

I-5 Skagit Transportation Study Report

Phase 1



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Acronyms & Abbreviations

AADT	Average Annual Daily Traffic
ADT	Average Daily Traffic
AWSC	All Way Stop Control
ESO	WSDOT Environmental Services Office
FHWA.....	Federal Highway Administration
GMA.....	Growth Management Act
HCM.....	Highway Capacity Manual
RTPO.....	Regional Transportation Planning Organization
LOS.....	Level of Service
MP	Mile Post
OFM.....	Office of Financial Management
RTP	Route Development Plan
SOV	Single Occupant Vehicle
SR.....	State Route
STS	Skagit Transportation Study
SCOG	Skagit Council of Governments
TDM.....	Transportation Demand Management
TSMO	Transportation System Management & Operations
TWSC.....	Two Way Stop Control
WSDOT.....	Washington State Department of Transportation



I-5 Skagit Transportation Study

Phase 1



Introduction

The Washington State Department of Transportation Northwest Region Mount Baker Area initiated the Interstate 5 (I-5) Skagit Transportation Study Phase 1 to address capacity and safety performance issues identified in the 2021 Technical Report:

Interstate 5 Existing Conditions Analysis Mount Vernon/Burlington. This effort is also part of a larger statewide effort for I-5 from the U.S.-Canada border to the Washington-Oregon border. Three areas were analyzed in the initial study and included the traffic operations analysis, safety analysis and merge threshold analysis. The analysis discovered that there were some segments on the corridor that experience higher vehicle density and poor levels of service for traffic, ramp operations and crashes.

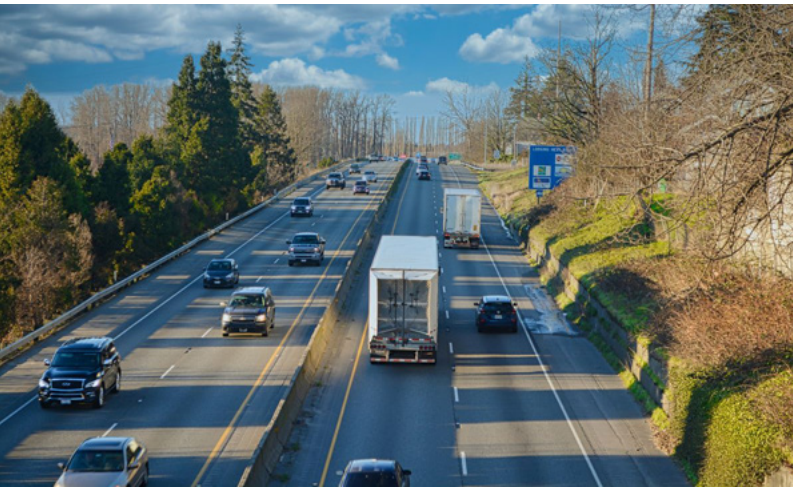
Using the information and findings from the 2021 technical analysis, WSDOT, along with its planning partners have moved to the next stage of the transportation study to address the safety and congestion needs identified in the 2021 Existing Conditions Analysis.

To address these issues the I-5 Skagit Transportation study was divided up into two phases. Phase I will gather additional multimodal transportation and social economic data, incorporate environmental factors conduct a robust and equitable community engagement process, and analyze current (2022) and future (2045) transportation conditions to determine how I-5 in Skagit County can better meet regional mobility and safety needs. Phase II will include the identification of near and mid-term strategies and solutions alternatives to areas in the corridor not meeting state transportation performance expectations.

This study will improve information sharing and support project delivery by minimizing duplication between planning and environmental review processes. It will be performed in a way where the outcomes could be incorporated into a Planning and Environmental Linkages (PEL) study, if needed, or the project that results from this study could go directly into a National Environmental Policy Act (NEPA) process.



Introduction



I-5 North through Mount Vernon

Project Area

The study area spans the 9-mile-long corridor that runs through the urban areas of Mount Vernon and Burlington in Skagit County. The focus area of the corridor is the segment along I-5 from Old 99 Highway (exit 224) to Cook Road (exit 232), as shown in Exhibit 1. The major commercial areas within the two cities in the study area are near the Skagit River bridge.

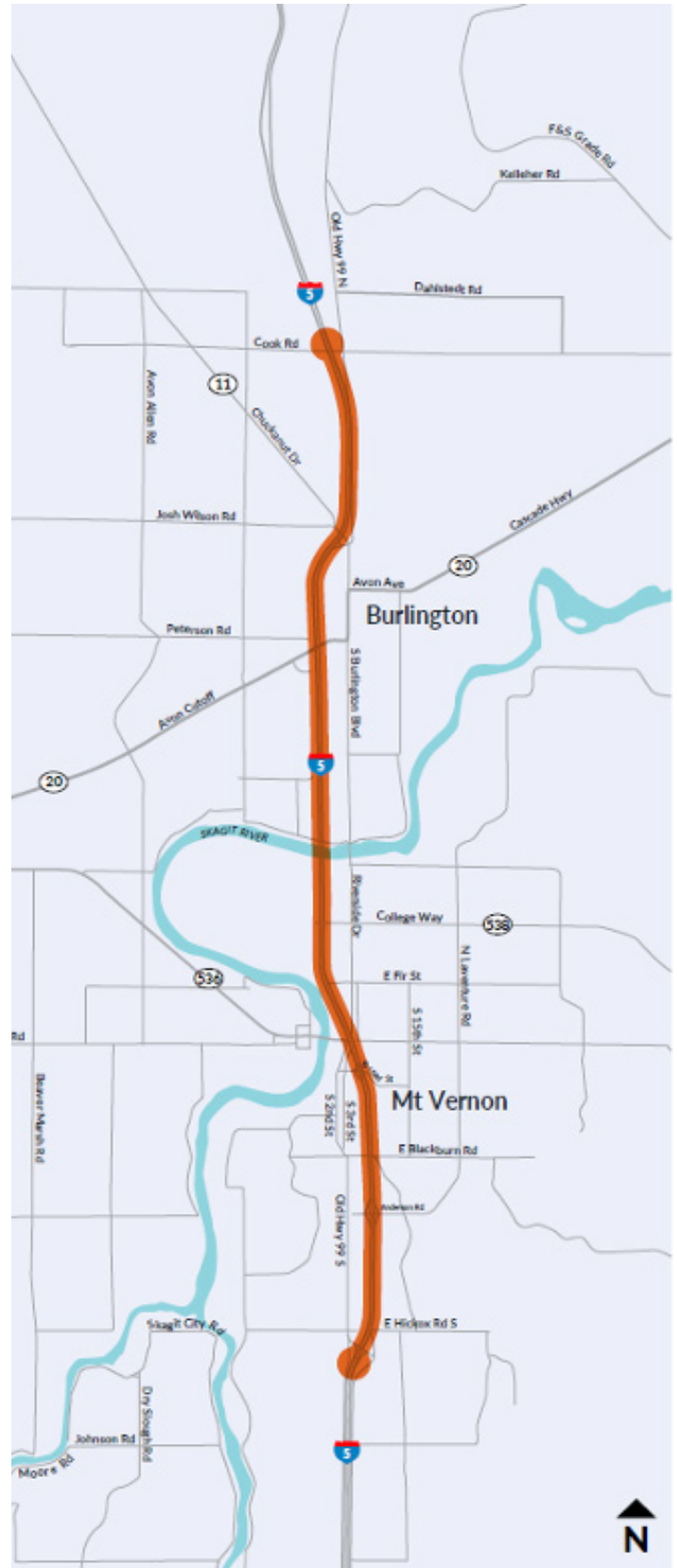


Exhibit 1 Project Area



Purpose

The purpose of this Skagit I-5 Transportation Study is to investigate and assess the existing and future transportation needs with respect to vehicular congestion, operations and safety issues, as well as the reliability of the interstate to transport commerce in accordance with adopted FHWA regulations and the Washington State Department of Transportation guidelines, including Practical Solutions and TSMO best practices.

This study will analyze current and future conditions and overlay those needs with the community use of the interstate and the environmental issues within the corridor.

The purpose of the project is to ensure that I-5 is performing at expected levels for passenger vehicles, freight, transit, and active modes and provide support for increased person throughput.



Need

The project needs related to the purpose statement are outlined below.

Enhanced Mobility

Traffic volumes in this corridor are near or exceeding highway design vehicle throughput capacity during peak travel periods during weekday pm peak periods. North and south of the Skagit River Bridge, traffic volumes are approximately 77,000 average daily traffic (ADT), but increase to 81,000 ADT at the Skagit River Bridge.

According to the Skagit Council of Government (SCOG) **2018 Regional Transportation Plan**, travel demand model forecasts, daily traffic volumes are expected to increase along the I-5 corridor, with 2045 weekday volumes expected to be between 6 and 7 percent higher than today.

Skagit Transit provides fixed route bus transit service throughout the Skagit region with connections to Bellingham via Whatcom Transportation Authority (WTA) buses and to Everett via Community Transit. Amtrak Cascades provides daily rail service into Seattle. Buses can sometimes experience increased traffic congestion, increased travel times, and variable schedule reliability for transit riders in the corridor.

Population Growth

The current populations of Mount Vernon and Burlington have higher than average Hispanic or Latino residents, limited English language speakers, people living with disabilities and without health insurance, and high percentages of aging veterans. Future population and employment growth in the area indicates a need for increased local and regional transit, but light rail ridership potential may be low and commuter rail may not be financially feasible.

The Old Highway 99 to Cook Road section of I-5 will continue to operate near or at capacity during evening commute hours and during special events, such as the Skagit Tulip Festival, I-5 will experience periodic overload with ramp queues backing up not mainline I-5. Years of local resident experience make this more evident than even the data indicates.



Mount Vernon from the Kincaid St. Exit

The cities of Mount Vernon and Burlington are growing, and daily traffic volumes are expected to increase with 2045 weekday pm peak volumes expected to be 6 to 7 percent higher than today. The Skagit region is forecast to grow by 46,000 residents and 80% (36,800) of those new residents are supposed to be accommodated in urban areas, such as Mount Vernon and Burlington (**SCOG Regional Transportation Plan**).

Skagit Transit provides fixed route bus transit service through both Mount Vernon and Burlington, but in order for maximum efficiency to be realized to move people, not just cars.

The cities of Mount Vernon and Burlington will need to re-envision land use patterns, provide opportunities for local residents to use alternative modes of transportation such as transit and enhancing walking and bikes/rolling options to transit stops and facilities. Improving access, frequency and reliability for transit could take vehicle trip pressure off of I-5 for local trips.

All cities in the Skagit region are currently required to update their comprehensive plans and transportation element by 2025. This will provide an ideal opportunity to create better ways for people to move around their community without having to get in a car or to get onto I-5 to get to local destinations. It will also provide an opportunity to match transportation facility needs on both the local roadways and state highway to address existing and future land uses.



Freight Mobility

The Skagit Valley is a major agricultural production region area and relies heavily on the ability for food and produce to be shipped to market in a timely and efficient manner. I-5 is an international conduit from farm to market spanning the entire west coast of North America from Canada to Mexico. In addition to many local agricultural products being shipped from the Skagit region, I-5 allows outside products to be shipped into the Skagit region.

