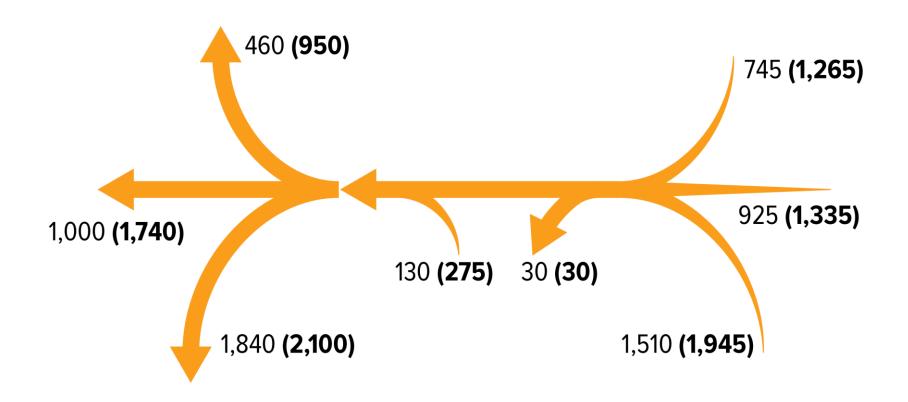
- 81,000 daily trips
- 3,200 vph during the peak
- 8-10% freight traffic
- Three bus routes and 14 bus trips during peak period
- About 30 people per bus



Safety



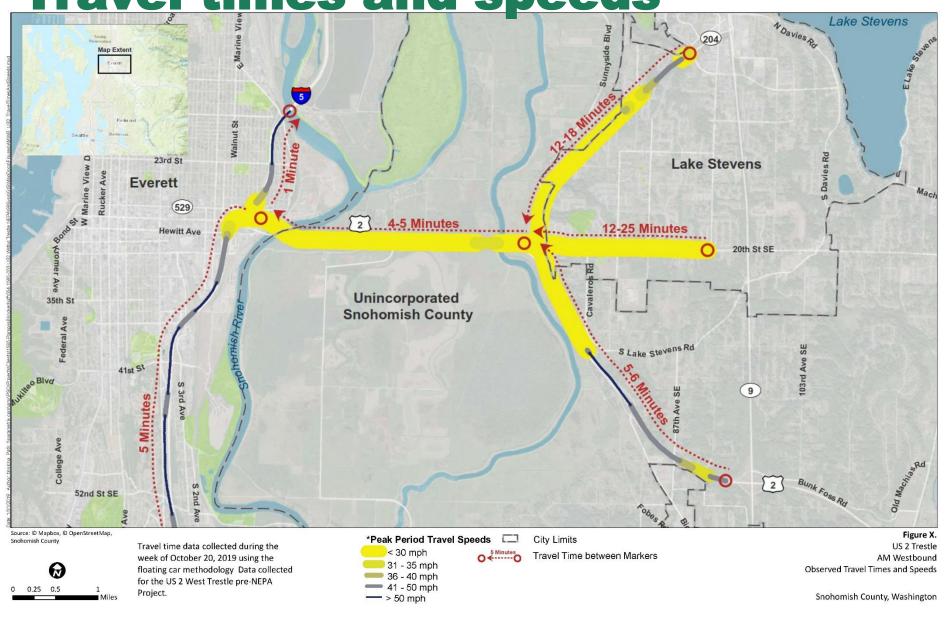
Traffic demand



Existing (Year 2040)

Future demand assumes 3-lane trestle

Travel times and speeds



Draft NEPA needs

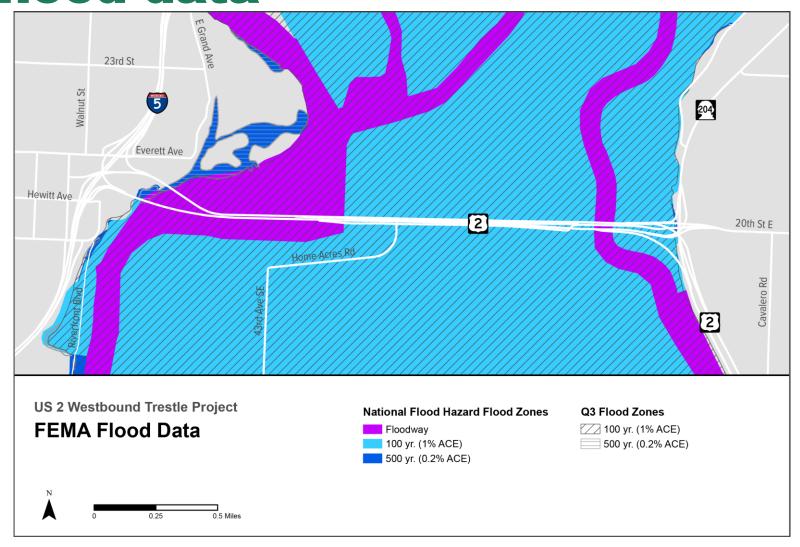
- Local communities are growing faster in population and jobs than the Puget Sound Region or the State as a whole.
- Morning traffic volumes into Everett and south on I-5 already exceed interchange capacity at both the SR 204 and I-5 interchanges.
- The demand includes high truck volumes and occupancy of available buses.
- Non-motorized connections don't exist through the US 2 and SR 204 interchange.
- High volumes at merge points have increased collision frequency.
- The current trestle has 3-foot shoulders, with no refuge space.

Draft Purpose

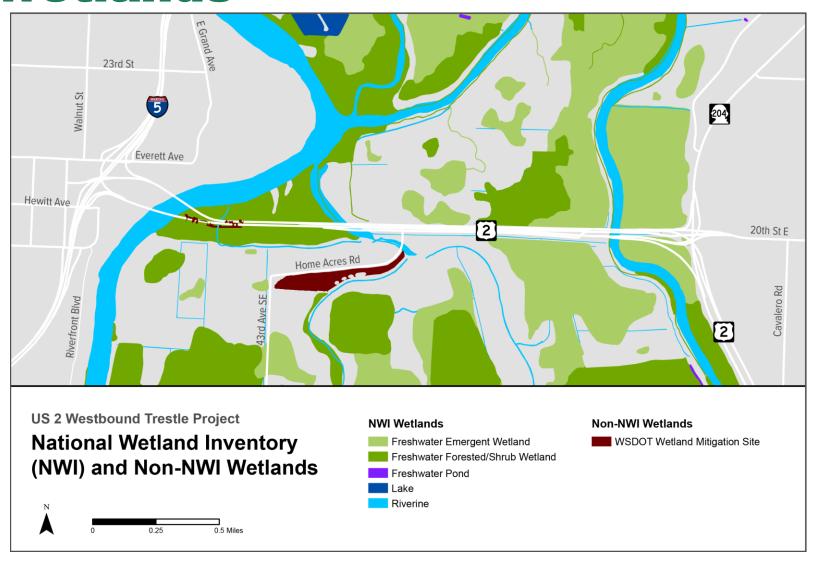
The purpose of the US 2 Westbound Trestle project is to develop a long-term solution that meets the following objectives:

- Improve travel reliability for motorists, transit vehicles, freight, bicyclists, pedestrians and emergency responders.
- Improve safety for all users.
- Provide improved system linkages to support regional and local planned growth.
- Provide a structurally sound solution that corrects roadway deficiencies and utilizes a full life-cycle cost approach.

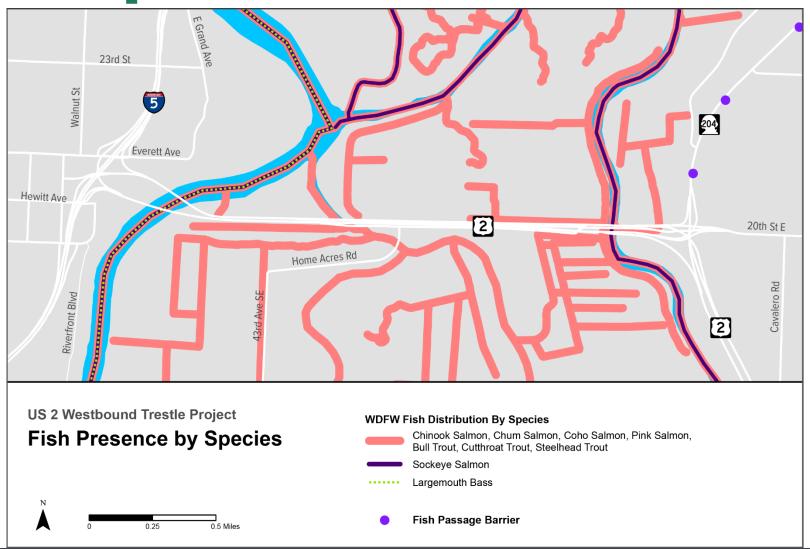
Environmental considerations: flood data



Environmental considerations: wetlands



Environmental considerations: fish species



Stakeholder interviews recap

Interviews conducted with:

- Washington Vocational Services
- Community Foundation of Snohomish County
- Futurewise
- BIKES Club of Snohomish County
- Snohomish County Economic Alliance
- WSDOT Freight Office

Baseline Needs

- Improve corridor safety.
- Improve the State's transportation system to support continued regional center economic growth while managing environmental impacts.
- Provide opportunities that facilitate competitive higher occupancy travel in the system.
- Improve corridor travel time reliability.
- Provide non-motorized travel opportunities.

Design considerations

- Review roll plot of existing conditions:
 - System operations from east to west

Workshop and report out

- Break into working groups.
- Brainstorm ideas to address draft Purpose and Need.
- Consider environmental and design constraints.
- Report out and discussion of ideas in 45 minutes.

Next steps

- February/March 2019: Stakeholder interviews
- March 2019: Resource Agency Committee and Tribal coordination
- March/April 2019: Alternatives development and metrics analysis

Action items



US 2 Westbound Trestle Contacts

Tim Nau, P.E.
Assistant Project Engineer for Connecting Washington
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Suanne Pelley
Communications Lead
pelleys@consultant.wsdot.wa.gov

US2TrestleInfo@wsdot.wa.gov



Technical Working Group (TWG) Meeting #2 Summary

Feb. 28, 2019

Attendees

TWG members/alternates

Name	Organization
Cory Hert	City of Everett
Tim Miller	City of Everett
Grace Kane	City of Lake Stevens
Jeff Laycock	City of Marysville
Roland Behee	Community Transit
Dave Lucas	Snohomish County
Doug McCormick	Snohomish County
Mohammad Uddin	Snohomish County
Gwen McCullough	Sound Transit
Sargent Tom Burress	Washington State Patrol

Project team:

- Cathy George, WSDOT
- Dean Moon, WSDOT
- Emily Geralds, WSDOT
- Hannah Plummer, WSDOT
- Harmony Weinberg, WSDOT
- Kyengo Ndile, WSDOT
- Miguel Gavino, WSDOT
- Tim Nau, WSDOT
- Ben Rodenbough, Consultant Team
- Brent Baker, Consultant Team
- Dave Warner, Consultant Team
- Jared Nakamoto, Consultant Team
- Lawrence Spurgeon, Consultant Team
- Liz Mack, Consultant Team
- Michael Horntvedt, Consultant Team
- Suanne Pelley, Consultant Team



Welcome and introductions

Tim Nau, WSDOT assistant project engineer, welcomed the group. Doug McCormick, Snohomish County, provided a safety briefing for the building. Tim then led a round of introductions.

Tim reviewed the meeting agenda, noting that the team will present context to prepare the group for a workshop to brainstorm alternatives. The bulk of the meeting will be focused on this workshop and hearing input on alternatives.

TWG meeting #1 recap

Tim recapped the first meeting in which the team provided background on the project, discussed how the current work will build on previous studies, and gathered input on considerations for the Purpose and Need. There were four action items from that meeting, all of which are complete. Tim introduced Dave Warner, consultant team lead.

Context

Dave Warner introduced the context topics which included:

- Regional planned growth
- Transportation system
- Safety
- Traffic demand
- Travel times and speeds
- Environmental considerations
- Stakeholder feedback

Regional anticipated growth

Dave Warner reviewed data that showed Snohomish County and its cities growing at a fast rate and above the average for the Puget Sound region and the state.

Comments:

 Doug McCormick noted that a lot of communities are feeling the growth projected for 2040 right now.

Dave then introduced Michael Horntvedt, consultant transportation lead.

Transportation system

Michael Horntvedt provided an overview of the existing transportation system, noting that:

- 81,000 daily trips is a pretty strong demand. It is higher than the SR 520 Portage Bay bridge located between I-5 and the University of Washington.
- There are about 3,200 westbound vehicles per hour getting to the mid-span trestle during the peak hour, but there are many more vehicles stuck in congestion that need consideration



- This is a T1 corridor—a primary freight corridor for the state, and the heavy trucks make
 up three to five percent of the traffic stream during the peak. Nearly 10 percent of the
 traffic is single unit trucks (UPS, local delivery).
- There are three bus routes operating on the corridor that make about 14 trips during the morning peak period serving over 300 people. The average occupancy of a bus is about 30 people.
- HOV use is at about three percent along the corridor and the number of cyclists is quite low. These last three modes have limited incentive for use and there is limited access for non-motorized use.

Questions

- Doug McCormick asked how the HOV numbers compare with other facilities. The
 project team responded that on I-5 northbound, HOVs make up 10 to 11 percent of
 traffic in general purpose lanes. This area also has a three to five percent violation
 rate in the HOV lane. In the Marine View Drive area about 24 percent of traffic is
 HOV.
- Doug McCormick asked about the capacity of the buses on the trestle. Roland Behee noted that there are six buses per hour, four of which are 40 feet (40-person seated capacity) and two are double decker buses (80-person seated capacity). There is a big opportunity to add trips.

Safety

Michael Horntvedt explained that safety issues are highly correlated with congestion in the area and pointed out several areas with a high number of collisions, including:

- Highly congested northbound areas on I-5.
- A short merge zone of the trestle with limited shoulder near the weave to I-5.
- A short merge zone with high volume and limited shoulder at the east end of the trestle.

Michael shared that the existing design meets many of the state's minimum design requirements.

Traffic demand

Michael Horntvedt reviewed the existing and future (year 2040) traffic demand on the trestle. This future demand assumes a three-lane trestle. Preliminary analysis in the US 2 Westbound Trestle Funding and Finance study forecasts showed that tolling the trestle could lower the traffic volume by about 30 percent.

Questions/Comments

 Miguel Gavino added that they have looked at the Puget Sound Regional Council's data and street light information and determined that about 45 percent of all westbound traffic is an exchange between Lake Stevens and Everett.



- Gwen McCullough asked if the team knows what happens to the 30 percent of riders who would avoid the trestle if tolled. The team explained that some riders would go onto buses and some would use alternative routes, redistributing them in the network. The team has only done a preliminary look and will need to conduct additional evaluation to fully answer this question.
- Roland Behee asked if the numbers in the diagram are vehicle or person counts.
 The team answered that they are vehicle data. Roland noted that it will be
 important to also forecast person trips since that helps show the potential for
 mass transit. The team agreed with this assessment and said that will be part of
 future analysis.
- Mohammad Uddin asked what constraints the team used for the 2040 forecasts.
 The team answered that the west end was the existing conditions with no
 additional constraints. The east end was the no build from the Interchange
 Justification Report (IJR) which assumed a three lane trestle and no
 modifications to the US 2/SR 204/20th Street SE interchange.

Time and travel speeds

Michael Horntvedt presented the current travel times and speeds during the morning commute which are:

- Trestle to I-5 at the Snohomish River: 1 minute
- Crossing the westbound trestle: 4-5 minutes
- SR 204 and Market Place to east end of the trestle: 12-18 minutes
- 91st Avenue SE and 20th Street SE to the east end of the trestle: 12-25 minutes
- US 2 at SR 9 to east end of the trestle:5-6 minutes

Questions

 Dave Lucas asked if congestion at the westbound exit to I-5 caused the slowed down. The team answered that the traffic backups occur along the corridor at different times and different locations during the morning peak. Traffic congestion on the trestle begins at the SR 204/20th Street SE ramp. At the same time, congestion on 20th Street SE begins at Cavalero Road. Sometimes, congestion at the I-5 interchange backs onto the trestle. Congestion from these various bottleneck locations can also back up into the other bottlenecks.

Michael Horntvedt introduced Lawrence Spurgeon, consultant environmental lead.

Environmental considerations

Lawrence Spurgeon presented the draft NEPA needs, noting:

Delay in the corridor during the data collection period ranges between eight and 24 minutes. Public input has expressed a wider range of travel time when crashes affect the system. There is a need to improve travel time reliability to improve transit effectiveness, freight delivery and personal livability.



- Hot spot safety analysis highlights locations where accidents occur more frequently due
 to limited shoulders, acceleration lengths, and gap acceptance lengths. Improvements to
 the corridor would reduce crash occurrences and improve corridor reliability.
- Regional system planning includes a new light rail station in downtown Everett that
 would reliably move people between key economic centers along the I-5 corridor. There
 are currently no plans for additional parking in downtown Everett and no HOV facilities to
 encourage transit use for connectivity between the freeway and transit system.
 Improvements to the corridor are needed to include HOV connectivity.
- The existing corridor does not have enough shoulder space for vehicle refuge in the
 event of a crash or disabled vehicle. Provisions for refuge is needed to improve corridor
 reliability and safety.

Lawrence Spurgeon then reviewed the Draft Purpose which is to develop a long-term solution that meets the following objectives:

- Improve travel reliability for motorists, transit vehicles, freight, bicyclists, pedestrians and emergency responders.
- Improve safety for all users.
- Provide improved system linkages to support regional and local planned growth.
- Provide a structurally sound solution that corrects roadway deficiencies and utilizes a full life-cycle cost approach.

Next, Lawrence reviewed other environmental considerations including flood data, wetlands and fish species. Then, Lawrence introduced Liz Mack from the consultant communications team.

Stakeholder feedback

Liz Mack explained the team is meeting with non-government organizations to hear their perspectives on the trestle, the congestion, project considerations, and strategies for reaching a diverse audience. The team has heard the following key themes:

- Many people are concerned about the reliability of the trestle and the impacts on commuters and the economy.
- Non-motorized access between Lake Stevens and Everett is important.
- Concern that growth in the region will only make things worse.
- There are low-income and unrepresented populations on both sides of the corridor that will need consideration.
- Improving transit across the trestle is important.
- Tolling came up in some conversations but wasn't on the forefront as much as the reliability issues.
- Lots of interest in the project and assisting with outreach to the public.

In addition, the team met with the Snohomish County Economic Alliance, and they are amenable to pulling together some of their members to discuss the trestle work. They can help pull together a freight/mobility meeting to discuss the specific needs of freight in the corridor.

US 2 Westbound Trestle



The freight conversation continued with the WSDOT freight office, which will also be joining the TWG when their new planner comes on board. They are happy to work with the team on a freight coordination meeting, along with the Economic Alliance.

Questions

 Gwen McCullough asked if the stakeholder interview questions specifically addressed tolling. The team explained that the interviewers informed the stakeholders that the team is considering a wide range of options including tolling but did not ask a question specifically about their view on tolling.

Workshop: alternatives brainstorming

Dave Warner presented the Baseline Needs which include:

- Improve corridor safety.
- Improve the state's transportation system to support continued regional center economic growth while managing any effects on the environment.
- Provide opportunities that facilitate competitive higher occupancy travel in the system.
- Improve corridor travel time reliability.
- Provide non-motorized travel opportunities.

Next, Dave introduced Ben Rodenbaugh, consultant design lead who provided a quick overview of the existing conditions shown on a roll plot. Then, Dave asked the TWG members to divide into three group and brainstorm ideas to address draft Purpose and Need. These ideas should consider:

- Transit
- Non-motorized access
- HOV lanes
- Tolling
- Number of lanes
- Location/constructability

Workshop report out

After about 30 minutes of small-group discussion, the TWG members reconvened and reported the key findings from their small groups.

Group 1

The following ideas and questions were shared by this group.

- Could tolling be used to create a mode shift?
- Need to solve safety issues for cyclists. Could have a non-motorized bi-directional trail
 on the new trestle. California Street is going to be a future bike corridor and would put
 non-motorized traffic on the correct side of the interchange.



- Everett Avenue, north of US 2, is underutilized. It could be used for traffic going into Everett to reduce traffic on California and Maple streets. This would also help to better use the lanes under I-5.
- The grid system in Everett has capacity for an increase in traffic.

Group 2

The following ideas and questions were shared by this group.

- Agreed there is capacity available on local streets in Everett.
- Prioritize access to Everett Station, especially for Community Transit buses coming across the trestle.
- Need to realign westbound to southbound transfer.
- Work with Maple Street signal to increase capacity for future traffic.
- Entice people to use the single lane north exit onto Walnut Street.
- Construction phasing will have an impact on cost and schedule. Recommend building the east interchange, then the west, and then the trestle.
- The main trestle could have a bus on shoulder lane, peak-use shoulder lane, or transit/HOV only lane combined with two general purpose lanes.
- Potential for express toll lane (ETL), but it will be challenging to get the traffic to separate between general purpose and ETL. Could create connection below US 2/SR 204 with a roundabout that provides access to ETL and the lower roadway.
- Four lanes across the trestle will be challenging to split near the I-5 interchange.
- If ETLS are on the southside of the trestle, then need to move lower roadway on ramp to the northside.

Group 3

The following ideas and questions were shared by this group.

- Focused on transit-oriented solutions. There is a lot of potential for additional transit.
 More bus trips could create a mode shift especially from Lake Stevens to Everett. Trestle would need a priority HOV path to make this work.
- Could make California Street exit on the west end into an HOV-only exit. SOV traffic would divert to Maple Street.
- Downtown Everett and the Everett Station will be the main transit destinations. There
 may also be a demand for buses to continue south. These paths will influence the
 location of the HOV lane.
- Could have all buses use westbound to southbound direct-access path and then direct buses into Everett on Pacific Avenue.
- Eastbound structure could have one lane in the morning that is a westbound HOV.
- Instead of replacing the westbound trestle, add a separate structure with a reversible two-lane ETL that can directly connect to the new transit facilities and be used independent of the existing trestle. This would also help with construction phasing and





could serve as an incident by pass for the existing trestle. The existing trestle would make connections to I-5, and the new trestle would provide local access into Everett.

Please see Appendix A for copies of the drawings shared during the meeting.

Next steps

Suanne Pelley, consultant communications lead presented the next steps, including:

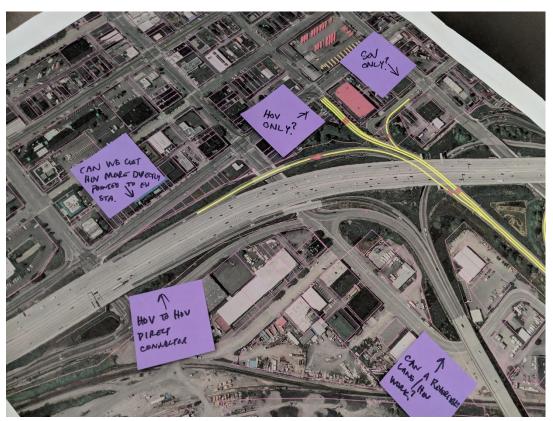
- February/March 2019: Stakeholder interviews
- March 2019: Resource Agency Committee and Tribal coordination
- March/April 2019: Alternatives development and metrics analysis

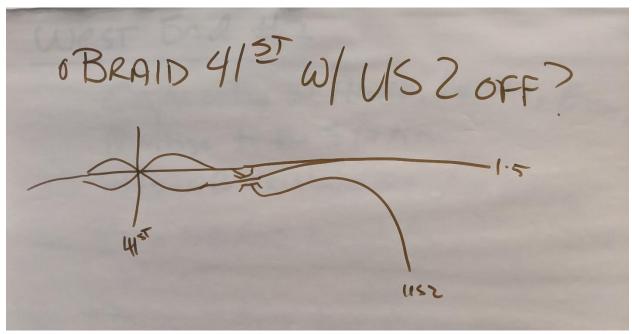
There were no action items from this meeting.

The project team thanked the TWG for attending the meeting and adjourned.

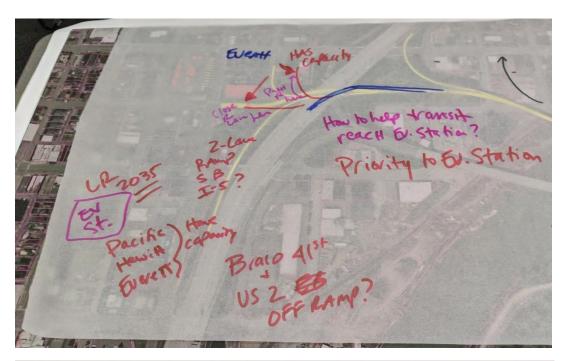


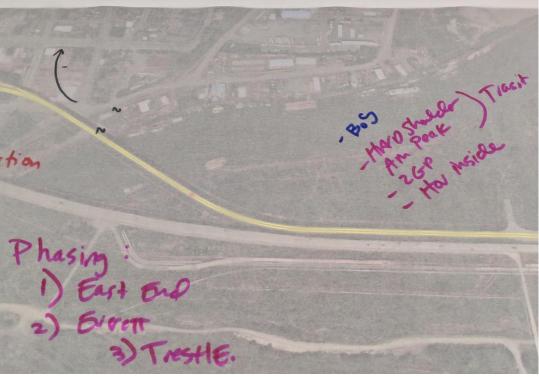
Appendix A. Drawings from alternatives discussion





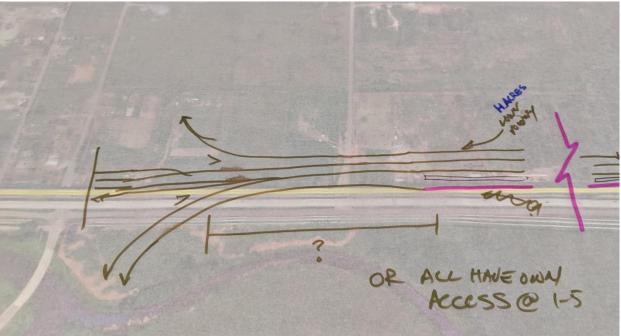




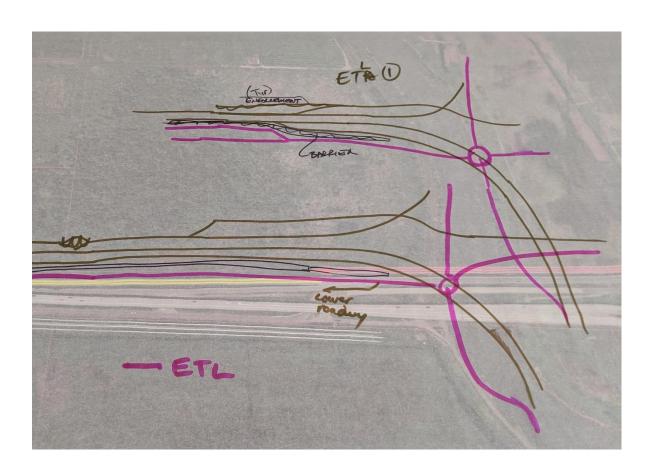














AGENDA

Technical Working Group (TWG) Meeting #3

Thursday, June 20, 2019, 1 - 4 p.m. Everett Station, Dan Snow Room 3201 Smith Avenue Everett, WA 98201

Time	Topic	Lead
1 – 1:10 p.m	Welcome and introductionsSafety briefing	Tim Nau
1:10 – 1:15 p.m.	TWG meeting #2 recap	Tim Nau
1:15 – 2:25 p.m.	 Concept Screening Overview Draft Purpose and Need Develop concepts Rate concepts 	Dave Warner
2:25 – 2:35 p.m.	Break	All
2:35 – 3:35 p.m.	Representative alternatives	Dave Warner All
3:35 – 3:45 p.m.	Next steps and adjourn	Liz Mack

Attendees listed on reverse side





Attendees

Attendees	
TWG Members:	
 □ Corey Hert, City of Everett □ Tim Miller, City of Everett □ Ryan Sass, City of Everett □ Grace Kane, City of Lake Stevens □ Jesse Hannahs, City of Marysville □ Jeff Laycock, City of Marysville □ Brad Feilberg, City of Monroe □ Yosh Monzaki, City of Snohomish □ Roland Behee, Community Transit □ Scott Ritterbush, Community Transit □ Noah Tunick, Community Transit □ Tom Hingson, Everett Transit □ John Pike, Everett School District □ Angel Rivera, FHWA 	 □ Kelly McGourty, PSRC □ Lisa Lefeber, Port of Everett □ Steve Dickson, Snohomish County □ Kirt Hanson, Snohomish County □ Doug McCormick, Snohomish County □ Mohammad Uddin, Snohomish County □ Gwen McCullough, Sound Transit □ Tom Burress, WA State Patrol □ Jason Knott, WA State Patrol □ Scott McCoy, WA State Patrol □ Jason Beloso, WSDOT Freight □ Trevor Daviscourt, WSDOT Freight □ Danny McReynolds, U.S. Coast Guard
WSDOT and Consultants:	
 □ Barb Briggs, WSDOT □ Miguel Gavino, WSDOT □ Cathy George, WSDOT □ Ruth Park, WSDOT □ Dean Moon, WSDOT □ Tim Nau, WSDOT □ Kyengo Ndile, WSDOT □ Hannah Plummer, WSDOT 	 □ Brent Baker, WSP □ Jared Nakamoto, WSP □ Ben Rodenbough, WSP □ Lawrence Spurgeon, WSP □ David Warner, WSP □ Michael Horntvedt, Parametrix □ Suanne Pelley, Envirolssues □ Liz Mack, Envirolssues

□ Amir Rasaie, WSDOT



US 2 Westbound TrestleTechnical Working Group

Meeting #3 June 20, 2019 1:00 - 4:00 p.m.

