

US 101 East Sequim Pre-Design Study



Prepared by
Washington State Department of Transportation
Olympic Region
Multimodal Planning Office
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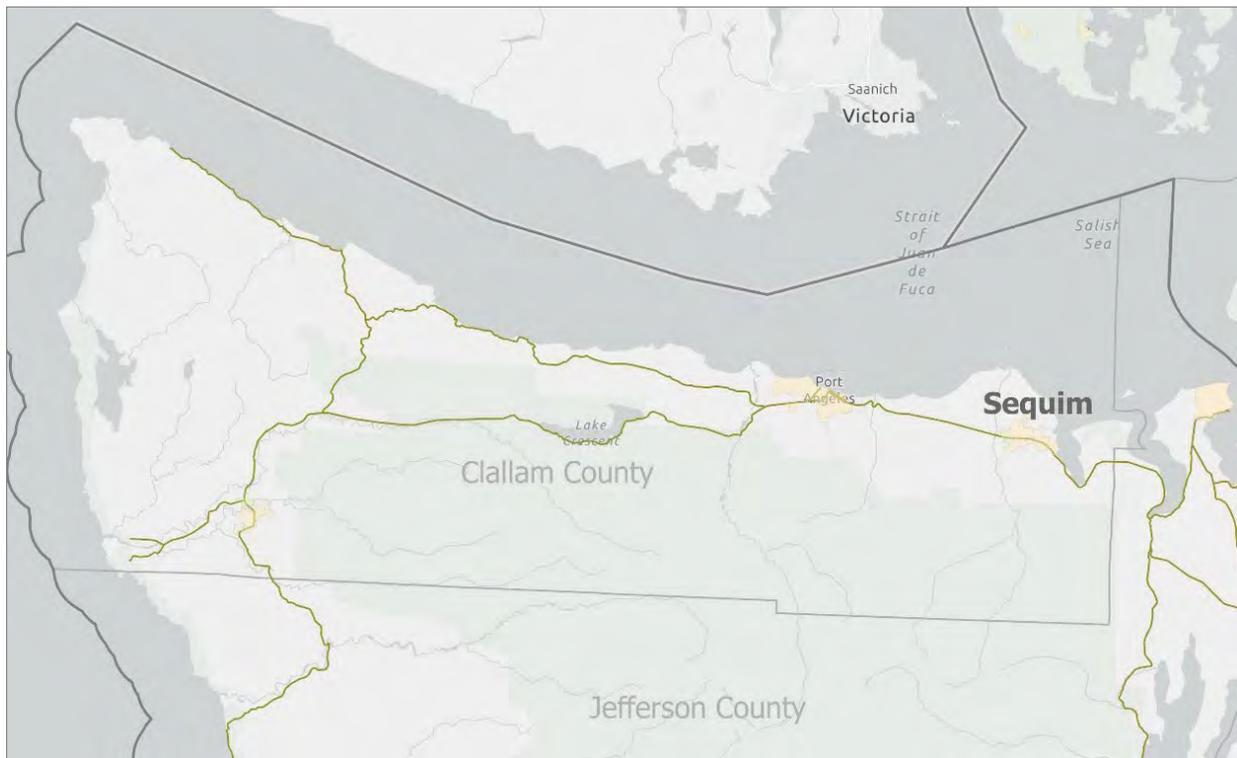
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INTRODUCTION

Study Area Context

During the 2019 legislative session, the Washington State Legislature allocated funds to the Washington State Department of Transportation (WSDOT) to begin a pre-design study of US 101 between the Simdars Road Interchange and Palo Alto Road in Sequim, Washington. An in-person stakeholder advisory committee meeting in Sequim was held before the study was put on hold due to the COVID 19 pandemic. The pre-design study started again in July 2021. Exhibit 1 is a map showing the location of the City of Sequim in Clallam County, Washington on the Olympic Peninsula. This pre-design study will identify potential roadway improvements focusing on safety, access and improving traffic conditions along the US 101 corridor in the southeastern area of Sequim.

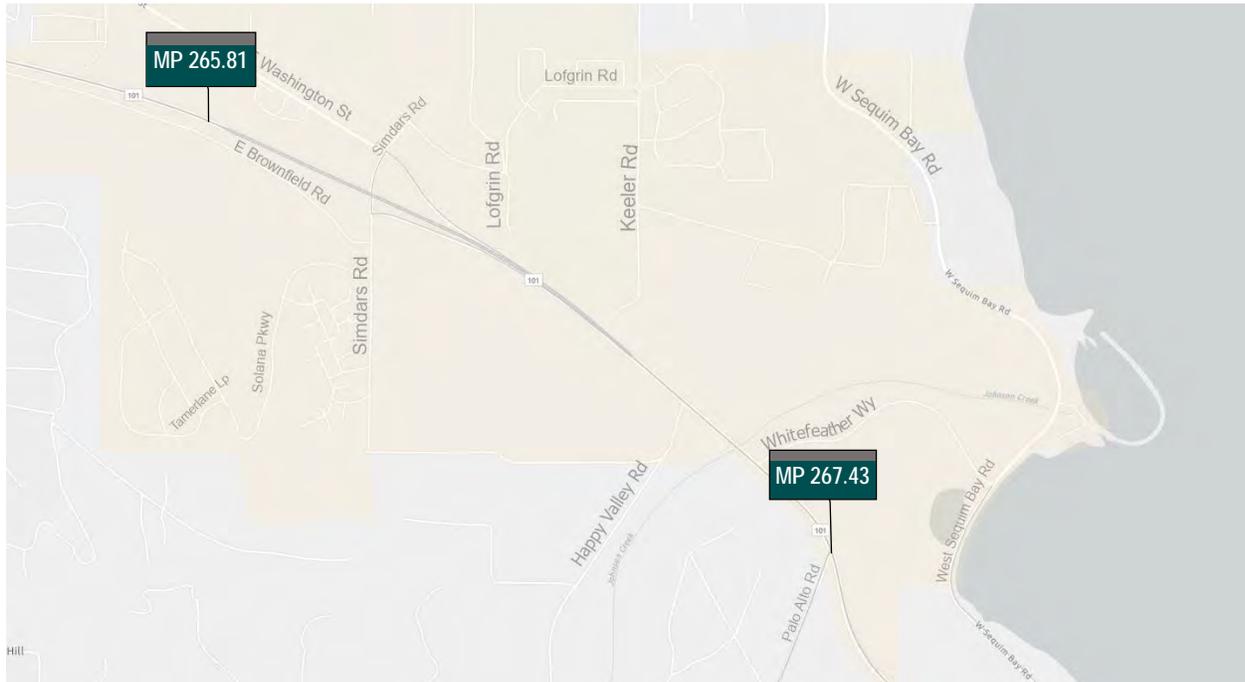
Exhibit 1: Regional Map



US 101 is a rural freight corridor and commuter highway that regionally connects Port Angeles and Sequim with the Hood Canal Bridge and Kitsap County, providing a critical east-west link on the northern Olympic Peninsula and is also part of the Olympic Peninsula US 101 Loop. This scenic highway runs along the southern boundary of the City of Sequim. US 101 functions as an urban-principal arterial and is an undivided National Highway System (NHS) highway and important route for the United States economy, mobility, and defense.

Shown in Exhibit 2, the limits of the pre-design study are US 101 west of the Simdars Road Interchange at Milepost 265.81 to Palo Alto Road at Milepost 267.43. This segment of US 101 is a 2-lane undivided roadway and is located on the southern boundary of the city limits within the Urban Growth Area boundary. The Simdars Road Interchange is a partial interchange along US 101 with an eastbound on ramp and westbound off ramp.

Exhibit 2: Study Area Map



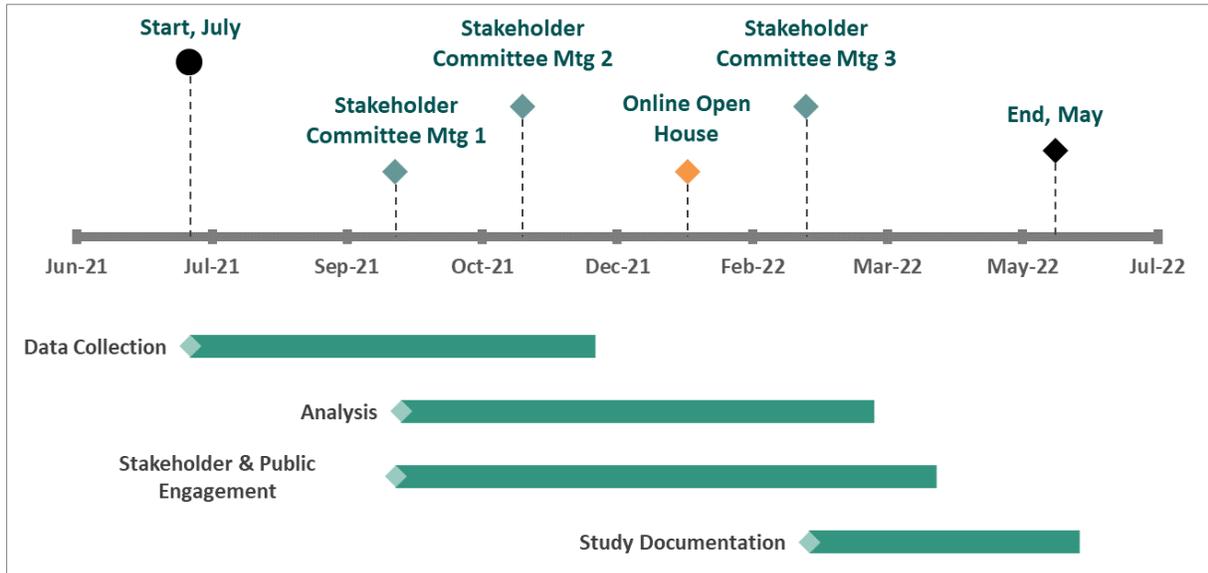
The study reviewed the following reports and plans to assist in the development of potential improvements.

- US 101 O'Brien Road to Palo Alto Road Environmental Impact Statement (EIS)
- WSDOT Corridor Sketch for US 101 Simdars on ramp to Clallam County Line
- Clallam County Comprehensive Plan
- City of Sequim Comprehensive Plan and Transportation Master Plan
- Clallam Transit Development Plan
- Peninsula Regional Transportation Planning Organization technical reports for US 101 intersections at Happy Valley and Palo Alto Roads
- US 101 at Sophus Road Intersection Control Evaluation

Pre-Design Study Process

The study process involved working with key stakeholders and the public to understand the conditions of US 101 in the City of Sequim and surrounding area to determine potential improvements. The study timeline is shown in Exhibit 3 and identifies meetings and tasks conducted during this effort.

Exhibit 3: Study timeline



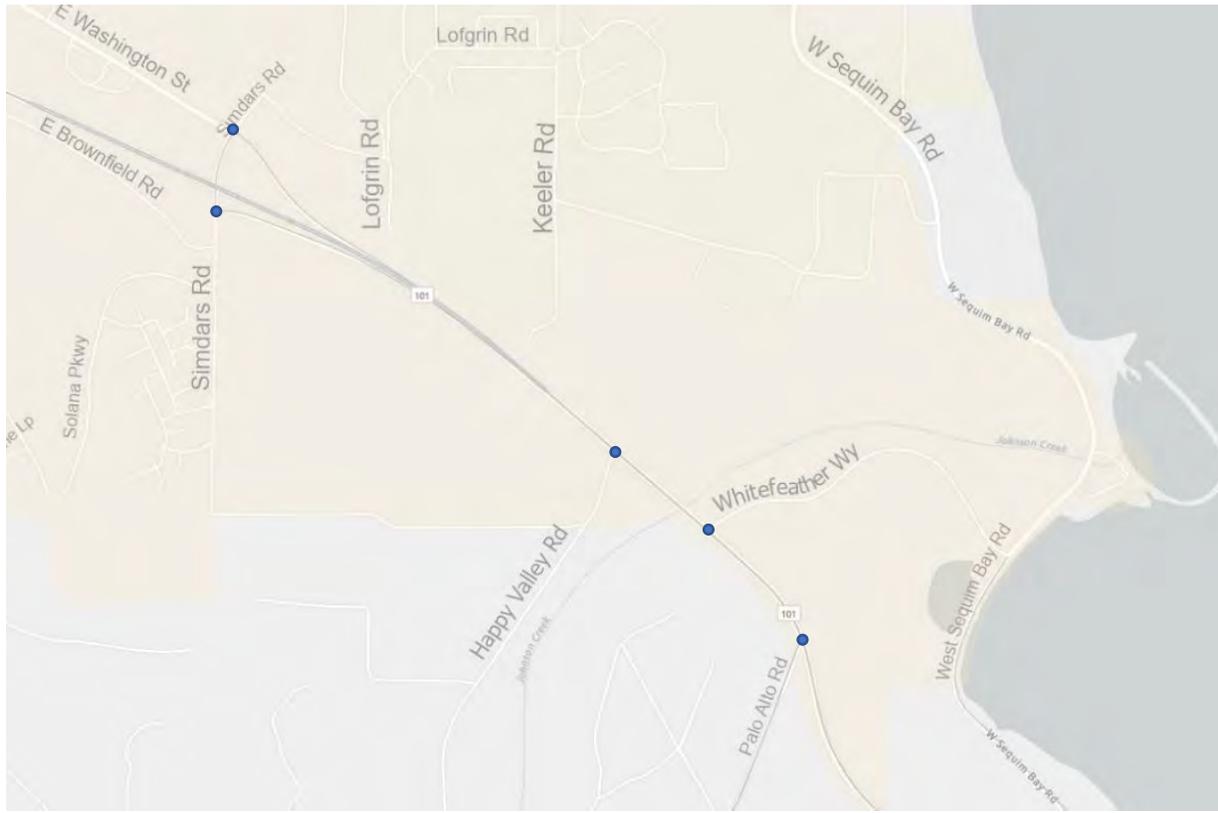
Data Collection

WSDOT gathered background information about US 101, including traffic and crash data and the existing conditions along the corridor. This information was collected prior to community engagement and helped provide a better understanding of the key issues that exist to aid in developing the right improvements in the study area.

Traffic Analysis

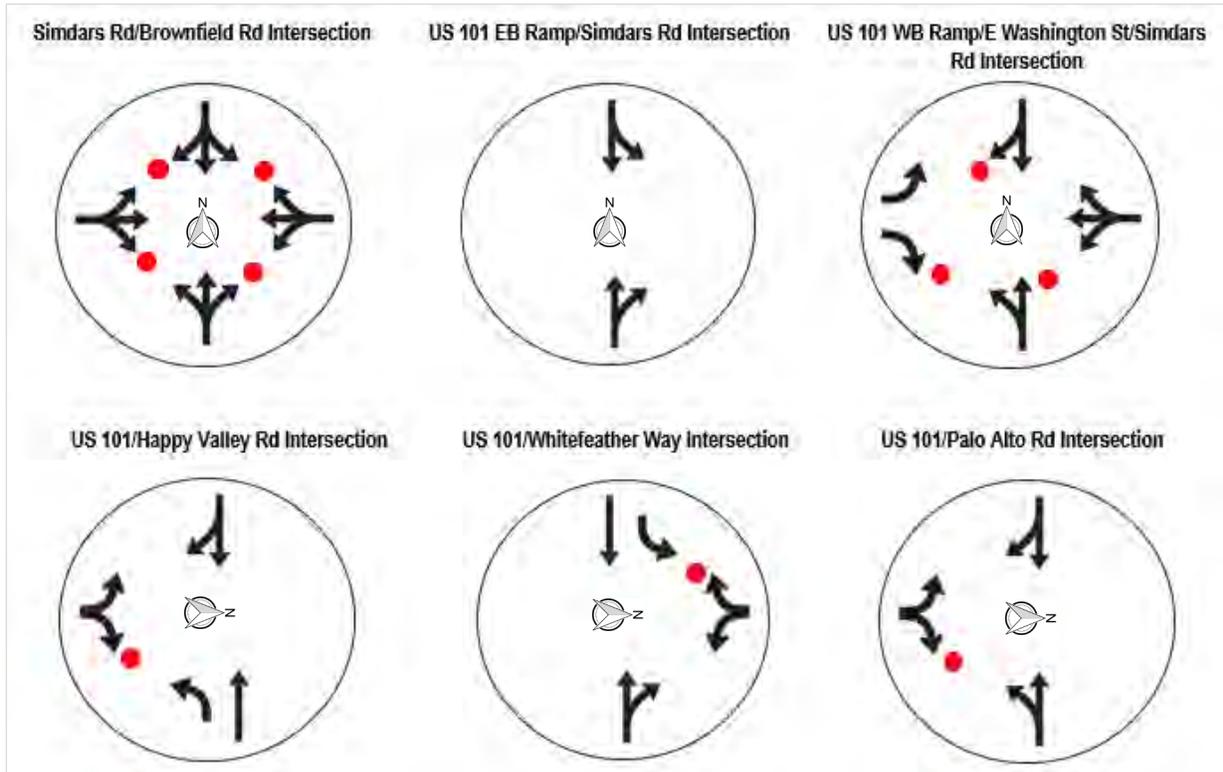
The US 101 corridor in East Sequim carries an average 17,000 vehicles a day in the year 2020, with a posted speed limit of 50-55 MPH. US 101 is a T-2 truck route carrying on average, 1,100 trucks a day on average. Traffic data provides valuable information necessary for traffic operational analysis. In January and September 2021, WSDOT traffic count data for the analysis was collected on Simdars Road, and on US 101 at the intersections of Happy Valley Road, Whitefeather Way, and Palo Alto Road. The traffic count locations are displayed in Exhibit 4.

Exhibit 4: Traffic count locations



The Simdars Road/Brownfield Road intersection is an all-way stop control. The US 101 eastbound on ramp/Simdars Road intersection features no traffic control while the US 101 westbound off ramp/East Washington Street/Simdars Road intersection features a 3-way stop control with no traffic control from the off ramp direction. These intersections, US 101/Happy Valley Road, US 101/Whitefeather Way, and US 101/Palo Alto Road, are all t-intersections with stop control on the minor approach. Also, at the US 101/Happy Valley Road intersection, there is a left-turn lane from westbound US 101 to the south and a left-turn lane from eastbound US 101 to the north direction for the US 101/Whitefeather Way intersection. The following Exhibit 5 shows lane configurations at each of the 6 intersections analyzed as part of this study.

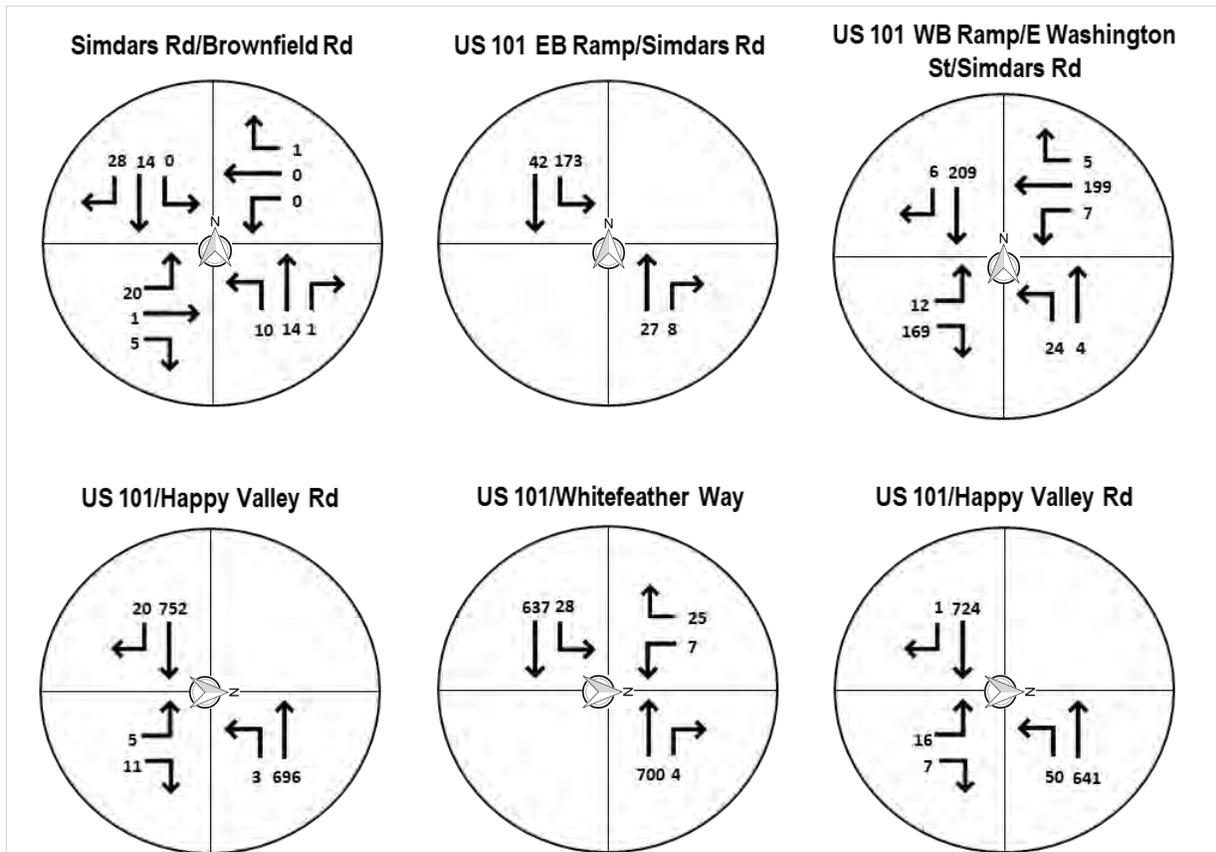
Exhibit 5: Intersection Lane configuration



The 2021 traffic counts show the afternoon peak hour volumes are greater than the morning or midday volumes; therefore, only the afternoon weekday peak hour volumes were used in the analysis to produce information for the existing year 2021 and a twenty-year forecast year 2041.

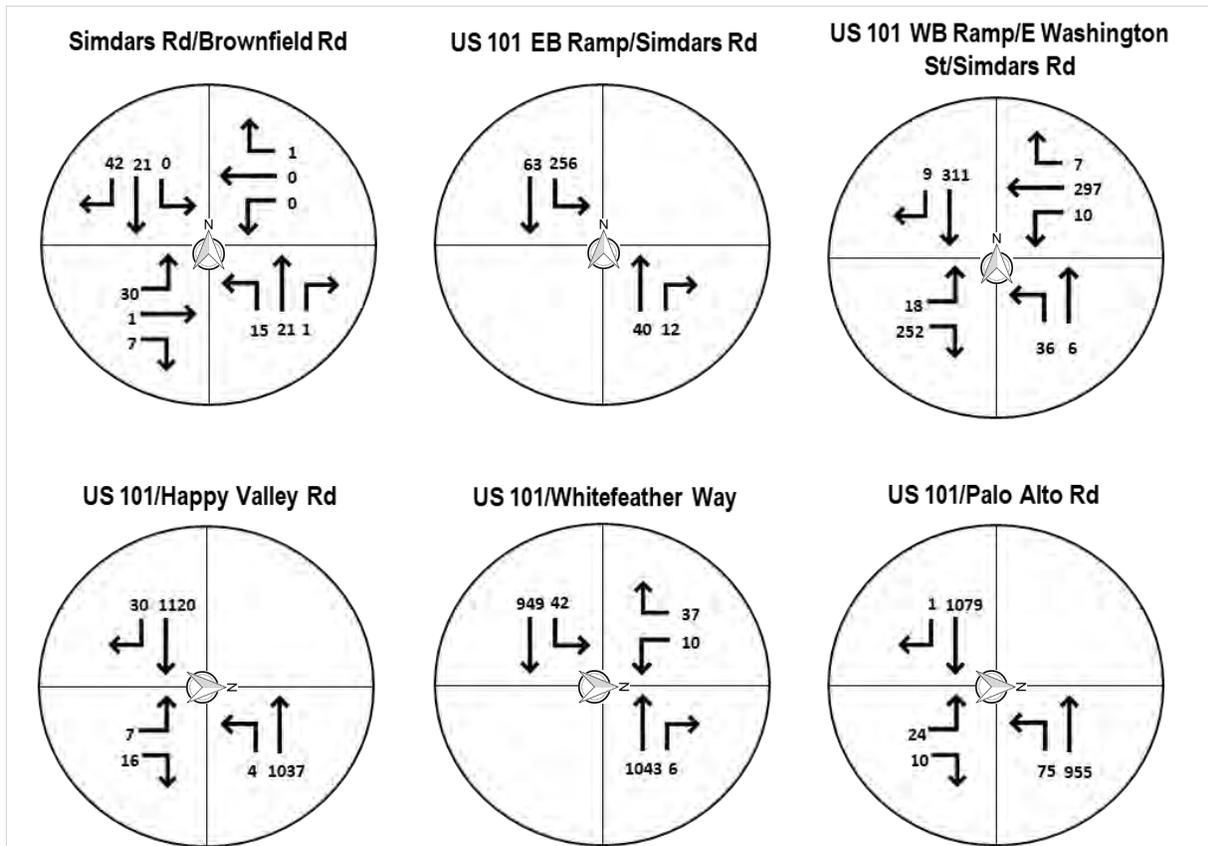
Exhibit 6 shows the afternoon peak hour vehicle volumes and the turning direction at each intersection in 2021. Traffic data shows the higher volumes are on US 101 with lower volumes on the side streets. At the intersection of the US 101 westbound off ramp at Simdars Road and East Washington Street, the highest volumes were vehicles traveling south on Simdars Road, vehicles exiting US 101 heading straight on East Washington Street, and vehicles turning right. Access to the Olympic Discovery Trail is also located at this intersection.

Exhibit 6: 2021 afternoon peak hour turning movements



WSDOT coordinated with the City of Sequim to determine a 2.0% growth rate application to the future forecasted traffic volumes for the year 2041. This was based on anticipated growth and increasing population, including plans for new development in the City of Sequim over the next 20 years. Exhibit 7 shows the afternoon peak hour vehicle volumes and the turning direction at each intersection for 2041. Traffic data shows the higher volumes are on US 101 with lower volumes on the side streets. The highest volumes at the intersections on Simdars Road are at the existing US 101 on and off ramps, particularly the intersection of US 101 westbound off ramp with Simdars Road and East Washington Street.

Exhibit 7: 2041 afternoon peak traffic counts



As is WSDOT’s protocol, the traffic analysis information for the study was developed using Highway Capacity (HCS), Synchro, and Sidra software programs. In accordance with the Level of Service Highway Capacity Manual, the measure of effectiveness applied in the analysis is control delay. Additional details about the traffic analysis are also available in Appendix A of the report.

Intersection and Mainline Operational Analysis

The following intersections were evaluated in Synchro 11 using existing and future traffic volumes. The HCS Freeways Version 7.8 was used to evaluate the US 101 corridor, a two-lane undivided highway. The US 101 mainline in the study area is a Level of Service (LOS) D in 2021. In the future it is predicted the LOS will drop to Level of Service E for US 101 mainline in 2041.

Simdars Road/Brownfield Road

The intersection at Simdars Road/Brownfield is expected to operate at LOS A (3.3 seconds of delay) during the peak hour in 2021 and 2041. In 2021, Brownfield Road is the worst approach at LOS A (8.9 seconds of delay) due to left turns in the peak hour. For 2041, Brownfield Road is still the worst approach at LOS A with the seconds of delay increasing to 9.1 due to left turns in the peak hour. The second worst approach in the peak hour is the northbound movement on Simdars Road due to left turn movements. The LOS is still A for this approach with 2.9 seconds of delay in both 2021 and 2041.

US 101 Eastbound on ramp/Simdars Road

The intersection at Simdars Road/US 101 eastbound on ramp operates at LOS A (8.4 seconds of delay) during the peak hour in 2021, and the LOS is still A in 2041 (9.4 seconds of delay). In 2021, the Simdars Road is the worst approach going southbound with LOS A (9.8 seconds of delay) due to left turns in the peak hour. For 2041, the Simdars Road is still the worst approach going southbound with LOS B and the seconds of delay increases to 10.9 due to left turns in the peak hour. The seconds of delay at this intersection is expected to be lower than reported here. To calculate an LOS, a stop control instead of a yield control for left turn movements using the eastbound on ramp had to be used to run the analysis.

US 101 Westbound off ramp/East Washington Street/Simdars Road

The intersection at US 101 westbound off ramp/East Washington Street/Simdars Road operates at LOS B (10.1 seconds of delay) during the peak hour in 2021. The LOS continues to be B at this intersection with 11 seconds of delay in 2041. In 2021, Simdars Road is the worst approach going northbound with LOS B (13.5 seconds of delay) due to left turns in the peak hour. For 2041, Simdars Road is still the worst approach going northbound with LOS B and the seconds of delay increases to 21.7 due to left turn movements in the peak hour. To calculate the LOS at this intersection, a 2-way and all-way stop control was used to run this analysis to report results close to a 3-way stop control.

US 101/Happy Valley Road

The left turning movement from the minor street experiences the worst delay and defines the LOS for the US 101/Happy Valley Road intersection. The LOS criteria apply to each lane on a given approach and to each approach on the minor street. LOS is calculated for street approaches or for the intersection as a whole. The LOS is C with 24.1 seconds of delay in the peak hour at the US 101/Happy Valley Road intersection in 2021. In 2041, the LOS drops down to F with 70.2 seconds of delay during the afternoon peak hour for the same intersection.

US 101/Whitefeather Way

The left turning movement from the minor street experiences the worst delay and defines the LOS for the US 101/Whitefeather Way intersection. The LOS criteria apply to each lane on a given approach and to each approach on the minor street. Level of Service is calculated for street approaches or for the intersection as a whole. The LOS is C with 20.1 seconds of delay in the peak hour at the US 101/Whitefeather Way intersection in 2021. In 2041, the LOS drops down to F with 56.1 seconds of delay during the afternoon peak period for the same intersection.

US 101/Palo Alto Road

The left turning movement from the minor street experiences the worst delay and defines the LOS for the US 101/Palo Alto Road intersection. The LOS criteria apply to each lane on a given approach and to each approach on the minor street. Level of Service is calculated for street approaches or for the intersection as a whole. The LOS is E with 37.3 seconds of delay in the afternoon peak hour at the US 101/Palo Alto Road intersection in 2021. In 2041, the LOS drops down to F with 252.0 seconds of delay during the peak hour for the same intersection.