Increased traffic congestion on I-5 can have negative effects on the reliability and efficiency to transport goods, some of which may be perishable and time-sensitive. The project team included freight trucking schools and agricultural shipping interests in this Phase 1 study of the Skagit I-5 corridor and their concerns are being considered in the recommendations for further study in Phase 2.



Study Area Characteristics

- I-5 in Skagit County is part of the 48,000-lane mile, limited-access, national Interstate system. FHWA, along with the WSDOT, are responsible for this system and recognize that the interstate system is also a part of regional and local transportation systems.
- As mentioned earlier, this study is also part of a larger statewide I-5 Master Plan effort to address regional transportation needs between B.C. Canada and the Oregon border.
- The study area is about 9-miles in length with an estimated current population of about 41,000 residents in the Mount Vernon – Burlington urban area and surrounding County.
- I-5 is a four-lane divided interstate and consisting of two 12-foot driving lanes with 8-foot shoulders in each direction, except on the Skagit River Bridge where the shoulders narrow to 3 feet.
- Bicycles are permitted on a portion of the interstate but restricted between the SR 528/ College Way Interchange (Exit 227) and George Hopper Road Interchange at Exit 229. Many local streets in the urban area permit bicycle use, but only a few have dedicated bicycle lane facilities.
- The posted speed limit is 60 MPH in the Mount Vernon – Burlington urban areas and 70 MPH on the north and south ends of the study area.
- There are eight interchanges at least one-mile apart within the corridor with a total of 30 ramps that provide access on and off I-5 to local communities. Four interchanges provide connections to State Routes (SR) 536, SR 538, SR 20 and SR 11. There are two east-west street crossings of I-5 in Burlington and four east-west street of I-5 in Mount Vernon.
- The Skagit River flows between Mount Vernon and Burlington. There are only two north-south bridges across the Skagit River: the Skagit River Bridge (known as the I-5 Trooper Sean M. O'Connell Jr. Memorial Bridge) and the Riverside Bridge connecting Burlington Boulevard to Riverside Drive in Mount Vernon.
- An additional bridge is located on SR 536 south through Mount Vernon connecting to SR 20. This section of SR 536 serves as an alternate route to Anacortes/San Juan ferry and Whidbey Island.



Existing Conditions—Environment, Land Use, Population, Demographics

Environment

Per WSDOT environmental guidance for planning studies, the project team conducted a qualitative environmental screening of the study area, provided in (Appendix A). This assessment included a desktop review of available information sources, along with a brief reconnaissance level screening for wetland and stream features. This study did not include all environmental information considered at the project level. That will occur in Phase 2 work. No environmental constraints were identified within the study area at this preliminary stage.

Climate Vulnerability Impacts

The assessment found the 9-mile long study area to be of a moderate to high vulnerability for increased impacts from climate change. Specifically, state Routes 11, 20 and 536 were identified as high-potential for increased climate impacts, while SR 530 was projected as low-potential for vulnerability from climate impacts but could still be affected by reduced capacity.

Chronic Environmental Deficiency

No Chronic Environmental Deficiency priorities were identified within the study area.

Fish Passage Barriers

There are ten (10) fish-bearing crossings within the study area, two (2) of which have been designated as fish passage barriers. Both barriers are located in Mount Vernon jurisdiction and are scheduled for upcoming replacement by WSDOT.

Habitat Connectivity Improvements

The study area was identified as low to medium priority for investing in habitat connectivity improvements and was also ranked low to medium for pollinator habitat risk. Two (2) high-rank urban gateway areas were identified in Mount Vernon for pollinator habitat restoration.

Noise Wall Priorities

The need for new noise walls along I-5 in the urban portions of the study area was determined to be moderate to high.

Stormwater and Wetland Retrofit Priorities

There are four (4) approved Total Maximum Daily Loads (TMDL) identified within the study area, one (1) TMDL that is in development, and three (3) total 303(d) listed waters. It is expected that all mapped stormwater discharge points in the study area will require compliance with TMDL actions.

Currently, there are fifty-two (52) potential wetlands, eight (8) streams, and zero (0) WSDOT mitigation sites within the study area. Identified potential wetlands and streams within the study area can be seen in Exhibit 2 below. A total of twenty-six (26) bridges and culverts were identified within the study area, though none met the criteria for historic status.

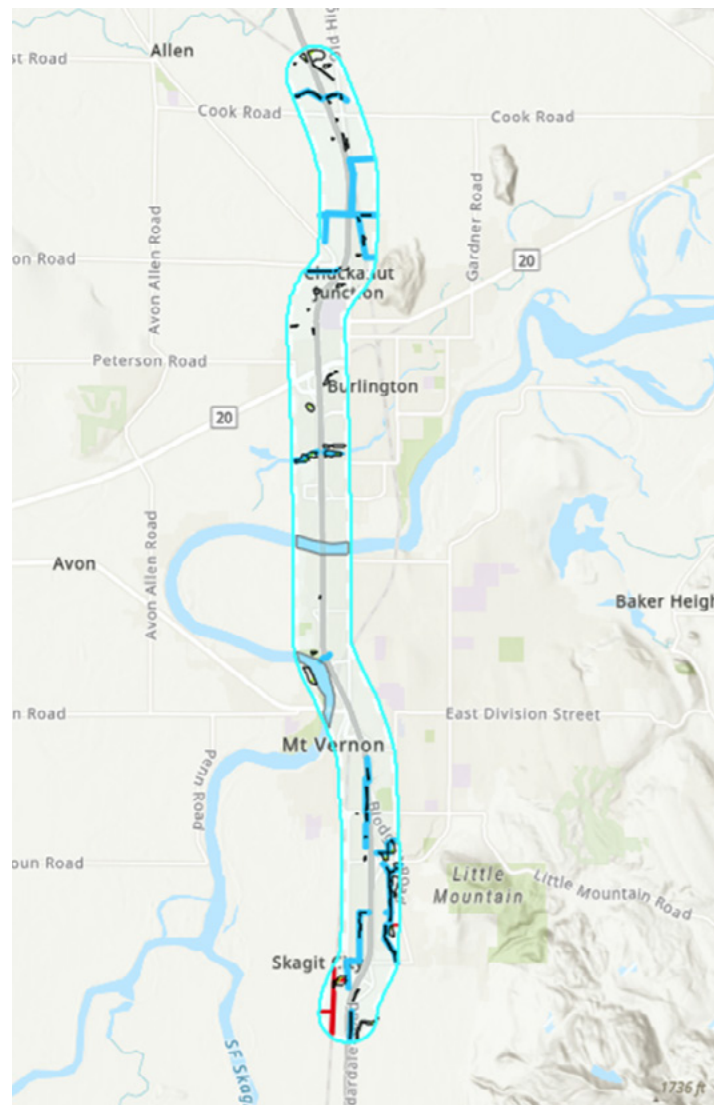


Exhibit 2 Study Area and Environmental Factors
(Note: Light blue = streams; Red = Ditch)



Land Use—Transportation Context

Interstate 5 through Skagit County was constructed in the mid-1960's and the urban areas of Mount Vernon and Burlington have grown primarily along the east side of the freeway. Currently, Mount Vernon has 35,500 residents, Burlington has 9,800 residents, and the combined city and surrounding urban growth area population is about 40% of Skagit County's total current population of 131,179.

Interstate 5 is a critical transportation link connecting Skagit County to Whatcom and Snohomish counties and I-5 is the primary north-south crossing of the Skagit River. While I-5 provides a critical north-south link, it also a limited access facility that bisects the cities of Burlington and Mount Vernon and creates a major mobility barrier to east-west travel for all modes of transportation including walking, bicycling, riding transit, and driving vehicles, including freight and farm equipment.

Average daily traffic (ADT) on I-5 is about 77,000 vehicles in the northern portion of the study area, about 81,000 ADT at the Skagit River Bridge, and about 77,000 vehicles in the southern portion of the study area. As is typical on freeways in urban areas, weekday peak hour traffic congestion occurs primarily from 3-7pm. As documented in the 2021 baseline study, I-5 nears through-put capacity in some places, has higher than average safety issues in the southbound lanes from SR 20 to George Hopper and from College Way to Kincaid Street, and there are some issues of concern with traffic and operations regarding the merging of vehicles from on-ramps to mainline I-5.



Exit 230 (SR 20) Ramp

In addition to I-5, State Routes 11, 20, 536, and 538 are major east-west connections that bisect Burlington, Mount Vernon, and Skagit County. These state highways are also critical links in the regional transportation network, but can also pose mobility barriers to north-south travel, especially for people walking, biking, and rolling. The presence of these major state highway transportation routes through these urban areas has influenced local land use development, the types of commercial and retail services that are available along them, and the type of trip-making that occurs. In commercial areas, these major routes are typically characterized by retail, restaurants, services, and offices. In residential areas, these major routes are typically characterized by lower income housing populated by higher percentages of non-white people with limited English language proficiency.



Population, Socio-Economic, and Demographic Profile

Skagit County currently has 131,179 residents, most of whom live in the western half of the county. Mount Vernon is the largest city with 35,500 residents and Burlington has 9,800 residents. Exhibit 3 highlights the people per square mile in the vicinity of I-5.

According to U.S. Census data (Table 1), compared to the reference communities of Skagit County and Washington State, Mount Vernon and Burlington have higher percentages of:

- Hispanic or Latino residents
- Spanish language spoken at home
- Non-English languages spoken at home
- Residents living in poverty, and
- Residents living with disabilities

Other notable demographic observations include:

- Mount Vernon, Burlington, and Skagit County have high percentages of residents living without health care coverage.
- Skagit County has a high percentage of senior residents over 65 years old
- Burlington has a high percentage of resident military veterans
- Mount Vernon has a high percentage of school-age residents under 18 years old

Many of these groups have special needs and mobility challenges related to where they live and where they need to go and many are affected by the physical presence, and mobility barrier, of I-5.

More specific data can be found in Appendix B. Population, Socio-Economic, Demographic Profile.

Population, socio-economic, and demographic conditions are changing in the Skagit Valley and, according to the SCOG Regional Transportation Plan, the Skagit region is expected to grow by 46,000 residents to a total county population of 177,000 by 2045.

County-wide planning policies agreed to by all jurisdictions within Skagit County direct that 80% (36,800) of these new residents be accommodated in cities, towns, and Urban Growth Areas (UGA). Skagit County, Mount Vernon, Burlington, Sedro-Woolley, Anacortes, and La Conner are all working on Comprehensive Plan updates that are due in 2025.

Phase 2 of the Skagit I-5 Transportation Study will go into greater depth to understand issues that were brought to light in the June 7 Advisory Group Meeting, as well as the Stakeholder interviews and the various community engagement activities that occurred in late June 2023. Collaborating with local land use and transportation officials in Mount Vernon and Burlington, as well as a deeper look into block-level U.S. Census data will help the project team to pin-point specific populations that have more specific transportation needs. This work will help to inform both the WSDOT study as well as the local comprehensive plans for Mount Vernon, Burlington, and Skagit County.