Agenda

- Safety briefing and introductions 10 min
- TWG meeting #2 recap 5 min
- Concept screening overview 70 min
 - Draft purpose and need
 - Develop concepts
 - Rate concepts
- Representative alternatives 60 min
- Next steps and adjourn 5 min

TWG meeting #2 recap (Feb. 28, 2019)

West end

- Everett Ave is underutilized
- Transit access
- Westbound to southbound realignment
- California Street could be HOV-only

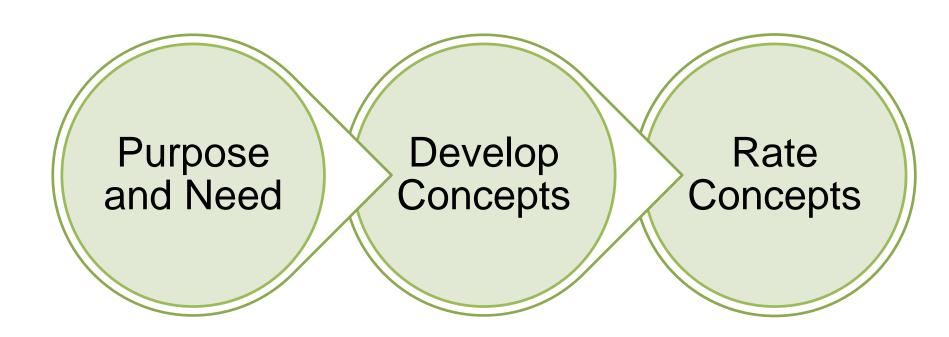
Trestle

- Shoulder, HOV/transit lane
- Reversible lane
- Additional structure with reversible ETL

East end

- Roundabout on lower roadway
- Move lower roadway ramp

Concept screening overview



West end concepts



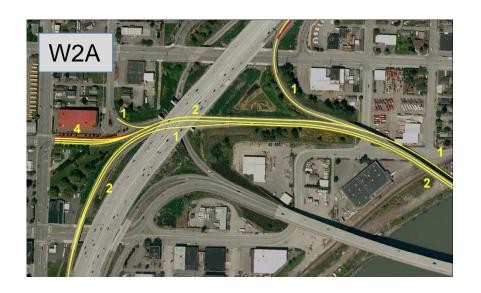
Non-motorized connections will be considered in all concepts

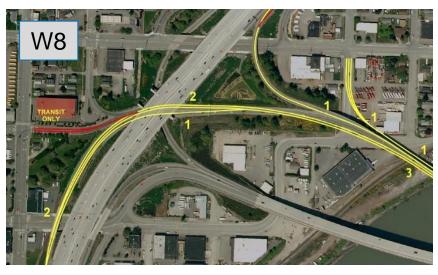


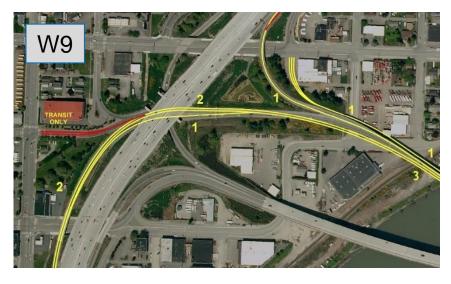
Findings from initial screening West end

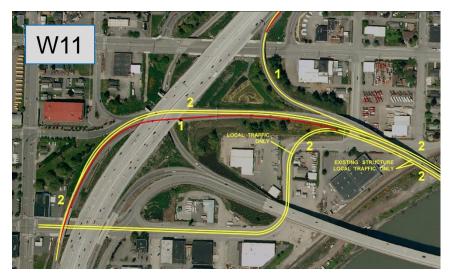


West end concepts with highest rating







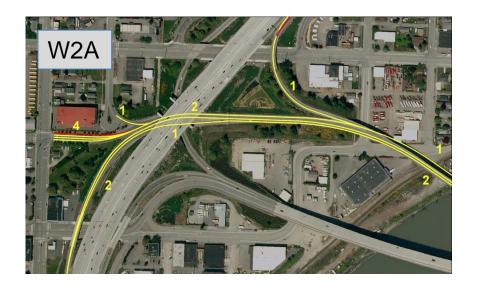


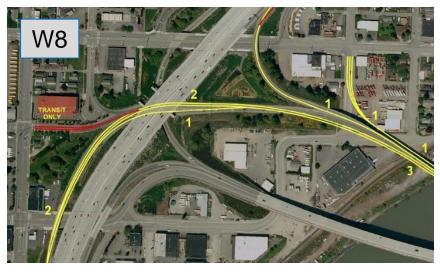
Concept rating summary West end

Criteria	W1: No Build	W2: 2L NB, 2L SB, 2L Local	W2A: 2L NB, 2L SB, 1L Local	W3: 2L NB, 2L SB over I-5, 2L Local	W4: Reversible I-5 Inside Connections	W5: 1L NB, 2L SB, 3L Local	W6: 1L NB, 2L SB, 2L Local	W7: 1L NB, 2L SB, 2L Local on Separate Structure	W8: 1L NB, 2L SB, 2L Local to Summit Ave	W9: 1L NB, 2L SB, 2L Local to Everett Ave	W10: 1L NB, 3L SB, 2L Local on Existing Structure	W11: 1L NB, 3L SB, 2L Local on Existing Structure to Hewitt Ave
Reliability	•	•		•	0			0			•	
Safety	•	•		•	0	•	•	0	•	•	•	•
System Accessibility	•	•	•	•	0	•	•	0	•	•	•	•
Design Solution				•	0	\circ	•	0	•	•	•	•
Sustainability	•	•	•	•	0	0	•	0	•	•	•	•
Overall Rating:	•	•	•	•	0	•		0	•	•	•	•

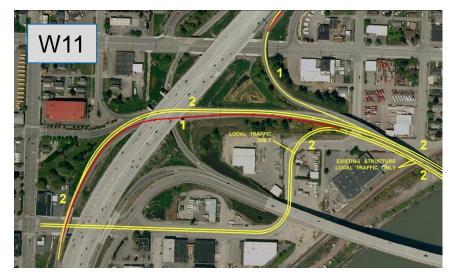
= highest $\bigcirc =$ lowest

West end discussion

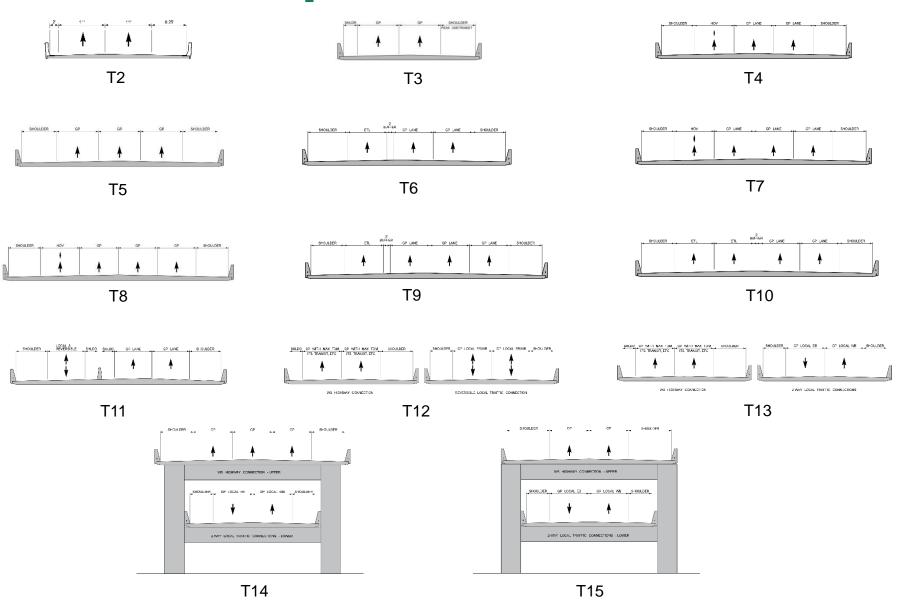








Trestle concepts

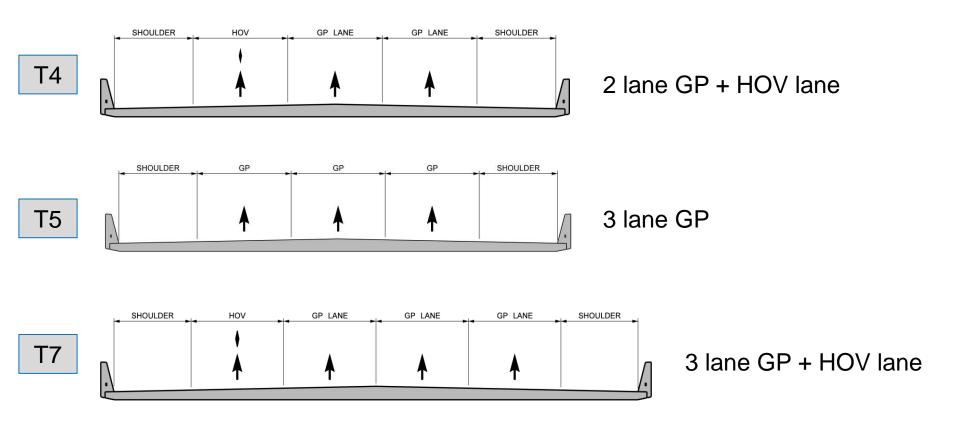


Findings from initial screening *Trestle*

- 3 and 4 lane = high rating
- 2 general purpose lanes = similar to existing
- Stormwater treatment (all concepts) = high rating



Trestle concepts with highest rating



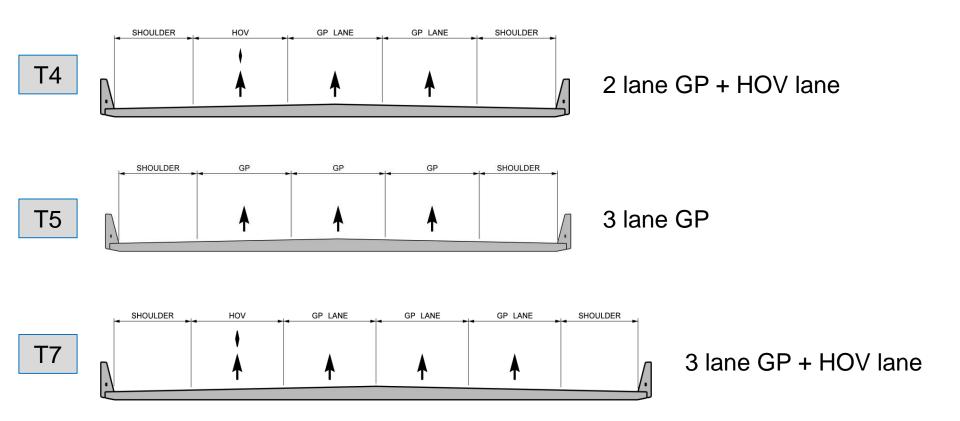
Tolls may be considered for any concept if directed by the legislature

Concept rating summary Trestle

Criteria	T1: No Build	T2: 2L Retrofit w/ Expanded Deck	T3: 2L GP + Transit Shoulder	T4: 2L GP + HOV	T5: 3L GP	T6: 2L GP + ETL	T7: 3L GP + HOV	T8: 3L GP + HOV	T9: 3L GP + ETL	T10: 2L GP + 2 ETL	T11: 2L GP + 1L REV	T12: 2L GP + 2L Local REV	T13: 2L GP + 1/1L Local	T14: 3L GP + 1/1L Local (Viaduct)	T15: 2L GP + 1/1L Local (Viaduct)
Reliability			•	•		•				•	•	•	•		
Safety		•	•			•			•	•	•	•	•	•	•
System Accessibility		•	•	•	•	•	•	•	•	•	•	•	•	•	•
Design Solution		•	•				•		•	•	•	•	•	0	0
Sustainability		•		•	•	•	•	•	•	•		•	•	•	•
Overall Rating:	•	•		•	•	•	•	•	•	•		•	•	0	•

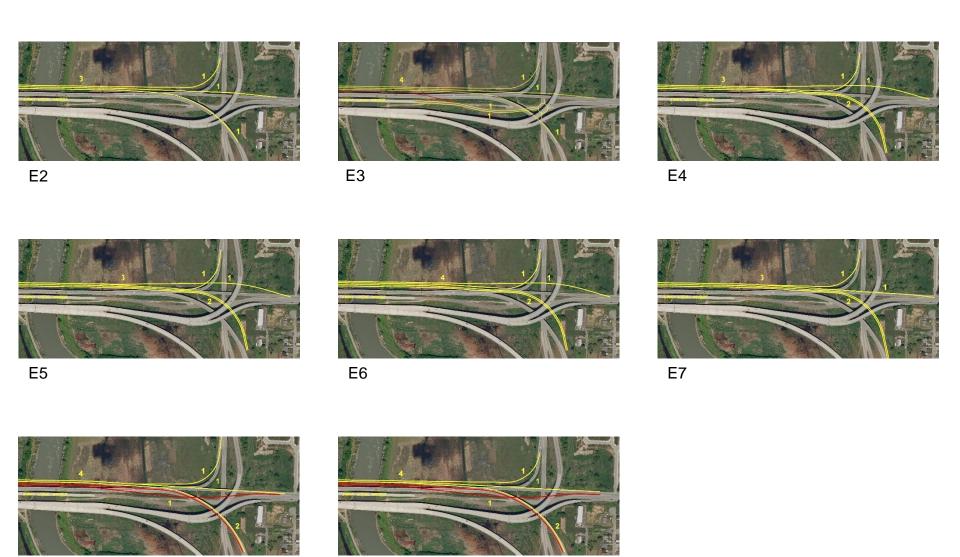
= highest $\bigcirc =$ lowest

Trestle discussion



Tolls may be considered for any concept if directed by the legislature

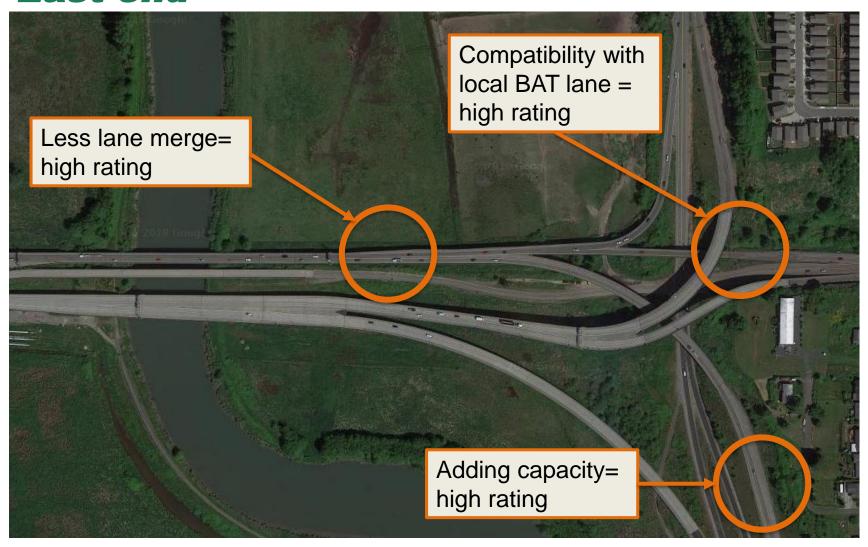
East end connection concepts



Non-motorized connections will be considered in all concepts

E8

Findings from initial screening East end



East end concepts with the highest rating









Concept rating summary East end

	E1: No Build	E1A: No Build + ITS	E2: 1L SB, 1L NB, 1L WB	E3: 1L SB, 1L NB, 1L WB, 1L WB ETL	E4: 1L SB, 2L NB, 1L WB	E5: 1L SB, 2L NB, 1L WB	E6: 1L SB, 2L NB, 1L WB	E7: 1L SB, 2L NB, 1L WB	E8: 1L SB, 1L NB, 1L WB, 1L NB ETL, 1L WB ETL	E9: 1L SB, 1L NB, 1L WB, 1L NB ETL, 1L WB ETL
Reliability										
Safety	•		•	•	•	•	•	•		•
System Accessibility	(=	•	•	•	•	•	•	•	•	•
Design Solution										
Sustainability	•		•		•	•	•	•	•	•
Overall Rating:	•	•	•	•		•	•	•	0	0

 \blacksquare = highest \bigcirc = lowest

East end discussion

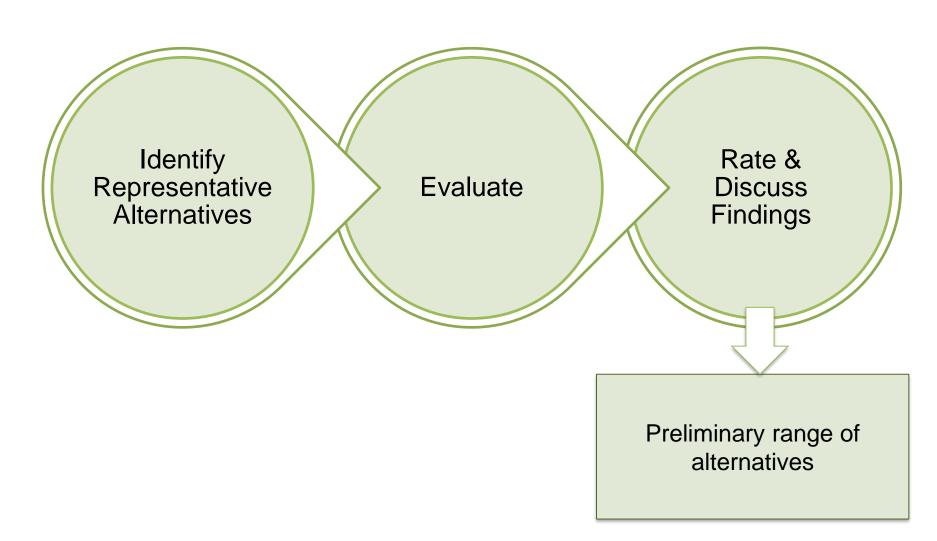








Alternatives screening next steps

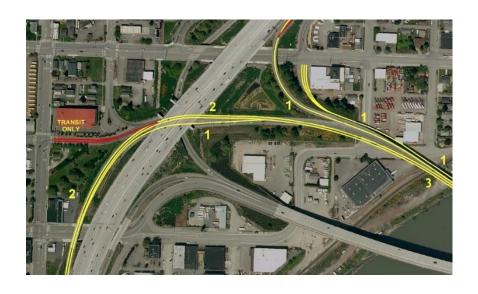


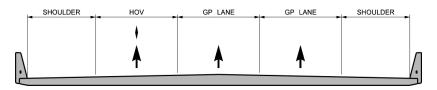
Representative alternative 1:

W9: Local ramp connections to Everett east of I-5

T4: 3 lane trestle

E2: 1 lane connections from all movements at 20th/204







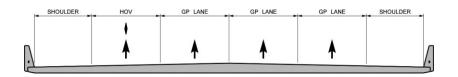
Representative alternative 2:

W11: Local ramp connections to Everett east of I-5

T7: 4 lane trestle

E6: 2 lanes NB to WB US 2 connection from 20th/204 vicinity

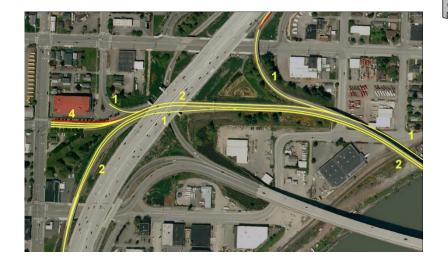


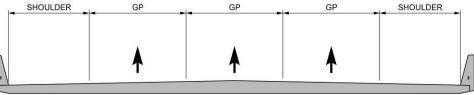




Representative alternative 3

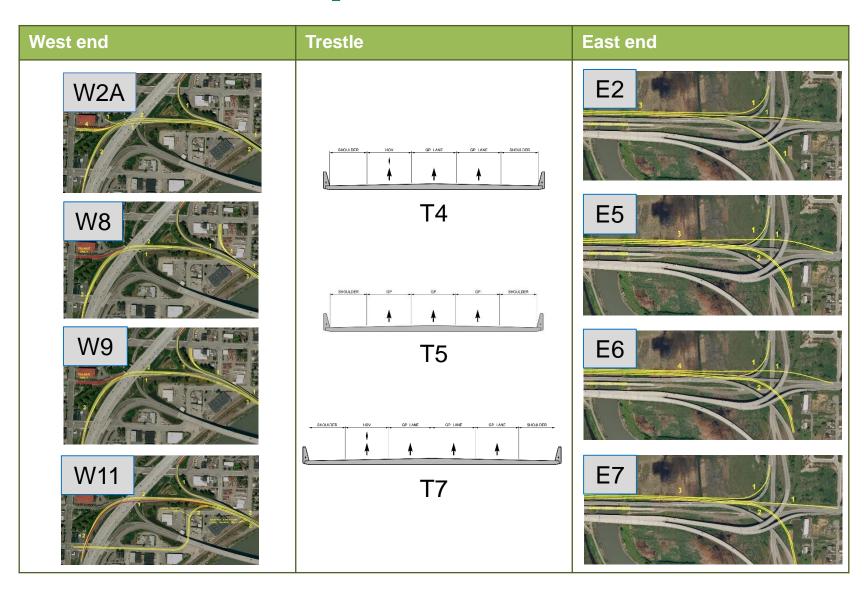
- W2A: Local ramp connections to Everett same as existing with additional SB I-5 ramp lane
- T5: 3 lane trestle
- E7: 2 lanes NB to WB US 2 connection from 20th/204 vicinity







Discussion of representative alternatives



Next steps

- Further study representative alternatives
- Present results at August TWG
- Optional public outreach in Fall

Action items



US 2 Westbound Trestle Contacts

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Suanne Pelley
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Technical Working Group (TWG) meeting #3 summary

June 20, 2019

Attendees

TWG members/alternates

Name	Organization
Corey Hert	city of Everett
Grace Kane	city of Lake Stevens
Jesse Hannahs	city of Marysville
Scott Ritterbush	Community Transit
Noah Tunick	Community Transit
Steve Thomsen	Snohomish County
Kirt Hanson	Snohomish County
Trevor Daviscourt	WSDOT Freight

Project team

- Barb Briggs, WSDOT
- Madelyn Cayton, WSDOT
- Miguel Gavino, WSDOT
- Tim Nau, WSDOT
- Kyengo Ndile, WSDOT
- Kris Olsen, WSDOT
- Ruth Park, WSDOT
- Hannah Plummer, WSDOT
- Brent Baker, Consultant Team
- Michael Horntvedt, Consultant Team
- Liz Mack, Consultant Team
- Jared Nakamoto, Consultant Team
- Suanne Pelley, Consultant Team
- Ben Rodenbough, Consultant Team
- Lawrence Spurgeon, Consultant Team
- Dave Warner, Consultant Team

Welcome and introductions

Tim Nau, WSDOT assistant project engineer, welcomed the group, provided a safety briefing for the building, and led introductions.



Tim reviewed the meeting agenda, noting the bulk of the meeting will be the Consultant Team presenting draft concepts by geographic areas of the US 2 corridor, and then a discussion of representative alternatives.

TWG meeting #2 recap

Tim recapped the second meeting, noting:

- We launched the meeting by providing project context of key factors—including regional growth, safety, and environmental considerations.
- We then broke into small groups that each focused on a geographic section of the corridor:
 - I-5 on the west end.
 - The trestle.
 - o Where NE 20th, SR 204 and US 2 all converge.
- The results of the workshop gave the technical team analysis work for each geographic area. The team will then develop representative alternatives that pull the geographic areas together.

Tim introduced Dave Warner, consultant team lead.

Concept screening overview

Dave noted at our first TWG meeting we discussed the project's purpose and need. When the TWG met in February, we had a good working session with roll plots of the US 2 corridor from SR 204 to I-5. These concepts were grounded in the purpose and need.

Lawrence Spurgeon, environmental lead for the consultant team, reminded the group of the five key areas included in the draft Purpose & Need:

- Improves travel reliability for motorists, transit vehicles, freight, bicyclists, pedestrians, and emergency responders.
- Improves safety for all users.
- Provides improved system linkages to support regional and local planned growth.
- Provides a structurally sound solution that corrects roadway deficiencies and utilizes a full life-cycle cost approach.
- Incorporates WSDOT's core value of sustainability.

The Technical Working Group and Resource Agency Committee reviewed the draft Purpose and Need. Those groups want us to include environmental benefits of the project and continued access to Ebey Island

After the last TWG, the technical team worked to define concepts by geography which include:

- I-5 connection: 11 concepts
- Trestle: 14 concepts
- 20th / SR 204 connection: 9 concepts
- The No Build concept is included in each of the geographic segments.



The technical team then rated the concepts against the Purpose and Need criteria:

- Travel reliability
- Safety
- System accessibility
- Design solution
- Sustainability

West end concepts

Dave presented the west end concepts noting some of these have fairly minor modifications between the concepts, with the major differences being the number of lanes in each configuration, as well as connecting points and configurations. The team is not making any changes to the eastbound trestle nor its connections to I-5.

Dave reviewed the findings from the initial screening which include:

- Any modifications to I-5 received the lowest rating under design solution.
 - Alternatives that add lane capacity under I-5 for access between westbound US
 2 and SB I-5 or into downtown Everett would require some reconstruction of I-5.
 - Reversible ramps connecting to the I-5 median HOV systems would require significant reconstruction of I-5.
- Adding lanes or width of structure over the Snohomish River rates lower due to environmental effects.
- Maintaining full local access to California Street results in low ratings for design solution and safety due to limited space.
 - Placing the WB to SB US 2 movement onto a ramp over I-5 would alleviate these issues.
- Everett access to Everett Avenue east of I-5 and transit only to California Street results in a high rating.
- Everett access, including transit, directly to Hewitt Avenue east of I-5 also results in a high rating.

Dave discussed the west end concepts with the highest ratings and noted the option to bring traffic onto Everett Avenue was a suggestion from the last TWG meeting and also reflects TWG interest in transit-only access.

Dave showed a summary of the concept rankings for each of the 11 concepts for the west end. The top-ranking concepts are: W2A, W8, W9, and W11. They rose to the top when considering all of the criteria.

General feedback on the west end concepts:

Dave led a discussion about the west end concepts. TWG shared the following questions and comments:

Questions



- How are you weighting the tradeoffs of mobility improvements and environmental effects?
- Have you examined freight routes for each of the concepts? We need to see to/from data for Everett, Lake Stevens, and Port of Everett.
- Where are cars queueing at the west end? Is it on Maple? Can there be transit signal priority?
- How many lanes are on the west end for the local connection to Everett?
- Which option is most compatible with transit to Everett Station?
- Are you reconstructing or re-striping local lanes?
- Will the HOV/transit lane be on the left or right side? We noted no decisions on placement yet—need more discussion about where the HOV traffic is headed.

Comments

- Everett and Sound Transit are considering light rail in locations beyond Everett Station.
- Community Transit likely prefers to cross Maple Street to Cedar though it depends on traffic models.
- city of Everett has plans for non-motorized access on California.
- Consider northbound I-5 to eastbound on the trestle for transit as well as westbound on the trestle to southbound on I-5. There may be future demand for southbound transit on I-5 from the trestle with light rail expansion. Eastbound transit will need to be considered on other projects. Need to include the movement to Mariner Park & Ride.
- Need further review of transit on Pacific/Smith or Pacific/Broadway.

Trestle concepts

Dave presented the trestle concepts noting some of these have minor modifications between concepts, with major differences being the number of lanes in each configuration, as well as connecting points and configurations.

Dave reviewed the findings from the initial screening which include:

- The highest ratings are 3 and 4 lane replacement bridges.
- Tolling improved the reliability, but it reduced the social effects by impacting low-income households, all-lane tolling was not included in the rating.
- All design solutions provide improvements to stormwater treatment and therefore rate highly for sustainability.
- Increased footprint resulted in lower environmental rankings:
 - 3 lanes with stormwater treatment rates higher than no build.
 - 4 lanes with stormwater treatment rates similar to no build.
 - Wider than 4 lanes with stormwater treatment rates below no build.
- Ingress and egress for reversible and express toll lane configurations varied based on weave conditions and access points.
- Now let's look at the concepts with the highest ratings.

Dave discussed the trestle concepts with the highest rating which are: T4, T5, and T7. They rose to the top when considering all the criteria we evaluated. Next, Dave showed a summary of the concept rankings for each of the 15 concepts for the trestle.



General feedback on the trestle concepts:

Dave led a discussion about the trestle concepts. The following questions and comments were shared by the TWG:

Questions

- Would the project improve the surface bike path for a safer ride?
- What happens to the eastbound bike path? Does it remain on the trestle?
- What is the incremental cost difference between the 3- and 4-lane options?
- What is the total width difference between the 3- and 4-lane options?
- Does that width difference impact the environment?
- Where in the criteria do you address mode shift? Is it in sustainability?
- How do we describe efficiency? Is that about vehicle travel times or person throughput?
- What are the differences between T5 and T7? The team noted they have different footprints which cause different amounts of shading.

Comments

- Need to show tolls could be on some lanes, but not all lanes, such as with express toll lanes.
- Plan for a future shoulder conversion. Potentially show 14-foot width for hard shoulder running. This could be in T-4 and T-5 so we build a 3-lane now with future options.
- Bike and pedestrian access should be considered and explained when presenting the concepts to the public.
- Reminder we'll remove old piers with this project which will have an environmental benefit.

East end concepts

Dave presented the east end concepts noting some of these have fairly minor modifications between the concepts, with the major differences being the number of lanes in each configuration, as well as connecting points and configurations.

Dave reviewed the findings from the initial screening which include:

- Separating the merges onto the trestle resulted in a higher rating.
- Poor merge conditions lead to a low rating.
- Adding capacity to US 2 on-ramps resulted in a higher rating.
- Now let's look at the concepts with the highest ratings.

Dave discussed the east end concepts with the highest rating which are: E2, E5, E6, and E7. They rose to the top when considering all of the criteria. Next, Dave showed a summary of the concept rankings for each of the nine concepts for the trestle.

General feedback on the east end concepts:

Dave led a discussion about the east end concepts. The following questions and comments were shared by the TWG:



Questions

- Is there any value in a roundabout on the east end to help people determine where they're going, rather than weaving on the trestle?
- How do you ensure the best connection to the new BAT lane?

Comments

- TWG was okay with refining the IJR preferred alternative.
- With E5 and E6, it makes sense to have HOV on the north side.
- With E2 and E7, it makes sense to have HOV on the south side.
- The west end is probably the bigger driver for the HOV/transit lane location.
- Community Transit assumes Northeast 20th Street will be the main transit access. The
 demand comes most from Lake Stevens (not US 2 to the south). Need to also
 understand where the HOV traffic is going to determine the lane placement.

Representative alternatives

Dave explained the approach to identifying the representative alternatives. The steps included:

- Combine the highest rated concepts.
- Identify up to 3 complete representative alternatives.
- · When pairing, consider:
 - Purpose & Need
 - Transit and HOV compatibility
 - Origin / destination
 - Lane assignment, driver expectation
 - Possibility for toll lane(s) ingress, egress

Dave walked through the three representative alternatives. The first alternative combines the following:

- W9: Local ramp connections to Everett east of I-5.
- T4: 3-lane trestle.
- E2: 1-lane connections from all movements at 20th/204.

The second alternative combines:

- W11: Local ramp connections to Hewitt east of I-5.
- T7: 4-lane trestle.
- E6: 2 lanes NB to WB US 2 connection from 20th/204 vicinity.

The third alternative combines:

- W2A: Local ramp connections to Everett same as existing with additional SB I-5 ramp lane.
- T5: 3-lane trestle.
- E7: 2 lanes NB to WB US 2 connection from 20th/204 vicinity.



General feedback on the representative alternatives:

Dave led a discussion about the east end concepts. The following questions and comments were shared by the TWG.

Questions

- How can this project focus on people through-put instead of vehicles?
- What kind of weaves would there be with the HOV lane?
- Could you relocate the traffic coming on US 2 from Snohomish and Monroe to the
 outside lane? This may also mean some buses coming from the south are forced to the
 outside lane.
- Lots of freight going to the Port of Everett. What is their route to Marine View Drive?
- Are we trying to get to one Preferred Alternative at the end of this study/report?
 - The team responded there will likely be options for final analysis as part of the environmental process, but they would prefer to have one alternative moving forward.

Comments

- Four lanes do not increase the footprint much more than three lanes, but it provides capacity benefits.
- Need at least three lanes plus a shoulder that can be converted for peak use to account for future capacity.
- Team confirmed there is enough room for a ramp on W11, but the impacts still need to be determined.
- The public may interpret the shoulder as being an option for a bike lane when doing the NEPA review. Be careful how it is presented. Need to find a clear way to represent bike/ped access to the public.
- Having a large facility (trestle) takes away the transit incentive.
- Need to understand the weaving and merge conditions when looking at alternatives.
- HOV/transit in the alternatives seems more like queue jumps than an HOV/transit lane.
- Suggestion to use a roundabout to move HOV/transit to the outside and help position the lanes on the east end.
- Lots of freight will weave on the east. Few trucks from Everett cross the mountains.
- Oversized loads are discouraged from downtown Everett.
- Modeling on the west end will be very important. May need to split the local access into Everett as to not overwhelm an arterial. Need to consider future HOV use and transit.
- Getting the east end lane assignments correct will be very important.
- The preferred alternative needs to be the least environmentally damaging alternative that still meets the need.
- Snohomish County cares most about throughput of people/vehicles and will default to the cities on the specifics of the east and west end configurations.
- Need to know what the origin/destination of HOV users is before we can determine the lane placement.





Summary of comments by jurisdiction/agency

Community Transit

• Would like to further examine what lanes are best for transit to reach their destinations.

city of Everett

- 1,700 vehicles accessing Everett Avenue
- Want California to be bike priority
- Likes all westbound options
- Need to see some modeling numbers
- Need to meet with CT and ST to discuss transit connections
- Need specific review of local connections

Snohomish County

- Throughput of people/vehicles is most important. The county will default to the cities on the specifics of the east and west end configurations.
- Everett and transit need to figure out all the west end connections.
- Need to keep two ETL and two general-purpose lane alternatives on the table.

Next Steps:

Dave concluded by reviewing the next steps which include:

- A late summer TWG and a fall EAG meeting.
- Hold a meeting with the freight community prior to next TWG to review representative alternatives.
- Wrap up this portion of the funded report.
- Ideally do some outreach this fall with this work today.
- Prepare for legislative session.