Safety Analysis

The study team conducted a review of a 5-year history of crashes on US 101 between Simdars Road and Palo Alto Road from January 2016 to December 2020, focusing on the injury and fatal crashes. Exhibit 8 gives an overall view of vehicle crashes on mainline US 101 and the existing Simdars Road Interchange

by year. During the 5-year period there were 56 total crashes on US 101. A single head on vehicle crash occurred on eastbound US 101 just west of Happy Valley Road in 2020 where the vehicle crossed the centerline fatally injuring 2 passengers. The most common types of crashes were rear ends and struck animal. Circumstances that contributed to the crashes include speeding and inattentive drivers.

Exhibit 8: US 101 crash data, 2016 – 2020

Year	PDO	Possible injury	Serious/Evident injuries	Fatal	Number of crashes	Types of crashes				Contributing circumstances	
						Rear end crashes	Hit animal	At angle	In a ditch	Speeding	Inattention
2016	12	0	0	0	13	3	7	1	2	1	1
2017	5	2	0	0	8	2	1	2	1	0	4
2018	7	1	0	0	8	3	2	0	2	2	1
2019	9	1	0	0	10	2	2	1	0	0	2
2020	13	5	0	1	19	2	9	2	0	6	3

Under 23 U.S. Code § 148 and 23 U.S. Code § 409, safety data, reports, surveys, schedules, lists compiled or collected for the purpose of identifying, evaluating, or planning the safety enhancement of potential crash sites, hazardous roadway conditions, or railway-highway crossings are not subject to discovery or admitted into evidence in a Federal or State court proceeding or considered for other purposes in any action for damages arising from any occurrence at a location mentioned or addressed in such reports, surveys, schedules, lists, or data.

The study team reviewed intersection related crash data. There were 5 crashes at the intersection of US 101 and Palo Alto Road with 2 of them involving injuries. At the intersection of Happy Valley Road and US 101 there were 4 crashes with 3 of the crashes resulting in injuries and 1 fatal. The crash data for the US 101 and Whitefeather intersection indicates there were 2 crashes at the intersection with no injuries.

Environmental conditions

The WSDOT study team conducted a review of existing environmental conditions on US 101 and in the surrounding area. Exhibit 9 is a map showing the environmental resource information that was reviewed for the study. Environmental resource information was downloaded from WSDOT’s Geographic Information Systems (GIS) map tool to examine and highlight potential areas of concern. The study team reviewed data on climate impacts, fish barriers, wetlands, and wildlife connectivity. The Climate Impacts Vulnerability Report evaluation of the study area determined there is a low vulnerability risk for climate impacts. Field work was not conducted as part of this study; this environmental summary is subject to field verification, which will be needed as projects move forward to design and permitting.

Streams

Johnson Creek is located within the study limits and flows through a confined ravine with steep slopes. Over 4.5 miles of fish habitat are identified upstream of the Johnson Creek crossing at US 101, and the creek contains an intact forested riparian corridor for most of its length. The outlet of Johnson Creek is located just south of the John Wayne Marina.

A tributary to Johnson Creek is also located within the study limits between Happy Valley Rd and Simdars Rd. This tributary is identified as fish habitat downstream of the crossing at US 101; upstream of US 101 should be evaluated for fish habitat. This stream appears to be part of a stream-wetland complex that flows through the County-owned property adjacent to the south of US 101.

Fish barriers

Two fish barriers are located within the study limits. The first is on the north side of US 101 at Johnson Creek (fish passage site ID 990219) and is 67% passible. This fish barrier is currently in project design with construction scheduled for completion by the end of 2024.

The second identified fish barrier is located between Happy Valley Road and Simdars Road, is on a tributary to Johnson Creek (fish passage site ID 995481) and is 0% passible. This fish barrier is not currently part of the WSDOT delivery plan due to insignificant habitat gain based on information from the Washington Department of Fish and Wildlife (WDFW). The stream is not supportive of fish life or fish habitat although it has potential for fish use due to its connection with Johnson Creek.

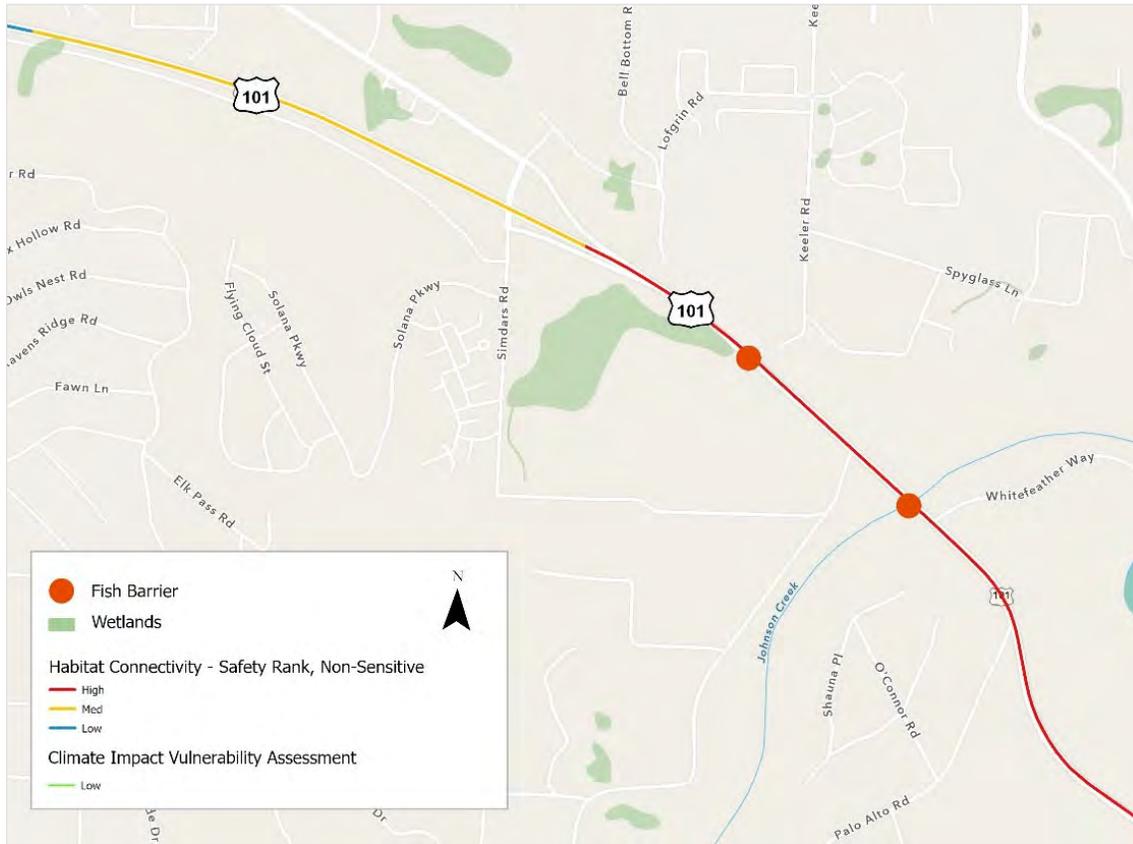
Wetlands

Two wetland locations shown in Exhibit 9 were identified which could potentially impact possible improvement alternatives being considered in the study. According to wetland maps, there is a wetland on the south side of US 101 east of Simdars Road which is currently owned by the City of Sequim. The second wetland is located west of the US 101/Simdars Road Interchange and just south of East Washington Street. This wetland site is on WSDOT right of way. Further investigation is necessary along with wetland delineation which will need to be conducted during project design.

Habitat connectivity

Wildlife connectivity in the area is mostly considered a high risk with the likelihood of impacts to elk and possible fish species in the vicinity of Johnson Creek. A more detailed review will need to be conducted during project design.

Exhibit 9: Environmental map



Community Engagement

Community engagement is an important part of the planning study process. A key component to the success of the study is to gather information from partners, community members and people who travel the route. This collaboration provided additional context as concepts were developed, ensuring the needs of the community were more completely identified. The study team coordination efforts involved working with WSDOT technical staff, stakeholders from local jurisdictions and organizations, and the community to understand the existing conditions, the vision for the area, brainstorm improvement ideas and determine the proper solutions moving forward.

WSDOT gathered background information, including traffic and crash data and the existing traffic and environmental conditions along the US 101 corridor. This information was collected prior to community engagement and helps provide a better understanding of the key issues that exist which will assist in developing the right improvements.

Three stakeholder advisory committee meetings and a public online open house were held during the study. A webpage was developed to share information about the study, advertise the open house event, publish the final study report, and provide an additional means for community members to communicate with WSDOT and the study management team.

Stakeholder Advisory Committee

A key component of this study was collaboration with local jurisdictions, local business and property owners, tribal staff, community members, and people who travel US 101. WSDOT assembled a stakeholder advisory committee and applied the standard planning method of 1) developing the study purpose and need, 2) analyzing existing conditions, 3) developing solutions to achieve the study goals, 4) evaluating potential solutions, and 5) developing recommendations. The collaboration provided additional context as concepts were developed, ensuring the uses and needs of the community were more completely identified. Three stakeholder advisory committee meetings were held September and December of 2021 and in May 2022. WSDOT's Practical Solutions approach was also included in the process to allow for enhanced collaboration with transportation providers to identify the gaps and apply least cost solutions. The organizations who were invited to participate on the stakeholder advisory committee included:

- Clallam County
- City of Sequim
- Clallam Transit System
- Jamestown S'Klallam Tribe
- Port Gamble S'Klallam Tribe
- Lower Elwha S'Klallam Tribe
- Port of Port Angeles
- Sequim-Dungeness Valley Chamber of Commerce
- Citizen representative

A total of three stakeholder committee meetings were held during the course of the study to develop the purpose and need statement, the study recommendations for operation and infrastructure improvements on US 101 and address at-grade access points. The stakeholder advisory committee meeting summaries are in Appendix B of this report. The purpose and need statement offers the basis for understanding what the issues are and identifying potential improvements to address the issues in a practical and collaborative way. The purpose and need statement that was developed by the stakeholder committee states:

“The purpose of the US 101 East Sequim corridor improvements project between Simdars Road Interchange and Palo Alto is to support economic development and growth in the City of Sequim by developing potential practical solutions strategies that promote safety, mobility, multimodal connectivity, and congestion relief while providing an opportunity for enhancements towards a city gateway.”

Once the study purpose and need were established, the committee identified concerns with the operations and functionality of US 101 in Sequim. During peak periods and special community events, US 101 traffic experiences congestion creating delays for vehicle access on and off US 101 from Palo Alto, Happy Valley, and Whitefeather Roads. The US 101 and Simdars Road Interchange consists of an eastbound on ramp and westbound off ramp only. The US 101 westbound on ramp and eastbound off ramp does not currently exist at the interchange.

Stakeholder advisory committee members brainstormed a list of potential improvement ideas during the second committee meeting, shown in Exhibit 10. These 14 conceptual ideas were included in the materials release during the online open house for the public to view and submit feedback.

Exhibit 10: Stakeholder committee improvement ideas list

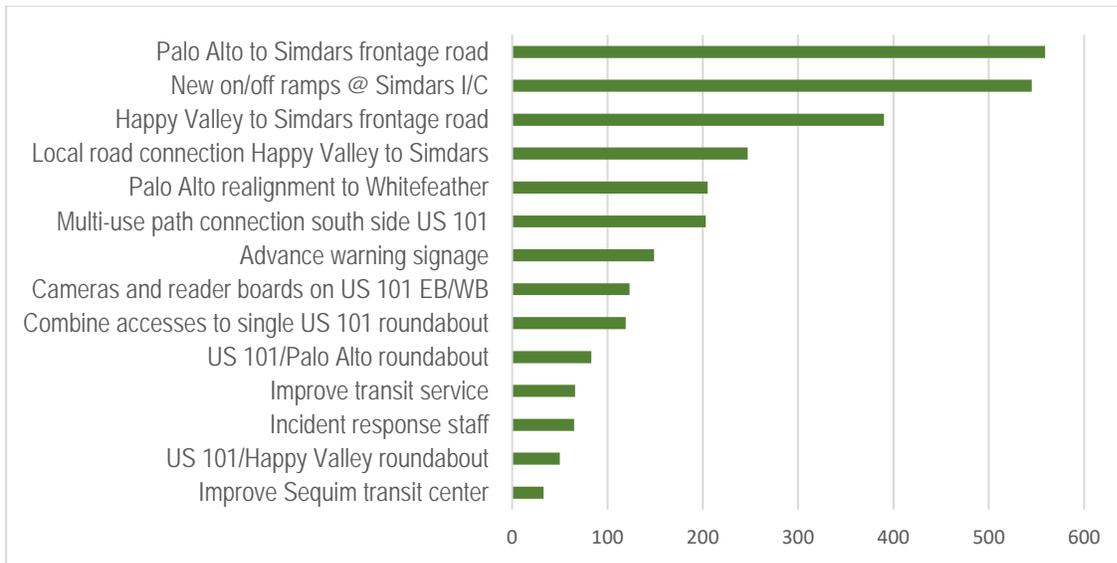
Improvement Idea	Description
New on/off ramps at US 101 and Simdars Road Interchange	Build a new US 101 westbound on ramp from East Washington Street and a new US 101 eastbound off ramp to Simdars Road.
Palo Alto to Simdars frontage road	Build a new 2-lane frontage road from Palo Alto Road to Simdars Road. This new roadway includes construction of a new structure crossing Johnson Creek. Existing access to US 101 from Happy Valley and Palo Alto Roads would be closed once construction is complete.
Happy Valley to Simdars frontage road	Build a new 2-lane frontage road from Happy Valley Road to Simdars Road. Existing access to US 101 from Happy Valley Road would close once construction is complete.
Palo Alto Road realignment to Whitefeather Way	A realignment of a portion of the existing two-lane Palo Alto Road to tie into the existing Whitefeather Way intersection. Access to US 101 from existing Palo Alto Road would close once construction is complete.
US 101 / Happy Valley roundabout	Build a new three-legged roundabout at the Happy Valley Road and US 101 intersection. This would replace the stop-controlled intersection.
US 101 / Palo Alto roundabout	Build a three-way roundabout at the intersection of Palo Alto Road and US 101. Realign Palo Alto Road to meet the roundabout location, which is north of the current intersection. Original access to US 101 would close upon completion of the new roundabout.
Local road connection Happy Valley to Simdars Road	Local road connection from Happy Valley Road to Simdars Road. Involves changes to Clearview Lane, extending it to Simdars Road.
Combine accesses to single US 101 roundabout	Local road connections for Happy Valley and Palo Alto Roads. The roads would lead to a new roundabout at Whitefeather Way / US 101 intersection. Existing access at Happy Valley and Palo Alto Roads would close once the project is complete.
Multi-use separated path across US 101 to connect with the Olympic Discovery Trail	Location undetermined at this time

Advance warning signage	Placement of directional signage according to WSDOT design standards
Variable message boards and cameras installed on US 101	Variable message signs and cameras located west of US 101/Happy Valley Road intersection for both eastbound and westbound US 101 traffic.
Incident response staff	The Incident Response Team (IRT) works with other agencies and resources to respond to traffic incidents on the state highway system. They assist with clean up and clearing the roadway. One to two staff would be assigned to work in the area along this stretch of US 101.
Improve Sequim Transit Center	Improvements to transit center (lead agency Clallam Transit)
Improve transit service	Improvements to transit center (lead agency Clallam Transit)

Public online open house

WSDOT held an online open house for the pre-design study January 27 to February 10, 2022. The public event was advertised through local media outlets, WSDOT’s study webpage, on social media, in the City of Sequim’s monthly newsletter, and at the local library in Sequim. Information presented during the open house included a study overview and timeline, a list of the 14 conceptual improvement ideas developed by the Stakeholder Advisory Committee, and a brief questionnaire at the end. A short description of each improvement and preliminary conceptual drawings were presented. Community members were encouraged to view the information and conceptual drawings then submit comments or additional ideas to WSDOT. Additional information about the online open house can be found in Appendix C. The study team received 824 responses during the open house. Majority of responders to the online open house travel US 101 between Port Angeles and Sequim. Some responders identified themselves as living along Happy Valley, Palo Alto, Sequim Bay and Lofgrin Roads. WSDOT also received comments from residents living in Port Angeles, Carlsborg, Blyn and east Clallam County. Most responders were concerned about roundabouts on US 101 slowing traffic; however, the main concern was traveler safety at the US 101/Palo Alto intersection. Exhibit 11 illustrates the improvements that were most important to the community. Responders communicated the frontage road from Palo Alto Road to Simdars Road was the most important improvement to the community. The second most important improvement according to responses was new on and off ramps at the US 101 Simdars Road Interchange.

Exhibit 11: Open house public feedback



There were approximately 20 ideas received from responders during the online open house. These ideas, in addition to the original 14 concepts were incorporated into the two-part alternative evaluation process.

Community developed ideas:

- Local road connection from Happy Valley to Simdars Road
- Advance warning signage for curves near Happy Valley and Palo Alto Roads
- US 101 acceleration lanes northbound/southbound between Simdars and Happy Valley Roads
- US 101 U-turn or turn around area
- Restrict access at US 101/Palo Alto Road to right in/right out
- Widen shoulders on US 101
- Michigan left turn
- Traffic lights on US 101 at Palo Alto Road and Whitefeather Way
- Widen US 101 to 4 lanes
- Wildlife crossing over US 101
- Interchange at US 101 and Whitefeather Way
- Overpass at US 101/Palo Alto Road for westbound traffic with exit lane for eastbound off traffic
- Diamond interchange at US 101 and Palo Alto Road
- Commuter rail that runs parallel to US 101
- Lower speed limit on US 101
- Cut back trees to increase visibility and relocation of Sequim Welcome sign
- Restriping US 101 near Palo Alto Road is needed
- Illumination and signage improvements needed between Happy Valley and Palo Alto Roads
- Left turn lane on US 101 at Palo Alto Road
- Do nothing and leave US 101 the same

ALTERNATIVES DEVELOPMENT

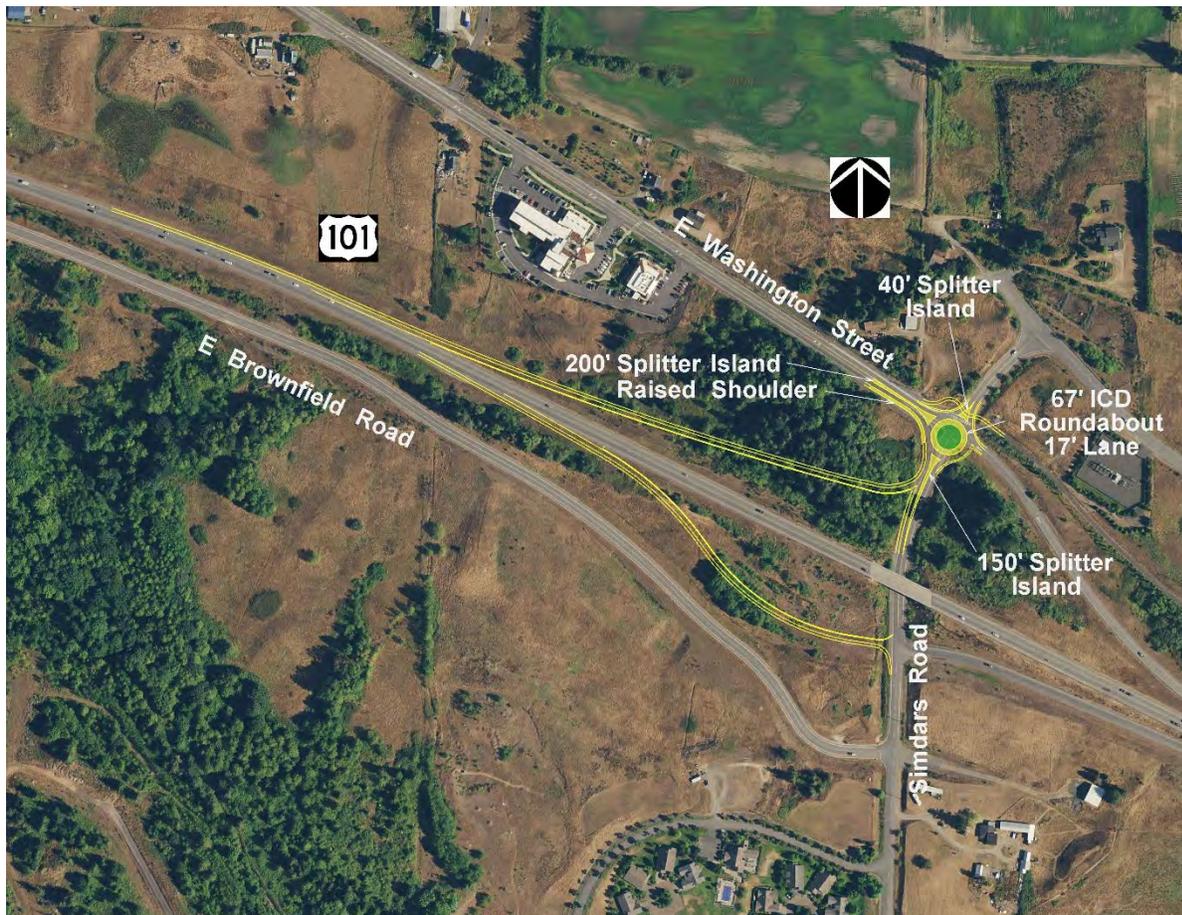
Improvement ideas

During the pre-design study process, there was a total of 34 improvement ideas that were identified by WSDOT, the stakeholder advisory committee, and the community. Drawings were created for 8 of the more detailed improvement ideas, with the remaining alternatives being more conceptual and including only a description.

New on and off ramps at US 101/Simdars Road Interchange with roundabout

Build a new US 101 westbound on ramp and eastbound off ramp to Simdars Road with a single lane roundabout at the East Washington Street intersection. Exhibit 12 is a conceptual drawing of the alternative. As alternatives were further refined, revisions were made showing a new intersection roundabout at East Washington Street and Simdars Road with the new US 101 westbound on ramp.

Exhibit 12: US 101/Simdars Road Interchange on and off ramps and roundabout



Palo Alto to Simdars frontage road

Build a new 2-lane frontage road from Palo Alto Road to Simdars Road. This conceptual drawing of a new roadway, shown in Exhibit 13, includes construction of a new structure crossing Johnson Creek. The red markings show the existing accesses to US 101 from Happy Valley and Palo Alto Roads would be closed once construction is complete.

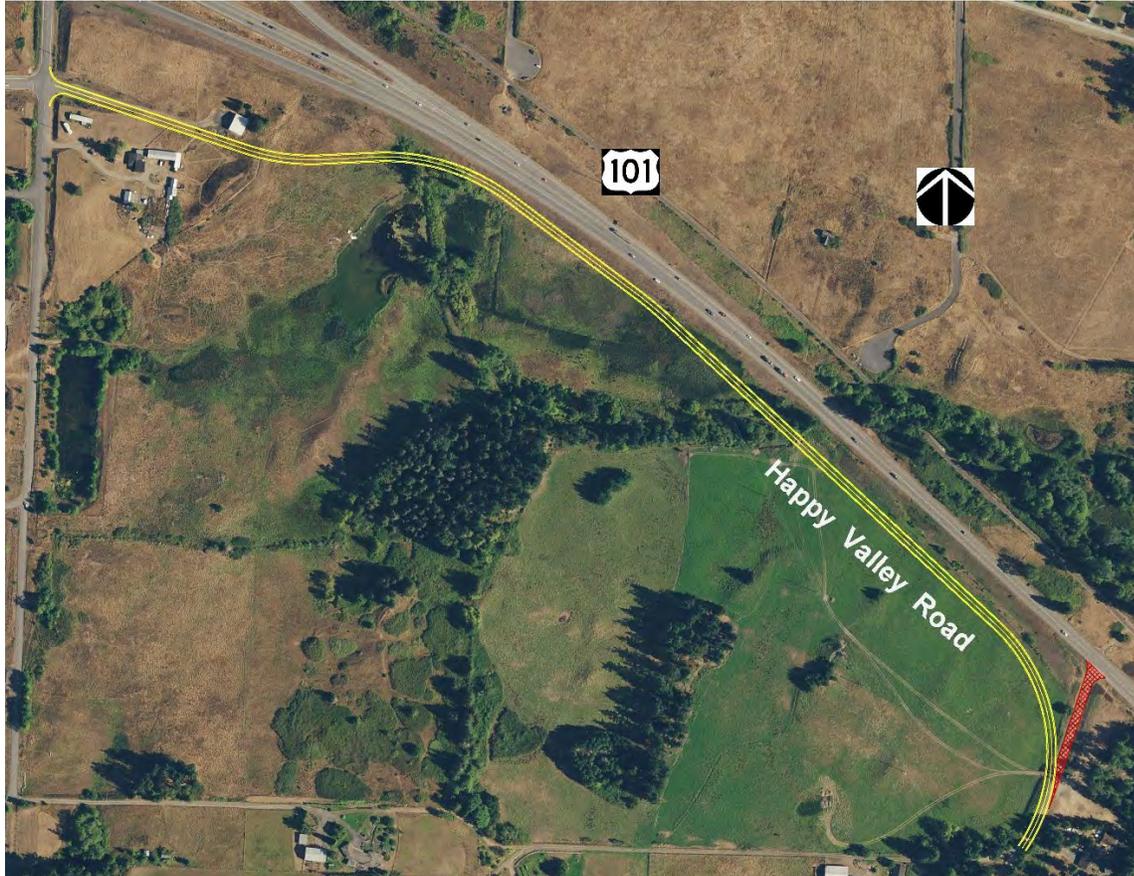
Exhibit 13: Palo Alto to Simdars frontage road



Happy Valley to Simdars frontage road

Build a new 2-lane frontage road from Happy Valley Road to Simdars Road. Exhibit 14 is a conceptual drawing of the alternative. The red marking shows the existing access to US 101 from Happy Valley Road would close once construction is complete.

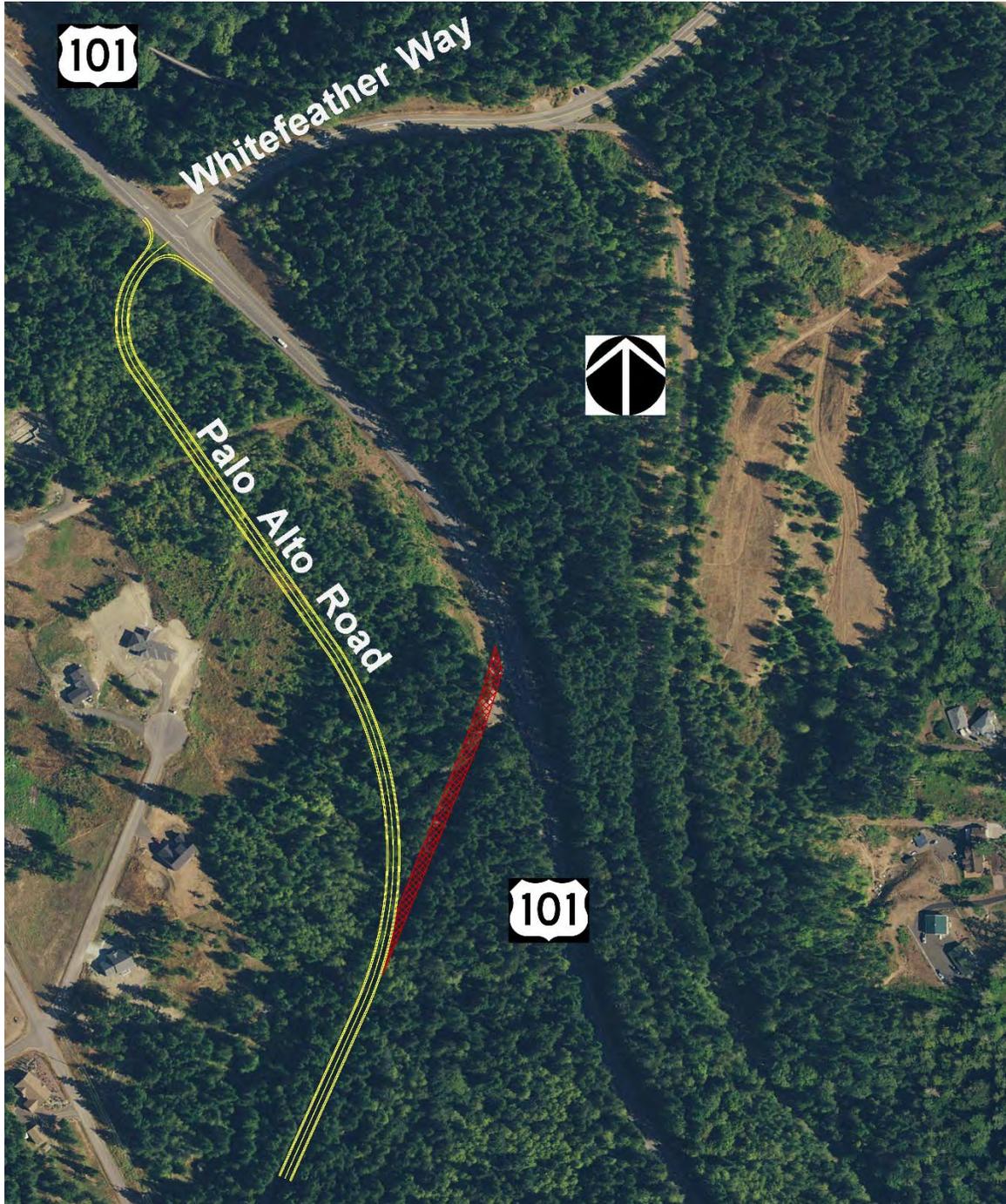
Exhibit 14: Happy Valley to Simdars frontage road



Palo Alto Road realignment to Whitefeather Way

Exhibit 15 is a conceptual drawing of a realignment of a portion of the existing two-lane Palo Alto Road to tie into the existing Whitefeather Way intersection. The red marking shows access to US 101 from existing Palo Alto Road would close once construction is complete.

Exhibit 15: Palo Alto Road realignment to Whitefeather Way



Happy Valley Road and US 101 roundabout

Exhibit 16 is a conceptual drawing of the alternative which proposes building a new three-legged roundabout at the Happy Valley Road and US 101 intersection. This would replace the stop-controlled intersection.