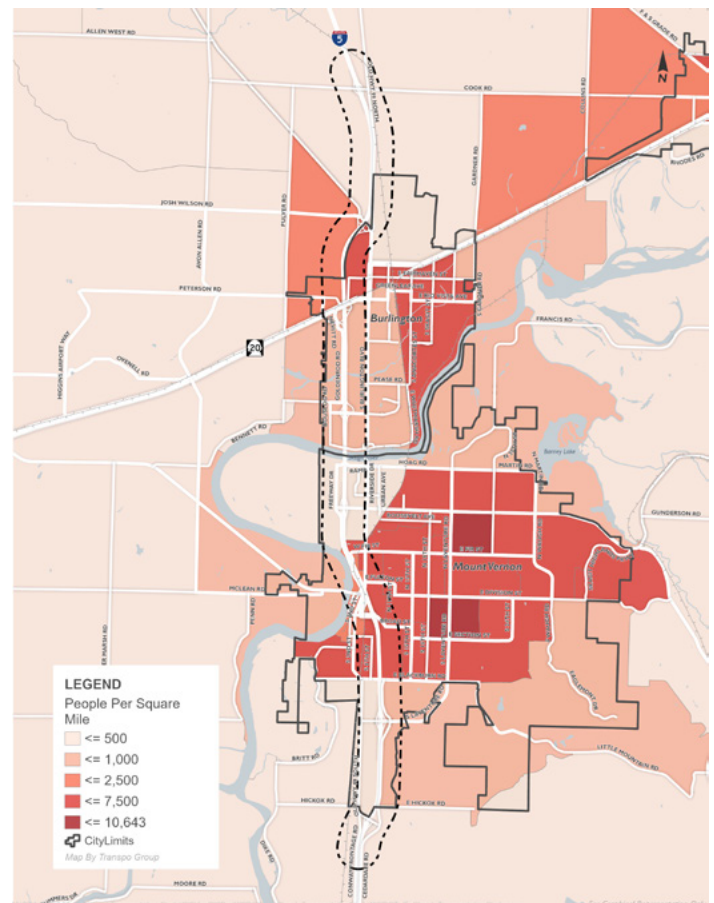


Exhibit 3 Persons Per Square Mile in the Vicinity of I-5



Environmental Justice

The Skagit I-5 Study incorporates environmental justice principles according to current WSDOT guidance for planning studies and will also consider the evolving direction regarding the **2021 Healthy Environment for All (HEAL) Act**. Phase 1 of the study will collect population, socio-economic, and demographic data, as well as data regarding health disparities of the people served by and impacted by Interstate 5 who live within the study area.

Phase 1 environmental justice data sources are listed at **Environmental guidance - Environmental justice & Title VI | WSDOT** (wa.gov) and include:

- **EJ Screen** produced by the U.S. Environmental Protection Agency (EPA)
- **Washington Tracking Network** - Washington State Department of Health (DOH)
- **2022 SCOG Coordinated Public Transit - Human Service Transportation Plan** (HST)

The U.S. Census is also a source of information at the census tract level for Phase 1 and web site links for U.S. Census data sources are provided with Table 1.

Environmental Justice Study Area Data

WSDOT provides specific guidance for defining an Environmental Justice Study Area required by the National and State Environmental Policy Act (NEPA/SEPA). Several thematic GIS maps have been created to highlight the I-5 study area (See below). Each map depicts the geographic distribution of population, socio-economic, demographic, or health disparity clusters and patterns within and around the study area according to census tracts. A general discussion of the thematic findings is provided with the maps below and will be used to identify potential outreach opportunities to stakeholder groups and to further develop the Phase 2 Environmental Justice Analysis (EJA).



Inclusion of Regional Native American Tribal Governments

WSDOT and consultants have made special efforts to reach out to the five native American tribal governments (Suak-Suiattle; Stillaguamish; Swinomish; Samish; and Upper Skagit) in the Skagit region and have invited all to participate in advisory meetings and stakeholder interviews to express their observations, issues, and concerns related to I-5.

Observations of the Demographic Data

Table 1 includes U.S. Census population, socio-economic, and demographic data for the cities of Mount Vernon and Burlington in comparison to data for Skagit County and Washington State. Exhibit 4 highlights percent of low-income households in the vicinity of I-5.

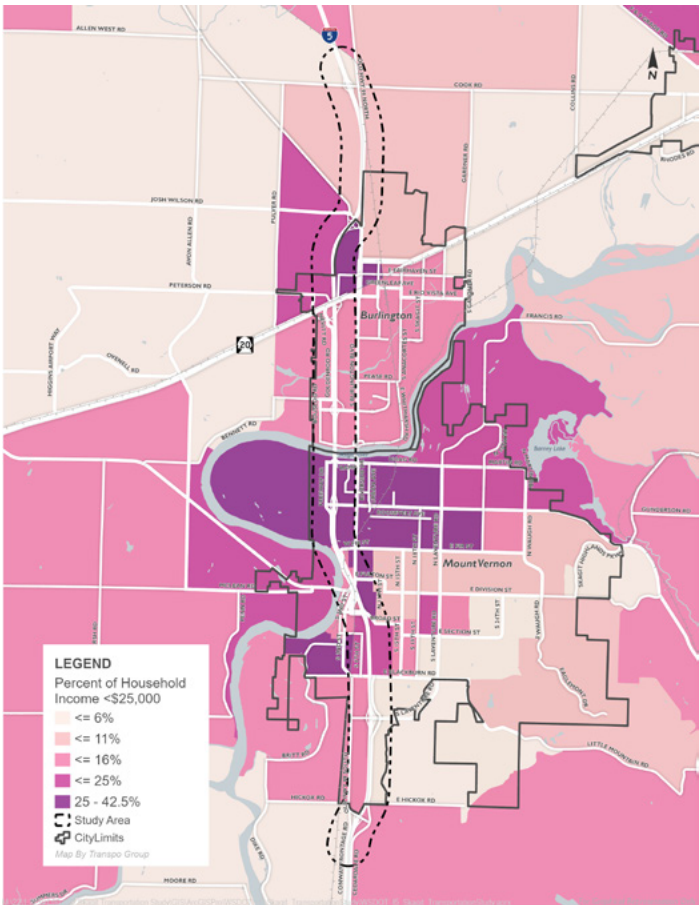


Exhibit 4 Persons Per Square Mile in the Vicinity of I-5

Table 1 Comparison of Population, Socio-Economic, and Demographic Data for I-5 Skagit Transportation Study Area

Categories	Mount Vernon	Burlington	Skagit County	Washington
Total Resident Population	35,000	9,800	131,179	7,785,786
Hispanic or Latino Residents	33.7%	31.0%	19.5%	13.6%
Spanish Spoken at Home	26.6%	21.7%	18.5%	10.6%
Non-English Spoken at Home	30.8%	25.7%	16.5%	20.8%
Education—Bachelor's or Higher	25.4%	22.6%	28.6%	39.0%
Housing Units	13,457	3,645	57,126	3,202,241
Owner-Occupied Housing	62.6%	50.0%	70.5%	64.0%
Median Gross Rent/Month	\$1,114	\$1,331	\$1,217	\$1,484
Area Employment Rate	58.1%	58.2%	58.3%	59.1%
Median Household Income	\$62,706	\$58,345	\$75,308	\$84,247
Residents Living in Poverty	16.5%	14.3%	11.6%	9.9%
Residents with Disability	14.2%	17.3%	9.8%	13.1%
Residents without Health Care Coverage	9.5%	9.9%	8.9%	6.4%
Residents Under 18 Years Old	26.1%	22.9%	21.3%	21.7%
Median Age of Residents (Years)	33.9	36.2	41.6	38.2
Residents Over 65 Years Old	16.8%	17.1%	21.8%	16.2%
Residents Military Veterans	7.7%	12.1%	8.0%	8.2%

INFORMATION SOURCES

MOUNT VERNON
[data.census.gov/profile/Mount Vernon city](https://data.census.gov/profile/MountVernon)

BURLINGTON
[data.census.gov/profile/Burlington city](https://data.census.gov/profile/Burlington)

SKAGIT COUNTY
data.census.gov/quickfacts/skagitcountywashington

WASHINGTON
data.census.gov/quickfacts/fact/table/WA/PST045222



Community Engagement

Community engagement was a central piece of this Phase 1 portion of the I-5 Skagit Transportation Study. As part of Phase I of the study, equitable communication and stakeholder engagement strategies sought to solicit, understand, and respond to the concerns of the community by conducting meetings, attending social gatherings, meeting residents where they shop and congregate, and through an online survey. The project team was committed to including community members in this process, with an emphasis on reaching and involving people who have been historically underrepresented in planning processes. The engagement activities outlined in this plan supported an effort to meet community members where they were and empower the public to make their voices heard and be a part of the process.

Priority audiences included environmental justice communities, such as low-income and minority communities. WSDOT utilized a suite of engagement tools to inform the study, such as stakeholder interviews, targeted outreach, online surveys, an Advisory Committee, fact sheets, and other project materials. Project materials, including the fact sheet, project website, and survey were translated into Spanish.

The community's collective experiences, challenges, and goals will be considered alongside the technical analysis. Together, they will validate the findings from the 2021 Existing Conditions Analysis and set the foundation for the development of alternatives that addressed these challenges, and identify solutions that meet the needs of WSDOT, partner agencies, and the community.

See the Community Engagement Summary Report in Appendix C for a detailed account of the extensive outreach efforts and engagement activities in Phase 1 for organizations, agencies, and community stakeholders, including *WSDOT Environmental Justice Guidelines*.

Engagement Goals

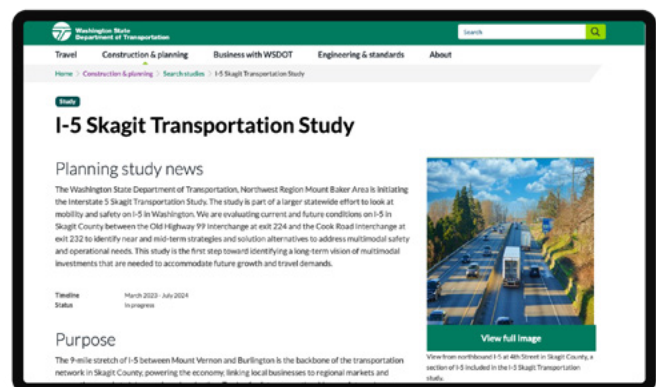
- Validate the findings from the community engagement performed during the 2021 Existing Conditions Analysis
- Identify community needs in the study area, including the needs of residents, businesses, and other stakeholders
- Engage the community throughout the process to ensure that community needs are met and to build understanding and support for potential improvements

Engagement Strategies

The project team implemented the following strategies shown in Exhibit 5 to inform and involve the community in Phase I of the I-5 Skagit Transportation Study.

Stakeholder Engagement

The project team reached out to a wide range of stakeholders to spread awareness and to build participation in Phase I of the Study, including City, County, and Transit agency offices, School Districts, Public and Private Schools, Child Development Centers, Community Colleges, Police and Fire Departments, State Patrol, Health Districts, Ports, Native American Tribes, Agricultural Businesses, Chambers of Commerce and Economic Development Interests, Commercial Retail Stores, Environmental Advocacy Groups, Hispanic Advocacy Groups, Medical Care Providers, Automotive Businesses, and Freight Trucking Schools and Businesses.