The project team thanked the TWG for attending the meeting and adjourned.



AGENDA

Technical Working Group (TWG) Meeting #4

Dec. 5, 2019, 1:30-3:30 p.m. Everett Station – Dan Snow Room 3201 Smith Ave., Ste. 215, Everett, WA 98201

Time	Topic	Lead
1:30 p.m.	Welcome and introductionsSafety briefing	Kyengo Ndile
1:40 p.m.	TWG meeting #3 recap	Kyengo Ndile
1:45 p.m.	Purpose and Need review	Dave Warner
1:50 p.m.	Alternatives review	Dave Warner
2:05 p.m.	Overview of findings	Dave Warner
2:15 p.m.	Finding #1: Network congestion	Michael Horntvedt
2:30 p.m.	Break	All
2:40 p.m.	Finding #2: Managed lanes	Michael Horntvedt
2:55 p.m.	Finding #3: Three lane trestle	Michael Horntvedt
3:10 p.m.	Discussion, conclusions, and recommendations	Dave Warner
3:25 p.m.	Next steps and adjourn	Dave Warner

Attendees listed on reverse side



Attendees

TWG Members:	
 □ Corey Hert, City of Everett □ Tim Miller, City of Everett □ Ryan Sass, City of Everett □ Grace Kane, City of Lake Stevens □ Jesse Hannahs, City of Marysville □ Jeff Laycock, City of Marysville □ Brad Feilberg, City of Monroe □ Yosh Monzaki, City of Snohomish □ Roland Behee, Community Transit □ Scott Ritterbush, Community Transit □ Noah Tunick, Community Transit □ Tom Hingson, Everett Transit □ John Pike, Everett School District □ Angel Rivera, FHWA 	 □ Kelly McGourty, PSRC □ Lisa Lefeber, Port of Everett □ Steve Dickson, Snohomish County □ Kirt Hanson, Snohomish County □ Doug McCormick, Snohomish County □ Mohammad Uddin, Snohomish County □ Lauryn Douglas, Sound Transit □ Tom Burress, WA State Patrol □ Jason Knott, WA State Patrol □ Scott McCoy, WA State Patrol □ Jason Beloso, WSDOT Freight □ Trevor Daviscourt, WSDOT Freight □ Danny McReynolds, U.S. Coast Guard
WSDOT and Consultants:	
 □ Barb Briggs, WSDOT □ Miguel Gavino, WSDOT □ Cathy George, WSDOT □ Ruth Park, WSDOT □ Dean Moon, WSDOT □ Tim Nau, WSDOT □ Kyengo Ndile, WSDOT □ Hannah Plummer, WSDOT 	 □ Brent Baker, WSP □ Jared Nakamoto, WSP □ Ben Rodenbough, WSP □ Lawrence Spurgeon, WSP □ Laura Shabe, WSP □ David Warner, WSP □ Michael Horntvedt, Parametrix □ Suanne Pelley, Envirolssues

□ Liz Mack, Envirolssues

□ Amir Rasaie, WSDOT



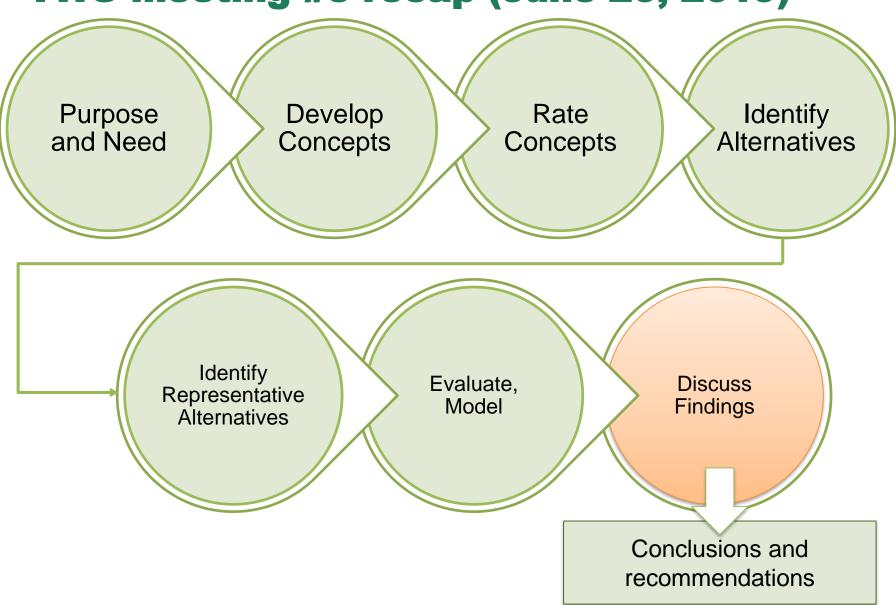
US 2 Westbound TrestleTechnical Working Group

Meeting #4 December 5, 2019 1:30 – 3:30 p.m.

Agenda

- Safety briefing, introductions, agenda review 10 min
- TWG meeting #3 recap 5 min
- Purpose and need review 5 min
- Alternatives Review 15 min
- Overview of findings 10 min
- Finding #1: Network congestion 15 min
- Finding #2: Managed lanes 15 min
- Finding #3: Three lane trestle 15 min
- Discussion 15 min
- Conclusions and recommendations 15 min
- Next steps and adjourn 5 min

TWG meeting #3 recap (June 20, 2019)



Draft purpose

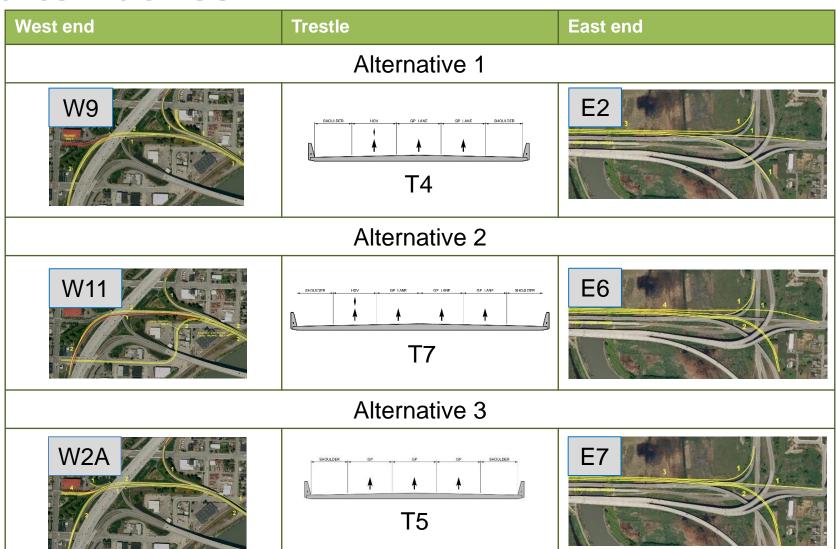
The purpose of the US 2 Westbound Trestle project is to develop a long-term solution that meets the following objectives:

- Improves travel reliability for motorists, transit vehicles, freight, bicyclists, pedestrians and emergency responders.
- Improves safety for all users.
- Provides improved system linkages to support regional and local planned growth.
- Provides a **structurally sound solution** that corrects roadway deficiencies and utilizes a full life-cycle cost approach.
- Incorporates WSDOT's core value of sustainability.

Draft need

- Accommodates existing and future demand
- Addresses safety and roadway deficiencies
- Provides system linkages
- Sustainability

TWG meeting #3: representative alternatives



Alternatives finding review

Finding #1: Network congestion

-Future congestion on I-5 limits the effectiveness of US 2 westbound trestle improvements.

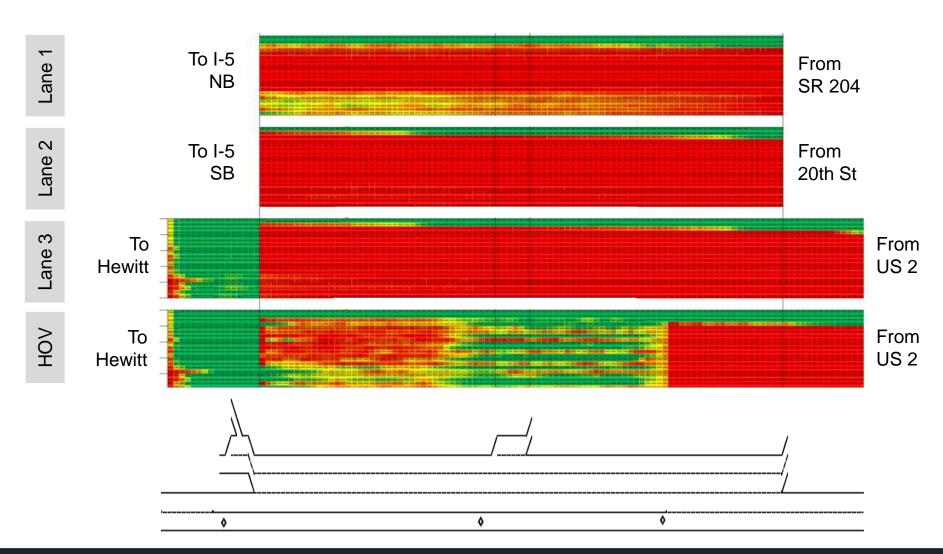
Finding #2: Managed lanes

 Transit and HOV lanes with improved system connections could provide people an option to bypass system congestion.

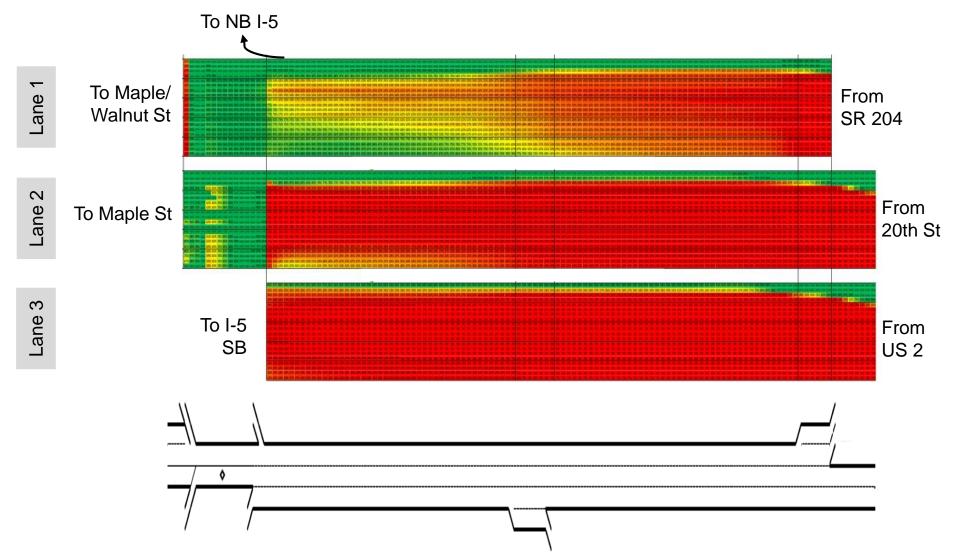
Finding #3: Three lane trestle

Three lane trestle would provide sufficient capacity.

Finding #1: Network congestion Alternative 2: 2040 traffic analysis, 4 – 9 am



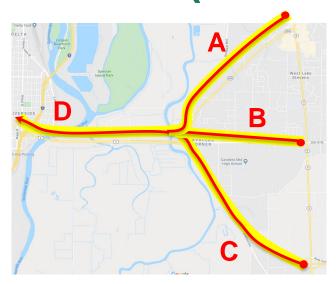
Finding #1: Network congestion Alternative 3: 2040 traffic analysis, 4 – 9 am

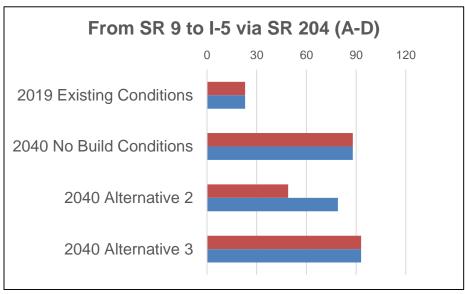


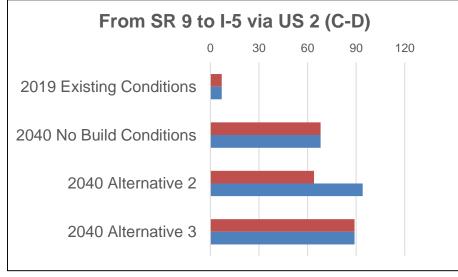
Finding #2: Transit and HOV Travel

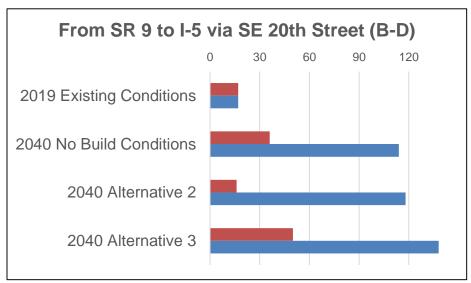
Time Data (minutes)







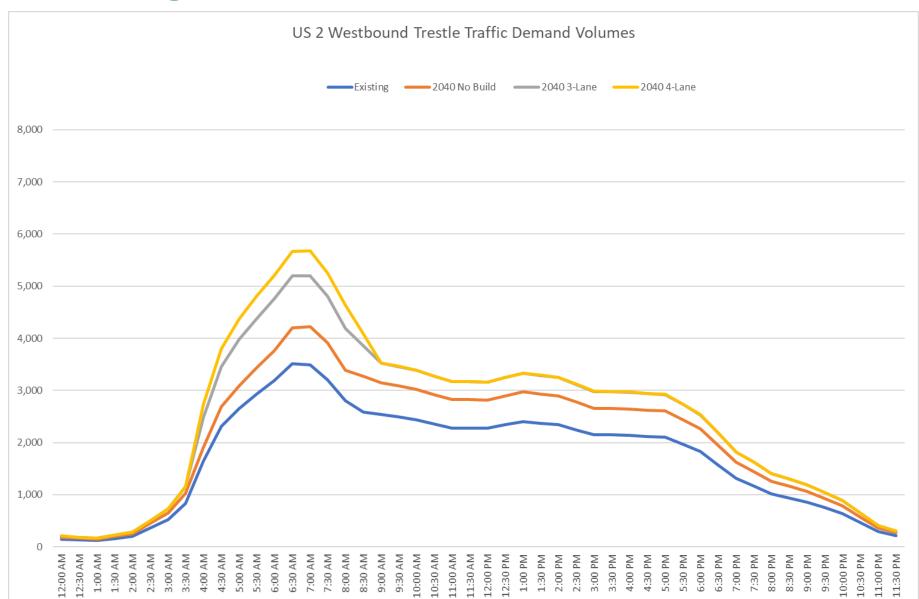




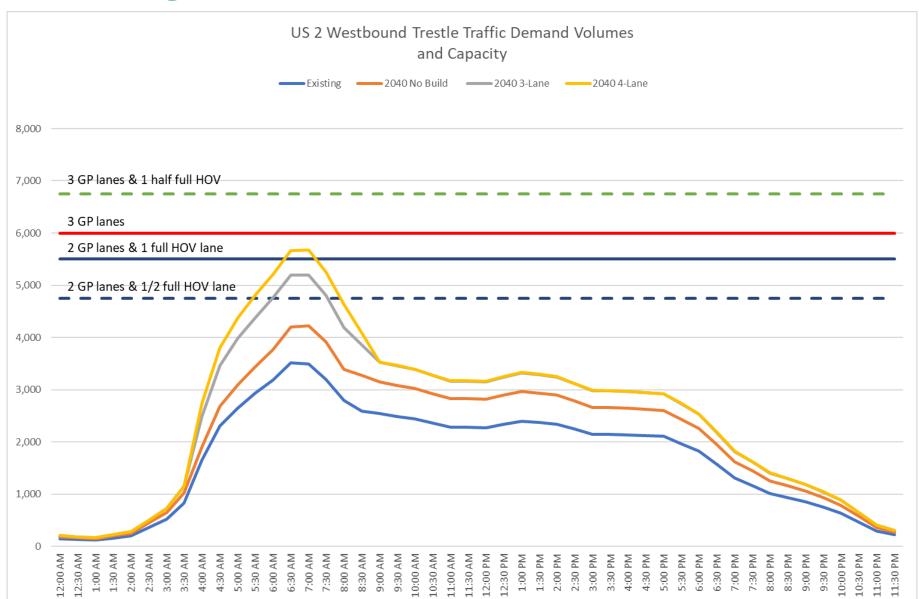
Year 2040 AM Peak Hour travel times. Alt. 2 and 3 use No Build volumes.



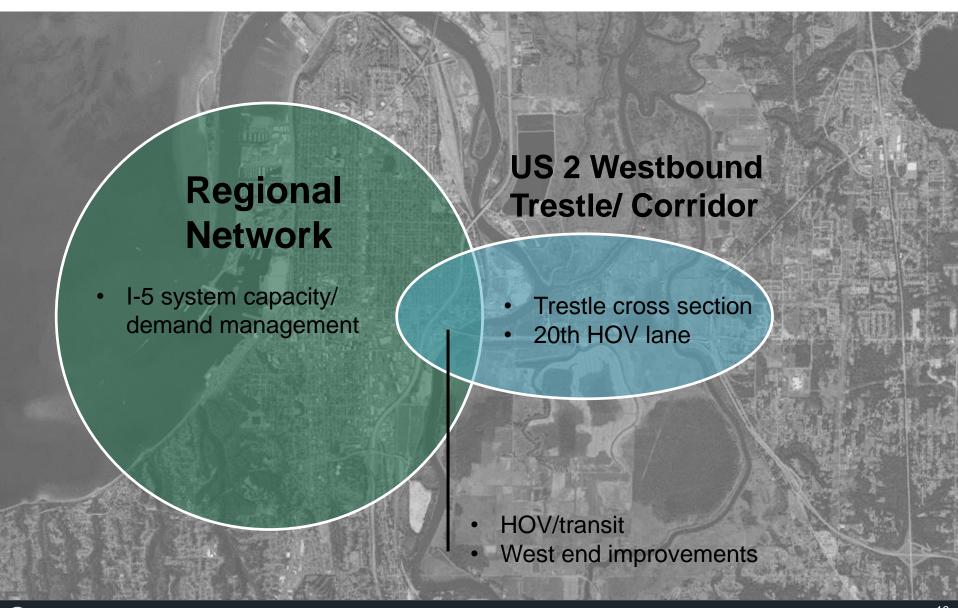
Finding #3: Trestle cross section



Finding #3: Trestle cross section



Considering connectivity



Discussion



Next steps

- EAG meeting December 9, 2019
- Preliminary Draft Planning and Environmental Linkage Report

Action items



US 2 Westbound Trestle Contacts

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<u>US2TrestleInfo@wsdot.wa.gov</u>



Technical Working Group (TWG) meeting #4 summary

December 5, 2019 Everett Station

Attendees

TWG members/alternates

Name	Organization
Tim Miller	City of Everett
Tom Hood	City of Everett
Ryan Sass	City of Everett
Grace Kane	City of Lake Stevens
Scott Ritterbush	Community Transit
Noah Tunick	Community Transit
Angel Rivera*	FHWA
Sharleen Bakeman*	FHWA
Steve Dickson	Snohomish County
Kirt Hanson	Snohomish County
Mohammad Uddin	Snohomish County
Nick Steele	Washington State Patrol
Jason Beloso	WSDOT Freight
Trevor Daviscourt	WSDOT Freight

^{*}Attended via phone

Project team

- Cathy George, WSDOT
- Kyengo Ndile, WSDOT
- Miguel Gavino, WSDOT
- Kris Olsen, WSDOT
- Hannah Plummer, WSDOT
- Dave Warner, Consultant Team
- Michael Horntvedt, Consultant Team
- Jared Nakamoto, Consultant Team
- Liz Mack, Consultant Team
- Suanne Pelley, Consultant Team
- Ben Rodenbough, Consultant Team
- Laura Shabe, Consultant Team

Note: The summary below recaps the presentation that was given with the attached slides. We have noted the slide page numbers on each section below.



Welcome and introductions (slides 1 & 2)

Kyengo Ndile, WSDOT project engineer, welcomed the group, provided a safety briefing for the building, and led introductions. Kyengo reviewed the meeting agenda, noting that Dave Warner and Michael Horntvedt will walk through the analysis conducted since the last TWG meeting on June 20, 2019, then finish the meeting with a discussion about next steps. Kyengo also noted that this is likely the last TWG meeting since there is not additional funding to pursue additional work related to the US 2 trestle.

TWG meeting #3 recap from June 2019 (slide 3)

Kyengo recapped the third meeting, noting:

- At the last meeting the team presented the screening overview for the west end, the trestle, and east end concepts.
- We also discussed how these concepts could be arranged into representative alternatives—including options for east end, trestle, and west end of the US 2 corridor.
- Today we will review and discuss the findings.

Kyengo introduced Dave Warner, consultant team lead.

Purpose and Need review (slides 4 & 5)

Dave Warner explained that over the course of the TWG work, beginning about a year ago, we have developed the draft purpose for the project.

We are keeping this as draft until the project is ready to do public outreach and we have a broader discussion with the stakeholders who will want to weigh in on the US 2 trestle.

The key purpose items identified by the TWG and Executive Advisory Group (EAG) are:

- Improving travel reliability
- Improving safety
- Providing system linkages
- Providing a structurally sound solution
- Incorporates sustainability

Dave explained that for each of the draft need statements, we considered a few specific elements:

- Accommodate existing and future demand
 - Peak a.m. traffic volumes exceed capacity
 - No HOV/transit lanes; transit experiences the same congestion as general purpose traffic
 - Using Puget Sound Regional Council (PSRC) 2040 growth projections
 - Provide non-motorized connections
- Safety and roadway deficiencies
 - Frequent collisions at merge points.



- Existing shoulders don't meet current standards.
- Trestle nearing end of service life: 2045
- System linkages
 - Connect areas of high population and employment growth
 - Important freight corridor
- Sustainability
 - Address stormwater runoff and water quality

Alternatives Review (slides 6 & 7)

Dave reminded the group that at the June meeting, the team brought forward a number of options for the east end, the trestle, and the west end. The TWG then developed three representative alternatives.

The team used PSRC 2040 growth and demand projections to do the analysis on each of the alternatives. The demand projections also include Sound Transit light rail reaching Everett by 2040.

Dave used roll plots to walk through the three alternatives, noting that the modifications on the east end have similar refinements. Alternatives 1 and 2 included a full transit/HOV lane across the trestle. Alternative 3 only included a short transit/HOV bypass at the I-5 interchange.

Alternative 1 was not further analyzed because of constraints with the existing I-5 bridges. Widening Everett Avenue underneath I-5 would be prohibitively expensive so this alternative was not considered practical to further analyze.

Overview of findings

Dave reviewed the three key findings from the analysis which include:

- **Three-lane trestle**. A three-lane trestle would provide sufficient capacity for vehicle demands that can be expected in 2040.
- Network congestion. To improve movement of general-purpose traffic we need to address network congestion.
- Managed lanes. Transit and HOV lanes with improved system connections could provide people an option to bypass system congestion.

Dave introduced Michael Horntvedt, traffic lead for the consultant team.

Findings 1 – 3 (slides 8 – 12)

Michael Horntvedt presented a traffic chart, called a heat map, explaining:

- The chart illustrates Finding #1: That the network is congested.
- The first chart illustrates Alternative 2. From top to bottom, it shows four lanes across the trestle from 20th Street, with two lanes exiting to I-5. The bottom of the page displays a schematic layout of the corridor corresponding to the modeled configuration.



- The colors are similar to what you'd see on the WSDOT website for congestion, except we don't use the color black. The red color represents slow traffic that is 0-30% of the posted speed and green is 100%+ of the posted speed.
- This chart displays the year 2040 morning commute times that start at about 4 a.m. and run through 9 a.m.
- In keeping with the assigned scope of work, the team did not modify I-5 or its ramps but merged the trestle concepts onto existing structures.

After orienting everyone to the chart, Michael explained some of the key findings for alternative 2.

- Slide 8 tells us that traffic congestion on the US 2 trestle would be severe with the future system congestion on I-5 south of the US 2 merge.
- We see some low levels of congestion in the transit/HOV lane that feeds into downtown Everett, as well as on the north lane that exits to northbound I-5.
- The middle two lanes serve trips into downtown Everett and southbound I-5.
- We know that anticipated 2040 levels of congestion on southbound I-5 congestion would worsen with any new traffic entering from the US 2 trestle.
- Congestion on southbound I-5 will extend backups onto local streets, keeping downtown
 Everett from being a viable bypass alternative.
- What this tells us is that unless we can figure out how to get traffic on I-5 moving, we won't see much benefit from added general-purpose capacity on the trestle.
- We might see some benefit for transit and HOV as demonstrated by the green in that lane. Please note that without system level connectivity on either end, the benefits are limited to a bypass section only on a portion of the trestle.

Question

- How far west does the model show green on the surface streets into Everett?
 - The team responded that it turns red soon and that the I-5 congestion backs up onto Pacific Street. City congestion is caused by a lack of I-5 receiving capacity.

Next, Michael walked through slide 9, which has a similar heat-map chart for Alternative 3, noting:

- Alternative 3 is similar to what we have on the corridor today except there is a third general-purpose lane. We also included a short section of transit/HOV bypass at the I-5 interchange, but the benefits are minimal because transit and HOV have to cross the trestle with general-purpose traffic to reach the bypass section.
- This shows us that the traffic headed for southbound I-5 will be backed up across the trestle and affect all lanes of traffic, due to congestion on I-5.
- The outer lane starts to show some traffic flow, but that is because it feeds northbound I-5 and downtown Everett, so those lower volumes can be accommodated by the dedicated lane. Traffic destined to southbound I-5 begins to exit the outside lane prior to the Snohomish River Bridge.



 Again, this demonstrates the effect I-5 congestion will have on any improvements suggested for the US 2 trestle.

Next, Michael presented slide 10, which shows the travel time data for the three key travel origins across the trestle to I-5:

- From 204 at SR 9
- From Southeast 20th Street at SR 9
- From US 2 at SR 9

For each of these three different origins, the team developed the same data:

- What are the travel times in existing conditions in the transit/HOV lane versus the general-purpose lane?
- What about in the 2040 no-build condition?
- And finally, how do the HOV and general-purpose lanes perform from each location with Alternative 2 and Alternative 3?

The team observed the following:

- Traffic from SR 204 and US 2 must wait to reach the transit/HOV lane on the trestle as shown in Alternative 2 to realize transit/HOV lane benefits.
- Travel times for the transit/HOV lane are improved compared to general purpose.
- 20th Street Business Access Transit (BAT) lane connection to US 2 still provides a benefit for bypassing congestion.
- I-5 congestion still affects the functionality of the westbound trestle and receiving capacity.

Questions

- Does the no build consider the HOV lane that Lake Stevens is building on 20th Street?
 - The team responded that this is included but at the time of the modeling it was assumed to be a BAT lane only.
- Did you consider having the intersections on 20th Street be changed to roundabouts instead of signalized intersections?
 - The team noted that Lake Stevens does not have roundabouts in their current plans, so we didn't model it. The team speculated that the benefits from including roundabouts would be minimal during the time periods when I-5 congestion affects the trestle and the 20th Street corridor.

Next Michael reviewed slides 11 & 12 that show traffic volumes and capacity, and how different trestle cross sections will work. This analysis does not consider the connections on either end of the trestle.

On slide 11, total demand on the trestle is shown based on 2040 population and employment:

The left axis shows the number of vehicles per hour for all lanes of the trestle



- At the bottom are the hours between 12 a.m. and 11 p.m.
- The four lines represent:
 - Blue is existing demand
 - o Orange is 2040 no-build demand
 - o Gray is the demand associated with a three-lane trestle
 - Gold is the demand associated with a four-lane trestle

These data show:

- No-build demand increases by over 700 vehicles per hour without improving the corridor.
- Three-lane trestle traffic volume during the peak is shown to increase by about 1,000 vehicles per hour over no build, but the only addition is an HOV lane and shoulder.
- Adding a general-purpose lane to the corridor adds nearly another 500 vehicles per hour per hour only over the no build.
- HOV/transit vehicle volumes are nearly 10% of the traffic mix and freight is closer to 12%.
- Transit and HOV carry 20% of the people across the bridge in 10% of the vehicles.

Next Michael moved to slide 12 which looks at how capacity can meet these traffic demand volumes.

On this chart we've carried over the same traffic volume lines that were on the previous slides. We have added both the three-lane and four-lane scenarios across the top to see how each of them can address the traffic volumes.

The data show:

- The green dashed line at the top is a three general-purpose lane and half full HOV lane.
- The red line shows three general-purpose lanes.
- The blue line shows two general-purpose lanes and a full HOV lane.
- The blue dashed line shows two general-purpose lanes and a half full HOV lane.

Michael explained that the peak hours between 5:30 – 7:30 a.m. show that:

- The traffic volumes do not justify the top green line that is a four-lane trestle.
- Even the three general-purpose lanes shown would provide enough capacity for the anticipated 2040 traffic volumes.
- A three-lane trestle, with two general-purpose lanes and one HOV lane will accommodate the traffic volumes on the trestle.

Finding #3 is that the three-lane trestle is the right size for the corridor to handle the 2040 projected traffic volumes.

Questions

- Does this assume the trestle is free flow and not constrained by I-5 congestion?
 - The team confirmed that this trestle capacity discussion does not account for I-5 congestion levels. If the congestion on the ends of the trestle were not an



issue, then three lanes would provide enough capacity to move the traffic across the trestle.

- Does the forecast include freight?
 - Yes, with freight accounting for about 10% 12% of the general traffic. The team also noted that transit is also included and assumes light rail expansion to Everett.
- Why does two general-purpose lanes and a full HOV lane have different capacity than three general-purpose lanes?
 - The team noted that industry standard assumes the HOV lane is full at 1,500 vehicles per hour and general-purpose lanes we assumed 2,000 vehicles per hour. The 1,500 vehicles per hour in the HOV lane is a general guideline used to keep the lane operating at 45 mph during the peak period. This is desired to maintain transit and HOV speed and reliability. It was further described that the general-purpose lane capacity could be assumed to be even higher than 2,000 vehicles per hour per lane, but that would result in the same finding about the required number of lanes on the trestle.

Dave returned to slide 13 to summarize the findings, noting that there were a few definitive results of the study:

- All alternatives will improve safety, water quality, and non-motorized travel.
- The trestle alternatives won't alleviate congestion due to I-5. The network and I-5 are bigger issues for travel reliability than the trestle.
- A three-lane trestle (two general-purpose and one HOV) is enough for the demand.
- An HOV lane is necessary to meet the purpose and need.
- We don't want to preclude future I-5 planning.

Discussion

Dave noted that the team knows these are not the answers the TWG wanted to hear about the US 2 trestle, but the team knew that it was a strong possibility that I-5 congestion would be a major hindrance in their effort to address the trestle.

Dave led a discussion, noting that the team will meet with the EAG on Monday, December 9 and wants to share some of the TWG's ideas about next steps.

- TWG question: Have you looked at how vehicles could travel northbound on SR 9 to bypass the trestle all together? Do you expect people to use alternative routes?
 - The team responded that during the peak period there aren't any alternative routes that would save time.
- TWG question: Lots of freight goes north and south, could you divert truck traffic north to get them from SR 9 to I-5?
 - The team replied that it would depend on the freight destinations and noted that many trucks do not want to take SR 9.