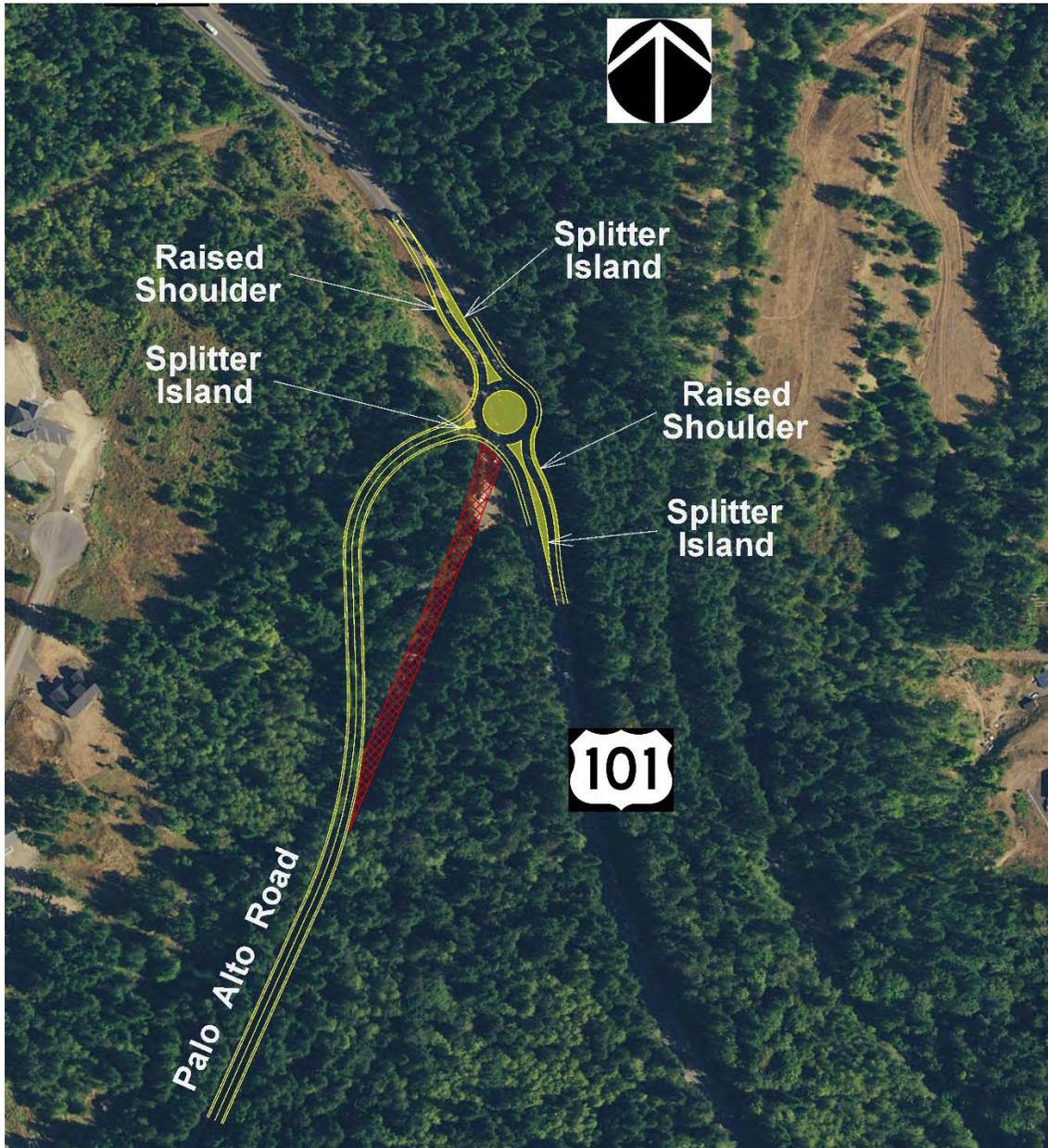
Exhibit 16: Happy Valley Road and US 101 roundabout



Palo Alto Road and US 101 roundabout

Exhibit 17 is a conceptual drawing of the alternative which proposes building a three-legged roundabout at the intersection of Palo Alto Road and US 101. Realign Palo Alto Road to meet the roundabout location, which is north of the current intersection. The red marking shows the original access to US 101 which would close upon completion of the new roundabout.

Exhibit 17: Palo Alto Road and US 101 roundabout



Combine access to single US 101 roundabout

Exhibit 18 is a conceptual drawing of the alternative which proposes building a four-legged roundabout at the intersection of Palo Alto Road and US 101. Realign Palo Alto Road to meet the roundabout location, which is north of the current intersection. The red markings show the original accesses to US 101 at Happy Valley Road and Palo Alto Road would close upon completion of the project.

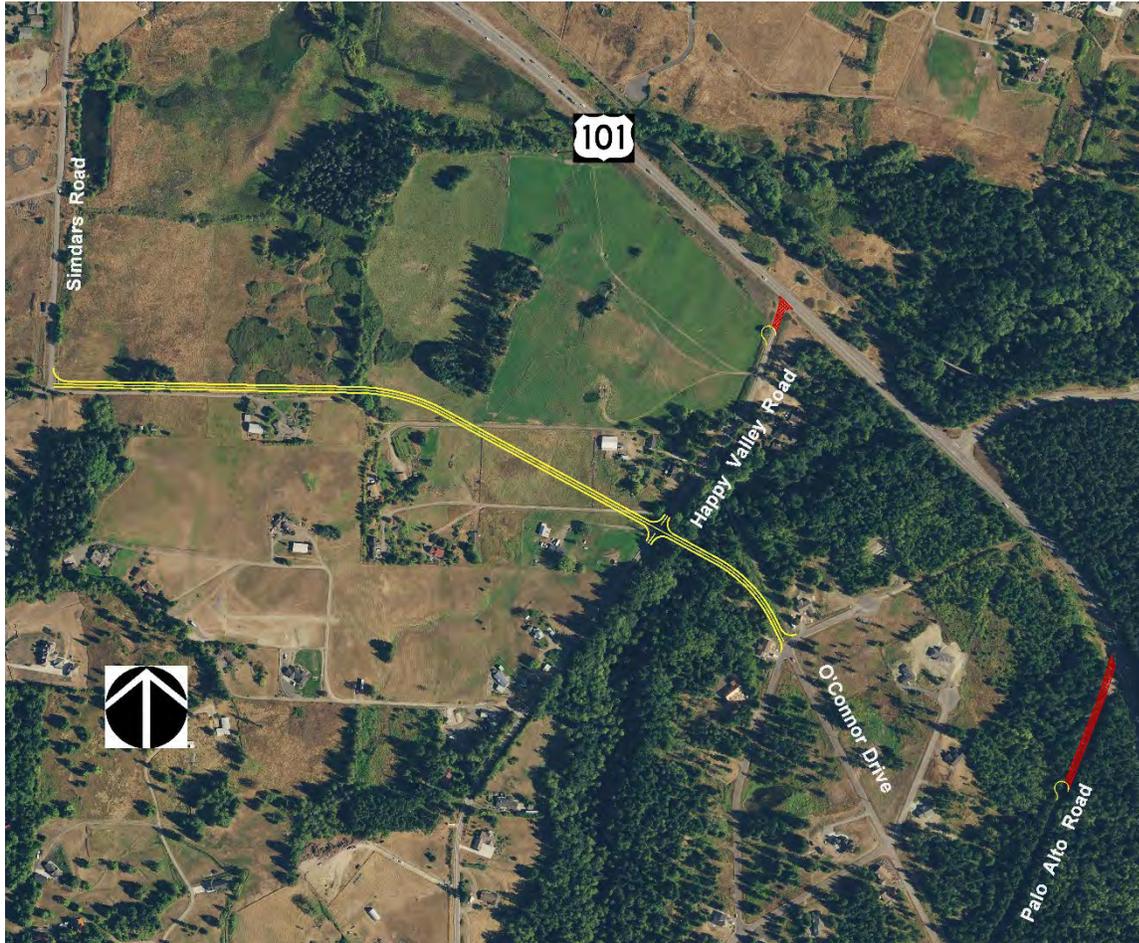
Exhibit 18: Combine access to single US 101 roundabout



Local road connection from Happy Valley to Simdars Road

Exhibit 19 is a conceptual drawing of the alternative which proposes a local road connection from Happy Valley Road to Simdars Road. This would involve making changes to O'Connor Drive, extending it to Simdars Road. The red markings show the original accesses to US 101 which would close upon completion of the project.

Exhibit 19: Local road connection from Happy Valley to Simdars Road



The conceptual drawings and remaining list of alternatives in Exhibit 20 were reviewed by the study team and further evaluated in the alternatives screening process.

Exhibit 20: Remaining alternatives considered

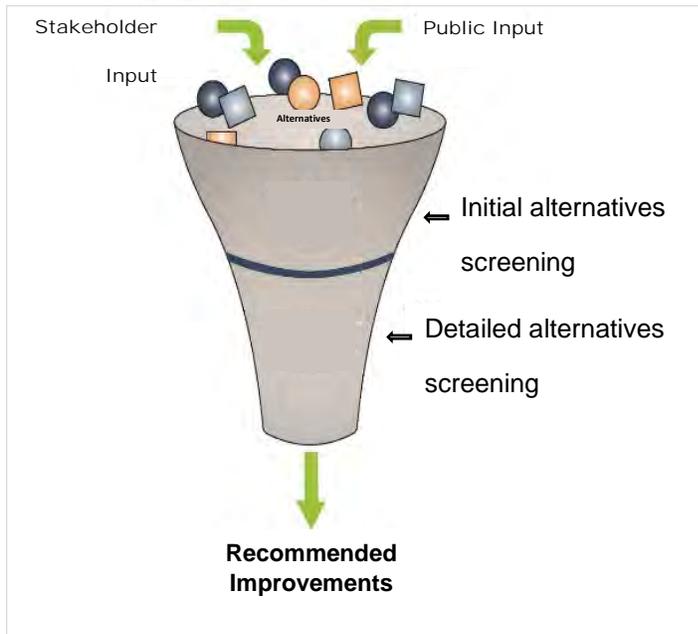
Improvement Idea
ITS variable message board and camera on US 101
Left turn lane on US 101 at Palo Alto Road

Adding illumination and signage on US 101 between Happy Valley and Palo Alto
Bicycle pedestrian bridge over US 101 at Happy Valley Road connecting to the ODT trail
New on/off ramps at US 101 and Simdars Road Interchange
Palo Alto to Simdars long frontage road
Happy Valley to Simdars frontage road
Advance warning signage for curves near Happy Valley and Palo Alto Roads
Incident Response
Improve Transit Center
Adding acceleration lane NB and SB US 101
US 101 U-turn or turnaround area
Widen shoulders on US 101
4-lane US 101
Michigan left turn
Traffic lights on US 101 at Palo Alto Road and Whitefeather Way
Restrict access at US 101/Palo Alto Road to right in/right out
Wildlife crossing over US 101
Interchange at Whitefeather
Interchange at Happy Valley w/ frontage road from Palo Alto to Happy Valley
Add overpass at Palo Alto for WB traffic onto US 101 add exit lane for EB US101 off at Palo Alto
Diamond interchange at Palo Alto
Commuter rail that runs parallel to US 101
Lower speed limit
Cut back trees to increase visibility and look at placement of Welcome to Sequim sign
Restriping US 101 near Palo Alto is needed

ALTERNATIVES SCREENING & EVALUATION

This section provides a summary of the process used to evaluate and screen the proposed improvement alternatives. Once the list of alternatives was established, the study alternatives were further developed and evaluated in collaboration with the stakeholder advisory committee. There were two screening exercises (see Exhibit 21) that were performed, the first was the *initial alternatives screening* followed by the second screening, the *detailed alternatives screening*. Alternatives that did not meet the first screening criteria were eliminated while the remaining alternatives carried through to the final screening.

Exhibit 21: Alternative screening process



Criteria development

All 34 preliminary alternatives were assessed during the initial alternatives screening based on three assumptions:

- Alternative meets study purpose and need
- Alternative is feasible
- Alternative is located within the scope of the study
- Alternative is cost-effective

In the detailed alternatives screening, there were 7 criteria identified for evaluation of the alternatives remaining from the initial screening. The study team and stakeholder advisory committee brainstormed screening criteria to use in evaluating the effectiveness of each alternative. The detailed alternatives screening criteria included:

- **Mobility** – WSDOT uses Level of Service (LOS) standards to measure roadway performance assigning letter grades from A through F to a segment or intersection. Each of the alternatives was evaluated and scored based on LOS for future forecast year 2041.
- **Safety** – Safety analysis includes alternative evaluation incorporating FHWA crash modification factors where possible to develop vehicle crash reduction and predicted crash frequency information for each alternative.
- **Cost** – Scoping level cost estimates were identified for each alternative based on current year 2021 dollars. More detailed information is in Appendix D. In addition to the cost for design, environmental, right-of-way and construction, a separate cost estimate for maintenance was provided for each alternative. The estimated maintenance cost was developed using the replacement project cost converted into a yearly cost using durations of 10 years for pavement, 20 years for structures and 75 years for bridges.
- **Multimodal** – The level of traffic stress represents a measurement for bicyclists and pedestrians on the road. Each alternative was evaluated based on the roadway speed, number of traffic lanes, and whether a bike lane exists or is planned. A level of traffic stress score of 1 to 4 is possible, 1 being the least stress and 4 representing the highest stress.
- **Right-of-way impacts** – An assessment of the number of parcels potentially impacted by the alternative. The preferred alternative should strive to minimize right-of-way impacts.
- **Economic development** – Considers if the alternative is consistent with local plans, is in the Urban Growth Area, is within the Qualified Opportunity Zone, is part of a freight corridor, and its location to jobs using US Census data.
- **Environmental complexity** – A review of environmental resources and permitting assessing potential impacts with the potential to create more complexity in a project.

A point rating scale (see Exhibit 22) for each criterion was developed to measure performance and determine the desired outcomes for the alternatives. Each criterion is worth 10 points and the total number of points an alternative can receive is 70.

Exhibit 22: Criteria scoring

Mobility	Safety	Cost	Multimodal	Right of Way	Economic Development	Environmental Resources
LOS A = 10 LOS B = 8 LOS C = 6 LOS D = 4 LOS E = 2	<u>Vehicle crash reduction</u> 50% reduction = 10 < 50% = 5 <u>Predicted crash frequency</u> 0 - .99 = 10 1 - 1.5 = 5 >1.5 = 1	<\$1 = 10 \$1-\$5 = 7 \$6-\$10 = 5 >\$10 = 2	LTS 1 = 10 LTS 2 = 7 LTS 3 = 5 LTS 4 = 2	0 parcel = 10 1-4 parcels = 7 5-10 parcels = 5 >10 parcels = 2	Local plans, UGA, freight, QOZ, jobs Yes = 2 Partial = 1 No = 0	< 8 impacts = 10 9-11 impacts = 5 >11 impacts = 0

Alternatives evaluation and results

An assessment was conducted of each alternative to determine whether it has sufficient merit to move forward as a recommendation or should be eliminated based on evaluation results.

A total of 34 ideas were identified and gathered from the stakeholder advisory committee and community outreach. These ideas were reviewed and refined during screening. The initial alternatives screening reviewed all 34 proposed ideas to determine if they meet the study purpose and need, are feasible, are within the scope of the study and if the project is cost-effective.

Listed in Exhibit 23, there were 22 alternatives that did not meet the study's initial screening and were removed from the list.

Exhibit 23: Study alternatives eliminated

Improvement Idea	Reason for elimination
New on/off ramps at US 101 and Simdars Road Interchange (westbound on ramp at E Washington Street)	Concerns with future volumes on E Washington Street and additional turn movements with an on-ramp entrance to US 101, close proximity to the E Washington Street/Simdars Road intersection
Acceleration lanes between Simdars and Happy Valley Roads	Insufficient space on US 101 between Happy Valley Road and the and Simdars Road for acceleration lanes.
Restrict access at Palo Alto Road to right in/right out	As a stand-alone project, WSDOT cannot limit access without providing an alternate route for vehicles. If frontage road is built, access would be eliminated.
U-turn turnaround area	Does not meet purpose and need. Also, if new on and off ramps at US 101 and Simdars Road are completed, the Simdars interchange could be used for U-turns in both directions.
Incident response	WSDOT Maintenance staff currently support incident response type activities. Does not meet the study purpose and need.
Widen shoulders	Does not meet the study purpose and need
4-lane US 101	Not considered at this time
Interchange at US 101/Happy Valley Road	Close proximity to US 101 Simdars Road Interchange, high cost
Interchange at US 101/Whitefeather Way	Close proximity to US 101 Simdars Road Interchange, high cost
Diamond interchange at US 101/Palo Alto Road	Close proximity to US 101 Simdars Road Interchange, high cost, not enough right of way
US 101 westbound overpass at Palo Alto Road, eastbound exit lane	Close proximity to US 101 Simdars Road Interchange, high cost, not enough right of way
Wildlife crossing over US 101	Does not address the study purpose and need

Improve transit center	Planned park and ride lot is being considered in a location outside of the study area
Improve transit service	Area identified for transit service expansion is located outside of the study area
Commuter rail parallel to US 101	Beyond study scope, high cost, significant right of way needed
Traffic signals on US 101 at Palo Alto Road and Whitefeather Way	WSDOT traffic information shows roundabouts have more continuous throughput, are easier to maintain and are safer than traffic signals
Local road connection Happy Valley to Simdars Roads	Alternative replaced with a similar alignment that was developed using the existing O'Connor Road
Advance curve warning signage	Signage alternative already exists
Michigan left turn	An at-grade intersection design that replaces each left turn at an intersection between a divided roadway and a secondary roadway with the combination of a right turn followed by a U-turn. US 101 in Sequim is an undivided highway.
Cut back trees and consider moving Welcome sign	Forward information to WSDOT Olympic Region Maintenance
Restriping near Palo Alto Road	Forward information to WSDOT Olympic Region Maintenance
Lower speed limit	Forward information to WSDOT Olympic Region Traffic

These 12 remaining alternatives survived the initial screening and moved to the detailed alternatives screening for evaluation based on the 7 criteria developed in coordination with the stakeholder advisory committee:

- New US 101/Simdars Road on and off ramps with E Washington Street/Simdars Road intersection roundabout
- Happy Valley to Simdars frontage road
- Palo Alto to Simdars frontage road
- Palo Alto to Simdars frontage road O'Connor alternative
- Palo Alto Road realignment to Whitefeather Way
- Happy Valley Road and US 101 roundabout
- Palo Alto Road and US 101 roundabout
- Combine access to single US 101 roundabout at Whitefeather Way
- Bike ped bridge over US 101 at Happy Valley Road connecting to the Olympic Discovery Trail
- ITS variable message board and camera on US 101
- Left turn lane on US 101 at Palo Alto Road
- Adding illumination and signage on US 101 between Happy Valley and Palo Alto Roads

Exhibit 24 represents the scores each of the remaining 12 alternatives received during the detailed alternatives screening. Evaluation sheets which were developed for the environmental, multimodal, and economic development criteria scores can be found in Appendix E.

Exhibit 24: Detailed alternatives screening results

	Improves Safety		Mobility - Improves Operations LOS		Constructability - Project & Maintenance Cost			Multimodal		Right of Way Impacts		Economic Development	Environmental Impact	Total Score
	Safety Analysis	Safety Score	Level of Service	Mobility Score	Project Cost (millions)	Project Cost Score	Annual Maintenance Cost	Level of Traffic Stress	Multimodal Score	Parcels Impacted	RW Impact Score	Economic Development Score	Complexity Score	
Ramps														
New US 101/Simonds Road on and off ramps w/ Simonds Road roundabout	Based on the Crash Modification Factor # 233 from the WSDOT CMF Shortlist converting the stop controlled intersection to a RAB will reduce the potential for all crashes by 33%, reducing the number of conflict points at the intersection.	5	LOS A	10	9M	5	23K	2	7	0	10	10	5	52
Happy Valley to Simonds Road frontage road	Adds Simonds Rd I/S = crash increase of 133% Happy Valley reduction of 50% w/ removal of 1 at grade I/S on high speed facility Outcome = net positive	10	LOS A	10	4.7M	7	15K	4	2	0	10	6	5	50
Palo Alto to Simonds Road frontage road	Adds Simonds Rd I/S = crash increase of 133% Happy Valley reduction of 50% w/ removal of 2 at grade I/S on high speed facility Outcome = net positive	10	LOS A	10	14.6M	2	21K	4	2	3	7	7	5	43
Palo Alto to Simonds frontage road O'Comer alternative (avoids existing wetlands near original frontage road concept)	Adds Simonds Rd I/S = crash increase of 133% Happy Valley reduction of 50% w/ removal of 2 at grade I/S on high speed facility Outcome = net positive	10	LOS A	10	13.7M	2	20K	4	2	19	2	2	5	33
Palo Alto Road realignment to Whitefeather Way	Predicted crash frequency 2.1 with 75% crash increase at Whitefeather Way Outcome = overall benefit, removes 1 at grade I/S	1	LOS A	10	3.8M	7	13K	4	2	9	5	6	5	36
Happy Valley Road and US 101 roundabout	Predicted crash frequency 0.34 or 74% crash reduction	10	LOS A	10	2.8M	7	13K	3	5	0	10	4	10	56
Palo Alto Road and US 101 roundabout	Predicted crash frequency 0.6	10	LOS A	10	5M	7	12K	3	5	0	10	5	10	57
Combine access to single US 101 roundabout at Whitefeather Way	Largest potential safety benefit due to elimination of 2 at grade intersections. Predicted crash frequency of 0.57.	10	LOS A	10	14.5	2	25K	3	5	5	5	5	0	37
Bike ped bridge over US 101 at Happy Valley Road connecting to Olympic Discovery Trail	No historic bike or pedestrian crashes in last 5 years. If separated crossing is built, there is no indication of an increase in bike or ped related crashes.	0	No change	10	10.3M	2	3K	1	10	1	7	5	10	44
ITS variable message board and camera on US 101	Quantitative safety analysis not currently available	0	No change	4	1.3M	7	2K	4	2	0	10	5	10	38
Left turn lane at US 101 / Palo Alto Road	Predicted crash frequency 1.5 42% crash reduction	5	No change	8	424K	10	4K	4	2	0	10	6	10	51
Traffic Management	Happy Valley predicted crash frequency of 1.2 and Palo Alto predicted crash frequency of 2.3. Overall 11% decrease in potential crashes.	1	No change	4	1.1M	7	3K	4	2	0	10	5	10	39

Under 23 U.S. Code § 148 and 23 U.S. Code § 409, safety data, reports, surveys, schedules, lists compiled or collected for the purpose of identifying, evaluating, or planning the safety enhancement of potential crash sites, hazardous roadway conditions, or railway-highway crossings are not subject to discovery or admitted into evidence in a Federal or State court proceeding or considered for other purposes in any action for damages arising from any occurrence at a location mentioned or addressed in such reports, surveys, schedules, lists, or data

RECOMMENDATIONS AND NEXT STEPS

The purpose of the pre-design study was to collaborate with local jurisdictions, organizations, and community members, and travelers to develop solutions for making improvements to US 101 in East Sequim. The study team in collaboration with the stakeholder advisory committee reviewed available data, discussed the issues, and brainstormed concepts for improving US 101. Local community members and commuters who travel this section of the corridor provided ideas and comments to aid in the development of improvement concepts.

Recommended Alternatives

Based on analysis and community engagement undertaken as part of this study, the results of the alternatives screening process identified the following top 5 scoring improvements:

1. Palo Alto / US 101 roundabout (57 points)
2. Happy Valley / US 101 roundabout (56 points)
3. New US 101 Simdars on and off ramps w/ roundabout (52 points)
4. Left turn lane at US 101 / Palo Alto (53 points)
5. Happy Valley to Simdars frontage road (50 points)

These 5 alternatives scored well based on analysis, evaluation, and performance. Throughout the study there was concern from the stakeholder advisory committee and the community about roundabouts on US 101 and they believed a frontage road is the preferred solution. WSDOT considered the outcome of the alternatives evaluation process and recognized the top scoring alternatives would perform well. However, considering the stakeholder and community response as well as the recent \$30 million dollar funding for an improvement project in Sequim, WSDOT agreed to proceed with recommending the US 101/Simdars Road new on and off ramps with E Washington /Simdars Road intersection roundabout, and one of the proposed frontage road alternatives. Following the final stakeholder meeting and discussions between the City of Sequim and Clallam County, it was decided the Palo Alto to Simdars frontage road alternative is the preferred solution in addition to the US 101/Simdars Road new on and off ramps with E Washington /Simdars Road intersection roundabout. Also, during the final stakeholder meeting, the committee was made aware the newly completed frontage road will be operated and maintained by the local jurisdiction and the two existing access points to US 101 from Happy Valley and Palo Alto Roads will be permanently closed.

Next Steps

The Washington State Legislative Session in 2022 identified \$30 million dollars for improvements in East Sequim as part of the Move Ahead Washington program. The 2023 Legislative Session will determine the timeline for design and construction of the recommended improvement projects.

APPENDICES

Appendix A – Traffic Analysis

Appendix B – Stakeholder Advisory Committee meeting summaries

Appendix C – Community engagement

Appendix D – Alternatives scoping level cost estimates

Appendix E – Screening criteria evaluation sheets

US 101 East Sequim Pre-Design Study

APPENDIX A – Traffic analysis

HCM 6th TWSC

20: E Brownfield Rd & Simdars Rd

05/12/2022

Intersection												
Int Delay, s/veh	3.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕			↕			↕			↕		
Traffic Vol, veh/h	20	1	5	0	0	1	10	14	1	0	14	28
Future Vol, veh/h	20	1	5	0	0	1	10	14	1	0	14	28
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Yield	Yield	Yield	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	22	1	5	0	0	1	11	15	1	0	15	30
Major/Minor	Minor2			Major1			Major2					
Conflicting Flow All	68	68	30				45	0	0	16	0	0
Stage 1	30	30	-				-	-	-	-	-	-
Stage 2	38	38	-				-	-	-	-	-	-
Critical Hdwy	6.4	6.5	6.2				4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	5.4	5.5	-				-	-	-	-	-	-
Critical Hdwy Stg 2	5.4	5.5	-				-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3				2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	942	826	1050				1576	-	-	1615	-	-
Stage 1	998	874	-				-	-	-	-	-	-
Stage 2	990	867	-				-	-	-	-	-	-
Platoon blocked, %							-	-	-	-	-	-
Mov Cap-1 Maneuver	935	0	1050				1576	-	-	1615	-	-
Mov Cap-2 Maneuver	935	0	-				-	-	-	-	-	-
Stage 1	991	0	-				-	-	-	-	-	-
Stage 2	990	0	-				-	-	-	-	-	-
Approach	EB			NB			SB					
HCM Control Delay, s	8.9			2.9			0					
HCM LOS	A											
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1576	-	-	956	1615	-	-					
HCM Lane V/C Ratio	0.007	-	-	0.03	0	-	-					
HCM Control Delay (s)	7.3	0	-	8.9	0	-	-					
HCM Lane LOS	A	A	-	A	A	-	-					
HCM 95th %ile Q(veh)	0	-	-	0.1	0	-	-					

US 101 East Sequim Pre-Design Study

HCM 6th TWSC

20: E Brownfield Rd & Simdars Rd

05/12/2022

Intersection												
Int Delay, s/veh	3.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	20	1	5	0	0	1	10	14	1	0	14	28
Future Vol, veh/h	20	1	5	0	0	1	10	14	1	0	14	28
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Yield	Yield	Yield	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	32	2	8	0	0	2	16	23	2	0	23	45

Major/Minor	Minor2			Major1			Major2					
Conflicting Flow All	102	103	46				68	0	0	25	0	0
Stage 1	46	46	-				-	-	-	-	-	-
Stage 2	56	57	-				-	-	-	-	-	-
Critical Hdwy	6.4	6.5	6.2				4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	5.4	5.5	-				-	-	-	-	-	-
Critical Hdwy Stg 2	5.4	5.5	-				-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3				2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	901	791	1029				1546	-	-	1603	-	-
Stage 1	982	861	-				-	-	-	-	-	-
Stage 2	972	851	-				-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	892	0	1029				1546	-	-	1603	-	-
Mov Cap-2 Maneuver	892	0	-				-	-	-	-	-	-
Stage 1	972	0	-				-	-	-	-	-	-
Stage 2	972	0	-				-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.1	2.9	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	SBL	SBT	SBR
Capacity (veh/h)	1546	-	-	916	1603	-	-
HCM Lane V/C Ratio	0.01	-	-	0.046	-	-	-
HCM Control Delay (s)	7.4	0	-	9.1	0	-	-
HCM Lane LOS	A	A	-	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	-	-

US 101 East Sequim Pre-Design Study

HCM 6th TWSC
23: Simdars Rd & SR 101 EB Ramp

05/12/2022

Intersection						
Int Delay, s/veh	8.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			↶			↷
Traffic Vol, veh/h	0	0	27	8	172	42
Future Vol, veh/h	0	0	27	8	172	42
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	4	0	1	12
Mvmt Flow	0	0	29	9	187	46
Major/Minor	Major1		Minor2			
Conflicting Flow All		0	0	34	38	
Stage 1		-	-	0	0	
Stage 2		-	-	34	38	
Critical Hdwy		-	-	6.41	6.62	
Critical Hdwy Stg 1		-	-	-	-	
Critical Hdwy Stg 2		-	-	5.41	5.62	
Follow-up Hdwy		-	-	3.509	4.108	
Pot Cap-1 Maneuver		-	-	982	835	
Stage 1		-	-	-	-	
Stage 2		-	-	991	844	
Platoon blocked, %		-	-	-	-	
Mov Cap-1 Maneuver		-	-	982	0	
Mov Cap-2 Maneuver		-	-	982	0	
Stage 1		-	-	-	0	
Stage 2		-	-	991	0	
Approach	NB		SB			
HCM Control Delay, s	0		9.8			
HCM LOS			A			
Minor Lane/Major Mvmt	NBT	NBR	SBLn1			
Capacity (veh/h)	-	-	982			
HCM Lane V/C Ratio	-	-	0.237			
HCM Control Delay (s)	-	-	9.8			
HCM Lane LOS	-	-	A			
HCM 95th %tile Q(veh)	-	-	0.9			