Project Website



Stakeholder Interviews Summary

The project team interviewed local government agencies and community-based organizations within the study area to build relationships, understand the needs of communities they serve or represent and gather input on engagement strategies for future phases of the study. Interviews were based on stakeholder's location within the study area, diversity of communities served and ability to share information internally and to other organizations in the community. Priority stakeholders contacted included the following groups:

- Community Action's Latino Advisory Committee
- Catholic Community Services
- Skagit County Farm Bureau
- Burlington Chamber of Commerce
- Mount Vernon Chamber of Commerce (Interviewed on June 9, 2023)
- Friends of Skagit County
- Burlington-Edison School District
- Mount Vernon School District (Interviewed on June 14, 2023)
- Skagit Transit (Interviewed on June 14, 2023)
- North Cross Commercial Driving School, LLC
- Taylor Made TDS Inc
- Skagit City Trucking School LLC

The project team reached out to the above priority stakeholders and held in-depth stakeholder interviews with three organizations. While some groups did not respond to our multiple outreach attempts, we still provided information such as the link to the English and Spanish version of the online survey and fact sheet.

Interviewees provided additional context about the communities they serve and shared feedback about how and why people in their communities travel along the I-5 corridor, barriers to traveling within the study area, actions they take to avoid those barriers and strategies to engage the community in future phases of the study. See the Community Engagement Summary Report for a detailed summary.

Survey Results

During Phase I of the I-5 Skagit Transportation Study, WSDOT solicited input via a public community survey to understand challenges experienced on I-5 in the Mount Vernon and Burlington area. The survey focused on travel patterns on local roads, preferred modes of travel, and barriers and opportunities experienced when traveling in or through Mount Vernon and Burlington.

The survey ran from June 8 through June 26, 2023. A Spanish version of the survey ran from June 15 through June 26, 2023. People without internet or computer access were offered computer access at local libraries and via paper copies of the survey. A total of 1,144 people participated in the survey. WSDOT published the survey on the project website and shared the survey via Twitter and targeted emails to stakeholders. Additionally, the project team hosted pop-up events on June 23 at Skagit Station, Skagit Valley Food Co-op and Burlington Fred Meyer.

See the Community Engagement Summary Report for a detailed summary of engagement activities including details about who, when, where, and why.

Outreach Results

- In May and June 2023, the community engagement team spent significant time and effort reaching out to the community in a wide variety of ways. A community advisory group was convened on June 7, 2023 with a wide variety of stakeholders participating.
- In mid-June, stakeholder interviews were held with a variety of community individuals and interest groups.
- In mid-June an online community survey was launched and broadly advertised to individuals and community groups.
- Near the end of June, several stations were placed at community gathering locations and community members were asked to participate in surveys.



Community Engagement

Phase I (Spring/Summer 2023)						
Audience	General public, priority communities	Community-based organizations, general public priority communities	General public, priority communities	CBOs; priority communities	General public	Advisory Committee
Strategies	Distribute awareness-building project materials to the community The team will develop and distribute a range of materials throughout the community to connect people with project resources and opportunities to engage in this process.	Send targeted emails and phone calls to partners and community groups WSDOT and the consultant team will proactively reach out to key partners and community groups to build an informed audience and connect people with opportunities to engage in this process.	Table at community gathering places Tabling at community gathering places, such as grocery stores and farmers markets will support engaging with people in the study area who represent overburdened, vulnerable, or traditionally underserved communities, including minority, low-income, and non-English speaking.	Conduct interviews with stakeholders and community groups Interviews will establish an understanding of existing conditions and concerns, as well as identify considerations to support developing potential solutions.	Conduct a survey to gather input on existing issues, concerns and ideas Survey results will help inform the development and analysis of potential strategies and solutions.	Send targeted emails and phone calls to identify Advisory Committee members WSDOT will proactively reach out to key partners and community groups to build participation in the Advisory Committee.
	<ul style="list-style-type: none"> Design, translate and print materials Determine mailing area and send mailer Distribute materials to key community locations Use NW Region and general WSDOT social media to share digital materials, as needed 	<ul style="list-style-type: none"> Develop a contact list Draft emails and phone scripts Send emails and make phone calls Track responses and follow-ups 	<ul style="list-style-type: none"> Identify popular community gathering locations Coordinate with site managers Compile materials for tabling Engage and interact with the public at events 	<ul style="list-style-type: none"> Identify key stakeholders and community groups Develop an interview guide and questions Schedule and conduct interviews Record and analyze interview responses 	<ul style="list-style-type: none"> Develop survey questions and format Choose an online survey platform Promote the survey through various channels Analyze survey responses and summarize findings 	<ul style="list-style-type: none"> Identify Advisory Committee members Reach out to members to build awareness Work with Advisory Committee members to organize workshop Host Advisory Committee workshop
Tools	<ul style="list-style-type: none"> Mailer Flyer Poster Social media posts 	<ul style="list-style-type: none"> Contact list Email template Phone script Project materials Tracking spreadsheet 	<ul style="list-style-type: none"> Table setup Project materials Sign-up sheets 	<ul style="list-style-type: none"> Stakeholder contact list Email template Interview guide Project materials Tracking spreadsheet Stakeholder interview summary 	<ul style="list-style-type: none"> Online survey Promotional materials Survey summary 	<ul style="list-style-type: none"> Contact list Email template Workshop materials
Evaluation	<ul style="list-style-type: none"> Number of events attended Number of people engaged 	<ul style="list-style-type: none"> Number of contacts reached Response rate Level of interest and engagement 	<ul style="list-style-type: none"> Number of events attended Number of people engaged 	<ul style="list-style-type: none"> Number of interviews conducted Representation of interviewees Quality of insights and feedback collected 	<ul style="list-style-type: none"> Number of completed surveys Demographics d representation of survey respondents Quality and diversity of feedback collected 	<ul style="list-style-type: none"> Representation on Advisory Committee Level of interest and engagement Participation in Advisory Committee workshop

Exhibit 5 Community Engagement Strategies and Tools Used





In-Person Outreach

Online Survey Results

Survey Responses and Analysis

From June 8 through June 26, 2023 the project team broadcast the availability of an online community survey throughout the local area. A Spanish language version was also made available to local residents. Community input outlined and summarized below will support WSDOT's understanding of how the community uses I-5 and local roads to move throughout the study area and Skagit County and inform the development of solution alternatives in Phase II.

Questions Asked of Participants

1. When you travel in or through Mount Vernon and Burlington, do you primarily use local roads, I-5 or both?
2. What challenges do you experience when traveling in or through Mount Vernon and Burlington? (Select all that apply)
3. Please tell us more about these challenges.
4. How often do you experience these challenges?
5. Which modes of transportation do you use to travel in or through Mount Vernon and Burlington? (Please select all that apply)
6. Why do you choose to use these modes to travel in and through Mount Vernon and Burlington?
7. Which modes of transportation would you like to be able to use to travel in or through Mount Vernon and Burlington? (Please select all that apply)
8. Why would you like to be able to use these modes to travel in and through Mount Vernon and Burlington?
9. What are your primary reasons for traveling in or through Mount Vernon and Burlington? (Select all that apply)
10. How does I-5 impact your trips when traveling in or through Mount Vernon and Burlington? (500-character limit)
11. Which local roads do you use to avoid traveling on I-5? (500-character limit)
12. Which interchanges do you use to cross I-5 between Mount Vernon and Burlington? (Select all that apply)
13. What are the primary challenges you face at these interchange(s)? (500-character limit)
14. What is your ZIP code?

A full account of the responses to these questions is available in Appendix D Community Engagement Results.



Interstate Operations and Safety Assessment

Appendix E provides more details on future freeway operations and safety forecasts.

Development of Travel Forecasts

As part of the 2021 Existing Conditions Analysis, the project team developed traffic volumes for the I-5 mainline and ramp facilities. Using updated 2022 traffic counts, a set of revised existing 2022 traffic volumes were developed by WSDOT and forecast to 2045 conditions. The updated traffic volume forecasts were based on the Skagit County of Governments travel demand model (SCOG Model), which has a future horizon year of 2045 and includes the population and land use growth anticipated in the region by 2045.

Assessment of Future I-5 Mainline and Ramp Performance

The assessment of corridor traffic operations is generally consistent with the prior 2021 analysis. The primary focus of the 2045 conditions performance metrics was freeway segment level of service (LOS). Other ramp related metrics (merge-lane volume threshold) were updated as well for comparison with the 2021 analysis. The LOS standard established for this section of I-5 is LOS D since it is designated as a Highway of Statewide Significance.

Exhibits 6 and 7 were created to illustrate future freeway density and LOS conditions for each direction of I-5, in 15-minute periods between 3:00 p.m. and 7:00 p.m.

Northbound Operations

- 2021 LOS F conditions are expected to increase from two 15-minute periods to five by 2045 between Anderson Road (Exit 225) and George Hopper Road (Exit 229).
- Similar to 2021, the most congested area is associated with the Skagit River Bridge.
- Compared to 2021 conditions, LOS E conditions also expand to other time periods and other freeway segments, though mostly south of the Skagit River Bridge.

Southbound Operations

- 2021 LOS F conditions are expected to increase from zero to four 15-minute periods by 2045 between George Hopper Road (Exit 229) and College Way (Exit 227).
- Similar to 2021, the most congested area is associated with the Skagit River Bridge.
- Compared to 2021 conditions, LOS E conditions also expand to other time periods and other freeway segments, mostly south of the Skagit River Bridge, though this change is not at the same scale as northbound operations.



