WSDOT's Corridor Sketch Initiative is a collaborative planning process with agency partners to identify performance gaps and select high-level strategies to address them on the 304 corridors statewide. This Corridor Sketch Summary acts as an executive summary for one corridor. Please review the User Guide for Corridor Sketch Summaries prior to using information on this corridor:

I-5: SR 11 Jct (Bellingham) to SR 548 Jct (Ferndale)

This 16-mile long segment of Interstate 5 in Whatcom County spans between the State Route 11 interchange in Bellingham and the SR 548 interchange in north Ferndale. The southern portion of the corridor passes directly through the urban center of Bellingham and follows the curve of Bellingham Bay. Land uses in this section of the corridor include residential, commercial, retail, and industrial developments. The third largest enplanement in the state, Bellingham International Airport, and the third largest university by enrollment in the state, Western Washington University, are also located along this section of the corridor. North of Bellingham, the landscape is less densely populated. Small forests, large-lot residential areas, and agriculture are the primary land uses along most of the corridor in Whatcom County with the exception of more urban development within the city limits of Ferndale. This section of I-5 crosses the Nooksack River and multiple creeks, including Whatcom Creek. In natural areas along the corridor, the vegetation includes short plants and grasses, shrubs and mixed conifer forests.

Current Function

I-5 is the major north-south route along the U.S. west coast connecting most major cities between Canada and Mexico. Commuters, freight carriers, and tourists use this corridor for regional and international travel. The corridor is used for local access to Bellingham, Ferndale, and the Lummi Nation Reservation (Washington's third-largest indigenous tribe). This portion of the corridor has junctions with SR 11, SR 542, SR 539 and SR 548. Primary traffic generators include the city of Bellingham, regional shopping centers, manufacturing and industrial operations, educational centers like Western Washington University, hospitals, residential areas, and international travelers from Canada. Transportation hubs such as the Bellingham International Airport, Alaska Ferry terminal, and Fairhaven Station also contribute to traffic. The route provides access to several recreational attractions including Lake Whatcom, Lake Terrell State Game Refuge, Hovander Homestead, Tennant Lake Park, and multiple state and regional parks, marinas, and trails. Whatcom Transportation Authority provides bus service on this corridor.

Future Function

Based on the projected population, land use, and economic trends, the future function of this corridor is expected to remain the same. Bellingham, as a major city near an international border, anticipates significant population and employment growth in the future. It is developing long-term strategies for increasing the use of multiple-passenger and alternative transportation options in this corridor. Freight traffic is expected to substantially increase as border, retail, and distribution center uses expand. Programmed improvements at Orchard Drive and Thornton Street will create new local network connections across I-5 to better serve demand and increase non-motorized access.

Highlights and Performance

This segment of I-5 is primarily a four-lane highway with a median. The highest average daily traffic along this corridor is near downtown Bellingham and the lowest occurs near Ferndale/SR 548 interchange.

What's working well?

- About 99% of surveyed pavement on this corridor is in fair or better condition.
- Except for peak hour commute times, traffic along the corridor is generally free flowing.
- Local investments at interchanges have improved congested conditions.
- Bellingham has developed an effective, integrated non-motorized network in response to high demand.
- Ramp improvements have made I-5 merging easier.
- Cable barrier installation has improved safety.

What needs to change?

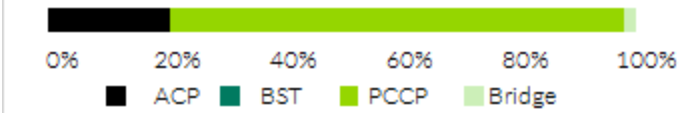
- Roughly 3% of the corridor is congested regularly due to high traffic volumes during peaks.
- High traffic flow onto the corridor from interchanges during peak periods is resulting in congestion.
- Interchanges have tight spacing, short ramps, and tight curves resulting in inefficient merging and congestion.
- Roughly half of traffic volume is local trips of three miles or less, due to lack of local street connectivity.
- Lack of non-motorized connectivity in the north portion of the corridor limits access.
- Functionally obsolete bridges limit access for modes and throughput, and require high maintenance.