- Another TWG member noted that trucks come down SR 9 to avoid the Everett weigh station and the state is working to correct that.
- TWG comment: Right now, it looks like transit gets a benefit during the a.m. peak. We should also consider the p.m. peak as there will be a lot of traffic coming back north to get to the eastbound trestle.
- Team comment: The origin and destination data show that the majority of westbound trestle traffic ends up in downtown or South Everett. Only a small percent travels into King County.
 - o TWG question: Do these origin and destination data include light rail?
 - The team replied that these data are taken from Streetlight data and do not show future trends.
 - TWG comment: Snohomish County models show a large percentage of people commuting from Snohomish into King County. That doesn't seem to align with your data.
 - The team responded that those commuters going into King County are not using the trestle. Most trestle users have a five- to ten-mile commute.
- TWG comment: Given the long-term effort to prioritize transit on 20th Street,
 Alternative 3 should include a.m. shoulder running for transit. The Interchange
 Justification Report (IJR) assumed the north lane would be used for transit and have
 direct access to the light rail station in Everett.
 - TWG comment: Access to future light rail is still unresolved for Community Transit. Some transit to light rail traffic may divert to the Mariner Station and not to downtown Everett.
- TWG comment: When meeting with the EAG consider describing that one of the key takeaways is that there's a benefit to having HOV infrastructure go to light rail and other I-5 projects can help move traffic into Everett.
- Team comment: All the alternatives have a single lane going to I-5 which is not enough capacity to handle the demand. We need at least two lanes going to I-5 southbound.
 - TWG question: Are the I-5 constraints only because the 41st Street interchange or do they continue south?
 - The team responded that they only modeled to 41st Street.

Dave asked if there were any thoughts on how to manage the lanes?

 TWG comment: Community Transit would like to see an HOV lane instead of a peakuse shoulder since it provides more consistency outside of the peak hours. However, they recognized that the trestle is short and usually HOV lanes are used for longer distances to address weaves with the general-purpose lanes.

Dave asked if there was a preference for a right or left side HOV?

• TWG question: With the amount of weaving needed, would it be better to leave it as three general-purpose lanes?



- The team explained that two general-purpose lanes and one HOV lane provides better travel times savings.
- TWG question: It doesn't seem like two general-purpose lanes would meet the demand; wouldn't it be better to make three general-purpose lanes with a shoulder running HOV lane?
 - The team noted that based on the trestle traffic demand graph shown on slide 12, two general-purpose lanes can provide enough capacity, if at least half of the HOV lane is full. If we introduce three lanes of general-purpose traffic into the west end, it's going to bottle up.

Additional questions and comments

- TWG question: Are you suggesting we need an Interchange Justification Report (IJR) for the west end?
 - The team noted that yes that will be needed, but usually IJRs are done after an alternative is identified and in concurrence with NEPA.
- TWG comment: I-5 is definitely a challenge, but I think the team should focus on the trestle and the work that needs to be done to confirm a trestle configuration. The trestle needs to at least have a shoulder available for emergencies and if you build a shoulder you might as well include a peak-use lane like on the eastbound trestle.
 - The team noted that the reason that configuration works eastbound is that I-5 regulates input onto the trestle eastbound. Right now, I-5 congestion is masking the differences between the trestle configurations.
- TWG comment: The heat maps show an important part of your story. As a planning study your findings are correct and important to show to leadership. From your findings you know what's not working and what you need to further study to make it work. Also, your study is not able to show a benefit that meets the current Purpose and Need.
- TWG comment: It may help to work backward from I-5 and determine its receiving capacity and then determine how you can create a trestle that matches.
 - The team noted that they also need to pay attention to the Everett city streets and their capacity. The entire network needs to be considered.
- TWG question: Community Transit is doing a system redistribution analysis study.
 Could you look at those results and how the trestle could further benefit transit?
 - Community Transit clarified that they are planning for 2024 when Link gets to Lynnwood and how transit routes will need to change in response.
- TWG question: Is WSDOT proposing to model the rest of I-5 down to the county line? Snohomish County will be revisiting our east-west corridor study.
 - The team responded that there is nothing funded at this point. There was an I-5 planning study, but it wasn't funded this biennium. The Management of Mobility group submitted a build grant but did not receive funding either.
- TWG comment: The growth in Snohomish County has been different than what we originally planned for. It's not unreasonable to expect to see I-5 fully congested from





the county line. This would make light rail the most efficient way to travel long distances. We shouldn't delay the momentum on US 2 by making I-5 the focus.

 The team agrees, but also doesn't want to build a new trestle that turns into a parking lot for vehicles trying to reach I-5.

The project team thanked the TWG for attending the meeting and adjourned.



AGENDA

Executive Advisory Group (EAG) Meeting #1

December 17, 2018, 1 – 2:30 p.m. Everett Station, 4th floor, Weyerhaeuser Room 3201 Smith Ave Everett, WA 98201

Time	Topic	Lead
1:00 p.m.	 Introductions and overview Agenda review Safety moment Introductions: What are your interests in the US 2 Westbound Trestle? Purpose of the EAG Legislative direction 	Mike Cotten Cathy George
1:20 p.m.	Project background and previous studies US 2 / SR 204 / 20th St IJR US 2 Corridor Study US 2 Funding & Finance Study Project schedule and EAG work plan	David Warner
1:40 p.m.	Discussion: Purpose and Need Report out from Technical Working Group Review plans and considerations	Lawrence Spurgeon
1:50 p.m.	Stakeholder outreach	Suanne Pelley
2:00 p.m.	Discussion: Upcoming state and local actions What are our next steps working together? Do you need anything from WSDOT?	Mike Cotten All
2:20 p.m.	Next steps, action items and adjourn	Suanne Pelley



US 2 Westbound Trestle

Attendees

EAG Invited Participants	
 □ Chairwoman Marie Zackuse, Tulalip Tribes □ Senator John McCoy, 38th District □ Senator Keith Wagoner, 39th District □ Senator Steve Hobbs, 44th District □ Representative Carolyn Eslick, 39th District □ Representative Elect Jared Mead, 44th District □ Representative John Lovick, 44th District □ Representative June Robinson, 38th District □ Representative Mike Sells, 38th District (Rachel II □ Representative Robert Sutherland, 39th District □ County Executive Dave Somers, Snohomish Coun □ Councilmember Brian Sullivan, Snohomish Coun □ Councilmember Sam Low, Snohomish County □ Mayor Cassie Franklin, City of Everett □ Mayor John Spencer, City of Lake Stevens □ Bob Bolerjack, City of Everett □ Emmett Heath, Community Transit (Roland Behe □ Kenneth Klein, Snohomish County □ Les Reardanz, Port of Everett □ Mike Cotten, WSDOT □ Ryan Sass, City of Everett □ Steve Thomsen, Snohomish County 	inty ty
WSDOT and Consultants:	
 □ Amir Rasaie, WSDOT □ Anthony Buckley, WSDOT □ Cathy George, WSDOT □ Debbie Driver, WSDOT □ Ed Barry, WSDOT □ Kyengo Ndile, WSDOT 	 □ Brent Baker, WSP □ David Warner, WSP □ Lawrence Spurgeon, WSP □ Michael Horntvedt, Parametrix □ Liz Mack, Envirolssues □ Suanne Pelley, Envirolssues



US 2 Westbound Trestle Executive Advisory Group

Meeting #1 December 17, 2018 1:00 - 2:30 p.m.

Agenda

- Introductions and overview
- Project background and previous studies
- Project schedule and stakeholder outreach
- Discussion: Purpose and Need
- Discussion: Upcoming state and local actions
- Next steps and adjourn

Safety Moment

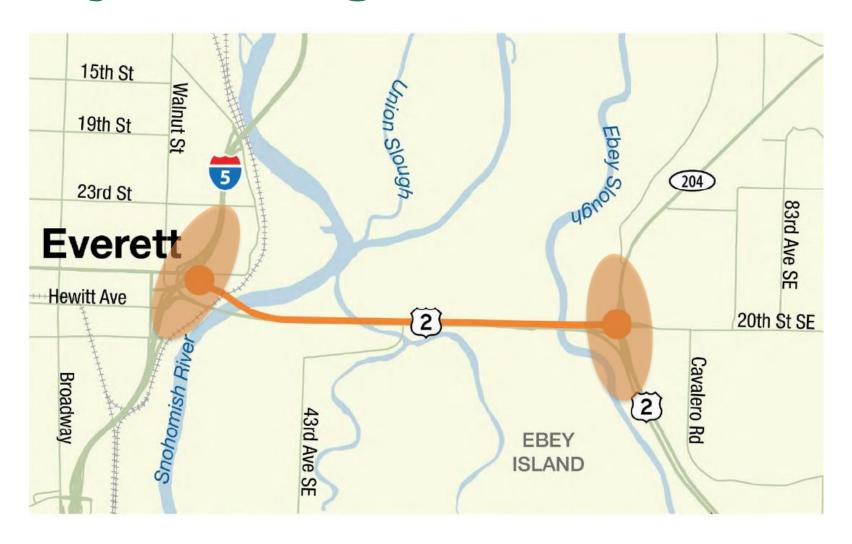
Purpose of the EAG

- Provide input on alternatives development and screening prior to public events
- Communicate interests of your constituents
- Identify key issues for the team to address
- Provide advice on moving the US 2
 Westbound Trestle effort forward
- Participate in EAG meetings anticipated to be two to four meetings over the next 12 months

Legislative Direction

- In 2018, the legislature authorized new funding "for getting to a preliminary preferred option in the environmental process."
 - Funding helps launch early environmental work
 - Funding is insufficient to complete the full NEPA process

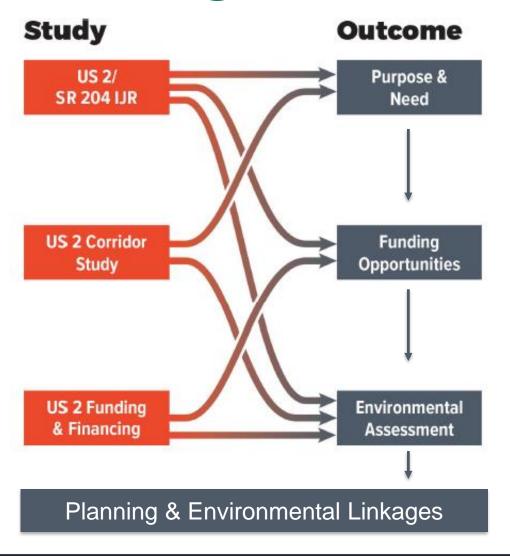
Project Background



US 2 Westbound Trestle Project Considerations



Leveraging Previous Studies: Planning & Environmental Linkages



Benefit

- Early understanding of stakeholders' positions expedites P&N process
- Early draft P&N
- Leverage F&F study to support EA funding options (federal, state, local)
- Consistent approach to cost estimating (menu of options) – helps legislative support
- Align US 2/SR 204 Preliminary Preferred Alternative with environmental effects early to define phasing
- Initiate resource agency plans early to develop and maintain momentum toward approval

US 2 Corridor Study

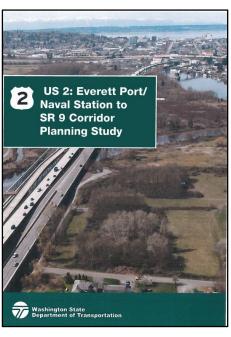
Purpose

- Analyzed the existing and future congestion levels in the corridor
- Addressed the future operational and structural adequacy needs of the US 2 westbound trestle
- Considered near-term/lower-cost treatments and longer-term unfunded improvements for the corridor
 - Including replacement of the westbound trestle with a new three-lane facility

Timing

2009	Legislature provided funding along with Everett and Snohomish County
2016	Finalized





US 2 Corridor Study Key Findings

- Heavy congestion levels
- Operational deficiencies
- Retrofits completed in 2011 to extend useful life of Westbound Trestle

Study informs:

- ☑ Purpose and Need
- ☐ Funding opportunities
- ☑ Environmental assessment

US 2 Westbound Trestle Funding and Financing Study

Purpose:

- Updated cost estimates for replacing the westbound trestle
- Examined funding and financing options



Timing:

2017	Legislature authorized study
Sept – Dec 2017	WSDOT formed two partnership groups:Technical Working Group (TWG)Executive Advisory Group (EAG)
Jan 2018	Finalized

US 2 Westbound Trestle Funding and Financing Study Key Findings

The project will likely include a combination of federal, state and local funding sources, such as:

- Federal/state grant programs with local funding
- State gas tax
- Tolling
- Public-Private Partnership

Study informs:

- ☐ Purpose and Need
- ☑ Funding opportunities
- ☑ Environmental assessment

US 2 / SR 204 / 20th Street SE Interchange Justification

Report

Purpose:

 To study potential improvements to the US 2, SR 204, and 20th Street Southeast interchange

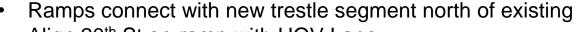


Timing:

2016	Legislature authorized study
Sept 2018	Finalized

US 2 / SR 204 / 20th Street SE IJR Key Findings

Preliminary Preferred Alternative



- Align 20th St on-ramp with HOV Lane
- Realign 20th St off-ramp to lower roadway
- Provide trestle width that could accommodate up to 4 lanes
- Non-motorized connection(s) included in all alternatives



Study informs:

- ☑ Purpose and Need
- ☑ Funding opportunities
- ☑ Environmental assessment

Ebey Slough

20th St SE

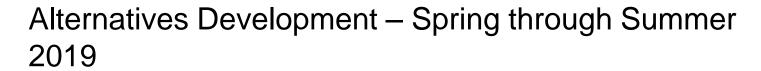
Project Schedule

Part 1 Funded 2018 – June 2020



Launch TWG and EAG - December 2018









Goal: Identify Preliminary Preferred Alternative

Draft Planning and Environmental Linkages Study – Spring 2020



Project Work Plan

Part 1 Funded 2018 – June 2020



Launch TWG and EAG - December 2018



TWG, RAC, Tribal Coordination – February 2019



TWG, RAC, EAG, Tribal Coordination - May 2019



Open Houses – June 2019



TWG, RAC, EAG, Tribal Coordination – September 2019

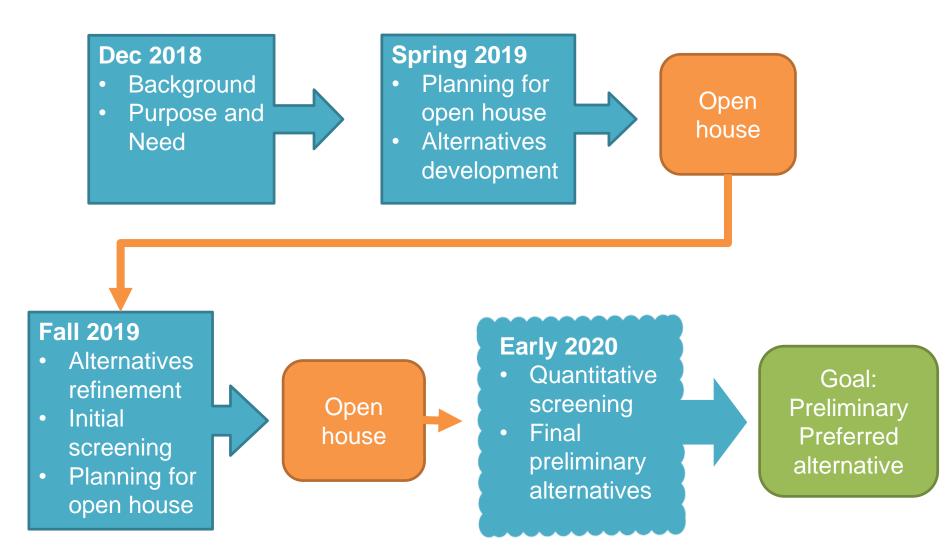


Open Houses – October 2019



Goal: Preliminary Preferred Alternative

EAG Work Plan



TWG Meeting Recap of Purpose and Need

Need for the Project Considers

- Existing corridor
- Operational conditions / demand
- Safety
- Supporting planning goals
- Other factors

Core Purpose of the Project

To move people and freight safely and reliably across the US 2 Westbound Trestle

What else should be considered?

Additional feedback can be sent to: US2TrestleInfo@wsdot.wa.gov



Key Stakeholder Groups

Corridor users

Regional businesses and business organizations

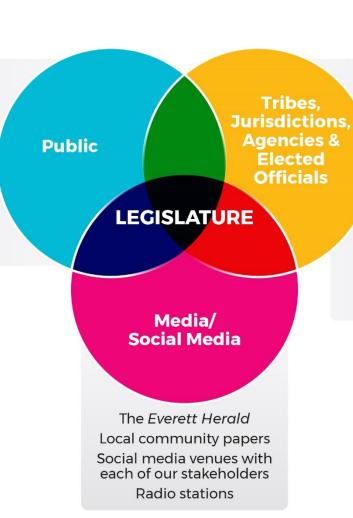
Adjacent businesses, property owners and residents

Community organizations and interest groups

Low income earners, seniors, those speaking diverse languages

Transit riders

Bicycle/multimodal groups



Tulalip Tribes, Sauk-Suiattle Tribe,
Stillaguamish Tribe, other area tribes
Snohomish County, Cities of
Everett, Lake Stevens, Monroe,
Marysville, and Snohomish
Federal, state and local
regulatory agencies
Legislators from the 38th,
39th and 44th Districts

Transportation Committee leadership
Universities, colleges and schools
Transit agencies
Naval Station Everett
Port of Everett

Communication Tools

Stakeholder interviews
Statistically valid survey
Open houses/
on-line open houses
Briefings
Drop-in sessions/
informational tables
Comment tracking, responses and analysis (EnviroLytical)



Technical working group
Resource agency committee
Executive advisory group
Briefings
Project tours

Media/ Social Media

Media releases
Reporter/editorial board
briefings
Website/email/social media
Printed material

Discussion

Next EAG meeting is in May 2019. What do you need between now and then?

Next Steps

- January-February 2019: Stakeholder interviews to help determine Purpose and Need
- February 2019: Resource Agency Committee and Tribal coordination
- February 2019: Next TWG Meeting
- Spring 2019: Tentative next EAG Meeting
- Spring 2019: Open House

Action items



US 2 Westbound Trestle Contacts

Mike Cotten, PE, DBIA
Northwest Region Administrator
Mike.Cotten@wsdot.wa.gov

Cathy George, PE
Engineering Manager, Connecting Washington
Cathy.George@wsdot.wa.gov

<u>US2TrestleInfo@wsdot.wa.gov</u>



Executive Advisory Group (EAG) meeting #1 summary

Dec. 17, 2019

Attendees

EAG members/alternates

Name	Organization
Rachel Dean	38th District, alternate for Mike Sells
Representative Carolyn Eslick	39th District
Senator Keith Wagoner	39th District
Representative Robert Sutherland	39th District
Representative-elect Jared Mead	44th District
Senator Steve Hobbs	44th District
Bob Bolerjack	City of Everett
Ryan Sass	City of Everett
Roland Behee	Community Transit, alternate for Emmett Heath
Les Reardanz	Port of Everett
Doug McCormick	Snohomish County
Steve Thomsen	Snohomish County
Darcee Chessman	Snohomish County, alternate for Sam Low
Mike Cotten	WSDOT

Other attendees

- Jennifer Smolen Legislative Aide for Steve Hobbs
- Dave Lucas Snohomish County
- Lisa Lefeber Port of Everett

WSDOT / Project team

- Amir Rasaie, WSDOT
- Cathy George, WSDOT
- Debbie Driver, WSDOT
- Ed Barry, WSDOT
- Kyengo Ndile, WSDOT
- Brent Baker, WSP
- Dave Warner, WSP
- Lawrence Spurgeon, WSP
- Michael Horntvedt, Parametrix
- Liz Mack, Envirolssues
- Suanne Pelley, Envirolssues
- Charla Skaggs Consultant for Ed Barry and toll division

Introductions and overview

WSDOT Regional Administrator Mike Cotten welcomed the group and noted the three key items to accomplish during the meeting:

- Discuss the purpose of the Executive Advisory Group.
- Review legislative direction and project background.
- Confirm our project schedule, environmental work, and community engagement as we work toward a Preliminary Preferred Alternative.

Next, Mike Cotten invited Sen. Steve Hobbs to provide some opening remarks. Sen. Hobbs explained the importance of this project and noted the importance of elected officials being unified so this project can receive funding and move forward.

Cathy George, WSDOT engineering manager for Connecting Washington projects, provided a safety briefing for the building and led a round of introductions. Next, she described the purpose of the EAG which is to:

- Provide input on alternatives development and screening prior to public events.
- Communicate interests of your constituents.
- Identify key issues for the team to address.
- Provide advice on moving the US 2 Westbound Trestle project effort forward.
- Participate in EAG meetings anticipated to be two to four meetings over the next 12 months.

Next, Cathy George explained the legislative direction for this project noting:

- In 2018, the Legislature provided funding to start the early environmental work.
- The current funding will not allow WSDOT to compete the full NEPA process, however, it does allow WSDOT to launch the early environmental work that will lead into the full environmental analysis.
- The US 2 corridor has received other legislative action in recent sessions to conduct several different studies.

Project background and previous studies

Cathy George introduced Dave Warner, consultant project manager, who reviewed the project background, noting:

- The US 2 trestle is part of a key corridor connecting Everett with SR 9 and eastern Snohomish County.
- With approximately 78,000 average daily trips across the trestle, this structure is essential to freight and commuters.
- The westbound trestle was completed in 1968. The original eastbound timber bridge was replaced with a concrete structure in the early 1990s.
- Snohomish County's population has grown by over 130 percent since 1980.
 - The US 2 corridor near the trestle faces operational deficiencies and capacity needs, leading the State Legislature to commit funds to begin early environmental analysis.
- Project scope/limits.

• Critical corridor components.

Dave Warner presented a map showing project considerations and explained:

- WSDOT has identified three key areas on this map, each with various considerations:
 - The dense urban area in Everett, which includes current and future transit facilities.
 - The environmentally-sensitive area underneath the US 2 trestle, which includes farmlands, flood plains, and wetlands.
 - The community of Lake Stevens just east of the trestle.
- The yellow bar represents the potential area of influence from construction on the north side of the bridge, though it is much larger than the actual right of way.

Next, Dave Warner explained how this project will use a Planning and Environmental Linkages (PEL) Study to leverage previous corridor studies, noting:

- The alternatives development process builds on previous studies, including the US 2/SR 204/20th Street SE Interchange Justification Report (IJR), US 2 Corridor Study, and US 2 Funding and Financing Study.
- The IJR feeds into all future environmental work, the other two studies also contribute.
- The PEL Study will tie together these previous studies and allow WSDOT to lead into NEPA with a preliminary preferred alternative.

US 2 Corridor Study

Dave Warner noted that the US 2 Corridor Study was funded in 2009 and finalized in 2016. The purpose was to:

- Analyze the existing and future congestion levels in the corridor.
- Address the future operational and structural adequacy needs of the US 2 westbound trestle
- Consider near-term/lower-cost treatments and longer-term unfunded improvements for the corridor. This includes replacement of the westbound trestle with a new three-lane facility.

Dave Warner reviewed key findings from the US 2 Corridor Study which included:

- Heavy congestion both existing and forecasted on the westbound US 2 trestle, especially in the morning peak period.
- Congestion is especially heavy at the eastern end of the facility where US 2, SR 204, and 20th Street Southeast merge.
- Operational deficiencies at the SR 204/20th Street Southeast and US 2 interchange.
- The rehabilitation projects completed in 2011 and continued maintenance extend the useful life of the westbound trestle to approximately 2045.
- The trestle will eventually need to be replaced and will require significant lead time given the complexity of environmental, funding and constructability issues involved.

US 2 Westbound Trestle Funding and Financing Study

Dave Warner noted that the US 2 Westbound Trestle Funding and Financing Study was authorized in 2017, finalized in 2018, and included input from a TWG and Executive Advisory Group (EAG). The purpose was to:

- Update cost estimates for replacing the westbound trestle.
- Examine funding and financing options.

Dave Warner described the key findings:

- The project will likely require a combination of federal, state and local funding sources:
 - Federal/state grant programs with local funding.
 - State gas tax.
 - o Tolling.
 - Public-private partnership.

Questions/comments:

• Sen. Hobbs noted that the Legislature asked WSDOT to conduct this study and to look at all the funding and financing tools available. WSDOT is not proposing a specific funding or financing tool with this study.

US 2 / SR 204 / 20th Street SE Interchange Justification Report

Dave Warner introduced the US 2 / SR 204 / 20th Street SE Interchange Justification Report. Its purpose was to study potential improvements to the US 2, SR 204, and 20th Street Southeast interchange. The Legislature authorized the study in 2016 and it was finalized in 2018.

Dave Warner reviewed the key findings which include:

- Traffic congestion in the year 2040 was shown to be in excess of a mile long for people trying to access the westbound trestle.
- Travel times more than double for most people.
- Safety was also shown to be an issue today and in the future.
- The problem is both the westbound trestle and the interchange.
- The forecasted traffic volumes in the area show more demand than a two-lane trestle could accommodate.
- The Preliminary Preferred Alternative would move traffic through the interchange and across the wider trestle, but the roadway geometries and capacity on the west end could not accommodate the full increase in traffic.
- There were issues with high traffic volumes destined for the expanding downtown of Everett and to southbound I-5.
- Further study and design of a future west end is needed as part of the US 2 Westbound
 Trestle NEPA project.
- When considering a different sequence of construction, the earliest benefit would be realized by constructing the SR 204 and 20th Street Southeast ramps first.
- If there wasn't a new trestle in place, WSDOT would need to build the east end of the trestle out beyond the Ebey Slough so that it could minimize re-work when the rest of the interchange is constructed.

Dave Warner reviewed the Preliminary Preferred Alternative which includes:

- A new US 2 trestle is assumed to be built north of the existing US 2 corridor.
- Aligning the 20th Street on-ramp with the HOV lane.
- Realigning the 20th Street off-ramp to lower roadway.
- Providing a trestle width that could accommodate up to four lanes.
- Non-motorized connection(s) are included in all alternatives.

Questions/comments:

- Rep. Sutherland asked during what period of time tolling was considered. The team
 explained that tolling would last for 25 years if done by the state and 35 years if done
 through a public-private partnership. WSDOT also considered tolling the existing
 structure during construction.
- Les Reardanz asked how much funding tolling could generate. The team answered that tolling could generate \$330 to \$660 million. The higher amount comes from tolling in both directions.
- Sen. Wagoner asked if the eastbound lanes of the trestle are considered adequate. The team noted the significant congestion is in the westbound lanes. The eastbound trestle is much wider and does not have any structural issues since it is much newer.

The project team agreed to send out links to these reports to the EAG members.

Project schedule and EAG work plan

Dave Warner reviewed the project schedule, noting:

- These are key activities currently funded.
- The team knows the traffic and design analysis to reach a Preliminary Preferred Alternative will be extensive.
- The goal is to reach a Preliminary Preferred Alternative at the end of this process, but the team may need additional funding to complete the analysis.
- Project milestones include:
 - Launch TWG and EAG December 2018.
 - Purpose and Need Spring 2019.
 - Alternatives Development Spring through summer 2019.
 - Alternatives Refinement Fall 2019.
 - Short List Alternatives Early 2020.
 - Draft Planning and Environmental Linkages Study Spring 2020.
- During this process the team will engage with the public and the TWG, RAC, EAG and Tribes at key milestones.

Dave Warner reviewed the project work plan which includes:

- Launching the TWG and EAG December 2018
- TWG, RAC, Tribal coordination February 2019
- TWG, RAC, EAG, Tribal coordination May 2019
- Open Houses June 2019
- TWG, RAC, EAG, Tribal coordination September 2019
- Open Houses October 2019

Questions/comments:

 Sen. Hobbs added that the project team is willing to go to service clubs and other organizations to provide briefings on this project.

Dave Warner reviewed the EAG work plan noting:

- The team has developed a plan for four TWG meetings that should allow the group to accomplish the necessary work.
- The team will also time the public engagement so that people can weigh in at key milestones.
- Future EAG meetings topics include:
 - Spring 2019 plan for open house and alternatives development.
 - Fall 2019 alternatives refinement, initial screening and planning for an open house
 - Early 2020 (tentative) quantitative screening and final preliminary alternatives.

Discussion: Purpose and Need

Dave Warner introduced Lawrence Spurgeon, environmental lead for the consultant team, who described considerations for the project need including:

- Existing corridor
- Operational conditions / demand
- Safety
- Supporting planning goals
- Other factors

Lawrence Spurgeon noted that the core purpose of the project is to move people and freight safely and reliably across the US 2 westbound trestle. He also explained that the team is working with the TWG to gather input on additional factors to consider.

Stakeholder outreach

Lawrence Spurgeon introduced Suanne Pelley, communication lead for the consultant team, who reviewed the many audiences that have been identified as potential stakeholders, including public, agency/jurisdictional/Tribal, and media/social media audiences. Reaching out to numerous stakeholders will ensure that a broad set of constituents are represented in the US 2 trestle discussions.

Suanne Pelley also showed tools that the team will use to reach the audiences, noting:

- Stakeholder interviews will be conducted and will utilize the feedback from interviews that were done for the US 2 / SR 204 / 20th Street SE IJR.
- The new interviews will engage community organizations and under-represented populations in the work.
- All of the work is aimed at informing people of the environmental process and providing information to the Legislature.

Discussion: upcoming state and local actions

Mike Cotten opened the floor for discussion and questions.

Questions/comments:

- Rep. Eslick cautioned about building for the current need as opposed to the need anticipated 30 to 40 years from now.
- Representative-elect Mead asked if adding one or two lanes would be enough for the
 population in another 30 years. The team explained that new project includes traffic
 modeling to determine the current need and estimate the future need. WSDOT cannot
 build its way out of congestion and needs to look at other modes to get people where
 they need to go. The team thinks a four-lane foot print will provide enough options to
 address the westbound congestion.
- Rep. Sutherland asked WSDOT to explain managed lanes. The team responded that these lanes manage the capacity in order to move the greatest number of people.
- Rep. Sutherland asked if it would be possible to have the lanes reverse according to the time of day. The team explained that it is possible but will probably be more expensive since on/off ramps and interchanges would need to be converted and that work is typically very costly.
- Sen. Wagoner asked how the team will guard against a well-organized interest group dominating the public involvement process. The team explained that they will work to engage a wide range of stakeholders by providing briefings and drop-in sessions that make it easy for people to comment. The team will also host online open houses so people can provide input from the convenience of their homes. The summary of comments will be representative of all the groups involved.
- Representative-elect Mead asked if WSDOT has data on who uses the trestle currently.
 The team answered that they have this information, but they must also consider future
 use. For example, adding bike infrastructure would lead to higher amounts of bike use
 than what is currently seen in the area. Light rail expansion to Everett may also change
 the way people use the corridor.
- Les Reardon expressed appreciation for WSDOT including freight in the core purpose of the project.
- Steve Thomsen noted that he is excited to see the project move forward. He explained
 that Snohomish County is redoing its comprehensive plan and will be planning for a
 multimodal westbound facility.
- Sen. Hobbs expressed desire for the Legislature to be unified and fight for this and other Snohomish County projects.
- Lisa Lefeber noted that there is a lot of growth in eastern portion of the county that will
 use the corridor. The Port of Everett has done a study looking at how freight travels to
 the port and the most efficient way to keep trucks off the corridor during peak commute
 hours.
- Rep. Eslick noted that there was a project to add a safety wall between the lanes of traffic on US 2. She's heard that it may not happen in 2019 as originally planned. The team responded that Mike Cotten and Debbie Driver will meet with the 39th District soon to discuss.

Next steps, action items and adjourn

Action items:

- The project team will send out links to the three previous US 2 corridor / trestle studies that were summarized.
- WSDOT will set up a meeting with the 39th District.

The project team thanked the EAG for attending the first meeting and adjourned.