Interstate Operations and Safety Assessment

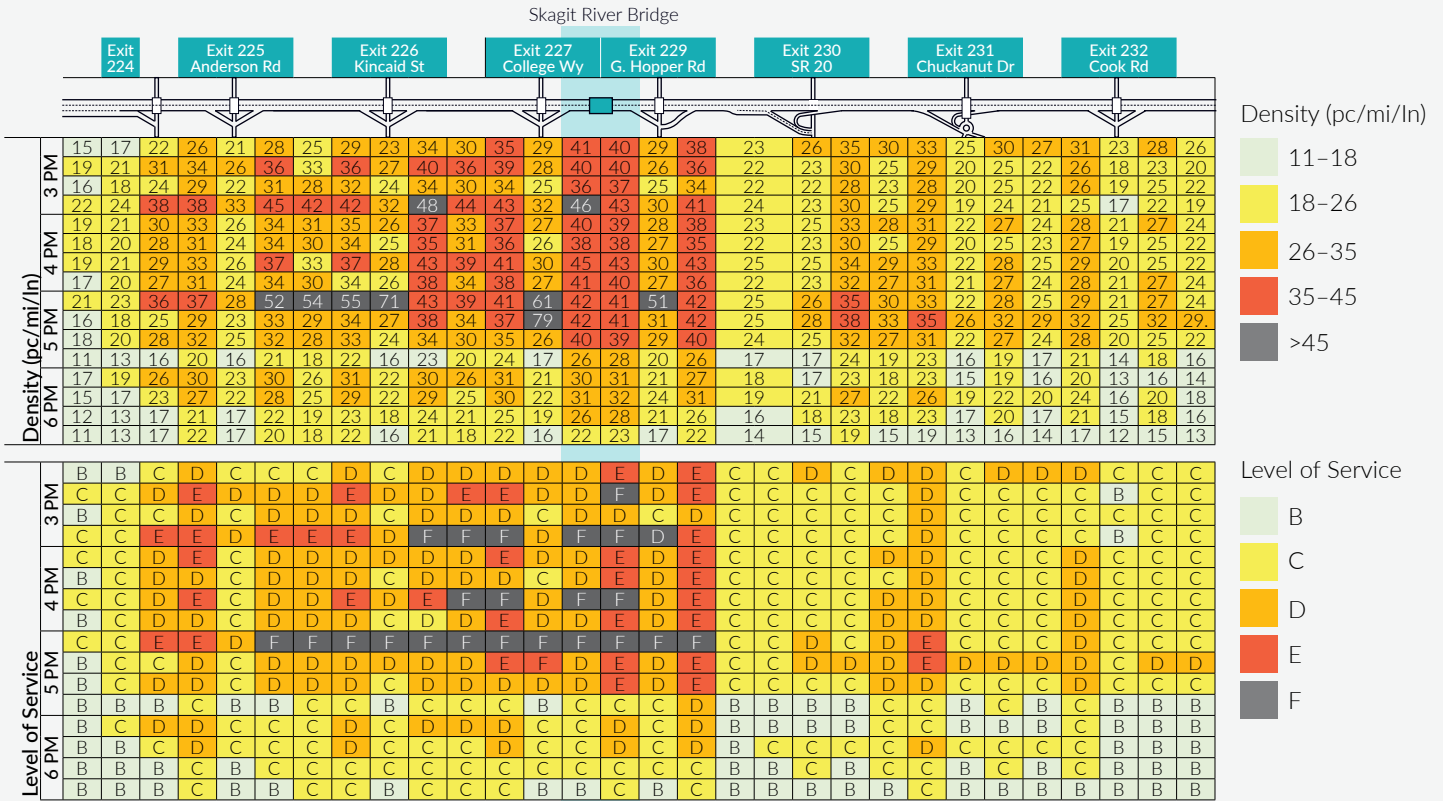


Exhibit 6 2045 Northbound I-5 Mainline Density and LOS

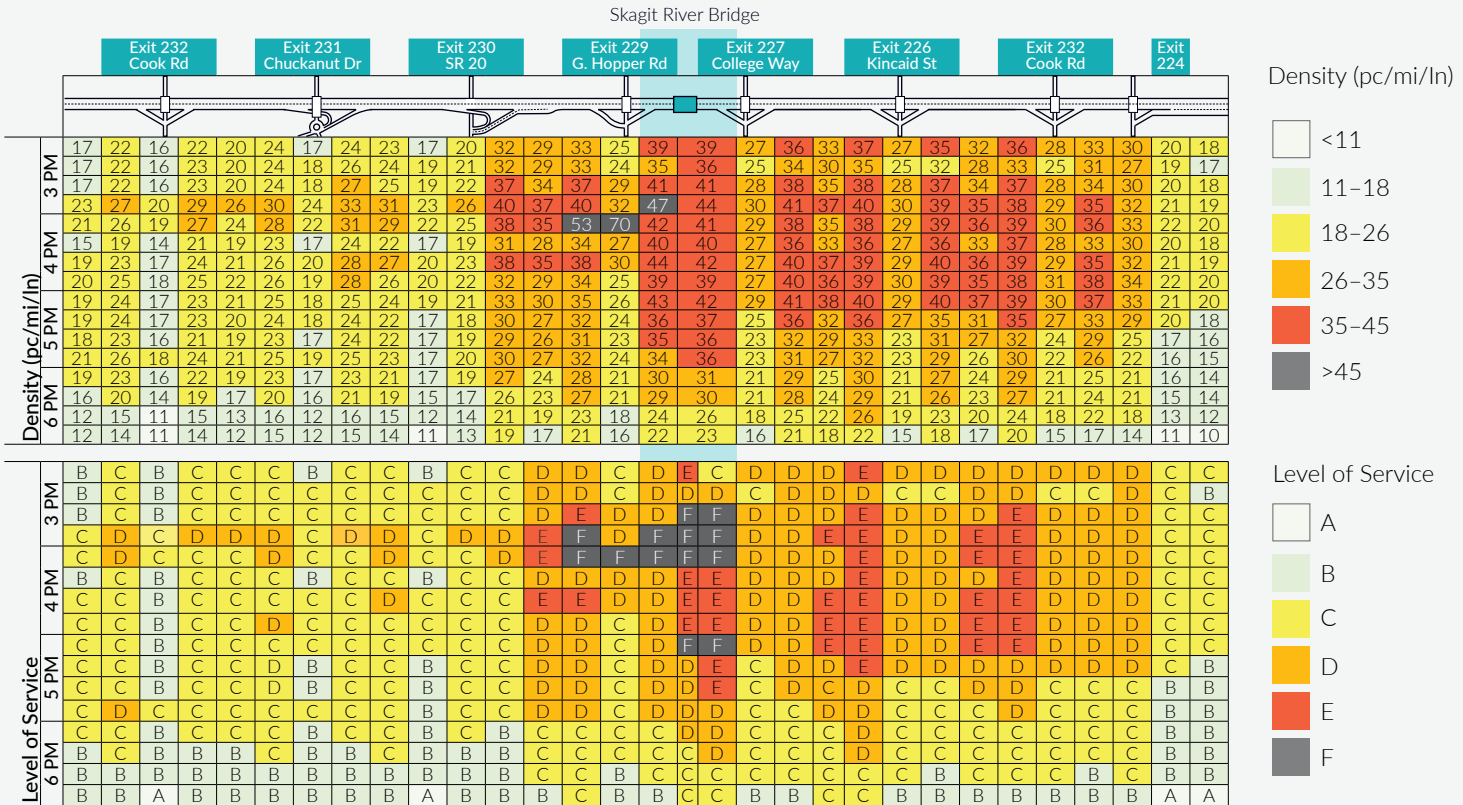


Exhibit 7 2045 Southbound I-5 Mainline Density and LOS



Merge-Lane Volume Threshold

This metric is used to assist in determining when an on-ramp should be metered to improve traffic flow and merging onto the freeway mainline. Combined on-ramp volumes that meet or exceed 1,700 vehicles per lane per hour indicates when a potential conflict may exist or when ramp metering may become useful. Heat maps shown in Exhibits 8 and 9 were created of on-ramp merge volume conditions for northbound and southbound directions. Locations and times at or above 1,700 vehicles-per-hour threshold are shown with darker colors indicating greater need to manage traffic flow in the merge lane.

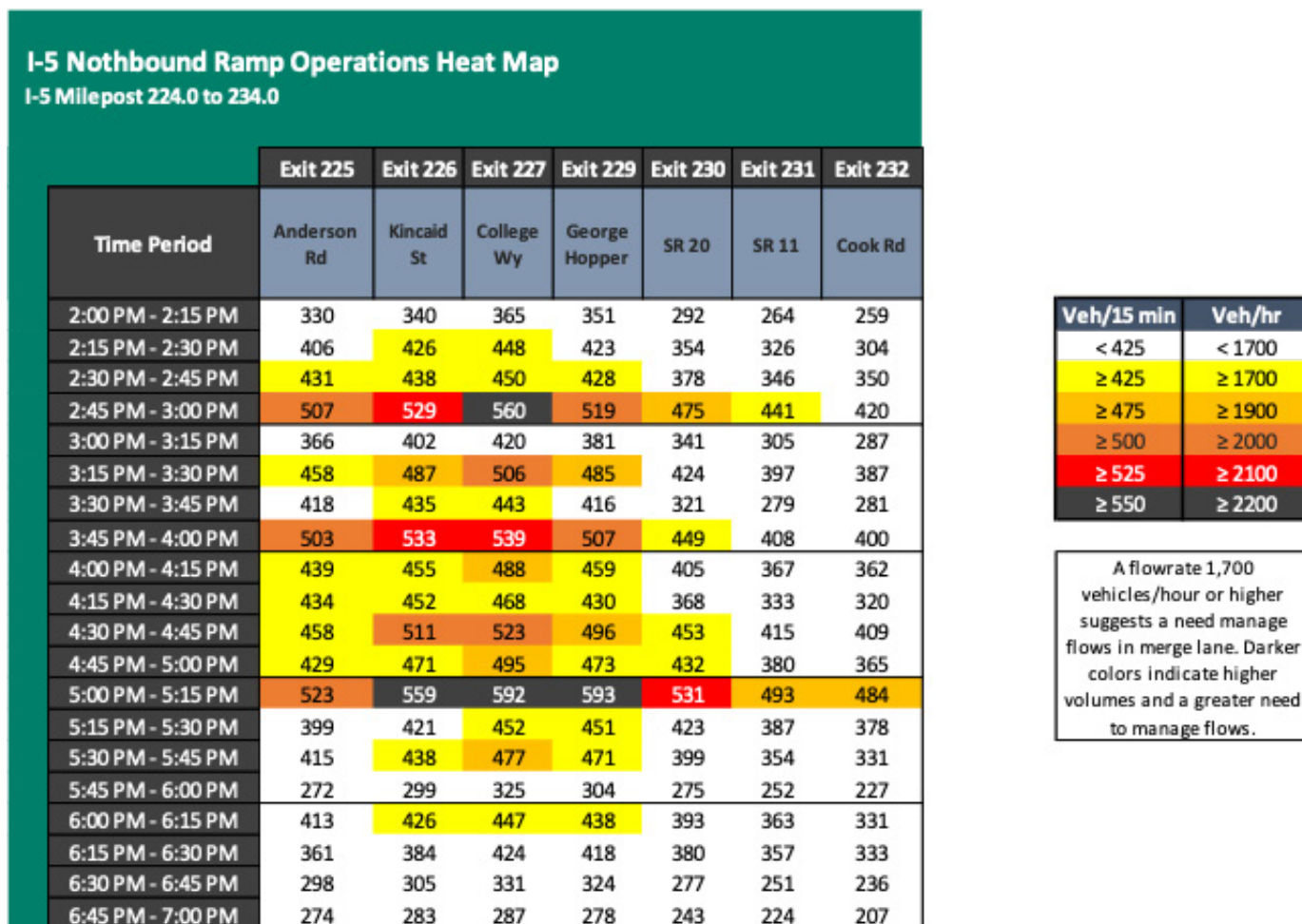


Exhibit 8 2045 Northbound I-5 On-Ramp Heat Map

Northbound Operations

The 2021 analysis suggested that on-ramps at Kincaid Street, College Way, and George Hopper Road interchanges would benefit from some type of metered volumes. Operations in 2045 suggest that Anderson Road and SR 20 interchanges would be added to that list of interchanges benefiting from metered volumes.