US 101 East Sequim Pre-Design Study

HCM 6th TWSC

23: Simdars Rd & SR 101 EB Ramp

05/12/2022

Intersection						
Int Delay, s/veh	9.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			↶			↷
Traffic Vol, veh/h	0	0	27	8	172	42
Future Vol, veh/h	0	0	27	8	172	42
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	4	0	1	12
Mvmt Flow	0	0	44	13	279	68
Major/Minor	Major1		Minor2			
Conflicting Flow All		0	0	51	57	
Stage 1		-	-	0	0	
Stage 2		-	-	51	57	
Critical Hdwy		-	-	6.41	6.62	
Critical Hdwy Stg 1		-	-	-	-	
Critical Hdwy Stg 2		-	-	5.41	5.62	
Follow-up Hdwy		-	-	3.509	4.108	
Pot Cap-1 Maneuver		-	-	960	815	
Stage 1		-	-	-	-	
Stage 2		-	-	974	828	
Platoon blocked, %		-	-	-	-	
Mov Cap-1 Maneuver		-	-	960	0	
Mov Cap-2 Maneuver		-	-	960	0	
Stage 1		-	-	-	0	
Stage 2		-	-	974	0	
Approach	NB		SB			
HCM Control Delay, s		0		10.9		
HCM LOS				B		
Minor Lane/Major Mvmt	NBT	NBR	SBLn1			
Capacity (veh/h)	-	-	960			
HCM Lane V/C Ratio	-	-	0.361			
HCM Control Delay (s)	-	-	10.9			
HCM Lane LOS	-	-	B			
HCM 95th %tile Q(veh)	-	-	1.7			

US 101 East Sequim Pre-Design Study

HCM 6th TWSC

15: Simdars Rd & E Washington St/US 101 WB Ramp

05/12/2022

Intersection												
Int Delay, s/veh	7.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶		↷		↕			↕			↷	
Traffic Vd, veh/h	12	0	169	7	199	5	24	4	0	0	209	6
Future Vol, veh/h	12	0	169	7	199	5	24	4	0	0	209	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	Yield	-	-	None	-	-	None	-	-	None
Storage Length	180	-	0	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	1	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	100	0	14	0	0	8	0	100	100	3	0
Mvmt Flow	13	0	184	8	216	5	26	4	0	0	227	7

Major/Minor	Major2	Minor1	Minor2
Conflicting Flow All	0	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.24	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.326	-	-
Pot Cap-1 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s		13.5	13.3
HCM LOS		B	B

Minor Lane/Major Mvmt	NBLn1	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	455	-	-	-	668
HCM Lane V/C Ratio	0.067	-	-	-	0.35
HCM Control Delay (s)	13.5	-	-	-	13.3
HCM Lane LOS	B	-	-	-	B
HCM 95th %tile Q(veh)	0.2	-	-	-	1.6

US 101 East Sequim Pre-Design Study

HCM 6th AWSC

15: Simdars Rd & E Washington St/US 101 WB Ramp

05/12/2022

Intersection	
Intersection Delay, s/veh	10.1
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖		↗		↕			↖			↗	
Traffic Vol, veh/h	12	0	169	7	199	5	24	4	0	0	209	6
Future Vol, veh/h	12	0	169	7	199	5	24	4	0	0	209	6
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	0	100	0	14	0	0	8	0	100	100	3	0
Mvmt Flow	13	0	184	8	216	5	26	4	0	0	227	7
Number of Lanes	1	0	1	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	2
HCM Control Delay	9	10.7	8.9	10.5
HCM LOS	A	B	A	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1	SBLn1
Vol Left, %	86%	100%	0%	3%	0%
Vol Thru, %	14%	0%	0%	94%	97%
Vol Right, %	0%	0%	100%	2%	3%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	28	12	169	211	215
LT Vd	24	12	0	7	0
Through Vol	4	0	0	199	209
RT Vd	0	0	169	5	6
Lane Flow Rate	30	13	184	229	234
Geometry Grp	2	7	7	5	2
Degree of Util (X)	0.047	0.021	0.24	0.328	0.325
Departure Headway (Hd)	5.576	5.923	4.712	5.145	5
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	635	601	755	695	715
Service Time	3.67	3.695	2.483	3.214	3.066
HCM Lane V/C Ratio	0.047	0.022	0.244	0.329	0.327
HCM Control Delay	8.9	8.8	9	10.7	10.5
HCM Lane LOS	A	A	A	B	B
HCM 95th-tile Q	0.1	0.1	0.9	1.4	1.4

US 101 East Sequim Pre-Design Study

HCM 6th TWSC

15: Simdars Rd & E Washington St/US 101 WB Ramp

05/12/2022

Intersection

Int Delay, s/veh	11											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖		↗		↕			↖			↗	
Traffic Vol, veh/h	12	0	169	7	199	5	24	4	0	0	209	6
Future Vol, veh/h	12	0	169	7	199	5	24	4	0	0	209	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	Yield	-	-	None	-	-	None	-	-	None
Storage Length	180	-	0	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	1	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	100	0	14	0	0	8	0	100	100	3	0
Mvmt Flow	19	0	274	11	322	8	39	6	0	0	338	10

Major/Minor	Major2		Minor1		Minor2	
Conflicting Flow All	0	0	0	522	352	-
Stage 1	-	-	-	0	0	-
Stage 2	-	-	-	522	352	-
Critical Hdwy	4.24	-	-	7.18	6.5	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	6.18	5.5	-
Follow-up Hdwy	2.326	-	-	3.572	4	-
Pot Cap-1 Maneuver	-	-	-	456	576	0
Stage 1	-	-	-	-	-	0
Stage 2	-	-	-	527	635	0
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	239	576	-
Mov Cap-2 Maneuver	-	-	-	239	576	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	241	635	-

Approach	WB	NB	SB
HCM Control Delay, s		21.7	20.3
HCM LOS		C	C

Minor Lane/Major Mvmt	NBLn1	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	261	-	-	-	577
HCM Lane V/C Ratio	0.174	-	-	-	0.603
HCM Control Delay (s)	21.7	-	-	-	20.3
HCM Lane LOS	C	-	-	-	C
HCM 95th %tile Q(veh)	0.6	-	-	-	4

US 101 East Sequim Pre-Design Study

HCM 6th AWSC

15: Simdars Rd & E Washington St/US 101 WB Ramp

05/12/2022

Intersection

Intersection Delay, s/veh 14.8
 Intersection LOS B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘		↗		↕			↖			↗	
Traffic Vol, veh/h	12	0	169	7	199	5	24	4	0	0	209	6
Future Vol, veh/h	12	0	169	7	199	5	24	4	0	0	209	6
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	0	100	0	14	0	0	8	0	100	100	3	0
Mvmt Flow	19	0	274	11	322	8	39	6	0	0	338	10
Number of Lanes	1	0	1	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	2
HCM Control Delay	12.1	16.4	10.5	16
HCM LOS	B	C	B	C

Lane	NBLn1	EBLn1	EBLn2	WBLn1	SBLn1
Vol Left, %	86%	100%	0%	3%	0%
Vol Thru, %	14%	0%	0%	94%	97%
Vol Right, %	0%	0%	100%	2%	3%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	28	12	169	211	215
LT Vol	24	12	0	7	0
Through Vol	4	0	0	199	209
RT Vol	0	0	169	5	6
Lane Flow Rate	45	19	274	342	348
Geometry Grp	2	7	7	5	2
Degree of Util (X)	0.085	0.036	0.421	0.562	0.559
Departure Headway (Hd)	6.751	6.753	5.532	5.922	5.783
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	526	528	646	608	620
Service Time	4.849	4.519	3.298	3.985	3.847
HCM Lane V/C Ratio	0.086	0.036	0.424	0.563	0.561
HCM Control Delay	10.5	9.8	12.3	16.4	16
HCM Lane LOS	B	A	B	C	C
HCM 95th-tile Q	0.3	0.1	2.1	3.5	3.5

US 101 East Sequim Pre-Design Study

HCM 6th TWSC
3: Happy Valley & US 101

05/09/2022

Intersection						
Int Delay, s/veh	0.3					
Movement	NBL	NBR	SET	SER	NWL	NWT
Lane Configurations	↖ ↗		↖ ↗		↖ ↗	↖ ↗
Traffic Vol, veh/h	5	11	752	20	3	696
Future Vol, veh/h	5	11	752	20	3	696
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	240	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	20	9	4	5	0	5
Mvmt Flow	5	12	817	22	3	757

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1591	828	0
Stage 1	828	-	-
Stage 2	763	-	-
Critical Hdwy	6.6	6.29	-
Critical Hdwy Stg 1	5.6	-	-
Critical Hdwy Stg 2	5.6	-	-
Follow-up Hdwy	3.68	3.381	-
Pot Cap-1 Maneuver	107	361	-
Stage 1	400	-	-
Stage 2	430	-	-
Platoon blocked, %			-
Mov Cap-1 Maneuver	107	361	-
Mov Cap-2 Maneuver	107	-	-
Stage 1	400	-	-
Stage 2	428	-	-

Approach	NB	SE	NW
HCM Control Delay, s	24	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBLn1	NWL	NWT	SET	SER
Capacity (veh/h)	207	804	-	-	-
HCM Lane V/C Ratio	0.084	0.004	-	-	-
HCM Control Delay (s)	24	9.5	-	-	-
HCM Lane LOS	C	A	-	-	-
HCM 95th %tile Q(veh)	0.3	0	-	-	-

US 101 East Sequim Pre-Design Study

HCM 6th TWSC
3: Happy Valley & US 101

05/09/2022

Intersection						
Int Delay, s/veh	0.8					
Movement	NBL	NBR	SET	SER	NWL	NWT
Lane Configurations	↘		↗		↘	↗
Traffic Vol, veh/h	5	11	752	20	3	696
Future Vol, veh/h	5	11	752	20	3	696
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	240	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	20	9	4	5	0	5
Mvmt Flow	8	18	1218	32	5	1127

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	2371	1234	0
Stage 1	1234	-	-
Stage 2	1137	-	-
Critical Hdwy	6.6	6.29	4.1
Critical Hdwy Stg 1	5.6	-	-
Critical Hdwy Stg 2	5.6	-	-
Follow-up Hdwy	3.68	3.381	2.2
Pot Cap-1 Maneuver	34	208	564
Stage 1	253	-	-
Stage 2	282	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	34	208	564
Mov Cap-2 Maneuver	34	-	-
Stage 1	253	-	-
Stage 2	279	-	-

Approach	NB	SE	NW
HCM Control Delay, s	70.2	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBLn1	NWL	NWT	SET	SER
Capacity (veh/h)	80	564	-	-	-
HCM Lane V/C Ratio	0.324	0.009	-	-	-
HCM Control Delay (s)	70.2	11.4	-	-	-
HCM Lane LOS	F	B	-	-	-
HCM 95th %tile Q(veh)	1.2	0	-	-	-

US 101 East Sequim Pre-Design Study

HCM 6th TWSC
8: US 101 & Whitefeather

05/09/2022

Intersection						
Int Delay, s/veh	0.6					
Movement	WBL	WBR	SEL	SET	NWT	NWR
Lane Configurations	↔		↔	↑	↔	
Traffic Vol, veh/h	7	25	28	637	700	4
Future Vol, veh/h	7	25	28	637	700	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	240	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	4	0	3	5	0
Mvmt Flow	8	27	30	692	761	4

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	1515	763	765	0	-
Stage 1	763	-	-	-	-
Stage 2	752	-	-	-	-
Critical Hdwy	6.4	6.24	4.1	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.336	2.2	-	-
Pot Cap-1 Maneuver	133	401	857	-	-
Stage 1	464	-	-	-	-
Stage 2	469	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	128	401	857	-	-
Mov Cap-2 Maneuver	128	-	-	-	-
Stage 1	448	-	-	-	-
Stage 2	469	-	-	-	-

Approach	WB	SE	NW
HCM Control Delay, s	20.1	0.4	0
HCM LOS	C		

Minor Lane/Major Mvmt	NWT	NWRWBLn1	SEL	SET
Capacity (veh/h)	-	-	273	857
HCM Lane V/C Ratio	-	-	0.127	0.036
HCM Control Delay (s)	-	-	20.1	9.4
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	0.4	0.1

US 101 East Sequim Pre-Design Study

HCM 6th TWSC
8: US 101 & Whitefeather

05/09/2022

Intersection

Int Delay, s/veh 1.5

Movement

	WBL	WBR	SEL	SET	NWT	NWR
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Lane Configurations	↔		↔	↑	↔	
Traffic Vol, veh/h	7	25	28	637	700	4
Future Vol, veh/h	7	25	28	637	700	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	240	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	4	0	3	5	0
Mvmt Flow	11	40	45	1032	1134	6

Major/Minor

	Minor2	Major1	Major2
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Conflicting Flow All	2259	1137	1140	0	-	0
Stage 1	1137	-	-	-	-	-
Stage 2	1122	-	-	-	-	-
Critical Hdwy	6.4	6.24	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.336	2.2	-	-	-
Pot Cap-1 Maneuver	46	243	620	-	-	-
Stage 1	309	-	-	-	-	-
Stage 2	314	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	43	243	620	-	-	-
Mov Cap-2 Maneuver	43	-	-	-	-	-
Stage 1	286	-	-	-	-	-
Stage 2	314	-	-	-	-	-

Approach

	WB	SE	NW
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HCM Control Delay, s	56.1	0.5	0
HCM LOS	F		

Minor Lane/Major Mvmt

	NWT	NWRWBLn1	SEL	SET
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Capacity (veh/h)	-	-	120	620	-
HCM Lane V/C Ratio	-	-	0.432	0.073	-
HCM Control Delay (s)	-	-	56.1	11.3	-
HCM Lane LOS	-	-	F	B	-
HCM 95th %tile Q(veh)	-	-	1.9	0.2	-

US 101 East Sequim Pre-Design Study

HCM 6th TWSC
10: Palo Alto Rd & US 101

05/09/2022

Intersection

Int Delay, s/veh	0.9					
Movement	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations	↖	↑	↗		↖	
Traffic Vol, veh/h	50	641	724	1	16	7
Future Vol, veh/h	50	641	724	1	16	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	300	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	4	4	3	0	9	0
Mvmt Flow	54	697	787	1	17	8

Major/Minor

	Major1	Major2	Minor2		
Conflicting Flow All	788	0	-	0	1593 788
Stage 1	-	-	-	-	788 -
Stage 2	-	-	-	-	805 -
Critical Hdwy	4.14	-	-	-	6.49 6.2
Critical Hdwy Stg 1	-	-	-	-	5.49 -
Critical Hdwy Stg 2	-	-	-	-	5.49 -
Follow-up Hdwy	2.236	-	-	-	3.581 3.3
Pot Cap-1 Maneuver	823	-	-	-	113 394
Stage 1	-	-	-	-	436 -
Stage 2	-	-	-	-	428 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	823	-	-	-	106 394
Mov Cap-2 Maneuver	-	-	-	-	106 -
Stage 1	-	-	-	-	407 -
Stage 2	-	-	-	-	428 -

Approach

	NB	SB	NE
HCM Control Delay, s	0.7	0	37.3
HCM LOS			E

Minor Lane/Major Mvmt

	NELn1	NBL	NBT	SBT	SBR
Capacity (veh/h)	136	823	-	-	-
HCM Lane V/C Ratio	0.184	0.066	-	-	-
HCM Control Delay (s)	37.3	9.7	-	-	-
HCM Lane LOS	E	A	-	-	-
HCM 95th %tile Q(veh)	0.6	0.2	-	-	-

US 101 East Sequim Pre-Design Study

HCM 6th TWSC
10: Palo Alto Rd & US 101

05/09/2022

Intersection						
Int Delay, s/veh	4.5					
Movement	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations	↖	↑	↗		↖	
Traffic Vol, veh/h	50	641	724	1	16	7
Future Vol, veh/h	50	641	724	1	16	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	300	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	4	4	3	0	9	0
Mvmt Flow	81	1038	1173	2	26	11

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	1175	0	-	0	2374 1174
Stage 1	-	-	-	-	1174 -
Stage 2	-	-	-	-	1200 -
Critical Hdwy	4.14	-	-	-	6.49 6.2
Critical Hdwy Stg 1	-	-	-	-	5.49 -
Critical Hdwy Stg 2	-	-	-	-	5.49 -
Follow-up Hdwy	2.236	-	-	-	3.581 3.3
Pot Cap-1 Maneuver	587	-	-	-	36 236
Stage 1	-	-	-	-	284 -
Stage 2	-	-	-	-	276 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	587	-	-	-	31 236
Mov Cap-2 Maneuver	-	-	-	-	31 -
Stage 1	-	-	-	-	245 -
Stage 2	-	-	-	-	276 -

Approach	NB	SB	NE
HCM Control Delay, s	0.9	0	252
HCM LOS			F

Minor Lane/Major Mvmt	NELn1	NBL	NBT	SBT	SBR
Capacity (veh/h)	42	587	-	-	-
HCM Lane V/C Ratio	0.887	0.138	-	-	-
HCM Control Delay (s)	252	12.1	-	-	-
HCM Lane LOS	F	B	-	-	-
HCM 95th %tile Q(veh)	3.5	0.5	-	-	-

US 101 East Sequim Pre-Design Study

MOVEMENT SUMMARY

Site: [US 101/Simdars Rd/E Washington St - 2041(2%)] (Site Folder: General)

US 101/Simdars Rd/E Washington St Roundabout
 Site Category: (None)
 Roundabout
 Design Life Analysis (Final Year): Results for 20 years

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES [Total HV] veh/h	%	DEMAND FLOWS [Total HV] veh/h	%	Deg. Satn w/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh.] veh	Dist.] ft	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed mph
South: Simdars Rd (S)														
3b	L3	14	0.0	20	0.0	0.046	9.2	LOSA	0.2	5.9	0.09	0.61	0.09	28.2
3	L2	24	8.0	34	8.0	0.046	8.3	LOSA	0.2	5.9	0.09	0.61	0.09	30.0
8	T1	4	0.0	6	0.0	0.046	3.5	LOSA	0.2	5.9	0.09	0.61	0.09	26.3
Approach														
		42	4.6	59	4.6	0.046	8.1	LOSA	0.2	5.9	0.09	0.61	0.09	29.3
East: US 101 Off-Ramp Westbound (E)														
1	L2	7	14.0	10	14.0	0.238	8.8	LOSA	1.2	30.0	0.22	0.41	0.22	31.2
1a	L1	5	0.0	7	0.0	0.238	7.5	LOSA	1.2	30.0	0.22	0.41	0.22	31.8
6	T1	199	0.0	279	0.0	0.238	3.8	LOSA	1.2	30.0	0.22	0.41	0.22	33.0
16	R2	5	0.0	7	0.0	0.238	3.9	LOSA	1.2	30.0	0.22	0.41	0.22	30.7
Approach														
		216	0.5	302	0.5	0.238	4.1	LOSA	1.2	30.0	0.22	0.41	0.22	32.9
North: Simdars Rd (N)														
4	T1	209	3.0	293	3.0	0.431	5.7	LOSA	2.6	66.8	0.57	0.62	0.57	27.5
14a	R1	102	0.0	143	0.0	0.431	5.2	LOSA	2.6	66.8	0.57	0.62	0.57	27.4
14	R2	6	0.0	8	0.0	0.431	5.6	LOSA	2.6	66.8	0.57	0.62	0.57	29.7
Approach														
		317	2.0	444	2.0	0.431	5.5	LOSA	2.6	66.8	0.57	0.62	0.57	27.5
West: E Washington St (W)														
5	L2	12	0.0	17	0.0	0.403	10.9	LOSB	2.6	65.6	0.68	0.74	0.68	24.8
12	R2	169	0.0	237	0.0	0.403	6.3	LOSA	2.6	65.6	0.68	0.74	0.68	30.0
12b	R3	86	0.0	120	0.0	0.403	6.7	LOSA	2.6	65.6	0.68	0.74	0.68	29.8
Approach														
		267	0.0	374	0.0	0.403	6.6	LOSA	2.6	65.6	0.68	0.74	0.68	29.7
All Vehicles														
		842	1.1	1179	1.1	0.431	5.6	LOSA	2.6	66.8	0.49	0.61	0.49	30.4

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Signalised Intersections.
 Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
 Intersection and Approach LOS values are based on average delay for all movements (v/c not used).
 Roundabout Capacity Model: SIDRA Standard.
 Delay Model: SIDRA Standard (Geometric Delay) (s included).
 Queue Model: HCM Queue Formula.
 Gap-Acceptance Capacity: SIDRA Standard (Arcelek M3D).
 HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

US 101 East Sequim Pre-Design Study

HCM 6th TWSC

8: US 101 & Whitefeather

05/12/2022

Intersection										
Int Delay, s/veh	25									
Movement	WBL	WBR	SEL	SET	SER	NWL	NWT	NWR	NEL	NER
Lane Configurations	↘		↘		↘		↘		↘	
Traffic Vol, veh/h	5	25	28	637	1	75	700	4	24	5
Future Vol, veh/h	5	25	28	637	1	75	700	4	24	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	-	None	-	-	None	-	-
Storage Length	0	-	240	-	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	-	-	0	-	0	-
Grade, %	0	-	-	0	-	-	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	4	0	3	2	2	5	0	2	2
Mvmt Flow	5	40	45	1032	1	82	1134	6	26	5

Major/Minor	Minor2	Major1	Major2	Minor1
Conflicting Flow All	2432	1137	1140	0
Stage 1	1301	-	-	-
Stage 2	1131	-	-	-
Critical Hdwy	7.1	6.24	4.1	-
Critical Hdwy Stg 1	6.1	-	-	-
Critical Hdwy Stg 2	6.1	-	-	-
Follow-up Hdwy	3.5	3.336	2.2	-
Pot Cap-1 Maneuver	22	243	620	-
Stage 1	200	-	-	-
Stage 2	249	-	-	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	12	243	620	-
Mov Cap-2 Maneuver	12	-	-	-
Stage 1	185	-	-	-
Stage 2	217	-	-	-

Approach	WB	SE	NW	NE
HCM Control Delay, s	63.6	0.5	0.7	\$ 1295.6
HCM LOS	F			F

Minor Lane/Major Mvmt	NELn1	NWL	NWT	NWRWBLn1	SEL	SET	SER
Capacity (veh/h)	14	673	-	-	105	620	-
HCM Lane V/C Ratio	2.64	0.121	-	-	0.437	0.073	-
HCM Control Delay (s)	\$ 1295.6	11.1	-	-	63.6	11.3	-
HCM Lane LOS	F	B	-	-	F	B	-
HCM 95th %tile Q(veh)	5.4	0.4	-	-	1.9	0.2	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

US 101 East Sequim Pre-Design Study

MOVEMENT SUMMARY

Site: 101 [US 101 Sequim/Happy Valley Road - 2041 (Horizon Year) (Site Folder: General)]

US 101 Sequim/Happy Valley Road

Site Category: (None)

Roundabout

Design Life Analysis (Final Year): Results for 20 years

Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h]	[HV] %	[Total veh/h]	[HV] %								
SouthEast: US 101 from Blyn (Southeast)													
3x	L2	3	0.0	4	0.0	0.760	10.9	LOS B	407.3	0.25	0.44	0.25	37.1
8x	T1	696	5.0	974	5.0	0.760	6.2	LOS A	407.3	0.25	0.44	0.25	41.0
Approach		699	5.0	979	5.0	0.760	6.2	LOS A	407.3	0.25	0.44	0.25	41.0
NorthWest: US 101 from Sequim (Northwest)													
4x	T1	752	4.0	1053	4.0	0.826	6.1	LOS A	511.3	0.19	0.45	0.19	41.5
14x	R2	20	5.0	28	5.0	0.826	5.7	LOS A	511.3	0.19	0.45	0.19	36.2
Approach		772	4.0	1081	4.0	0.826	6.1	LOS A	511.3	0.19	0.45	0.19	41.3
SouthWest: Happy Valley Road (Southwest)													
5x	L2	5	20.0	7	20.0	0.054	21.1	LOS C	9.0	0.85	0.81	0.85	28.6
12x	R2	11	9.0	15	9.0	0.054	14.7	LOS B	9.0	0.85	0.81	0.85	29.4
Approach		16	12.4	22	12.4	0.054	16.7	LOS B	9.0	0.85	0.81	0.85	29.2
All Vehicles		1487	4.6	2082	4.6	0.826	6.3	LOS A	511.3	0.23	0.45	0.23	41.0

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Signalised Intersections.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

Intersection and Approach LOS values are based on average delay for all movements (v/c not used).

Roundabout Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: HCM Queue Formula.

Gap-Acceptance Capacity: SIDRA Standard (Akcelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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US 101 East Sequim Pre-Design Study

MOVEMENT SUMMARY

Site: 101 [US 101 Sequim/Palo Alto Road - 2041 (Horizon Year) (Site Folder: General)]

US 101 Sequim/Palo Alto Road

Site Category: (None)

Roundabout

Design Life Analysis (Final Year): Results for 20 years

Vehicle Movement Performance															
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh.]	Dist [ft]	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed mph
		[Total veh/h]	[HV %]	[Total veh/h]	[HV %]										
SouthEast: US 101 from Blyn (Southeast)															
3x	L2	50	4.0	70	4.0	0.760		11.3	LOS B	14.9	385.0	0.45	0.45	0.45	36.2
8x	T1	641	4.0	897	4.0	0.760		6.5	LOS A	14.9	385.0	0.45	0.45	0.45	40.2
Approach		691	4.0	967	4.0	0.760		6.9	LOS A	14.9	385.0	0.45	0.45	0.45	39.9
NorthWest: US 101 from Sequim (Northwest)															
4x	T1	724	3.0	1014	3.0	0.830		7.7	LOS A	15.5	396.6	0.78	0.51	0.78	39.2
14x	R2	1	0.0	1	0.0	0.830		7.1	LOS A	15.5	396.6	0.78	0.51	0.78	34.4
Approach		725	3.0	1015	3.0	0.830		7.7	LOS A	15.5	396.6	0.78	0.51	0.78	39.2
SouthWest: Palo Alto Road (Southwest)															
5x	L2	16	9.0	22	9.0	0.090		18.4	LOS B	0.6	16.3	0.94	0.86	0.94	29.8
12x	R2	7	0.0	10	0.0	0.090		12.5	LOS B	0.6	16.3	0.94	0.86	0.94	30.4
Approach		23	6.3	32	6.3	0.090		16.6	LOS B	0.6	16.3	0.94	0.86	0.94	30.0
All Vehicles		1439	3.5	2015	3.5	0.830		7.4	LOS A	15.5	396.6	0.62	0.49	0.62	39.3

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Signalised Intersections.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

Intersection and Approach LOS values are based on average delay for all movements (v/c not used).

Roundabout Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Geometric Delay) is included.

Queue Model: HCM Queue Formula.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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US 101 East Sequim Pre-Design Study

MOVEMENT SUMMARY

Site: 101 [US 101 Sequim/Whitefeather Way/Happy Valley Connector - 2041 (Horizon Year)
 (Site Folder: General)]

US 101 Sequim/Whitefeather Way
 Site Category: (None)
 Roundabout
 Design Life Analysis (Final Year): Results for 20 years

Vehicle Movement Performance													
Mov ID	Turn	INPUT VOLUMES [Total HV] veh/h	DEMAND FLOWS [Total HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh.] veh	Dist.] ft	Prop. Que	Effective Stop Rate veh	Aver. No. Cycles	Aver. Speed mph	
SouthEast: US 101 from Blyn (Southeast)													
3x	L2	53	4.0	0.888	12.8	LOS D	17.0	440.6	0.93	0.57	0.93	34.8	
8x	T1	700	5.0	0.888	8.0	LOS D	17.0	440.6	0.93	0.57	0.93	38.3	
18x	R2	4	0.0	0.888	7.4	LOS D	17.0	440.6	0.93	0.57	0.93	33.9	
Approach		757	4.9	0.888	8.4	LOSA	17.0	440.6	0.93	0.57	0.93	38.0	
NorthEast: Whitefeather Way (Northeast)													
1x	L2	7	4.0	0.195	18.6	LOS B	1.4	36.1	0.98	0.94	0.98	31.2	
6x	T1	15	0.0	0.195	13.4	LOS B	1.4	36.1	0.98	0.94	0.98	28.9	
16x	R2	25	4.0	0.195	13.9	LOS B	1.4	36.1	0.98	0.94	0.98	30.8	
Approach		47	2.7	0.195	14.4	LOS B	1.4	36.1	0.98	0.94	0.98	30.2	
NorthWest: US 101 from Sequim (Northwest)													
7x	L2	28	5.0	0.810	12.5	LOS B	11.7	301.6	0.76	0.58	0.76	35.3	
4x	T1	637	4.0	0.810	7.6	LOSA	11.7	301.6	0.76	0.58	0.76	39.1	
14x	R2	21	0.0	0.810	7.1	LOSA	11.7	301.6	0.76	0.58	0.76	34.5	
Approach		686	3.9	0.810	7.8	LOSA	11.7	301.6	0.76	0.58	0.76	38.8	
SouthWest: Happy Valley Connector													
5x	L2	21	9.0	0.166	45.6	LOS B	1.1	28.8	0.88	0.88	0.88	31.5	
2x	T1	15	0.0	0.166	10.0	LOSA	1.1	28.8	0.88	0.88	0.88	29.8	
12x	R2	18	9.0	0.166	10.8	LOS B	1.1	28.8	0.88	0.88	0.88	31.1	
Approach		54	6.5	0.166	12.5	LOS B	1.1	28.8	0.88	0.88	0.88	30.9	
All Vehicles		1544	4.5	0.888	8.4	LOSA	17.0	440.6	0.85	0.59	0.85	37.7	

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Signalised Intersections.
 Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
 Intersection and Approach LOS values are based on average delay for all movements (v/c not used).
 Roundabout Capacity Model: SIDRA Standard.
 Delay Model: SIDRA Standard (Geometric Delay is included).
 Queue Model: HCM Queue Formula.
 Gap-Acceptance Capacity: SIDRA Standard (Akcelik M3D).
 HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

US 101 East Sequim Pre-Design Study

HCM 6th TWSC
10: Palo Alto Rd & US 101

05/11/2022

Intersection						
Int Delay, s/veh	4.5					
Movement	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations	↖	↑	↗		↖	↗
Traffic Vol, veh/h	50	641	724	1	16	7
Future Vol, veh/h	50	641	724	1	16	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	300	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	4	4	3	0	9	0
Mvmt Flow	81	1038	1173	2	26	11

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	1175	0	-	0	2374 1174
Stage 1	-	-	-	-	1174 -
Stage 2	-	-	-	-	1200 -
Critical Hdwy	4.14	-	-	-	6.49 6.2
Critical Hdwy Stg 1	-	-	-	-	5.49 -
Critical Hdwy Stg 2	-	-	-	-	5.49 -
Follow-up Hdwy	2.236	-	-	-	3.581 3.3
Pot Cap-1 Maneuver	587	-	-	-	36 236
Stage 1	-	-	-	-	284 -
Stage 2	-	-	-	-	276 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	587	-	-	-	31 236
Mov Cap-2 Maneuver	-	-	-	-	31 -
Stage 1	-	-	-	-	245 -
Stage 2	-	-	-	-	276 -

Approach	NB	SB	NE
HCM Control Delay, s	0.9	0	252
HCM LOS			F

Minor Lane/Major Mvmt	NELn1	NBL	NBT	SBT	SBR
Capacity (veh/h)	42	587	-	-	-
HCM Lane V/C Ratio	0.887	0.138	-	-	-
HCM Control Delay (s)	252	12.1	-	-	-
HCM Lane LOS	F	B	-	-	-
HCM 95th %tile Q(veh)	3.5	0.5	-	-	-

US 101 East Sequim Pre-Design Study

APPENDIX B – Stakeholder Advisory Committee Meetings

Appendix A contains meeting summaries of each of the three stakeholder advisory committee meetings held virtually over Zoom during the study.