AGENDA

Executive Advisory Group (EAG) Meeting #2

December 9, 2019, 1:30 – 3:00 p.m. Snohomish County Admin East Building 3000 Rockefeller Ave, Everett, WA 98102

Time	Topic	Lead
1:30 p.m.	Welcome • Agenda overview	Mike Cotten
1:40 p.m.	Overview	Cathy George
1:50 p.m.	Project study progress	David Warner
2:00 p.m.	Key findings	David Warner
2:10 p.m.	Context	David Warner
2:30 p.m.	Discussion	Mike Cotten
2:50 p.m.	Next Steps and Adjourn	Mike Cotten



US 2 Westbound Trestle

Attendees

EAG Members	
 □ Chairwoman Teri Gobin, Tulalip Tribes □ Senator Steve Hobbs, 44th District □ Representative John Lovick, 44th District □ Representative Jared Mead, 44th District □ Senator John McCoy, 38th District □ Representative June Robinson, 38th District □ Representative Mike Sells, 38th District □ Senator Keith Wagoner, 39th District □ Representative Robert Sutherland, 39th District □ Representative Carolyn Eslick, 39th District □ Mayor Cassie Franklin, City of Everett □ Bob Bolerjack, City of Everett □ Bob Bolerjack, City of Everett □ Les Reardanz, Port of Everett □ Emmett Heath, CEO, Community Transit □ County Executive Dave Somers, Snohomish County □ Councilmember Sam Low, Snohomish County □ Kenneth Klein, Executive Director, Snohomish □ Steve Thomsen, Public Works Director, Snoho 	county unty County
WSDOT and Consultants:	
 □ Mike Cotten, WSDOT □ Anthony Buckley, WSDOT □ Ed Barry, WSDOT □ Cathy George, WSDOT □ Kyengo Ndile, WSDOT □ Kris Olsen, WSDOT □ Brent Baker, WSP 	 □ Lawrence Spurgeon, WSP □ Laura Shabe, WSP □ David Warner, WSP □ Michael Horntvedt, Parametrix □ Liz Mack, Envirolssues □ Suanne Pelley, Envirolssues



US 2 Westbound Trestle Executive Advisory Group

Meeting #2 December 9, 2019 1:30 – 3:00 p.m.

Agenda

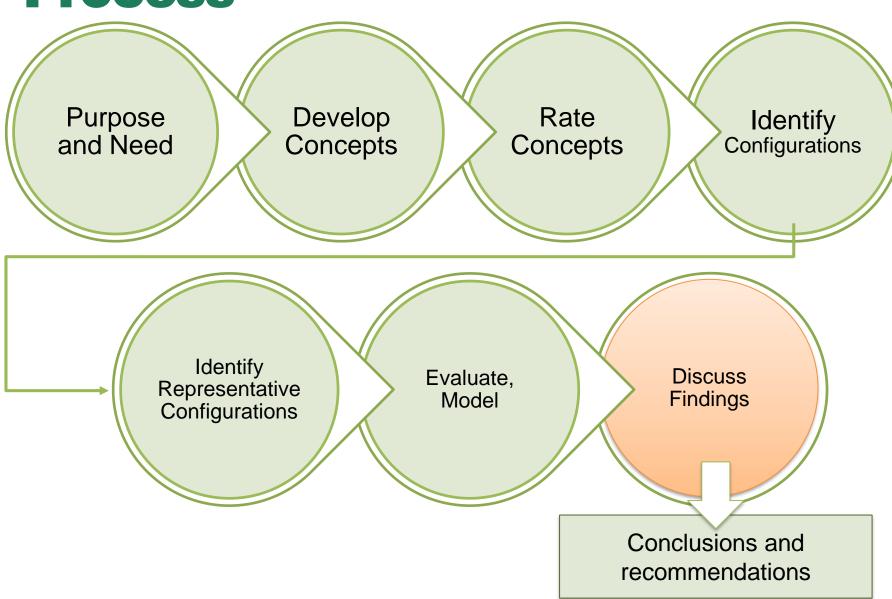
- Project study progress
- Key findings
- Context
- Discussion
- Next steps and adjourn

Safety Moment

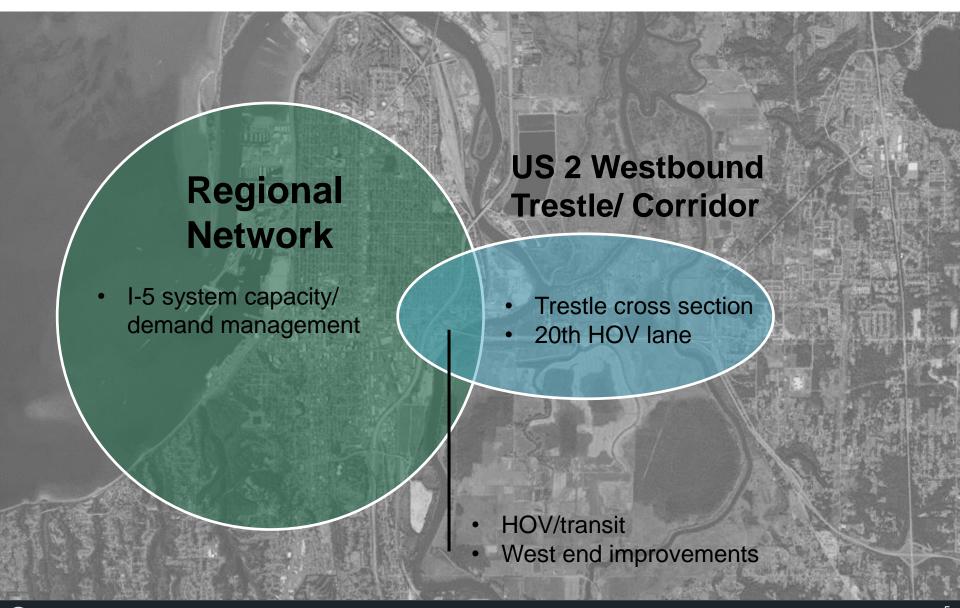
Legislative Direction

- In 2018, the Legislature authorized new funding "for getting to a preliminary preferred option in the environmental process."
 - Funding helps launch early environmental work
 - Funding is insufficient to complete the full NEPA process

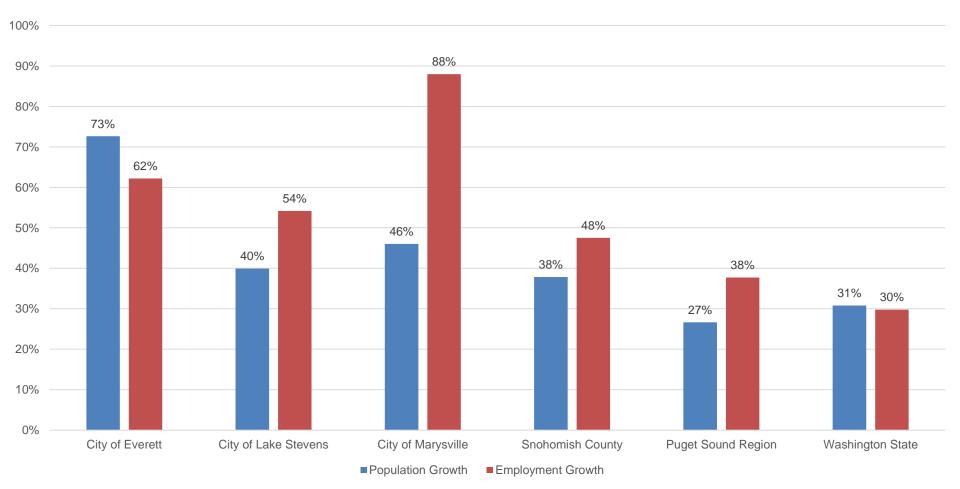
Process



Considering connectivity



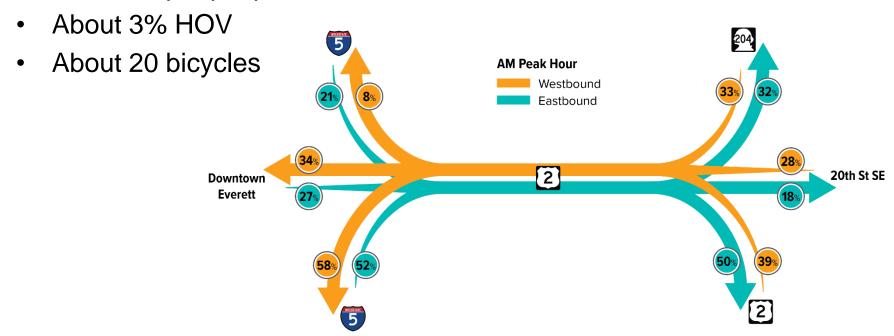
Regional planned growth 2015 – 2040



Sources: PSRC 2017; WOFM 2018b.

Transportation system

- 81,000 daily trips
- 3,200 vph during the peak
- 8-10% freight traffic
- Three bus routes and 14 bus trips during peak period
- About 30 people per bus



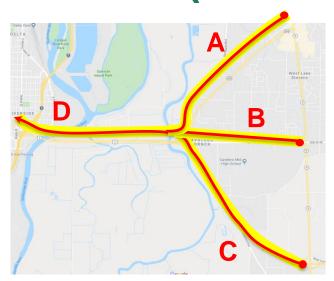
Representative configurations

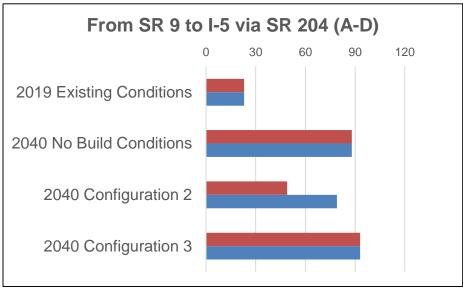
West end **Trestle East end** Configuration 1 W9 E2 T4 Configuration 2 W11 **E6 T7** Configuration 3 W2A T5

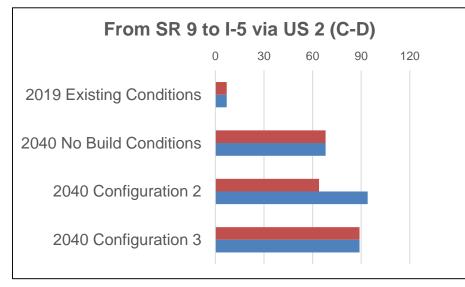
Finding #2: Transit and HOV Travel

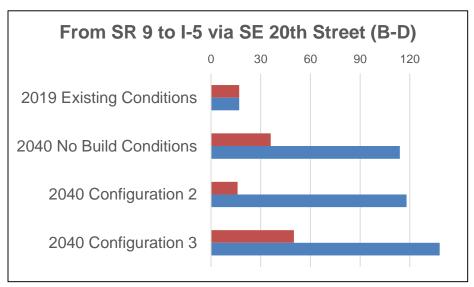
Time Data (minutes)











Year 2040 AM Peak Hour travel times. Configuration 2 and 3 use No Build



Findings summary

Finding #1: Network congestion

 Future congestion on I-5 limits the effectiveness of US 2 westbound trestle improvements.

Finding #2: Managed lanes

 Transit and HOV lanes with improved system connections could provide people an option to bypass system congestion.

Finding #3: Three lane trestle

Three lane trestle would provide sufficient capacity.

TWG Meeting Recap from 12/5/19

- Interest in continuing momentum of this latest work
- Concurrence for a 3-lane option with managed lane
- I-5 must be considered in the planning, but don't want to lose sight of trestle progress
- Need to integrate transit planning
- Local network planning in Everett should progress at same pace

Questions/Comments

- Does the Executive Advisory Group have any questions regarding the information presented today?
- What else would the Executive Group like to share about these findings?

Next Steps

- Preliminary Draft Planning and Environmental Linkages Report
 - Draft to WSDOT in early 2020
 - Updated draft to FHWA after WSDOT review
- Additional steps to be determined based on legislative funding



US 2 Westbound Trestle Contacts

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Executive Advisory Group (EAG) meeting #2 summary

Dec. 9, 2019

Attendees

EAG members/alternates

Name	Organization
Representative Mike Sells	38th District
Representative Carolyn Eslick	39th District
Representative Robert Sutherland	39th District
Representative Jared Mead	44th District
Senator Steve Hobbs	44th District
Bob Bolerjack	City of Everett
Roland Behee	Community Transit, alternate for Emmett Heath
Sharleen Bakeman	Federal Highway Administration
Lisa Lefeber	Port of Everett
Darcee Chessman	Snohomish County, alternate for Sam Low
Doug McCormick	Snohomish County, alternate for Steve Thomsen

Other attendees

- Erica Bramlet* Washington State Transportation Committee staff
- Gary Gill Legislative aide for Jared Mead
- Jed Gonzales Snohomish County Council Office
- Megan McPhaden* Washington State Transportation Committee staff
- Jennifer Smolen Legislative aide for Steve Hobbs
- Uriel Ybarra Community Transit

WSDOT / Project team

- Ed Barry, WSDOT
- Anthony Buckley, WSDOT
- Mike Cotten, WSDOT
- Cathy George, WSDOT
- Kyengo Ndile, WSDOT
- Kris Olsen, WSDOT
- Amir Rasaie, WSDOT
- Laura Shabe, WSP
- Dave Warner, WSP
- Michael Horntvedt, Parametrix
- Liz Mack, Envirolssues
- Suanne Pelley, Envirolssues

*Attended via phone

Introductions and overview

WSDOT Regional Administrator Mike Cotten welcomed the group and noted that during this meeting the team would give an update on the US 2 westbound trestle study, discuss key findings, consider the context that was used in the study, and discuss next steps. Mike then introduced Cathy George, WSDOT engineering manager for Connecting Washington projects.

Cathy asked Doug McCormick from Snohomish County to provide a safety briefing for the building, then she led a round of introductions. Next, she reviewed the legislative direction for this project, noting:

- When this study effort began, the funding helped launch the environmental work, but was insufficient to complete a full environmental evaluation.
- As you'll see today, this study has advanced our understanding of the US 2 trestle, but more work is needed.

Cathy introduced Dave Warner, the lead of the consultant team that has been conducting analysis and working with the Technical Working Group (TWG) which includes staff from agencies and jurisdictions.

Project study progress

Dave Warner gave a quick overview of the work that the TWG has completed over the past year. On Dec. 5, 2019 the team held the fourth and final meeting with the TWG under the current study. The TWG had a great discussion about the next steps for the US 2 trestle. In this meeting, the EAG will review and discuss the findings and consider next steps for the trestle.

Key findings and context

The analysis completed to date led the team to an overall conclusion: That as much as we wanted to separate the US 2 westbound trestle from the regional network, it is impossible to do so. In order to improve operations on westbound US 2, we will have to also look at I-5 and the connections to local streets in Everett.

Dave walked through a few definitive results of this study:

- All configurations will improve safety, water quality, and non-motorized travel.
- The trestle configurations won't alleviate congestion due to I-5: The network and I-5 are bigger issues for travel reliability than the trestle.
- A three-lane trestle is sufficient for demand.
- An HOV lane may be necessary to meet the Purpose and Need.
- Any solutions must be developed with future I-5 planning in mind.

Questions

- Lisa Lefeber asked if the team knew the configuration of the three-lane trestle.
 - The project team replied that they may need some additional analysis to decide, but they have received some feedback about this from the TWG.

Dave noted, that as we move forward, we will have to continue to explore some key topics:

- System capacity
- Managing demand
- Managing capacity
- System connectivity

Dave explained that earlier in 2019, the team combined their review of various planning documents to frame the draft Purpose and Need. In March, we presented the context for the purpose of this project and framed the need in conjunction with the purpose.

Dave presented the regional planned growth context (slide 6) for the trestle study, noting:

- The graph is a daunting look at the planned population and employment growth locally, regionally, and statewide.
- The blue bars show population growth, and the red bars show employment growth.
- According to the Puget Sound Regional Council and Washington Office of Financial Management, Snohomish County and its cities are projected to grow at a much greater rate than Puget Sound and Washington State.
- This is why the US 2 trestle is a critical project for Snohomish County.

Next, Dave reviewed the transportation system (slide 7) around the US trestle, noting:

- There are 81,000 trips which is a pretty strong demand. It is higher than the SR 520
 Portage Bay bridge located between I-5 and Montlake near the University of
 Washington.
- About 3,200 vehicles per hour get to the mid-span of the trestle during the peak hour, but there are many more vehicles stuck in congestion that we need to consider.
- This is a T1 primary freight corridor for the state, and the heavy trucks make up 3-5% of the traffic stream during the peak. Nearly 10% of the traffic is single-unit trucks (e.g., UPS, local delivery).
- There are three bus routes operating on the corridor that make about 14 trips during the peak period serving over 300 people. The average occupancy of a bus is about 30 people.
- HOV use is at about 3% along the corridor and cyclist numbers are quite low. These last three modes have limited incentive for use and there is limited non-motorized access.

Dave reviewed the representative configurations (slide 8), noting:

- In June the team brought forward to the TWG a number of options for the east end, the trestle, and the west end.
- The TWG then developed these into three representative configurations.
- The team used PSRC 2040 growth and demand projections to do the analysis on each
 of the configurations. The demand projections also include Sound Transit light rail
 reaching Everett in 2036.
- Configuration 1 and 2 both included a transit/HOV lane. Configuration 3 only included a short transit/HOV bypass at the I-5 interchange.

Questions/comments

- Rep. Sutherland asked if E6 on the east end of Configuration 2 is expected to relieve the congestion coming down SR 204 getting to the trestle.
 - The project team replied that they will show data on the travel times a bit later in the presentation, but overall this would help bring people down SR 204 if there were no downstream effects.
- Lisa Lefeber noted that the transportation system graphic makes it appear that an additional east-west corridor may be needed further south.
- Bob Bolerjack noted that light rail to Everett should have a positive effect.

Dave explained that Configuration 1 was not further analyzed with traffic modeling because of constraints with the existing I-5 bridges. The team couldn't widen Everett Avenue around these existing structures.

Next, Dave presented the travel time data (slide 9) for the three key travel origins across the trestle: SR 204, 20th Street Southeast, and SR 9. For each of these three different origins, the team answered the following questions:

- What are the travel times with existing conditions for transit/HOV users and generalpurpose users?
- What are the travel times with the 2040 no-build condition?
- How do the HOV and general-purpose lanes perform from each location with Configuration 2 and 3?

Dave walked through the data for each of the origins and noted:

- Traffic from SR 204 and US 2 must wait to reach the HOV lane to receive HOV lane benefits.
- Travel times for the HOV lane are improved compared to the general-purpose travel times
- The 20th Street Southeast BAT lane connection to US 2 still provides a benefit for bypassing congestion.
- I-5 congestion still affects the functionality of the westbound trestle and receiving capacity.

Questions/comments

- Sen. Hobbs asked if the HOV lane made up a consistent percentage of users across all scenarios.
 - The team confirmed that is correct and that the model does not consider if the increase in travel time would lead to mode shift.
- Rep. Sutherland asked if the team looked at eliminating access onto the westbound trestle from SR 9 via US 2. He noted that having a different east-west route for these users may free up traffic on the trestle.
 - The team responded that they did not study a new corridor further south but noted that a new crossing would be far more expensive than replacing the trestle. They noted that the trestle would still need to be replaced at some point. They also explained that most people headed north on SR 9 and then west on the trestle are not continuing south on I-5.

- Sen. Hobbs noted that a new east-west route would not address the problem of congestion on I-5.
- Doug McCormick pointed out that a parallel east-west route would still introduce traffic onto I-5.
- Rep. Sutherland noted that from the data, it doesn't look like a new trestle would help the problem.
 - The team noted that the congestion on I-5 is masking the comparison of the various trestle configurations.
- Sen. Hobbs asked if the expansion of SR 9 would help alleviate some of the congestion.
 - The team confirmed that is likely.

Dave reviewed the three key findings from the analysis (slide 10):

- 1. **Network congestion**. To improve movement of general-purpose traffic we need to address network congestion.
- 2. **Managed lanes.** Transit and HOV lanes with improved system connections could provide people an option to bypass system congestion.
- 3. Three-lane trestle. Three-lane trestle would provide sufficient capacity.

Lastly, Dave presented the key discussion elements from the TWG meeting on Dec. 5, 2019:

- The TWG is committed to the forward progress of the US 2 westbound trestle.
- There was overall agreement that a three-lane option would handle the traffic demand on the trestle. There needs to be more study on a transit/HOV lane vs. peak shoulder use
- The TWG was pleased that the east end Interchange Justification Report (IJR) that was completed in 2018 supports the future trestle.
- TWG members understood that I-5 must be evaluated and considered as part of the trestle planning, but they don't want to delay the trestle work to fix I-5.
- Transit planning for light rail coming to Everett in 2036 is also a key part of trestle planning. Right now, Community Transit is focused on rerouting for light rail to Lynnwood in 2024.
- Local streets in Everett need to work as part of the future trestle solution.

Discussion

Mike Cotten opened the floor for discussion and questions.

Questions/comments:

- Doug McCormick asked if a three-lane trestle would provide enough capacity if I-5 congestion wasn't a factor.
 - The team confirmed this is accurate, assuming the congestion at either end of the trestle was corrected.
- Bob Bolerjack asked if the data included Sound Transit 3's (ST3) original ridership projections, noting that current light rail ridership is exceeding the original projections.
 - o The team responded that they used the latest ST3 projections in the model.
- Lisa Lefeber asked how many of the people going southbound off of the trestle are headed to Boeing.

- The team replied that they don't have that specific data, but they know the majority is going into southwest Everett and only about 5% of people continue into King County.
- Bob Bolerjack asked if there were ideas for how to fix I-5.
 - The team responded that this will be an important next step. Right now, they
 know traffic goes south to at least 41st Street and there's significant weave in
 that section of I-5. Travel demand management will likely be a key part of the
 solution.
- Lisa Lefeber noted that backups in the SR 522/I-405 area often lead people to use arterials as bypass options. She noted that this may be a risk if the team uses direct ramps on the trestle.
- Roland Behee noted that the Purpose and Need has been focused on multimodal improvements and that transit is looking to take advantage of an improved east-west route.
- Lisa Lefeber noted that the City of Everett and the Port of Everett are working on a
 freight route that will discourage trucks from going through downtown Everett. They are
 considering a freight corridor via 41st Street then going across the trestle eastbound.
 Westbound traffic would travel via Marine View Drive.
- Sen. Hobbs noted that it's discouraging to see the problem with I-5. He stated that he's been consumed with I-976 lately and its effects on projects in the region. He encouraged the team to continue to move forward with this work, so they'll be ready for a future a transportation package. He doesn't anticipate a package next session (in 2020) and noted that the Legislature probably won't fund a new trestle without a toll. He also stressed that Snohomish County legislators need to stick together to make sure projects in the county get funding.
- Lisa Lefeber asked if there was an opportunity for a public-private partnership for this
 project.
 - Sen. Hobbs noted this may be more of a possibility now due to changes in the Legislature.
 - Anthony Buckley noted that the Legislature needs to clean up the language in the statute to make it work for the private sector.
- Sharleen Bakeman pointed out the using the Planning and Environmental Linkages
 (PEL) has helped make early findings before the team fully commits to a NEPA analysis
 and will help streamline this process. The team has discovered valuable information that
 will help to determine next steps.
- Rep. Sutherland noted that he hasn't heard any more discussion about a double-decker trestle and suggested that the trestle have a double-decker roadway that continue onto I-5 and a portion of I-5 could also be built as a double deck.
 - Sen. Hobbs noted that this idea would cost a tremendous amount of money.
- Rep. Eslick noted that it's going to be important to make sure there is enough capacity
 for the future. She also stated that the trestle has to have an HOV lane whether it's tolled
 or not.
- Rep. Sells noted that the problem with building more capacity is that if you build it, it will increase the demand. He explained that you can't build in a way that it won't fill up.
- Sen. Hobbs responded that the group must think about transit improvements.

• Lisa Lefeber added that more consumer goods are being shipped via barges on a north-south route and this effort will take trucks off the corridor.

Next steps, action items and adjourn

Mike Cotten noted that the consultant team plans to submit the preliminary draft PEL report early in 2020. WSDOT will review this and then submit to FHWA for its review. After that, the consultant team's work will be done and WSDOT will be in a holding pattern until the Legislature determines next steps for the US 2 trestle.

The project team thanked the EAG for participating in this effort for the US 2 trestle and attending the meeting, which was then adjourned.



AGENDA

Resource Agency Committee (RAC) Meeting #1

Thursday, March 7, 2019, 1 – 3 p.m. WSP Conference Room, Floor 32 999 3rd Ave, Seattle, WA 98104

Time	Topic	Lead
1:00 – 1:10 p.m.	 Welcome and introductions Safety briefing Operating guidelines 	Emily Geralds
1:10 – 1:30 p.m.	Project background US 2 / SR 204 / 20th St IJR US 2 Corridor Study US 2 Funding & Finance Study	Emily Geralds Dave Warner
1:30 – 1:35 p.m.	Project schedule and stakeholder outreach	David Warner Liz Mack
1:35 – 2:05 p.m.	Resources and constraints	Lawrence Spurgeon Katheryn Seckel
2:05 – 2:25 p.m.	Discussion: Purpose and Need	Emily Geralds Lawrence Spurgeon
2:25 - 2:55 p.m.	 Alternatives Development Alternative identification Group thoughts, ideas, and discussion 	Lawrence Spurgeon Ben Rodenbough
2:55 – 3:00 p.m.	Next Steps and Adjourn	Liz Mack

Attendees listed on reverse side



US 2 Westbound Trestle

Attendees

RAC Members (invited)		
RAC Members (invited) Michael Coffey, Bureau of Reclamation - Pacific I Allen Giffen, City of Everett Russell Wright, City of Lake Stevens Chris Holland, City of Marysville Allison Halpern, Conservation Commission Susan Buis, Corps of Engineers Mark Eberlein, Federal Emergency Management Jeff Horton, Federal Highway Administration Sharleen Bakeman, Federal Highway Administration Sharleen Bakeman, Federal Highway Administration Michael MacDonald, NOAA Fisheries/USFWS Erika Harris, Puget Sound Regional Council Monte Marti, Snohomish Conservation District Esther Moseichuk, Snohomish County Sean Curran, Snohomish County Sharon Swan, Snohomish County Tracie Eastman, Snohomish County Gregg Farris, Snohomish County Gregg Farris, Snohomish County Berik Stockdale, Snohomish County Gregg Farris, Snohomish County Ressica Lange, Sound Salmon Solutions Sam Barr, Stillaguamish Tribe Derek Marks, Tulalip Tribes Kurt Nelson, Tulalip Tribes Richard Young, Tulalip Tribes Richard Young, Tulalip Tribes Carl Smith, US Coast Guard Elaine Somers, US Environmental Protection Age Dennis Wardlaw, Washington State Department of Caroline Corcoran, Washington State Department of Jamie Bails, Washington State Department of	Agency tion ency of Archaeology and Historic Preservation at of Ecology of Ecology	
□ Tamra Zylstra, Washington State Department of	Natural Resources	
WSDOT and Consultants:		
 □ Cameron Kukes, WSDOT □ Emily Geralds, WSDOT □ Harmony Weinberg, WSDOT □ Kyengo Ndile, WSDOT □ Robert Woeck, WSDOT □ Ryan Boyle, WSDOT □ Tim Nau, WSDOT 	 □ Victoria Book, WSDOT □ Ben Rodenbough, WSP □ Lawrence Spurgeon, WSP □ David Warner, WSP □ Liz Mack, Envirolssues □ Katheryn Seckel, Parametrix 	



US 2 Westbound Trestle Resource Agency Committee

Meeting #1 March 7, 2019 1:00 - 3:00 p.m.

Agenda

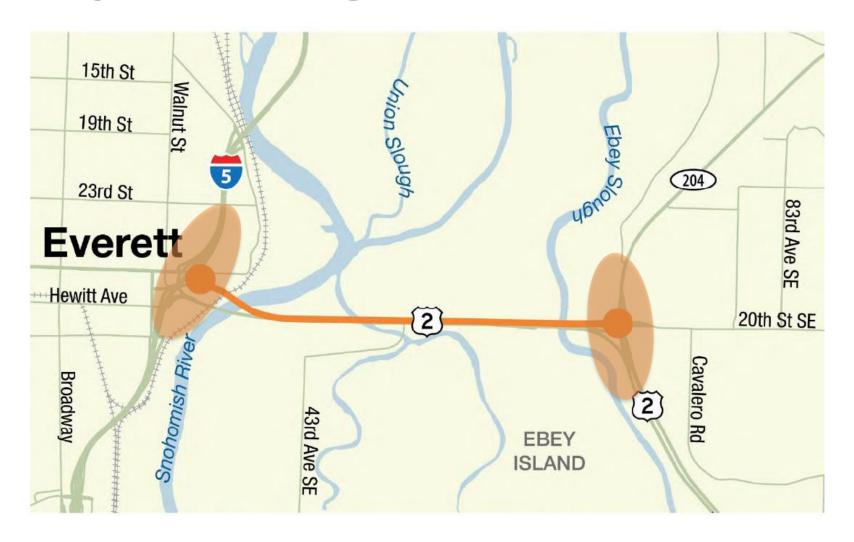
- Safety briefing and introductions 5 min
- Project background 20 min
- Project schedule and stakeholder outreach 5 min
- Discussion: Resources and constraints 30 min
- Discussion: Purpose and Need 20 min
- Discussion: Alternatives development 30 min
- Next steps and adjourn 5 min

RAC operating guidelines

Purpose of the group

- Provide input on alternatives development and screening
- Communicate your agency's priorities and concerns
- Identify key issues for the team to address
- Participate in RAC meetings anticipated to be 1 additional meeting over the next year

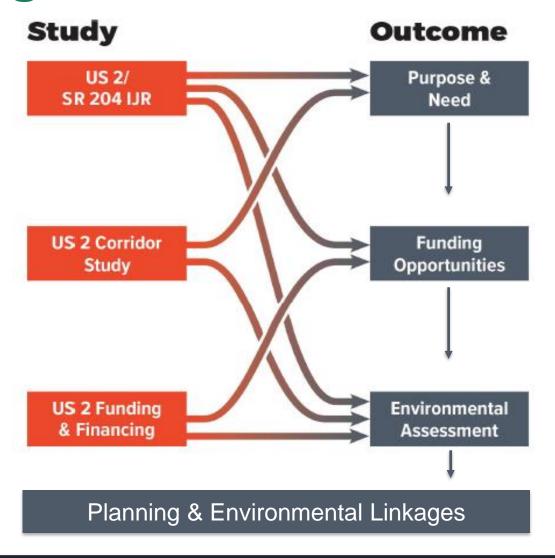
Project background



Legislative direction

- In 2018, the legislature authorized new funding "for getting to a preliminary preferred option in the environmental process."
 - Funding helps launch early environmental work
 - Funding is insufficient to complete the full NEPA process

Leveraging previous studies: Planning & Environmental Linkages



US 2 Corridor Study

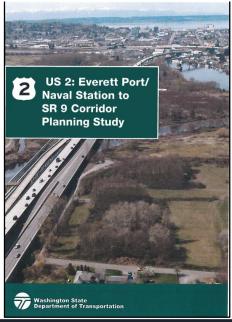
Purpose

- Analyzed the existing and future congestion levels in the corridor
- Addressed the future operational and structural adequacy needs of the US 2 westbound trestle
- Considered near-term/lower-cost treatments and longer-term unfunded improvements for the corridor
 - Including replacement of the westbound trestle with a new three-lane facility

Timing

2009	Legislature provided funding along with Everett and Snohomish County
2016	Finalized





US 2 Westbound Trestle Funding and Financing Study

Purpose:

- Updated cost estimates for replacing the westbound trestle
- Examined funding and financing options



Timing:

2017	Legislature authorized study	
2017	WSDOT formed partnership groups	
Jan 2018	Finalized	

US 2 / SR 204 / 20th Street SE IJR key findings

Purpose:

 To study potential improvements to the US 2, SR 204, and 20th Street Southeast interchange



Preliminary Preferred Alternative

- Ramps connect with new trestle segment north of existing
- Align 20th St on-ramp with HOV Lane
- Realign 20th St off-ramp to lower roadway
- Provide trestle width that could accommodate up to 4 lanes
- Non-motorized connection(s) included in all alternatives



20th St SE

Project schedule

Part 1 Funded 2018 – June 2020



Launch TWG and EAG - December 2018

Launch RAC – March 2019

Purpose and Need – Spring 2019

Alternatives Development – Spring through Summer 2019

Alternatives Refinement – Fall 2019

RAC Participation in Alternative Review 2019/2020

Short List Alternatives – Early 2020

Goal: Identify Preliminary Preferred Alternative

Stakeholder involvement

Interviews conducted with:

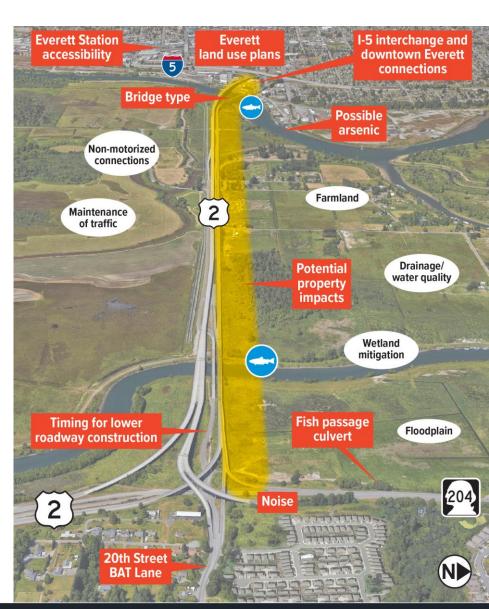
- Washington Vocational Services
- Community Foundation of Snohomish County
- Futurewise
- BIKES Club of Snohomish County

Meetings with:

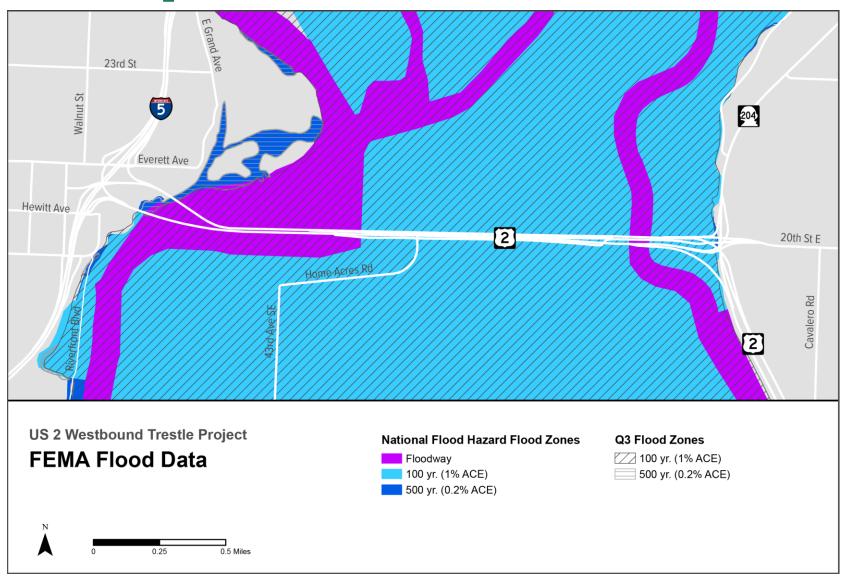
- Snohomish County Economic Alliance
- WSDOT Freight Office

Environmental considerations

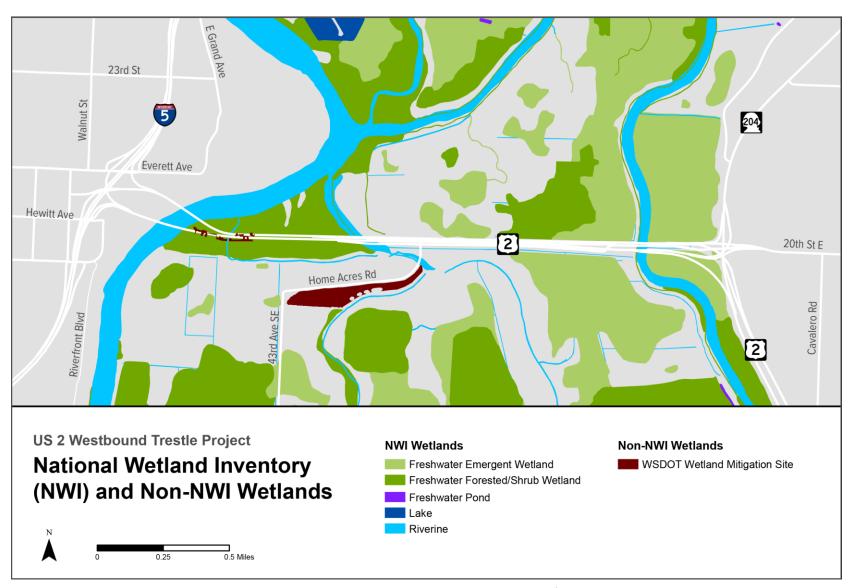
- Existing US 2 corridor crosses:
 - Floodplains
 - Wetlands
 - Fish-bearing streams
- Surrounding communities have several indicators for environmental justice populations
- Publicly-owned land managed as part of the Snohomish River Estuary is adjacent to the corridor
- Collecting information on cultural resources



Floodplains



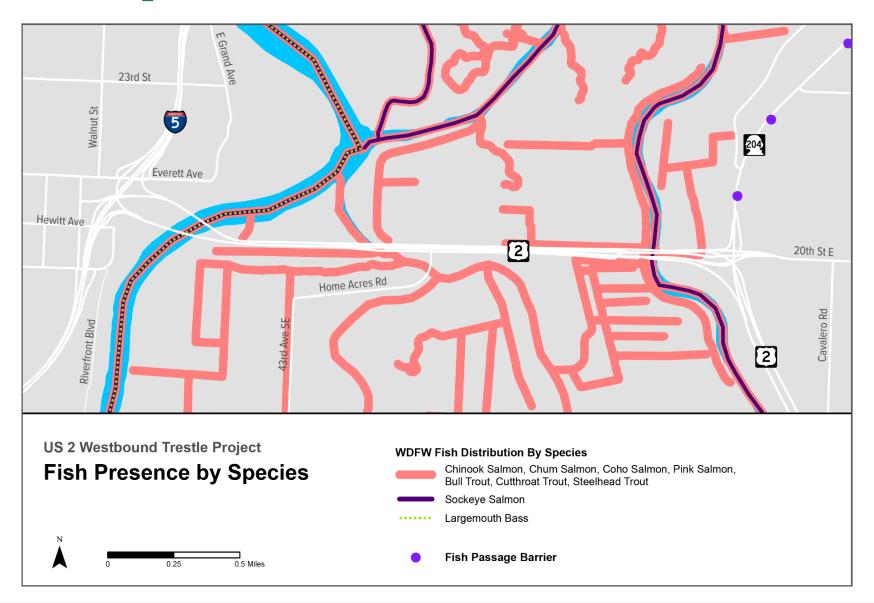
Wetlands



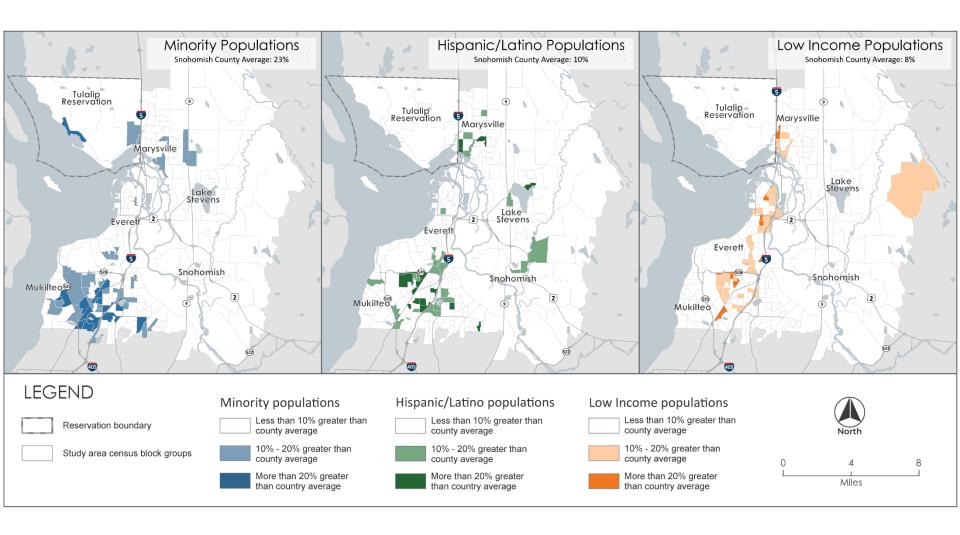
There are several wetland restoration projects in the area, including south of the eastbound trestle, to restore freshwater wetlands to estuarine.



Fish presence



Environmental justice



Protected land uses



Draft Purpose

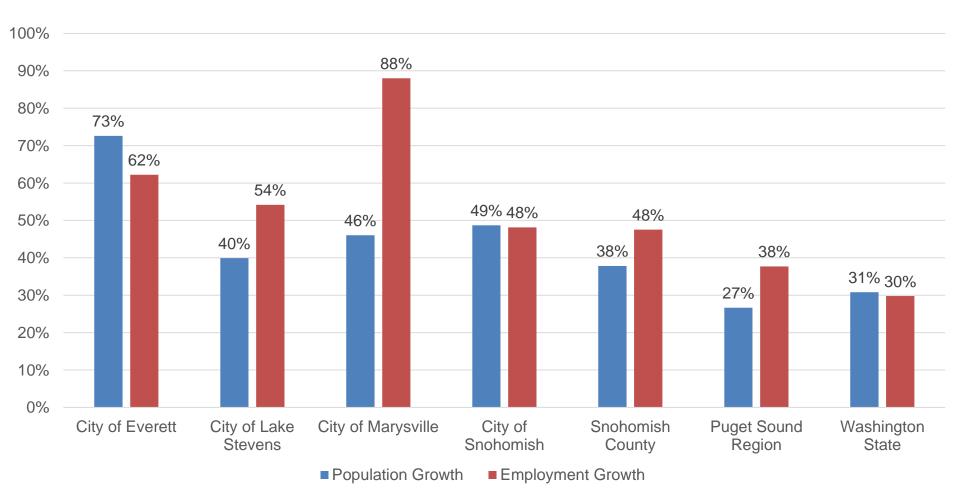
The purpose of the US 2 Westbound Trestle project is to develop a long-term solution that meets the following objectives:

- Improves travel reliability for motorists, transit vehicles, freight, bicyclists, pedestrians and emergency responders.
- Improves safety for all users.
- Provides improved system linkages to support regional and local planned growth.
- Provides a structurally sound solution that corrects roadway deficiencies and utilizes a full life-cycle cost approach.

Draft Need

- Local communities are growing faster in population and jobs than the Puget Sound Region or the State as a whole.
- Morning traffic volumes into Everett and south on I-5 already exceed interchange capacity at both the SR 204 and I-5 interchanges.
- The demand includes high truck volumes and occupancy of available buses.
- Non-motorized connections don't exist through the US 2 and SR 204 interchange.
- High volumes at merge points have increased collision frequency.
- The current trestle has 3-foot shoulders, with no refuge space.

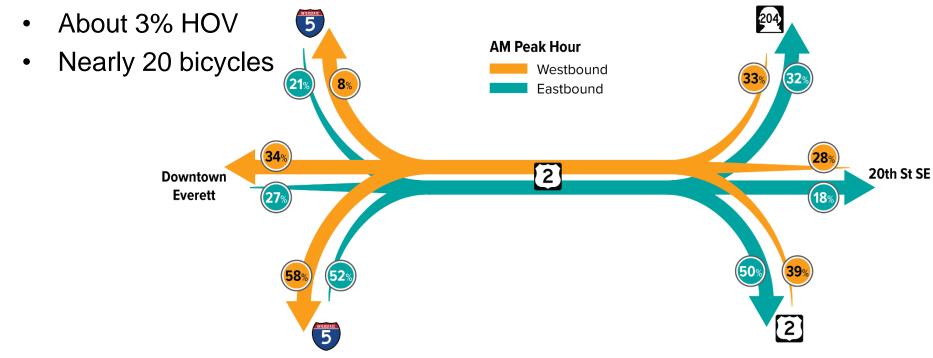
Regional planned growth 2015 – 2040



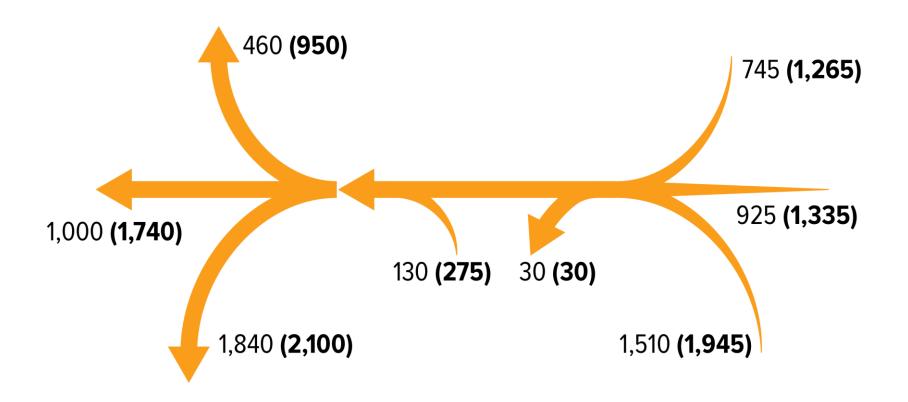
Sources: PSRC 2017; WOFM 2018b.

Existing transportation system

- 81,000 daily trips
- 3,200 vehicles/hour during the peak
- 8-10% freight traffic
- Three bus routes and 14 bus trips during peak period
- About 30 people per bus



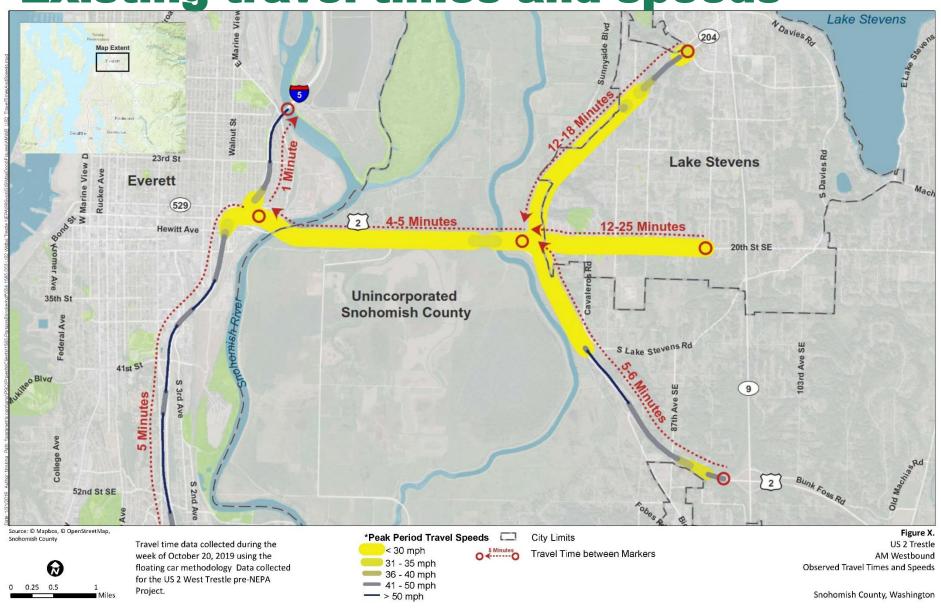
Existing and 2040 traffic demand



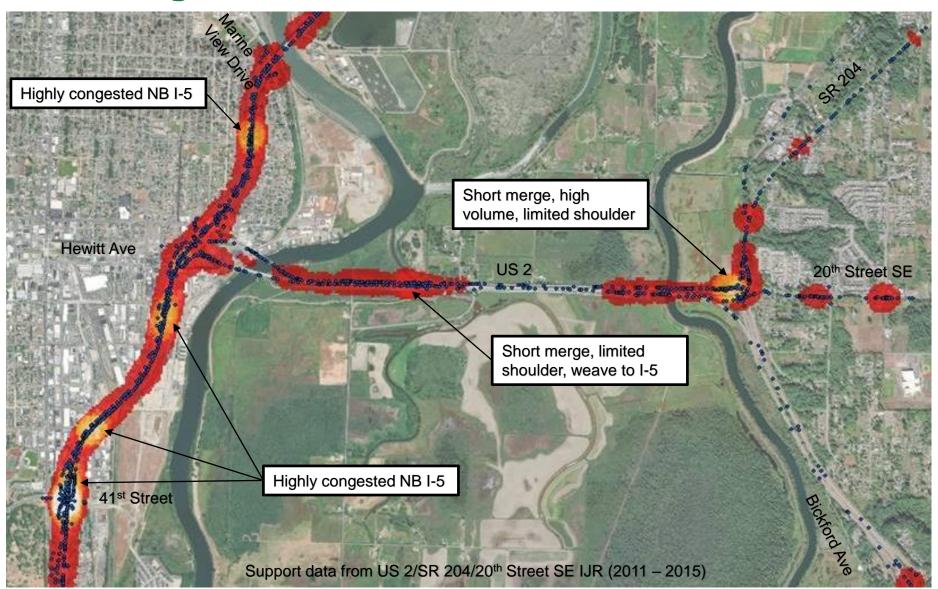
Existing (Year 2040)

Future demand assumes 3-lane trestle

Existing travel times and speeds



Safety



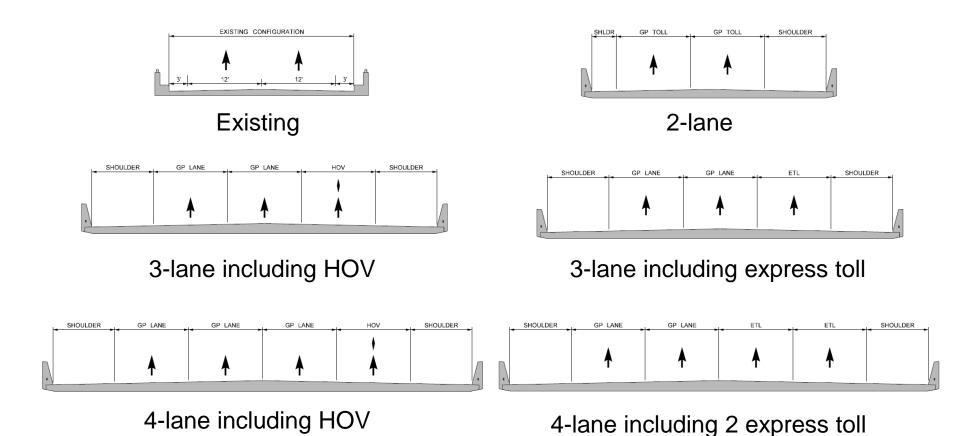
Alternatives development

- WSDOT is identifying a range of alternatives to consider against the Purpose and Need.
- Physical alternatives in the corridor:
 - West end interchange with I-5 and Everett
 - Trestle structure concepts
 - East interchange with 20th St. SE and SR 204
 - Non-motorized and transit connections
- Policy and operational considerations
 - Transit
 - Non-motorized
 - Tolling, managed lanes
 - Operation with loss of trestle

Conceptual corridor



Range of trestle concepts



These are preliminary concepts to illustrate a range of ideas that have been proposed for the US 2 westbound trestle configuration.



Next steps

- February/March 2019: Stakeholder interviews
- March 2019: Resource Agency Committee and Tribal coordination
- March/April 2019: Alternatives development and metrics analysis

Action items



US 2 Westbound Trestle Contacts

Emily Geralds
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GeraldE@wsdot.wa.gov

Lawrence Spurgeon
Consultant Environmental Lead
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US2TrestleInfo@wsdot.wa.gov



Resource Agency Committee (RAC) Meeting #1 Summary

March 7, 2019

Attendees

RAC members/alternates

Name	Organization
Susan Buis*	Corps of Engineers
Marc Hershfield	Department of Ecology
Jeff Horton	FHWA
Sharon Love	FHWA
Erika Harris	PSRC
Monte Marti*	Snohomish County Conservation District
Sam Barr	Stillaguamish Tribe
Kurt Nelson	Tulalip Tribes
Carl Smith	US Coast Guard
Danny McRynolds	US Coast Guard
Jamie Bails*	WDFW

^{*}attended via phone

Project team:

- Cameron Kukes, WSDOT
- Emily Geralds, WSDOT
- Kyengo Ndile, WSDOT
- Tim Nau, WSDOT
- Ben Rodenbough, Consultant Team
- Dave Warner, Consultant Team
- Lawrence Spurgeon, Consultant Team
- Liz Mack, Consultant Team
- Diana Brown, Consultant Team
- Katheryn Seckel, Consultant Team



Welcome and introductions

Emily Geralds, WSDOT environmental lead, welcomed the group. Dave Warner, consultant team project manager, provided a safety briefing for the building. Emily then led a round of introductions.

Emily reviewed the meeting agenda. The bulk of the meeting will focus on providing project background and discussing resources and constraints, draft Purpose and Need statements and alternatives development.

Operating guidelines

Emily provided an overview of the purpose of the group. Highlighting that the group is expected to meet twice over the next year.

Project background

Emily reviewed the project background, noting:

- The US 2 trestle is part of a key corridor connecting Everett with SR 9 and eastern Snohomish County.
- The westbound trestle was completed in 1968. The original eastbound timber bridge was replaced with a concrete structure in the early 1990s.
- Snohomish County's population has grown by over 130 percent since 1980.
 - The US 2 corridor near the trestle faces operational deficiencies and capacity needs, leading the state legislature to commit funds to begin early environmental analysis.
- Project scope and limits.
- Critical corridor components to be considered moving forward.

Emily shared that in 2018, the legislature authorized new funding and the US 2 corridor has received other legislative action in recent sessions in the form of studies.

Emily introduced the concept of Planning & Environmental Linkages (PEL) then passed the lead to Dave Warner.

Dave explained how this project will use a PEL Study to leverage previous corridor studies, noting:

- The alternatives development process builds on previous studies, including the US 2/SR 204 Interchange Justification Report (IJR), US 2 Corridor Study, and US 2 Funding and Financing study.
- The IJR feeds into all future environmental work, the other two studies also contribute.
- The PEL Study will tie together these studies.

US 2 Westbound Trestle



US 2 Corridor Study

Dave Warner shared the purpose and key findings of the Corridor Study. Key findings include heavy existing and future congestion levels, operational deficiencies, and the retrofits completed in 2011 to extend useful life of the Westbound Trestle.

US 2 Westbound Trestle Funding and Financing Study

Dave Warner reviewed financing options, including public-private partnerships, transportation benefit districts, loans, grants, and other alternative financing measures at the state and local level, and various tolling scenarios, including tolling in both directions. The cost estimate included the east side interchange improvements proposed within the IJR.

The study found that the project will likely require a combination of federal, state and local funding sources, including: Federal/state grant programs with local funding, state gas tax, tolling, Public-Private Partnership.

US 2 / SR 204 / 20th Street SE IJR key findings

Dave Warner reviewed the purpose and findings of the IJR, which include:

- Traffic congestion in the year 2040 was shown to be in excess of a mile long for people trying to access the westbound trestle.
- Travel times more than double for most people.
- Safety was also shown to be an issue today and in the future.
- The Preliminary Preferred Alternative would move traffic through the interchange and across the wider trestle, but the roadway geometries and capacity on the west end could not accommodate the full increase in traffic.
- There were issues with high traffic volumes destined for the expanding downtown of Everett and to southbound I-5.
- Further study and design of a future west end is needed as part of the US 2 Westbound
 Trestle NEPA project.

The team will use these key findings and all that they learned through the IJR process as they look at the more system wide needs related to the corridor.

Project schedule and stakeholder outreach

Dave Warner reviewed the project schedule to reach a Preliminary Preferred Alternative. Dave emphasized that the traffic and design analysis to reach a Preliminary Preferred Alternative will be extensive. While it is our goal to reach a Preliminary Preferred Alternative at the end of this process, we may need additional funding to complete the analysis. The schedule reflects the key milestones. During this process we will engage with the public and the TWG, RAC, EAG and Tribes at key milestones.

Dave then introduced Liz Mack, consultant team communications, to discuss stakeholder engagement.

US 2 Westbound Trestle



Liz Mack explained that the team is meeting with non-government organizations to hear their perspectives on the trestle, the congestion, project considerations, and strategies for reaching a diverse audience. The team has heard the following key themes:

- Many people are concerned about the reliability of the trestle and the impacts on commuters and the economy.
- Non-motorized access between Lake Stevens and Everett is important.
- Concern that growth in the region will only make things worse.
- There are low-income and unrepresented populations on both sides of the corridor that will need consideration.
- Improving transit across the trestle is important.
- Tolling came up in some conversations but wasn't on the forefront as much as the reliability issues.
- Lots of interest in the project and assisting with outreach to the public.

In addition, the team met with the Snohomish County Economic Alliance, and they are amenable to pulling together some of their members to discuss the trestle work. They can help pull together a freight/mobility meeting to discuss the specific needs of freight in the corridor.

The freight conversation continued with the WSDOT freight office, which will also be joining the TWG when their new planner comes on board. They are happy to work with the team on a freight coordination meeting, along with the Economic Alliance.

Liz introduced Lawrence Spurgeon, consultant team environmental lead.

Resources and constraints

Lawrence Spurgeon provided an overview of environmental considerations in the project corridor, then introduced Kathryn Seckel, consultant environmental team.

Kathryn provided an overview of existing floodplain data and reviewed a graphic showing FEMA data of the floodway and National Flood Hazard Flood Zones.

Questions

o Kurt Nelson, Tulalip Tribes, asked if the image showed the floodway, flood fringe, or the floodplain and asked if they were being treated differently in the analysis. The team said they would follow up and clarify the definition. A follow up phone call with Snohomish County after the meeting clarified that a majority of the corridor is located within FEMA's "density fringe" designation (from east end to Deadwater Slough. The rest of the corridor (Deadwater Slough to I-5) is within floodway.

Wetlands

Kathryn reviewed a map of National Wetland Inventory (NWI) and Non-NWI Wetlands. Mapped or modeled wetlands cover almost the entire area within 500 feet of the existing trestle. Several wetland types, including freshwater emergent, riverine, and freshwater forested/shrub wetlands,



are present. Many of the wetlands in the project area are likely to be rated as Category 1 or 2 (i.e., high-quality). Source: Environmental Considerations Report: US 2/ SR 204 & 20th St SE Interchange Justification Report (WSDOT 2017).

Questions

- Kurt Nelson asked if the team had looked at the Snohomish Estuary Wetland Inventory by the City of Everett. The team responded that they had not but would add it to the list of studies to review.
- Carl Smith, US Coast Guard, asked if the white areas on the map are wetlands.
 The team confirmed that these areas do not contain wetlands based on the data the team has gathered.
- Kurt Nelson asked if the team had considered the restoration sites of Ebey Island. The team confirmed that they had.

Fish presence

Kathryn shared information about ESA-Listed Species and Critical Habitat, noting:

- Puget Sound Chinook salmon and Puget Sound steelhead are documented in the segments of the Snohomish River and Ebey Slough.
- Bull trout use the Snohomish River in the project area as rearing habitat, and they are presumed to be present in Ebey Slough.
- The Ebey Island floodplain includes a network of ditches accessible to fish. Puget Sound Chinook salmon, Puget Sound steelhead, and bull trout are presumed to be present in those ditches.
- The segments of the Snohomish River and Ebey Slough crossed by the US 2 trestle
 have been designated as critical habitat for bull trout, Puget Sound Chinook salmon, and
 Puget Sound steelhead.
- Dead Water Slough, which is crossed by the trestle approximately 0.5 mile east of the Snohomish River bridge, is designated as critical habitat for Puget Sound Chinook salmon and Puget Sound steelhead.

Other Species and Habitats of Concern (WDFW PHS mapping) include:

- Peregrine falcon, waterfowl concentration areas, and wetlands.
- Eight salmonid species (Chinook, coho, chum, pink, and sockeye salmon, and cutthroat, steelhead, and bull trout).
- Bald eagle nest approximately 0.5 mile from the project area (USFWS compliance with Bald and Golden Eagle Management Act)
- Some species of birds (e.g., peregrine falcon, cliff swallow, barn swallow) that may build nests on structures such as the US 2 trestle.

The WSDOT Fish Passage Inventory identifies no state-owned culverts that impede fish passage along the US 2 trestle. Some are identified along SR 204 to the north of the US 2/SR204/20th Street Interchange.



Questions and comments

- Kurt Nelson noted that the Washington Department of Fish and Wildlife did a study on restoration alternatives for Ebey Island and noted that there are tidegates related to fish access and restoration. The team was aware of this study.
- Sam Barr, Stillaguamish Tribe, shared that there are cultural resources on Dead Water Slough and there is an established site under the surface near the highway. There are additional sites on Ebey's island. He requested that tribal monitors be present when crews dig in the area. Sam also asked if there would be a full cultural survey and if it would be possible to test before full construction begins. Sam also asked if there is a plan to process the storm water on site. The team confirmed that they plan to study and test these areas and that they are looking at way to treat stormwater on site. The team is also meeting separately with the area tribes to discuss these issues.
- Sharon Love, FHWA, stated that disturbances from construction could also occur beyond the piers and include areas where construction equipment is being staged, among other locations and encourage the study area to cover those areas. The team confirmed that they would study all areas affected by construction.

Environmental justice

Lawrence Spurgeon reviewed maps showing areas with higher concentrations of low-income and/or minority persons than Snohomish County as a whole, identified through initial study of US Census Bureau and Washington's Office of Superintendent of Public Instruction data. The team will work with community-based organizations serving these areas to conduct focus groups and listening sessions aimed at understanding public perceptions about burdens and equity.

Consideration of a tolling program requires a comprehensive understanding of public perceptions of burden and equity. The project public engagement approach to developing that comprehensive understanding of burden and equity related to tolling will begin with targeted engagement in specific areas with substantially high concentrations of low-income and/or minority populations.

Protected land uses

Lawrence Spurgeon reviewed a map identifying property owned by Snohomish County and designated as part of the Snohomish River Estuary management area identified for conservation and recreation.

US 2 Westbound Trestle



Within 500 feet for the US2 trestle footprint (including interchanges), the land is zoned agricultural between the Snohomish River and SR 204.

In Snohomish County's comprehensive plan, the land use is listed as riverway commercial farmland. It is a designated farmland area for Snohomish County and zoned A-10. Not allowed in riverway commercial farmland: new government structures and facilities, except roads, utilities, and flood protection, drainage, and irrigation structures and facilities. (Added by Amended Ord. 02-064, Dec. 9, 2002, Eff date Feb. 1, 2003).

Properties shown as prime or important farmland are identified as such based on NRCS soil types. None of the soil types are classified as Prime and Unique.

Questions and comments

- Kurt Nelson noted that WSDOT has parcels in this area and that it would be helpful to see where those are as these might be good opportunities for mitigation. Kurt also mentioned that the Snohomish County Conservation District has better information for helping determine prime or important farmland. The team agreed to look into this information and share it with the RAC.
- Erika Harris, PSRC, asked if the team is looking into climate change considerations and noted that PSRC has recently released an EIS (Vision 2050) about this issue which highlights the project area and offered to share the EIS with the team. The team welcomed the suggestion and said they would add this to their studies to review.
- Erika Harris noted that changes to the land uses and population growth will continue in the project area and encourages an analysis of indirect land use impacts. The team said that this is one of the next steps.
- Sharon Love suggested the team review the WSDOT Climate Vulnerability Assessment. The team committed to reviewing the assessment.
- Marc Hershfield, Department of Ecology, asked if the Preferred Alternative is planned to be located north of the trestle and asked about the reasoning for this. The team clarified that the graphic illustrates construction impacts are likely to be on the north side because they must work around the eastbound structure. No decision has been made about a preferred alternative. The team needs to take into account phasing, constructability, the location of resources before making that determination.
- Sharon Love asked if the representatives from the Coast Guard had concerns about what had been presented thus far. Carl Smith and Danny McRynolds stated their main focus is protecting navigation on the waterways and noted that the new bridge would need to have similar or better characteristics than the current bridge to avoid navigation issues. They highlighted that there are likely permitting issues related to the construction of a new bridge. They noted that the Coast Guard would likely require a new navigation study to asses these waterways and recommended the team look into the permit application guide to better understand topics the Coast Guard is interested in. The project team stated that they are still in the early phases of the alternative analysis and that some of these issues are topics to be addressed at a later date.