WSDOT monitors the state system in ongoing efforts to track asset performance. For this corridor, WSDOT finds:

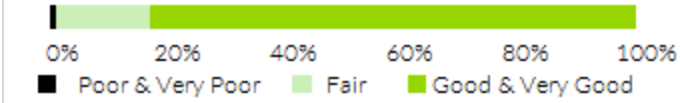
High	Low	
78,000	43,386	Annual Average Daily Traffic (AADT)
7.2%	6.5%	Bus/Truck Percent
73.16		Number of Lane Miles
0		# of Signalized/Stop Controlled Intersections
$67,457,000		Corridor Investments (2005-2016)

Preservation

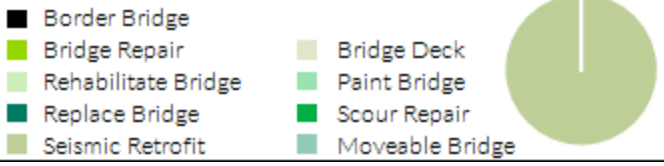
Roadway Surface Type



Roadway Surface Condition (Percent of Surveyed Area)

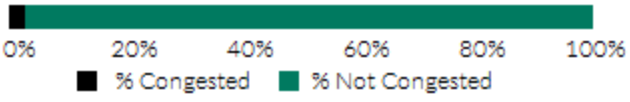


Corridor Bridge Preservation Needs



Mobility

Percent of Corridor Congested (Statewide Screen)



Environment

	Protect	Restore/ Enhance/ Assess
Fish Barriers	33.3% Passable	66.7% to Do
Noise Walls	0% Resolved	0% Unresolved
Chronic Environmental Deficiencies	50% Built	50% Proposed
Wildlife Connectivity	0 Structures in Place	15 High Priority Miles
Stormwater Treatment	27 BMPs	Retrofit Prioritization in progress

Zero	% of Corridor with high potential for increased Climate Impacts
None	Wetland Mitigation Locations
None	Historical Bridges

1) 2015 data unless otherwise noted. 2) For more information see the User Guide for Corridor Sketch Summaries at http://bit.ly/WSDOTcorridorsketch

What we heard from our partners

WSDOT collected feedback from agency partners. Key themes included:

- Partners suggested that some interchanges along the corridor will need to be improved to support growth.
- An interest in expanding transit service in the long-term, since 80% of the county's employment is in Bellingham.
- Significant demand for biking, walking, and transit will not be met until coordinated facilities are established.
- Major local streets are susceptible to congestion caused by events like at-grade rail crossings, accidents, inclement weather, and additional freight traffic.
- Continued development and an increase in freight traffic will add to demand on the corridor and local streets.

Strategies

WSDOT identified the following strategies and associated actions to keep the corridor working well and address performance gaps. Regional partners collaborated on high-level mobility strategies. The identified strategies are not meant to be all-inclusive, nor an established list of priorities. Further evaluation is needed before any strategy can be recommended as a solution to address performance. Project funding decisions will take place at the programming phase, and are subject to statewide prioritization. For more strategy information, visit the Corridor Sketch Summary User Guide.

Policy Goals / Strategies	Description and Near-Term Actions
Economic Vitality	
Under Development	*WSDOT will continue to work with partners in developing strategies to address economic vitality.*
Environment	
Protect and Maintain	*Protect and maintain existing assets that provide environmental function (these include WSDOT's mitigation sites, storm water systems, fish passable culverts).*
Enhance or Restore	*Enhance or restore natural areas and environmental functions associated with the multimodal transportation system.*
Fish Barrier Retrofit	*WSDOT has prioritized the removal of state-owned culverts that block habitat for salmon and steelhead. See interactive map of uncorrected fish barriers at http://www.wsdot.wa.gov/Projects/FishPassage/default.htm.*
Mobility	
Assessment	*Further information about the proposed strategies can be found attached at the end of this document.*
Preservation	
Maintenance	*Based on expenditure history, it is expected that the top three activities will continue to be maintenance on snow and ice control, rest areas, and pavement repair.*
Pavement	*WSDOT has identified one Pavement action in the next six years encompassing 20% of the corridor.*
Safety	
Investment	*WSDOT has identified one Safety Investment action in the next six years encompassing 92% of the corridor.*
Stewardship	
Planning	*Under Practical Solutions, the Corridor Sketch Initiative identifies corridor performance, and assesses alternative strategies to improve the quality, effectiveness, and efficiency of the transportation system.*

WSDOT

Mobility assessment for segment of Corridor 287

I-5: Bellingham and Ferndale/Fairhaven to Main Street (Milepost 249.0-269.0)

I-5 is the primary north-south corridor between the U.S. and B.C. Canada. The corridor accommodates passenger vehicles, commercial freight, and transit operations. Interchange spacing, short on/off ramps, and narrow shoulder width along some segments of the corridor impacts traffic operations during peak periods.