Stakeholder Committee Meeting 1 – September 29, 2021

Attendees:

Matt Klontz, City of Sequim
Charisse Deschenes, City of Sequim
Steve Gray, Clallam County
Jason O'Dell, Clallam County
Kevin Gallacci, Clallam Transit System
Wendy Clark-Getzin, Jamestown S'Klallam Tribe
Anji Scalf, Sequim-Dungeness Valley Chamber of Commerce
Kumiko Izawa, WSDOT OR Traffic
Josh Tax, WSDOT Port Angeles PEO
Dennis Engel, WSDOT OR Multimodal Planning
Matt Pahs, WSDOT OR Multimodal Planning
Yvette Liufau, WSDOT OR Multimodal Planning

Introductions, Meeting objective and committee responsibilities

Yvette Liufau, WSDOT, Olympic Region Multimodal Planning conducted the meeting. Yvette thanked everyone for attending the meeting, initiated introductions with the group and reviewed the meeting agenda. The objective of the meeting was to understand the scope of the study and identify the purpose and needs in determining necessary improvements for the US 101 East Sequim Pre-Design Study. The stakeholder advisory committee list of participants included the City of Sequim, Clallam County, Clallam Transit, Jamestown S'Klallam Tribe, Sequim-Dungeness Valley Chamber of Commerce and WSDOT. Yvette asked the group if any organization not listed should be considered for inclusion. One comment from the group suggested inviting the Port of Port Angeles who represents the John Wayne Marina located at the end of Whitefeather Road. Yvette will extend an invitation to the Port of Port Angeles to be on the stakeholder advisory committee.

Practical Solutions and Pre-Design Study

Yvette introduced Practical Solutions and information about this pre-design study to the group. The WSDOT's Practical Solutions approach to managing the State's highway system assets is a method that helps WSDOT to make transportation decisions and investments at the right places, using the right approach to achieve an integrated sustainable transportation system. Applying it to the planning process in studies also allows for a more enhanced collaboration with partners and communities. A question from the committee was asked if Practical Solutions is always used in planning studies. In

US 101 East Sequim Pre-Design Study

response, yes WSDOT uses this approach in all planning studies. Using this approach has allowed WSDOT to do numerous low-cost projects.

The US 101 East Sequim study is a pre-design study. Yvette described a pre-design study as working with stakeholders and the community to validate or revise the project scope, schedule and budget using a scalable multimodal, multi-discipline, and multi-agency process.

Pre-design study overview

Previous work

Previous work and various local and state plans are being reviewed as part of this pre-design study process. Yvette mentioned some of that work comes from the SR 101 O'Brien Road to Palo Alto Road Environmental Impact Statement (EIS) that was completed in 1993. This information is important however, some changes have occurred in the last 20 years since the EIS was finished.

Study schedule

Yvette explained work on the pre-design study began in July with the study team gathering background information. The study limits are between US 101 just west of the Simdars Road interchange to the intersection of US 101 and Palo Alto Road. Three stakeholder advisory committee meetings are planned during the study: today's meeting, with the second and third meetings to be held in November 2021 and February 2022. The timeline shown on the slide also identifies an online open house event planned for January 2022 where the community will be asked to view and comment on some preliminary ideas. The public event will be advertised by WSDOT, and the stakeholder committee expressed their willingness to inform the public of the event through their organization contacts also. Yvette mentioned tasks planned during the pre-design study include data collection, analysis, and community engagement. The study is expected to be complete by the end of May 2022 with recommendations outlined in the study report.

The following comments about the study timeline were discussed:

- Are public outreach opportunities for the study mainly the online open house or is there additional opportunities to comment? The online open house event will be a way for the public to review and provide comments, and it will be available to view and give feedback for 2 weeks. The committee agreed to advertise the event through their contacts. The City would like to include event information in their monthly newsletter. Other ways the community can learn about the study or give feedback is by viewing the study webpage or contacting WSDOT study staff directly.

Existing conditions

The following existing conditions information was shared with the group.

- Traffic conditions –This section of US 101 on average carries 17,000 vehicles a day. It is T-2 truck route with an average 1,100 trucks a day that travel the corridor. The overall Level of Service (LOS) for US 101 mainline is LOS D meaning drivers experience some moderate delay where speeds slightly decrease as traffic volume increases. The intersection traffic information came from

US 101 East Sequim Pre-Design Study

WSDOT’s Olympic Region Traffic data analysis that was completed in 2018. At US 101 and Palo Alto Road the intersection LOS in the afternoon received the worst vehicle delay with LOS E and 44 seconds of delay. At US 101 and Happy Valley Road the intersection LOS was D in the morning and afternoon and C at mid-day. Yvette mentioned WSDOT staff are collecting new traffic counts which will be shared at the next stakeholder committee meeting.

- Crash history – The study team reviewed a 5-year history of crashes on US 101 within the study area from January 2016 to December 2020. There was a total of 53 crashes, where the most common types of crashes were rear end and striking an animal. Yvette mentioned 34% of the crashes were possible injury with the rest being non-injury. There were 2 possible injury and 6 non-injury crashes that occurred at the Simdars Road interchange. The table describes the intersection related only crashes that were shown on the slide presentation at Happy Valley, Whitefeather, and Palo Alto Roads.

	Possible injury	Non-injury
Happy Valley Road	3	1
Whitefeather Road	0	2
Palo Alto Road	4	6

Under 23 U.S. Code § 409, safety data, reports, surveys, schedules, lists compiled or collected for the purpose of identifying, evaluating, or planning the safety enhancement of potential crash sites, hazardous roadway conditions, or railway highway crossings are not subject to discovery or admitted into evidence in a Federal or State court proceeding or considered for other purposes in any action for damages arising from any occurrence at a location mentioned or addressed in such reports, surveys, schedules, lists, or data.

One crash resulting in a vehicle crossing the centerline and two fatalities happened on US 101 near Happy Valley Road in December 2020.

The following comments about crash information were brought up in the meeting:

- On US 101 in the area there are vehicles crossing the centerline.
 - With animal crashes occurring on US 101, a committee member felt there may be a need to establish a wildlife crossing in the area or something to address the safety.
- Environment – Yvette shared some of WSDOT’s environmental information with the group. A map showing information about wetlands, climate impacts, fish passage barriers, and wildlife connectivity was discussed. Within the US 101 study limits there’s a significant size wetland south of US 101 and east of the Simdars Road interchange. A climate impact vulnerability assessment shows the future climate risk to this segment of US 101 is low. There are 2 fish passage barriers located in the study area. One at Johnson Creek located near Whitefeather Road that is programmed for design in 2022 with construction expected to be complete by December 2024. The second fish passage located to the west has not yet been schedule for replacement. WSDOT’s wildlife data shows a presence of wildlife exists along the US 101 corridor with a high presence to the east of the Simdars Road interchange.

US 101 East Sequim Pre-Design Study

Purpose and need statement discussion

The study purpose and need statement provides the foundation for successful decision-making and the basis for evaluating and comparing reasonable alternatives. Yvette explained the purpose and need statement is developed and agreed to by the study team and the stakeholder committee. The draft purpose and need statement below is from the study stakeholder committee meeting held in 2019 and was not finalized because the study was temporarily put on hold. This same draft statement was presented to the group for discussion.

“The purpose of the US 101 East Sequim corridor improvements project between Simdars Interchange and Palo Alto Road is to support economic development and growth in the City of Sequim by developing potential practical solution strategies that promote mobility and connectivity, while providing enhancements for a city gateway.”

The committee was asked if this statement still reflects the study purpose and need and if any changes are needed. The group provided the following comments about the purpose and need statement:

- Add the words “an opportunity for” to the last sentence after “providing”.
- What does the word “enhancements” used in the statement refer to? The statement refers to landscaping the US 101 corridor and is something that can be addressed in the future or even by the city or county as part of a gateway, however the language can remain in the purpose and need.
- Include “multimodal” in the statement referring to the consideration of freight, transit, park and ride lots, the Olympic Discovery Trail, and bicycle connections when developing strategies.
- Suggestion to include safety. Safety at intersections and crossing centerline are areas of concern.
- Congestion relief should be added to the statement.

Yvette will make changes to the purpose and need statement to incorporate the comments and email it out to the committee members for review.

The committee provided some general comments about the study:

- Will traffic analysis look beyond the highway, and will WSDOT traffic staff be involved in the study? Yes, the study looks beyond the highway and WSDOT’s region traffic office is participating on the stakeholder committee and will be engaged in the traffic analysis.
- A frontage road would fill some of the gaps of local road connections not on US 101. A frontage road was identified during the 1993 study and will also be considered in the study.
- There was some discussion about the gap in funding and being able to fund a project. The group agreed it would be helpful to learn more about funding opportunities at the next meeting.

Next Steps

The next steps in the study will be to finalize the purpose and needs statement with the information that’s been collected in the meeting. Yvette explained the next stakeholder advisory committee meeting will be in November 2021. During the next stakeholder meeting traffic forecasting data will be presented and a discussion about alternatives screening criteria and brainstorming alternatives is planned.

US 101 East Sequim Pre-Design Study

Stakeholder Committee Meeting 2 – December 14, 2021

Attendees:

Matt Klontz, Port of Port Townsend
Charisse Deschenes, City of Sequim
Sarah VanAusdle, City of Sequim
Matthew Huish, City of Sequim
Don Ctibor, City of Sequim
Steve Gray, Clallam County
Jason O'Dell, Clallam County
Kevin Gallacci, Clallam Transit System
Wendy Clark, Jamestown S'Klallam Tribe
Beth Pratt, Sequim-Dungeness Valley Chamber of Commerce
Gary Rudolf, Citizen
Kumiko Izawa, WSDOT OR Traffic
Dennis Engel, WSDOT OR Multimodal Planning
Matt Pahs, WSDOT OR Multimodal Planning
Yvette Liufau, WSDOT OR Multimodal Planning

Introductions, study schedule and progress

Yvette Liufau, WSDOT, Olympic Region Multimodal Planning conducted the meeting. Yvette thanked everyone for attending the meeting, initiated introductions with the committee and reviewed the meeting agenda. The study schedule and progress information were provided to the group. The objective of the meeting was to finalize the purpose and need statement and brainstorm improvement ideas and screening criteria. The stakeholder advisory committee list of participants included the City of Sequim, Clallam County, Clallam Transit, Jamestown S'Klallam Tribe, Sequim-Dungeness Valley Chamber of Commerce, Port of Port Townsend and WSDOT.

Purpose and need statement

Yvette reviewed with the committee the changes made to the study purpose and need statement during the first stakeholder committee meeting in the following underlined text:

The purpose of the US 101 East Sequim corridor improvements project between Simdars Road Interchange and Palo Alto is to support economic development and growth in the City of Sequim by developing potential practical solutions strategies that promote safety, mobility, multimodal connectivity, and congestion relief while providing an opportunity for enhancements towards a city gateway.

The committee made a final request to move the words safety and mobility closer to the beginning of the statement. Yvette will make the changes discussed and send the revised purpose and need statement out to the committee.

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The following phrase is the revised purpose and need statement:

The purpose of the US 101 East Sequim corridor improvements project between Simdars Road Interchange and Palo Alto is to support safety, mobility, economic development, and growth by developing potential practical solutions strategies that promote multimodal connectivity and congestion relief while providing an opportunity for enhancements towards a city gateway.

Traffic information

Yvette shared with the committee traffic information. Vehicle turn movement counts were taken in September and October 2021 at the following intersections:

- Simdars Road/East Washington/US 101 off ramp
- Simdars Road and US 101 on ramp
- US 101 and Happy Valley Road
- US 101 and Palo Alto Road

Additional traffic counts were taken at US 101 and Whitefeather Way in January 2021, which were also used in the study's analysis. Information on the presentation slide also showed the overall US 101 mainline existing level of service is D. The study team analysis showed a future forecast year 2041 mainline level of service on US 101 was reduced to LOS E.

Yvette shared the 2021 afternoon peak hour traffic intersection analysis for the six intersections in the study area.

- Simdars Road and US 101 on ramp
- Simdars Road/East Washington/US 101 off ramp
- Simdars and East Brownfield
- US 101 and Happy Valley Road
- US 101 and Whitefeather Way
- US 101 and Palo Alto Road

Existing Year 2021 PM Peak Hour Traffic

Vehicle turn movement counts were used to develop the number of seconds of vehicle delay and the level of service at each leg within the intersection. The worst traffic delays in 2021 were seen on the local streets like Happy Valley, Whitefeather and Palo Alto, with vehicles taking right or left turns onto US 101.

Future Forecast Year2041 PM Peak Hour Traffic

Next, Yvette provided a future forecast for the year 2041 afternoon peak hour traffic at the same intersections. A 1.2% growth rate based on WSDOT's historic annual average daily traffic volumes was applied to the data and gives the future forecast. The intersection level of service and vehicle delay in the year 2041 for Happy Valley, Whitefeather and Palo Alto is worse. Yvette also explained

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the Simdars/Washington/US 101 off ramp intersection experienced a change on three of the four legs from A and B to a B and C.

Brainstormed improvement ideas

Yvette shared with the committee a list of potential improvement ideas which were identified in the 1993 US 101 O'Brien to Palo Alto Road environmental impact statement, the WSDOT corridor sketch and discussions with WSDOT staff:

- Construct on and off ramps on west side of Simdars Road Interchange
- Build frontage roads south side of US 101 from Simdars to Happy Valley and vicinity of Whitefeather intersection to Palo Alto
- Roundabouts at Happy Valley and Palo Alto intersections
- Signage – advance warning signage for vertical curves near Happy Valley and Palo Alto Roads
- ITS – Variable Message Board and Camera on US 101

The committee was asked to brainstorm additional improvement ideas. The following comments came from the group discussion:

- Concern about roundabouts reducing the 50 and 55 MPH speeds on US 101. Preference is mobility and to keep traffic moving.
- Combine all three local road access to US 101 into one roundabout
- Keep the Johnson Creek fish passage project's temporary bridge as a permanent one and connect Palo Alto with Whitefeather.
- Any improvement option should include the Simdars ramps to help alleviate congestion in Sequim.
- Future development plans in Sequim include large resort at John Wayne Marina near Whitefeather Way.
- Information was mentioned about Sequim Avenue and potential for growth in light industrial/high tech/commercial use zoned area. Ramps at Simdars Road Interchange would help alleviate traffic at Sequim Avenue.
- The Olympic Discovery Trail west of Whitefeather Way connection with areas on the south side of US 101 could have safe passage under US 101.
- Transit services use the corridor and may need an expanded transit center.
- Traffic coming to/from the marina on Whitefeather Way is typically vehicles with recreational boat trailers.

Develop alternatives screening criteria

Information about the two-part alternatives screening process was provided by Yvette to the committee. Once improvement ideas are gathered from the stakeholder committee and the public, this information is examined through the screening process. The initial alternatives screening considers whether each alternative meets the study purpose and need, the study goals and if the alternative is feasible. Alternatives that meet this criterion are moved to the next screening level. The second level of

US 101 East Sequim Pre-Design Study

alternatives screening is more detailed where criterion is used to conduct a same level comparison and performance scoring of each proposed alternative. This criterion is developed with the help of stakeholder committee members. To begin the brainstorming exercise, a list of suggested criteria was displayed for the group:

- Cost
- Safety
- Right of way impacts
- Feasibility
- Level of service
- Environmental

The committee was asked to brainstorm additional screening criteria. The following comments came from the group discussion:

- How are the screening criteria used? The criteria are used to determine if a potential improvement is feasible or is fatally flawed. Criteria also allows for comparing and measuring the performance of each alternative to produce a prioritized list.
- How is Practical Solutions used? WSDOT uses practical solutions to make low cost and short-term improvements in a shorter period before a long-term expensive fix is needed.
- For level of service, consider separating the corridor and intersection LOS
- The Simdars Road interchange ramps and frontage road would help relieve issues on Happy Valley Road
- Replace level of service with mobility
- Include maintenance with cost
- Add economic development and tie to land use. Measurement could be whether the improvement helps or doesn't help.
- Are the criteria qualitative or quantitative? Depending on the individual criteria, the performance measurement could be either qualitative or quantitative.

Next Steps

The next steps in the study will be a public online open house being held from January 27 to February 10, 2022. The online open house will include an overview of the pre-design study, including a timeline and the purpose and need statement. A list of improvement ideas that were developed with the help of the stakeholder committee will be shared. The public will be asked for their comments on the ideas and will have an opportunity to share any ideas they have for improvements.

Yvette explained the third and final stakeholder advisory committee meeting will be in February or March of 2022. During the stakeholder meeting, the committee will review the alternatives screening results, prioritize the alternatives, and finalize the study recommendations.

Following the final stakeholder meeting, the study team will draft a study report which the committee will have a chance to review and comment on. The study is expected to be complete in May of 2022.

US 101 East Sequim Pre-Design Study

Stakeholder Committee Meeting 3 – May 11, 2022

Attendees:

Sarah Van Ausdle, City of Sequim
David Garlington, City of Sequim
Steve Gray, Clallam County
Joe Donisi, Clallam County
Jason O'Dell, Clallam County
Kevin Gallacci, Clallam Transit System
Wendy Clark, Jamestown S'Klallam Tribe
Gary Rudolf, Citizen
Kumiko Izawa, WSDOT OR Traffic
Dennis Engel, WSDOT OR Multimodal Planning
Matt Pahs, WSDOT OR Multimodal Planning
Yvette Liufau, WSDOT OR Multimodal Planning

Introductions, pre-design study recap

Yvette Liufau, WSDOT, Olympic Region Multimodal Planning conducted the meeting. Yvette thanked everyone for attending the meeting, initiated introductions with the committee and reviewed the meeting agenda. She reviewed the study schedule and purpose and need statement. Yvette reviewed the study schedule explaining that following today's meeting, the draft study report will be provided to the stakeholder committee for review. Once the report is finalized, most likely in June, it will be published on the study webpage.

Online public open house key takeaways

The study virtual public open house was held January 27 to February 10. There were 824 responses WSDOT received during the event. Materials that were published for the open house included an overview of the study, the study purpose and need statement, and the conceptual list of improvements developed by the stakeholder committee. The open house was advertised at the library in Sequim and in the City of Sequim's newsletter. Yvette shared with the group the feedback from the community. Most responders ranked the frontage road from Palo Alto Road to Simdars Road as the most important improvement. The second most important improvement according to feedback was new on and off ramps at the Simdars Road interchange. Majority of responders were concerned about roundabouts slowing traffic on US 101. The community's main concern traveling US 101 was entering and exiting Palo Alto Road safely. Yvette mentioned the improvement ideas submitted during the open house were reviewed during the alternatives screening which will be covered in the next few slides.

Alternatives screening

The next few slides Yvette explained, will describe the alternatives screening process, the analysis, and the results. Information about the two-part alternatives screening process was shared. There were 14

US 101 East Sequim Pre-Design Study

improvement ideas brainstormed by the stakeholder advisory committee. During the open house, 20 ideas were submitted for consideration. In total, 34 improvement concepts were evaluated going into the alternatives screening for the study.

Alternatives Screening 1

The initial alternatives screening or screening 1 considers whether each alternative meets the study purpose and need, the cost, if the alternative is feasible, and whether the alternatives is within the scope of the study. Alternatives that meet this criterion were moved to the next screening level. During screening 1, 21 alternatives were removed, and 1 alternative was modified. The alternatives that were removed included:

- Acceleration lanes between Simdars and Happy Valley
- Restrict Palo Alto access to right in/right out
- U-turn, turnaround area
- Incident response
- Widen shoulders
- 4-lane US 101
- Interchange at Happy Valley
- Interchange at Whitefeather Way
- Interchange at Palo Alto
- US 101 WB Palo Alto overpass w/ EB exit lane
- Wildlife crossing over US 101
- Improve transit service
- Improve transit center
- Commuter rail that runs parallel to US 101
- Traffic lights at Palo Alto and Whitefeather
- Palo Alto to Simdars long frontage road
- Local road connection Happy Valley to Simdars
- Advance curve warning signage

In addition to this list, three more ideas will be shared with WSDOT Maintenance or Traffic offices for their consideration:

- Cut back trees & look at placement of Welcome sign
- Restriping near Palo Alto
- Lower speed limit

Yvette asked the group if they had any questions or concerns about the alternatives that were eliminated during the first screening and there were not comments or concerns raised by the committee. She then explained a revision was made the new on and off ramps at Simdars Road Interchange alternative. The eastbound US 101 off ramp on the south side did not change from the original concept, but a change was made to the westbound US 101 on ramp connection at East Washington Street. The revised concept shows the westbound on ramp entrance at Simdars Road with a single lane roundabout at the Washington Street/Simdars Road intersection. The reasons for making the change primarily were concerns about the future traffic volumes on Washington Street mixed with adding an on ramp to it could create conflicts, and the close proximity the new ramp is to the existing Washington Street/Simdars Road intersection. WSDOT felt the best location for the new US 101 westbound on ramp is at Simdars Road slightly south of a new roundabout that will be built at the intersection of East Washington Street and Simdars Road where the entrance to the Olympic Discovery Trail currently exists. When asked if the group had any concerns about the revisions to the new on and

off ramps to US 101 and new roundabout alternative, a comment was made about the original westbound on ramp at Washington Street location was chosen in the 90's to avoid a wetland that exists near the ramp. Yvette mentioned WSDOT is aware of the wetland and the new ramp location did not seem to impact the wetland, although a more detailed environmental analysis will be conducted during the design phase. There were no other comments made.

Alternatives Screening 2

The second level of alternatives screening is a more detailed evaluation of the 12 remaining alternatives using the seven criterion included in the study purpose and need to measure and compare performance scores for each proposed alternative. Yvette went through each criterion with the committee to explain the performance measures which were used in evaluating the alternatives.

Safety – A safety analysis was completed by our WSDOT Traffic Safety Office. Each alternative was evaluated based on the potential to reduce vehicle crashes and the predicted crash frequency, which is the number of potential crashes per year. The analysis takes into consideration historic crash data and FHWA crash modification factors. This information tells us from a safety perspective if the location is performing better or worse once the alternative is in place.

Mobility – This was determined by the future year 2041 LOS based on a 2% growth rate.

Cost – A scoping level cost for each alternative was developed using current year dollars.

Multimodal – with help from our Active Transportation Division, Yvette explained the Level of Traffic Stress (LTS) represents a measurement of stress experienced by bicyclists and pedestrians on the road. Each alternative was evaluated looking at the roadway speed, number of lanes and bike lanes with existing conditions and then with the improvement in place. An LTS score of 1 to 4 was assigned to each alternative. A 1 being the least amount of stress for bicyclists or pedestrians, and a 4 represents the highest stress.

Right of way – The number of parcels affected by the alternative.

Economic development – Each alternative was evaluated based on if it is consistent with local community plans, if the improvement is located within the UGA, if it is within the Qualified Opportunity Zone, if it is on a freight corridor, and lastly the study team considered the proximity of the alternative to jobs using US Census data information.

Environmental complexity – A review of each alternative to determine the potential of impacts to environmental resources and some permitting that can create more complexity in a project. The more resources impacted may create more project coordination complexity, and the lower an alternative might score in this category.

The group was asked if they had any questions about the criteria and performance measures and there were not comments. Next Yvette went over each of the 12 alternatives evaluated during screening 2 and reviewed the final criteria scores with the group. The highest score each alternative can earn during screening 2 is 70 points, with each criterion worth 10 points. The final scores are shown on the spreadsheet on Page 4.

	Improves Safety		Mobility - Improves Operations		Constructability - Project & Maintenance Cost			Multimodal		Right of Way Impacts		Economic Development	Environmental Impacts	Total Score
	Safety Analysis	Safety Score	Level of Service		Project Cost (millions)	Project Cost Score	Annual Maintenance Cost	Level of Traffic Stress Worksheet (scoring: 4=high, 1=low)	Multimodal Score	Parcels Impacted	RW Impact Score	Economic Development Score (see worksheet)	Environmental complexity Score (see worksheet)	
Measurement		With crash reduction: 90% reduction = 10 < 50% reduction = 5 Predicted Crash Freq: 0 - 499 = 10 1 - 1.5 = 5 > 1.5 = 1		LOS A = 10 LOS B = 8 LOS C = 6 LOS D = 4 LOS E = 2		< \$1 = 10 \$1 - \$5 = 7 \$6 - \$10 = 5 > \$10 = 2			LTS 1 = 10 LTS 2 = 7 LTS 3 = 5 LTS 4 = 2		0 parcels = 10 1 - 4 parcels = 7 5 - 10 parcels = 5 > 10 parcels = 2	Local plans, UGA, freight, Qualified Opportunity Zone, etc. Yes = 2 points Partial = 1 point No = 0 point	< 8 impacts = 10 9-11 impacts = 5 > 11 impacts = 0	70 total available points
Roundabout New US 101/Simlars Road on and off ramps w/ Simlars Road roundabout	39% crash reduction	5	A	10	9	5	23 K	2	7	0	10	10	5	52
Frontage Road Happy Valley to Simlars Road frontage road	50% crash reduction	10	A	10	3.8	7	15 K	4	2	0	10	6	5	50
Frontage Road Palo Alto to Simlars Road frontage road	50% crash reduction	10	A	10	14.1	2	21 K	4	2	3	7	7	5	43
Frontage Road Palo Alto to Simlars frontage road O'Conner alternative (avoids existing wetlands near original frontage road concept)	50% crash reduction	10	A	10	13.7	2	20 K	4	2	19	2	2	5	33
Roundabout Palo Alto Road realignment to Whitefeather Way	redicted crash frequency 2.1	1	A	10	3.8	7	13 K	4	2	9	5	6	5	36
Roundabout Happy Valley Road and US 101 roundabout	Predicted crash frequency 0.34	10	A	10	2.5	7	13 K	3	5	0	10	4	10	56
Roundabout Palo Alto Road and US 101 roundabout	Predicted crash frequency 0.6	10	A	10	4.6	7	12 K	3	5	0	10	5	10	57
Roundabout Combine access to single US 101 roundabout at Whitefeather Way	Predicted crash frequency of 0.57	10	A	10	10.5	2	25 K	3	5	5	5	5	0	37
Multimodal Bike ped bridge over US 101 at Happy Valley Road connecting to Olympic Discovery Trail	No historic bike or pedestrian crashes in last 5 years. If separated crossing is built, there is no indication of an increase in bike or ped related crashes.	-	A	10	10.3	2	3 K	1	10	1	7	5	10	44
Multimodal ITS variable message board and camera on US 101	Quantitative safety analysis not currently available	-	D	4	1.3	7	2 K	4	2	0	10	5	10	38
Train Management Left turn lane at US 101 / Palo Alto Road	Predicted crash frequency 1.5	5	B	8	424 K	10	4 K	4	2	0	10	6	10	51
Train Management Adding illumination and signage on US 101 between Happy Valley and Palo Alto	Predicted crash frequency of 2.3	1	D	4	1.6	7	3 K	4	2	0	10	5	10	39

Questions and comments from stakeholders:

- What is the future design year? *It was explained the design year is 2041 and a 2% growth rate was used. A 2% growth rate is a high assumption. WSDOT's standard is a 20-year future forecast.*
- Is it possible to conduct a safety analysis using future crash data? *The concern with that is there is not a good way to know about future crashes. The acceptable standard is to use historical crash data and FHWA Crash Modification Factors were also used in the safety analysis, which helps identify the potential for reducing crashes.*
- There was concern about the LOS A being the same for the frontage road and roundabout options. The LOS for the roundabout alternatives is an intersection level of service and considers all legs of the intersection for the analysis. The number of vehicles going into and out of the side streets at Happy Valley, Palo Alto and Whitefeather are low, which means the traffic flow will be pretty good, even in 2041. The frontage road alternatives LOS analysis was based on the volume of traffic that would potentially use the road once it is built. The study team assumption is a frontage road would have low volumes mainly used by local traffic.
- If a frontage road is built from Palo Alto to Simlars Road, does access to US 101 have to be completely closed or can it be right in/right out only and is the reason for closing it due to safety? *It is always the safer choice to reduce the number of direct accesses to state highways, which is why WSDOT will completely close access to those roads once construction of a frontage road is complete.*
- Level of traffic stress. Why is the score higher for roundabouts than the frontage roads? Seems counterintuitive to eliminate an intersection and not see an improvement to safety. Yvette explained the level of traffic stress scores were based on speed, the number of lanes and if there is a bike lane. Yvette will send the committee the Level of Traffic Stress spreadsheet with the evaluation scores included.
- Right-of-way parcel numbers is less important than the value of the parcels. What would the total scores be if we removed the right of way criteria score? *The criteria was taken out of the*

alternatives scoring spreadsheet and it did not change the top 5 scoring alternatives. The group decided to leave the criteria in.

- Environmental mitigation could affect frontage road options.