Discussion: Purpose and Need

Draft Purpose

Lawrence Spurgeon shared the Draft Purpose: The purpose of the US 2 Westbound Trestle project is to develop a long-term solution that meets the following objectives:

- Improves travel reliability for motorists, transit vehicles, freight, bicyclists, pedestrians and emergency responders.
- Improves safety for all users.
- Provides improved system linkages to support regional and local planned growth.
- Provides a structurally sound solution that corrects roadway deficiencies and utilizes a full life-cycle cost approach.

Questions and comments

- Kurt Nelson commented that residents of Ebey Island need to be considered.
 The team confirmed they would take them into account.
- Erika Harris emphasized the importance of focusing on environmental improvement, stormwater improvements and alternative modes of transportation, including the regional bike and trail network. The team noted they will consider these components.

Draft Need

Lawrence Spurgeon shared the Draft Need and highlighted four key needs, noting:

- Delay in the corridor during the data collection period ranges between 8 and 24 minutes.
 Public input has expressed a wider range of travel time when there are crashes in the system.
- Hot spot safety analysis highlights locations where accidents occur more frequently due
 to limited shoulders, acceleration lengths, and gap acceptance lengths. Improvements to
 the corridor would reduce crash occurrences and improve corridor reliability.
- Regional system planning includes a new light rail station in downtown Everett that
 would reliably move people between key economic centers along the I-5 corridor. There
 are currently no plans for additional parking in downtown Everett and no HOV facilities to
 encourage transit use for connectivity between the freeway and transit system.
 Improvements to the corridor are needed to improve transit connectivity.
- The existing corridor does not have enough shoulder space for vehicle refuge in the
 event of a crash or disabled vehicle. Provisions for refuge is needed to improve corridor
 reliability and safety.

Regional planned growth 2015 – 2040

Lawrence Spurgeon reviewed data that showed Snohomish County and its cities growing at a fast rate and above the average for the Puget Sound Region and the state.



Existing transportation system

Lawrence Spurgeon provided an overview of the existing transportation system, noting that:

- 81,000 daily trips is a pretty strong demand. It is higher than the SR 520 Portage Bay bridge located between I-5 and the University of Washington.
- There are about 3,200 vehicles per hour getting to the mid-span trestle during the peak hour, but there are many more vehicles stuck in congestion that need consideration.
- This is a T1 corridor—a primary freight corridor for the state, and the heavy trucks make up three to five percent of the traffic stream during the peak. Nearly 10 percent of the traffic is single unit trucks (UPS, local delivery).
- There are three bus routes operating on the corridor that make about 14 trips during the morning peak serving over 300 people. The average occupancy of a bus is about 30 people.
- HOV use is at about three percent along the corridor and the number of cyclists is quite low. These last three modes have limited incentive for use and there is limited access for non-motorized use.

Traffic demand

Lawrence Spurgeon reviewed the existing and future (year 2040) traffic demand on the trestle. This future demand assumes a three-lane trestle. Tolling the trestle lowers the volume by about 30 percent. Lawrence clarified that these numbers are morning peak volumes.

Existing travel times and speeds

Lawrence Spurgeon presented the current travel times and speeds during the morning commute which are:

- Trestle to I-5 at the Snohomish River: 1 minute
- Crossing the westbound trestle: 4-5 minutes
- SR 204 and Market Place to east end of the trestle: 12-18 minutes
- 91st Avenue SE and 20th Street SE to the east end of the trestle: 12-25 minutes
- US 2 at SR 9 to east end of the trestle:5-6 minutes

Safety

Lawrence Spurgeon explained that safety issues are highly correlated with congestion in the area and pointed out several areas with a high number of collisions, including:

- Highly congested northbound areas on I-5
- A short merge zone of the trestle with limited shoulder near the weave to I-5
- A short merge zone with high volume and limited shoulder at the east end of the trestle



Questions and comments

- Jeff Horton, FHWA, asked if the project team was looking to address capacity issues on I-5, related to the projected capacity increase on US 2. The team answered that there may be elements of a new trestle that would impact I-5, but the project isn't far enough along to know what that might look like. The trestle project is focused on a specific section and is not a project to solve issues on I-5.
- Jeff Horton asked if this is a major utility corridor. The team answered that there are no known utilities on the northside of the existing westbound trestle.
- Dave Warner asked that Lawrence Spurgeon review the non-motorized routes.
 Lawrence walked through how a bike would cross the trestle demonstrating that the east end interchange is missing.
- Dave Warner noted that the team is also considering access to the future Everett Station.
- A participant asked for the eastbound considerations of the 2040 traffic demand.
 This information is available in the IJR.

Lawrence introduced Ben Rodenbough, design lead for the consultant team, who shared more about alternatives development.

Alternatives development

Ben Rodenbough shared key takeaways from the TWG meeting and asked for feedback from the RAC.

Questions and comments

- Cameron Kukes, WSDOT, asked if the team had found any seismic issues. The team hasn't looked into this yet but noted that soils will have a major role when designing the structure.
- Carl Smith asked whether the existing bridge would be demolished or preserved.
 The team responded that the current bridge is rated "fair" and reaches the end of
 its lifespan in 2045. The existing trestle has been retrofitted once and further
 retrofit could require substantial upgrades of major elements of the bridge. The
 Snohomish River Bridge is a different structure and WSDOT may replace the
 trestle structure and keep river bridge.
- Cameron Kukes asked for clarification of the extents of the Snohomish River Bridge. The team noted that it's generally the section that crosses the river.
- Kurt Nelson stated that the Army Corps recently fixed a levy just north of this area and noted that there is unstable geology in the area. He also noted that there is a pump station under the bridge that needs to be considered for potential impacts. The team responded that they are familiar with this area and issue.
- Erika Harris stated that she appreciated the discussion of mode shift, encouraging people to shift modes as much as possible to achieve greenhouse gas goals and recommended that the team highlights how the plan would fit into



the state and region's greenhouse gas goals. Several other participants reiterated the need for strong climate change considerations.

Ben Rodenbough reviewed a roll plot of the corridor, highlighting existing conditions and potential areas of change as highlighted by the team and RAC members.

Ben also shared the existing channelization of the westbound trestle and showed other options, including 2-lanes with a shoulder, 3-lanes including an HOV lane, 3-lanes including express toll, 4-lanes including an HOV lane and 4-lanes including 2 express toll lanes.

Questions and comments

- Cameron Kukes asked if the shoulders in the graphics represent the design safety standards. The team responded that this is typical design consistent with design guidelines.
- Dave Warner noted that the current access to Ebey Island is a left side exit which is less conventional, and that this consideration may impact the width.
- Dave Warner asked the team if there was anything discussed at the TWG meeting that is worth sharing with the group. The project team reviewed the TWG discussion about ways to use HOV lanes, interchanges and the overall system changes.
- Cameron Kukes noted that the transportation committee in the Senate has requested a new funding package and that this project is identified as a priority along with others. It has been labeled a high priority corridor for transportation in the state.
- o Kurt Nelson challenged the team to construct a project that's an overall ecological gain for the area. Ways to do this include treating stormwater and mitigating wetlands. He also noted that there is a pump station under the existing bridge. The team responded that an overall ecological benefit is a goal of the project. Elements of this project may be built in phases, but the whole program will be evaluated together, and the most critical issues will be addressed first.

Next steps

Liz Mack and Dave Warner reviewed next steps for the RAC, including:

- The project team will share more detailed alternative development and analysis with the RAC
- Action items for the project team include:
 - Share WSDOT parcel information in regards to mitigation opportunities
 - Send out notes from this meeting and follow up with those who could not attend
 - o Follow up on flood designations question
 - o Review the Snohomish Estuary Wetland Inventory report
 - o Review the draft EIS for PSRC Vision 2050
 - o Review WSDOT Climate Vulnerability Assessment



US 2 Westbound Trestle

 Add access to Ebey Island and environmental and stormwater improvements to the Purpose and Needs Statement

US 2 westbound trestle - Stakeholder interview plan

Draft: 1/23/19

Purpose

Stakeholder interviews conducted prior to project outreach will help inform communication tools and tactics, as well as project Purpose and Need. Specifically, interviews will help the project team to:

- Understand the community and specific populations that may be impacted by the project
- Identify project needs and concerns of the stakeholders
- Identify how different populations prefer to receive information
- Identify other potentially interested parties to engage during the project
- Tailor outreach to meet the needs of traditionally underrepresented populations
- Seek feedback that will help inform screening criteria

Format

Interviews will be conducted in person when possible but may be conducted via phone if an inperson meeting is not possible. Each interview will last between 30 and 60 minutes and be documented and summarized by the communication team. Two consultant staff and one WSDOT staff member will attend each interview.

Organizations to interview

We will invite the following 13 organizations to participate in an interview and aim to complete a total of 10 interviews. These organizations represent stakeholder groups in the project area as well as social service providers that are working with traditionally underrepresented communities. We will work with our Lake Stevens contacts to see if there are other specific Lake Stevens organizations we should speak with.

Organization	Address	Mission statement/description
United Way of Snohomish County	3120 McDougall Ave. Suite 200, Everett, WA 98201	Funds five cross-sector Collaboratives — groups of community partners with a shared action plan — working together on long-term outcomes for children from birth to age 8 and their families struggling with low incomes.
Leadership Snohomish County	808 134th St. SW, Suite 101 Everett, WA 98204	Offers programs to develop current and future leaders to sharpen their civic and adaptive leadership skills for a stronger community. Program graduates serve on school boards, nonprofit boards and in corporate boardrooms.
Boys & Girls Clubs of Snohomish County	9502 19th Ave. SE, Suite F Everett, WA 98208	Has 24 clubs in the Northwest, including those in Arlington, Edmonds, Everett, Granite Falls, Lake Stevens, Lynnwood, Marysville, Monroe, Mukilteo,

Stakeholder Interview Plan

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Organization	Address	Mission statement/description
		Snohomish, Sultan, Tulalip, Coupeville and Oak Harbor.
Sherwood Community Services	402 91st Ave. NE, Lake Stevens, WA 98258	Aims to provide innovative, inclusive services for children and adults with disabilities in their communities through early intervention, assistive technology and vocational services.
Washington Vocational Services	111 SE Everett Mall Way, Building C, Suite 100 Everett, WA 98208	Matches individuals with disabilities to jobs based on the employee's talents and the specific needs of the employer
Community Foundation of Snohomish County	823 Rockefeller Ave. Everett, WA 98201	Connects people, opportunities and resources through grant making and by offering free training and workshops to local nonprofits. The Foundation manages more than 133 charitable funds
YMCA of Snohomish County	2720 Rockefeller Ave. Everett, WA 98201	Has branches in Everett, Marysville, Mill Creek, Monroe, Mukilteo, Stanwood-Camano, and a Big Brothers Big Sisters affiliate. It focuses on youth development, healthy living, social responsibility and strengthening communities.
Operation Homefront	Everett, WA	Recently moved a regional office to Everett. The national nonprofit supports military families with financial assistance, transitional and permanent housing and family support services to prevent short-term needs from turning into long-term struggles
Familias Unidas	215 W Mukilteo Blvd Everett, WA 98203	Familias Unidas is the first Latino Resource Center in Snohomish County. It is open to all but provides bilingual services with a focus on the Hispanic Community in the area.
Sierra Club Sno-Isle Group		The Sno-Isle Group (formerly the Snohomish Group) serves two counties: Snohomish and Island (Whidbey and Camano Islands). Group leaders are all volunteers. In Snohomish and Island counties, it works on climate action, conservation issues, and political endorsements.
The Nature Conservancy - Washington	74 Wall Street, Seattle, WA 98121	Their vision is of thriving nature and thriving communities—a shared future that enables us to prosper while caring for the lands and waters that sustain us

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Organization	Address	Mission statement/description
FutureWise	816 Second Avenue, Suite 200 Seattle, WA 98104	They focus on preventing the conversion of wildlife habitat, open space, farmland, and working forests to subdivisions and development, while directing most growth into our urbanized areas.
BIKES Club of Snohomish County	PO Box 5242 Everett, WA, 98206	Bike group that hosts recreation rides and provides grants to bike-related causes

Previous interviews

Stakeholder interviews were also conducted as part of the US 2/SR 204/20th Street SE Interchange Justification Report in February 2017. The following groups were interviewed:

City/Agency/Organization	Staff in Attendance	
City of Monroe	Brad Feilberg, Public Works Director	
City of Snohomish	Steve Schuller, Public Works Director	
City of Marysville	Jeff Laycock, City Engineer	
City of Lake Stevens*	Mick Monken, City Engineer	
City of Everett	Ryan Sass, Engineer	
Snohomish County	Steve Thomsen, Public Works Director	
Community Transit	Carol Thompson, Service Development Manager	
Cascade Bicycle Club	Jeff Aken, Regional Planning Director	
Washington Trucking Association*	Sheri Call, Vice President	
Boeing	Richard White, Government Relations	

^{*}Indicates phone interview

Key themes of previous interviews

- The current interchange operations are poor during peak travel times and stakeholders are supportive of a study to identify near-term improvements to relieve congestion.
- Top priority improvements were varied for stakeholders, but all could agree that the near-term improvements must not adversely impact local streets and communities or hinder potential for long-term improvements, i.e., the recommended improvements should consider and compliment regional and future transportation planning.
- Potential future improvements that reduce travel time and increase speed and reliability are key indicators that the study is successful.
- Stakeholders confirmed there are plenty of ways to engage the public on the study.

Stakeholder Interview Plan January 2019

Interview questions

The interviewer will start by providing a brief overview of the project. The following questions will then guide the interview. Some questions may be omitted or revised depending on the participant.

Background / Project Purpose and Need

- 1. Tell us about the transportation issues your organization is tracking or transportation concerns of the communities you serve/work with.
- 2. How do those you serve/work with use the US 2 Trestle and how does the congestion on the trestle affect them?
- 3. How does the trestle currently affect mobility options in the area? How would this project affect mobility options in the future? [ask same question for equity and economy]
- 4. The team has identified a few potential impacts from this project including construction detours/delays/noise/vibration, residential and business displacements, noise, air quality, traffic diversion from US2 to other areas. Are there other potential impacts the project team should consider? Which of these impacts is most important for the team to avoid or minimize?

Communication and Engagement

- 5. How do you or those you serve/work with typically learn about things going on in your community? What doesn't work well for those you serve?
- 6. How do you or those you serve/work with prefer to engage in a project like this? (e.g., online, at in-person meetings, by reading print materials, etc.) What would make you want to engage?
- 7. What barriers to participation exist for the community you serve/work with? What's been successful in addressing these barriers?
- 8. What are the top three things you'd like your community to learn about the project in the next 12 months?
- 9. How frequently do you want/expect to hear from us during the project?

Wrap up

- 1. Have you worked with WSDOT before? If so, what went well and what didn't go well?
- Is there anything else you'd like us to know as we begin this project?
- 3. Are there other people or groups that we should be reaching out to about this project?

Closing Comments

Thank you so much for your time today. The input you've provided will be used to inform our engagement strategy with the goal of making sure we involve the community in discussions around issues most important to them, as related to the US 2 Westbound Trestle Project. We plan to stay in touch with you as we have information to share or upcoming engagement opportunities planned.

Do you have any questions for us?

Stakeholder Interview Plan

January 2019

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Environmental Services Office

Environmental Context Memo

To: Hannah Plummer and Ruth Park

Through: Justin Zweifel
From: Victoria Book
Date: 3/31/2020
Re: US 2 Trestle PEL

This planning-level environmental review focuses on select environmental assets that need to be protected, or have the potential to influence the scope of future investments. This evaluation, conducted by subject matter experts form the WSDOT Environmental Services office, is a desk review, capturing only information available at the time using GIS resources. The review does not examine the full range of environmental and social issues that will need to be addressed during site specific project development. The following is a summary of the environmental review, with additional information provided in the attached report. Contact Victoria Book at (360) 705-7408 if you have questions.

Environmental asset	Summary	Contact
Chronic Environmental Deficiencies	None	Jenni Dykstra
Climate vulnerability	I-5 @ US2 I/C – High vulnerability	Victoria Book
	US 2 Trestle Low vulnerability	
	SR 204 – Low vulnerability	
Fish passage barriers	One documented fish passage injunction	Susan Kanzler
	barrier on SR 204 at MP 0.21. This site	
	should be considered for correction if it	
	is located within 1,000 feet of the	
	project limits.	
Habitat connectivity	Multiple high ranks for Urban Gateway	Glen Kalisz
	pollinator habitat	
Historic bridges	Did not review – evaluated in the PEL	See PEL
	study	
Noise walls	No existing, proposed, or non-WSDOT	Victoria Book
	noise walls in the study area	
Stormwater retrofits	Study area has 7 pond type, 1 vault type,	Cory Simon
	and 3 ditch type BMPs; No medium or	
	high priority stormwater retrofit areas;	
	Fully within Snohomish River Estuary	
	Multi-parameter TMDL	
Wetland mitigation sites	Did not review – evaluated in PEL study	See PEL
	(2 in study area)	

Climate Vulnerability Impacts

WSDOT relies on the University of Washington Climate Impacts Group (CIG) as its primary source for climate information. The CIG's Washington Climate Change Impacts Assessment provides sufficient information to enable planning-level considerations of Washington's forecasted climate impacts. WSDOT's Climate Impacts Vulnerability Assessment (2011) is a qualitative assessment of risks to the state's transportation infrastructure from climate change. Climate impacts were assessed at baseline sea level rise – about 2 feet.

The assessment included 3 sections within the study area, summarized below and shown in Figure 1.

1-5 @ US2 I/C - High vulnerability

Snohomish River basin to Quilceda Creek: This section is a low elevation, river delta with several diking districts. It is tidally influenced, and includes Union & Steamboat sloughs. Embankments are saturated. There are scour critical bridges. The I-5 Snohomish bridges are in good shape with deep piers. The county has a wetland mitigation bank in the intertidal area.

US 2 Trestle - Low vulnerability

Everett To Bickford: There are no scour critical bridges. The road is elevated but there are log jam issues on the bridge (Snohomish River). There are aggradation/storm events issues on Snohomish River.

SR 204 – Low vulnerability

US 2 to SR 9: This section has overarching issues of blocked culverts and overflowing ditches.

Fish Passage Barriers

Presently, there is one documented fish passage barrier, site <u>995137</u> crossing SR 204 at MP 0.21, that is "near" the project area (Figure 1). This site is an injunction barrier and should be considered for correction if it is located within 1,000 feet of the project limits. Please contact ESO's Stream Restoration Program Manager for more information about this site.

All projects must be assessed for inclusion of fish barrier correction. Please see scoping instructions for <u>Fish Barriers in Other Transportation Projects</u>, last updated October 16, 2017, for guidance on determining when to correct a fish barrier during a transportation project. The WSDOT Fish Passage Barrier Removal Program coordinates with WDFW and Tribal governments to inventory culverts on fish-bearing streams within the jurisdiction of WSDOT and assess how well those structures are allowing fish passage. This corridor may not have been surveyed for fish passage barriers in several years.

ESO's Stream Restoration Program contracts with WDFW's Fish Passage Program to re-survey stretches of roads in large transportation projects, to make sure all fish-bearing road crossings have been identified and assessed for fish passage within the project limits. As this project advances, please coordinate with ESO's Stream Restoration Program Manager to have the fish passage inventory updated.

Habitat Connectivity Priorities

Wildlife Collisions

Carcass removals (either by WSDOT maintenance or citizens salvage road-killed deer or elk) and crashes involving deer or elk are used to identify high rank segments where actions to reduce collisions are warranted. There are no high ranked segments in this corridor.

Pollinators

The entire Washington State highway system has been ranked, by half mile segment, for pollinator habitat enhancement potential. The state highway system has received ranks for three types of investments to benefit pollinators:

- General pollinator rank -- intended to benefit nearby croplands and natural area.
 - No high priority segments in study area
- Monarch rank intended to benefit a declining butterfly.
 - No high priority segments in study area
- **Urban Gateway** rank -- identify areas where local partnerships could be pursued to enhance conditions for pollinators for the appreciation of urban-dwellers and their gardens.
 - 5 high priority segments in study area:

I-5 MP 191.94 – 192.94 I-5 MP 194.44 – 195.44 US2 MP 0.00 – 0.89 US2 MP 1.87 – 2.87 SR204 MP 0.00 – 0.50

Stormwater Retrofit and TMDL (Total Maximum Daily Load)

Within the corridor, there are 7 pond, 1 vault, and 3 ditch type stormwater treatment and/or flow control BMPs. There are no medium or high priority areas for stormwater retrofit in the study area. The study area falls entirely within the Snohomish River Estuary Multi-parameter (Ammonia-N, CBOD, Dissolved Oxygen) TMDL.

Chronic Environmental Deficiencies

Currently, no CEDs are located in the study area. A Chronic Environmental Deficiency (CED) is a location along the state highway system where recent, frequent, and chronic maintenance to WSDOT infrastructure from changing hydrologic conditions is causing impacts to fish or fish habitat. CED projects are constructed to improve maintenance and environmental conditions of these locations.

Noise Walls

No existing noise walls or proposed retrofit noise walls were identified in the study area.

US 2 Trestle Replacement PEL

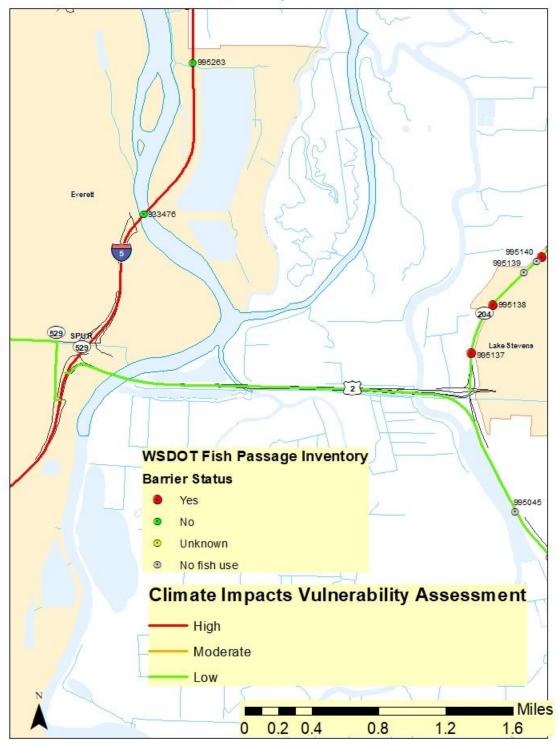


Figure 1. US 2 Trestle area -Climate vulnerability and Fish Passage

Appendix P Planning and Environmental Linkages Questionnaire

Introduction

A Planning and Environment Linkages (PEL) Study is a collaborative and integrated approach to transportation decision-making authorized by 23 CFR 168. PEL considers environmental, community, and economic goals early in the transportation planning process, generally at the corridor sketch or plan level. The information, analysis, and products developed during planning will inform the environmental review process under the National Environmental Policy Act (NEPA) and will help meet WSDOT requirements of least cost planning and practical solutions.

The PEL questionnaire is a tool that state departments of transportation (DOT) and metropolitan planning organizations (MPO) use to ensure that planning studies and decisions include environmental considerations. Analysis and findings are documented so that they can inform future studies and the environmental review process. The PEL questionnaire is used as a checklist to summarize the approach to addressing environmental and project development issues as part of the planning study in anticipation of a future NEPA study. The PEL questionnaire will be "handed off" to the NEPA practitioner as a starting point for the environmental review process. This helps the NEPA practitioner consider the past work that was done and avoid re-doing certain analysis or decisions made during planning.

The PEL questionnaire is intended to:

- 1) Provide planners a "checklist" detailing the requirements and options to consider when developing a planning study with a goal to inform the NEPA process; and
- 2) Document and share relevant planning information with NEPA practitioners to build understanding about a project both the information studied and areas that require more analysis.

This completed PEL questionnaire has been included as an appendix to the PEL Study. FHWA will use this questionnaire to assist it in determining if the study meets the requirements of 23 CFR §§ 450.212 or 450.318.

Questions and Answers

1 Background:

A. Who is the sponsor of the planning study? (state DOT, Local Agency, Other)

Washington State Department of Transportation (WSDOT)

B. What is the name of the planning study/document and other identifying project information (e.g., sub-account or STIP numbers, long-range plan, or transportation improvement program years)?

The United States Route 2 Westbound Trestle Study

C. Who was included on the study team (Name and title of agency representatives, consultants, etc.)?

WSDOT Staff

The following WSDOT staff were part of the study team:

- · Cathy George, Engineering Manager
- Kyengo Ndile, Project Engineer
- Tim Nau, Assistant Project Engineer
- Harmony Weinberg, Communications Lead
- Kris Olsen, Communications Lead
- Hannah Plummer, Management of Mobility Liaison
- Emily Geralds, Environmental Lead
- Ruth Park, Environmental Lead
- Vanessa Rogers, Environmental Lead
- Miguel Gavino, Traffic Engineer
- Barb Briggs, Traffic Engineer

Consultant Team

The following consultant staff were part of the study team:

- Dave Warner, Consultant Project Manager
- Jared Nakamoto, Consultant Deputy Project Manager
- Ben Rodenbough, Design Lead
- Michael Horntvedt, Traffic Lead
- Brian Woodburn, Traffic Operations
- Lawrence Spurgeon, Environmental Lead
- Laura Shabe, PEL Lead
- Brent Baker, Funding and Tolling Lead
- Bradley Brey, Transportation Planning
- Jessie Jones, Graphic Design
- Suanne Pelley, Communications Lead
- Liz Mack, Deputy Communications Lead
- D. Provide a description of the existing transportation facility within the corridor being studied, including project limits, modes, functional classification, number of lanes, shoulder width, access control and type of surrounding environment (urban vs. rural, residential vs. commercial, etc.)

The project area of the US 2 Westbound Trestle PEL Study is defined as the westbound segment of US 2 between and including the interchanges at Interstate 5 (I-5) and SR 204/20th St SE. US 2 is a crucial, multimodal, east-west highway corridor that connects I-5 and the city of Everett to the

residential communities of Snohomish, Lake Stevens, and Monroe, and to businesses and industries on both sides of the Snohomish River. VISION 2040¹, developed by the Puget Sound Regional Council (PSRC), designates Everett as a regional growth center with Lake Stevens and Snohomish as two of the region's 24 small cities. For this growth strategy to be successful, the US 2 westbound trestle must operate reliably and serve transit and active transportation in addition to automobile traffic.

This segment of US 2 crosses the Snohomish River on elevated structures or "trestles." The westbound trestle runs parallel to the eastbound trestle and both traverse an estuarine environment that includes Ebey Island, Ebey Slough, and Deadwater Slough.

The trestle span consists of two 12-foot travel lanes without a median and with three-foot shoulders on each side. The travel lanes are bounded by WSDOT Type L barriers with a raised 11-inch-high by 18-inch-wide curb at the base.

Several previous WSDOT studies, described below in more detail, identified the need to address the roadway geometries and capacity of the westbound trestle to accommodate future growth.

E. Provide a brief chronology of the planning activities including the year(s) the studies were completed.

Several planning studies were undertaken recently to consider changes to the westbound trestle, including

- The US 2: Everett Port/Naval Station to SR 9 Corridor Planning Study² (US 2 Corridor Study) focused on short and long-range improvements for the westbound trestle and was completed by WSDOT in August 2016.
- The US 2-SR 204-20th Street SE Interchange Justification Report (IJR)³ was initiated by the 2016 Washington State Legislative session to evaluate the need for improvements to the interchange and immediately surrounding highway system to improve traffic conditions and mobility for people and freight in the project area. The report was finalized by WSDOT in April 2018.
- The US 2 Westbound Trestle Funding and Financing Study⁴ was completed by WSDOT in January 2018. The Washington State Legislature directed WSDOT to prepare a cost estimate for replacing the westbound trestle, including the east interchange improvements proposed in the IJR, and to examine and recommend financing options.
- F. Are there recent, current, or near future planning studies or projects in the vicinity? What is the relationship of this project to those studies/projects (e.g., Are corridor connections described in local transportation plans? Do those plans identify elements incorporated into the current plan? How might WSDOT planning modify local plans, or vice versa?)?

The Puget Sound Regional Council (PSRC), the federally designated MPO for the region, developed VISION 2040 and the associated Regional Transportation Plan (RTP). VISION 2040 provides a framework for how and where development occurs and how the region supports efforts to manage growth. The RTP provides a blueprint for improving and coordinating mobility,

FHWA Draft 06/29/2020 P-3

¹ www.psrc.org/vision-2040-documents

² www.wsdot.wa.gov/sites/default/files/2006/02/14/US2CorridorPlanningStudySigned20160901.pdf

³ www.wsdot.wa.gov/publications/fulltext/LegReports//17-19/US2 SR204 20thStSE IJR Report.pdf

⁴ www.wsdot.wa.gov/publications/fulltext/LegReports/17-

^{19/}US2WestboundTrestleFunding FinanceStudy WithAppendixA.pdf

providing improved transportation choices, addressing special needs, moving the region's freight, and supporting the region's economy and environment.

From this framework, the PEL Study utilized transportation and socio-economic data, the classification of cities and towns, and plans for transit and growth centers. PSRC is currently finalizing its VISION 2050, an update to VISION 2040 and is anticipated to begin the update of the RTP during the second half of 2020

The city of Lake Stevens recently issued a notice of land use application for the US 2 Trestle HOV/Transit Trestle Congestion Jump Project⁵ (also referred to as the Business Access and Transit lane project). This project is listed in the city's Capital Facilities Element of the Comprehensive Plan as well as in the 20th Street SE Corridor Subarea Plan. It was included in the transportation analysis of this PEL Study.

Looking forward, it is recommended that WSDOT planning continue to work with the city of Everett to address traffic operations for the mutual benefit of US 2 travelers and downtown mobility.

2 Methodology used:

A. What was the scope of the study and the reason for completing it?

The scope of this PEL Study included the following tasks and actions:

- Preparation of a draft purpose and need statement.
- Coordination with federal, state, and local agencies.
- First phase of tribal coordination.
- Review and documentation of baseline information to determine the scope of issues.
- Development and documentation of concepts and configurations.
- Documentation of unreasonable concepts and configurations that could be eliminated.
- Initial screen of affected environmental resources.
- Preliminary transportation analysis.
- · Recommendations and next steps.

The study was completed to develop options, at the conceptual level, that would address the function of the westbound trestle. The completion of a quantitative transportation analysis offers clarity to stakeholders and jurisdictions on the need for a replacement trestle. The high-level assessment of environmental considerations places the project in a larger context and serves as a framework for future NEPA phases. As the US 2 westbound trestle nears the end of its useful life, WSDOT will continue to pursue plans to replace this important east-west connection.

B. Did you use NEPA-like language? Why or why not?

NEPA language was used except for the planning terms listed below. Planning terms listed below were used to support continuity with the terms used in previous studies of the corridor. A term-by-term description is provided in the response to C below.

⁵ www.lakestevenswa.gov/DocumentCenter/View/8287/NOA_20th-St-SE-BAT-Lane-Widening

Crosswalk of Terminology between Planning and NEPA

Planning Term	NEPA Term	
Project or Study area limits	Logical Termini	
Long list of Concepts	Preliminary range of alternatives	
Highly-rated Concepts	Selected Alternatives	
Ranking of Concepts	Screening of alternatives analysis	
Recommendations	Preferred Alternative	
Environmental Considerations	Affected Environment	

C. What were the actual terms used and how did you define them? (Provide examples or list)

The term "study area" was used instead of logical termini because this PEL Study used data and findings from an earlier corridor study and an IJR which used the former term. The terms "concept" and "configuration" were used instead of alternatives to reflect that this was not a complete alternatives analysis as required under NEPA. It was determined early in the PEL Study that the study area would need to be revisited in future NEPA phases and thus a robust, quantitative evaluation of the configurations was not carried out. Similarly, the term "environmental considerations" was used to reflect that a high-level review of key resources was undertaken, rather than a project-level NEPA assessment.

D. How do you see these terms being used in NEPA documents?

The non-NEPA terms would be referenced in background documents. These terms can, in each case, be replaced by the appropriate NEPA language in future NEPA phases without loss of the knowledge gained in the PEL Study. For example, future NEPA phases would consider the representative configurations as reasonable alternatives and utilize options within those alternatives to work through the various design solutions at the interchanges (previously known as "Concepts").