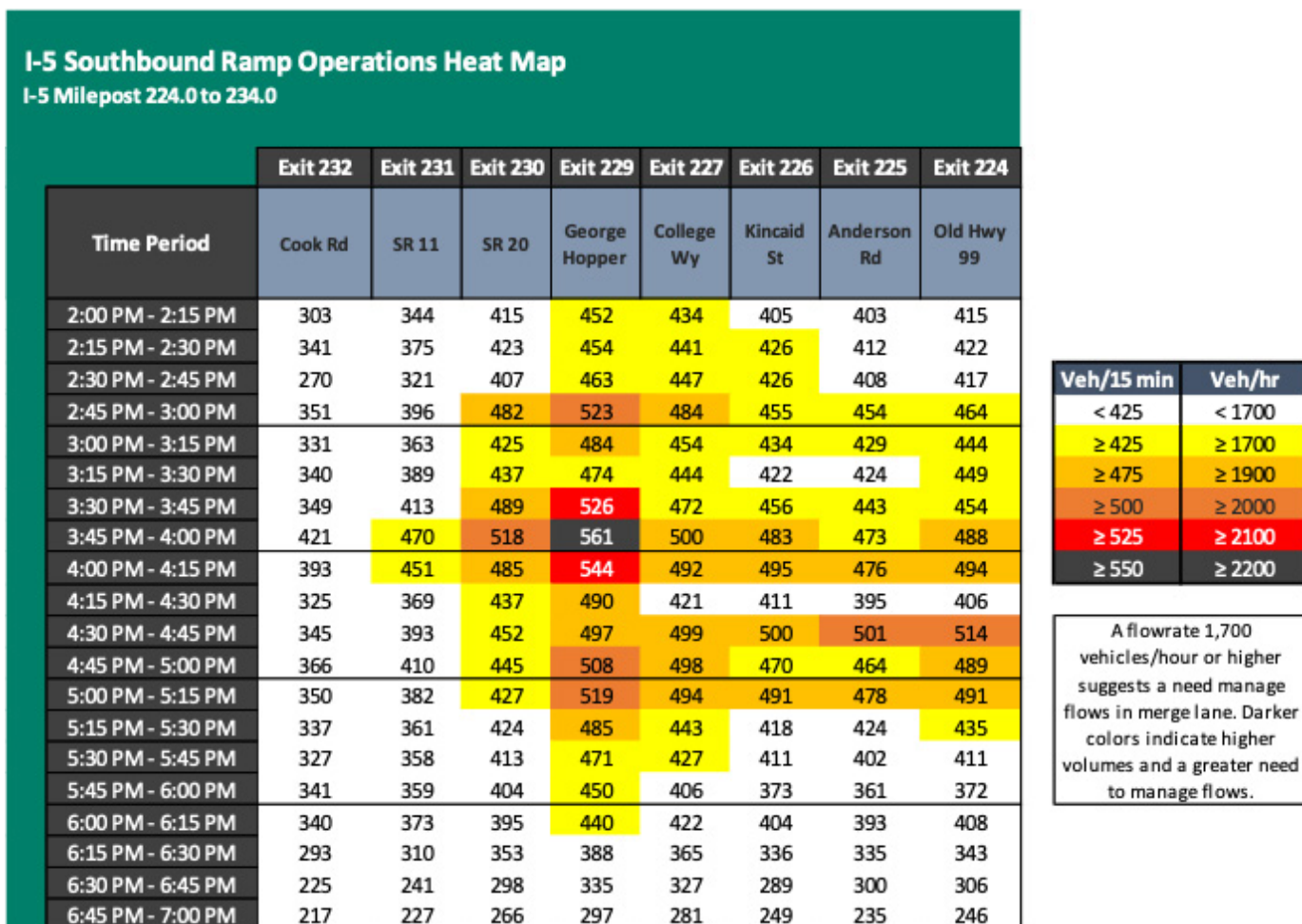


Exhibit 9 2045 Southbound I-5 On-Ramp Heat Map

Southbound Operations

The 2021 analysis suggested that on-ramps at George Hopper Road and College Way interchanges would benefit from some type of metered volumes. Operations in 2045 suggest that most of I-5 would be added to that list, from SR 20 (Exit 230) to Old Highway 99 (Exit 224).



Safety Assessment

The existing safety assessment was conducted in the 2021 Existing Conditions Analysis. This included a Target Zero Summary, Crash Summary Assessment, and Highway Safety Manual Analysis. The 2021 analysis revealed some corridor segments are not performing within expectations (The Highway Safety Manual methodology treats segments as non-directional). The general locations include northbound I-5 between Kincaid Street and George Hopper and southbound I-5 between SR 20 and Kincaid Street. The Highway Safety Manual Analysis also indicated two sections performing below average for safety: a one-mile section between SR 538 and George Hopper Road; and in the vicinity of the SR 20 interchange.

The future safety assessment will be primarily used as a baseline for comparing alternatives in the Phase 2 effort of the study. The predictive safety analysis of 2045 will be used to compare if potential solutions are predicted to be better or worse than the 2045 baseline condition (as noted below).

As forecast volumes are higher in 2045, the overall crash frequencies increased as well compared to 2021 conditions. Predicted crash frequencies are generally highest south of the College Way interchange. As forecast volumes are higher in 2045, the overall crash frequencies increased as well compared to 2021 conditions.

Skagit 2045 Regional Transportation Plan

This section provides details about population growth, comprehensive plans, SCOG model forecasts, and resulting forecast issues for the I-5 corridor in 2045. Much of this information is based on findings in the Skagit 2045 Regional Transportation Plan.

Travel Model Forecasts

The SCOG travel demand model forecasts a 6.5 percent increase in vehicle traffic by 2045. However due to congestion, traffic growth along the I-5 corridor is expected to be at a smaller rate. This may include a potential traffic increase on I-5 in the north and south portions of the study area from 77,000 to 82,000 ADT and a potential traffic increase at Skagit River Bridge from 81,000 to 86,300 ADT. Region-wide, the SCOG travel model forecasts an increase of 28 percent more vehicle miles traveled by 2045. Exhibit 8 shows how traffic congestion is expected to worsen by 2045 as shown in the SCOG travel demand model.

Forecast Issues

Mainline I-5 is operating at or near LOS throughput capacity during the weekday PM peak hour, which will also create traffic congestion on local street approaches to I-5 interchanges, which could increase safety and operations issues on both I-5 and local streets. Exhibit 10 shows how traffic congestion is expected to worsen by 2045 as shown in the SCOG travel demand model. Increased congestion and delay can reduce the ability of I-5 and local streets to allow the efficient transport of freight and goods, which can have economic ramifications.

It bears repeating that local Comprehensive Plan transportation elements that are well-integrated with mixed use land use patterns, increased urban densities, promote active transportation facilities, and facilitate transit-oriented development will create opportunities for more walking, biking, trail use, and transit ridership, which could relieve some vehicle pressure on I-5, state highways, and local streets. These are opportunities for WSDOT to work very closely with local jurisdictions as they make important decisions for how to accommodate future population growth within their existing city limits and urban growth areas.



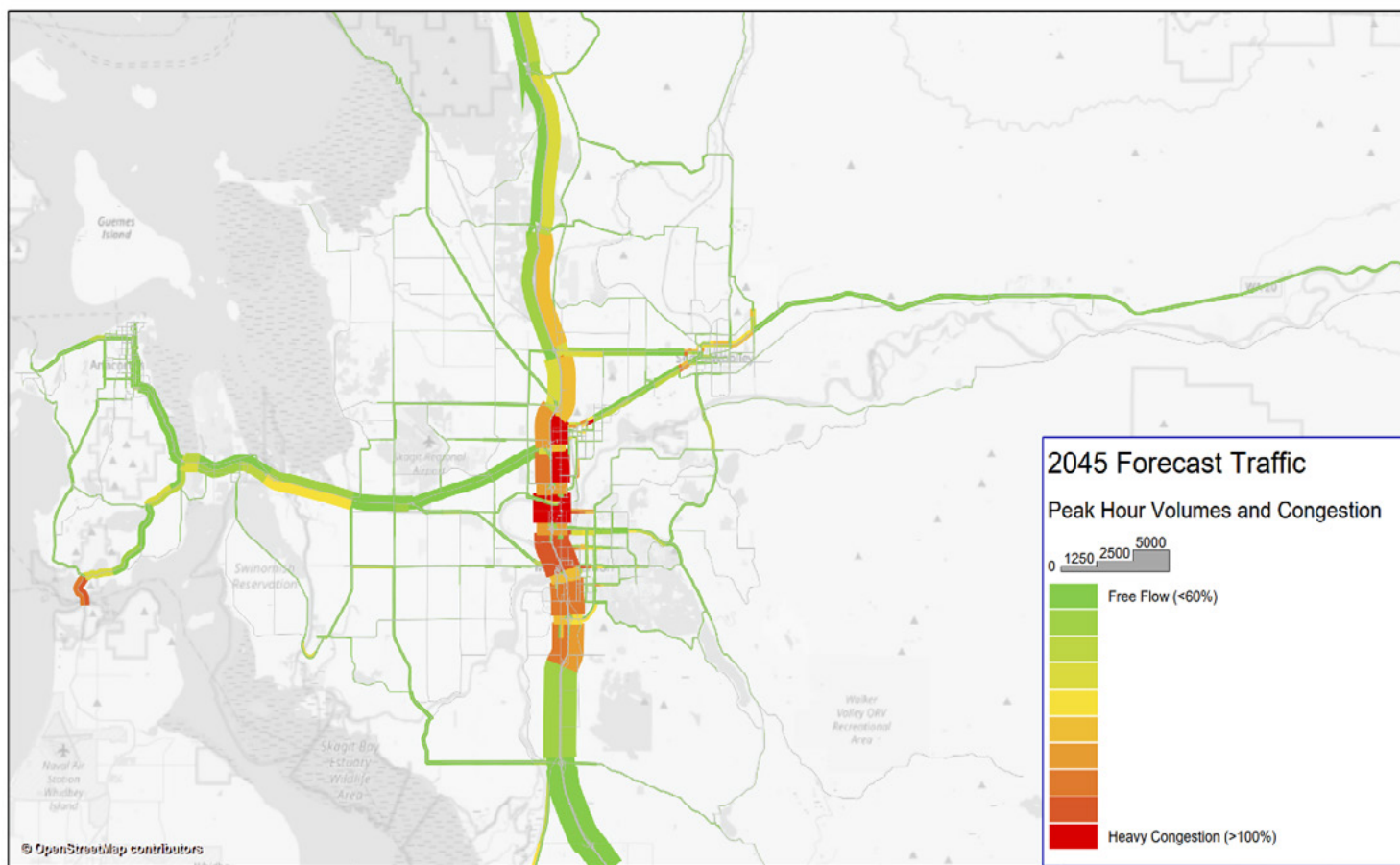


Exhibit 10 Congestion in Skagit County in 2045

(Source: SCOG 2045 Travel Demand Model)

Origin-Destination Patterns

Patterns related to the origin and destination of I-5 trips were obtained from Replica, a national model that incorporates location-based data sets (cellphone and fleet information), US Census data, and other data used in traveler information systems and applications.

Local versus Regional Trips

To understand the origin-destination patterns, the region was split into two districts as shown in Exhibit 11. These district boundaries largely coincide with US Census geographies. The “Internal District” represents “local” districts, and are centered around Burlington, Sedro-Woolley, and Mount Vernon. The “Regional District” represents “regional” districts north, south, east, and west of the study area.

Within the Replica model, all I-5 northbound study area trips were selected to determine origin and destination patterns. This selection set included daily trips entering the study area from the south on the I-5 mainline as well as all northbound on-ramp volumes at the interchanges.

Based on this analysis the following patterns were observed for northbound daily trips:

- 22% of northbound I-5 trips started and stopped within “local” districts
- 44% of northbound I-5 trips had one end within “local” district and other in “regional”
- 34% of northbound I-5 trips had both ends within “regional” districts



Interstate Operations and Safety Assessment

The data indicates that about a quarter of northbound trips are local use of I-5 corridor for local daily circulation patterns. In addition, it appears that about a third of northbound trips pass-through as regional trips on both I-5 and SR 20.