The top 5 scoring alternatives were:

1. Palo Alto / US 101 roundabout (57 points)
2. Happy Valley / US 101 roundabout (56 points)
3. New US 101 Simdars ramps w/ roundabout (52 points) \$9M
4. Left turn lane at US 101 / Palo Alto (53 points)
5. Happy Valley to Simdars frontage road (50 points)

Yvette explained to the committee that considering the new US 101 Simdars ramps with roundabout scored as one of the top 5 improvements during alternatives screening 2, WSDOT agrees to move forward with recommending this alternative as one of the preferred options.

Discussion of preferred alternatives

With the Move Ahead Washington \$30 million dollar funding for a project in Sequim and the new on and off ramps and roundabout project \$9 million cost, there is \$21 million remaining for a second project. We recognize the alternatives screening results show two of the roundabout alternatives scored the highest, will perform well and are safer options. Once we discussed the alternatives screening with WSDOT Olympic Region executive management team, they considered our scoring results, what was heard from the stakeholder committee and community feedback and concluded with agreement to construct a frontage road.

Yvette presented the three frontage road alternatives, Happy Valley to Simdars frontage road, Palo Alto to Simdars frontage road, and Palo Alto to Simdars frontage road O'Connor alternative. The frontage road alternative will be operated and maintained by a local jurisdiction and reiterated access at Happy Valley and Palo Alto Roads would be closed after construction is complete. Discussion about the frontage roads included the following comments and questions from the group:

- Jamestown S'Klallam Tribe mentioned they are in support of a frontage road alternative.
- A Johnson creek crossing would involve impacts to the environment.
- The city explained the frontage road will need to have access to the future Keeler Park
- The committee felt both the Palo Alto to Simdars, and the O'Connor frontage road alternatives have benefits
- If the Palo Alto to Simdars frontage road alternative is selected, can it be built in a way where a future interchange at Whitefeather Way could be considered? *At this point we do not want to consider the idea. Also, the committee should keep in mind the extra \$7 million dollars may be needed for unforeseen environmental work on the two existing projects.*
- Would the frontage road be built by WSDOT or local jurisdictions? We do not know yet, but if for example, the O'Connor frontage road was chosen, WSDOT could potentially turn it over to the local jurisdiction to build considering it involves existing local roads.

The City of Sequim and Clallam County asked for a few weeks to discuss the frontage road alternatives before choosing which one they would prefer. WSDOT agreed to give them the time to decide.

Next Steps

The next steps in the study are for Yvette to send out the screening criteria information for level of traffic stress, and the meeting summary and presentation materials. The City of Sequim and Clallam County will decide in 2 weeks which of the frontage road alternatives should be the preferred improvement to design and build with the new US 101 on off ramps and roundabout at Simdars Road. A draft study report will be completed and sent to the stakeholder advisory committee for review and comments. In June, the study report will be finalized and published on the study webpage, and the study will be complete. The next Legislative Session will determine the timeline for design and construction.

APPENDIX C – Community Engagement

Appendix B contains event materials and public feedback that WSDOT received during the online open house.



JANUARY 2022

US 101 East Sequim Pre-Design Study SHARE YOUR THOUGHTS!

WSDOT is studying ways to improve US Highway 101 in Sequim. Your ideas will help develop the best options moving forward.

Provide your comments through an online open house: Visit engage.wsdot.wa.gov and choose US 101 East Sequim Pre-Design Study. View the project: wsdot.wa.gov/construction-planning/search-studies/us-101-east-sequim-pre-design-study.

Comments taken from January 27 through February 10, 2022.



MORE INFORMATION:

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21-12-0303

Estudio de prediseño de la carretera US 101 en el este de Sequim

¡Comparta sus opiniones!

El Departamento de Transporte del Estado de Washington (Washington State Department of Transportation, WSDOT) está estudiando maneras de mejorar la carretera US 101 en Sequim. Sus ideas nos ayudarán a desarrollar las mejores opciones en el futuro.

Comparta sus comentarios en una sesión abierta en línea: Visite engage.wsdot.wa.gov y elija el estudio de prediseño de la carretera US 101 en el este de Sequim. Consulte el proyecto: wsdot.wa.gov/construction-planning/search-studies/us-101-east-sequim-pre-design-study.

Se recibirán comentarios del 27 de enero al 10 de febrero de 2022.



MÁS INFORMACIÓN:

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Online open house on US 101 improvements in Sequim begins Jan. 27

January 27, 2022

[Dennis Engel](#), Multimodal Planning Manager, 360-357-2651

[Mark Krulish](#), Communications, 360-819-0375

SEQUIM – Community members can learn more about 14 potential improvements for US 101 on the east side of Sequim in an [online open house](#).

Starting today, Jan. 27, the Washington State Department of Transportation is hosting a pre-design study on the section of highway between the [Simdars Road interchange](#) and Palo Alto Road through Thursday, Feb. 10.

Visitors to the open house are encouraged to leave feedback on potential roadway improvements that would support safety, mobility, economic development and multimodal connectivity. This includes new US 101 on- and off-ramps westbound at the Simdars Road interchange, as well as changes at three intersections – at Palo Alto Road, Whitefeather Way and Happy Valley Road.

After the open house, WSDOT will finalize recommendations and publish a report.

US 101 improvements in Sequim online open house

When

Thursday, Jan. 27 to Thursday, Feb. 10, 2022

Where

<https://engage.wsdot.wa.gov/us-101-east-sequim/>

Details

The online open house will detail:

- Pre-design study information
- Potential improvement ideas
- Timeline and next steps

How to participate

The public can comment on the study using the feedback form in the online open house.

Free Wi-Fi access is available at these locations in Sequim for people who wish to participate in the online open house but do not have broadband service:

- Sequim Chamber of Commerce, 1192 E. Washington St.
- Guy Cole Events Center, 114 N. Blake Ave.
- Sequim Branch Library, 630 N. Sequim Ave.

Additional Wi-Fi Hotspots are available via the [Washington State Department of Commerce](#) website.

NEWS

Online open house seeks input on Simdars Interchange design

By *Matthew Nash* • January 26, 2022 1:30 am



Sequim Gazette photo by Matthew Nash Residents can comment online through the Department of Transportation's website Jan. 27–Feb. 10 on pre-design concepts that would complete the Simdars Road Interchange on the eastern side of the City of Sequim.

An online open house begins this week to comment on pre-design work for the U.S. 101 East Sequim Road Project that could complete the Simdars Road Interchange.

The virtual open house begins Thursday, Jan. 27, and runs through Thursday, Feb. 10, according to Dennis Engel, WSDOT multi-modal planning manager.

A link will go live Jan. 27 at engage.wsdot.wa.gov and the project's site at wsdot.wa.gov/construction-planning/search-studies/us-101-east-sequim-pre-design-study.

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"We are looking at 14 potential improvements including roundabouts and new U.S. (Highway) 101 on- and off-ramps at the Simdars Road interchange," Engel said.

"The study will be completed by May of this year with recommendations which will be used t

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Participants will be able to provide comments as part of the survey, Engel said, and they can be left at the end of the survey or emailed to him or Yvette Laufau, WSDOT senior transportation planner, using their contact information on the project's webpage.

The Simdars Road Interchange was originally set for completion with the opening of the 4.6-mile U.S. Highway 101 bypass in August 1999, but the eastbound off-ramp was left incomplete due to a lack of funds.

Multiple local agencies and municipalities have worked together looking to complete the East Sequim Project with joint funding requests through the state Legislature for \$26 million to build the ramps, construct a frontage road for Palo Alto Road and Happy Valley roads along the highway to the new interchange, and add landscaping to the Sequim entryway.

Municipalities have formally written letters saying that completing the bypass would help economic development in the city's east side and increase safety for Palo Alto and Happy Valley roads.

In 2019, legislators funded \$1.3 million for the Department of Transportation to do pre-design work and community outreach, which was delayed due to the COVID-19 pandemic.

Engel said this pre-design work does not include planned construction on U.S. Highway 101 at Johnson Creek to increase fish passage. A proposed roundabout in Blyn is not included in the open house either, said City of Sequim leaders.

Completing the Simdars Road Interchange has remained a legislative priority for the City of Sequim for several years.

Sequim City Manager Matt Huish said at the Jan. 24 Sequim City Council meeting he participated in a call last week about the project and that city staff and other local agencies shared "strong verbal opposition" for roundabouts coming into the city on the highway, particularly up hills.

City councilor William Armacost suggested they consider a letter discouraging roundabouts because "we'd have people backed up to the Hood Canal Bridge" with the high amount of truck traffic going through the area.

Mayor Tom Ferrell said a letter is something they'd likely consider in the coming months.

Assistant City Manager Charisse Deschenes suggested the city promote its previous legislative agenda during the process, which includes rerouting Palo Alto Road and Happy Valley Road off the highway rather than inserting roundabouts.



MENU



WSDOT PUBLISHES HIGHWAY SOLUTIONS EAST OF SEQUIM FOR PUBLIC INPUT

Posted By: Radio Pacific, Inc January 27, 2022 @ 11:53 am [Local News](#), [News](#), [News Daypop](#)



By Pepper Fisher

SEQUIM – It’s been years in the making, but we can finally get a solid look at 14 potential improvements to Highway 101 on the east side of Sequim by going to an [online open house](#) created by the Washington State Department of Transportation.

As of Thursday, Jan. 27, WSDOT is hosting a pre-design study on the section of highway between the [Simdars Road interchange](#) and Palo Alto Road. Through Thursday, Feb. 10, the public can get a look at proposed solutions to the safety and access issues that have plagued that section of highway where it meets Simdars Road, Palo Alto Road, Whitefeather Way and Happy Valley Road.

Visitors to the open house are encouraged to leave feedback on everything from safety, to mobility and economic development.

After the open house, WSDOT will finalize recommendations and publish a report.

(DOT photo of intersection at Hwy 101 and Happy Valley Road)



CITY OF SEQUIM News
January 2022

Meeting Dates	
City Council Regular Meeting	2nd & 4th Monday 6:00 p.m.
City Council Work Session	2nd & 4th Monday 5:00 p.m.
Planning Commission	1st & 3rd Tuesday 6:00 p.m.
Parks, Arbor, and Recreation Board	3rd Monday 4:00 p.m.
Lodging Tax Advisory Comm.	Quarterly—Next Meeting March (TBD)—9:00 a.m.
Arts Advisory Commission	3rd Monday 3:00 p.m.

City offices will be closed on Monday, January 17 in observance of Martin Luther King Jr. Day.



Parks and Open Space Master Plan is Under Review

The City of Sequim is in the process of updating the Parks and Open Space Master Plan. For the past year the City has been gathering input from the community through surveys, focus groups, and an on-line open house to learn more about the needs for park services. The proposed Master Plan can be viewed on the City website at <https://www.sequimwa.gov/325/Parks>.

Parks and Open Space Master Plan Review Schedule:

- **Tuesday, January 4** – Planning Commission Public Hearing and Recommendation for Adoption
- **Monday, January 10** – City Council Study Session on Impact Fees
- **Monday, February 14** – City Council Public Hearing and Potential Adoption

The Sequim City Council and other Board and Commission meetings will be held online during the COVID-19 pandemic. The meetings are held on Zoom. Visit <https://sequimwa.gov>, scroll down to the Calendar of Events and click on the meeting. Open the agenda and click the link or call the phone number.

US Highway 101 East Sequim Pre-Design Study Online Open House January 27—February 10



The public is invited to participate in an Online Open House, hosted by the Washington State Department of Transportation (WSDOT), to view open house materials and provide comments regarding the potential improvements to US Highway 101 at the east end of Sequim. Visit <http://engage.wsdot.wa.gov/> and choose “US 101 East Sequim Pre-Design Study” or go to the study website at <https://wsdot.wa.gov/construction-planning/search-studies/us-101-east-sequim-pre-design-study>.

**Save the Dates—March 4 & 5
3rd Annual Sequim Sunshine Festival**



Celebrate the sun and shake off the winter blues. Go to <https://visitsunnysequim.com> for information.

Be Kind
#BeKindSequim

*“Make Kindness the Norm.”
- The Random Acts of Kindness Foundation*

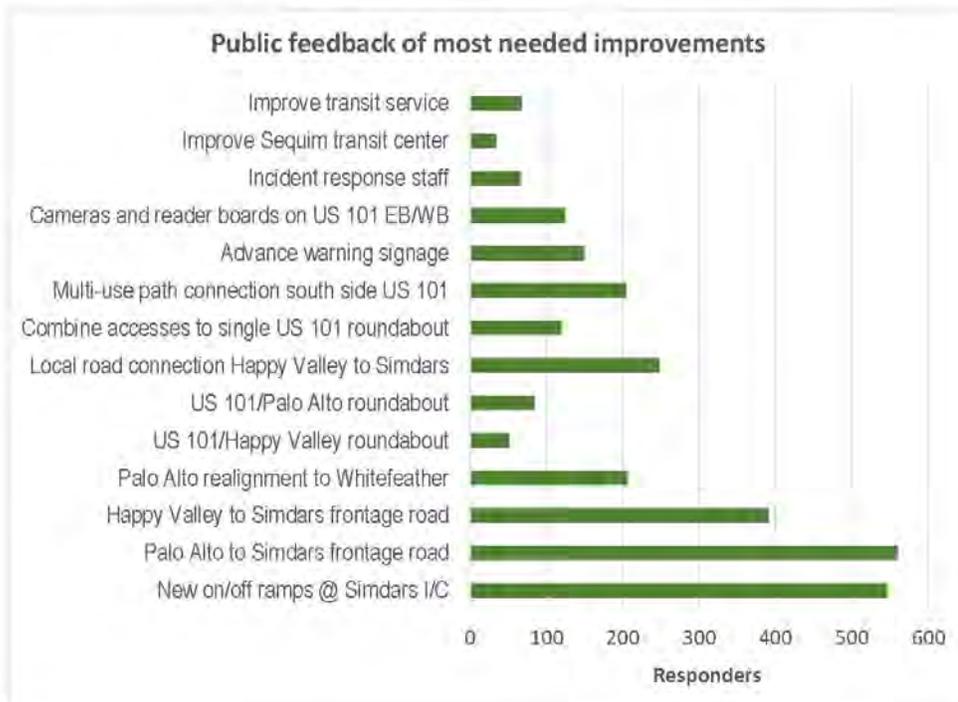
US 101 East Sequim Pre-Design Study

Jan 27-Feb 10 Online Open House Summary

Survey Highlights

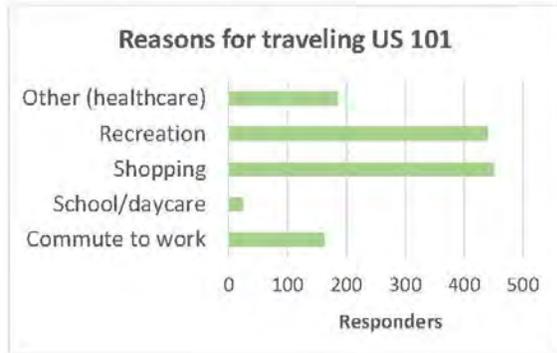
- ❖ The online open house survey received 824 responses
- ❖ Most respondents ranked a frontage road from Palo Alto Road to Simdars Road as the most important improvement
- ❖ The second most important improvement according to responses was new on and off ramps at the Simdars Road interchange
- ❖ Majority of responders were concerned about roundabouts slowing traffic on US 101
- ❖ Responders main concern traveling US 101 was entering and exiting Palo Alto Road safely

Respondents during the public online open house were asked to identify their top five most needed improvements out of the 14 potential ideas provided. The results are shown in the graphic below.



Respondents travel US 101 between Sequim and Port Angeles mostly for shopping and recreation

Most respondents who travel US 101 between Sequim and Port Angeles said trips were for shopping and recreation. Other survey responses included traveling US 101 for healthcare reasons and commuting to work.



Proposed improvement ideas that were presented at the online open house

New US 101 and Simdars Road on and off ramps (conceptual drawing)

Potential option: build a new US 101 westbound on ramp from East Washington Street and a new US 101 eastbound off ramp to Simdars Road.



Palo Alto Road to Simdars Road frontage road (conceptual drawing)

Potential option: build a new 2-lane frontage road from Palo Alto Road to Simdars Road. This new roadway includes construction of a new structure crossing Johnson Creek. Existing access to US 101 from Happy Valley and Palo Alto Roads would be closed once construction is complete.



Happy Valley Road to Simdars Road frontage road (conceptual drawing)

Potential option: build a new 2-lane frontage road from Happy Valley Road to Simdars Road. Existing access to US 101 from Happy Valley Road would close once construction is complete.



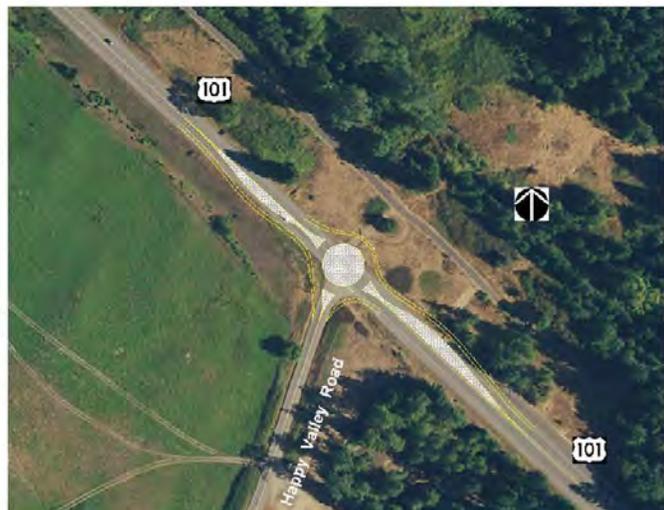
Palo Alto Road realignment to Whitefeather Way (conceptual drawing)

Potential option: a realignment of a portion of the existing two-lane Palo Alto Road to tie into the existing Whitefeather Way intersection. Access to US 101 from existing Palo Alto Road would close once construction is complete.



Happy Valley Road and US 101 Roundabout (conceptual drawing)

Potential option: build a new three-way roundabout at the Happy Valley Road and US 101 intersection. This would replace the stop-controlled intersection.



Palo Alto Road and US 101 Roundabout (conceptual drawing)

Potential option: build a three-way roundabout at the intersection of Palo Alto Road and US 101. Realign Palo Alto Road to meet the roundabout location, which is north of the current intersection. Original access to US 101 would close upon completion of the new roundabout.



Combine accesses to single US 101 roundabout (conceptual drawing)

Potential option: local road connections for Happy Valley and Palo Alto Roads. The roads would lead to a new roundabout at Whitefeather Way / US 101 intersection. Existing access at Happy Valley and Palo Alto Roads would close once the project is complete.



Local road connection from Happy Valley to Simdars Road (conceptual drawing)

Potential option: Local road connection from Happy Valley Road to Simdars Road. Involves changes to Clearview Lane, extending it to Simdars Road.



Proposed improvement ideas without conceptual drawings:

Potential Option	Description
Advance warning signage for curves near Happy Valley and Palo Alto Roads	Placement of directional signage according to WSDOT design standards
Variable message boards and cameras installed on US 101	Variable message signs and cameras located west of US 101/Happy Valley Road intersection for both eastbound and westbound US 101 traffic.
Incident response staff	The Incident Response Team (IRT) works with other agencies and resources to respond to traffic incidents on the state highway system. They assist with clean up and clearing the roadway. One to two staff would be assigned to work in the area along this stretch of US 101.
A multi-use separated path across US 101 to connect with the Olympic Discovery Trail	Location undetermined at this time
Improve Sequim Transit Center	Improvements to transit center (lead agency Clallam Transit)
Improve transit service	Improvements to transit service (lead agency Clallam Transit)

Public responses received during the online open house

- Widen shoulders on US 101
- Add turn lanes and acceleration lanes at US 101 to Happy Valley and Palo Alto Roads
- Add a U-turn or turn around area on US 101
- Traffic lights on US 101 at Palo Alto Road and Whitefeather Way
- Bicycle/pedestrian bridge over US 101
- 4-lane US 101
- Build a wildlife crossing across US 101
- New interchange at Happy Valley Road with Palo Alto to Happy Valley frontage road
- Diamond interchange at US 101 and Palo Alto Road
- Commuter rail that runs parallel to US 101
- Restrict access to right in/right out at US 101 and Palo Alto Road
- Better lighting and signage on US 101
- Restriping US 101
- Cut back trees to increase visibility
- Make improvements to US 101 and Louella Road
- Trash clean up along US 101
- Frontage roads will cause significant impacts to wildlife
- Increase police patrols on US 101

APPENDIX D – Alternatives scoping level cost estimates

The information included in Appendix C are the planning level cost estimates the detailed alternatives screening evaluation.

STATE OF WASHINGTON							*****	
DEPT. OF TRANSPORTATION							* CONSTRUCTION ESTIMATE *	
OLYMPIA, WASHINGTON							*****	
US 101								
SIMDARS ROAD ROUNDABOUT AND RAMPS								
SCOPING ESTIMATE								
ENGINEER'S ESTIMATE DATE :							6-Jun-22	
QUANTITY	UNIT	ITEM NO.	ITEM		UNIT PRICE	AMOUNT		
PREPARATION								
1		L.S.		MOBILIZATION	10.00%	\$460,000		
2	8.6	ACRE	25	CLEARING AND GRUBBING	\$9,000.00	\$77,400		
3	0	L.F.	170	REMOVING GUARDRAIL	\$5.00	\$0		
4	0	EACH	182	REMOVING GUARDRAIL ANCHOR	\$400.00	\$0		
5	2,570	L.F.	187	REMOVING PAINT LINE	\$2.00	\$5,140		
6	0	L.F.	230	REMOVING WIRE FENCE	\$3.00	\$0		
GRADING								
7	6,690	C.Y.	310	ROADWAY EXCAVATION INCL. HAUL	\$40.00	\$267,600		
8	25,600	C.Y.	405	COMMON BORROW INCL. HAUL	\$15.00	\$384,000		
9	25,600	C.Y.	470	EMBANKMENT COMPACTION	\$5.00	\$128,000		
DRAINAGE								
10	75,000	L.S.		MODIFY EXISTING DRAINAGE FACILITIES	\$75,000	\$75,000		
11	75,000	L.S.		SWALES AND DITCHES	\$75,000	\$75,000		
12	150,000	L.S.		QUANTITY AND QUALITY MITIGATION	\$150,000	\$150,000		
SURFACING								
13	11,485	TON	5100	CRUSHED SURFACING BASE COURSE	\$40.00	\$459,400		
ASPHALT CONCRETE PAVEMENT								
14	7,573	TON	5767	HMA CL. 1/2 IN. PG 64-22	\$130.00	\$984,490		
EROSION CONTROL AND PLANTING								
15	100	DAY	6403	ESC LEAD	\$180.00	\$18,000		
16	0	EACH	6471	INLET PROTECTION	\$110.00	\$0		
17	10500	L.F.	6373	SILT FENCE	\$6.50	\$68,250		
18	10000	EST.	6490	EROSION/WATER POLLUTION CONTROL	\$10,000	\$10,000		
19	5.7	ACRE	6414	SEEDING, FERTILIZING, & MULCHING	\$6,000.00	\$34,200		
20	1000	L.F.	6630	HIGH VISIBILITY FENCE	\$4.00	\$4,000		
21	50,000	L.S.		ROUNDABOUT LANDSCAPING	\$50,000	\$50,000		
TRAFFIC								
22	0	EACH	6698	ROUNDABOUT SPLITTER ISLAND NOSING CURB	\$1,700.00	\$0		
23	896	L.F.	6699	ROUNDABOUT CEMENT CONCRETE CURB & GUTTER	\$40.00	\$35,840		
24	544	L.F.	6709	ROUNDABOUT TRUCK APRON CEMENT CON C&G	\$52.00	\$28,296		
25	800	L.F.	6757	BEAM GUARDRAIL TYPE 31	\$37.00	\$29,600		
26	1	EACH	6766	BEAM GUARDRAIL TYPE 10 ANCHOR	\$1,500.00	\$1,500		
27	1	EACH	6719	BEAM GUARDRAIL TYPE 31 NON-FLARED TERMINAL	\$3,900.00	\$3,900		
28	0	EACH	6760	BEAM GUARDRAIL TRANSITION TYPE 21	\$4,700.00	\$0		
29	15,510	L.F.	6807	PLASTIC LINE	\$1.80	\$27,918		
30	80	L.F.	6859	PLASTIC STOP LINE	\$15.00	\$1,200		
31	6	EACH	6833	PLASTIC TRAFFIC ARROW	\$170.00	\$1,020		
32	160	SF	6857	PLASTIC CROSSWALK LINE	\$8.00	\$1,280		
33	70	EACH	6875	PLASTIC JUNCTION BOX MARKING	\$50.00	\$3,500		
34	3,000	L.F.	6895	TEMPORARY PAVEMENT MARKING - SHORT	\$0.48	\$1,400		
35	150,000	L.S.	6890	PERMANENT SIGNING	\$150,000	\$150,000		
36	350,000	L.S.	6904	ILLUMINATION SYSTEM	\$350,000	\$350,000		
37	921,000	L.S.	6971	PROJECT TEMPORARY TRAFFIC CONTROL	\$921,000	\$921,000		

OTHER ITEMS						
38	932	S.Y.		TEXTURED AND PIGMENTED CEMENT CONC PAVEMENT	\$220	\$205,040
39	30,000	L.S.	7038	ROADWAY SURVEYING	\$30,000	\$30,000
40	10,000	L.S.	7490	TRIMMING AND CLEANUP	\$10,000	\$10,000
41	5	EST.	7725	REIMBURSEMENT FOR THIRD PARTY DAMAGES	\$5.00	\$5
42	-5	EST.	7728	MINOR CHANGE	(\$5.00)	(\$5)
43	12,000	L.S.	7736	SPCC PLAN	\$12,000	\$12,000
PROJECT COST TOTALS						
SUBTOTAL W/O MOBILIZATION ----						\$4,603,974
SUBTOTAL WITH MOBILIZATION -----						\$5,063,974
OTHER WORK					25.0%	\$1,265,994
SUBTOTAL -----						\$6,329,968
SALES TAX					8.8%	\$557,037
SUBTOTAL -----						\$6,887,005
WSDOT CONSTRUCTION ENGINEERING					12%	\$826,441
UTILITIES AND OTHER AGREEMENTS						\$0
CHANGE ORDER CONTINGENCY					4.0%	\$275,480
=====						=====
PROJECT CONSTRUCTION TOTAL						\$7,988,926
=====						=====
RIGHT OF WAY ESTIMATED						\$25,000
WSDOT UTILITIES						\$0
WSDOT PRELIMINARY ENGINEERING					15%	\$1,033,051
=====						=====
PE TOTAL						\$1,058,051
=====						=====
=====						=====
PROJECT TOTAL						\$9,046,977
=====						=====

STATE OF WASHINGTON				*****			
DEPT. OF TRANSPORTATION				* CONSTRUCTION ESTIMATE *			
OLYMPIA, WASHINGTON				*****			
				US 101			
				HAPPY VALLEY ROAD - FRONTAGE CONNECTION			
				PRELIMINARY ESTIMATE			
		ENGINEER'S ESTIMATE DATE :		6-Jun-22			
QUANTITY	UNIT	ITEM NO.	ITEM		UNIT PRICE	AMOUNT	
PREPARATION							
1	L.S.		MOBILIZATION		10.00%	\$225,000	
2	4.7	ACRE	25	CLEARING AND GRUBBING	\$9,000.00	\$42,300	
3	4,400	L.F.	187	REMOVING PAINT LINE	\$2.00	\$8,800	
4	4,100	L.F.	230	REMOVING WIRE FENCE	\$3.00	\$12,300	
GRADING							
5	3,778	C.Y.	310	ROADWAY EXCAVATION INCL. HAUL	\$40.00	\$151,120	
6	14,000	C.Y.	405	COMMON BORROW INCL. HAUL	\$15.00	\$210,000	
7	14,000	C.Y.	470	EMBANKMENT COMPACTION	\$5.00	\$70,000	
DRAINAGE							
8	50,000	L.S.		MODIFY EXISTING DRAINAGE FACILITIES	\$50,000	\$50,000	
9	50,000	L.S.		SWALES AND DITCHES	\$50,000	\$50,000	
10	100,000	L.S.		QUANTITY AND QUALITY MITIGATION	\$100,000	\$100,000	
SURFACING							
11	5,802	TON	5100	CRUSHED SURFACING BASE COURSE	\$45.00	\$261,090	
ASPHALT CONCRETE PAVEMENT							
12	4,435	TON	5767	HMA CL. 1/2 IN. PG 64-22	\$130.00	\$576,550	
EROSION CONTROL AND PLANTING							
13	40	DAY	6403	ESC LEAD	\$180.00	\$7,200	
14	2	EACH	6471	INLET PROTECTION	\$110.00	\$220	
15	9000	L.F.	6373	SILT FENCE	\$6.50	\$58,500	
16	8000	EST.	6490	EROSION/WATER POLLUTION CONTROL	\$8,000	\$8,000	
17	3.3	ACRE	6414	SEEDING, FERTILIZING, & MULCHING	\$6,000.00	\$19,800	
18	0	C.Y.	6410	TOPSOIL TYPE B	\$8.00	\$0	
19	0	EACH	6552	PSIPE	\$15.00	\$0	
20	0	C.Y.	6447	FINE COMPOST	\$37.00	\$0	
21	2000	L.F.	6630	HIGH VISIBILITY FENCE	\$4.00	\$8,000	
TRAFFIC							
22	600	L.F.	6757	BEAM GUARDRAIL TYPE 31	\$37.00	\$22,200	
23	4	EACH	6719	BEAM GUARDRAIL TYPE 31 NON-FLARED TERMINAL	\$3,900.00	\$15,600	
24	15,449	L.F.	6807	PLASTIC LINE	\$1.80	\$27,808	
25	20	L.F.	6859	PLASTIC STOP LINE	\$15.00	\$300	
26	0	EACH	6833	PLASTIC TRAFFIC ARROW	\$170.00	\$0	
27	40	EACH	6875	PLASTIC JUNCTION BOX MARKING	\$50.00	\$2,000	
28	10,000	L.F.	6895	TEMPORARY PAVEMENT MARKING - SHORT	\$0.48	\$4,800	
29	15,000	L.S.	6890	PERMANENT SIGNING	\$15,000	\$15,000	
30	40,000	L.S.	6904	ILLUMINATION SYSTEM	\$40,000	\$40,000	
31	338,000	L.S.	6971	PROJECT TEMPORARY TRAFFIC CONTROL	\$338,000	\$338,000	