E. Attach the project schedule and describe the planning process. Specifically: What were the key steps and coordination points in the PEL decision-making process? Who were the decision-makers and who else participated in those key steps? For example, for the corridor vision, "the decision was made by state DOT and the local agency, with buy-in from FHWA, the USACE, and USFWS and other resource/regulatory agencies".

Throughout the PEL Study, key recommendations and decisions were made by the Technical Working Group, which included representatives from the following jurisdictions:

- City of Everett
- City of Lake Stevens
- City of Marysville
- City of Monroe
- City of Snohomish
- Community Transit
- Everett School District
- Everett Transit
- FHWA
- Port of Everett
- Puget Sound Regional Council

- Snohomish County
- Sound Transit
- US Coast Guard
- Washington State Patrol
- WSDOT Freight Office

Policy decisions and acceptance of recommendations were made by the Executive Advisory Group, which included the following elected officials and staff.

- Chairwoman Teri Gobin, Tulalip Board of Directors
- Councilmember Brian Sullivan, Snohomish County
- Councilmember Sam Low, Snohomish County
- Emmett Heath, CEO of Community Transit
- Executive Dave Somers, Snohomish County
- Les Reardanz, CEO of the Port of Everett
- Mayor Cassie Franklin, City of Everett
- Mayor John Spencer, City of Lake Stevens
- Representative Carolyn Eslick, 39th District
- Representative Jared Mead, 44th District
- Representative John Lovick, 44th District
- Representative June Robinson, 38th District
- Representative Mike Sells, 38th District
- Representative Robert Sutherland, 39th District
- Senator John McCoy, 38th District
- Senator Keith Wagoner, 39th District
- Senator Steve Hobbs, 44th District
- Steve Thomsen, Director of Snohomish County Public Works

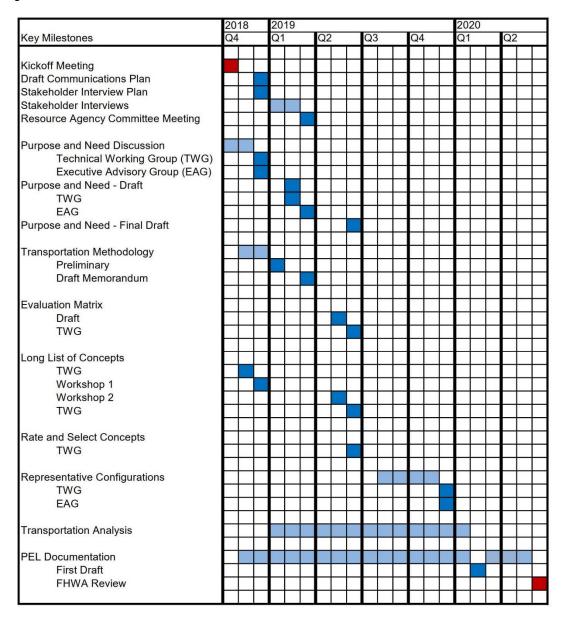
A Resource Agency Committee including tribes, federal, state, and local agencies was convened at the start of the PEL process to provide input on resources and constraints that should be considered during the PEL process and the Purpose and Need. The following agencies were invited to participate in the RAC.

- Army Corps of Engineers
- Bureau of Reclamation
- City of Everett
- City of Lake Stevens
- City of Marysville
- Conservation Commission
- Federal Emergency Management Agency
- Federal Highway Administration
- NOAA Fisheries/US Fish and Wildlife
- Puget Sound Regional Council
- Snohomish Conservation District
- Snohomish County
- Sound Salmon Solutions
- Stillaguamish Tribe
- Tulalip Tribes
- US Coast Guard

- US Environmental Protection Agency
- Washington Department of Archaeology and Historic Preservation
- Washington Department of Ecology
- Washington Department of Fish and Wildlife
- Washington State Department of Natural Resources

A milestone schedule of key decision and coordination points is included as Figure 1.

Figure 1. Milestone schedule



Ongoing Process/Analysis
Meeting and Delivery Dates
Major Milestones

F. What should be taken into consideration when presenting the PEL information in NEPA?

It is recommended that the study area limits of the PEL Study be expanded in future NEPA phases. The key finding from the PEL Study is that a transportation solution for the westbound trestle will need to involve capacity considerations on I-5. Congestion in downtown Everett streets will also need to be considered. These factors were not part of the scope of the PEL Study.

3 Agency coordination:

A. Provide a synopsis of coordination with Federal, tribal, state and local environmental, regulatory and resource agencies. Describe their level of participation and how you coordinated with them.

In addition to the agency coordination described in Section E, WSDOT initiated tribal coordination with the following tribes to invite their participation in the PEL study:

- Tulalip Tribes
- Confederated Tribes and Bands of the Yakama Nation (Yakama Nation)
- Stillaguamish Tribe of Indians (Stillaguamish Tribe)
- Snoqualmie Tribe (Snoqualmie Tribe)
- Sauk-Suiattle Indian Tribe (Sauk-Suiattle Tribe)

The Tulalip Tribes have expressed interest in transportation to the reservation and treaty fishing rights in the study area. WSDOT formally invited the Tulalip Tribes to participate in the EAG, TWG, and RAC, and made efforts to meet with the tribe.

WSDOT sent written correspondence to the Stillaguamish Tribe, Snoqualmie Tribe, Yakama Nation, and Sauk-Suiattle Tribe and followed up individually to invite them to participate in the RAC and TWG work groups. The WSDOT project team also worked to meet individually with the tribes on cultural resources and other issues. Tribal coordination meetings focused on presenting project briefings to the tribes, soliciting their feedback, and identifying any significant issues that would affect project development.

B. What transportation agencies (e.g. for adjacent jurisdictions) did you coordinate with or were involved during the study?

The PEL Study sought to coordinate and involve with all potential partners during this process, primarily through inclusion in the Technical Working Group. The following transportation agencies participated in this process: Community Transit, Everett Transit, FHWA and Sound Transit. Additionally, agencies with a major stake in transportation planning were also included: The Puget Sound Regional Council, Port of Everett and the WSDOT Freight Office. The PEL study involved participants from other jurisdictions with an interest in the facility, including the cities of Everett, Lake Stevens, Marysville, Monroe and Snohomish; Everett School District, Snohomish County, US Coast Guard, and Washington State Patrol.

C. What steps will need to be taken with each agency during NEPA scoping?

Future NEPA phases will focus on final determination of a study area and an advanced transportation analysis; public and agency engagement and environmental concerns. During NEPA scoping, the coordination that was started during this PEL study should continue with the three advisory groups. Agencies should be invited to contribute to the production of the final Purpose and Need statement. This task includes identifying and describing the needs of the individual agencies now and in future scenarios, and how the project can contribute to meeting those needs. Following that, agencies should be invited to participate in contributing to the

evaluation of concepts/alternatives, and later to partake in validating the data analysis regarding transportation and environmental concerns in the area.

4 Public coordination:

A. Provide a synopsis of your coordination efforts with the public and stakeholders. Provide information regarding dates, level of involvement, issues identified and how the Public coordination affected the planning process.

Throughout the duration of this study various stakeholders were engaged through the Technical Working Group (TWG), Executive Advisory Group (EAG) and Resource Agency Committee (RAC). To engage the general public, a public outreach plan was developed for this PEL study. However, public outreach activities scheduled for early 2020 were placed on hold due to the COVID-19 pandemic. Public outreach will commence in accordance with as local and state guidelines.

5 Purpose and Need for the study:

A. What was the scope of the study and the reason for completing it?

In the 2018 legislative session, the Washington State Legislature authorized new funding to start the process for additional high-level conceptual design on the US 2 Westbound Trestle. This initial funding was provided to allow WSDOT to begin determining the final preferred alternative to meet the project's Purpose and Need.

This PEL Study began the work to develop high-level concepts for environmental impacts, to answer questions raised by previous studies, and to begin developing options at a conceptual level of design to address the function of the westbound trestle. The completion of this project phase was intended to result in a PEL Study report that will be presented to the Legislature, offering clarity on the project's purpose and need, the scope of impacts and potential mitigation, and a preferred alternative. A key goal of completing this PEL was to provide information to the Legislature and affected jurisdictions that would support the funding of NEPA review, design and construction.

B. Provide the purpose and need statement, or the corridor vision and transportation goals and objectives to realize that vision.

Draft Purpose

The purpose of the US 2 Westbound Trestle Study is to develop a long-term solution that will:

- Increase travel reliability for all modes.
- Reduce the potential for fatal and serious injuries for all users.
- Improve multimodal system linkages to support regional and community growth.
- Modify roadway operations and geometrics to current standards.

Draft Need

A long-term solution for the US 2 Westbound Trestle will address the following primary issues:

- Mobility
- Safety
- Multimodal use
- Sustainability

C. What steps will need to be taken during the NEPA process to make this a project-level purpose and need statement?

One of the first key steps in the NEPA process will be a scoping exercise to determine the logical termini of the corridor. Non-highway considerations, including providing access to historically disadvantaged communities, will be added to the purpose and need statement. A definition of success to measure the efficacy of multimodal system improvements will be identified, as well as a person throughput approach. Goals that support human services transportation will be addressed and added. Feedback from the public online open house (to be scheduled during the second half of 2020) will be incorporated into the purpose and need statement.

- Range of alternatives: Planning teams need to be cautious during the alternative screen process; alternative screening should focus on purpose and need/corridor vision, fatal flaw analysis, and possibly mode selection. This may help minimize problems during discussions with resource agencies. Alternatives that have fatal flaws or do not meet the purpose and need/corridor vision will not be considered reasonable alternatives, even if they reduce impacts to a particular resource. Detail the range of alternatives considered, screening criteria, and screening process, including:
 - A. What types of alternatives were looked at? (Provide a one or two sentence summary and reference document.)

For each section of the westbound trestle, a long list of conceptual designs or concepts was developed, evaluated, and a short list of highly rated concepts was selected. Using these concepts, representative configurations were assembled and refined. Transportation analyses were performed to compare configurations and recommendations were developed to guide future studies and inform NEPA review. See *Section 3. Concept Development and Screening, Section 4. Configurations*, and *Section 5. Transportation Analysis* in the PEL Study.

B. How did you select the screening criteria and screening process?

Criteria were adopted from the WSDOT Mobility Framework and additional criteria were developed by the Technical Working Group.

C. For alternative(s) that were screened out, briefly summarize the reasons for eliminating the alternative(s). (During the initial screenings, this generally will focus on fatal flaws.)

Configuration 1 was not moved forward for additional consideration and transportation analysis in this PEL study. Configuration 1 included a concept for the west interchange that resulted in significant modifications to the I-5 structures. Thus, Configuration 1 received a low rating due to construction phasing requirements and potential adverse impacts on adjacent properties.

D. Which alternatives should be brought forward into NEPA and why?

Aspects of the representative configurations should be brought forward into NEPA. These include a three-lane trestle span and further exploration of opportunities for managed lanes to ensure reliable travel times.

E. Did the public, stakeholders, and agencies have an opportunity to comment during this process?

Representatives from surrounding jurisdictions and transportation agencies were part of the technical working groups and provided input and comment throughout the process.

F. Were there unresolved issues with the public, stakeholders, and/or agencies?

Discussions with the city of Everett are ongoing to ensure connectivity and at the same time address potential effects on levels of congestion on downtown Everett surface streets and

intersections. Ongoing coordination with resource agencies and tribes will include discussions to address stormwater concerns related to fish species.

- 7 Planning assumptions and analytical methods:
 - A. What is the forecast year used in the study? 2040
 - B. What method was used for forecasting traffic volumes?

The PSRC travel demand model was used to produce travel demand forecasts for each of the study alternatives. The most recent PSRC model has a horizon year of 2040. The model was validated and updated for this study according to the following steps.

- 1. Compared additional 2018 traffic counts to model-estimate vehicle volumes at key locations in the study area.
- 2. Performed a base year (2017/2018) model validation analysis and prepared necessary summary results. Analysis included using StreetLight origin-destination data to adjust base year trip tables produced by the PSRC model.
- Coordinated with WSDOT and Snohomish County regarding consistency between demographic forecasts prepared by PSRC and Snohomish County for the city of Everett.
- C. Are the planning assumptions and the corridor vision/purpose and need statement consistent with each other and with the long-range transportation plan? Are the assumptions still valid?

Relevant roadway and transit projects listed in the Regional Transportation Plan were accounted for in the existing conditions and year 2040 configurations.

The planning assumptions used in the traffic operations model are consistent with the corridor vision/purpose and need statement. Future NEPA phases will incorporate WSDOT Human Services Transportation Plan and the Active Transportation Plan currently being developed.

D. What were the future year policy and/or data assumptions used in the transportation planning process related to land use, economic development, transportation costs, and network expansion?

For land use and economic development, future year policies and data assumptions reflected the PSRC VISION 2050. Transportation costs were not considered in this PEL Study. Network expansion included all programmed and funded projects in the modeling study area, including Sound Transit 3.

- 8 Environmental resources (wetlands, cultural, etc.) reviewed. For each resource or group of resources reviewed, provide the following:
 - A. In the study, at what level of detail was the resource reviewed and what was the method of review?

This section provides a planning-level review of selected environmental resources. These are based on a WSDOT list of assets that need to be protected or have the potential to influence the evaluation of transportation solutions in the region. It is important to note that this planning-level review does not examine the full range of environmental and social issues, which will be addressed during NEPA review.

The methodology of this planning-level environmental review is consistent with NEPA, FHWA, and WSDOT guidelines. Information was compiled and mapped using readily available data from

local, regional, state, and federal agencies. Field studies were not conducted during this PEL Study.

As discussed in Section 5, it is anticipated that future studies of the US 2 westbound trestle will reevaluate the limits of the study area. As a result, the study area limits for each resource may need to be revised.

This planning-level environmental analysis was used to inform the development of concepts. More detailed information is included in the following appendices:

- US 2 Westbound Trestle Draft Summary of Project Environmental Baseline and PEL Study Plan (Appendix G)
- Draft Environmental Constraints US 2 Westbound Trestle NEPA Documentation (Appendix H)
- WSDOT Environmental Services Office, Environmental Context Memo (Appendix O).
- B. Is this resource present in the area and what is the existing environmental condition for this resource?

A summary of the environmental resources identified in this PEL Study is included in Table 1 below.

Table 1: Summary of Environmental Resources

Resource	Context	Evaluation Approach
Climate vulnerability	Areas of high vulnerability identified on the I-5 corridor near the interchange with US 2.	Qualitatively assessed in this PEL Study.
Historic bridges	Five bridges have been identified on SR 529 in Everett. Low probability of impact owing to location separate from project area.	Identified in PEL Study and will be reevaluated in future NEPA phases given new study area limits
Archaeological sites	Very few archaeological sites have been recorded in proximity to the project corridors, and no sites are directly within the corridors.	Identified in PEL Study. Presence and potential need for cultural survey will be reevaluated in future NEPA phases.
Environmental Justice (EJ)	EJ populations are present in the study area.	Identified in PEL Study. Potential impact on EJ communities will be evaluated in future NEPA phases given a more detailed impact analysis of selected alternatives.
Habitat connectivity	Five segments with high rankings as Urban Gateway pollinator habitat have been identified.	Identified in PEL Study. Potential effect on alternative development will be addressed in future NEPA phases.
Noise walls	No existing, proposed, or non-WSDOT noise walls are in the study area.	Identified in PEL Study. Will be revised in future NEPA phases given potential new study area limits.

Resource	Context	Evaluation Approach
Stormwater retrofits	No medium or high priority areas for stormwater retrofit are found in the study area. Study area is within Snohomish River Estuary Multiparameter Total Maximum Daily Load.	Evaluate qualitatively and quantitatively in future NEPA phases given a more detailed design of selected alternatives.
Wetlands	The potential impact on wetlands did not vary substantially among the Concepts and did not play a role in their evaluation and ranking.	Potential impacts to wetlands, including streams and buffer impacts, and associated mitigation will be evaluated quantitatively in future NEPA phases.
Wetland mitigation sites	Two WSDOT wetland mitigation sites were identified: 1.5 acres near the western end of the existing trestle, east of the Snohomish River; and 14 acres along 51st Avenue SE south of the westbound trestle. These two sites are currently in the maintenance phase.	Identified in PEL Study and will be reevaluated in future NEPA phases given potential new study area limits.
Fish passage barriers	One documented fish passage injunction barrier on SR 204 at MP 0.21 near the study area.	Identified in PEL Study. Consideration of fish passage barriers will continue as alternatives are developed during future NEPA phases.
Fish, wildlife, vegetation	Endangered Species Act (ESA) - listed species and areas that provide habitat for them are present within 500 feet of the project area.	Identified in PEL Study. Will be reevaluated in future NEPA phases given new study area limits. Adverse impacts will be avoided, minimized and/or mitigated as alternatives are developed in accordance with regulations.
Chronic Environmental Deficiencies	None present in the study area.	Identified in PEL Study. A modification to study area limits in future NEPA phases may require a reassessment.

C. What are the issues that need to be considered during NEPA, including potential resource impacts and potential mitigation requirements (if known)?

If changes are made to the project or study areas during future NEPA phases, a reassessment of climate vulnerability will be undertaken.

Due to the location of the identified historic bridges, the potential for impacts from improvements to the US 2 Westbound Trestle is low.

Updated socio-economic data will be collected and local communities engaged in future NEPA phases. With more detailed planning, potential impacts will be evaluated to identify whether the future project has the potential to cause adverse effects to these populations and households.

Issues related to stormwater management are likely to shape the design of alternatives during future NEPA phases. Depending on the sensitivity of the water resources, minimizing adverse effects could require stormwater treatment measures. Detention and treatment of stormwater runoff will be addressed in more detail during future NEPA phases.

The potential impact on wetlands does not vary substantially between the concepts and did not play a role in their evaluation and ranking. Impacts to wetlands and associated mitigation will be evaluated quantitatively in future NEPA phases.

If any alternatives would require work at locations of culverts that are identified as fish passage barriers, those culverts would need to be replaced with structures that are not barriers. Coordination with the WSDOT Fish Passage Barrier Program for guidance on fish barrier corrections will continue as alternatives are developed during future NEPA processes.

A modification to study area limits in future NEPA phases may require a reassessment of whether chronic environmental deficiencies are present.

D. How will the planning data provided need to be supplemented during NEPA?

Future studies will consider a systems level approach for the transportation analysis and include a focus on the movement of people that use the westbound trestle and their travel characteristics. This approach is likely to expand the project area and the limits of the transportation analysis as compared to this PEL Study. Thus, all environmental resources will need to be reassessed to reflect the new resource study areas.

9 List environmental resources you are aware of that were not reviewed in the PEL study and why. Indicate whether or not they will need to be reviewed in NEPA and explain why.

This PEL focused on 10 key resources identified by the WSDOT Environmental Services Office. Air quality and noise impacts were not reviewed and should be considered during NEPA due to the increases in traffic volumes that are anticipated across the westbound trestle.

10 Were cumulative impacts considered in the study? If yes, provide the information or reference where the analysis can be found.

Cumulative impacts were not considered in this PEL Study.

11 Describe any mitigation strategies discussed at the planning level that should be analyzed during NEPA.

The need for potential mitigation for potential adverse effects on wetlands and established wetland mitigation sites was identified in this PEL Study and should be analyzed further during future NEPA phases.

12 What needs to be done during NEPA to make information from the study available to the agencies and the public? Are there study products which can be used or provided to agencies or the public during the NEPA scoping process?

A public outreach plan was developed during this PEL Study. Public open houses are part of that outreach plan. WSDOT is planning to hold these open houses online and will align their planning with the state's COVID-19 response. The baseline environmental conditions document and the traffic white paper are study products which could be used during the NEPA scoping process.

- 13 Are there any other issues a future project team should be aware of?
 - A. Examples: Controversy, utility problems, access or ROW issues, encroachments into ROW, problematic land owners and/or groups, contact information for stakeholders, special or unique resources in the area, etc.

The US 2 westbound trestle is an important highway connector to I-5 and to Everett for the cities of Lake Stevens and Snohomish, rapidly growing residential communities east of the trestle. Congestion during the AM peak for westbound travelers is a significant concern highlighted and discussed by elected officials and the public in the press and social media. Elected officials have provided funding to develop transportation solutions to improve the traffic operations of the westbound trestle. Most commuters that cross the trestle travel in single occupancy vehicles and travel to destinations that may not be well served by transit. Some constituents may express negative reactions to the PEL study conclusion that widening the trestle is not a workable solution for addressing congestion on the westbound trestle.

The following list of media, community blogs, local agencies and governments, and resource groups received information about the US 2 Trestle PEL online open house and survey:

- Asia Today
- Associated Press (Seattle)
- Auburn Reporter
- Bellingham Herald
- City of Arlington
- City of Bothell
- City of Everett
- City of Marysville
- City of Monroe
- City of Snohomish
- City of Stanwood
- Community Transit
- Daily Journal of Commerce
- Everett Herald
- Everett School District
- Everett Transit
- Global Traffic Network
- Highways Today
- KCPQ-TV
- KING-TV
- Kirkland Reporter
- KIRO radio
- KIRO-TV
- KNKX radio
- KOMO radio
- KOMO-TV
- KRKO Radio
- KUNS-TV Univision Seattle
- KUOW Radio
- KVI Radio
- KWPZ
- Living Snoqualmie
- Mercer Island Reporter
- Mukilteo Beacon
- My Everett News
- NW Asian Weekly
- NW News Network
- NW Progressive
- Outdoors Northwest
- Port of Everett

- Puget Sound Regional Council
- Seattle Chinese Times
- Seattle Post-Intelligencer
- Seattle Times
- Seattle weekly
- Skagit Publishing
- Snohomish County
- Snohomish Times
- Snohomish Tribune
- Sound Transit
- The News Tribune
- AAA (vehicle association)
- Tulalip Tribes
- TVW
- US Coast Guard
- Washington State Patrol
- Washington Trucking Association
- Peachjar (online school district distribution platform to parents of schoolchildren)
 - o Lake Stevens Middle School
 - Skyline Elementary
 - Hillcrest Elementary
 - o Cavelero Mid High School
 - o Glenwood Elementary
 - o Mt. Pilchuck Elementary
 - o HomeLink
 - o North Lake Middle School
 - o Lake Steven High School
 - Sunnycrest Elementary
 - o Stevens Creek Elementary
 - o Early Learning Center
 - Highland Elementary

US 2 westbound trestle – Online survey questions

The westbound US 2 trestle is the only direct highway route across the Snohomish River to the I-5 corridor in Everett. With significant population growth in Snohomish County, the westbound structure is busier and more congested. In 2019, WSDOT began gathering information and studied different replacement concepts. WSDOT also wants to hear from highway users about their experiences on the trestle, interest in transit, car/van pooling, how to pay for a replacement and concerns around the environment and potential construction of a new trestle. This survey will take approximately 10 minutes to complete.1

1. What do you think are the top 3 problems with the westbound US 2 trestle traveling toward Everett?²

- 1. Not enough lanes. 58.28%
- No HOV lane. 11.04%
- 3. It's too narrow. 15.32%
- 4. The ramp to southbound I-5 can't accommodate peak period westbound US 2 traffic. - 45.21%
- The ramps to downtown Everett can't accommodate peak period westbound US 2 traffic. - 5.92%
- 6. The ramp to northbound I-5 can't accommodate peak period westbound US 2 traffic. - 28.92%
- 7. Southbound I-5 is so congested in the mornings that westbound trestle traffic can't merge onto it and backs up onto the trestle. - 28.96%
- 8. Downtown Everett streets are so congested in the mornings that westbound trestle traffic can't easily get into town. - 2.91%
- 9. The ramps to I-5 are too narrow with tight curves. 13.82%
- 10. Snohomish County population growth has overwhelmed the trestle. 52.80%
- 11. Drivers stay in the right lane across the trestle and then cut left into line at the last moment, causing drivers in the left lane to stop (also known as jumping the queue). - 28.08%
- 12. There's no shoulder for stalled vehicles or crashes. 40.53%

2. What is your usual starting location when traveling westbound on the US 2 trestle?

Starting location

- 1. Lake Stevens 62.75%
- 2. Snohomish 17.34%
- 3. Monroe 9.62%
- 4. Ebey Island 0.57%
- 5. Sultan 1.19%
- 6. Other (please specify) 17.21%

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- 3. When traveling westbound on the US 2 trestle what is your usual destination?
 - 1. Downtown Everett 48.22%
 - 2. Marysville 7.96%
 - 3. North of Marysville 8.28%
 - 4. Lynnwood 29.18%
 - 5. Seattle 25.84%
 - 6. Bellevue 5.90%
 - 7. Other (please specify) 26.73%
- 4. Prior to COVID-19, how many times per week did you cross the trestle toward Everett?
 - 1. 0 3.05%
 - 2. 1 9.15%
 - 3. 2 9.72%
 - 4. 3 9.63%
 - 5. 4 8.84%
 - 6. 5 30.67%
 - 7. 6 10.38%
 - 8. 7 or more 20.28%
- 5. How likely are you to return to your previous commute pattern?
 - 1. Very likely 60.80%
 - 2. Somewhat likely 24.16%
 - 3. Somewhat unlikely 9.20%
 - 4. Not at all likely 6.06%
- 6. Prior to COVID-19, what time of day did you normally travel westbound across the trestle?
 - 1. Before 6 a.m. 19.42%
 - 2. 6-7 a.m. 27.60%
 - 3. 7-8 a.m. 24.84%
 - 4. 8-9 a.m. 10.58%
 - 5. After 9 a.m. 27.96%
- 7. Please describe your actions if the trestle is too congested or blocked by an incident?
 - 1. Leave at my normal time and travel on the trestle as usual 31.83%
 - 2. Delay trip 10.70%
 - 3. Cancel trip 4.19%
 - 4. Use alternate route 65.44%
 - 5. Other (please specify) 11.29%
- 8. Have you ever considered biking or walking to access transit that crosses the trestle?
 - 1. Yes 10.50%
 - 2. No 89.59%

Online survey questions

- 9. Would you be more likely to bike or walk across the westbound bridge as part of your normal commute or recreation if there was a dedicated path/trail across the trestle?
 - 1. More likely 9.84%
 - 2. Somewhat likely 8.43%
 - 3. Somewhat unlikely 6.93%
 - 4. Not at all likely 75.07%
- 10. Which of the following would help you consider using transit (or using it more often) for your trips across the trestle? (Choose up to three)
 - 1. Improved stop amenities such as shelters and lighting 9.67%
 - 2. Direct service with no or fewer transfers 29.41%
 - 3. Service to more locations 18.59%
 - 4. More frequent bus service 18.01%
 - 5. Free ride home in case of emergencies 7.90%
 - 6. More reliable bus service 8.70%
 - 7. Earlier and/or later bus services 10.47%
 - 8. Transit provides a better travel time savings than driving alone 21.43%
 - 9. Lower fares 5.41%
 - 10. Comfortable bus seats 1.82%
 - 11. A dedicated bus lane across the trestle 12.20%
 - 12. Tolls for general passenger vehicles 3.64%
 - 13. Nothing will get me out of my car 55.68%
- 11. Which of the following would help you consider car/vanpooling (or car/vanpooling more often) for your trips across the trestle? (Choose up to three)
 - 1. A dedicated HOV lane across the trestle 26.14%
 - 2. A faster trip across the trestle 22.66%
 - 3. Free parking at my destination 8.95%
 - 4. Preferred or nearby parking at my destination 7.08%
 - 5. A free ride home in case of emergencies 13.22%
 - 6. Help finding carpool or vanpool partners 10.55%
 - 7. Door to door pickup and drop off 16.61%
 - 8. Dedicated meeting locations near my home and work 12.87%
 - 9. Tolled lanes for single-occupant vehicles lanes 5.92%
 - 10. Nothing will get me to carpool or vanpool 55.48%
- 12. Which of the following funding sources would you be most likely to support for construction of a new westbound trestle?
 - 1. Statewide gas tax 41.06%
 - 2. User fees, like tolls 10.82%
 - 3. Through a tax specifically in Snohomish County 20.76%
 - 4. A combination gas taxes, user fees/tolls and Snohomish County tax 18.33%

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- 5. None of the above 28.46%
- 6. Other (please specify) 21.26%

13. What are your top two environmental concerns about a replacement bridge?

- 1. Disturbance or destruction of existing wetlands 34.85%
- 2. Disturbance or destruction of existing or nearby wildlife, fish, birds and/or marine life during construction – 46.47%
- 3. Noise and air quality during construction 17.87%
- 4. Placing bridge piers in the Snohomish River 13.87%
- 5. Loss of residential and farm property/homes on Ebey Island, near the existing westbound trestle - 29%
- 6. Other 23.41%

14. What are your top two concerns about construction of a new bridge?

- 1. Construction-related traffic congestion 65.77%
- 2. Construction will be a visual distraction to drivers using the existing bridges -4.64%
- 3. Construction noise 2.17%
- 4. Construction-related air quality deterioration 2.74%
- 5. The costs associated with building a bridge in an area with poor ground stability and many wetlands. - 41.09%
- 6. A new bridge will remain congested when it opens due to population growth. 60.16%
- 7. Other 12.16%

15. What is the zip code where you live?3

16. Where do you live?

- 1. Lake Stevens 64.34%
- 2. Snohomish 17.20%
- 3. Monroe 7.62%
- 4. Gold Bar 0.82%
- 5. Skykomish .05%
- 6. Everett 10.45%
- 7. Other (please specify) 27.22%

17. If you're traveling for work, what modes of travel do you use? (Check all that apply)

- 1. Driving alone in personal vehicle 87.38%
- 2. Carpool 14.15%
- 3. Vanpool 1.53%
- 4. Public transit 6.89%
- 5. Bicycle 2.39%
- 6. Walk 0.95%
- 7. Commercial freight 0.95%
- 8. I don't travel in this area for work. 10.41%

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9. Other (please specify) – 5.95%

Demographic questions

WSDOT wants to hear from a wide range of people. By answering the following questions you'll help us better understand who is participating in the study. All your answers are optional and confidential. We will combine your answers with others for analysis purposes only.

18. How did you hear about the study/survey?

- 1. Email 15.37%
- 2. Social media 52.33%
- 3. Word of mouth 6.04%
- 4. At your place of work 4.80%
- 5. At your school 2.13%
- 6. News media (radio, newspaper) 25.90%

19. What is your age

- 1. Under 18 0.13%
- 2. 19-24 3.72%
- 3. 25-34 18.09%
- 4. 35-44 32.18%
- 5. 45-54 23.49%
- 6. 55-64 15.56%
- 7. 65+ 7.27%

20. How do you identify? Please check all that apply

- 1. Black/African-American 2.84%
- 2. Hispanic, Latinx, or Spanish origin 4.63%
- 3. Asian/Asian-American 5.18%
- 4. White/Caucasian 90.44%
- 5. American or Alaska Native/Indigenous 3.98%
- 6. Native Hawaiian or Other Pacific Islander 2.19%
- 7. Other (please specify) 10.81%

21. What is your approximate yearly household income?

- 1. \$0 to \$24,999 3.35%
- 2. \$25,000 to \$49,999 8.31%
- 3. \$50,000 to \$74,999 14%
- 4. \$75,000 to \$99,999 17.35%
- 5. \$100,000 to \$124,999 19.14%
- 6. \$125,000 to \$149,999 13.31%
- 7. \$150,000 to \$174,999 11.06%
- 8. 175,000 to 199,999 5.32%
- 9. \$200,000 or more 8.17%

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22. What is the highest level of education you have completed or the highest degree you have received?

- 1. Less than high school degree 0.74%
- 2. High school degree or equivalent (e.g., GED) 9.66%
- 3. Some college but no degree 22.22%
- 4. Associate degree 14.63%
- 5. Bachelor degree 33.99%
- 6. Master's degree 14.08%
- 7. Trade school 4.69%
- 8. Other (please specify) 3.36%

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¹SurveyMonkey results. Survey responses received by email are available from WSDOT

²Response percentages are listed next to each question choice

³Zip codes available from WSDOT