Similar analysis was conducted for southbound daily trips:

- 23% of southbound I-5 trips started and stopped within local districts
- 61% of southbound I-5 trips had one local trip end and one regional trip end
- 16% of southbound I-5 trips had both ends within regional districts

Similar to northbound conditions, about a quarter of southbound trips are local users using the I 5 corridor for local circulation patterns. Different from northbound conditions, only 16 percent of southbound trips are pass-through regional traffic.

Almost two-thirds of southbound trips are associated with local users linked with regional locations. This reflects a major origin-destination

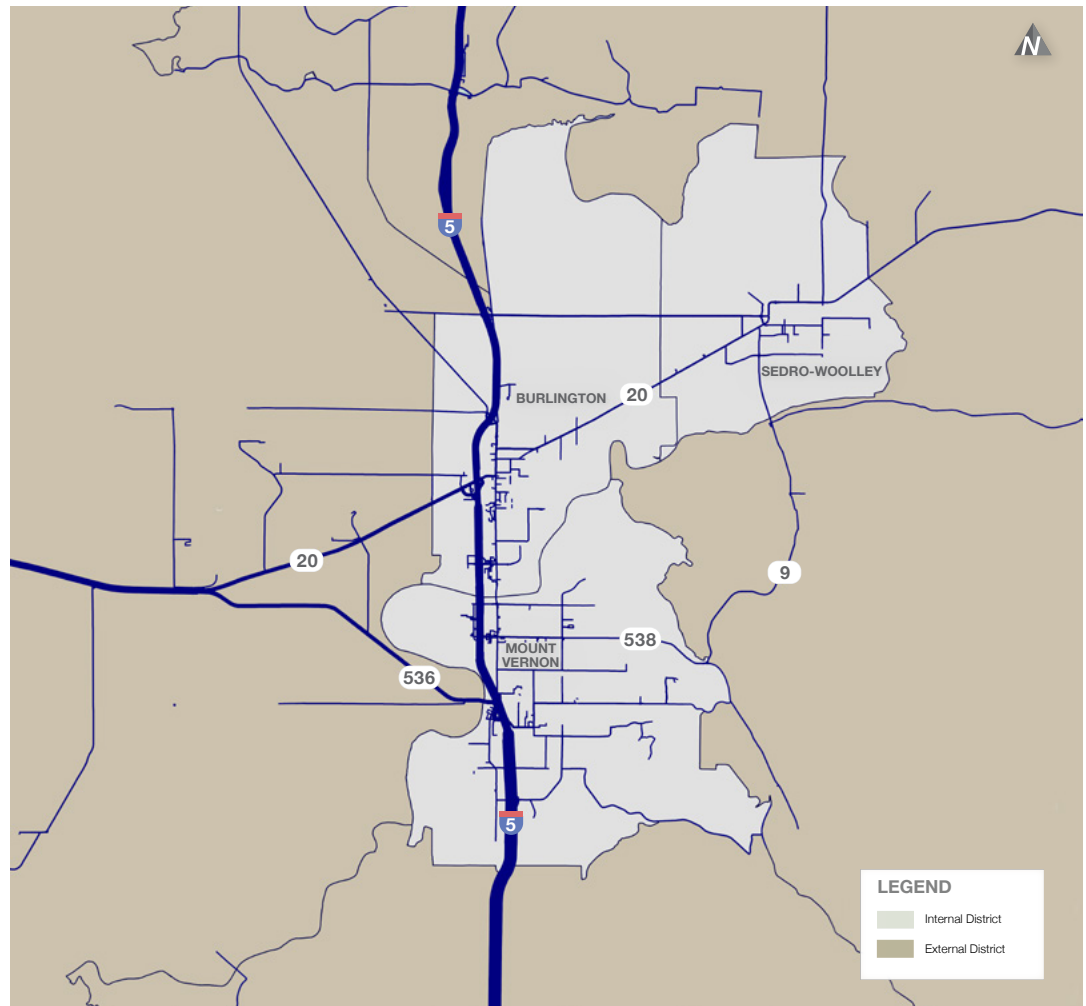


Exhibit 11 Districts Used in Origin-Destination Analysis

pattern of Skagit County urban areas linked with Snohomish and King County areas to the south where there are major employment centers and shopping destinations. This information may be helpful for local economic development planners in the Skagit region to develop investment plans, incentives, and employment strategies to entice locals within the Skagit economic market-shed to spend local rather than traveling south and taking local dollars out of the Skagit region.

Combined results show both northbound and southbound trips together, as follows.

- 22% of I-5 trips started and stopped within “local” districts
- 53% of I-5 trips had one trip end within a “local” district, other end in “regional district”
- 25% of I-5 trips had both ends within “regional” districts



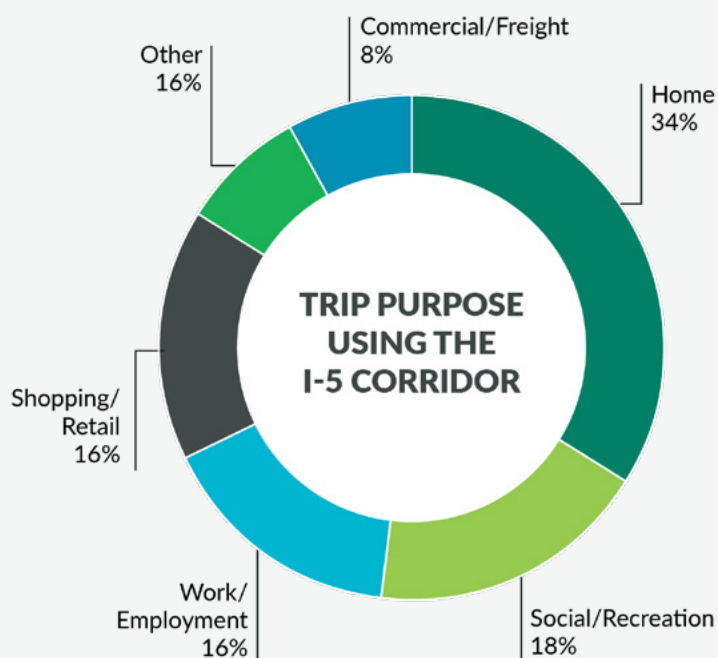


Exhibit 12 Trip Purpose by Percentage using I-5 Corridor

Interchange-to-Interchange Patterns

Another origin-destination pattern analyzed related to trips that enter the I-5 corridor at one interchange and exit at a nearby interchange. These interchange-to-interchange patterns provide insights on how local users use the I-5 mainline corridor for short-trip urban trips.

Northbound I-5 Trips

- Almost 80% of on-ramp trips for Anderson Road, Kincaid Street, College Way, and George Hopper Road exited within the study area.
- The George Hopper Road interchange had the highest percentage of northbound trips (57%) that exited at the very next interchange.
- The College Way interchange had 53% exiting at two interchanges north.
- These patterns reflect the major connection of these two regional commercial areas with the SR 20 corridor. At SR 20 and north, the northbound on-ramp trips become more regional compared to the southern end of the corridor.

Southbound I-5 Trips

- 60% of on-ramp trips for the College Way, George Hopper Road, SR 20, SR 11, and Cook Road exited within the study area. Compared to northbound conditions, this pattern reflects that more southbound trips are linked with regional areas to the south in Snohomish and King counties.
- There is a sizable portion of George Hopper Road and College Way southbound trips linked to the Kincaid Street interchange.

Trip Purpose

The Replica Model was used to identify the general trip purposes for travelers using the I-5 corridor in the study area. This includes any person trip in vehicles that use any part of I-5 within the corridor. Exhibit 12 shows the trip purpose as percent of I-5 trips based on trip ends. Most trips were to places of residence (34%), followed by social/recreation (18%), work (16%), shopping (16%), freight (8%), and undefined other (8%). Working with local cities, there may be opportunities to convert some of these I-5 trips to local street trips.

Trip Lengths

The Replica Model was used to identify the trip lengths for travelers using the I-5 corridor in the study area. This includes any vehicle trip that uses any part of I-5 within the corridor. Exhibit 13 and Exhibit 14 show trip lengths in miles and minutes.

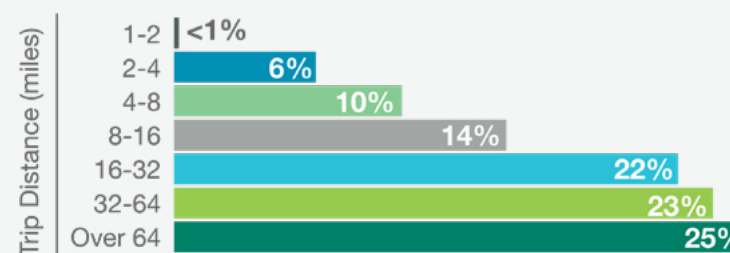


Exhibit 13 Distribution of Daily Trip Lengths (in Miles)

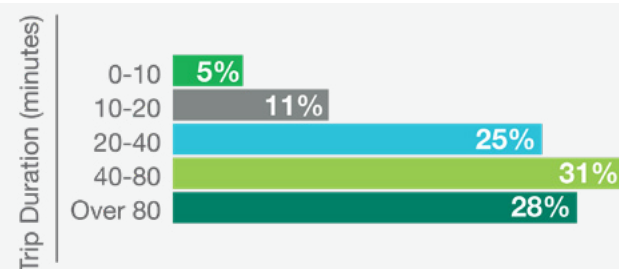


Exhibit 14 Distribution of Daily Trip Lengths (in Minutes)



ITS & Technology Options

The *ITS & Technology Options Development Plan* report (Appendix F) was completed, and provided an inventory of current and planned ITS applications on the corridor, an overview of the potential ITS/Technology Options that should be assessed for possible future implementation, and the assessment process that will be implemented in Phase II to develop ITS/technology packages of solutions that can support and/or enhance the overall development of corridor strategies and solutions. Table 2 outlines the draft candidate ITS/technology options for consideration for the mainline I-5 which will be assessed in detail during Phase II.

Additional technologies that were outlined for assessment during Phase II include: cooperative automated transportation (Freeway Safety, Freeway Convoying/ Platooning); Planned Event or Incident Signal Timing; Special Event Transportation Management; Traveler Information Systems; Electric Vehicle Infrastructure. Additionally, supporting ITS and data infrastructure were also identified as a need to support new technology and ongoing operations (Data Availability, Fiber Network Connection).

Table 2 Mainline Technology Options Summary

Technology	Potential Application to Corridor
Adaptive Ramp Metering	Applicability to I-5 on-ramps during AM/PM peak and special events Requires multi-jurisdictional coordination
Adaptive Signal Systems	Control arterial traffic flow in advance of and off I-5 exits Requires multi-jurisdictional coordination
Variable Message Signs (VMS)	Traffic warnings to vehicles on I-5 to improve traffic flow and safety Useful to manage traffic flow during special events (e.g. Tulip Festival) Priority need from TMC
Variable Speed Limits	Limited utility given I-5 in corridor is only two lanes in each direction Can be useful in managing emergencies.
Dynamic Lane Assignment	Limited utility given I-5 in corridor is only two lanes in each direction Could support Hard Shoulder Running operations
Hard Shoulder Running	Could be used to alleviate severe congestion situations, such as special events Constrained by bridge crossings (with no shoulder space) on the Project I-5 corridor Supports emergency resilience
Parallel route detouring communication to travelers	Could be supported by WSDOT Shoreline NW Region TMC Need to consider the safety and efficiency needs on the parallel/detour route Supports emergency resilience
Queue Warnings	Improves traffic flow and safety for all vehicles on mainline Reduces hard braking incidents, especially for trucks



Strategies and Recommendations for Study in Phase 2

1. Was a Problem Identified in the I-5 Skagit Study?

The Phase 1 Needs Assessment revealed that most of the I-5 corridor is meeting performance expectations, but some parts of the corridor are not meeting performance objectives, as listed below.