OTHER ITEMS						
32	5,000	L.S.	7038	ROADWAY SURVEYING	\$5,000.00	\$5,000
33	7,400	L.F.	7111	WIRE FENCE TYPE 1	\$18.00	\$133,200
34	4,000	L.S.	7490	TRIMMING AND CLEANUP	\$4,000.00	\$4,000
35	5	EST.	7725	REIMBURSEMENT FOR THIRD PARTY DAMAGES	\$5.00	\$5
36	-5	EST.	7728	MINOR CHANGE	(\$5.00)	(\$5)
37	10,000	L.S.	7736	SPCC PLAN	\$10,000.00	\$10,000
PROJECT COST TOTALS						
SUBTOTAL W/O MOBILIZATION ----						\$2,251,788
SUBTOTAL WITH MOBILIZATION -----						\$2,476,788
OTHER WORK					25%	\$619,197
SUBTOTAL -----						\$3,095,985
SALES TAX					8.8%	\$272,447
SUBTOTAL -----						\$3,368,432
WSDOT CONSTRUCTION ENGINEERING UTILITIES AND OTHER AGREEMENTS					14%	\$471,580
UTILITIES AND OTHER AGREEMENTS						\$0
CHANGE ORDER CONTINGENCY					4.0%	\$134,737
===== PROJECT CONSTRUCTION TOTAL =====						\$3,974,749
===== RIGHT OF WAY ESTIMATED =====						\$53,000
===== WSDOT UTILITIES =====						\$0
===== WSDOT PRELIMINARY ENGINEERING =====					20%	\$673,686
===== PE TOTAL =====						\$726,686
===== PROJECT TOTAL =====						\$4,701,435
=====						

STATE OF WASHINGTON				*****			
DEPT. OF TRANSPORTATION				* CONSTRUCTION ESTIMATE *			
OLYMPIA, WASHINGTON				*****			
				US 101			
				SIMDARS TO PALO ALTO FRONTAGE ROAD			
				PRELIMINARY ESTIMATE			
		ENGINEER'S ESTIMATE DATE :		6-Jun-22			
QUANTITY	UNIT	ITEM NO.	ITEM		UNIT PRICE	AMOUNT	
PREPARATION							
1	L.S.		MOBILIZATION		10.00%	\$731,000	
2	11.7	ACRE	25	CLEARING AND GRUBBING	\$9,000.00	\$105,300	
3	4,400	L.F.	187	REMOVING PAINT LINE	\$2.00	\$8,800	
4	8,300	L.F.	230	REMOVING WIRE FENCE	\$3.00	\$24,900	
GRADING							
5	20,355	C.Y.	310	ROADWAY EXCAVATION INCL. HAUL	\$40.00	\$814,200	
6	29,000	C.Y.	405	COMMON BORROW INCL. HAUL	\$15.00	\$435,000	
7	29,000	C.Y.	470	EMBANKMENT COMPACTION	\$5.00	\$145,000	
DRAINAGE							
8	75,000	L.S.		MODIFY EXISTING DRAINAGE FACILITIES	\$75,000	\$75,000	
9	100,000	L.S.		SWALES AND DITCHES	\$100,000	\$100,000	
10	150,000	L.S.		QUANTITY AND QUALITY MITIGATION	\$150,000	\$150,000	
STRUCTURE							
11	2,020,200	L.S.		NEW BRIDGE	\$2,020,200	\$2,020,200	
12	250,000	L.S.		WINGWALLS	\$250,000	\$250,000	
SURFACING							
13	9,663	TON	5100	CRUSHED SURFACING BASE COURSE	\$45.00	\$434,835	
ASPHALT CONCRETE PAVEMENT							
14	7,364	TON	5767	HMA CL. 1/2 IN. PG 64-22	\$130.00	\$957,320	
EROSION CONTROL AND PLANTING							
15	200	DAY	6403	ESC LEAD	\$180.00	\$36,000	
16	2	EACH	6471	INLET PROTECTION	\$110.00	\$220	
17	13400	L.F.	6373	SILT FENCE	\$6.50	\$87,100	
18	10000	EST.	6490	EROSION/WATER POLLUTION CONTROL	\$10,000	\$10,000	
19	7.9	ACRE	6414	SEEDING, FERTILIZING, & MULCHING	\$6,000.00	\$47,400	
20	3000	L.F.	6630	HIGH VISIBILITY FENCE	\$4.00	\$12,000	
TRAFFIC							
21	800	L.F.	6757	BEAM GUARDRAIL TYPE 31	\$37.00	\$29,600	
22	8	EACH	6719	BEAM GUARDRAIL TYPE 31 NON-FLARED TERMINAL	\$3,900.00	\$31,200	
23	4	EACH	6760	BEAM GUARDRAIL TRANSITION TYPE 21	\$4,700.00	\$18,800	
24	23,300	L.F.	6807	PLASTIC LINE	\$1.80	\$41,940	
26	40	L.F.	6859	PLASTIC STOP LINE	\$15.00	\$600	
25	0	EACH	6833	PLASTIC TRAFFIC ARROW	\$170.00	\$0	
27	40	EACH	6875	PLASTIC JUNCTION BOX MARKING	\$50.00	\$2,000	
28	10,000	L.F.	6895	TEMPORARY PAVEMENT MARKING - SHORT	\$0.48	\$4,800	
29	30,000	L.S.	6890	PERMANENT SIGNING	\$30,000	\$30,000	
30	80,000	L.S.	6904	ILLUMINATION SYSTEM	\$80,000	\$80,000	
31	1,097,000	L.S.	6971	PROJECT TEMPORARY TRAFFIC CONTROL	\$1,097,000	\$1,097,000	

OTHER ITEMS						
32	5,000	L.S.	7038	ROADWAY SURVEYING	\$5,000.00	\$5,000
33	13,600	L.F.	7111	WIRE FENCE TYPE 1	\$18.00	\$244,800
34	4,000	L.S.	7490	TRIMMING AND CLEANUP	\$4,000.00	\$4,000
35	5	EST.	7725	REIMBURSEMENT FOR THIRD PARTY DAMAGES	\$5.00	\$5
36	-5	EST.	7728	MINOR CHANGE	(\$5.00)	(\$5)
37	10,000	L.S.	7736	SPCC PLAN	\$10,000.00	\$10,000
PROJECT COST TOTALS						
SUBTOTAL W/O MOBILIZATION ----						\$7,313,015
SUBTOTAL WITH MOBILIZATION -----						\$8,044,015
OTHER WORK						25% \$2,011,004
SUBTOTAL -----						\$10,055,019
SALES TAX						8.8% \$884,842
SUBTOTAL -----						\$10,939,861
WSDOT CONSTRUCTION ENGINEERING UTILITIES AND OTHER AGREEMENTS						12% \$1,312,783 \$0
CHANGE ORDER CONTINGENCY						4.0% \$437,594
=====						=====
PROJECT CONSTRUCTION TOTAL						\$12,690,238
=====						=====
RIGHT OF WAY ESTIMATED						\$163,500
WSDOT UTILITIES						\$0
WSDOT PRELIMINARY ENGINEERING						16% \$1,750,378
=====						=====
PE TOTAL						\$1,913,878
=====						=====
=====						=====
PROJECT TOTAL						\$14,604,116
=====						=====

STATE OF WASHINGTON				*****			
DEPT. OF TRANSPORTATION				* CONSTRUCTION ESTIMATE *			
OLYMPIA, WASHINGTON				*****			
				US 101			
				O'CONNOR CONNECTION			
				PRELIMINARY ESTIMATE			
				ENGINEER'S ESTIMATE DATE :		6-Jun-22	
QUANTITY	UNIT	ITEM NO.	ITEM		UNIT PRICE	AMOUNT	
PREPARATION							
1	L.S.		MOBILIZATION		10.00%	\$653,000	
2	8	ACRE	25	CLEARING AND GRUBBING	\$9,000.00	\$72,000	
3	4,820	L.F.	187	REMOVING PAINT LINE	\$2.00	\$9,640	
4	1,800	L.F.	230	REMOVING WIRE FENCE	\$3.00	\$5,400	
GRADING							
5	11,355	C.Y.	310	ROADWAY EXCAVATION INCL. HAUL	\$40.00	\$454,200	
6	28,000	C.Y.	405	COMMON BORROW INCL. HAUL	\$15.00	\$420,000	
7	28,000	C.Y.	470	EMBANKMENT COMPACTION	\$5.00	\$140,000	
DRAINAGE							
8	75,000	L.S.		MODIFY EXISTING DRAINAGE FACILITIES	\$75,000	\$75,000	
9	100,000	L.S.		SWALES AND DITCHES	\$100,000	\$100,000	
10	150,000	L.S.		QUANTITY AND QUALITY MITIGATION	\$150,000	\$150,000	
STRUCTURE							
11	2,020,200	L.S.		NEW BRIDGE	\$2,020,200	\$2,020,200	
12	250,000	L.S.		WINGWALLS	\$250,000	\$250,000	
SURFACING							
13	5,684	TON	5100	CRUSHED SURFACING BASE COURSE	\$45.00	\$255,780	
ASPHALT CONCRETE PAVEMENT							
14	4,347	TON	5767	HMA CL. 1/2 IN. PG 64-22	\$130.00	\$565,110	
15	100,000	L.S.		SIMDARS ROAD PAVEMENT UPGRADE	\$100,000.00	\$100,000	
16	100,000	L.S.		O'CONNOR DRIVE WIDENING AND UPGRADE	\$100,000.00	\$100,000	
EROSION CONTROL AND PLANTING							
17	200	DAY	6403	ESC LEAD	\$180.00	\$36,000	
18	2	EACH	6471	INLET PROTECTION	\$110.00	\$220	
19	7500	L.F.	6373	SILT FENCE	\$6.50	\$48,750	
20	8000	EST.	6490	EROSION/WATER POLLUTION CONTROL	\$8,000	\$8,000	
21	6.1	ACRE	6414	SEEDING, FERTILIZING, & MULCHING	\$6,000.00	\$36,600	
22	400	L.F.	6630	HIGH VISIBILITY FENCE	\$4.00	\$1,600	
TRAFFIC							
23	200	L.F.	6757	BEAM GUARDRAIL TYPE 31	\$37.00	\$7,400	
24	4	EACH	6719	BEAM GUARDRAIL TYPE 31 NON-FLARED TERMINAL	\$3,900.00	\$15,600	
25	4	EACH	6760	BEAM GUARDRAIL TRANSITION TYPE 21	\$4,700.00	\$18,800	
26	13,700	L.F.	6807	PLASTIC LINE	\$1.80	\$24,660	
27	18	L.F.	6859	PLASTIC STOP LINE	\$15.00	\$270	
28	0	EACH	6833	PLASTIC TRAFFIC ARROW	\$170.00	\$0	
29	40	EACH	6875	PLASTIC JUNCTION BOX MARKING	\$50.00	\$2,000	
30	10,000	L.F.	6895	TEMPORARY PAVEMENT MARKING - SHORT	\$0.48	\$4,800	
31	70,000	L.S.	6890	PERMANENT SIGNING	\$70,000	\$70,000	
32	160,000	L.S.	6904	ILLUMINATION SYSTEM	\$160,000	\$160,000	
33	981,000	L.S.	6971	PROJECT TEMPORARY TRAFFIC CONTROL	\$981,000	\$981,000	

OTHER ITEMS						
34	5,000	L.S.	7038	ROADWAY SURVEYING	\$5,000.00	\$5,000
35	1,800	L.F.	7111	WIRE FENCE TYPE 1	\$18.00	\$32,400
36	4,000	L.S.	7490	TRIMMING AND CLEANUP	\$4,000.00	\$4,000
37	5	EST.	7725	REIMBURSEMENT FOR THIRD PARTY DAMAGES	\$5.00	\$5
38	-5	EST.	7728	MINOR CHANGE	(\$5.00)	(\$5)
39	100,000	L.S.		DRIVEWAYS	\$100,000.00	\$100,000
40	250,000	L.S.		VERTICAL UNCERTAINTIES OVER JOHNSON CREEK	\$250,000.00	\$250,000
41	10,000	L.S.	7736	SPCC PLAN	\$10,000.00	\$10,000
PROJECT COST TOTALS						
SUBTOTAL W/O MOBILIZATION ----						\$6,534,430
SUBTOTAL WITH MOBILIZATION -----						\$7,187,430
OTHER WORK						25% \$1,796,858
SUBTOTAL -----						\$8,984,288
SALES TAX						8.8% \$790,617
SUBTOTAL -----						\$9,774,905
WSDOT CONSTRUCTION ENGINEERING UTILITIES AND OTHER AGREEMENTS						12% \$1,172,989 \$0
CHANGE ORDER CONTINGENCY						4.0% \$390,996
=====						=====
PROJECT CONSTRUCTION TOTAL						\$11,338,890
=====						=====
RIGHT OF WAY ESTIMATED						\$828,400
WSDOT UTILITIES						\$25,000
WSDOT PRELIMINARY ENGINEERING						16% \$1,563,985
=====						=====
PE TOTAL						\$2,417,385
=====						=====
=====						=====
PROJECT TOTAL						\$13,756,275
=====						=====

STATE OF WASHINGTON				*****			
DEPT. OF TRANSPORTATION				* CONSTRUCTION ESTIMATE *			
OLYMPIA, WASHINGTON				*****			
				US 101			
				PALO ALTO ROAD REALIGNMENT			
				PRELIMINARY ESTIMATE			
		ENGINEER'S ESTIMATE DATE :		6-Jun-22			
QUANTITY	UNIT	ITEM NO.	ITEM		UNIT PRICE	AMOUNT	
PREPARATION							
1	L.S.		MOBILIZATION		10.00%	\$189,000	
2	5	ACRE	25	CLEARING AND GRUBBING	\$9,000.00	\$45,000	
3	2,400	L.F.	187	REMOVING PAINT LINE	\$2.00	\$4,800	
4	2,400	L.F.	230	REMOVING WIRE FENCE	\$3.00	\$7,200	
GRADING							
5	13,266	C.Y.	310	ROADWAY EXCAVATION INCL. HAUL	\$40.00	\$530,640	
6	1,000	C.Y.	405	COMMON BORROW INCL. HAUL	\$15.00	\$15,000	
7	1,000	C.Y.	470	EMBANKMENT COMPACTION	\$5.00	\$5,000	
DRAINAGE							
8	25,000	L.S.		MODIFY EXISTING DRAINAGE FACILITIES	\$25,000	\$25,000	
9	50,000	L.S.		SWALES AND DITCHES	\$50,000	\$50,000	
10	50,000	L.S.		QUANTITY AND QUALITY MITIGATION	\$50,000	\$50,000	
SURFACING							
11	3,488	TON	5100	CRUSHED SURFACING BASE COURSE	\$45.00	\$156,960	
ASPHALT CONCRETE PAVEMENT							
12	2,454	TON	5767	HMA CL. 1/2 IN. PG 64-22	\$130.00	\$319,020	
EROSION CONTROL AND PLANTING							
13	40	DAY	6403	ESC LEAD	\$180.00	\$7,200	
14	0	EACH	6471	INLET PROTECTION	\$110.00	\$0	
15	7000	L.F.	6373	SILT FENCE	\$6.50	\$45,500	
16	7000	EST.	6490	EROSION/WATER POLLUTION CONTROL	\$7,000	\$7,000	
17	3.5	ACRE	6414	SEEDING, FERTILIZING, & MULCHING	\$6,000.00	\$21,000	
TRAFFIC							
18	8,860	L.F.	6807	PLASTIC LINE	\$1.80	\$15,948	
19	0	EACH	6833	PLASTIC TRAFFIC ARROW	\$170.00	\$0	
20	40	EACH	6875	PLASTIC JUNCTION BOX MARKING	\$50.00	\$2,000	
21	3,000	L.F.	6895	TEMPORARY PAVEMENT MARKING - SHORT	\$0.48	\$1,400	
22	30,000	L.S.	6890	PERMANENT SIGNING	\$30,000	\$30,000	
23	80,000	L.S.	6904	ILLUMINATION SYSTEM	\$80,000	\$80,000	
24	378,000	L.S.	6971	PROJECT TEMPORARY TRAFFIC CONTROL	\$378,000	\$378,000	

OTHER ITEMS						
25	5,000	L.S.	7038	ROADWAY SURVEYING	\$5,000.00	\$5,000
26	4,400	L.F.	7111	WIRE FENCE TYPE 1	\$18.00	\$79,200
27	4,000	L.S.	7490	TRIMMING AND CLEANUP	\$4,000.00	\$4,000
28	5	EST.	7725	REIMBURSEMENT FOR THIRD PARTY DAMAGES	\$5.00	\$5
29	-5	EST.	7728	MINOR CHANGE	(\$5.00)	(\$5)
30	5,000	L.S.	7736	SPCC PLAN	\$5,000.00	\$5,000
PROJECT COST TOTALS						
SUBTOTAL W/O MOBILIZATION ----						\$1,889,868
SUBTOTAL WITH MOBILIZATION -----						\$2,078,868
OTHER WORK					25%	\$519,717
SUBTOTAL -----						\$2,598,585
SALES TAX					8.8%	\$228,675
SUBTOTAL -----						\$2,827,260
WSDOT CONSTRUCTION ENGINEERING					16%	\$452,362
UTILITIES AND OTHER AGREEMENTS						\$0
CHANGE ORDER CONTINGENCY					4.0%	\$113,090
=====						
PROJECT CONSTRUCTION TOTAL						\$3,392,712
=====						
RIGHT OF WAY ESTIMATED						\$25,000
WSDOT UTILITIES						\$0
WSDOT PRELIMINARY ENGINEERING					15%	\$424,089
=====						
PE TOTAL						\$449,089
=====						
=====						
PROJECT TOTAL						\$3,841,801
=====						

STATE OF WASHINGTON				*****			
DEPT. OF TRANSPORTATION				* CONSTRUCTION ESTIMATE *			
OLYMPIA, WASHINGTON				*****			
				US 101			
				HAPPY VALLEY ROAD ROUNDABOUT			
				SCOPING ESTIMATE			
		ENGINEER'S ESTIMATE DATE :		6-Jun-22			
QUANTITY	UNIT	ITEM NO.	ITEM		UNIT PRICE	AMOUNT	
PREPARATION							
1		L.S.		MOBILIZATION	10.00%	\$130,000	
2	0.75	ACRE	25	CLEARING AND GRUBBING	\$9,000.00	\$6,750	
3	300	L.F.	170	REMOVING GUARDRAIL	\$5.00	\$1,500	
4	2	EACH	182	REMOVING GUARDRAIL ANCHOR	\$400.00	\$800	
5	4,440	L.F.	187	REMOVING PAINT LINE	\$2.00	\$8,880	
GRADING							
6	1,833	C.Y.	310	ROADWAY EXCAVATION INCL. HAUL	\$40.00	\$73,320	
7	1,500	C.Y.	405	COMMON BORROW INCL. HAUL	\$15.00	\$22,500	
8	1,500	C.Y.	470	EMBANKMENT COMPACTION	\$5.00	\$7,500	
DRAINAGE							
9	50,000	L.S.		SWALES AND DITCHES	\$50,000	\$50,000	
10	50,000	L.S.		QUANTITY AND QUALITY MITIGATION	\$50,000	\$50,000	
SURFACING							
11	1,605	TON	5100	CRUSHED SURFACING BASE COURSE	\$60.00	\$96,300	
ASPHALT CONCRETE PAVEMENT							
12	1,060	TON	5767	HMA CL. 1/2 IN. PG 64-22	\$150.00	\$159,000	
EROSION CONTROL AND PLANTING							
13	40	DAY	6403	ESC LEAD	\$180.00	\$7,200	
14	0	EACH	6471	INLET PROTECTION	\$110.00	\$0	
15	2000	L.F.	6373	SILT FENCE	\$6.50	\$13,000	
16	4000	EST.	6490	EROSION/WATER POLLUTION CONTROL	\$4,000	\$4,000	
17	0.5	ACRE	6414	SEEDING, FERTILIZING, & MULCHING	\$6,000.00	\$3,000	
TRAFFIC							
18	0	EACH	6698	ROUNDABOUT SPLITTER ISLAND NOSING CURB	\$1,700.00	\$0	
19	1,208	L.F.	6699	ROUNDABOUT CEMENT CONCRETE CURB & GUTTER	\$40.00	\$48,320	
20	620	L.F.	6709	ROUNDABOUT TRUCK APRON CEMENT CON C&G	\$52.00	\$32,235	
21	100	L.F.	6757	BEAM GUARDRAIL TYPE 31	\$37.00	\$3,700	
22	0	EACH	6766	BEAM GUARDRAIL TYPE 10 ANCHOR	\$1,500.00	\$0	
23	2	EACH	6719	BEAM GUARDRAIL TYPE 31 NON-FLARED TERMINAL	\$3,900.00	\$7,800	
24	2	EACH	6760	BEAM GUARDRAIL TRANSITION TYPE 21	\$4,700.00	\$9,400	
25	4,720	L.F.	6807	PLASTIC LINE	\$1.80	\$8,496	
26	45	L.F.	6859	PLASTIC STOP LINE	\$15.00	\$675	
27	4	EACH	6833	PLASTIC TRAFFIC ARROW	\$170.00	\$680	
28	0	SF	6857	PLASTIC CROSSWALK LINE	\$8.00	\$0	
29	10	EACH	6875	PLASTIC JUNCTION BOX MARKING	\$50.00	\$500	
30	5,000	L.F.	6895	TEMPORARY PAVEMENT MARKING - SHORT	\$0.48	\$2,400	
31	60,000	L.S.	6890	PERMANENT SIGNING	\$60,000	\$60,000	
32	80,000	L.S.	6904	ILLUMINATION SYSTEM	\$80,000	\$80,000	
33	260,000	L.S.	6971	PROJECT TEMPORARY TRAFFIC CONTROL	\$260,000	\$260,000	

OTHER ITEMS						
34	1,175	S.Y.		TEXTURED AND PIGMENTED CEMENT CONC PAVEMENT	\$220	\$258,500
35	15,000	L.S.	7038	ROADWAY SURVEYING	\$15,000	\$15,000
36	3,000	L.S.	7490	TRIMMING AND CLEANUP	\$3,000	\$3,000
37	5	EST.	7725	REIMBURSEMENT FOR THIRD PARTY DAMAGES	\$5.00	\$5
38	-5	EST.	7728	MINOR CHANGE	(\$5.00)	(\$5)
39	4,000	L.S.	7736	SPCC PLAN	\$4,000	\$4,000
PROJECT COST TOTALS						
SUBTOTAL W/O MOBILIZATION ----						\$1,298,456
SUBTOTAL WITH MOBILIZATION -----						\$1,428,456
OTHER WORK					25.0%	\$357,114
SUBTOTAL -----						\$1,785,570
SALES TAX					8.8%	\$157,130
SUBTOTAL -----						\$1,942,700
WSDOT CONSTRUCTION ENGINEERING					16%	\$310,832
UTILITIES AND OTHER AGREEMENTS						\$0
CHANGE ORDER CONTINGENCY					4.0%	\$77,708
=====						
PROJECT CONSTRUCTION TOTAL						\$2,331,240
=====						
RIGHT OF WAY ESTIMATED						\$25,000
WSDOT UTILITIES						\$40,000
WSDOT PRELIMINARY ENGINEERING					25%	\$485,675
=====						
PE TOTAL						\$550,675
=====						
PROJECT TOTAL						\$2,881,915
=====						

STATE OF WASHINGTON				*****			
DEPT. OF TRANSPORTATION				* CONSTRUCTION ESTIMATE *			
OLYMPIA, WASHINGTON				*****			
				US 101			
				PALO ALTO ROAD ROUNDABOUT			
				SCOPING ESTIMATE			
		ENGINEER'S ESTIMATE DATE :		6-Jun-22			
QUANTITY	UNIT	ITEM NO.	ITEM		UNIT PRICE	AMOUNT	
PREPARATION							
1	L.S.		MOBILIZATION		10.00%	\$238,000	
2	6.00	ACRE	25	CLEARING AND GRUBBING	\$9,000.00	\$54,000	
3	6,525	L.F.	187	REMOVING PAINT LINE	\$2.00	\$13,050	
GRADING							
4	10,579	C.Y.	310	ROADWAY EXCAVATION INCL. HAUL	\$40.00	\$423,160	
5	12,500	C.Y.	405	COMMON BORROW INCL. HAUL	\$15.00	\$187,500	
6	12,500	C.Y.	470	EMBANKMENT COMPACTION	\$5.00	\$62,500	
DRAINAGE							
7	50,000	L.S.		SWALES AND DITCHES	\$50,000	\$50,000	
8	50,000	L.S.		QUANTITY AND QUALITY MITIGATION	\$50,000	\$50,000	
SURFACING							
9	3,212	TON	5100	CRUSHED SURFACING BASE COURSE	\$50.00	\$160,600	
ASPHALT CONCRETE PAVEMENT							
10	2,381	TON	5767	HMA CL. 1/2 IN. PG 64-22	\$140.00	\$333,340	
EROSION CONTROL AND PLANTING							
11	50	DAY	6403	ESC LEAD	\$180.00	\$9,000	
12	0	EACH	6471	INLET PROTECTION	\$110.00	\$0	
13	3500	L.F.	6373	SILT FENCE	\$6.50	\$22,750	
14	6000	EST.	6490	EROSION/WATER POLLUTION CONTROL	\$6,000	\$6,000	
15	6	ACRE	6414	SEEDING, FERTILIZING, & MULCHING	\$6,000.00	\$36,000	
TRAFFIC							
16	500	L.F.	6727	EXTRUDED CURB	\$20.00	\$10,000	
17	1	EACH	6698	ROUNDABOUT SPLITTER ISLAND NOSING CURB	\$1,700.00	\$1,700	
18	976	L.F.	6699	ROUNDABOUT CEMENT CONCRETE CURB & GUTTER	\$40.00	\$39,040	
19	600	L.F.	6709	ROUNDABOUT TRUCK APRON CEMENT CON C&G	\$52.00	\$31,195	
20	700	L.F.	6757	BEAM GUARDRAIL TYPE 31	\$37.00	\$25,900	
21	0	EACH	6766	BEAM GUARDRAIL TYPE 10 ANCHOR	\$1,500.00	\$0	
22	2	EACH	6719	BEAM GUARDRAIL TYPE 31 NON-FLARED TERMINAL	\$3,900.00	\$7,800	
23	8,300	L.F.	6807	PLASTIC LINE	\$1.80	\$14,940	
24	60	L.F.	6859	PLASTIC STOP LINE	\$15.00	\$900	
25	4	EACH	6833	PLASTIC TRAFFIC ARROW	\$170.00	\$680	
26	0	SF	6857	PLASTIC CROSSWALK LINE	\$8.00	\$0	
27	10	EACH	6875	PLASTIC JUNCTION BOX MARKING	\$50.00	\$500	
28	5,000	L.F.	6895	TEMPORARY PAVEMENT MARKING - SHORT	\$0.48	\$2,400	
29	60,000	L.S.	6890	PERMANENT SIGNING	\$60,000	\$60,000	
30	80,000	L.S.	6904	ILLUMINATION SYSTEM	\$80,000	\$80,000	
31	476,000	L.S.	6971	PROJECT TEMPORARY TRAFFIC CONTROL	\$476,000	\$476,000	

OTHER ITEMS						
32	903	S.Y.		TEXTURED AND PIGMENTED CEMENT CONC PAVEMENT	\$220	\$198,660
33	15,000	L.S.	7038	ROADWAY SURVEYING	\$15,000	\$15,000
34	3,000	L.S.	7490	TRIMMING AND CLEANUP	\$3,000	\$3,000
35	5	EST.	7725	REIMBURSEMENT FOR THIRD PARTY DAMAGES	\$5.00	\$5
36	-5	EST.	7728	MINOR CHANGE	(\$5.00)	(\$5)
37	4,000	L.S.	7736	SPCC PLAN	\$4,000	\$4,000
PROJECT COST TOTALS						
SUBTOTAL W/O MOBILIZATION ----						\$2,379,615
SUBTOTAL WITH MOBILIZATION -----						\$2,617,615
OTHER WORK					25.0%	\$654,404
SUBTOTAL -----						\$3,272,019
SALES TAX					8.8%	\$287,938
SUBTOTAL -----						\$3,559,957
WSDOT CONSTRUCTION ENGINEERING UTILITIES AND OTHER AGREEMENTS					14%	\$498,394
						\$0
CHANGE ORDER CONTINGENCY					4.0%	\$142,398
=====						=====
PROJECT CONSTRUCTION TOTAL						\$4,200,749
=====						=====
RIGHT OF WAY ESTIMATED						\$150,000
WSDOT UTILITIES						\$0
WSDOT PRELIMINARY ENGINEERING					20%	\$711,991
=====						=====
PE TOTAL						\$861,991
=====						=====
PROJECT TOTAL						\$5,062,740
=====						=====

STATE OF WASHINGTON				*****			
DEPT. OF TRANSPORTATION				* CONSTRUCTION ESTIMATE *			
OLYMPIA, WASHINGTON				*****			
				US 101			
				WHITEFEATHER/HAPPY VALLEY/PALO ALTO COMBINED			
				SCOPING ESTIMATE			
		ENGINEER'S ESTIMATE DATE :		6-Jun-22			
QUANTITY	UNIT	ITEM NO.	ITEM		UNIT PRICE	AMOUNT	