Demand exceeds capacity at multiple locations on this segment of I-5, resulting in long queues, reduced throughput, and delay during peak travel periods.

I-5 sunset interchange looking south

Corridor Segment Characteristics

- Within city limits of Bellingham and Ferndale, in Whatcom County.
- Average daily traffic was 69,229 vehicles in 2015. Freight accounted for 6.5% of traffic.
- Speed limits range from 60 to 70 mph.
- This segment of I-5 has four general purpose lanes (two northbound/two southbound).
- There are 12 interchanges with on/off ramps to and from the interstate.
- High local traffic use between major interchanges in Bellingham.
- This corridor splits Ferndale and Bellingham urban growth areas.
- This section of I-5 is a limited access control facility.
- Whatcom Transit Authority provides bus service with very limited park and ride lots (only at the south end of the corridor and in Ferndale).
- This segment has the highest I-5 traffic volumes north of Snohomish County.

Contributing Factors

- Interchanges are spaced less than one mile apart between Lakeway (Exit 253), Iowa/Ohio (Exit 254), Guide-Meridian (Exit 256), Northwest (Exit 257), and Bakerview (Exit 258) resulting in significant traffic weaving and merging.
- Some ramps are short or have tight curves slowing merging traffic and reducing system efficiency.
- Options for ramp lengthening are challenging due to tight interchange/bridge spacing and development creating obstacles to targeted improvements.
- Traffic on SR 542 and SR 539 backs up across key interchanges, impacting I-5 operations.
- Lack of adequate shoulder width along some segments of the interstate are impacted by crashes and stalled vehicles, disrupting traffic flow.
- Lack of local street connectivity across Whatcom Creek creates to north/south barrier local network trips resulting in a high number of local trips on I-5.
- Growth in visitors from Canada influences peak-hour demand on weekends and holidays.
- Friday demand increases volumes 10%, in August Fridays can experience a demand exceeding 100,000 trips per day resulting in significant delay.

Mobility Strategies:

Operational Improvements

- Implement ramp metering onto I-5 during peak demand to manage flow onto the facility.
- Provide traveler information to drivers on roadway conditions such as incidents, travel time, weather, emergency and alternatives to manage delay.
- Implement hard shoulder running lanes to help with peak demand periods.

Demand Management

- Encourage ridesharing, vanpooling, and transit service to reduce single occupant vehicle trips.

Local Network Improvements

- Develop options to increase local network circulation and connectivity by improving the functionality of key intersections and connecting misaligned deficient arterial streets.

Policy Change

- Consider closing problem ramps and/or providing alternative ramp locations to improve traffic flow.
- Leverage funding for mutually beneficial improvements on local and state system.

Further Study

- Develop options to mitigate short ramp spacing and increase traffic flow between interchanges.
- Evaluate potential for investments in alternative modes to single occupant vehicles to improve travel time reliability and throughput.
- Study ramp configurations to manage traffic flows and maximize system performance.
- Identify sections susceptible to recurrent congestion from incidents and study options to improve clearing time.
- Examine options with existing bridges to address merging issues at on/off ramps.

Ramp metering

Braided ramp and local street overpass

Orchard Street local connector

Shoulder widening project – potential for peak period "hard shoulder running"

For more information

To find out more information about this corridor or how to get involved, please contact:

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Washington State Department of Transportation's Corridor Sketch Initiative is a set of planning activities that engage our partners to define the context and performance information for all of the state's 304 highway corridors. The Corridor Sketch complements and supports regional planning processes in Washington. It is not intended to duplicate, substitute or compete with other planning efforts; nor is it intended to generate lists of projects.

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.

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