A. Traffic Operations: The traffic operations analysis revealed that some segments of the I-5 corridor exceed the throughput design capacity (LOS D) and future forecasts indicate that LOS will continue to deteriorate and expand to other corridor segments, as listed below.

- Northbound LOS F conditions are forecast to increase from two 15-minute periods to five by 2045 between Anderson Road (Exit 225) and George Hopper Road (Exit 229).
- Northbound LOS E conditions are also forecast to expand to other time periods and other freeway segments, primarily south of the Skagit River Bridge.
- Southbound LOS F conditions are forecast to increase from zero to four 15-minute periods by 2045 between George Hopper (Exit 229) and College Way (Exit 227).
- Southbound LOS E conditions also expand to other time periods and other freeway segments, primarily south of the Skagit River Bridge, but to a lesser extent than northbound operations.
- Similar to existing conditions for both northbound and southbound, the heaviest congestion is forecast to be at the Skagit River Bridge.

B. Merge-Lane Volumes: The analysis of the on-ramp merge lane threshold of 1,700 vehicles-per-hour indicates that existing traffic flow at some on-ramps is at or exceeds the threshold, with forecasts indicating additional on-ramps exceeding the threshold in the future, as listed below.

- Currently, northbound on-ramps at Kincaid Street, College Way, and George Hopper Road interchanges would benefit from some type of metered volumes.
- 2045 forecasts suggest that Anderson Road and SR 20 interchanges would be added to that list of interchanges benefiting from metered volumes.
- Currently, southbound on-ramps at George Hopper Road and College Way interchanges would benefit from some type of metered volumes.
- 2045 forecasts suggest that most of I-5 would be added to that list, from SR 20 (Exit 230) to Old Highway 99 (Exit 224).

C. Safety Assessment: The 2021 analysis revealed that some I-5 corridor segments are not performing within expectations and with future forecasts for increasing traffic, additional safety issues could also increase.

- Currently, there are higher than average crashes:
- Northbound I-5 between Kincaid Street and George Hopper
- Southbound I-5 between SR 20 and Kincaid Street.
- Both directions on a one-mile section between SR 538 and George Hopper
- Both directions in the vicinity of the SR 20 interchange.

The future safety assessment will be primarily used as a baseline for comparing alternatives in the Phase 2 effort of the study. The predictive safety analysis of 2045 will be used to compare if potential solutions are predicted to be better or worse than the 2045 baseline condition (as noted below). As forecasted volumes are higher in 2045, the overall crash frequencies increased as well compared to 2021 conditions. Predicted crash frequencies are generally highest south of the College Way interchange. As forecasted volumes are higher in 2045, the overall crash frequencies increased as well compared to 2021 conditions.



Strategies and Recommendations for Study in Phase 2

D. Local vs. Regional Trips: Origin and destination analysis revealed that many vehicle trips on the I-5 corridor are local vs regional, which contributes to traffic congestion, delay, decreased LOS, and safety issues. Local trips begin and end within the study area, local/regional trips have one trip end beginning or ending in the study area, and regional trips have both trip ends begin and end outside of the study area. Combined results show both northbound and southbound trips together, as follows.

- 22% of I-5 trips started and stopped within local districts
- 53% of I-5 trips had one trip end in local district, other end in regional district
- 25% of I-5 trips had both ends within regional districts

e. Under-Served Populations: The Phase 1 Needs Assessment and U.S. Census data revealed that Mount Vernon and Burlington have higher percentages of:

- Hispanic or Latino residents
- Spanish language spoken at home
- Non-English languages spoken at home
- Residents living in poverty, and
- Residents living with disabilities.

than either Skagit County or Washington state.

In addition, the Phase 1 Needs Assessment also revealed that:

- Mount Vernon, Burlington, and Skagit County have high percentages of residents living without health care coverage.
- Skagit County has a high percentage of senior residents over 65 years old
- Burlington has a high percentage of resident military veterans
- Mount Vernon has a high percentage of school-age residents under 18 years old

Many of these groups have special needs and mobility challenges related to where they live and where they need to go and many are affected by the physical presence, and mobility barrier, of I-5 and other state highways in the Skagit region.

Community Engagement: In May and June 2023, the project team reached out to a wide broad list of stakeholders in the study area using a wide variety of methods for communication, interaction, and collecting public input (See Appendices C and D).

General speaking, traffic congestion, poor infrastructure, safety hazards, and lack of public transportation options were identified as the biggest challenges to people with mobility challenges, special needs, or limited English proficiency.

Traffic congestion: Many respondents highlighted traffic congestion as a significant challenge. They mentioned long queues, delays and bottlenecks at interchanges, resulting in frustration and delays.

Poor infrastructure: Many respondents expressed concerns about the inadequate infrastructure at interchanges. They cited issues such as insufficient lanes, outdated designs and lack of proper signage, leading to confusion, accidents and inefficient traffic flow.

Safety hazards: Safety emerged as another prominent challenge. Respondents pointed out the absence of pedestrian crossings, inadequate lighting and unsafe merging lanes, posing risks for both drivers and pedestrians. These hazards contribute to accidents and raise concerns about the overall safety of the interchanges.

Lack of public transportation options: A recurring theme was the absence or limited availability of public transportation options at these interchanges. Respondents mentioned the inconvenience of not having access to buses, trains, or other forms of public transportation, which forces more people to rely on private vehicles, exacerbating traffic congestion.



2. What Additional Steps Should be Taken to Address Problems and Needs on the Skagit I-5 Corridor?

The analysis revealed that some locations on the Skagit I-5 corridor were not meeting performance expectations. Based on local land use patterns and transportation connections, it is likely that problem locations are influenced by local trips using I-5 between Mount Vernon, Burlington, and Skagit County interchanges in the study area.

WSDOT did not identify any immediate capital construction projects or other actions that needed to be taken, this will be part of the phase 2 study. However, regional travel demand model forecasts for population growth include associated increases in vehicle traffic from future development, which may further decrease operational and safety performance on several I-5 corridor segments.

Population, socio-economic, and demographic conditions are changing in the Skagit Valley and, according to the SCOG Regional Transportation Plan, the Skagit region is expected to grow by 46,000 residents to a total county population of 177,000 by 2045. Countywide planning policies agreed to by all jurisdictions within Skagit County direct that 80% (36,800) of these new residents be accommodated in cities, towns, and UGAs.

To address these concerns, it is recommended that WSDOT work closely with SCOG, Skagit County and all of the cities, towns, tribes, ports, and urban growth areas within the region to plan for better integration of land use, housing, and transportation with the social equity needs in each area. Planning at the local level away from I-5 will help with WSDOT's effort to manage, operate, and improve the I-5 corridor for regional transportation needs. WSDOT and local jurisdictions have an opportunity to incorporate best practices for land use, housing, transportation, and social equity to better meet regional transportation performance objectives as well as improving mobility and quality of life for local residents.

Phase 2 of the Skagit I-5 Transportation Study will include the following steps to address problems and needs identified on the corridor:

A. Recommended strategy for Phase 2 Study - Traffic Operations:

1. Work with Skagit County, Mount Vernon, and Burlington to promote compact mixed-use land use patterns with complete sidewalks, bikeways, and transit-supportive features, consistent with GMA, to produce less vehicle trips reliant on I-5 for travel.
2. Work with local governments to incentivize redevelopment of low-density, under-utilized parcels along transportation corridors, such as College Way, Riverside Drive, Burlington Boulevard, Highway 20, etc.
3. Work with Skagit Transit to explore potential for higher-frequency transit service on major corridors planned for higher density urban infill by local governments.
4. Work with local governments to explore opportunities for local complete street connections to provide more street density within communities and less reliance on I-5 as a super-arterial.
5. Work with local governments to identify opportunities and funding for pedestrian and bicycle crossings of I-5 and state highways, consistent with the **WSDOT Active Transportation Plan** and **RCW 47.24.060** requiring all WSDOT project over \$500,000 to incorporate Complete Streets features.

B. Recommended strategy for Phase 2 Study - Merge Lane Volumes:

1. Conduct an in-depth feasibility study of ramp metering opportunities in locations identified in the Phase 1 study as having current or potential future issues with merge-lane thresholds.
2. Conduct an in-depth study of variable speed limits on I-5 through the urbanized area during peak travel times, as well as other potential technology application to manage vehicle traffic flow.



Strategies and Recommendations for Study in Phase 2

C. Recommended strategy for Phase 2 Study - Safety Assessment:

1. Application of a combination of strategies listed under a and b may also have a positive effect on the safety of travel on some sections of I-5.
2. Consideration of additional technological applications to manage traffic flow on I-5 through the urbanized area, such as variable message signs, etc.
3. Low-cost capital improvements, such as minor ramp lengthening or widening to accommodate on-ramp metering and/or merge lane lengthening.

D. Recommended strategy for Phase 2 Study - Local Trips

1. Work with Skagit County, Mount Vernon, and Burlington to develop formal pedestrian, bicycle, and multi-use trail networks connected to popular local destinations to produce less vehicle trips reliant on I-5 for travel.
2. Work with local governments to incentivize redevelopment of low-density, under-utilized parcels along transportation corridors, such as College Way, Riverside Drive, Burlington Boulevard, Highway 20, etc. to become high-density transit-oriented developments served by Skagit Transit higher-frequency transit routes.
3. Work with local governments to explore opportunities for local complete street connections to provide more street density within communities and less reliance on I-5 as a super-arterial.
4. Work with local governments to identify opportunities and funding for pedestrian and bicycle crossings of I-5 and state highways, consistent with the WSDOT Active Transportation Plan and RCW 47.24.060 requiring all WSDOT project over \$500,000 to incorporate Complete Streets features.

E. Recommended strategy for Phase 2 Study - Special Needs

1. Work with local schools, transit providers, advocacy organizations, neighborhoods, and local governments to gain greater understanding of population-specific and location-specific transportation needs.
2. Work with service providers to create transportation partnerships to address the needs of those with transportation mobility challenges.
3. Work with local governments to consider opportunities to locate services closer to where people live, work, and spend time. Ground floor mixed-use spaces would be ideal opportunities for upper floor residents to have easy access to the services that they require and, if built in high-density fashion on transportation corridors served by Skagit Transit, then many individual mobility challenges could be eliminated.



Appendix A

Environmental Assessment



Appendix B

Population, Socio-Economic, Demographic Profile



Appendix C

Community Engagement Plan



Appendix D

Community Engagement Results



Appendix E

Freeway Operations and Safety Assessment



Appendix F

ITS & Technology Options Development Report



Appendix G

Methods and Assumptions