PREPARATION							
1	L.S.		MOBILIZATION		10.00%	\$727,000	
2	9.00	ACRE	25	CLEARING AND GRUBBING	\$9,000.00	\$81,000	
3	500	L.F.	170	REMOVING GUARDRAIL	\$5.00	\$2,500	
4	2	EACH	182	REMOVING GUARDRAIL ANCHOR	\$400.00	\$800	
5	9,700	L.F.	187	REMOVING PAINT LINE	\$2.00	\$19,400	
6	400	L.F.	230	REMOVING WIRE FENCE	\$3.00	\$1,200	
GRADING							
7	25,266	C.Y.	310	ROADWAY EXCAVATION INCL. HAUL	\$40.00	\$1,010,640	
8	19,000	C.Y.	405	COMMON BORROW INCL. HAUL	\$15.00	\$285,000	
9	19,000	C.Y.	470	EMBANKMENT COMPACTION	\$5.00	\$95,000	
DRAINAGE							
10	25,000	L.S.		MODIFY EXISTING DRAINAGE FACILITIES	\$25,000	\$25,000	
11	150,000	L.S.		SWALES AND DITCHES	\$150,000	\$150,000	
12	150,000	L.S.		QUANTITY AND QUALITY MITIGATION	\$150,000	\$150,000	
STRUCTURE							
13	2,020,200	L.S.		NEW BRIDGE	\$2,020,200	\$2,020,200	
14	250,000	L.S.		WINGWALLS	\$250,000	\$250,000	
SURFACING							
15	5,990	TON	5100	CRUSHED SURFACING BASE COURSE	\$45.00	\$269,550	
ASPHALT CONCRETE PAVEMENT							
16	4,162	TON	5767	HMA CL. 1/2 IN. PG 64-22	\$130.00	\$541,060	
EROSION CONTROL AND PLANTING							
17	80	DAY	6403	ESC LEAD	\$180.00	\$14,400	
18	0	EACH	6471	INLET PROTECTION	\$110.00	\$0	
19	12700	L.F.	6373	SILT FENCE	\$6.50	\$82,550	
20	10000	EST.	6490	EROSION/WATER POLLUTION CONTROL	\$10,000	\$10,000	
21	7	ACRE	6414	SEEDING, FERTILIZING, & MULCHING	\$6,000.00	\$42,000	
22	1000	L.F.	6630	HIGH VISIBILITY FENCE	\$4.00	\$4,000	
TRAFFIC							
22	1	EACH	6698	ROUNDAABOUT SPLITTER ISLAND NOSING CURB	\$1,700.00	\$1,700	
23	1,161	L.F.	6699	ROUNDAABOUT CEMENT CONCRETE CURB & GUTTER	\$40.00	\$46,440	
24	570	L.F.	6709	ROUNDAABOUT TRUCK APRON CEMENT CON C&G	\$52.00	\$29,635	
25	550	L.F.	6757	BEAM GUARDRAIL TYPE 31	\$37.00	\$20,350	
26	1	EACH	6766	BEAM GUARDRAIL TYPE 10 ANCHOR	\$1,500.00	\$1,500	
27	5	EACH	6719	BEAM GUARDRAIL TYPE 31 NON-FLARED TERMINAL	\$3,900.00	\$19,500	
28	5	EACH	6760	BEAM GUARDRAIL TRANSITION TYPE 21	\$4,700.00	\$23,500	
29	18,480	L.F.	6807	PLASTIC LINE	\$1.80	\$33,264	
30	100	L.F.	6859	PLASTIC STOP LINE	\$15.00	\$1,500	
31	4	EACH	6833	PLASTIC TRAFFIC ARROW	\$170.00	\$680	
32	0	SF	6857	PLASTIC CROSSWALK LINE	\$8.00	\$0	
33	70	EACH	6875	PLASTIC JUNCTION BOX MARKING	\$50.00	\$3,500	
34	10,000	L.F.	6895	TEMPORARY PAVEMENT MARKING - SHORT	\$0.48	\$4,800	
35	120,000	L.S.	6890	PERMANENT SIGNING	\$120,000	\$120,000	
36	170,000	L.S.	6904	ILLUMINATION SYSTEM	\$170,000	\$170,000	
37	1,454,000	L.S.	6971	PROJECT TEMPORARY TRAFFIC CONTROL	\$1,454,000	\$1,454,000	

OTHER ITEMS						
38	1,089	S.Y.		TEXTURED AND PIGMENTED CEMENT CONC PAVEMENT	\$220	\$239,580
39	25,000	L.S.	7038	ROADWAY SURVEYING	\$25,000	\$25,000
40	10,000	L.S.	7490	TRIMMING AND CLEANUP	\$10,000	\$10,000
41	5	EST.	7725	REIMBURSEMENT FOR THIRD PARTY DAMAGES	\$5.00	\$5
42	-5	EST.	7728	MINOR CHANGE	(\$5.00)	(\$5)
43	8,000	L.S.	7736	SPCC PLAN	\$8,000	\$8,000
PROJECT COST TOTALS						
SUBTOTAL W/O MOBILIZATION ----						\$7,267,249
SUBTOTAL WITH MOBILIZATION -----						\$7,994,249
OTHER WORK					25.0%	\$1,998,562
SUBTOTAL -----						\$9,992,811
SALES TAX					8.8%	\$879,367
SUBTOTAL -----						\$10,872,178
WSDOT CONSTRUCTION ENGINEERING UTILITIES AND OTHER AGREEMENTS					12%	\$1,304,661
						\$0
CHANGE ORDER CONTINGENCY					4.0%	\$434,887
===== PROJECT CONSTRUCTION TOTAL =====						\$12,611,726
===== RIGHT OF WAY ESTIMATED =====						\$174,500
===== WSDOT UTILITIES =====						\$0
===== WSDOT PRELIMINARY ENGINEERING =====					16%	\$1,739,548
===== PE TOTAL =====						\$1,914,048
===== PROJECT TOTAL =====						\$14,525,774
=====						

STATE OF WASHINGTON				*****			
DEPT. OF TRANSPORTATION				* CONSTRUCTION ESTIMATE *			
OLYMPIA, WASHINGTON				*****			
				US 101			
				HAPPY VALLEY ROAD PEDESTRIAN BRIDGE			
				PRELIMINARY ESTIMATE			
		ENGINEER'S ESTIMATE DATE :		6-Jun-22			
QUANTITY	UNIT	ITEM NO.	ITEM		UNIT PRICE	AMOUNT	
PREPARATION							
1	L.S.		MOBILIZATION		10.00%	\$544,000	
2	0.5	ACRE	25	CLEARING AND GRUBBING	\$9,000.00	\$4,500	
3	0	L.F.	187	REMOVING PAINT LINE	\$2.00	\$0	
4	0	L.F.	230	REMOVING WIRE FENCE	\$3.00	\$0	
GRADING							
5	0	C.Y.	310	ROADWAY EXCAVATION INCL. HAUL	\$40.00	\$0	
6	0	C.Y.	405	COMMON BORROW INCL. HAUL	\$15.00	\$0	
7	0	C.Y.	470	EMBANKMENT COMPACTION	\$5.00	\$0	
DRAINAGE							
8	85,000	L.S.		DRAINAGE IMPACTS	\$85,000	\$85,000	
STRUCTURE							
9	1,522,500	L.S.		NEW BRIDGE	\$1,522,500	\$1,522,500	
10	3,300,000	L.S.		APPROACH VIADUCTS AND CLOSED FILLS	\$3,300,000	\$3,300,000	
SURFACING							
11	0	TON	5100	CRUSHED SURFACING BASE COURSE	\$45.00	\$0	
ASPHALT CONCRETE PAVEMENT							
12	0	TON	5767	HMA CL. 1/2 IN. PG 64-22	\$130.00	\$0	
EROSION CONTROL AND PLANTING							
13	75	DAY	6403	ESC LEAD	\$180.00	\$13,500	
14	0	EACH	6471	INLET PROTECTION	\$110.00	\$0	
15	2000	L.F.	6373	SILT FENCE	\$6.50	\$13,000	
16	8000	EST.	6490	EROSION/WATER POLLUTION CONTROL	\$8,000	\$8,000	
17	0.25	ACRE	6414	SEEDING, FERTILIZING, & MULCHING	\$6,000.00	\$1,500	
18	15,000	L.S.		MISC LANDSCAPING	\$15,000	\$15,000	
TRAFFIC							
19	500	L.F.	6757	BEAM GUARDRAIL TYPE 31	\$37.00	\$18,500	
20	2	EACH	6719	BEAM GUARDRAIL TYPE 31 NON-FLARED TERMINAL	\$3,900.00	\$7,800	
21	0	EACH	6760	BEAM GUARDRAIL TRANSITION TYPE 21	\$4,700.00	\$0	
22	5,000	L.S.	6890	PERMANENT SIGNING	\$5,000	\$5,000	
23	0	L.S.	6904	ILLUMINATION SYSTEM	\$0	\$0	
24	435,000	L.S.	6971	PROJECT TEMPORARY TRAFFIC CONTROL	\$435,000	\$435,000	

OTHER ITEMS						
25	0	L.S.	7038	ROADWAY SURVEYING	\$0.00	\$0
26	0	L.F.	7111	WIRE FENCE TYPE 1	\$18.00	\$0
27	2,000	L.S.	7490	TRIMMING AND CLEANUP	\$2,000.00	\$2,000
28	5	EST.	7725	REIMBURSEMENT FOR THIRD PARTY DAMAGES	\$5.00	\$5
29	-5	EST.	7728	MINOR CHANGE	(\$5.00)	(\$5)
30	5,000	L.S.	7736	SPCC PLAN	\$5,000.00	\$5,000
PROJECT COST TOTALS						
SUBTOTAL W/O MOBILIZATION ----						\$5,436,300
SUBTOTAL WITH MOBILIZATION -----						\$5,980,300
OTHER WORK					25%	\$1,495,075
SUBTOTAL -----						\$7,475,375
SALES TAX					8.8%	\$657,833
SUBTOTAL -----						\$8,133,208
WSDOT CONSTRUCTION ENGINEERING UTILITIES AND OTHER AGREEMENTS					12%	\$975,985
						\$0
CHANGE ORDER CONTINGENCY					4.0%	\$325,328
===== PROJECT CONSTRUCTION TOTAL =====						\$9,434,521
=====						
RIGHT OF WAY ESTIMATED						\$32,500
WSDOT UTILITIES						\$35,000
WSDOT PRELIMINARY ENGINEERING					10%	\$813,321
=====						
PE TOTAL						\$880,821
=====						
=====						
PROJECT TOTAL						\$10,315,342
=====						

STATE OF WASHINGTON		*****					
DEPT. OF TRANSPORTATION		* CONSTRUCTION ESTIMATE *					
OLYMPIA, WASHINGTON		*****					
US 101 PALO ALTO ROAD LEFT TURN LANE SCOPING ESTIMATE							
ENGINEER'S ESTIMATE DATE :				6-Jun-22			
QUANTITY	UNIT	ITEM NO.	ITEM		UNIT PRICE	AMOUNT	
PREPARATION							
1		L.S.		MOBILIZATION	10.00%	\$16,000	
2	0.00	ACRE	25	CLEARING AND GRUBBING	\$9,000.00	\$0	
3	3,150	L.F.	187	REMOVING PAINT LINE	\$2.00	\$6,300	
GRADING							
4	0	C.Y.	310	ROADWAY EXCAVATION INCL. HAUL	\$40.00	\$0	
5	0	C.Y.	405	COMMON BORROW INCL. HAUL	\$15.00	\$0	
6	0	C.Y.	470	EMBANKMENT COMPACTION	\$5.00	\$0	
DRAINAGE							
7	0	L.S.		SWALES AND DITCHES	\$0	\$0	
8	0	L.S.		QUANTITY AND QUALITY MITIGATION	\$0	\$0	
SURFACING							
9	140	TON	5100	CRUSHED SURFACING BASE COURSE	\$50.00	\$7,000	
ASPHALT CONCRETE PAVEMENT							
10	445	S.Y.	5711	PLANING BITUMINOUS PAVEMENT	\$30.00	\$13,350	
11	78	TON	5767	HMA CL. 1/2 IN. PG 64-22	\$240.00	\$18,720	
EROSION CONTROL AND PLANTING							
12	10	DAY	6403	ESC LEAD	\$180.00	\$1,800	
13	0	EACH	6471	INLET PROTECTION	\$110.00	\$0	
14	0	L.F.	6373	SILT FENCE	\$6.50	\$0	
15	4000	EST.	6490	EROSION/WATER POLLUTION CONTROL	\$4,000	\$4,000	
16	0	ACRE	6414	SEEDING, FERTILIZING, & MULCHING	\$6,000.00	\$0	
TRAFFIC							
17	0	L.F.	6727	EXTRUDED CURB	\$20.00	\$0	
18	1,000	L.F.	6757	BEAM GUARDRAIL TYPE 31	\$37.00	\$37,000	
19	0	EACH	6766	BEAM GUARDRAIL TYPE 10 ANCHOR	\$1,500.00	\$0	
20	2	EACH	6719	BEAM GUARDRAIL TYPE 31 NON-FLARED TERMINAL	\$3,900.00	\$7,800	
21	4,000	L.F.	6807	PLASTIC LINE	\$1.80	\$7,200	
22	25	L.F.	6859	PLASTIC STOP LINE	\$15.00	\$375	
23	2	EACH	6833	PLASTIC TRAFFIC ARROW	\$170.00	\$340	
24	0	SF	6857	PLASTIC CROSSWALK LINE	\$8.00	\$0	
25	10	EACH	6875	PLASTIC JUNCTION BOX MARKING	\$50.00	\$500	
26	5,000	L.F.	6895	TEMPORARY PAVEMENT MARKING - SHORT	\$0.48	\$2,400	
27	10,000	L.S.	6890	PERMANENT SIGNING	\$10,000	\$10,000	
28	0	L.S.	6904	ILLUMINATION SYSTEM	\$0	\$0	
29	32,000	L.S.	6971	PROJECT TEMPORARY TRAFFIC CONTROL	\$32,000	\$32,000	

OTHER ITEMS						
30	0	S.Y.		TEXTURED AND PIGMENTED CEMENT CONC PAVEMENT	\$220	\$0
31	2,000	L.S.	7038	ROADWAY SURVEYING	\$2,000	\$2,000
32	3,000	L.S.	7490	TRIMMING AND CLEANUP	\$3,000	\$3,000
33	5	EST.	7725	REIMBURSEMENT FOR THIRD PARTY DAMAGES	\$5.00	\$5
34	-5	EST.	7728	MINOR CHANGE	(\$5.00)	(\$5)
35	4,000	L.S.	7736	SPCC PLAN	\$4,000	\$4,000
PROJECT COST TOTALS						
SUBTOTAL W/O MOBILIZATION ----						\$157,785
SUBTOTAL WITH MOBILIZATION -----						\$173,785
OTHER WORK					25.0%	\$43,446
SUBTOTAL -----						\$217,231
SALES TAX					8.8%	\$19,116
SUBTOTAL -----						\$236,347
WSDOT CONSTRUCTION ENGINEERING UTILITIES AND OTHER AGREEMENTS					22%	\$51,996 \$0
CHANGE ORDER CONTINGENCY					4.0%	\$9,454
===== PROJECT CONSTRUCTION TOTAL =====						\$297,797
===== RIGHT OF WAY ESTIMATED =====						\$15,000
===== WSDOT UTILITIES =====						\$0
===== WSDOT PRELIMINARY ENGINEERING =====					47%	\$111,083
===== PE TOTAL =====						\$126,083
===== PROJECT TOTAL =====						\$423,880

STATE OF WASHINGTON				*****			
DEPT. OF TRANSPORTATION				* CONSTRUCTION ESTIMATE *			
OLYMPIA, WASHINGTON				*****			
				US 101			
				SINGLE INTERSECTION ILLUMINATION			
				PRELIMINARY ESTIMATE			
		ENGINEER'S ESTIMATE DATE :		6-Jun-22			
	QUANTITY	UNIT	ITEM NO.	ITEM		UNIT PRICE	AMOUNT
PREPARATION							
1		L.S.		MOBILIZATION		10.00%	\$23,000
2	0.5	ACRE	25	CLEARING AND GRUBBING		\$9,000.00	\$4,500
3	0	L.F.	187	REMOVING PAINT LINE		\$2.00	\$0
4	0	L.F.	220	REMOVING CHAIN LINK FENCE		\$15.00	\$0
GRADING							
5	0	C.Y.	310	ROADWAY EXCAVATION INCL. HAUL		\$40.00	\$0
6	0	C.Y.	405	COMMON BORROW INCL. HAUL		\$15.00	\$0
7	0	C.Y.	470	EMBANKMENT COMPACTION		\$5.00	\$0
STORM SEWER							
8	25,000	L.S.		MODIFY EXISTING DRAINAGE FACILITIES		\$25,000	\$25,000
9	25,000	L.S.		SWALES AND DITCHES		\$25,000	\$25,000
10	0	L.S.		QUANTITY AND QUALITY MITIGATION		\$0	\$0
SURFACING							
11	420	TON	5100	CRUSHED SURFACING BASE COURSE		\$60.00	\$25,200
ASPHALT CONCRETE PAVEMENT							
12	0	TON	5767	HMA CL. 1/2 IN. PG 64-22		\$130.00	\$0
EROSION CONTROL AND PLANTING							
13	50	DAY	6403	ESC LEAD		\$180.00	\$9,000
14	0	EACH	6471	INLET PROTECTION		\$110.00	\$0
15	500	L.F.	6373	SILT FENCE		\$6.50	\$3,250
16	5000	EST.	6490	EROSION/WATER POLLUTION CONTROL		\$5,000	\$5,000
17	0.5	ACRE	6414	SEEDING, FERTILIZING, & MULCHING		\$6,000.00	\$3,000
18	0	C.Y.	6410	TOPSOIL TYPE B		\$8.00	\$0
19	0	EACH	6552	PSIPE		\$15.00	\$0
20	0	C.Y.	6447	FINE COMPOST		\$37.00	\$0
21	0	L.F.	6630	HIGH VISIBILITY FENCE		\$4.00	\$0
TRAFFIC							
22	0	L.F.	6757	BEAM GUARDRAIL TYPE 31		\$37.00	\$0
23	0	EACH	6766	BEAM GUARDRAIL TYPE 10 ANCHOR		\$1,500.00	\$0
24	0	EACH	6719	BEAM GUARDRAIL TYPE 31 NON-FLARED TERMINAL		\$3,900.00	\$0
25	0	L.F.	6807	PLASTIC LINE		\$1.80	\$0
26	0	EACH	6833	PLASTIC TRAFFIC ARROW		\$170.00	\$0
27	10	EACH	6875	PLASTIC JUNCTION BOX MARKING		\$50.00	\$500
28	0	L.F.	6895	TEMPORARY PAVEMENT MARKING - SHORT		\$0.48	\$0
29	0	L.S.	6890	PERMANENT SIGNING		\$0	\$0
30	80,000	L.S.	6904	ILLUMINATION SYSTEM		\$80,000	\$80,000
31	34,000	L.S.	6971	PROJECT TEMPORARY TRAFFIC CONTROL		\$34,000	\$34,000

OTHER ITEMS						
32	0	L.S.	7038	ROADWAY SURVEYING	\$0.00	\$0
33	0	L.F.	7084	CHAIN LINK FENCE TYPE 4	\$32.00	\$0
34	1,000	L.S.	7490	TRIMMING AND CLEANUP	\$1,000.00	\$1,000
35	5	EST.	7725	REIMBURSEMENT FOR THIRD PARTY DAMAGES	\$5.00	\$5
36	-5	EST.	7728	MINOR CHANGE	(\$5.00)	(\$5)
37	10,000	L.S.	7736	SPCC PLAN	\$10,000.00	\$10,000
PROJECT COST TOTALS						
SUBTOTAL W/O MOBILIZATION -----						\$225,450
SUBTOTAL WITH MOBILIZATION -----						\$248,450
OTHER WORK						25% \$62,113
SUBTOTAL -----						\$310,563
SALES TAX						8.8% \$27,330
SUBTOTAL -----						\$337,893
WSDOT CONSTRUCTION ENGINEERING UTILITIES AND OTHER AGREEMENTS						20% \$67,579
CHANGE ORDER CONTINGENCY						4.0% \$13,516
===== PROJECT CONSTRUCTION TOTAL =====						\$418,988
===== RIGHT OF WAY ESTIMATED =====						\$0
===== WSDOT UTILITIES =====						\$0
===== WSDOT PRELIMINARY ENGINEERING =====						38% \$128,399
===== PE TOTAL =====						\$128,399
===== PROJECT TOTAL =====						\$547,387

APPENDIX E – Screening criteria evaluation sheets

Appendix D provides the alternatives evaluation sheets for the environmental impacts economic development, and multimodal criteria.

GENERAL INFO	PERMITS										Preliminary environmental complexity score					
	Section 4f	Ag Land Conversion	Section 106, historic bridge	Wetland	Fish, Wildlife, Veg, ESA	Fish Passage Barrier (in vicinity)	Hazardous Materials (Level 1 Assessment)	Visual	Environmental Justice	Clean Water Act / Section 404		Clean Water Act - Section 401	WDFW HPA	LOCAL (SMA, CAO, CZM, Floodplain)		
Strategy																
Happy Valley to Simdars Road frontage road	Unlikely	Likely	Likely	Likely	Likely	No	Unlikely	Likely	Likely	Yes	Yes	Yes	Yes	Yes	Yes	10
US 101 Happy Valley RAB Future Bypass	Likely	Unlikely	Unlikely	Unlikely	TBD, unlikely	Yes but impacts TBD	Unlikely unless culvert to be replaced	TBD	Unlikely	Unlikely	TBD	Unlikely	Yes	Yes	Yes	4
US 101 Oconnor Connector	Unlikely	Likely	Likely	Likely	Likely	No, but adds new stream crossing	Unlikely	Likely	Likely	Yes	Yes	Yes	Yes	Yes	Yes	11
US 101 Palo Alto RAB Future 2 WB Lanes	Likely	Unlikely	Likely	Likely	Unlikely	No	Unlikely	TBD	Unlikely	Likely	Likely	TBD- unlikely	Likely	Likely	Likely	5
US 101 Simdars RAB and Ramps	Likely	Unlikely	Likely	Unlikely	Unlikely	TBD	Unlikely unless culvert to be replaced	Likely	Likely	Likely	Likely	TBD- depends on jurisdictional determination of irrigation ditches	Likely	Likely	Likely	10
US 101 Simdars to Palo Alto	Unlikely	Likely	Likely	Likely	Likely	No, but adds 2 new stream crossings	Unlikely	Likely	Likely	Likely	Likely	Yes- 2 new stream crossings	Yes	Yes	Yes	11
Palo Alto Realignment to Whitefeather Way	Likely	Unlikely	Likely	Unlikely	Likely	Yes but impacts TBD	Unlikely unless culvert to be replaced	TBD	Unlikely	Likely	Likely	TBD- depends on	Likely	Likely	Likely	9
Combined access to single US 101 roundabout at Whitefeather Way	Likely	Unlikely	Likely	Likely	Likely	Yes	Likely due to likely culvert replacement	Likely	Likely	Likely	Likely	Yes- 1 new stream crossing, 1 stream buffer	Yes- significant stream buffer	Yes- significant stream buffer	Yes- significant stream buffer	12
ITS variable message board and camera on US 101	Unlikely	No	No	No	No	No	No	TBD	Unlikely	No	No	No	No	No	No	0
Left turn lane at US 101 / Palo Alto Road	Unlikely	No	No	Unlikely	Unlikely	No	Unlikely	TBD	Unlikely	Unlikely	Unlikely	No	Unlikely	Unlikely	Unlikely	0
Adding illumination and signage on US 101 between Happy Valley and Palo Alto	Unlikely	No	No	No	No	No	No	TBD	Unlikely	No	No	No	No	No	No	0
Bike ped bridge over US 101 at Happy Valley Road connecting to Olympic Discovery Trail	Likely	Unlikely	Likely	Unlikely	Unlikely	No	Unlikely	TBD	Unlikely	Unlikely	Unlikely	No	Unlikely	Unlikely	Unlikely	2

ECONOMIC DEVELOPMENT						
Strategy	Consistent with local plans	Investment is within Urban Growth Area	Located on or providing connection to state designated freight economic corridors (statewide freight plan)	Located within designated Qualified Opportunity Zone (Dept. Commerce)	Census 2019 data - Jobs thermal sensitivity map	Total Score
	Scoring Yes = 2 No = 0	Scoring Yes = 2 Partial = 1 No = 0	Determines if improvement on a T2 or T4 freight economic corridor or is not	A QOZ is an economically distressed community where new investments, under certain conditions, may be eligible for preferential tax treatment. Localities qualify as QOZs if they have been nominated for that designation by a state, the District of Columbia, or a U.S. territory and that nomination has been certified by the Secretary of the U.S. Treasury via his delegation of authority to the Internal Revenue Service (IRS).		
New US 101/Simardas Road on and offramps w/ Simardas Road roundabout	Yes 2	Yes 2	Yes 2	Yes 2	2	10
Happy Valley to Simardas Road frontage road	Yes 2	Yes 2	No 0	No 0	2	6
Simardas to Palo Alto frontage road	Yes 2	Yes 2	No 0	Partial 1	2	7
Palo Alto to Simardas frontage road O'Connor Connector	No 0	Partial 1	No 0	Partial 1	1	2
Palo Alto Road realignment to Whitefeather Way	No 0	Yes 2	Yes 2	Yes 2	2	6
Happy Valley Road and US 101 roundabout	No 0	Yes 2	Yes 2	No 0	0	4
US 101 Palo Alto RAB Future 2 WB Lanes	No 0	Partial 1	Yes 2	Yes 2	2	5
Combine access to single US 101 roundabout at Whitefeather Way	No 0	Partial 1	Yes 2	Yes 2	2	5
Bike ped bridge over US 101 at Happy Valley Road connecting to Olympic Discovery Trail	No 0	Yes 2	No 0	Yes 2	2	4
ITS variable message board and camera on US 101	No 0	Yes 2	Yes 2	Partial 1	1	5
Left turn lane at US 101 / Palo Alto Road	No 0	Yes 2	Yes 2	Yes 2	2	6
Adding illumination and signage on US 101 between Happy Valley and Palo Alto	No 0	Yes 2	Yes 2	Partial 1	1	5

SOLUTIONS	LEVEL OF TRAFFIC STRESS										NOTES/COMMENTS
	Network Level of Traffic Stress (LTS) Analysis					Intersection Level of Traffic Stress (LTS) Analysis					
	Bicycle	Pedestrian	Bicycle	Pedestrian	Speed Limit	Bicycle	Pedestrian	Bicycle	Pedestrian	Speed Limit	
Simdars Road Interchange Ramps - new US 101 roundabout	20	1	0	20	2	20	1	0	20	2	Add a single lane roundabout (eliminate eastbound approach slip lane, green pavement markings added on the southbound approach near the Olympic/Discovery Trail connector).
Existing Conditions	35	1	0	35	2	35	2	35	2		
LTS Points under existing conditions	4	4	4	4	4	4	4	4	4		
LTS Points with new solution changes	2	2	2	2	2	2	2	2	2	Assumptions made from network level perspective and includes 35 MPH design speed, 11 foot lanes, 3 foot shoulders for this alternative. Bike lanes are not included in current configuration.	
Happy Valley to Simdars frontage road	35	1	0	35	2	35	2	35	2		
Existing Conditions	-	-	-	-	-	-	-	-	-		
LTS Points under existing conditions	-	-	-	-	-	-	-	-	-	Assumptions made from network level perspective and includes 35 MPH design speed, 11 foot lanes, 3 foot shoulders for this alternative. Bike lanes are not included in current configuration.	
LTS Points with new solution changes	4	4	4	4	4	4	4	4			
Existing Conditions	35	1	0	35	2	35	2	35	2		
LTS Points under existing conditions	-	-	-	-	-	-	-	-	-	Assumptions made from network level perspective and includes 35 MPH design speed, 11 foot lanes, 3 foot shoulders for this alternative. Bike lanes are not included in current configuration.	
LTS Points with new solution changes	4	4	4	4	4	4	4	4			
Existing Conditions	35	1	0	35	2	35	2	35	2		
LTS Points under existing conditions	-	-	-	-	-	-	-	-	-	Assumptions made from network level perspective and includes 35 MPH design speed, 11 foot lanes, 3 foot shoulders for this alternative.	
LTS Points with new solution changes	4	4	4	4	4	4	4	4			
Existing Conditions	35	1	0	35	2	35	2	35	2		
LTS Points under existing conditions	-	-	-	-	-	-	-	-	-	Evaluation is based on intersection only and not a corridor perspective.	
LTS Points with new solution changes	4	4	4	4	4	4	4	4			
Existing Conditions	55	1	0	55	3	55	3	55	3		
LTS Points under existing conditions	4	4	4	4	4	4	4	4	4	Evaluation is based on intersection only and does not consider the entire corridor	
LTS Points with new solution changes	3	3	3	3	3	3	3	3			
Existing Conditions	20	1	0	20	2	20	2	20	2		
LTS Points under existing conditions	55	1	0	55	1	55	2	55	2	Evaluation is based on intersection only and does not consider the entire corridor	
LTS Points with new solution changes	4	4	4	4	4	4	4	4			
Existing Conditions	20	1	0	20	1	20	2	20	2		
LTS Points under existing conditions	55	1	0	55	1	55	3	55	3	Assumptions made from network level perspective and includes 35 MPH design speed, 11 foot lanes, 3 foot shoulders for this alternative. Bike lanes are not included in current configuration.	
LTS Points with new solution changes	4	4	4	4	4	4	4	4			
Existing Conditions	35	1	0	35	1	35	2	35	2		
LTS Points under existing conditions	-	-	-	-	-	-	-	-	-	Assumptions made from network level perspective and includes 35 MPH design speed, 11 foot lanes, 3 foot shoulders for this alternative. Bike lanes are not included in current configuration.	
LTS Points with new solution changes	4	4	4	4	4	4	4	4			
Existing Conditions	55	1	0	55	1	55	2	55	2		
LTS Points under existing conditions	4	4	4	4	4	4	4	4	4	Adds a westbound left turn lane on US 101 at Palo Alto Road	
LTS Points with new solution changes	4	4	4	4	4	4	4	4			
Existing Conditions	55	1	0	55	1	55	2	55	2		
LTS Points under existing conditions	55	1	0	55	1	55	2	55	2	Adding illumination and signage in vicinity of Palo Alto and Happy Valley Roads	
LTS Points with new solution changes	4	4	4	4	4	4	4	4			
Existing Conditions	55	1	0	55	1	55	2	55	2		
LTS Points under existing conditions	4	4	4	4	4	4	4	4	4	LTS Points with new solution changes	
LTS Points with new solution changes	4	4	4	4	4	4	4	4			
Existing Conditions	15	1	0	15	1	15	2	15	2		
LTS Points under existing conditions	55	1	0	55	1	55	2	55	2	LTS Points with new solution changes	
LTS Points with new solution changes	4	4	4	4	4	4	4	4			
Existing Conditions	1	1	1	1	1	1	1	1			